FINAL

QUARTERLY SUMMARY REPORT
SECOND QUARTER 2013 SAMPLING EVENTS

OPERABLE UNIT No. 2 (GROUNDWATER)
FORMER NEBRASKA ORDNANCE PLANT
MEAD, NEBRASKA

Prepared for

United States Army Corps of Engineers
Northwestern Division, Kansas City District

September 2013

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September 2013

I hereby certify that the enclosed *Quarterly Summary Report Second Quarter 2013 Sampling Events*, shown and marked in this submittal, is in compliance with the contract specifications and is submitted for government approval for the former Nebraska Ordnance Plant near Mead, Nebraska.

Reviewed by:

9-5-13

ECC Project Manager Date

Accepted as a submittal:

USACE Contracting Officer Date

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LIST OF ACRONYMS AND ABBREVIATIONS

AMA	Atlas Missile Area
AOP	Advanced Oxidation Process
CD	compact disc
COC	contaminant of concern
EW	extraction well
FEW	focused extraction well
GAC	granular activated carbon
GMP	Groundwater Monitoring Program
GTP	Groundwater Treatment Plant
LL	Load Line
MS/MSD	matrix spike/matrix spike duplicate
MW	monitoring well
NDEQ	Nebraska Department of Environmental Quality
NOP	Nebraska Ordnance Plant
O&M	operations and maintenance
QC	quality control
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
TCE	trichloroethene
VOC	volatile organic compound
WSW	water supply well

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1.0 INTRODUCTION

This report summarizes and discusses the results of the groundwater monitoring wells, water supply wells, and operations and maintenance (O&M) locations sampled during the Second Quarter 2013 at the former Nebraska Ordnance Plant (NOP). Historical data and information prior to 2013 are presented in various documents including the *Supplemental Remedial Investigation/Feasibility Study, Operable Unit No. 1* (SEC Donohue, 1992), the *Remedial Investigation Report, Operable Unit No. 2 (Groundwater)* (Woodward-Clyde, 1993a), the *Draft Additional Field Investigation Report Operable Unit No. 2 (Groundwater)* (Woodward-Clyde, 1993b), and a series of Groundwater Monitoring Program (GMP) and O&M Annual Reports from 2000 through 2012.

This report contains the following Appendices:

- Appendix A contains the Concentration Trend Charts for Select Monitoring Wells;
- Appendix B contains the Concentration Trend Charts for Select Water Supply Wells;
- Appendix C contains the Quality Control Summary Report Second Quarter 2013 Groundwater Monitoring Program Sampling Events (on a compact disk [CD]);
- Appendix D contains the Quality Control Summary Report Second Quarter 2013 Water Supply Well Sampling Event (on a CD);
- Appendix E contains the Quality Control Summary Report Second Quarter 2013 Operations and Maintenance Sampling Events (on a CD); and
- Appendix F contains the historical spreadsheet of all trichloroethene (TCE) and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) results for the groundwater sampling program sampling events (on a CD).

The following sections 2.0, 3.0, and 4.0 contain a summary of results for the Second Quarter 2013 sampling event for the Operable Unit 2 Record of Decision contaminants of concern (COCs) and other site specific compounds.

1.1 Objectives

The objectives of the GMP and O&M activities were established in the *Site-Wide Work Plan, Revision 01, Support Services, Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2013), which includes the Field Sampling Plan. The objectives consist of the following:

- To monitor and evaluate potential changes in the concentrations of COCs, as shown on Table 1-1 and defined in the *Record of Decision, Operable Unit No. 2, Former Nebraska Ordnance Plant, Mead, Nebraska* (Woodward-Clyde, 1996);
- To monitor and evaluate the concentration of groundwater plumes;
- To provide data for evaluating whether plume(s) are being contained by the groundwater extraction well network; and
- Treat and discharge extracted groundwater to meet applicable standards.

2.0 SUMMARY OF SECOND QUARTER 2013 GROUNDWATER MONITORING WELL SAMPLING EVENT

The following sections are a summary of the groundwater monitoring well sampling event.

2.1 Field Sampling

Samples from 200 groundwater monitoring wells were collected during the Second Quarter 2013 monitoring well sampling event and are summarized below:

- One hundred forty-eight groundwater monitoring wells were sampled for volatile organic compounds (VOCs);
- One hundred fifty-one groundwater monitoring wells were sampled for explosives;
- Seventeen field duplicate samples were collected;
- Nine matrix spike (MS)/matrix spike duplicate (MSD) pairs were collected; and
- Ten trip blanks were included with the volatile shipments.

The sampling location monitoring well (MW)-18C was listed on the sampling schedule but was not collected as planned. According to the field team, the well was full of roots preventing hydrasleeves from reaching the water.

2.2 Analytical Results

The Second Quarter 2013 groundwater monitoring well validated analytical results for all site specific compounds are presented in Tables 2-1 through 2-6. Figure 2-1 illustrates all groundwater monitoring wells sampled during this sampling event. Groundwater monitoring well results are presented based on the following well categories defined in the 2013 GMP Plan included in Attachment 1 Field Sampling Plan, Appendix L of the *Site-Wide Work Plan, Revision 01* (ECC, 2013):

- Perimeter groundwater monitoring wells;
- Compliance groundwater monitoring wells;
- Interior Plume groundwater monitoring wells in the Load Line (LL)1 contaminant plume;
- Interior Plume groundwater monitoring wells in the LL2 and LL3 contaminant plumes;
- Interior Plume groundwater monitoring wells in LL4 contaminant plume, which includes the landfill and Atlas Missile Area (AMA) areas;
- Focused Extraction groundwater monitoring wells at the focused extraction well (FEW)-11, FEW-14, and FEW-15 sites; and
- Upgradient, Sidegradient and Downgradient groundwater monitoring wells.

The following is a summary of the former NOP groundwater monitoring well categories sampled during the Second Quarter 2013 sampling event:

- Three Perimeter groundwater monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-1);

- Thirty-five LL1 Interior Plume groundwater monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-2);
- Forty-five LL2 and LL3 Interior Plume groundwater monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-3);
- Sixty-four LL4/landfill/AMA Interior Plume groundwater monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-4);
- Twenty-seven Focused Extraction groundwater monitoring wells at FEW-11, FEW-14, and FEW-15 sites were sampled (detected results for site-specific compounds are presented in Table 2-5); and
- Twenty-six Upgradient, Sidegradient, and Downgradient groundwater monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-6).

No Compliance groundwater monitoring wells were sampled during the Second Quarter 2013 sampling event.

2.3 Groundwater Monitoring Well Summary

The following is a summary of the groundwater monitoring well results for the Second Quarter 2013 sampling event:

- VOCs were non-detect in the three Perimeter groundwater monitoring wells sampled. Explosives were not sampled during the Second Quarter 2013. Results for all Perimeter groundwater monitoring wells are presented in Table 2-1.
- TCE exceeded the Final Target Groundwater Cleanup Goals in 30 of the 35 LL1 Interior Plume groundwater monitoring well locations and RDX exceeded the goals in 13 locations. Additional explosive COCs, 2,4,6-trinitrotoluene, and 1,3,5-trinitrobenzene, exceeded the Final Target Groundwater Cleanup Goals in three and two LL1 Interior Plume locations, respectively. Additional site specific compounds were detected including COCs detected below the Final Target Groundwater Cleanup Goals in the LL1 Interior Plume monitoring wells. Results for all LL1 Interior Plume monitoring wells are presented in Table 2-2.
- RDX exceeded the Final Target Groundwater Cleanup Goals in 33 LL2 and LL3 Interior Plume groundwater monitoring well locations and 2,4-dinitrotoluene was exceeded at one location. No VOCs were detected above the Final Target Groundwater Cleanup Goals in the 10 groundwater monitoring wells sampled. Additional site specific compounds were detected including COCs detected below the Final Target Groundwater Cleanup Goals in the LL2 and LL3 Interior Plume monitoring wells. Results for all LL2 and LL3 Interior Plume monitoring wells are presented in Table 2-3.
- RDX exceeded the Final Target Groundwater Cleanup Goals in eight LL4, AMA and landfill Interior Plume groundwater monitoring well locations. TCE exceeded the Final Target Groundwater Cleanup Goals in 43 of the 64 locations sampled. Additional site specific compounds were detected including COCs detected below the Final Target Groundwater Cleanup Goals in the LL4, AMA and landfill Interior Plume monitoring wells. Results for all LL4, AMA, and landfill Interior Plume monitoring wells are presented in Table 2-4.

- RDX exceeded the Final Target Groundwater Cleanup Goals in three of the Focused Extraction groundwater monitoring well locations. TCE exceeded the Final Target Groundwater Cleanup Goals in 16 Focused Extraction groundwater monitoring well locations. Additional site specific compounds were detected including COCs detected below the Final Target Groundwater Cleanup Goals in the Focused Extraction monitoring wells. Results for all Focused Extraction monitoring wells are presented in Table 2-5.
- In the 26 Upgradient, Sidegradient, and Downgradient groundwater monitoring well locations sampled for VOCs, TCE exceeded the Final Target Groundwater Cleanup Goals in three groundwater monitoring wells. No explosives were detected above the Final Target Groundwater Cleanup Goals in the 15 groundwater monitoring wells sampled. Additional site specific compounds were detected including COCs detected below the Final Target Groundwater Cleanup Goals in the groundwater monitoring wells. Results for all Upgradient, Sidegradient, and Downgradient groundwater monitoring well locations are presented in Table 2-6.

Historical results are presented for all sampling locations in Appendix F. Appendix A contains trending charts for groundwater monitoring wells sampled during the Second Quarter 2013 sampling event. All trending charts require four or more data points to be included in this report.

3.0 SUMMARY OF SECOND QUARTER 2013 WATER SUPPLY WELL SAMPLING EVENT

The following sections are a summary of the water supply well sampling event.

3.1 Field Sampling

During the water supply well sampling event, one water supply well location was sampled. In addition, a field duplicate sample, a MS/MSD sample pair, and one trip blank were collected.

3.2 Analytical Results

The water supply well validated analytical results for site-specific compounds are presented in Table 3-1. Figure 3-1 illustrates the water supply well sampled during the Second Quarter 2013 sampling event.

3.3 Water Supply Well Summary

No COCs or other site specific compounds were detected in water supply well (WSW)-55 during the Second Quarter sampling event. Results for the water supply well sampling event are presented in Tables 3-1. Historical results for WSW-55 are presented in Appendix F. Appendix B contains trending charts for the water supply well sampled during the Second Quarter 2013 sampling event.

4.0 SUMMARY OF SECOND QUARTER 2013 OPERATIONS AND MAINTENANCE SAMPLING EVENTS

The following sections are a summary of the O&M sampling events.

4.1 Field Sampling

During the O&M sampling events, the following field samples were collected:

- One water sample from each of the following extraction wells (EW) and focused extraction wells: EW-1R, EW-4, EW-7, EW-9, FEW-11, and FEW-14.
- One water sample was collected during a startup and performance test following a construction completion for EW-17.
- One water sample from each of the following granular activated carbon (GAC) units in April and May 2013: 320, 340, and 360.
- One water sample from each of the following GAC units in June 2013: 310, 330, and 350.
- One influent water sample and one effluent water sample from the Main Groundwater Treatment Plant (GTP) during each month of this quarter.
- One influent water sample and one effluent water sample from groundwater circulation well 1 in June 2013.
- One influent water sample and one effluent water sample from the LL1 GTP during each month of this quarter.
- One influent air sample, one effluent air sample, and one field duplicate sample from the LL1 GTP.
- One influent water sample and one effluent water sample from the LL4 GTP during each month of this quarter.
- One effluent air sample from the LL4 GTP in April 2013.
- One influent and one effluent water from the Advanced Oxidation Process (AOP) GTP in April and June 2013. Only the effluent water sample was collected in May because the associated influent water sample was collected from FEW-11.

A trip blank was included in each shipment that contained field samples scheduled for analysis of VOCs. The required frequency of collection for quality control (QC) samples (field duplicate and MS/MSD) is 10% and 5%, respectively. Five QC field duplicate samples and MS/MSD for each parameter was collected for the Main GTP and LL1 GTP sampling events. Field duplicates and MS/MSD samples were not collected for the AOP GTP or LL4 GTP sampling events. The required field QC frequency was met overall for the Second Quarter 2013 O&M sampling events.

4.2 Analytical Results

The O&M validated analytical results for site-specific compounds are presented in Table 4-1. Figure 4-1 illustrates all O&M locations sampled during the Second Quarter 2013.

4.3 Operations and Maintenance Summary

All extracted groundwater was treated on-site using GAC adsorption, AOP, or air stripping. Treated groundwater was properly disposed of through surface discharge or beneficial re-use. During the Second Quarter 2013 O&M sampling events, there were no detections of TCE or RDX that exceeded the National Pollutant Discharge Elimination System limits in any treatment plant effluent water sample. The TCE results for air samples are compared to anticipated TCE concentrations in the influent of the treatment system. Effluent air standards are monitored to ensure the amount of TCE emitted per year remains below the Nebraska Department of Environmental Quality (NDEQ) permitted threshold of 5 tons/year. All air effluent sample results are presented in Table 4-1.

5.0 DATA VALIDATION RESULTS

Data from the Second Quarter 2013 GMP and O&M sampling events were validated in accordance with project required criteria and appropriate qualifiers were assigned to data. Data validation for the former NOP was performed in accordance with the *Mead Validation Guidelines* (ECC, 2007), which includes an evaluation of holding times, a comparison of both field and laboratory duplicate results, a review of trip blank results, and an evaluation of other quality control measurements reported by the laboratory.

The *Quality Control Summary Report Second Quarter 2013 Groundwater Monitoring Program Sampling Events* is included as Appendix C, *Quality Control Summary Report Second Quarter 2013 Water Supply Well Sampling Event,* is included as Appendix D, and the *Quality Control Summary Report Second Quarter 2013 Operations and Maintenance Sampling Events,* is included as Appendix E. All of these reports are included on a CD. These Quality Control Summary Reports present the following information: locations sampled, planned and actual sample collection and analyses, detailed results of the data validation for all sampling events; including sample collection summaries, QC outliers, data qualifiers, and completeness calculations. Each Quality Control Summary Report contains appendices which include sample chain-of-custody records; field sampling documents consisting of water quality parameter forms, daily chemical quality control reports, and daily field logbook pages; data validation qualifiers reference sheet; and the complete analytical laboratory report for the associated sampling event.

6.0 SECOND QUARTER 2013 SAMPLING EVENTS SUMMARY.

Based on the results of the Second Quarter 2013 GMP and O&M sampling events, the 2013 Sampling Plans that were previously developed are sufficient and meet the following objectives:

- To monitor and evaluate potential changes in the concentrations of COCs defined in the *Record of Decision* (Woodward-Clyde, 1996);
- To monitor and evaluate the concentration of groundwater plumes;
- To provide data for evaluating whether the plume(s) are being contained by the groundwater extraction well network; and
- Treat and discharge extracted groundwater to meet applicable standards.

GMP and O&M sampling programs will continue as planned for the remaining 2013 quarterly sampling events.

7.0 REFERENCES

ECC, 2007. *Mead Validation Guidelines.* 2007

ECC, 2013. *Final Site-Wide Work Plan, Revision 01, Support Services, Former Nebraska Ordnance Plant, Mead, Nebraska*. April.

NDEQ, 1998. Final Effluent Limitations Monitoring Requirements. October.

NDEQ, 2009. Nebraska Administrative Code, Title 117 - Nebraska Department of Environmental Quality, Chapter 4 – Standards for Water Quality, Section 003 – Aquatic Life, Part 003.01 – General Criteria for Aquatic Life, Subpart 003.01C – Toxic Substances. March.

SEC Donohue, 1992. *Supplemental Remedial Investigation/Feasibility Study, Operable Unit No. 1 Former Nebraska Ordnance Plant, Mead, Nebraska.* September.

Woodward-Clyde, 1993a. *Remedial Investigation Report, Operable Unit No. 2 (Groundwater) for Former Nebraska Ordnance Plant, Mead, Nebraska.* May.

Woodward-Clyde, 1993b. *Draft Additional Field Investigation Report, Operable Unit No. 2 (Groundwater) for Former Nebraska Ordnance Plant, Mead, Nebraska.* October.

Woodward-Clyde, 1996. *Record of Decision, Operable Unit No. 2, Former Nebraska Ordnance Plant, Mead, Nebraska*. Contract No. DACA41-92-C-0023. April.

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TABLES

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List of Acronyms for Tables

Term	Definition
µg/L	micrograms per liter
1,2-DCP	1,2-dichloropropane
2,4-DNT	2,4-dinitrotoluene
2ADNT	2-amino-4,6-dinitrotoluene
4ADNT	4-amino-2,6-dinitrotoluene
AOP	Advanced Oxidation Process
CIS-1,2-DCE	cis-1,2-dichloroethene
EFF	effluent
EW	extraction well
GCW	groundwater extraction well
INF	influent
J	estimated
LL	Load Line
MW	monitoring well
ppbv	parts per billion by volume
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
TCE	trichloroethene
TNB	1,3,5-trinitrobenzene
TNT	2,4,6-trinitrotoluene
Trans-1,2-DCE	trans-1,2-dichloroethene
TSS	total suspended solids
U	not detected at laboratory limit of detection
UJ	qualified as estimated and not detected at laboratory limit of detection
VOC	volatile organic compound
WSW	water supply well

All results are reported in µg/L

All air results are reported in ppbv

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Table 1-1
Final Target Groundwater Cleanup Goals
Groundwater Monitoring Program
Former Nebraska Ordnance Plant, Mead, Nebraska

Contaminant of Concern (COC)	Final Target Groundwater Cleanup Goal (μg/L)
Volatile Organic Compounds	
Methylene chloride	5
1,2-Dichloropropane	5
TCE	5
Explosive Compounds	
Trinitrobenzene (TNB)	0.778
2,4-Dinitrotoluene (2,4-DNT)	1.24
RDX	2
2,4,6-Trinitrotoluene (TNT)	2

Notes: *Source: Woodward-Clyde, Mead ROD, 1996*
Italics = Indicator compounds used to define groundwater contamination at the former Nebraska Ordnance Plant

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Table 2-1 Perimeter Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
MW-116A	06/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-116B	06/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-116D	06/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

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Table 2-2 LL1 Interior Plume Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-02A	06/05/2013	0.096 U	0.096 U	**0.062 J**	**0.16 J**	0.048 U	0.096 U
MW-02B	06/05/2013	**0.22 J**	**3.6**	**3.6**	**5.2**	**0.39 J**	**4.7**
MW-03A	06/05/2013	0.096 U	0.096 U	**0.10 J**	**2.3**	0.048 U	0.096 U
MW-03B	06/05/2013	0.096 U	**0.098 J**	**0.19 J**	**0.43**	0.048 U	0.096 U
MW-124A	06/05/2013	0.096 U	0.096 U	0.048 U	**2.3**	0.048 U	0.096 U
MW-124B	06/05/2013	0.096 U	0.096 U	**1.9 J**	**26.0**	**0.065 J**	0.096 U
MW-124D	06/05/2013	0.096 U	0.096 U	**0.15 J**	**0.23 J**	0.048 U	**0.073 J**
MW-125A	06/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-125B	06/04/2013	0.096 U	0.096 U	**3.5 J**	**11.0**	**0.26 J**	0.096 U
MW-125D	06/04/2013	0.096 U	0.096 U	**0.15 J**	0.048 U	0.048 U	**0.26 J**
MW-126A	06/05/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-126B	06/05/2013	0.096 U	**0.15 J**	**12.0 J**	**19.0**	**0.73**	**0.63**
MW-126D	06/05/2013	0.096 U	0.096 U	**0.12 J**	9.7 U	**0.055 J**	0.096 U
MW-127A	06/05/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-127B	06/05/2013	0.096 U	**0.57**	**0.33 J**	**0.31 J**	**0.49**	**3.0**
MW-127E	06/05/2013	**0.24 J**	**3.1 J**	**1.7 J**	**5.6 J**	**180 J**	**83.0 J**
MW-141A	06/04/2013	0.096 U	**0.052 J**	**0.048 J**	**0.75**	0.048 U	0.096 U
MW-141B	06/04/2013	0.096 U	**5.1**	**7.6 J**	**54.0**	0.048 U	0.096 U
MW-141E	06/04/2013	0.096 U	**0.34 J**	**3.3 J**	**15.0**	0.048 U	0.096 U
MW-142A	06/05/2013	0.096 U	0.096 U	0.048 U	**0.59**	0.048 U	0.096 U
MW-142E	06/05/2013	0.096 U	0.096 U	0.048 U	0.048 U	**1.1 J**	**0.14 J**
MW-160A	06/05/2013	0.096 U	0.096 U	**0.38 J**	**1.6**	0.048 U	0.096 U
MW-160B	06/05/2013	0.096 U	**0.16 J**	**0.065 J**	**0.82**	0.048 U	0.096 U
MW-161A	06/05/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-161B	06/05/2013	0.096 U	0.096 U	**4.1 J**	**6.6**	0.048 U	0.096 U
MW-21A	06/05/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-2 LL1 Interior Plume Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-21B	06/05/2013	0.096 U	**0.53**	**6.3**	**9.6**	0.048 U	0.096 U
MW-21D	06/05/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-24A	06/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-24B	06/04/2013	0.096 U	**0.27 J**	**3.5**	**15.0**	0.048 U	0.096 U
MW-90A	06/04/2013	0.096 U	0.096 U	0.048 U	**0.62**	0.048 U	0.096 U
MW-90B	06/04/2013	0.096 U	0.096 U	**0.067 J**	**0.13 J**	0.048 U	0.096 U
MW-90D	06/04/2013	0.096 U	**0.51**	**0.88 J**	**0.26 J**	**0.047 J**	**0.14 J**

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-2 LL1 Interior Plume Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	1,2-DCP	CIS-1,2-DCE	Methylene Chloride	TCE	TRANS-1,2-DCE	Vinyl Chloride
MW-02A	06/05/2013	0.50 U	0.50 U	0.50 U	**140**	0.50 U	0.50 U
MW-02B	06/05/2013	0.50 U	**37.0**	0.50 U	**100**	**9.3**	0.50 U
MW-03A	06/05/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-03B	06/05/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-124A	06/05/2013	2.8 UJ	**20.0 J**	2.8 UJ	**10000**	2.8 UJ	2.8 UJ
MW-124B	06/05/2013	2.8 UJ	**21.0 J**	2.8 UJ	**12000**	2.8 UJ	2.8 UJ
MW-124D	06/05/2013	1.3 UJ	**2.6 J**	1.3 UJ	**500**	1.3 UJ	1.3 UJ
MW-125A	06/04/2013	1.3 U	**3.0 J**	1.3 U	**460**	1.3 U	1.3 U
MW-125B	06/04/2013	2.8 UJ	**4.2 J**	2.8 UJ	**2500**	2.8 UJ	2.8 UJ
MW-125D	06/04/2013	0.25 U	0.25 U	0.25 U	**53.0**	0.25 U	0.25 U
MW-126A	06/05/2013	2.2 UJ	**31.0 J**	2.2 UJ	**5600**	**11.0 J**	2.2 UJ
MW-126B	06/05/2013	2.2 UJ	**7.6 J**	2.2 UJ	**7500**	**2.4 J**	2.2 UJ
MW-126D	06/05/2013	1.1 U	**280**	1.1 U	**200**	1.1 U	1.1 U
MW-127A	06/05/2013	0.25 U	**3.7**	0.25 U	**11.0**	**2.2**	0.25 U
MW-127B	06/05/2013	0.25 U	**10.0**	0.25 U	**69.0**	**8.8**	0.25 U
MW-127E	06/05/2013	0.25 U	0.25 U	0.25 U	**11.0**	0.25 U	0.25 U
MW-141A	06/04/2013	3.7 UJ	**850**	3.7 UJ	**6600**	3.7 UJ	3.7 UJ
MW-141B	06/04/2013	4.4 UJ	**8.5 J**	4.4 UJ	**5800**	4.4 UJ	4.4 UJ
MW-141E	06/04/2013	4.4 UJ	**10.0 J**	4.4 UJ	**5000**	4.4 UJ	4.4 UJ
MW-142A	06/05/2013	2.2 UJ	2.2 UJ	2.2 UJ	**1900**	2.2 UJ	2.2 UJ
MW-142E	06/05/2013	0.25 U	**4.5**	0.25 U	**54.0**	0.25 U	0.25 U
MW-160A	06/05/2013	1.3 UJ	**2.4 J**	1.3 UJ	**1200**	1.3 UJ	1.3 UJ
MW-160B	06/05/2013	0.70 U	0.70 U	0.70 U	**140**	0.70 U	0.70 U
MW-161A	06/05/2013	2.8 UJ	**40.0 J**	2.8 UJ	**8800 J**	2.8 UJ	2.8 UJ
MW-161B	06/05/2013	2.8 UJ	**20.0 J**	2.8 UJ	**7200**	2.8 UJ	2.8 UJ
MW-179A	06/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-2 LL1 Interior Plume Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
MW-179B	06/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-21A	06/05/2013	0.25 U	**4.0**	0.25 U	**6.7**	**5.0**	0.25 U
MW-21B	06/05/2013	0.38 U	0.38 U	0.38 U	**72.0**	0.38 U	0.38 U
MW-21D	06/05/2013	0.25 U	**39.0**	0.25 U	**24.0**	**22.0**	0.25 U
MW-24A	06/04/2013	1.3 U	**130**	1.3 U	**640**	**4.5 J**	1.3 U
MW-24B	06/04/2013	0.25 U	0.25 U	0.25 U	**27.0**	0.25 U	0.25 U
MW-90A	06/04/2013	1.3 UJ	1.3 U	1.3 U	**550**	1.3 U	1.3 U
MW-90B	06/04/2013	0.25 U	0.25 U	0.25 U	**52.0 J**	0.25 U	0.25 U
MW-90D	06/04/2013	1.2 U	**1.9 J**	**1.4 J**	**280**	1.2 U	1.2 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-3 LL2 and LL3 Interior Plume Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-130A	06/10/2013	0.096 U	0.096 U	**0.11 J**	**1.2**	0.048 U	0.096 U
MW-130B	06/10/2013	0.096 U	0.096 U	**0.054 J**	**0.38 J**	0.048 U	0.096 U
MW-130D	06/10/2013	0.096 U	0.096 U	0.048 U	**0.16 J**	0.048 U	0.096 U
MW-143B	06/05/2013	0.096 U	**0.37 J**	**2.0**	**16.0**	0.048 U	0.096 U
MW-144A	06/05/2013	0.096 U	**0.23 J**	**0.34 J**	**78.0**	0.048 U	0.096 U
MW-144E	06/05/2013	0.096 U	**1.7**	**1.1**	**92.0**	**0.11 J**	0.096 U
MW-145A	06/05/2013	0.096 U	0.096 U	**0.074 J**	**25.0**	0.048 U	0.096 U
MW-145B	06/05/2013	0.096 U	0.096 U	**0.41**	**17.0**	0.048 U	0.096 U
MW-145E	06/05/2013	0.096 U	**0.085 J**	**1.3**	**110**	0.048 U	0.096 U
MW-148A	06/05/2013	0.096 U	0.096 U	**0.078 J**	**0.15 J**	0.048 U	0.096 U
MW-148B	06/05/2013	0.096 U	0.096 U	**3.3**	**36.0**	0.048 U	0.096 U
MW-149A	06/06/2013	0.096 U	**0.065 J**	**0.89**	**24.0**	0.048 U	0.096 U
MW-150A	06/11/2013	0.096 U	0.096 U	**0.20 J**	**2.3**	0.048 U	0.096 U
MW-150B	06/11/2013	**0.32 J**	**0.17 J**	**0.48**	**6.5**	0.048 U	0.096 U
MW-162A	06/06/2013	0.096 U	0.096 U	**0.67**	**71.0**	0.048 U	0.096 U
MW-163A	06/06/2013	0.096 U	0.096 U	**0.46**	**13.0**	0.048 U	0.096 U
MW-164A	06/06/2013	0.096 U	0.096 U	**1.3**	**78.0**	0.048 U	0.096 U
MW-165B	06/06/2013	0.096 U	0.096 U	**3.2**	**170**	0.048 U	0.096 U
MW-166A	06/06/2013	0.096 U	0.096 U	**0.55**	**75.0**	0.048 U	0.096 U
MW-166B	06/06/2013	0.096 U	0.096 U	0.048 U	**0.37 J**	0.048 U	0.096 U
MW-167A	06/06/2013	0.096 U	0.096 U	**0.94**	**34.0**	0.048 U	0.096 U
MW-167B	06/06/2013	0.096 U	0.096 U	**0.23 J**	**16.0**	0.048 U	0.096 U
MW-168A	06/06/2013	0.096 U	0.096 U	**0.052 J**	**7.5**	0.048 U	0.096 U
MW-168B	06/06/2013	0.096 U	0.096 U	0.048 U	**0.28 J**	0.048 U	0.096 U
MW-169A	06/06/2013	0.096 U	0.096 U	**0.071 J**	**12.0**	0.048 U	0.096 U
MW-169B	06/06/2013	0.096 U	0.096 U	**0.28 J**	**49.0**	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-3 LL2 and LL3 Interior Plume Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-170A	06/06/2013	0.096 U	0.096 U	0.048 U	**5.3**	0.048 U	0.096 U
MW-171A	06/05/2013	**0.58**	**0.84**	**1.1**	**62.0**	**0.033 J**	**0.49**
MW-171B	06/05/2013	**2.9**	**4.8**	**2.8**	**96.0**	**0.070 J**	**0.18 J**
MW-172A	06/07/2013	0.096 U	0.096 U	**0.68**	**3.2**	0.048 U	0.096 U
MW-172B	06/07/2013	0.096 U	0.096 U	**0.38 J**	**2.1**	0.048 U	0.096 U
MW-173A	06/07/2013	0.096 U	0.096 U	**0.67**	**6.4**	0.048 U	0.096 U
MW-174A	06/07/2013	0.096 U	0.096 U	**0.31 J**	**1.2**	0.048 U	0.096 U
MW-174B	06/07/2013	0.096 U	0.096 U	**0.28 J**	**1.1**	0.048 U	0.096 U
MW-175A	06/07/2013	0.096 U	**0.49**	**2.2**	**8.2**	0.048 U	0.096 U
MW-175B	06/07/2013	0.096 U	**0.068 J**	**1.3**	**2.6**	0.048 U	0.096 U
MW-29A	06/05/2013	0.096 U	0.096 U	0.048 U	**2.0**	0.048 U	0.096 U
MW-29B	06/05/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-32A	06/06/2013	0.096 U	0.096 U	**0.22 J**	**6.8**	0.048 U	0.096 U
MW-32B	06/06/2013	0.096 U	0.096 U	**0.14 J**	**5.9**	0.048 U	0.096 U
MW-32D	06/06/2013	0.096 U	0.096 U	**0.072 J**	**5.8**	0.048 U	0.096 U
MW-65B	06/05/2013	**0.49**	**0.64**	**0.37 J**	**16.0**	0.048 U	0.096 U
MW-99A	06/07/2013	0.096 U	0.096 U	**0.064 J**	**0.47**	0.048 U	0.096 U
MW-99B	06/07/2013	0.096 U	0.096 U	**0.088 J**	**1.4**	0.048 U	0.096 U
MW-99D	06/07/2013	0.096 U	0.096 U	**0.10 J**	**3.3**	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-3 LL2 and LL3 Interior Plume Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
MW-143B	06/05/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-148B	06/05/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-149A	06/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	**0.96 J**
MW-150A	06/11/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-150B	06/11/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-175A	06/07/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-175B	06/07/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-32A	06/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-32B	06/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-32D	06/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

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Table 2-4 LL4, AMA, and Landfill Interior Plume Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-104A	05/31/2013	0.096 U	0.096 U	0.048 U	**0.89**	0.048 U	0.096 U
MW-104B	05/31/2013	0.096 U	0.096 U	0.048 U	**0.45**	0.048 U	0.096 U
MW-104D	05/31/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-104O	05/31/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-105A	06/03/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-105B	06/03/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-105O	06/03/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-109A	06/03/2013	0.096 U	0.096 U	**0.13 J**	**4.3**	0.048 U	0.096 U
MW-109B	06/03/2013	0.096 U	0.096 U	**0.12 J**	**4.0**	0.048 U	0.096 U
MW-11	06/04/2013	0.096 U	0.096 U	0.048 U	**2.9**	0.048 U	0.096 U
MW-111A	05/31/2013	0.096 U	0.096 U	0.048 U	**0.23 J**	0.048 U	0.096 U
MW-111B	05/31/2013	0.096 U	0.096 U	0.048 U	**0.12 J**	0.048 U	0.096 U
MW-151A	05/30/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-151B	05/30/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-152B	05/30/2013	0.096 U	0.096 U	**0.053 J**	**1.3**	0.048 U	0.096 U
MW-153A	05/30/2013	0.096 U	**0.059 J**	0.048 U	0.048 U	0.048 U	0.096 U
MW-153B	05/30/2013	0.096 U	0.096 U	0.048 U	**0.65**	0.048 U	0.096 U
MW-154A	05/30/2013	0.096 U	**0.079 J**	**0.18 J**	**5.3**	0.048 U	0.096 U
MW-154B	05/30/2013	0.096 U	0.096 U	**0.043 J**	**3.1**	0.048 U	0.096 U
MW-155A	05/30/2013	0.096 U	0.096 U	0.048 U	**0.14 J**	0.048 U	0.096 U
MW-155B	05/30/2013	0.096 U	0.096 U	0.048 U	**0.18 J**	0.048 U	0.096 U
MW-155E	05/30/2013	0.096 U	0.096 U	0.048 U	**0.31 J**	0.048 U	0.096 U
MW-156A	05/31/2013	0.096 U	0.096 U	**0.097 J**	**0.41**	0.048 U	0.096 U
MW-156B	05/31/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-157A	05/30/2013	0.096 U	0.096 U	**0.059 J**	**1.7**	0.048 U	0.096 U
MW-157B	05/30/2013	0.096 U	0.096 U	0.048 U	**0.20 J**	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-4 LL4, AMA, and Landfill Interior Plume Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-176A	05/30/2013	0.096 U	0.096 U	0.048 U	**0.42**	0.048 U	0.096 U
MW-176B	05/30/2013	0.096 U	0.096 U	0.048 U	**0.20 J**	0.048 U	0.096 U
MW-178B	05/30/2013	0.096 U	0.096 U	0.048 U	**1.5**	0.048 U	0.096 U
MW-18A	05/30/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-18B	05/30/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-42A	05/30/2013	0.096 U	0.096 U	**0.099 J**	**2.9**	0.048 U	0.096 U
MW-42B	05/30/2013	0.098 U	0.098 U	0.049 U	**0.11 J**	0.049 U	0.098 U
MW-42D	05/30/2013	0.096 U	**0.058 J**	**0.12 J**	**3.5**	0.048 U	0.096 U
MW-43A	05/30/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-43B	05/30/2013	0.096 U	**0.14 J**	**0.14 J**	**3.5**	0.048 U	0.096 U
MW-43D	05/30/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-44A	05/30/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-44B	05/30/2013	0.11 U	0.11 U	0.055 U	0.055 U	0.055 U	0.11 U
MW-44D	05/30/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-4 LL4, AMA, and Landfill Interior Plume Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	1,2-DCP	CIS-1,2-DCE	Methylene Chloride	TCE	TRANS-1,2-DCE	Vinyl Chloride
MW-09A	05/31/2013	0.25 U	**0.54 J**	0.25 U	**55.0**	0.25 U	0.25 U
MW-09B	05/31/2013	0.25 U	0.25 U	0.25 U	**38.0**	0.25 U	0.25 U
MW-09D	05/31/2013	1.3 U	1.3 U	1.3 U	**480**	1.3 U	1.3 U
MW-104A	05/31/2013	1.3 U	**1.3 J**	1.3 U	**320**	1.3 U	1.3 U
MW-104B	05/31/2013	1.3 U	**2.9 J**	1.3 U	**620**	1.3 U	1.3 U
MW-104D	05/31/2013	0.25 U	0.25 U	0.25 U	**0.28 J**	0.25 U	0.25 U
MW-104O	05/31/2013	0.25 U	**1.0**	0.25 U	0.25 U	0.25 U	0.25 U
MW-105A	06/03/2013	0.25 U	**1.4**	0.25 U	**28.0**	0.25 U	0.25 U
MW-105B	06/03/2013	0.25 U	**1.3**	0.25 U	**23.0**	0.25 U	0.25 U
MW-105O	06/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-109A	06/03/2013	0.25 U	**0.76 J**	0.25 U	**17.0**	0.25 U	0.25 U
MW-109B	06/03/2013	0.25 U	**0.69 J**	0.25 U	**18.0**	0.25 U	0.25 U
MW-111A	05/31/2013	0.25 U	0.25 U	0.25 U	**6.6**	0.25 U	0.25 U
MW-111B	05/31/2013	0.25 U	0.25 U	0.25 U	**7.4**	0.25 U	0.25 U
MW-136A	06/03/2013	0.25 U	0.25 U	0.25 U	**4.9**	0.25 U	0.25 U
MW-136B	06/03/2013	0.25 U	**1.2**	0.25 U	**53.0**	0.25 U	0.25 U
MW-136D	06/03/2013	1.3 U	1.3 U	1.3 U	**140**	1.3 U	1.3 U
MW-136E	06/03/2013	0.45 U	**1.1 J**	0.45 U	**89.0**	0.45 U	0.45 U
MW-137A	06/03/2013	1.3 U	**1.9 J**	1.3 U	**350**	1.3 U	1.3 U
MW-137B	06/03/2013	0.25 U	0.25 U	0.25 U	**17.0**	0.25 U	0.25 U
MW-137E	06/03/2013	2.8 U	**16.0**	2.8 U	**4100**	2.8 U	2.8 U
MW-138A	06/04/2013	0.25 U	0.25 U	0.25 U	**4.9**	0.25 U	0.25 U
MW-138B	06/04/2013	4.4 UJ	**15.0 J**	4.4 UJ	**2700**	4.4 UJ	4.4 UJ
MW-139A	06/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-139B	06/04/2013	1.2 U	**1.4 J**	1.2 U	**240**	1.2 U	1.2 U
MW-140A	06/03/2013	0.25 U	0.25 U	0.25 U	**0.60 J**	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-4 LL4, AMA, and Landfill Interior Plume Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	1,2-DCP	CIS-1,2-DCE	Methylene Chloride	TCE	TRANS-1,2-DCE	Vinyl Chloride
MW-140B	06/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-140D	06/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-140O	06/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-151A	05/30/2013	0.25 U	**1.0**	0.25 U	**44.0**	0.25 U	0.25 U
MW-151B	05/30/2013	1.3 U	**5.3**	1.3 U	**1100**	1.3 U	1.3 U
MW-152B	05/30/2013	0.25 U	**0.68 J**	0.25 U	**9.3**	0.25 U	0.25 U
MW-153A	05/30/2013	1.3 U	**2.9 J**	1.3 U	**710**	1.3 U	1.3 U
MW-153B	05/30/2013	1.3 U	**1.6 J**	1.3 U	**320**	1.3 U	1.3 U
MW-154A	05/30/2013	0.25 U	**1.1**	0.25 U	**41.0**	0.25 U	0.25 U
MW-154B	05/30/2013	0.25 U	**0.54 J**	0.25 U	**18.0**	0.25 U	0.25 U
MW-155A	05/30/2013	1.3 U	**4.3 J**	1.3 U	**910**	1.3 U	1.3 U
MW-155B	05/30/2013	0.73 U	**0.79 J**	0.73 U	**150**	0.73 U	0.73 U
MW-155E	05/30/2013	1.3 U	**2.1 J**	1.3 U	**470**	1.3 U	1.3 U
MW-156A	05/31/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-156B	05/31/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-157A	05/30/2013	0.25 U	0.25 U	0.25 U	**37.0**	0.25 U	0.25 U
MW-157B	05/30/2013	0.25 U	0.25 U	0.25 U	**0.65 J**	0.25 U	0.25 U
MW-176A	05/30/2013	1.3 U	**3.2 J**	1.3 U	**720**	1.3 U	1.3 U
MW-176B	05/30/2013	0.55 U	0.55 U	0.55 U	**120**	0.55 U	0.55 U
MW-178B	05/30/2013	0.25 U	**0.90 J**	0.25 U	**31.0**	0.25 U	0.25 U
MW-18A	05/30/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-18B	05/30/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-40A	06/03/2013	0.25 U	0.25 U	0.25 U	**1.8**	0.25 U	0.25 U
MW-40B	06/03/2013	0.45 U	**0.57 J**	0.45 U	**85.0**	0.45 U	0.45 U
MW-42A	05/30/2013	0.45 U	**0.45 J**	0.45 U	**96.0**	0.45 U	0.45 U
MW-42B	05/30/2013	0.25 U	0.25 U	0.25 U	**0.82 J**	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-4 LL4, AMA, and Landfill Interior Plume Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
MW-42D	05/30/2013	0.50 U	**0.67 J**	0.50 U	**120**	0.50 U	0.50 U
MW-43A	05/30/2013	0.25 U	0.25 U	0.25 U	**19.0**	0.25 U	0.25 U
MW-43B	05/30/2013	0.25 U	0.25 U	0.25 U	**2.4**	0.25 U	0.25 U
MW-43D	05/30/2013	0.25 U	0.25 U	0.25 U	**11.0**	0.25 U	0.25 U
MW-44A	05/30/2013	0.70 U	**2.2 J**	0.70 U	**150**	0.70 U	0.70 U
MW-44B	05/30/2013	0.25 U	0.25 U	0.25 U	**13.0**	0.25 U	0.25 U
MW-44D	05/30/2013	0.25 U	0.25 U	0.25 U	**19.0**	0.25 U	0.25 U
MW-72A	06/03/2013	0.25 U	0.25 U	0.25 U	**3.3**	0.25 U	0.25 U
MW-72B	06/03/2013	1.3 U	**6.3**	1.3 U	**410**	1.3 U	1.3 U
MW-78A	06/04/2013	0.25 U	0.25 U	0.25 U	**0.68 J**	0.25 U	0.25 U
MW-78B	06/04/2013	0.25 U	**2.9**	0.25 U	**39.0**	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

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Table 2-5 Focused Extraction Monitoring Wells at the FEW-11, FEW-14 and FEW-15 Sites

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-119A	06/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-119B	06/04/2013	0.096 U	**0.095 J**	**0.12 J**	**0.19 J**	0.048 U	0.096 U
MW-120A	06/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-120B	06/04/2013	0.096 U	**0.053 J**	**3.0 J**	**7.4**	0.048 U	0.096 U
MW-120D	06/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-120E	06/04/2013	0.096 U	0.096 U	**0.64 J**	**8.5**	0.048 U	0.096 U
MW-121A	06/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-121B	06/04/2013	0.098 U	0.098 U	**0.098 J**	0.049 U	0.049 U	0.098 U
MW-121E	06/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-122A	06/05/2013	0.096 U	0.096 U	**0.15 J**	0.048 U	0.048 U	0.096 U
MW-122B	06/05/2013	0.096 U	0.096 U	**0.34 J**	**1.1**	0.048 U	0.096 U
MW-123A	06/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-123B	06/04/2013	0.096 U	0.096 U	**0.19 J**	**0.14 J**	0.048 U	0.096 U
MW-128A	06/07/2013	0.096 U	0.096 U	**0.29 J**	**0.43 J**	0.048 U	0.096 U
MW-128B	06/07/2013	0.096 U	0.096 U	**0.72**	**1.4**	0.048 U	0.096 U
MW-131A	06/07/2013	0.096 U	0.096 U	**0.63**	**3.0**	0.048 U	0.096 U
MW-131B	06/07/2013	0.096 U	0.096 U	**0.15 J**	**0.81**	0.048 U	0.096 U
MW-131D	06/07/2013	0.096 U	0.096 U	0.048 U	**0.19 J**	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-5 Focused Extraction Monitoring Wells at the FEW-11, FEW-14 and FEW-15 Sites

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
MW-119A	06/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-119B	06/04/2013	0.25 U	0.25 U	0.25 U	**0.34 J**	0.25 U	0.25 U
MW-120A	06/04/2013	0.93 U	**200**	0.93 U	**300**	**0.91 J**	0.93 U
MW-120B	06/04/2013	2.8 UJ	**5.4 J**	**3.0 J**	**6600**	2.8 UJ	2.8 UJ
MW-120D	06/04/2013	0.58 U	**190**	0.58 U	**11.0**	**1.0 J**	0.58 U
MW-120E	06/04/2013	4.4 UJ	**24.0 J**	4.4 UJ	**12000**	4.4 UJ	4.4 UJ
MW-121A	06/04/2013	0.25 U	0.25 U	0.25 U	**0.87 J**	0.25 U	0.25 U
MW-121B	06/04/2013	0.25 U	0.25 U	0.25 U	**0.26 J**	0.25 U	0.25 U
MW-121E	06/04/2013	0.25 U	0.25 U	0.25 U	**1.6**	0.25 U	0.25 U
MW-122A	06/05/2013	0.25 U	**0.61 J**	0.25 U	**60.0**	0.25 U	0.25 U
MW-122B	06/05/2013	1.3 U	**3.0 J**	1.3 U	**790**	1.3 U	1.3 U
MW-123A	06/04/2013	0.25 U	**0.48 J**	0.25 U	**7.4**	0.25 U	0.25 U
MW-123B	06/04/2013	0.25 U	0.25 U	0.25 U	**2.1**	0.25 U	0.25 U
MW-133A	05/31/2013	0.25 U	0.25 U	0.25 U	**7.2**	0.25 U	0.25 U
MW-133B	05/31/2013	1.3 U	**2.5 J**	1.3 U	**290**	1.3 U	1.3 U
MW-133D	05/31/2013	0.25 U	**0.26 J**	0.25 U	**33.0**	0.25 U	0.25 U
MW-134A	05/31/2013	0.25 U	**1.4**	0.25 U	**29.0**	0.25 U	0.25 U
MW-134B	05/31/2013	0.85 U	**10.0**	0.85 U	**210**	0.85 U	0.85 U
MW-134D	05/31/2013	0.45 U	**0.49 J**	0.45 U	**140**	0.45 U	0.45 U
MW-135A	06/03/2013	0.85 U	**1.9 J**	0.85 U	**130**	0.85 U	0.85 U
MW-135B	06/03/2013	0.85 U	**8.3**	0.85 U	**210**	0.85 U	0.85 U
MW-135D	06/03/2013	1.3 U	**3.7 J**	1.3 U	**930**	1.3 U	1.3 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-6 Upgradient, Sidegradient and Downgradient Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-08A	05/31/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-08B	05/31/2013	0.096 U	0.096 U	0.048 U	**0.22 J**	0.048 U	0.096 U
MW-129A	06/07/2013	0.096 U	0.096 U	**0.055 J**	**0.26 J**	0.048 U	0.096 U
MW-129B	06/07/2013	0.096 U	0.096 U	0.048 U	**0.12 J**	0.048 U	0.096 U
MW-129D	06/07/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-146A	06/07/2013	0.096 U	**0.060 J**	0.048 U	0.048 U	0.048 U	0.096 U
MW-146B	06/07/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-25A	06/05/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-25B	06/05/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-28A	06/05/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-28B	06/05/2013	0.096 U	0.096 U	0.048 U	**0.92 J**	0.048 U	0.096 U
MW-28D	06/05/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-33A	06/06/2013	0.096 U	0.096 U	**0.12 J**	**0.79**	0.048 U	0.096 U
MW-33B	06/06/2013	0.096 U	0.096 U	**0.052 J**	0.048 U	0.048 U	0.096 U
MW-33D	06/06/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-6 Upgradient, Sidegradient and Downgradient Monitoring Wells

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
MW-08A	05/31/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-08B	05/31/2013	0.25 U	0.25 U	0.25 U	**0.15 J**	0.25 U	0.25 U
MW-177A	06/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-177B	06/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-25A	06/05/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-25B	06/05/2013	0.25 U	**0.29 J**	0.25 U	**23.0**	0.25 U	0.25 U
MW-89A	06/04/2013	0.25 U	0.25 U	0.25 U	**8.9**	0.25 U	0.25 U
MW-89B	06/04/2013	0.25 U	0.25 U	0.25 U	**0.80 J**	0.25 U	0.25 U
MW-89D	06/04/2013	0.25 U	0.25 U	0.25 U	**1.3**	0.25 U	0.25 U
MW-89E	06/04/2013	1.3 U	1.3 U	1.3 U	**390**	1.3 U	1.3 U
MW-91A	06/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-91B	06/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-91D	06/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-93A	06/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-93B	06/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 3-1 Water Supply Well

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
WSW-55	05/08/2013	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 3-1 Water Supply Well

Results for Second Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
WSW-55	05/08/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 4-1 Operations and Maintenance

Results for Second Quarter 2013 Sampling Event

Operations and Maintenance Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
AOP-EFF	04/01/2013	0.048 U	0.048 U	**0.033 J**	**3.1**	**0.038 J**	**0.10 J**
AOP-EFF	05/01/2013	0.048 U	0.048 U	**0.028 J**	**3.1**	**0.039 J**	**0.095 J**
AOP-EFF	06/03/2013	0.048 U	0.048 U	0.024 U	**3.0**	**0.033 J**	**0.094 J**
AOP-INF	04/01/2013	0.048 U	**0.035 J**	**0.92 J**	**3.7**	0.024 U	0.048 U
AOP-INF	06/03/2013	0.048 U	**0.031 J**	**0.90 J**	**3.8**	0.024 U	0.048 U
EW-17	05/22/2013	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
EW-1R	05/01/2013	0.048 U	0.048 U	**0.022 J**	**0.082 J**	0.024 U	0.048 U
EW-4	05/01/2013	0.048 U	0.048 U	**0.50**	**3.7**	0.024 U	0.048 U
EW-7	05/01/2013	0.048 U	0.048 U	**0.085 J**	**7.8**	0.024 U	0.048 U
EW-9	05/01/2013	0.048 U	0.048 U	**0.13 J**	**6.7**	0.024 U	0.048 U
FEW-11	05/01/2013	0.048 U	**0.034 J**	**0.92 J**	**3.8**	0.024 U	0.048 U
FEW-14	05/01/2013	0.048 U	**0.059 J**	**0.72**	**4.8**	0.024 U	0.048 U
GTP-310	06/03/2013	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
GTP-320	04/01/2013	0.048 U	0.048 U	0.024 U	**1.2**	0.024 U	0.048 U
GTP-320	05/01/2013	0.048 U	0.048 U	**0.020 J**	**1.4**	0.024 U	0.048 U
GTP-330	06/03/2013	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
GTP-340	04/01/2013	0.048 U	0.048 U	0.024 U	**0.76**	0.024 U	0.048 U
GTP-340	05/01/2013	0.048 U	0.048 U	0.024 U	**0.96**	0.024 U	0.048 U
GTP-350	06/03/2013	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
GTP-360	04/01/2013	0.048 U	0.048 U	**0.020 J**	**0.94**	0.024 U	0.048 U
GTP-360	05/01/2013	0.048 U	0.048 U	0.024 U	**1.1**	0.024 U	0.048 U
GTP-EFF	04/01/2013	0.048 U	0.048 U	0.024 U	**0.97**	0.024 U	0.048 U
GTP-EFF	05/01/2013	0.048 U	0.048 U	**0.022 J**	**1.1**	0.024 U	0.048 U
GTP-EFF	06/03/2013	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
GTP-INF	04/01/2013	0.048 U	0.048 U	**0.17 J**	**4.3**	0.024 U	0.048 U
GTP-INF	05/01/2013	0.048 U	0.048 U	**0.17 J**	**4.2**	0.024 U	0.048 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter
Air results in ppbv = parts per billion per volume

Table 4-1 Operations and Maintenance

Results for Second Quarter 2013 Sampling Event

Operations and Maintenance Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
GTP-INF	06/03/2013	0.048 U	0.048 U	**0.17 J**	**4.1**	0.024 U	0.048 U
LL1-EFF	05/01/2013	0.048 U	0.048 U	**0.024 J**	**0.077 J**	0.024 U	0.048 U
LL1-EFF	05/22/2013	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
LL1-INF	05/01/2013	0.048 U	0.048 U	0.024 U	**0.079 J**	0.024 U	0.048 U
LL4-EFF	05/01/2013	0.048 U	0.048 U	0.024 U	**0.032 J**	0.024 U	0.048 U
LL4-INF	05/01/2013	0.048 U	0.048 U	0.024 U	**0.046 J**	0.024 U	0.048 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter
Air results in ppbv = parts per billion per volume

Table 4-1 Operations and Maintenance

Results for Second Quarter 2013 Sampling Event

Operations and Maintenance Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	1,2-DCP	CIS-1,2-DCE	Methylene Chloride	TCE	TRANS-1,2-DCE	Vinyl Chloride
AOP-EFF	04/01/2013	0.25 U	0.25 U	0.25 U	**0.35 J**	0.25 U	0.25 U
AOP-EFF	05/01/2013	0.25 U	0.25 U	0.25 U	**0.32 J**	0.25 U	0.25 U
AOP-EFF	06/03/2013	0.25 U	0.25 U	0.25 U	**0.30 J**	0.25 U	0.25 U
AOP-INF	04/01/2013	1.3 U	**5.0**	1.3 U	**1700**	1.3 U	1.3 U
AOP-INF	06/03/2013	2.2 U	**4.8 J**	2.2 U	**1600**	2.2 U	2.2 U
EW-17	05/22/2013	0.25 U	0.25 U	0.25 U	**43.0**	0.25 U	0.25 U
EW-1R	05/01/2013	0.25 U	0.25 U	0.25 U	**3.5**	0.25 U	0.25 U
EW-4	05/01/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
EW-7	05/01/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
EW-9	05/01/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
FEW-11	05/01/2013	1.3 U	**4.7 J**	1.3 U	**1500**	1.3 U	1.3 U
FEW-14	05/01/2013	0.25 U	0.25 U	0.25 U	**0.86 J**	0.25 U	0.25 U
GCW1-EFF	06/03/2013	0.25 U	0.25 U	0.25 U	**3.0**	0.25 U	0.25 U
GCW1-INF	06/03/2013	0.25 U	**2.9**	0.25 U	**420**	0.25 U	0.25 U
GTP-310	06/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
GTP-320	04/01/2013	0.25 UJ	0.25 UJ	0.25 UJ	**0.31 J**	0.25 UJ	0.25 UJ
GTP-320	05/01/2013	0.25 U	0.25 U	0.25 U	**0.44 J**	0.25 U	0.25 U
GTP-330	06/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
GTP-340	04/01/2013	0.25 U	0.25 U	0.25 U	**0.22 J**	0.25 U	0.25 U
GTP-340	05/01/2013	0.25 U	0.25 U	0.25 U	**0.30 J**	0.25 U	0.25 U
GTP-350	06/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
GTP-360	04/01/2013	0.25 U	0.25 U	0.25 U	**0.23 J**	0.25 U	0.25 U
GTP-360	05/01/2013	0.25 U	0.25 U	0.25 U	**0.34 J**	0.25 U	0.25 U
GTP-EFF	04/01/2013	0.25 U	0.25 U	0.25 U	**0.24 J**	0.25 U	0.25 U
GTP-EFF	05/01/2013	0.25 U	0.25 U	0.25 U	**0.38 J**	0.25 U	0.25 U
GTP-EFF	06/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter
Air results in ppbv = parts per billion per volume

Table 4-1 Operations and Maintenance

Results for Second Quarter 2013 Sampling Event

Operations and Maintenance Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	1,2-DCP	CIS-1,2-DCE	Methylene Chloride	TCE	TRANS-1,2-DCE	Vinyl Chloride
GTP-INF	04/01/2013	0.25 U	0.25 U	0.25 U	**0.82 J**	0.25 U	0.25 U
GTP-INF	05/01/2013	0.25 U	0.25 U	0.25 U	**0.83 J**	0.25 U	0.25 U
GTP-INF	06/03/2013	0.25 U	0.25 U	0.25 U	**0.71 J**	0.25 U	0.25 U
LL1_AIR_EF (Air)	05/01/2013	-	-	-	2.0 U	-	-
LL1-EFF	04/01/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
LL1-EFF	05/01/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
LL1-EFF	05/22/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
LL1-EFF	06/11/2013	0.25 U	0.25 U	0.25 U	**0.33 J**	0.25 U	0.25 U
LL1-INF	04/01/2013	0.73 U	0.73 U	0.73 U	**150**	0.73 U	0.73 U
LL1-INF	05/01/2013	0.73 U	0.73 U	0.73 U	**140**	0.73 U	0.73 U
LL1-INF	06/11/2013	0.50 U	0.50 U	0.50 U	**110**	0.50 U	0.50 U
LL4_AIR_EF (Air)	04/01/2013	-	-	-	**370**	-	-
LL4-EFF	04/01/2013	0.25 U	0.25 U	0.25 U	**0.54 J**	0.25 U	0.25 U
LL4-EFF	05/01/2013	0.25 U	0.25 U	0.25 U	**0.53 J**	0.25 U	0.25 U
LL4-EFF	06/03/2013	0.25 U	0.25 U	0.25 U	**0.51 J**	0.25 U	0.25 U
LL4-INF	04/01/2013	1.3 U	**2.0 J**	1.3 U	**350**	1.3 U	1.3 U
LL4-INF	05/01/2013	1.3 U	**1.8 J**	1.3 U	**320**	1.3 U	1.3 U
LL4-INF	06/03/2013	1.3 U	1.3 U	1.3 U	**240**	1.3 U	1.3 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter
Air results in ppbv = parts per billion per volume

Table 4-1 Operations and Maintenance

Results for Second Quarter 2013 Sampling Event

Operations and Maintenance Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Wet Chemistry						
	Sampling Date	**Nitrogen, Nitrate**	**Iron**	**Manganese**	**TSS**	**Total Organic Carbon**
GTP-EFF	04/01/2013	**3.8**	-	-	-	-
GTP-EFF	05/01/2013	**3.9**	-	-	-	-
GTP-EFF	06/03/2013	**3.5**	-	-	-	-
GTP-INF	06/03/2013	-	**120 J**	**33.0**	0.50 U	**0.81 J**
LL1-EFF	04/01/2013	**11.0**	-	-	-	-
LL1-EFF	05/01/2013	**11.0**	-	-	-	-
LL4-EFF	04/01/2013	**6.8**	-	-	-	-
LL4-EFF	05/01/2013	**7.0**	-	-	-	-
LL4-EFF	06/03/2013	**7.0**	-	-	-	-
LL4-INF	06/03/2013	-	150 U	8.5 U	0.50 U	**0.82 J**

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in mg/L = milligrams per liter

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FIGURES

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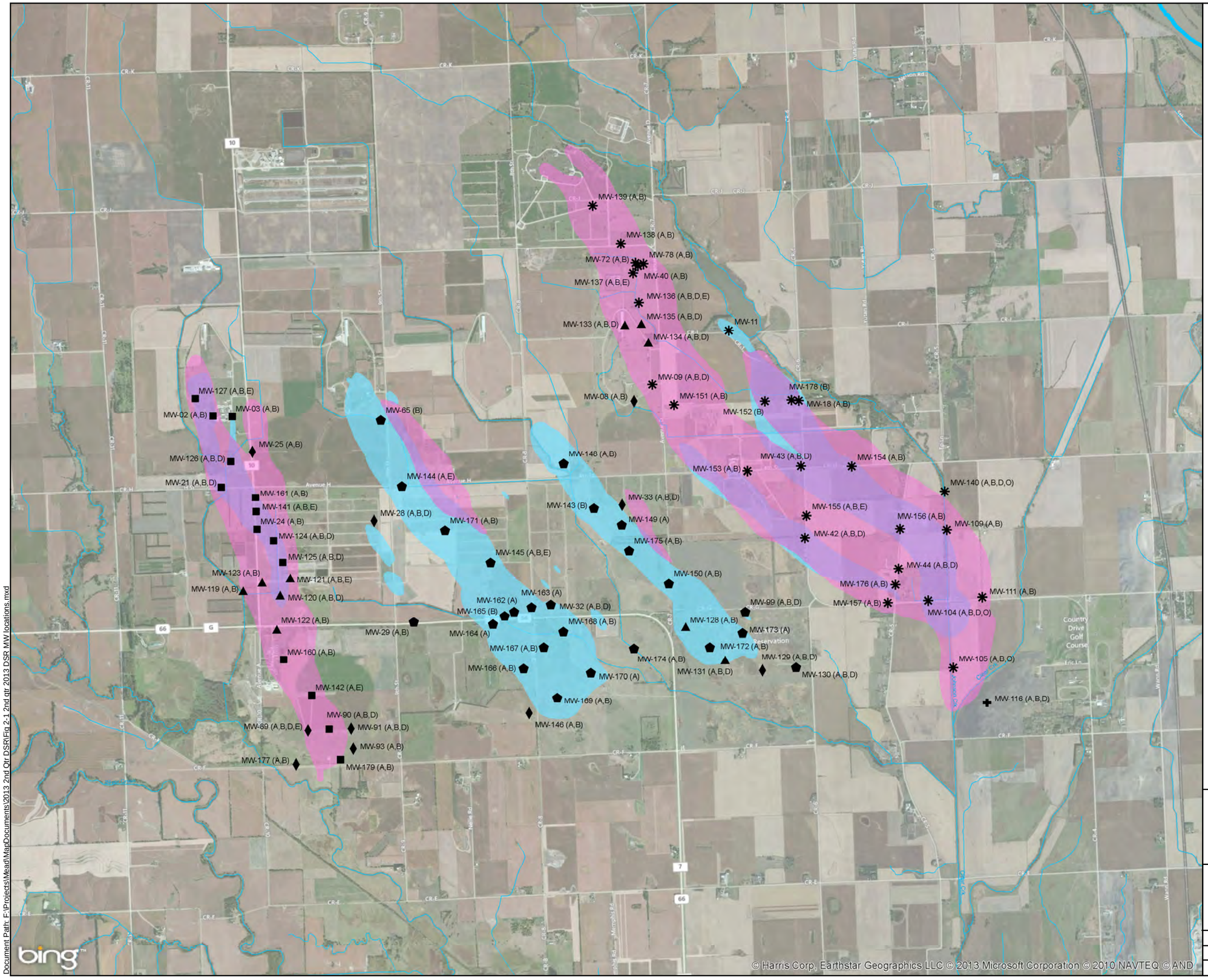

EXPLANATION

- ■ Load Line 1 Interior Plume Monitoring Well
- ⬟ Load Line 2 and Load Line 3 Interior Plume Monitoring Well
- ✱ Load Line 4, Atlas Missile Area, and Landfill Interior Plume Monitoring Well
- ✚ Perimeter Monitoring Well
- ♦ Upgradient/Sidegradient/Downgradient Monitoring Well
- ▲ Focused Extraction Monitoring Well
- Approximate Area of TCE at a concentration of 5 ug/L or greater (2012)
- Approximate Area of RDX at a concentration of 2 ug/L or greater (2012)
- Approximate Area of both TCE at a concentration of 5 ug/L or greater and RDX at a concentration of 2 ug/L or greater (2012)

NOTE:

TCE and RDX plume delineations are based on Groundwater Monitoring Program data, direct-push data, and other data. The plume delineations represent a combination of the shallow zone data and the intermediate zone data.

TCE - trichloroethene

RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine

ug/L - micrograms per liter

N

0 1,250 2,500 5,000 7,500 10,000 Feet

US Army Corps of Engineers
Kansas City District

Figure 2-1
Monitoring Wells
Second Quarter 2013 Sampling Locations

Drawn by: M Johanson		Reviewed by:	Notes and Sources Projection: North American Datum 1983 Nebraska State Plane Units: Feet
Date: 08/01/2013		Date:	
Version:		Revision Date / Initials:	

Document Path: F:\Projects\Mead\MapDocuments\2013 2nd Qtr DSR\Fig 2-1 2nd qtr 2013 DSR MW locations.mxd

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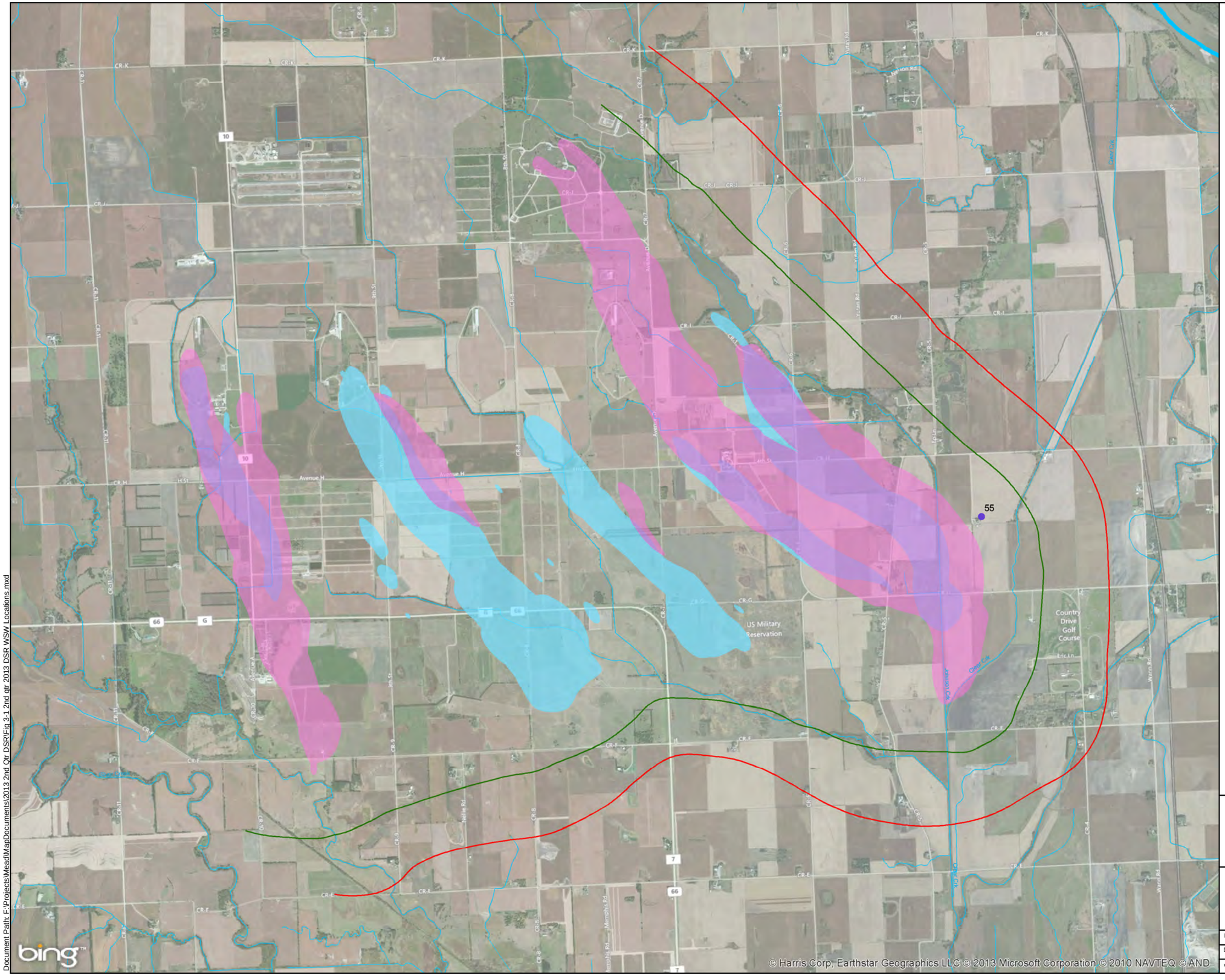

EXPLANATION

- Water Supply Well
- Half-Mile Buffer Zone
- One-Mile Buffer Zone
- Approximate Area of TCE at a concentration of 5 ug/L or greater (2012)
- Approximate Area of RDX at a concentration of 2 ug/L or greater (2012)
- Approximate Area of both TCE at a concentration of 5 ug/L or greater and RDX at a concentration of 2 ug/L or greater (2012)

NOTE:

TCE and RDX plume delineations are based on Groundwater Monitoring Program data, direct-push data, and other data. The plume delineations represent a combination of the shallow zone data and the intermediate zone data.

TCE - trichloroethene

RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine

ug/L - micrograms per liter

N

0 1,250 2,500 5,000 7,500 10,000 Feet

US Army Corps of Engineers
Kansas City District

Figure 3-1
Water Supply Well
Second Quarter 2013 Sampling Locations

Drawn by: M Johanson	Reviewed by:	Notes and Sources Projection: North American Datum 1983 Nebraska State Plane Units: Feet
Date: 08/01/2013	Date:	
Version:	Revision Date / Initials:	

Document Path: F:\Projects\MeadMapDocuments\2013 2nd Qtr DSR\Fig 3-1 2nd qtr 2013 DSR WSW Locations.mxd

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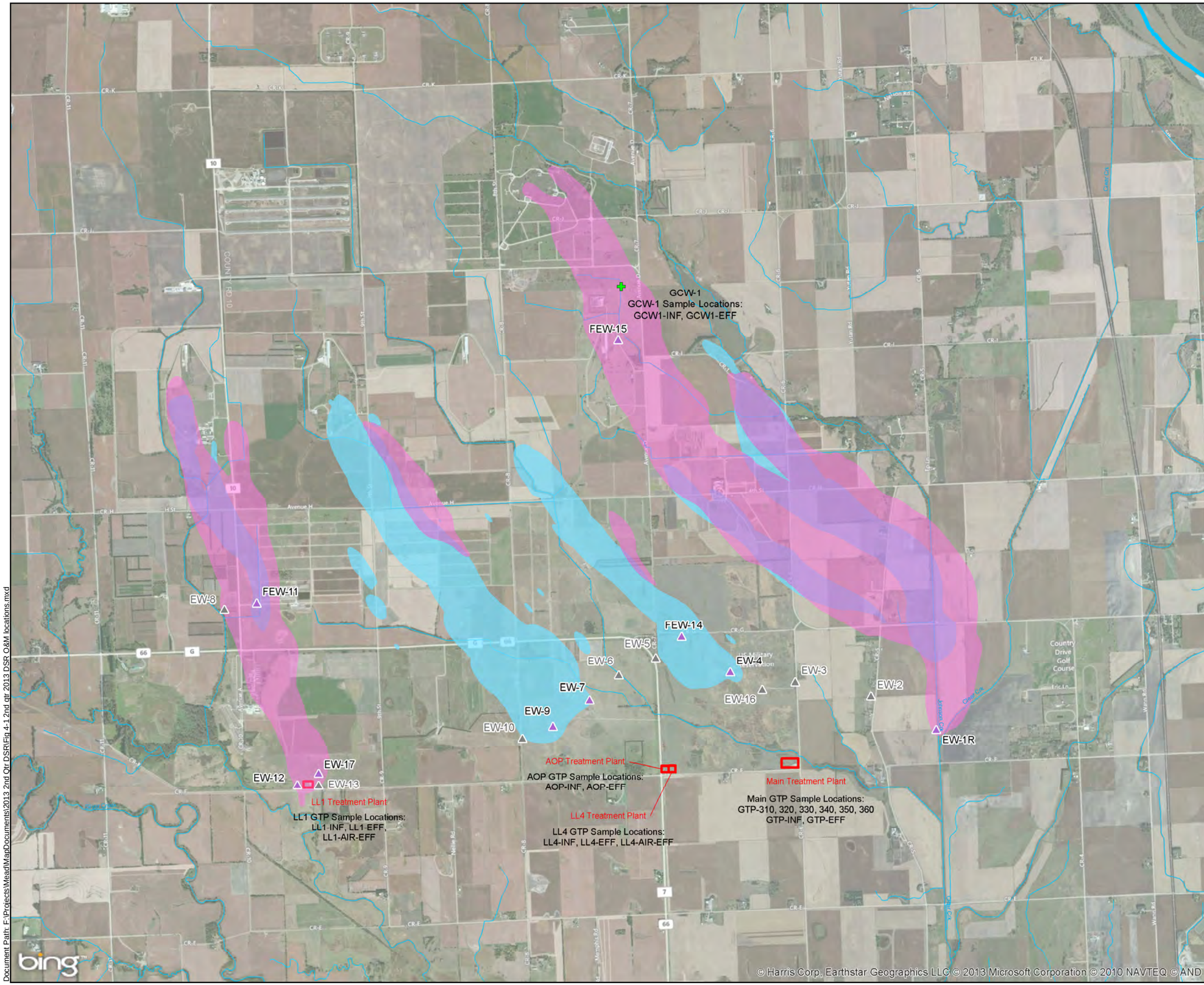

EXPLANATION

- Groundwater Circulation Well
- Groundwater Extraction Well (Sampled)
- Groundwater Extraction Well (Not Sampled)
- Water Treatment Plant
- Approximate Area of TCE at a concentration of 5 ug/L or greater (2012)
- Approximate Area of RDX at a concentration of 2 ug/L or greater (2012)
- Approximate Area of both TCE at a concentration of 5 ug/L or greater and RDX at a concentration of 2 ug/L or greater (2012)

NOTES:

TCE and RDX plume delineations are based on Groundwater Monitoring Program data, direct-push data, and other data. The plume delineations represent a combination of the shallow zone data and the intermediate zone data.

AOP - Advanced Oxidation Process
EFF - Effluent
EW - Extraction Well
FEW - Focused Extraction Well
GCW - Groundwater Circulation Well
GTP - Groundwater Treatment Plant
INF - Influent
LL1 - Load Line 1
LL4 - Load Line 4
RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
TCE - trichloroethene
ug/L - micrograms per liter

N

0 1,250 2,500 5,000 7,500 10,000 Feet

US Army Corps of Engineers
Kansas City District

Figure 4-1
Operations and Maintenance
Second Quarter 2013 Sampling Locations

Drawn by: M Johanson	Reviewed by: S Carter	Notes and Sources Projection: North American Datum 1983 Nebraska State Plane Units: Feet
Date: 08/01/2013	Date: 08/16/2013	
Version:	Revision Date / Initials: 08/16/2013 MGJ	

Document Path: F:\Projects\Mead\MapDocuments\2013 2nd Qtr DSR\Fig 4-1 2nd qtr 2013 DSR O&M locations.mxd

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Appendix A
Concentration Trend Charts for Select Monitoring Wells

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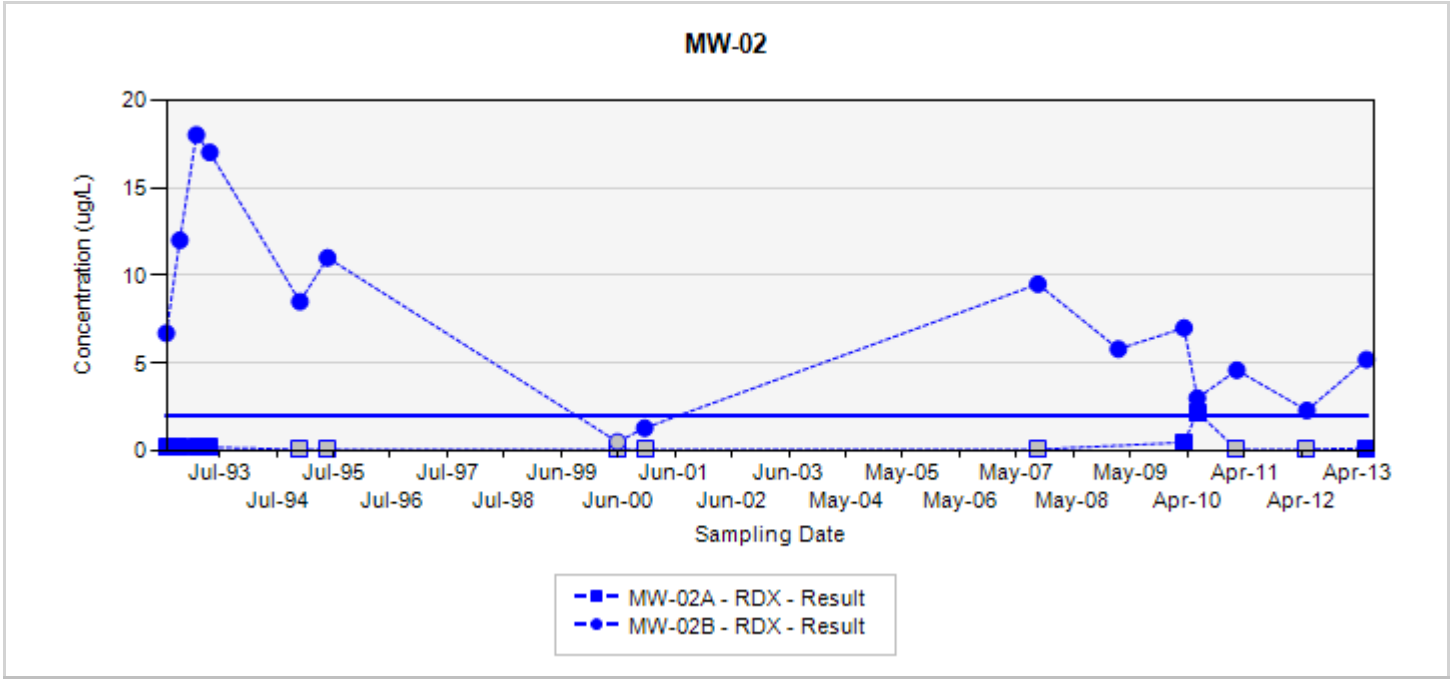
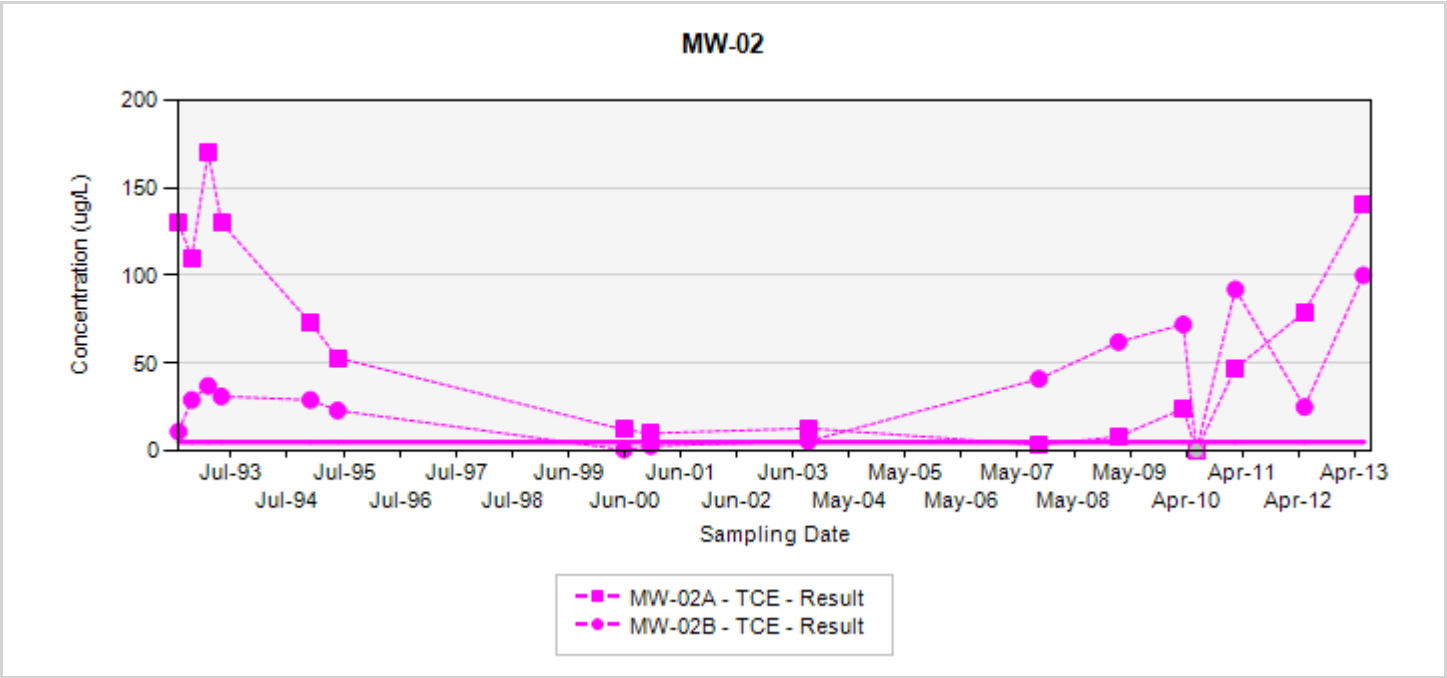
Appendix A
Concentration Trend Charts for Monitoring Wells





TCE - trichloroethene
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Final Target Groundwater Cleanup Goals for TCE is 5 UG/L
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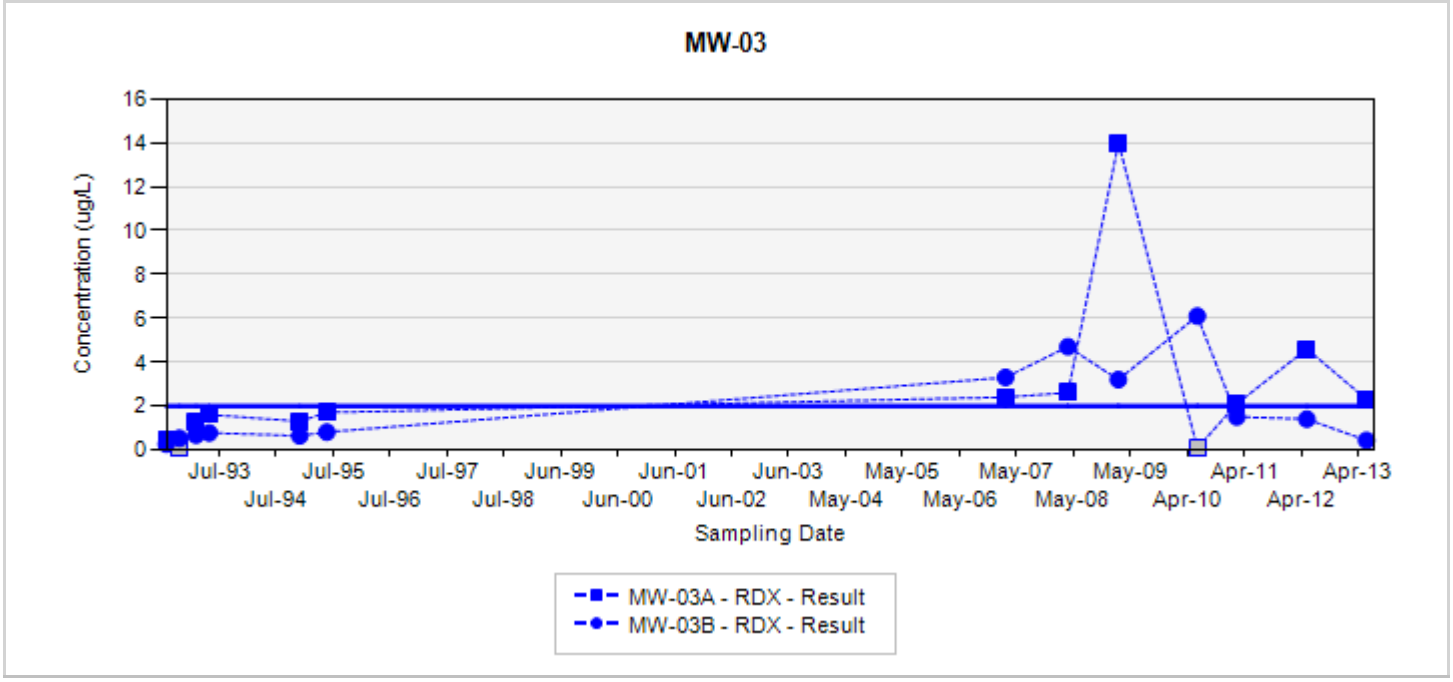
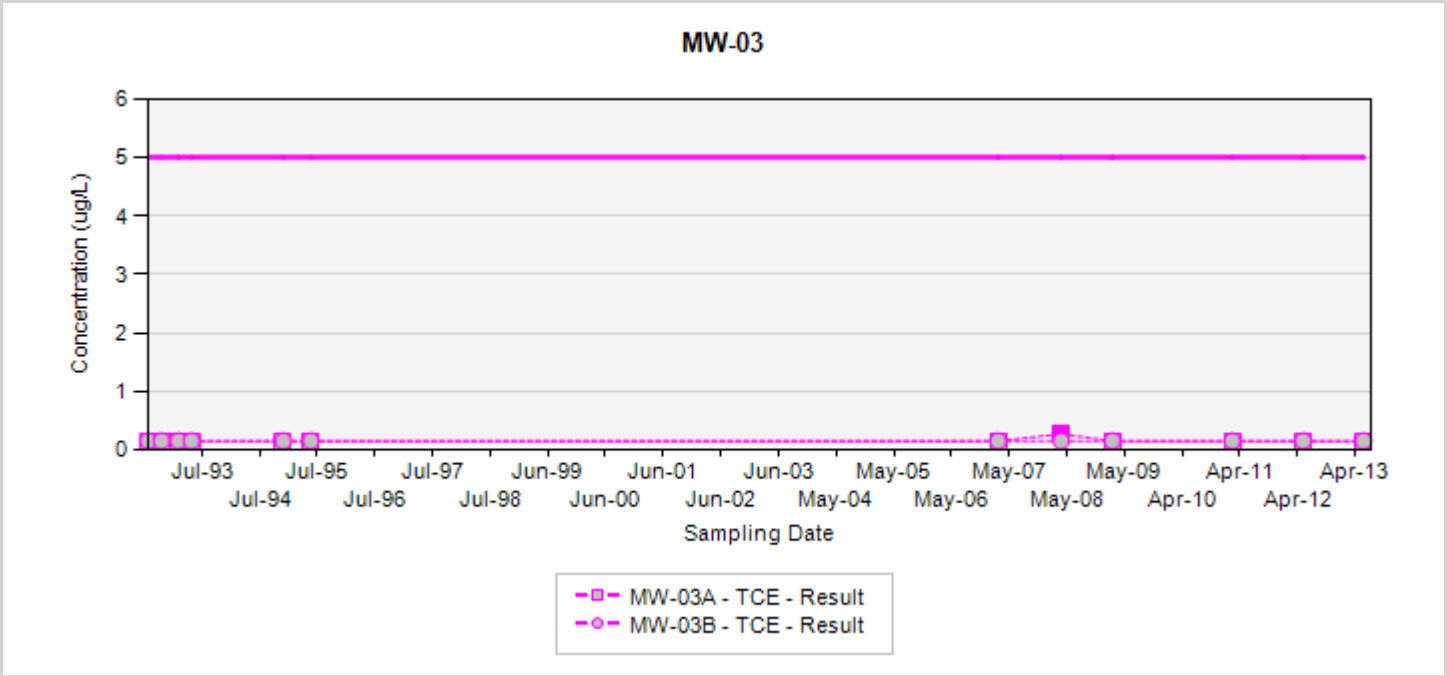
In the event that both a normal sample and a field duplicate were collected, the higher of the two results will be displayed on the chart

ug/L: micrograms per liter
Silver markers indicate non-detected results

Appendix A
Concentration Trend Charts for Monitoring Wells





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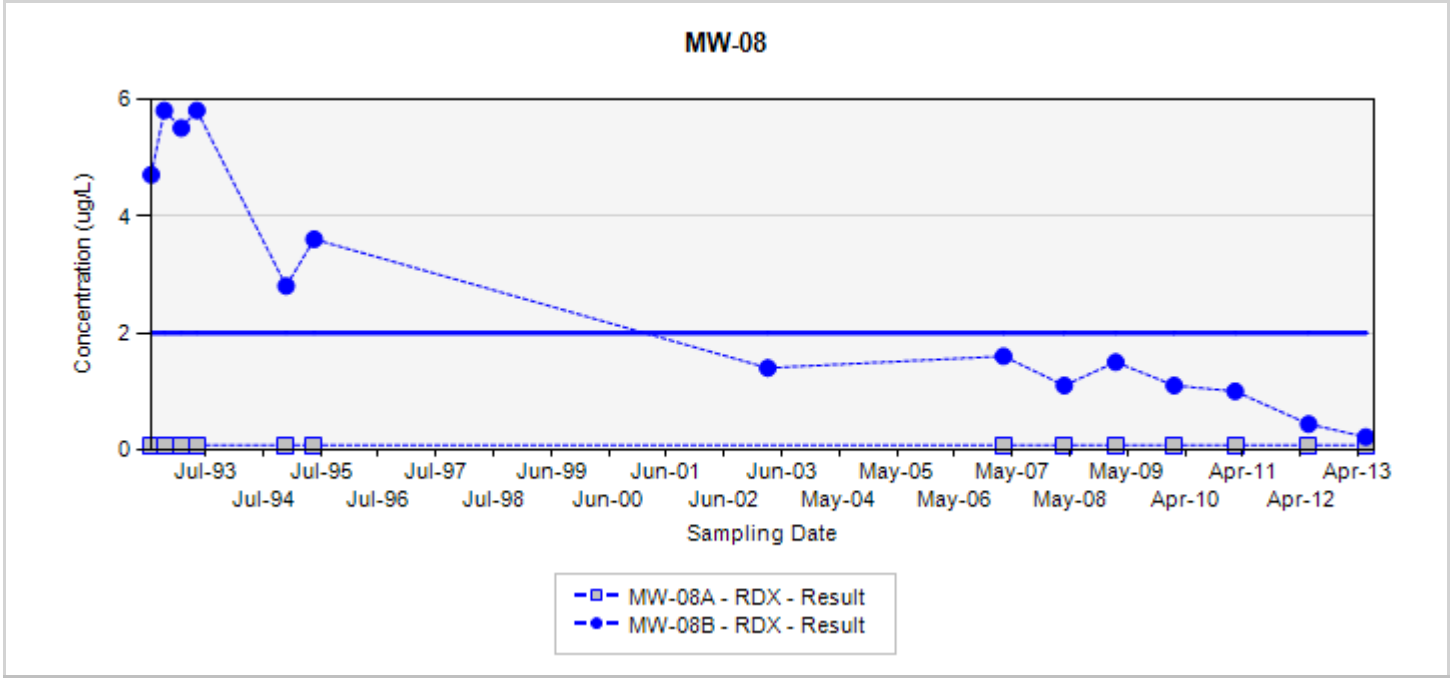

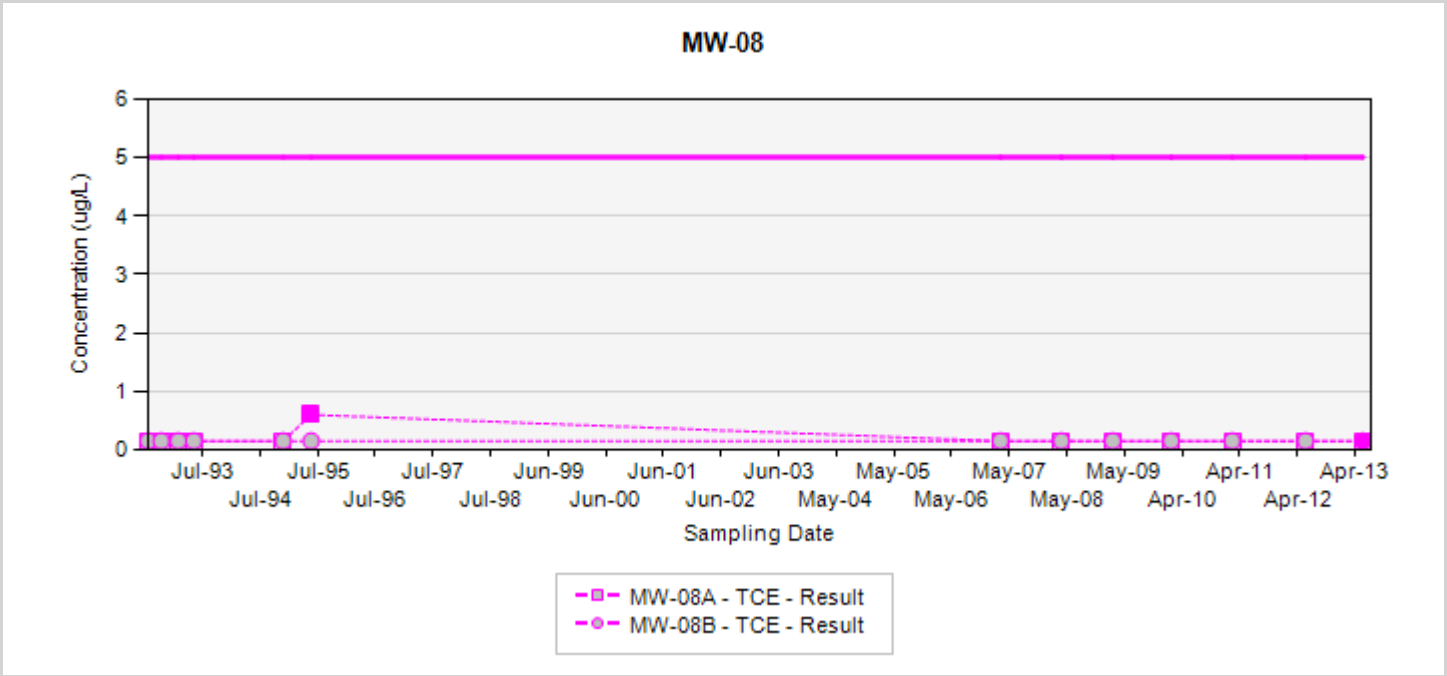

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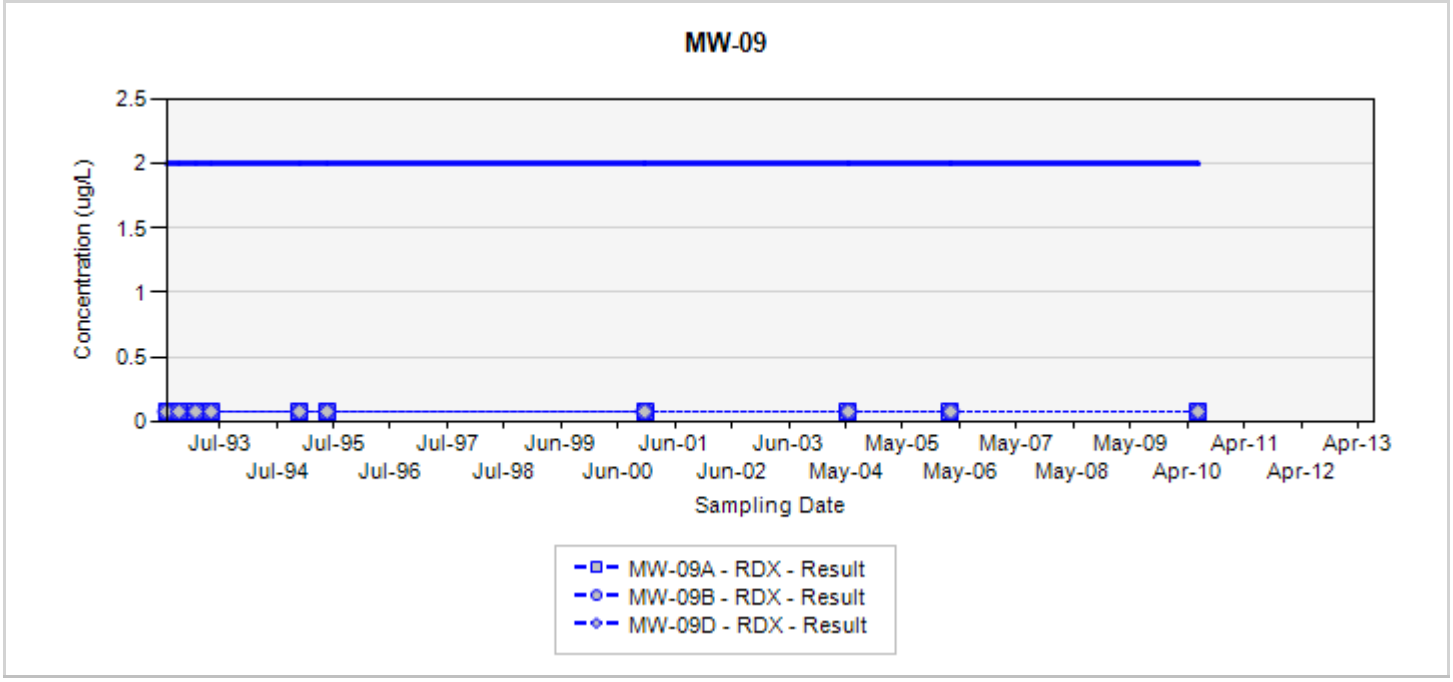

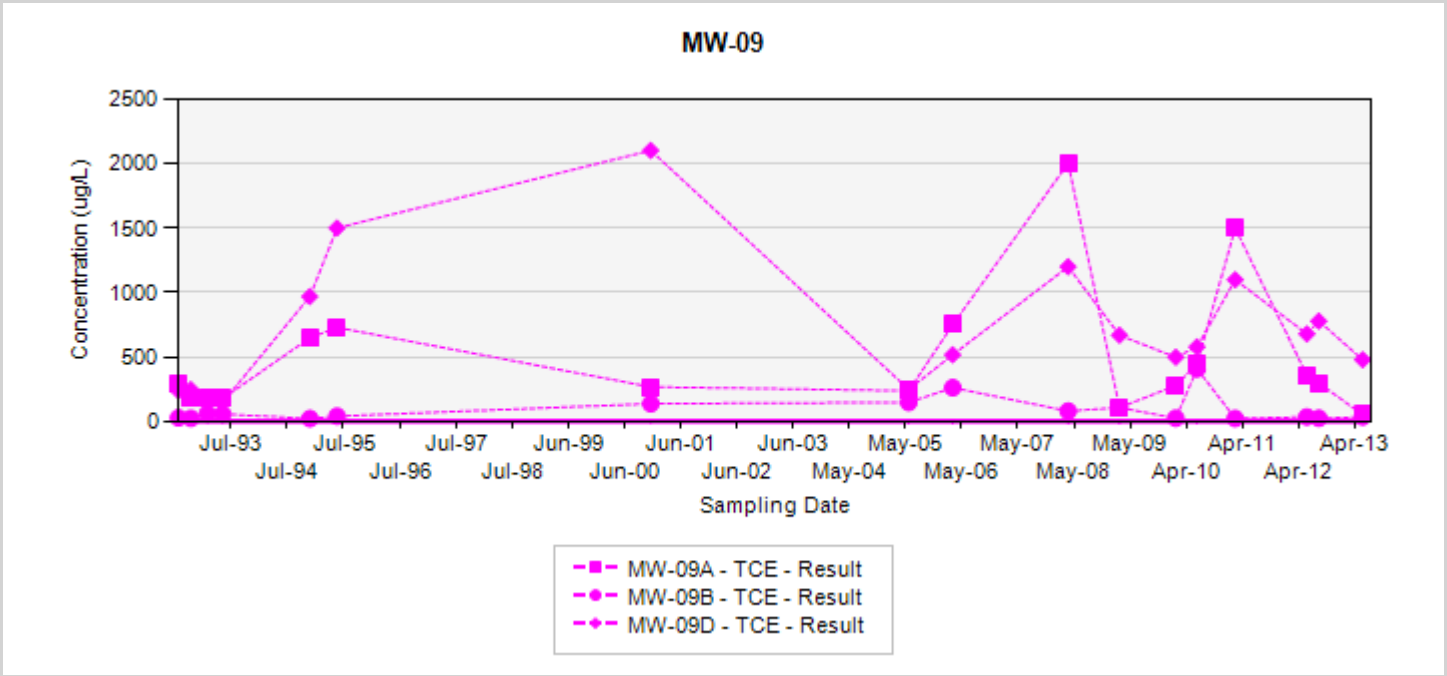

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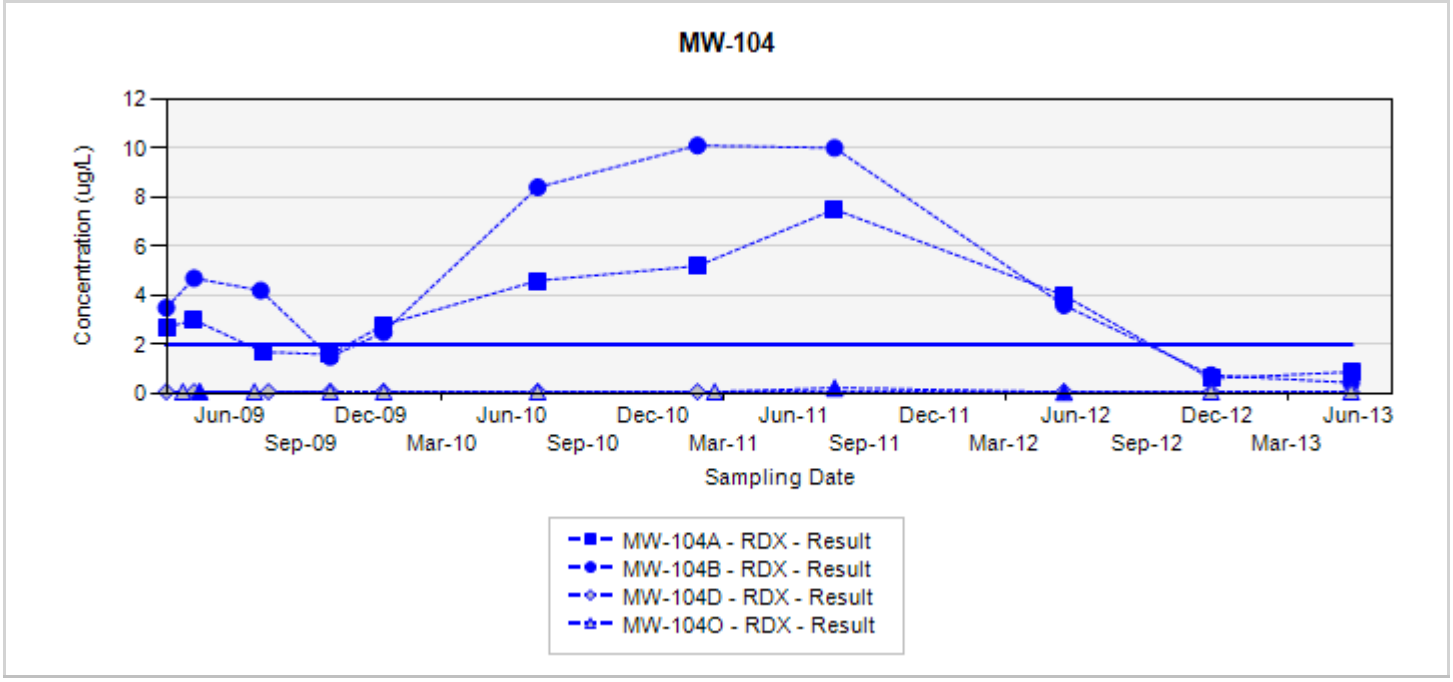

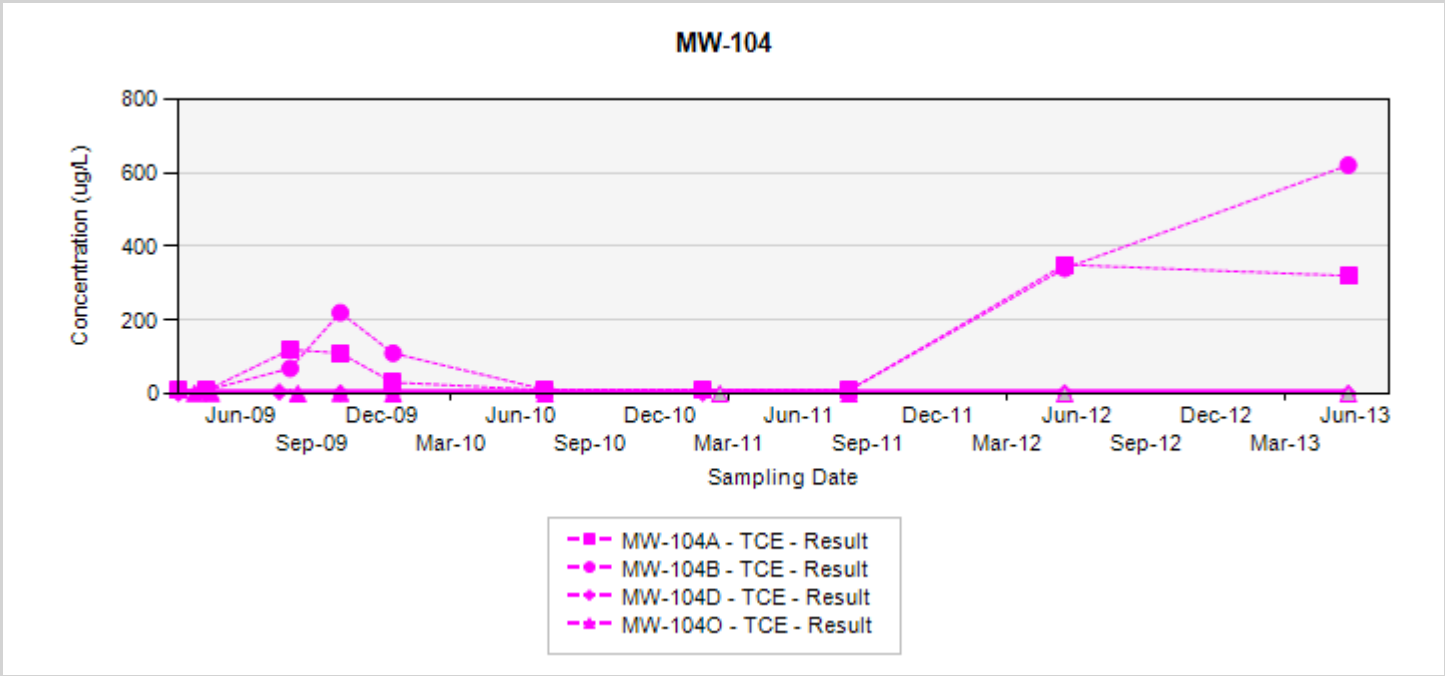

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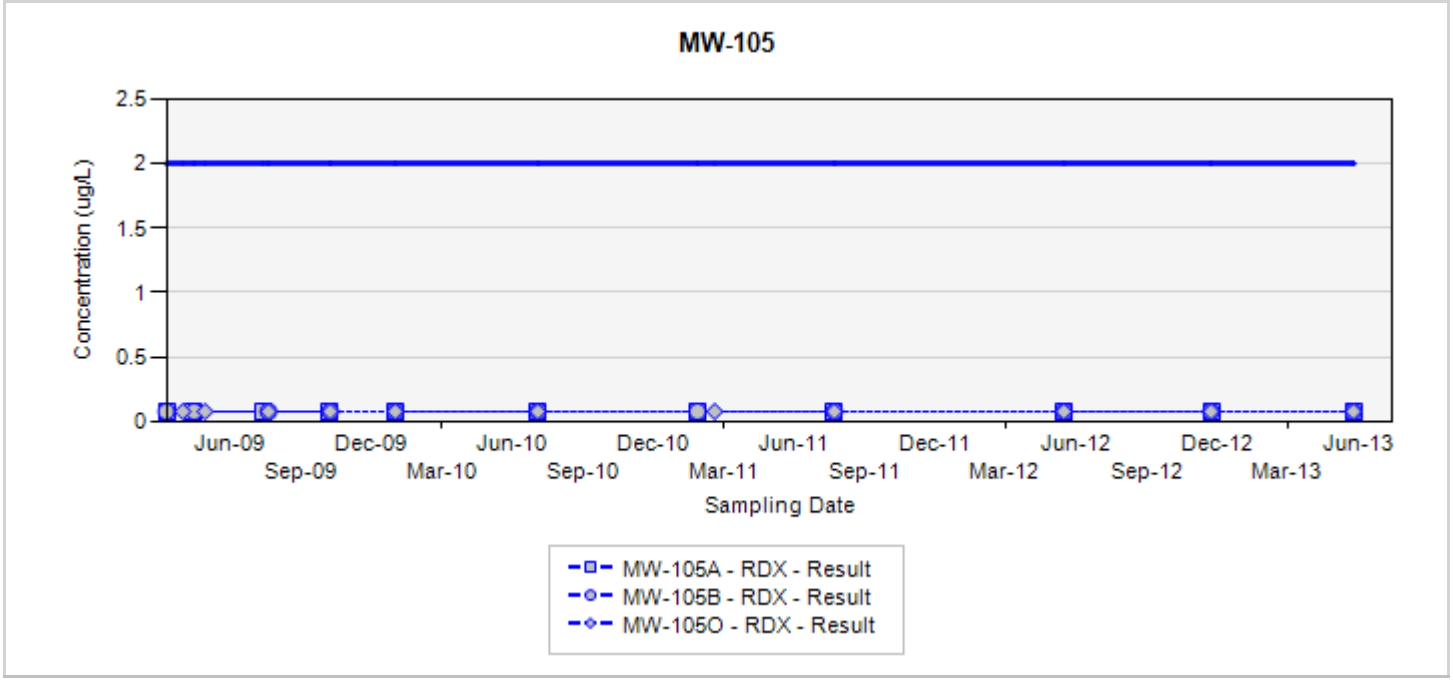

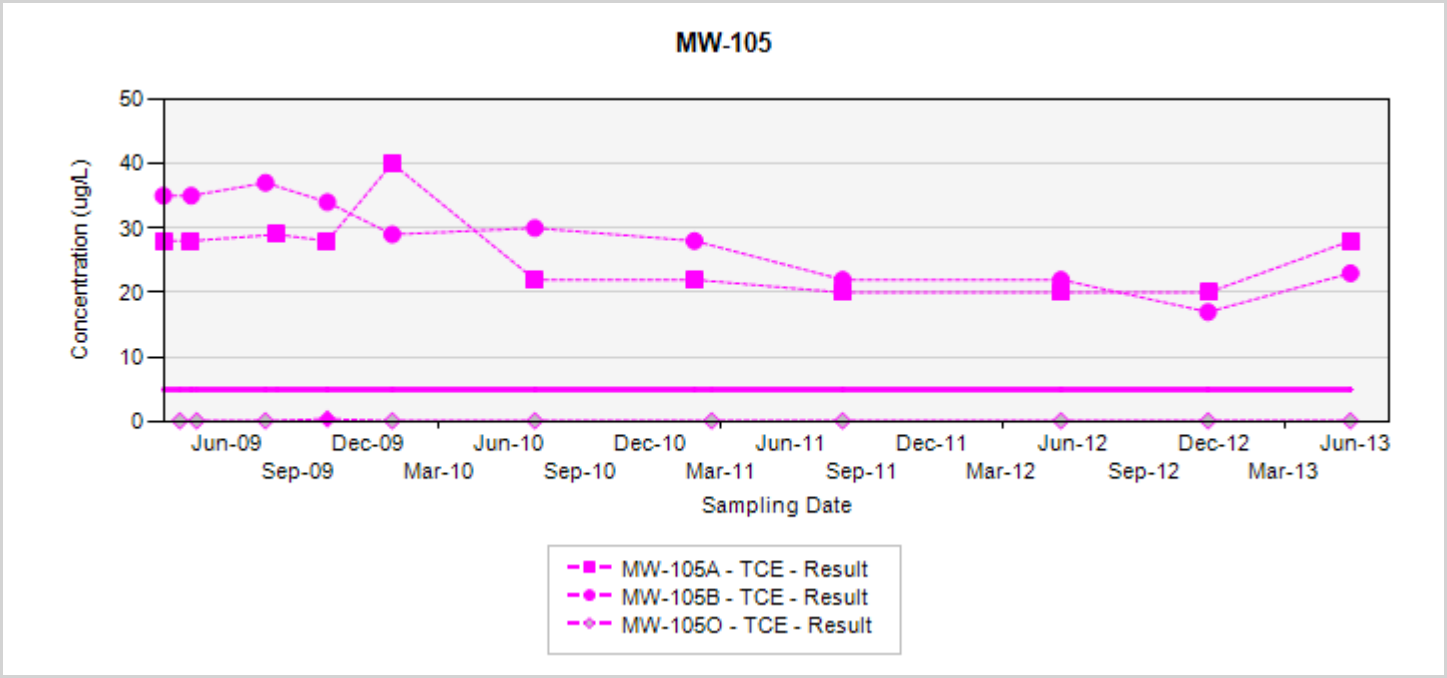

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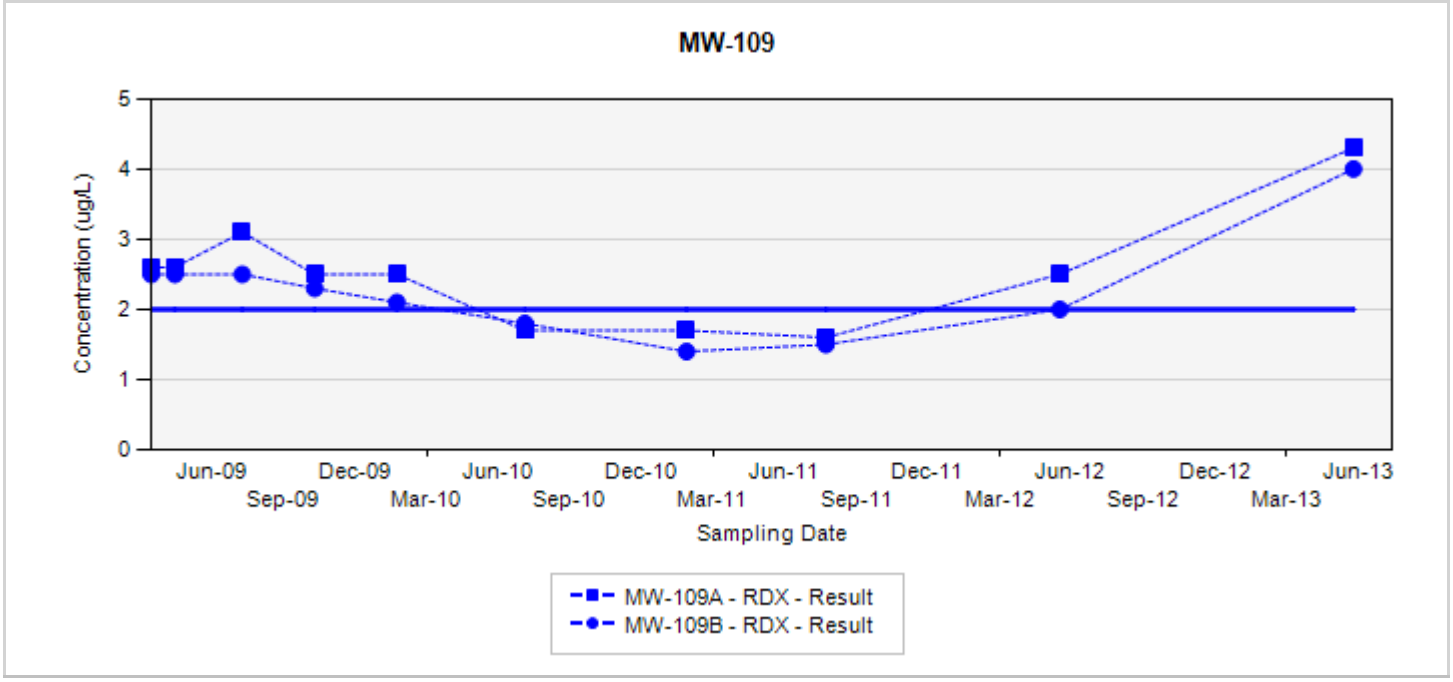

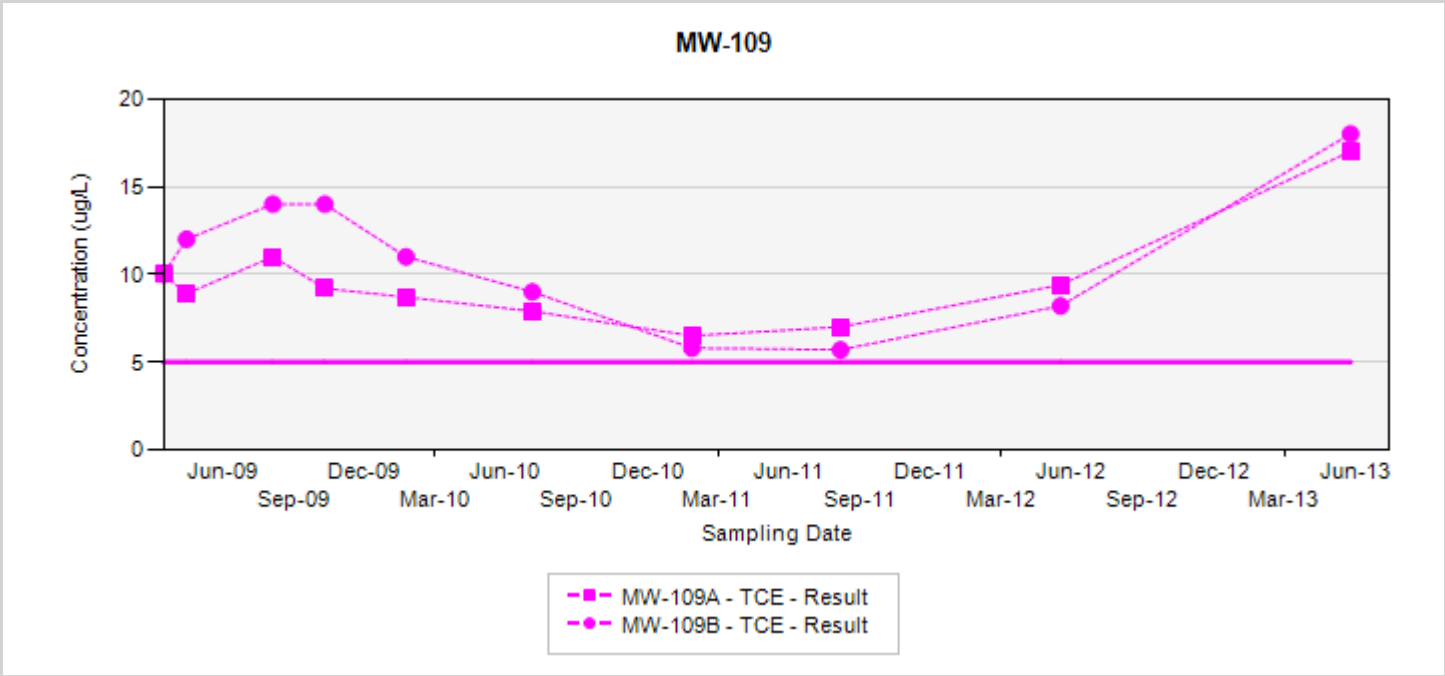

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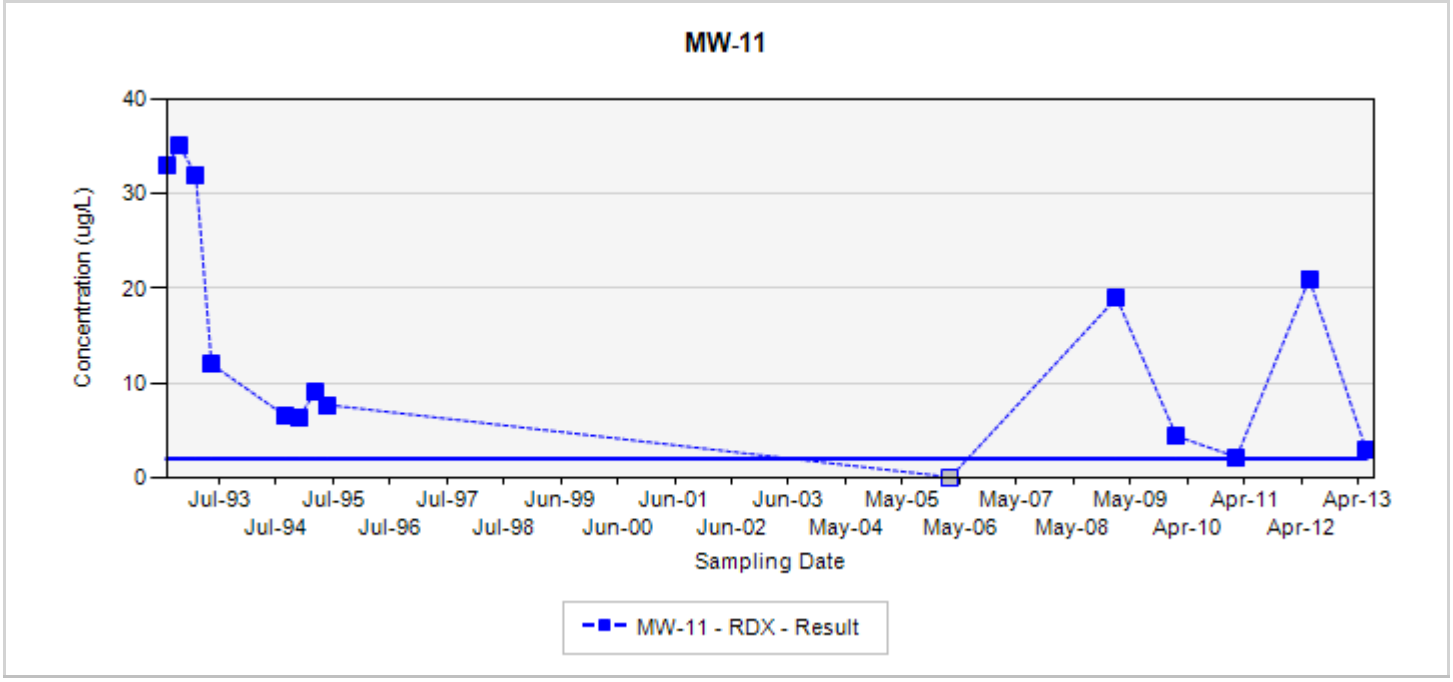

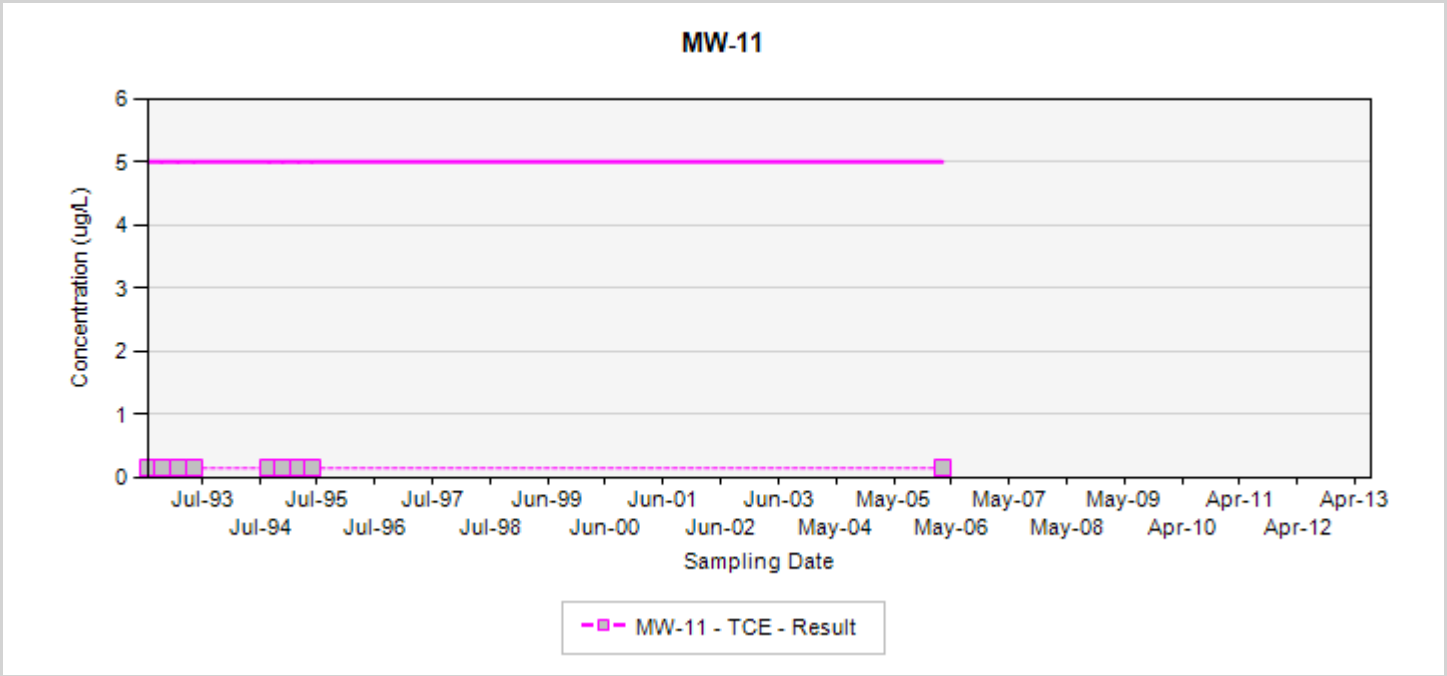

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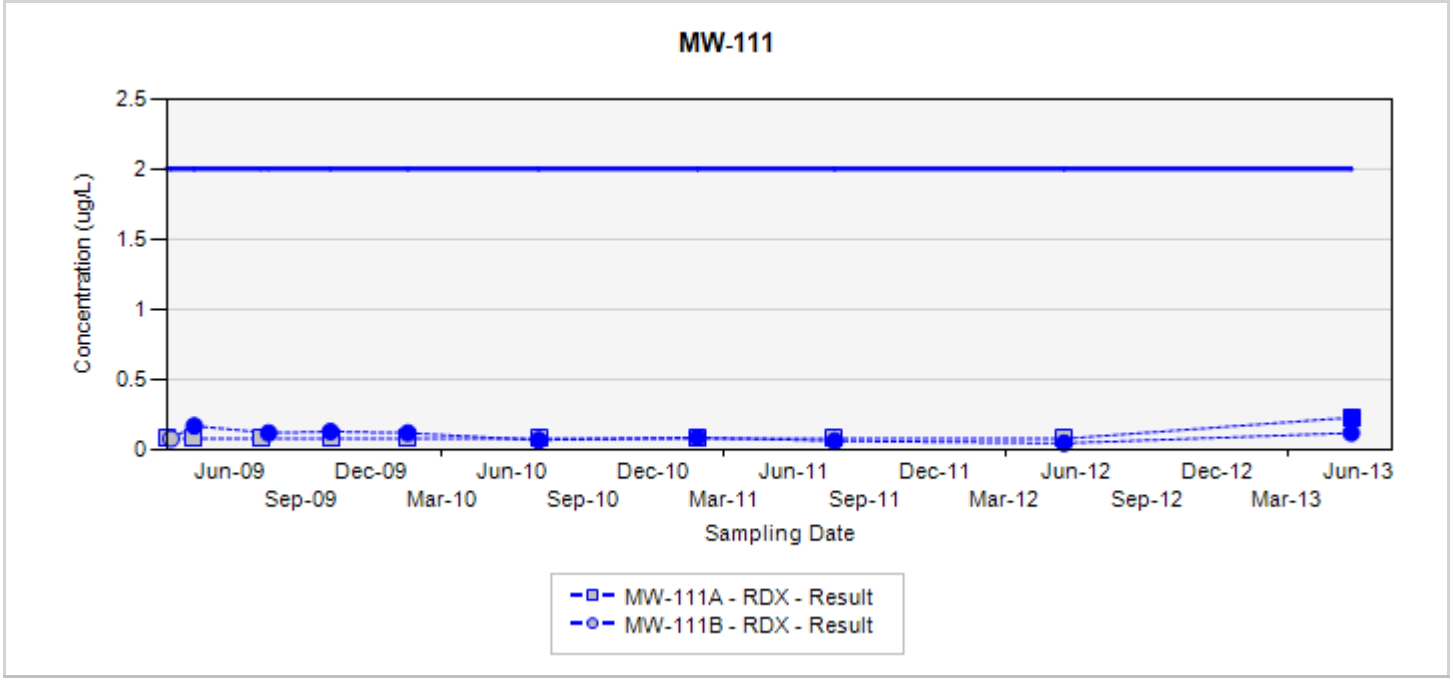

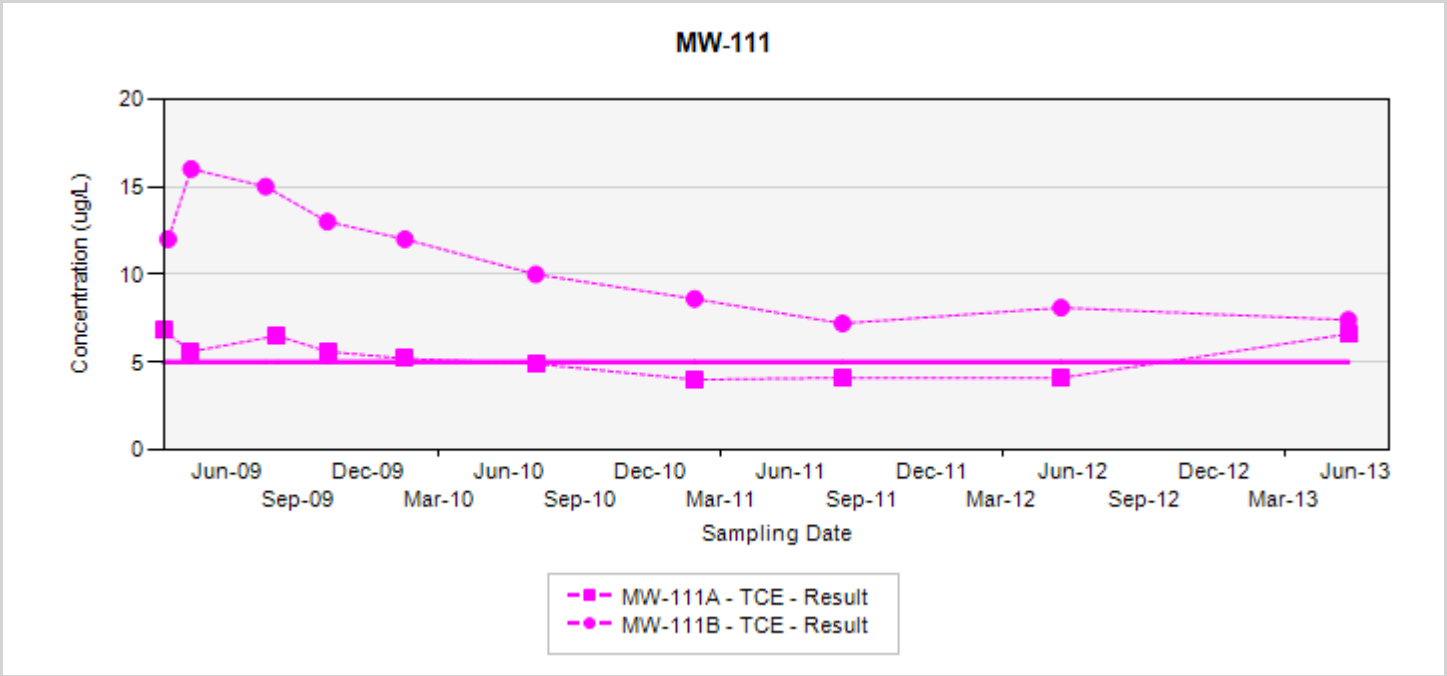

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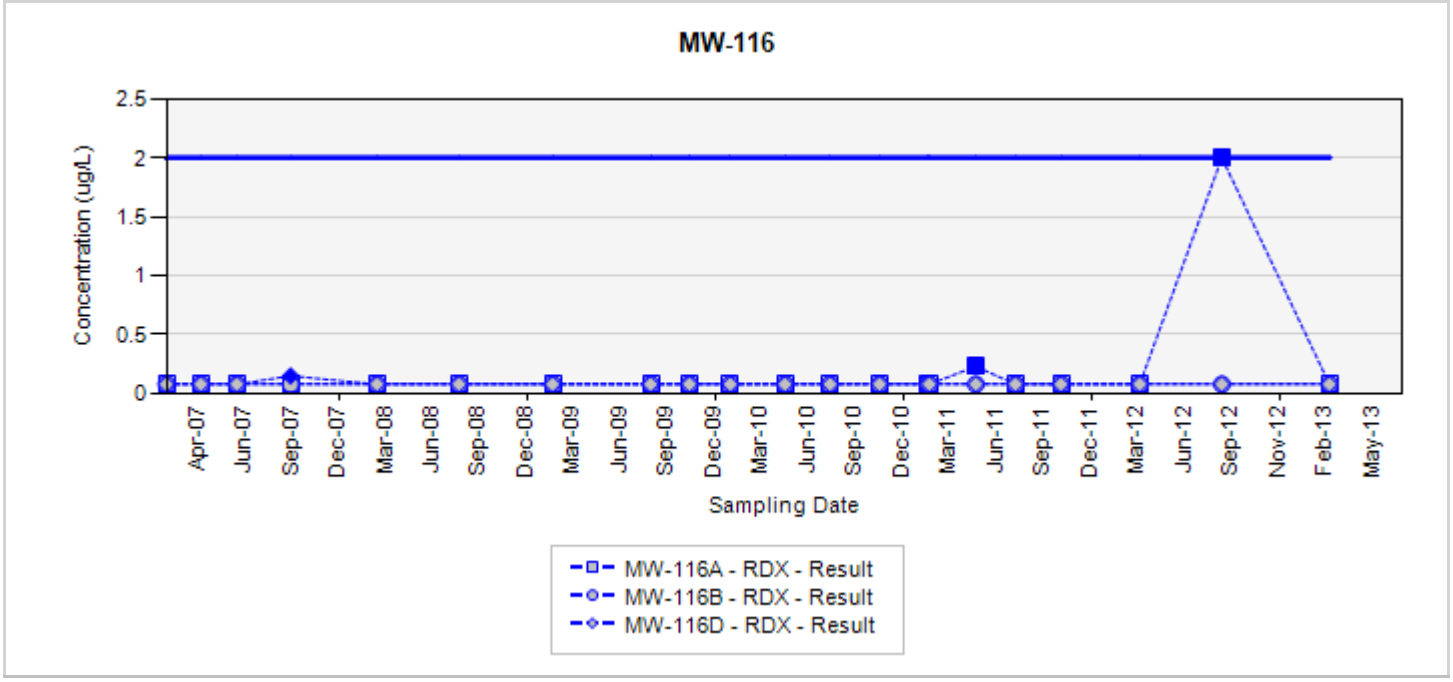

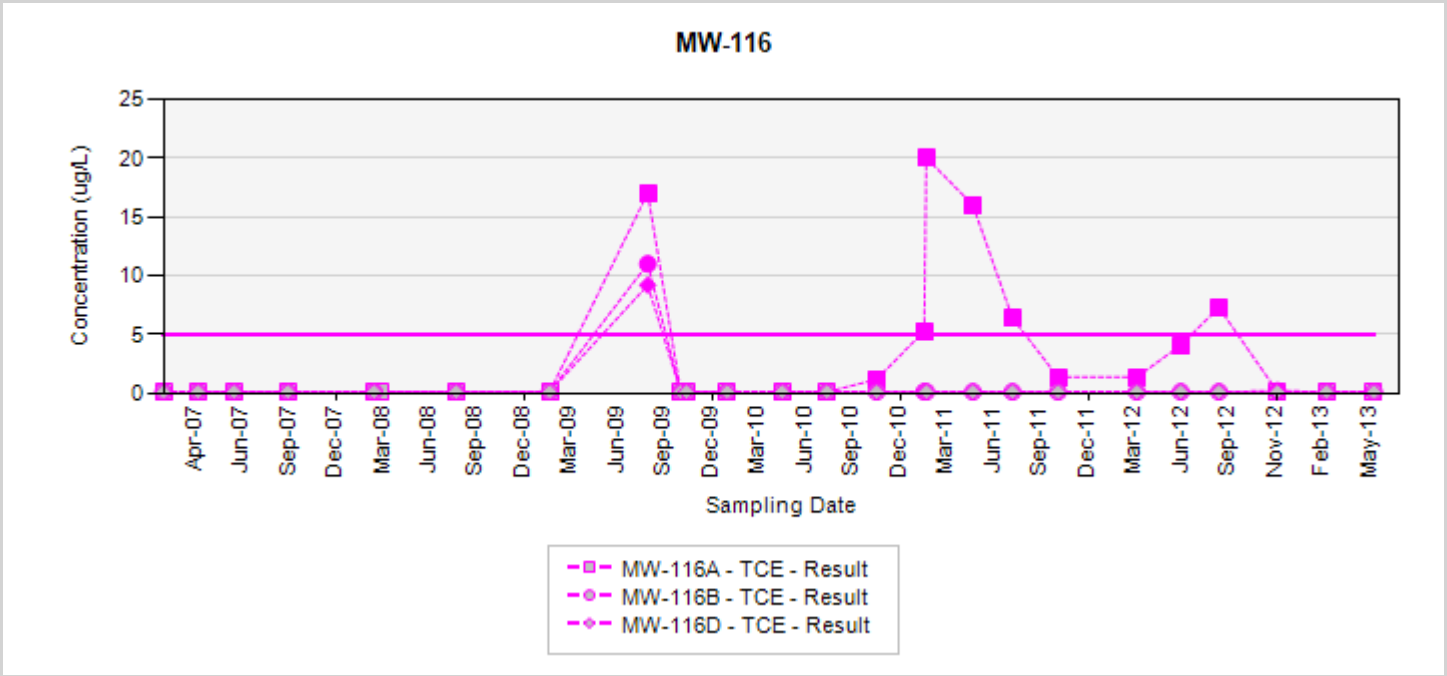

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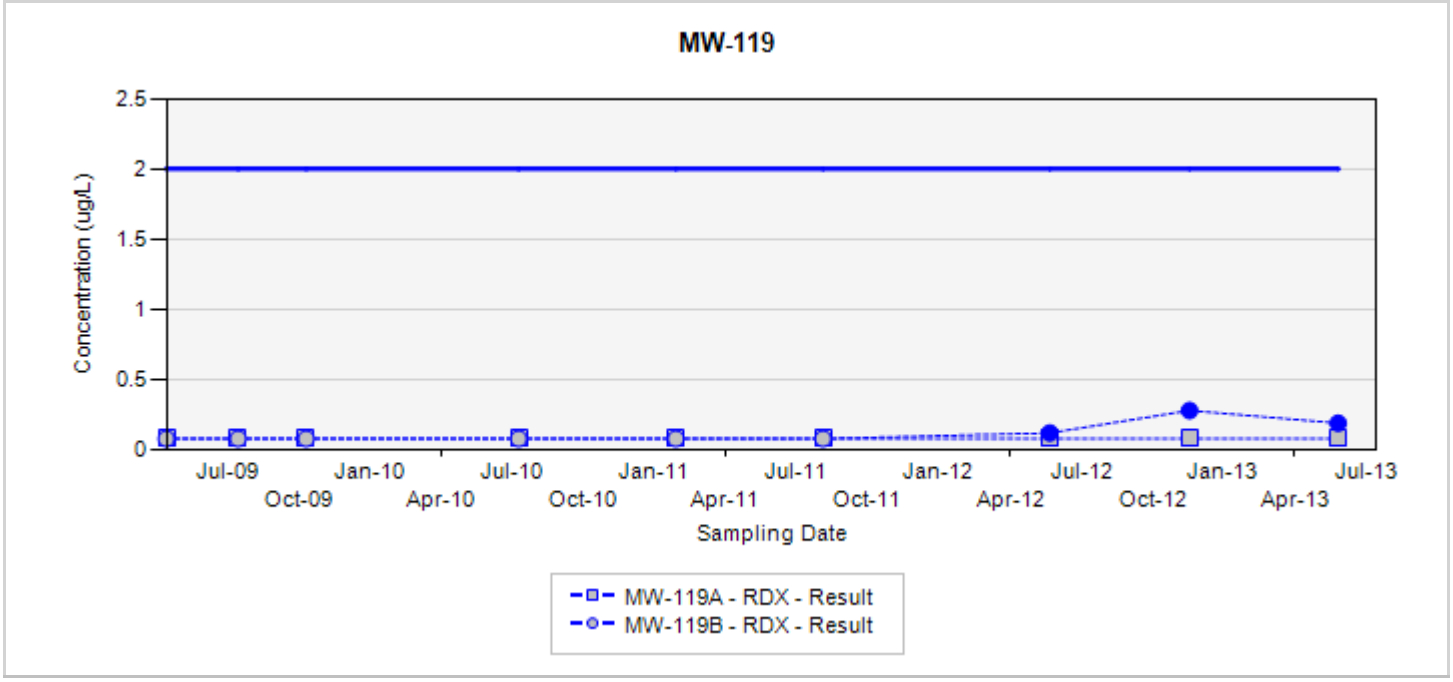

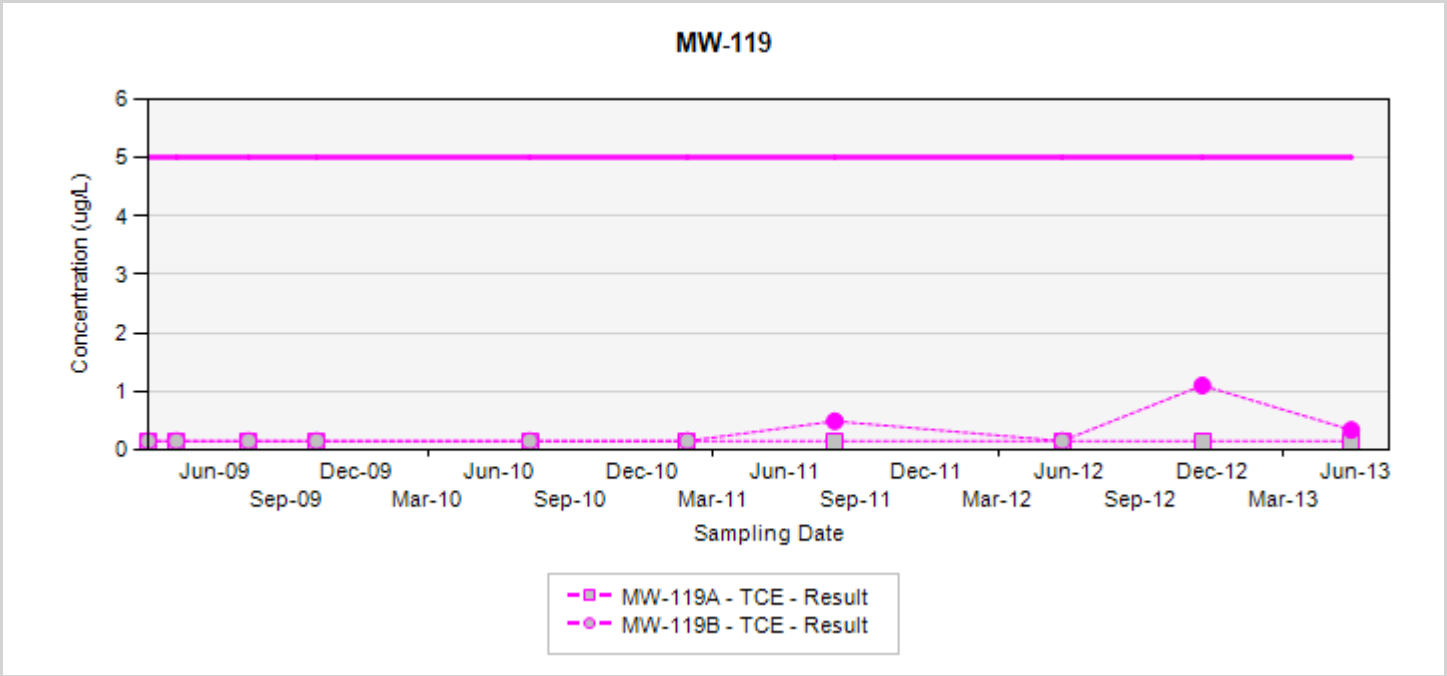

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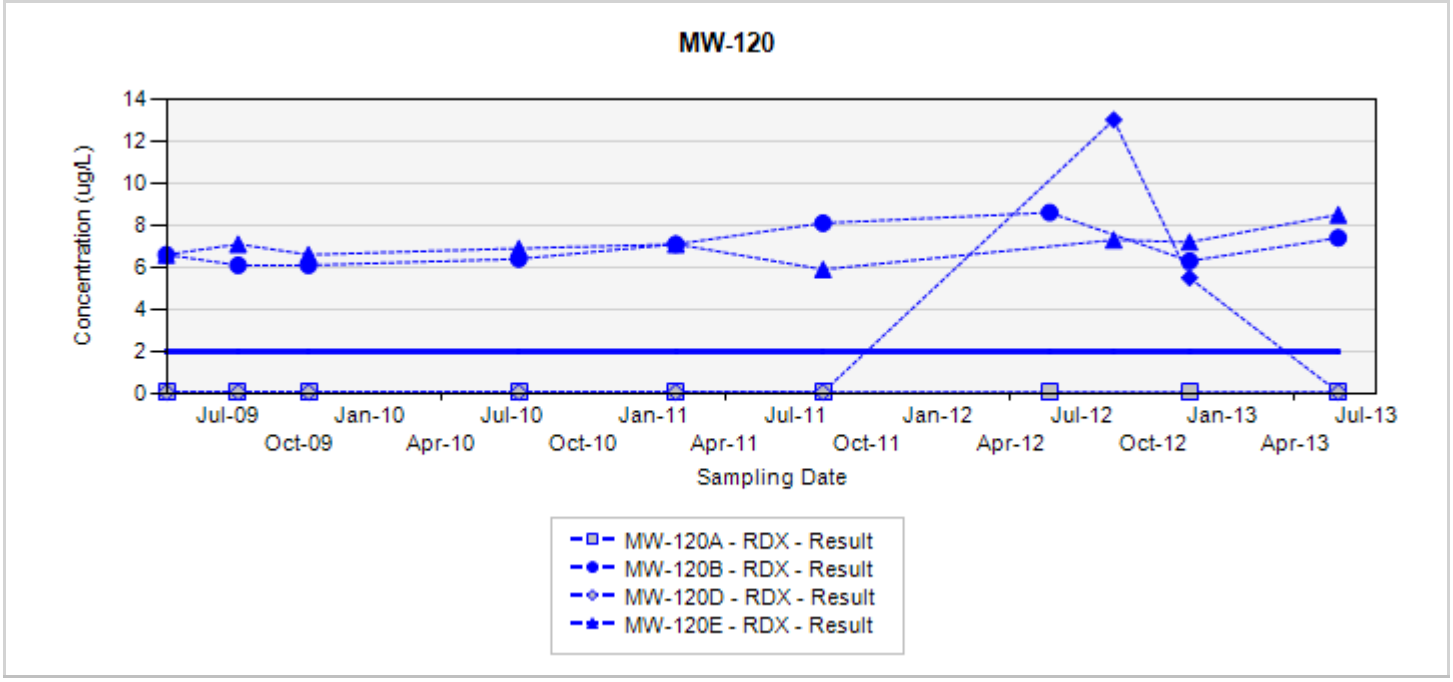

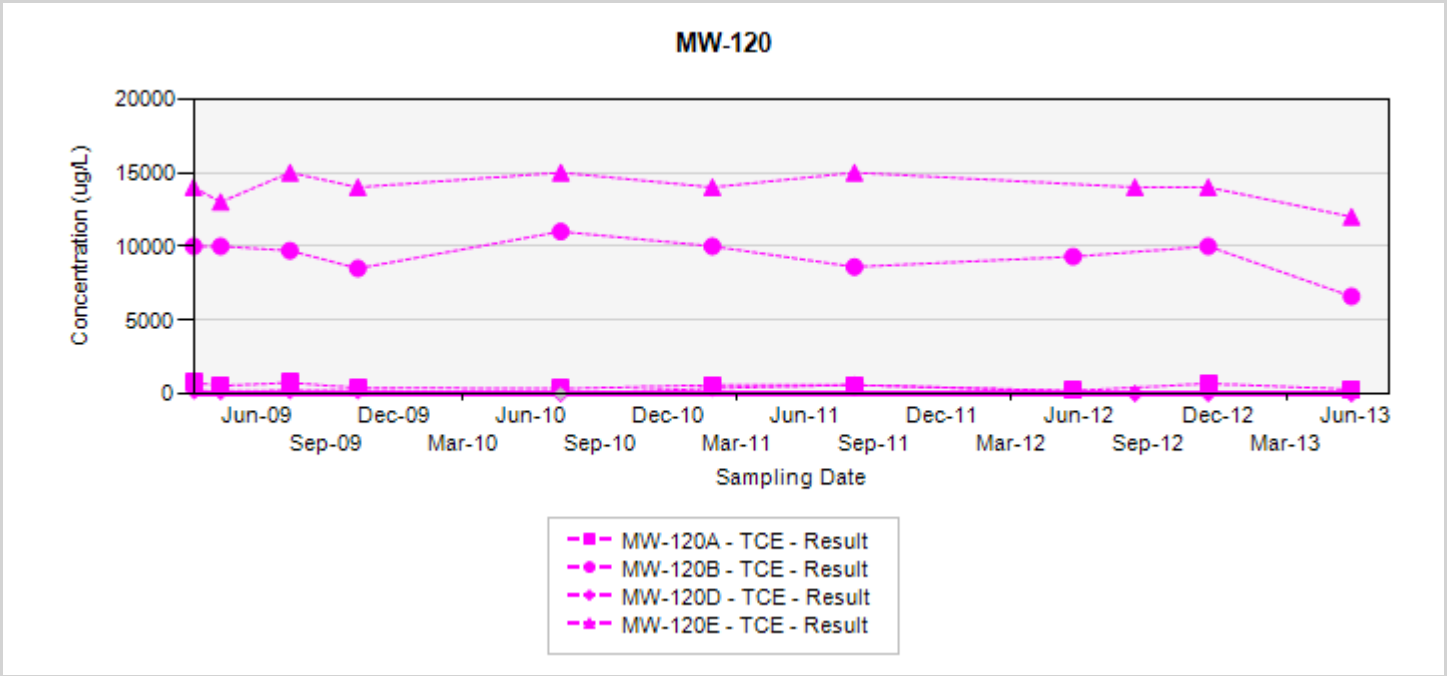

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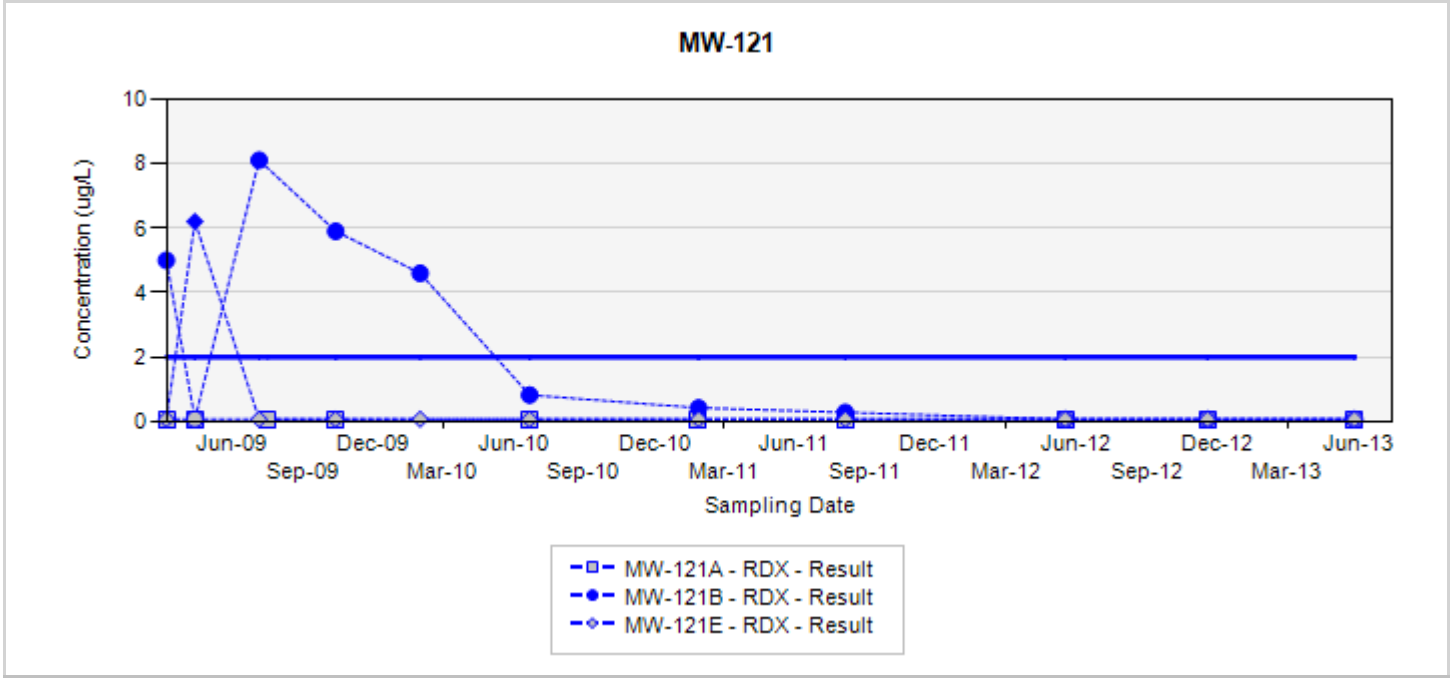

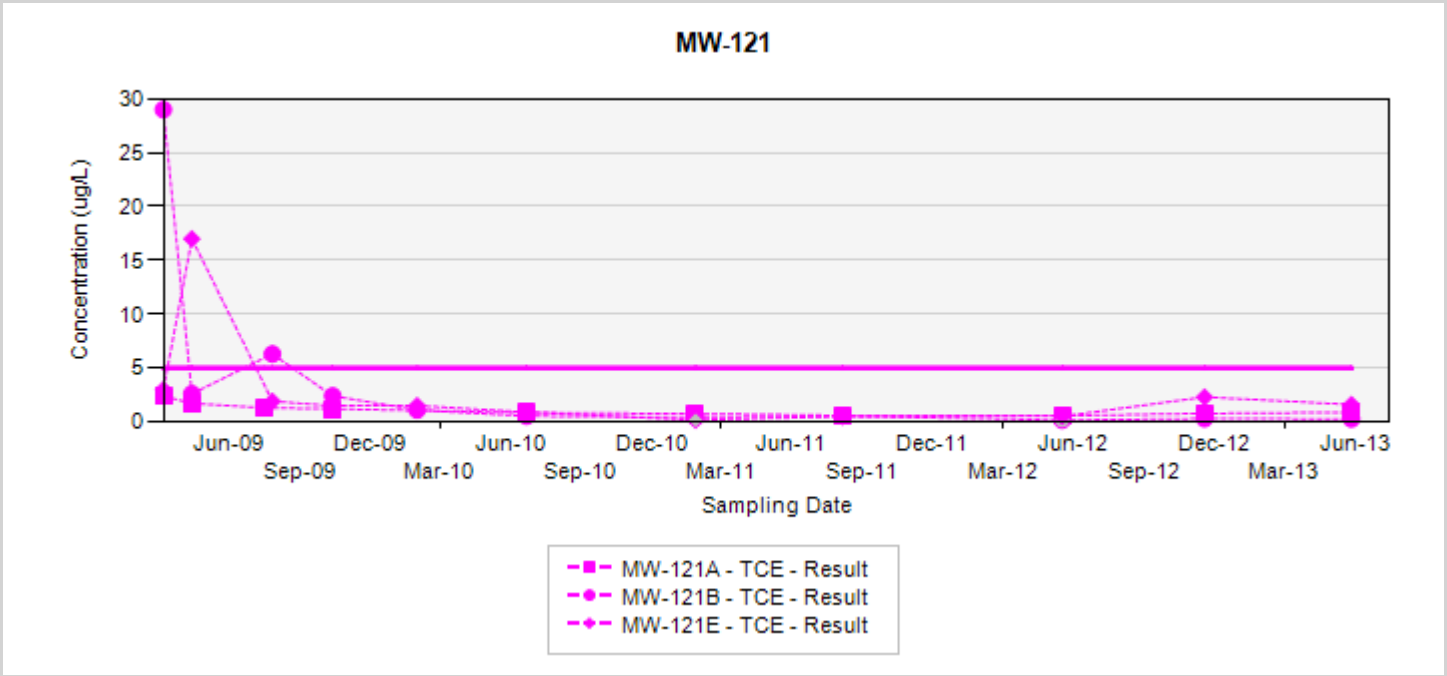

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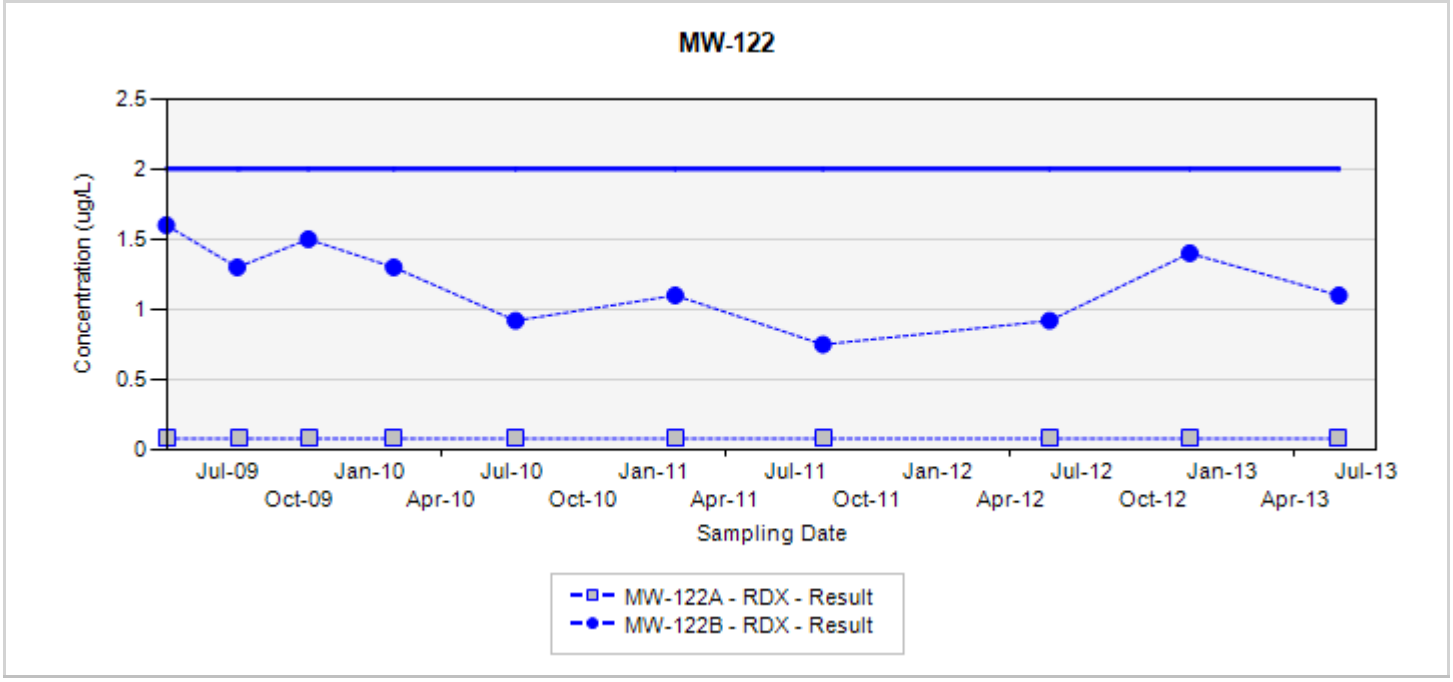

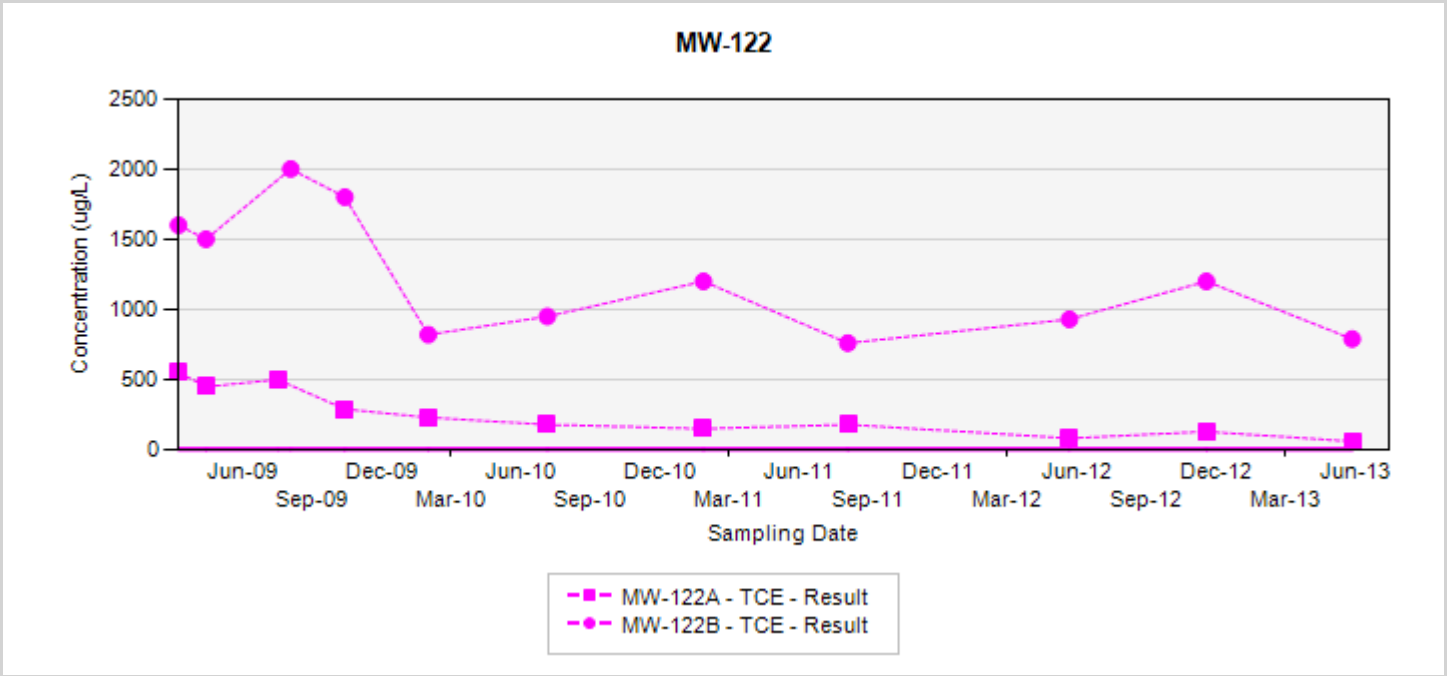

TCE - trichloroethene
RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
Final Target Groundwater Cleanup Goals for TCE is 5 ug/L
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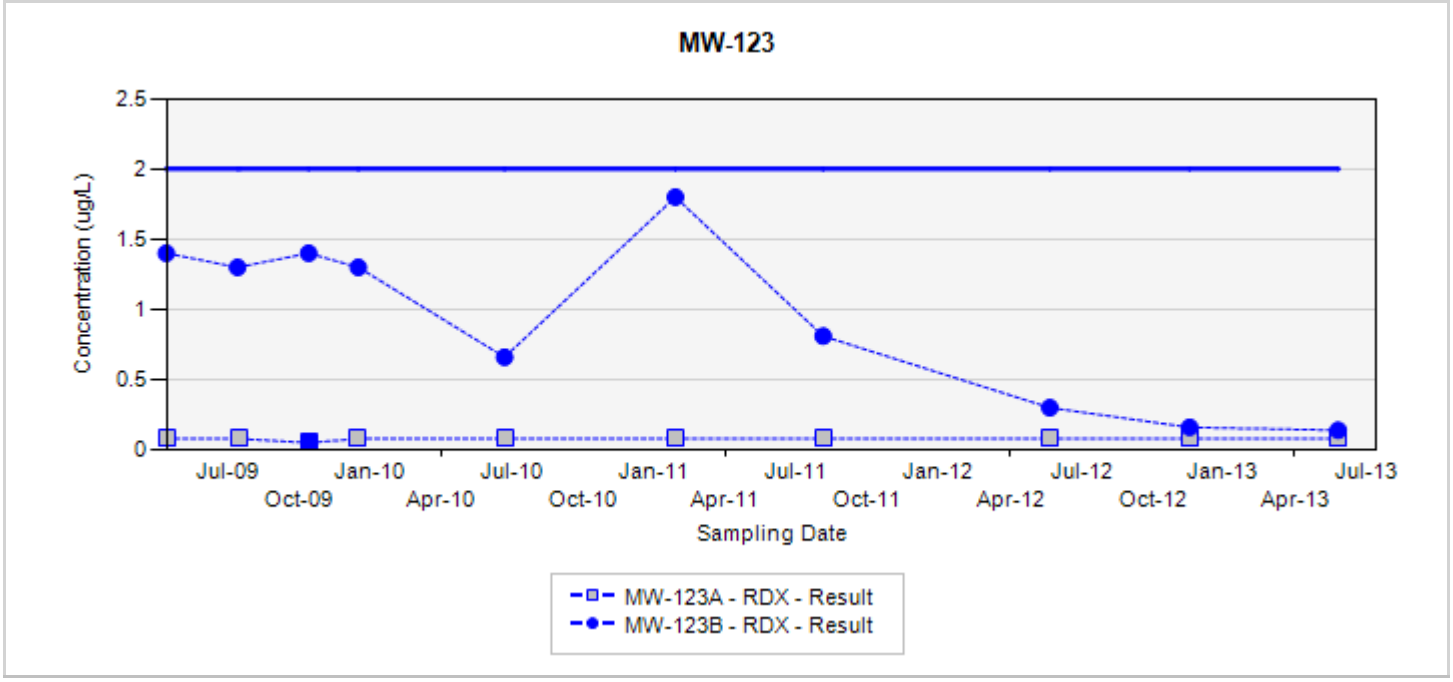

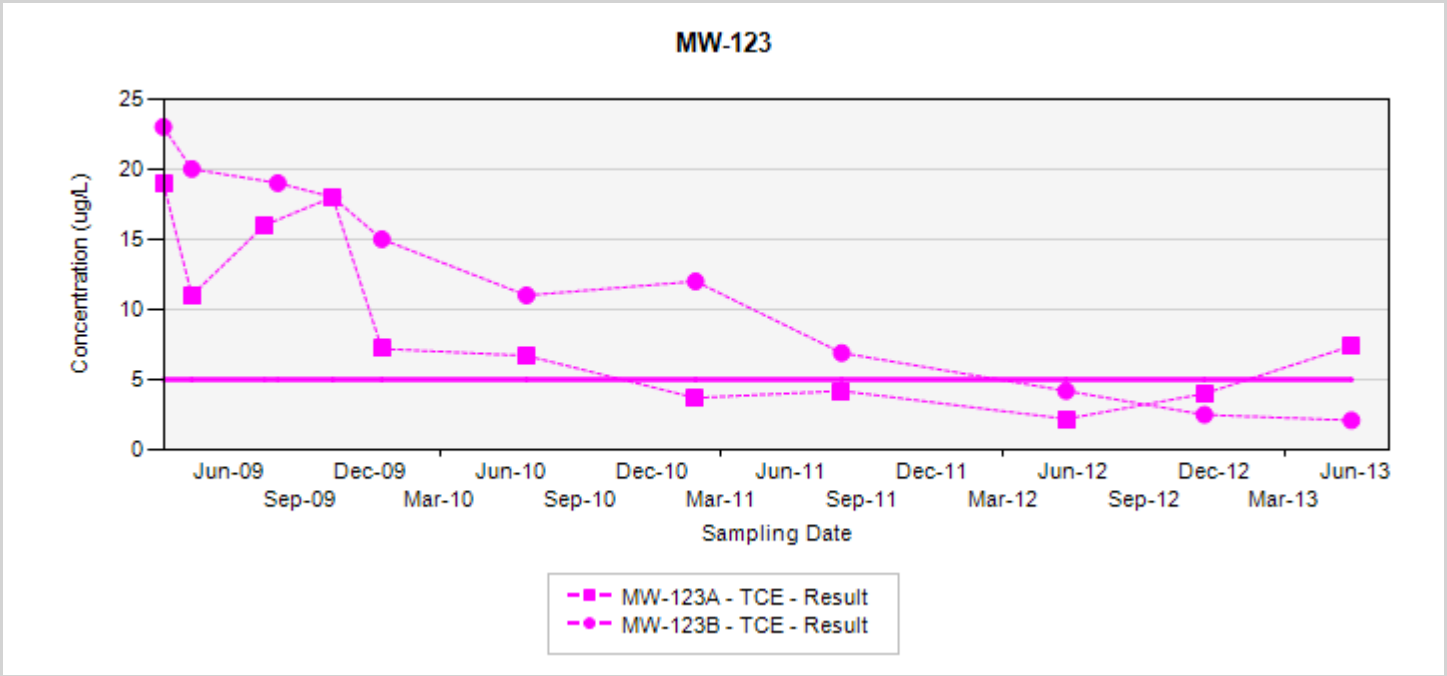

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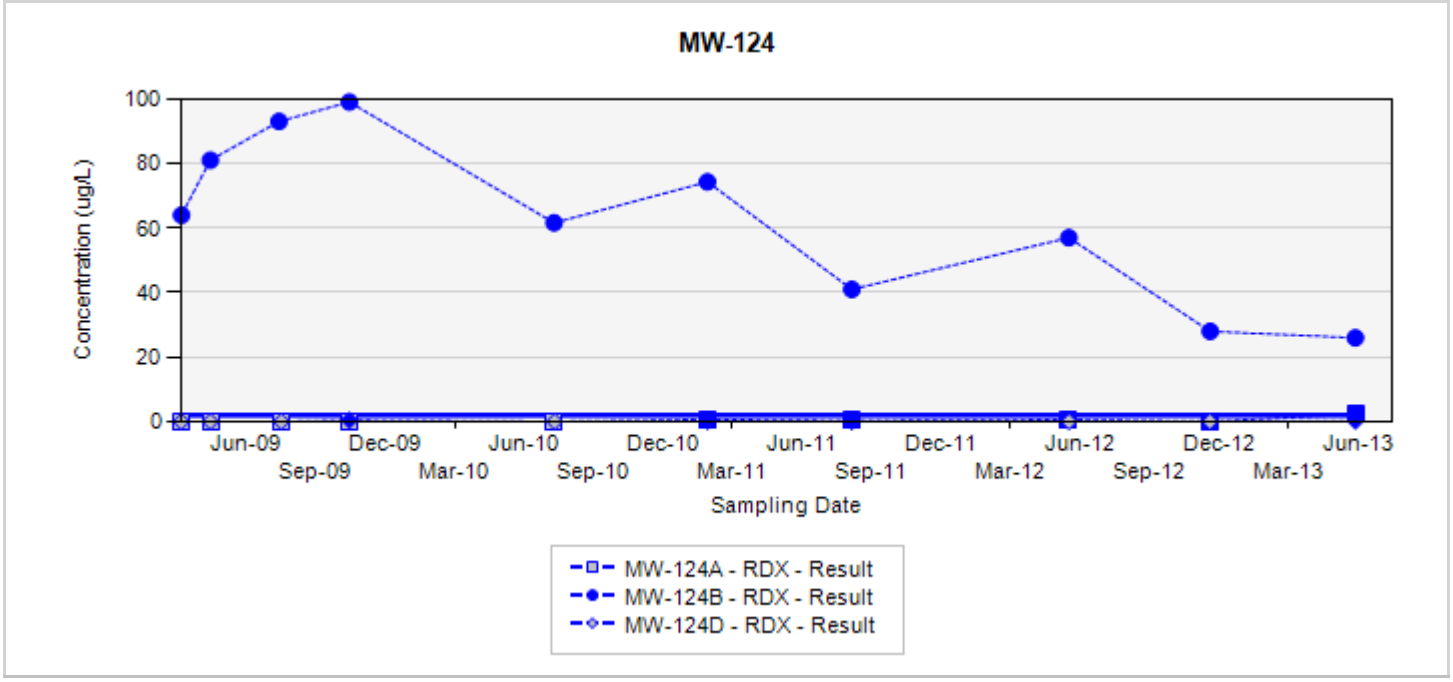

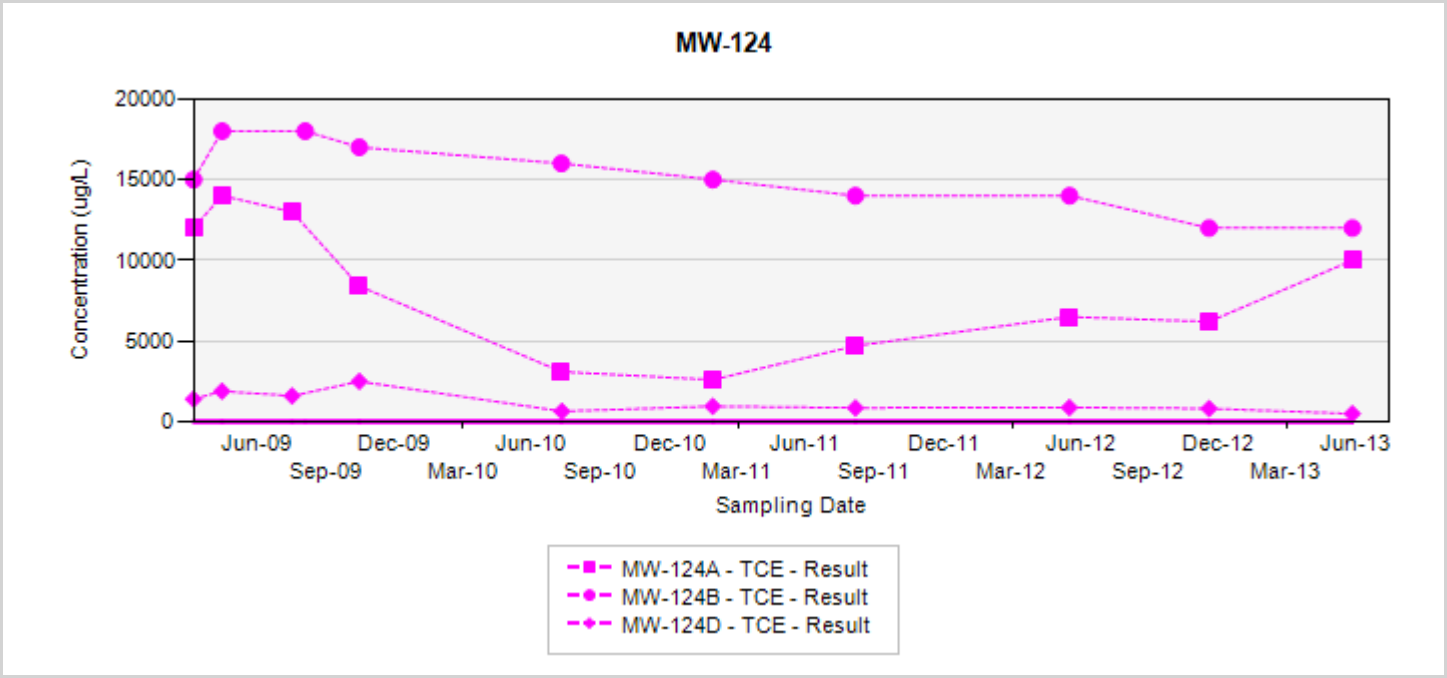

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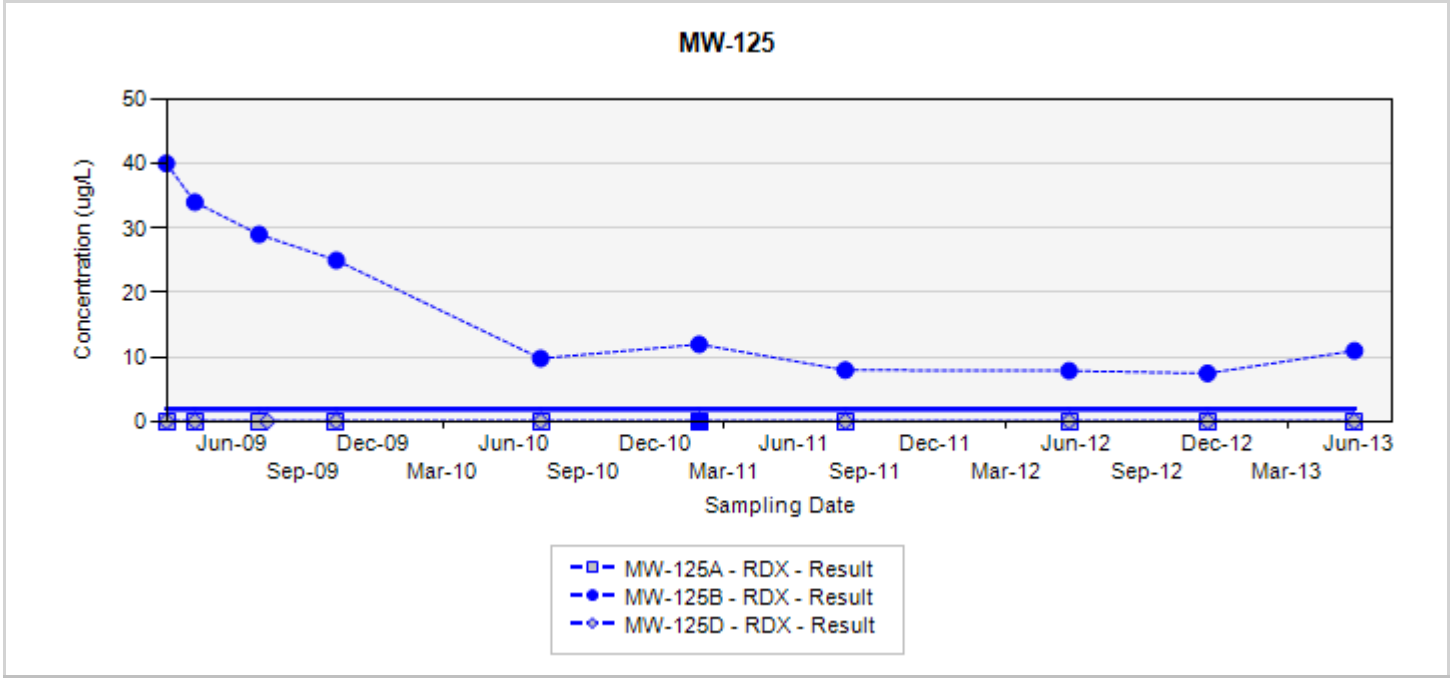

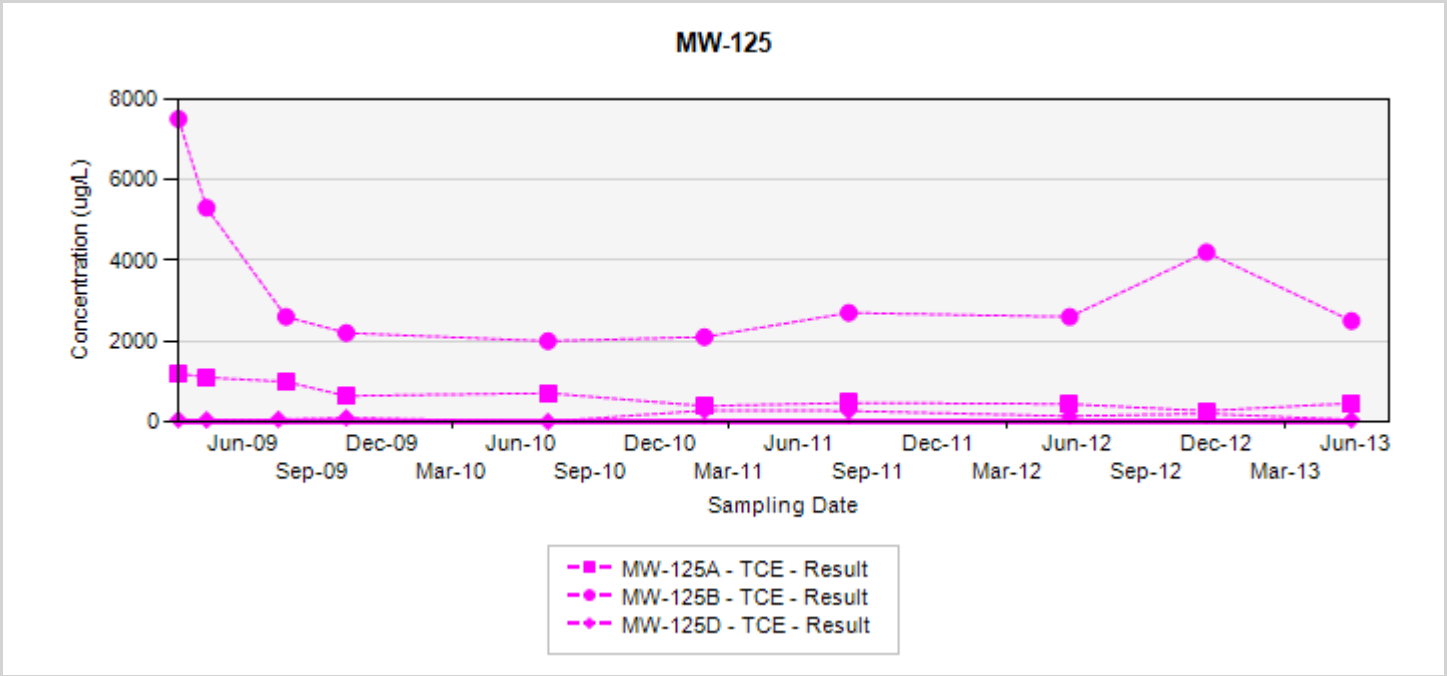

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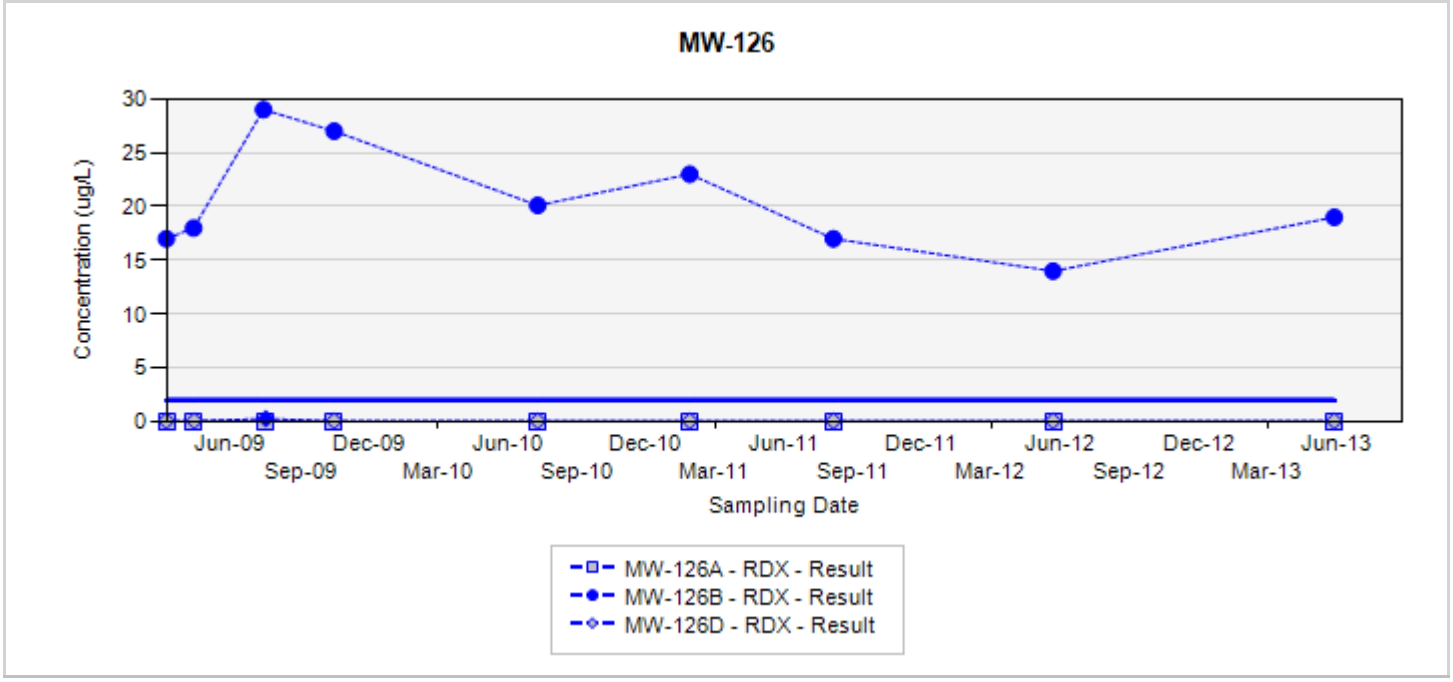

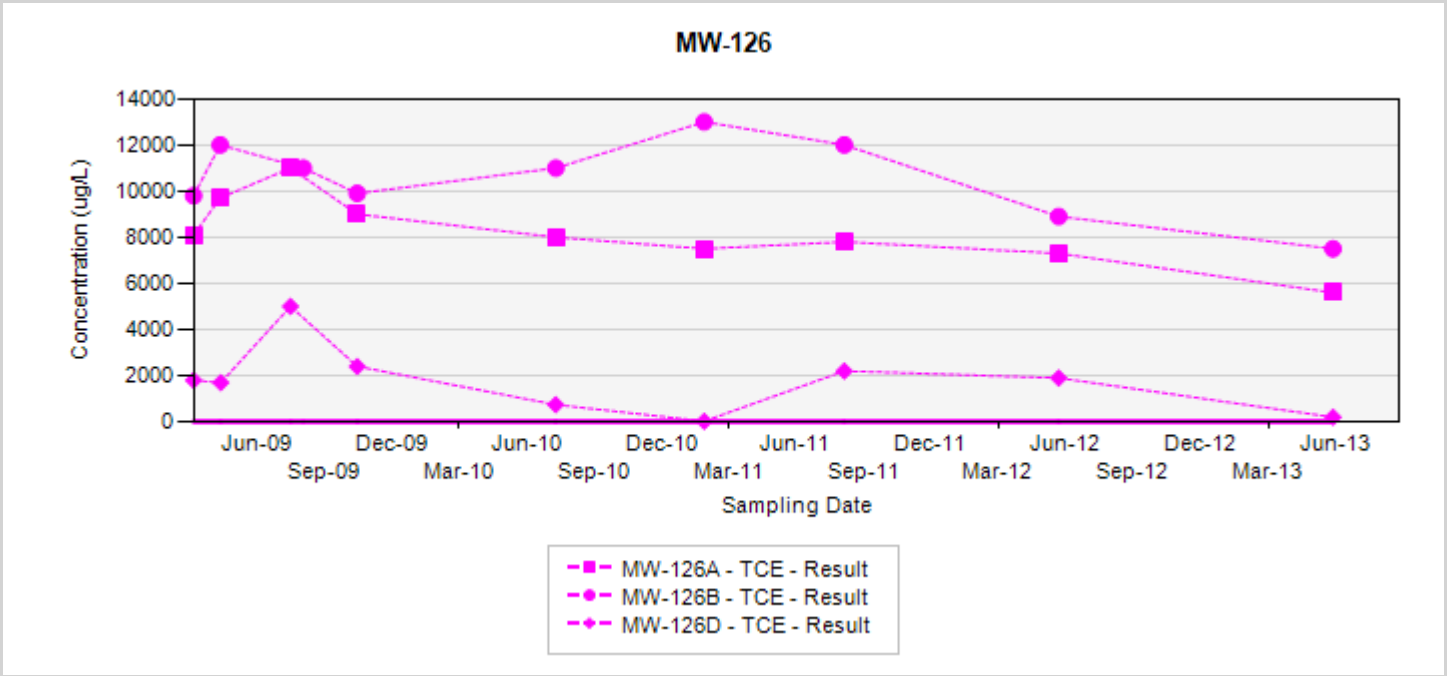

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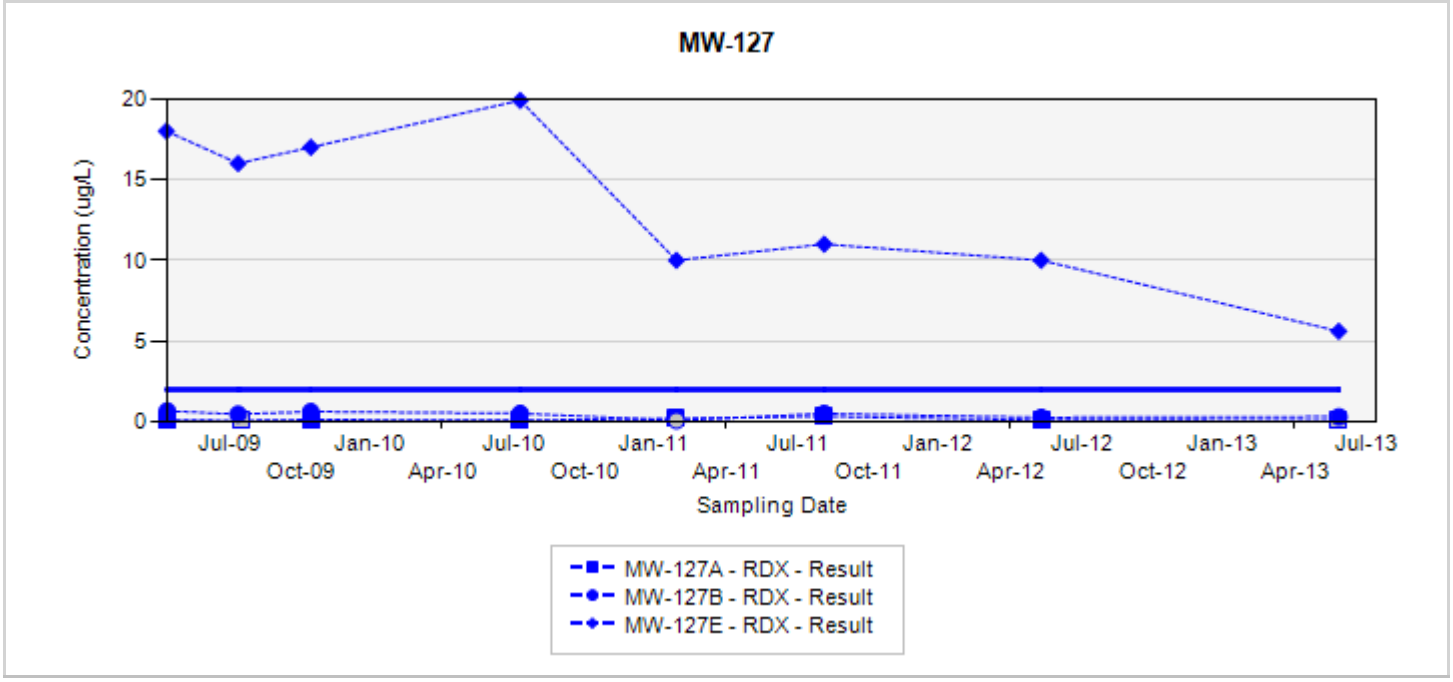

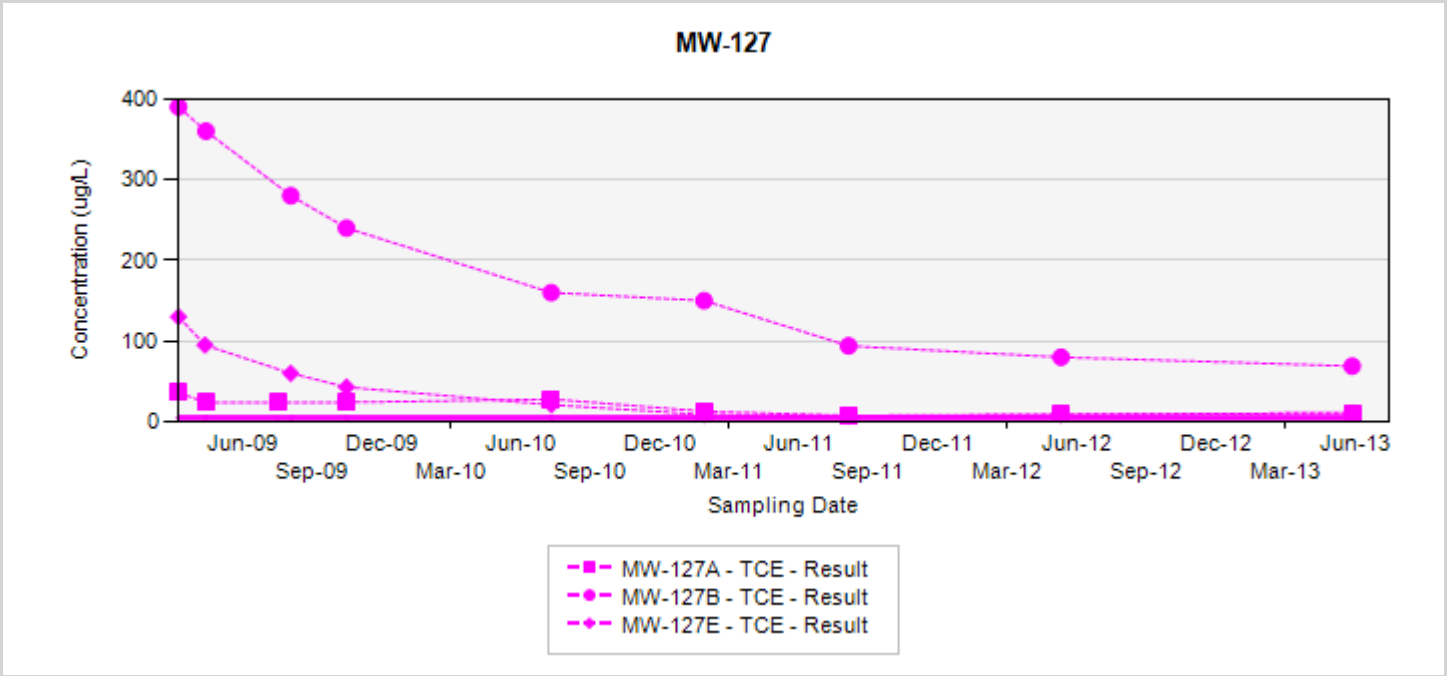

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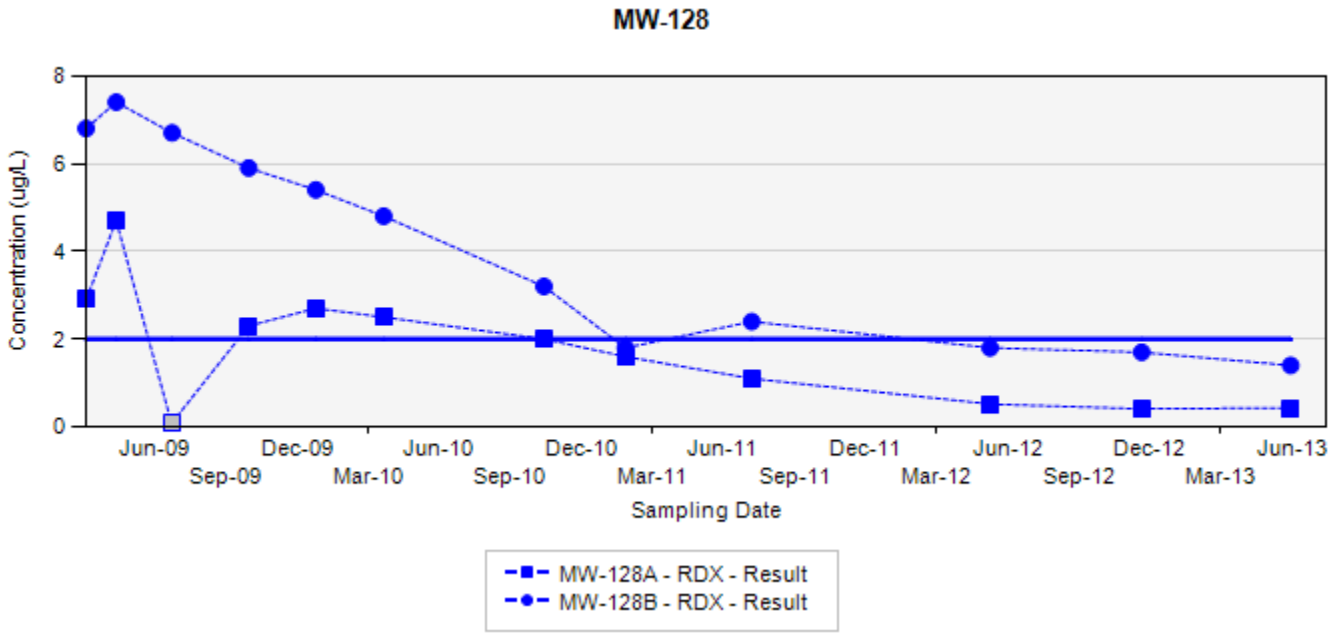

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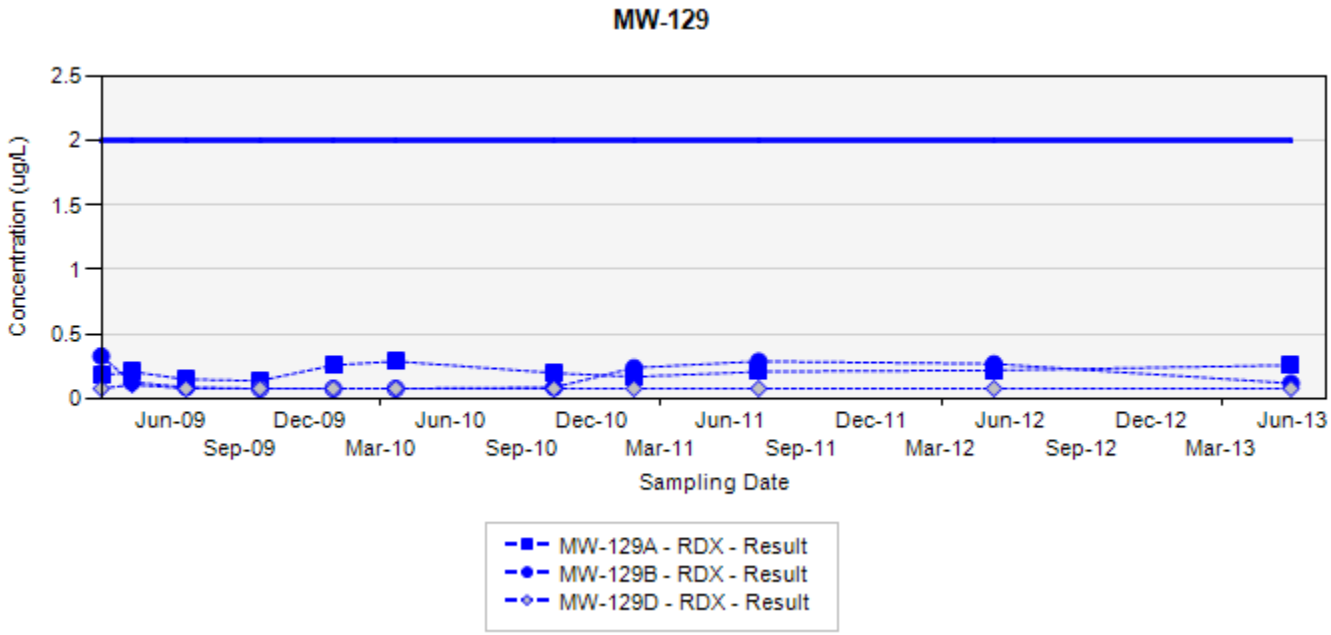

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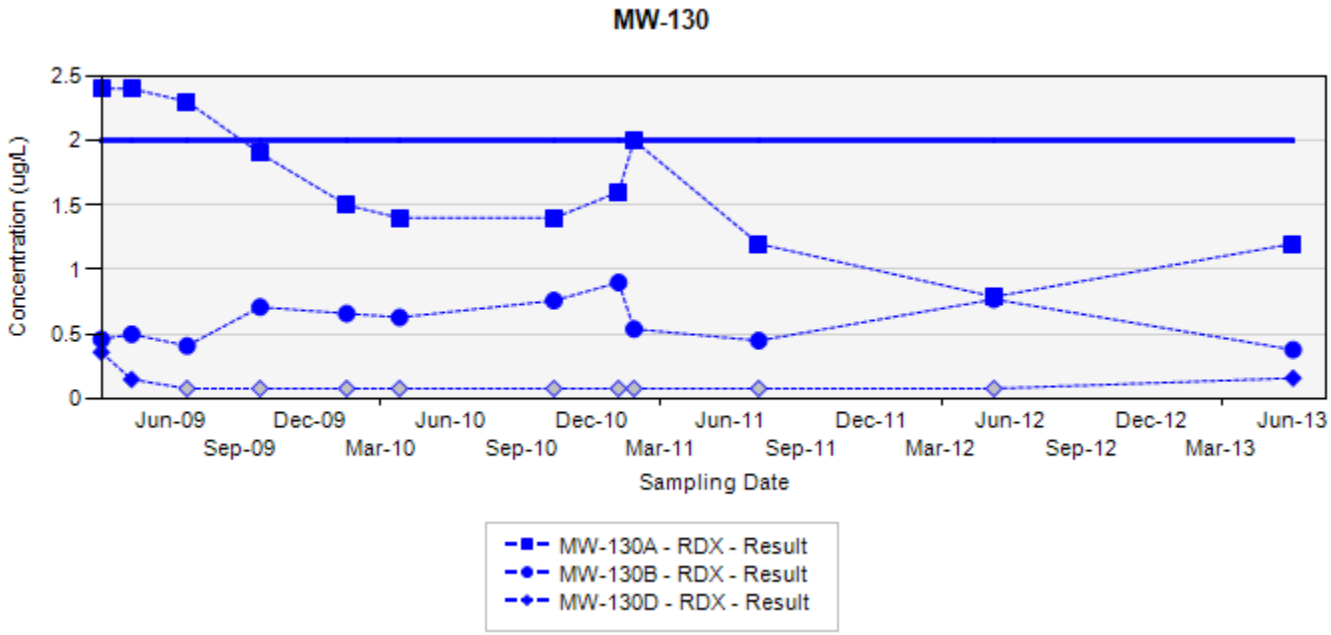

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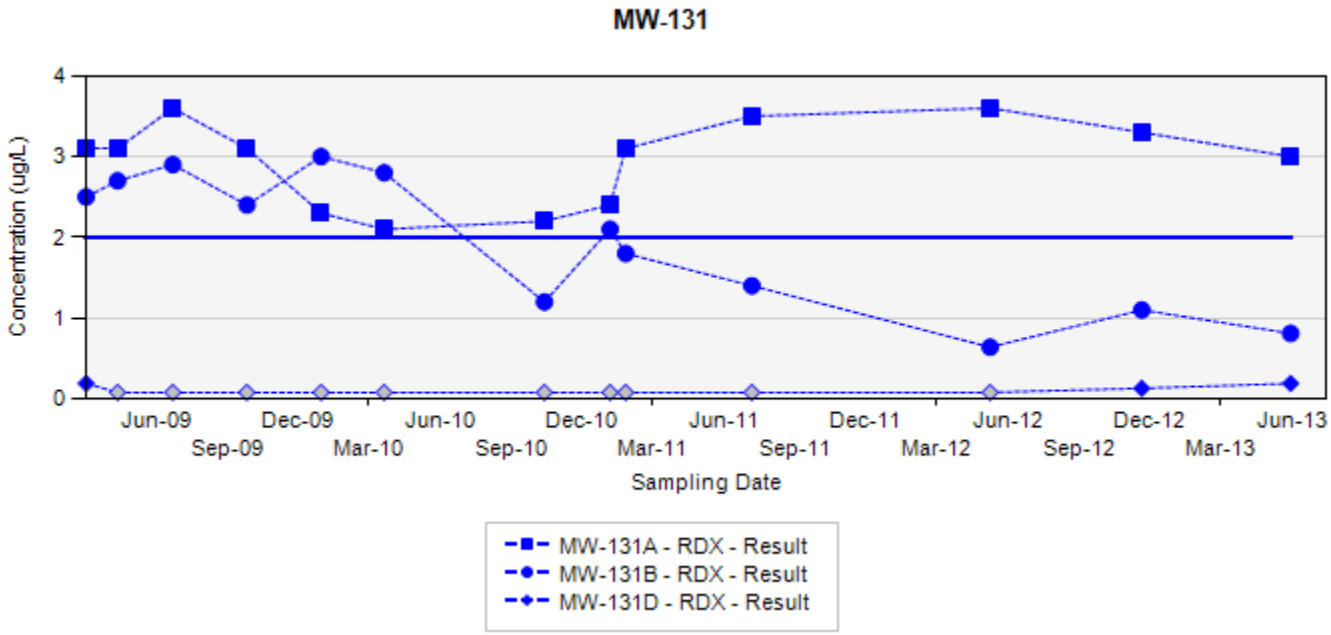

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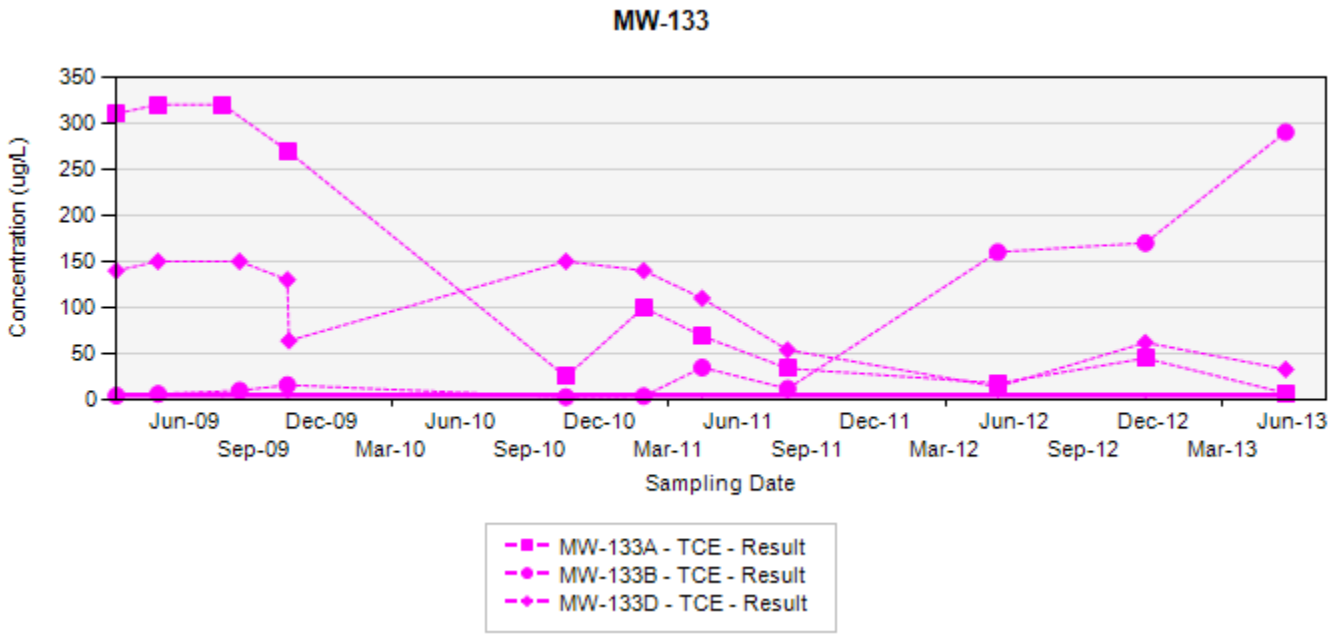

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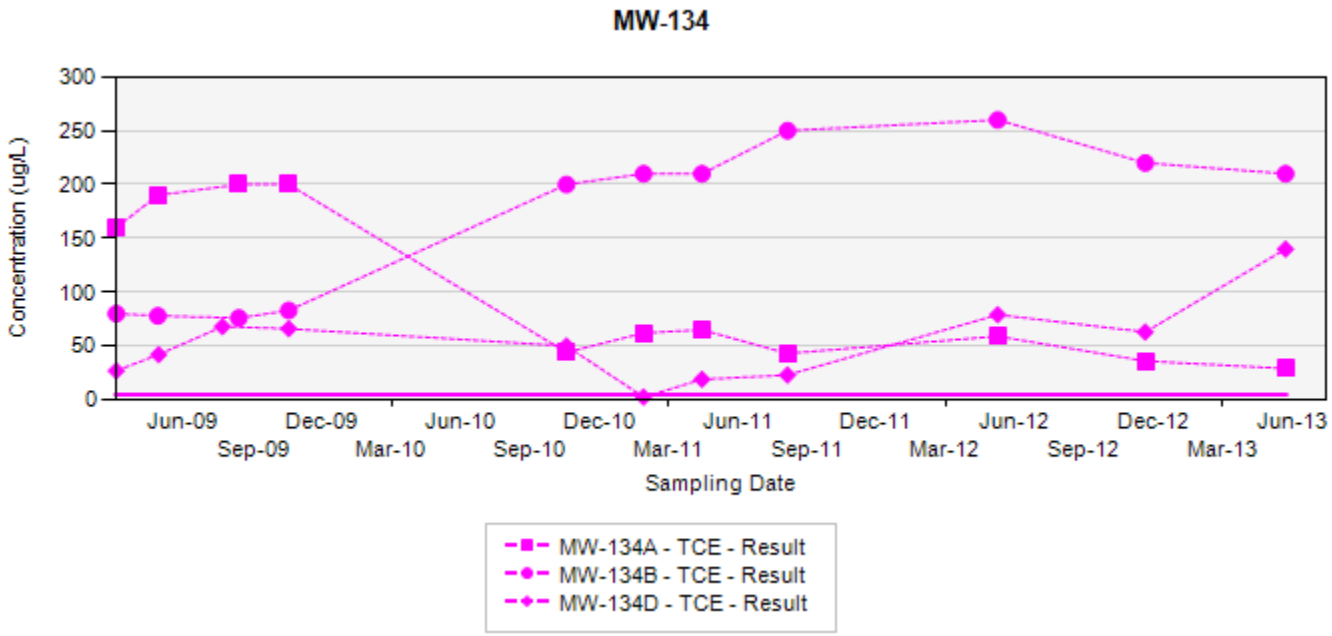

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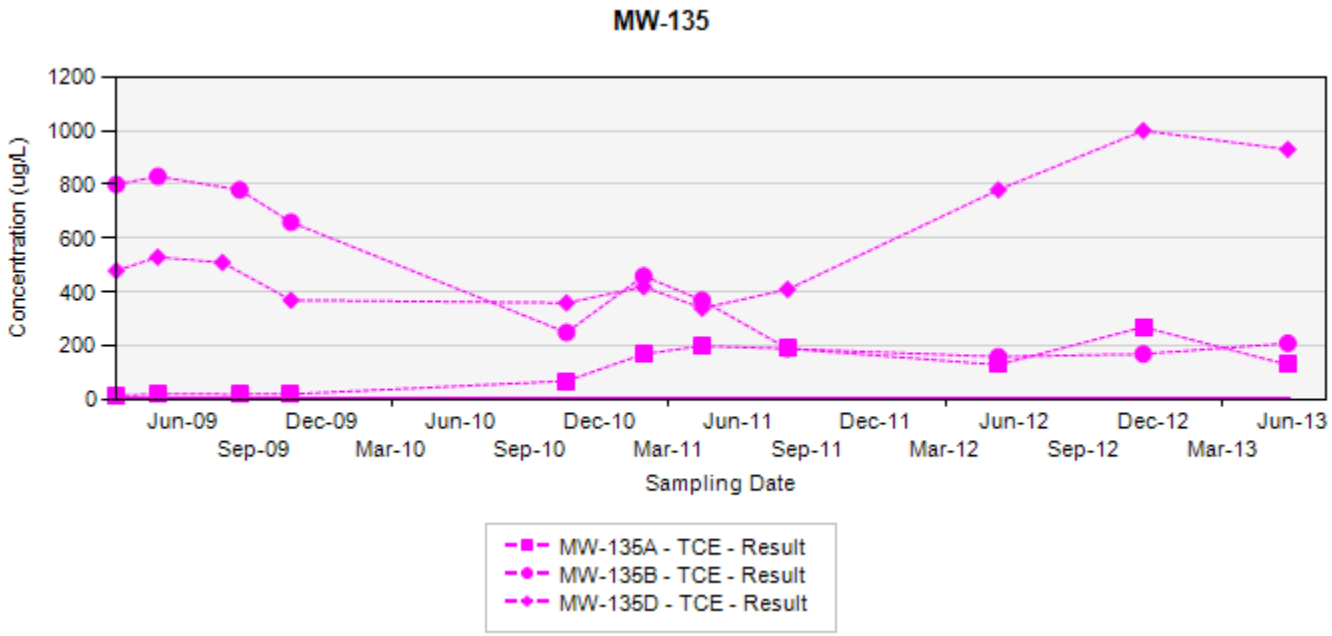

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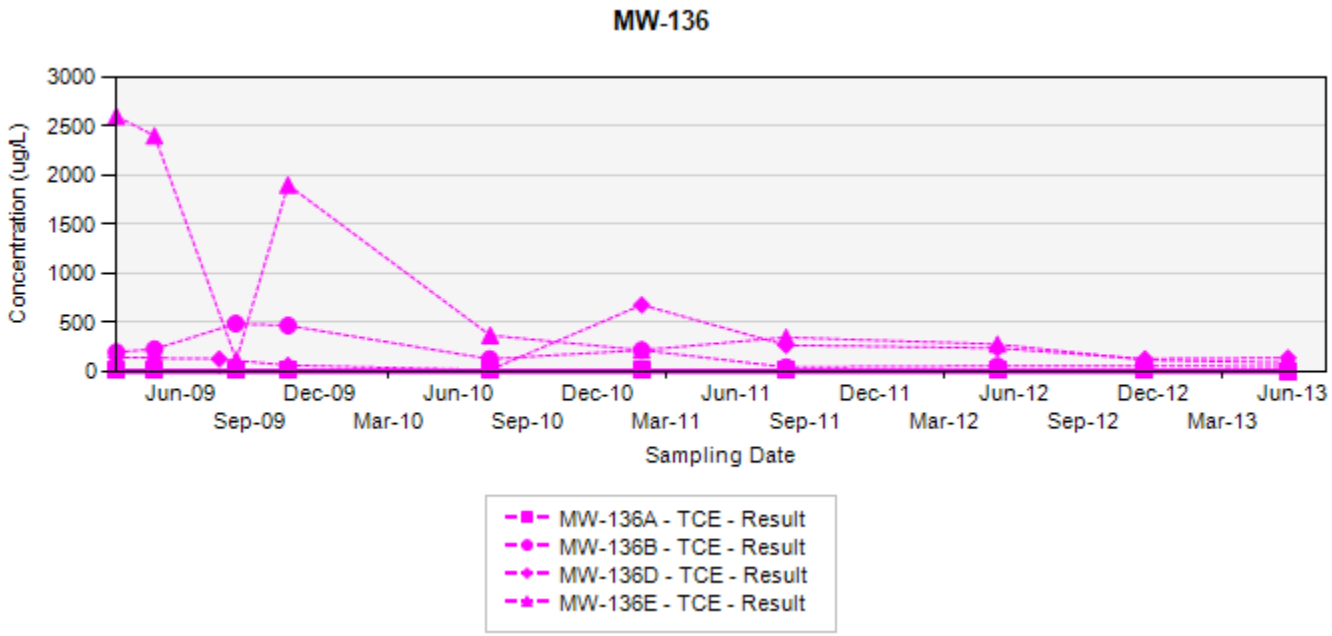

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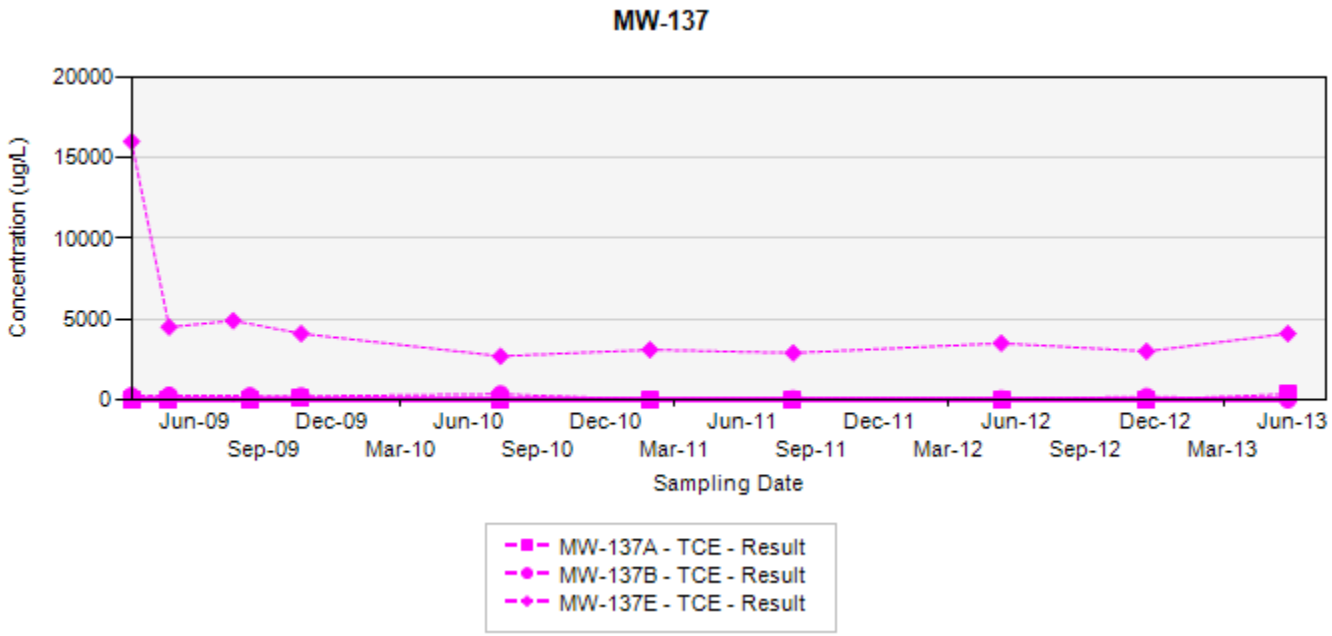

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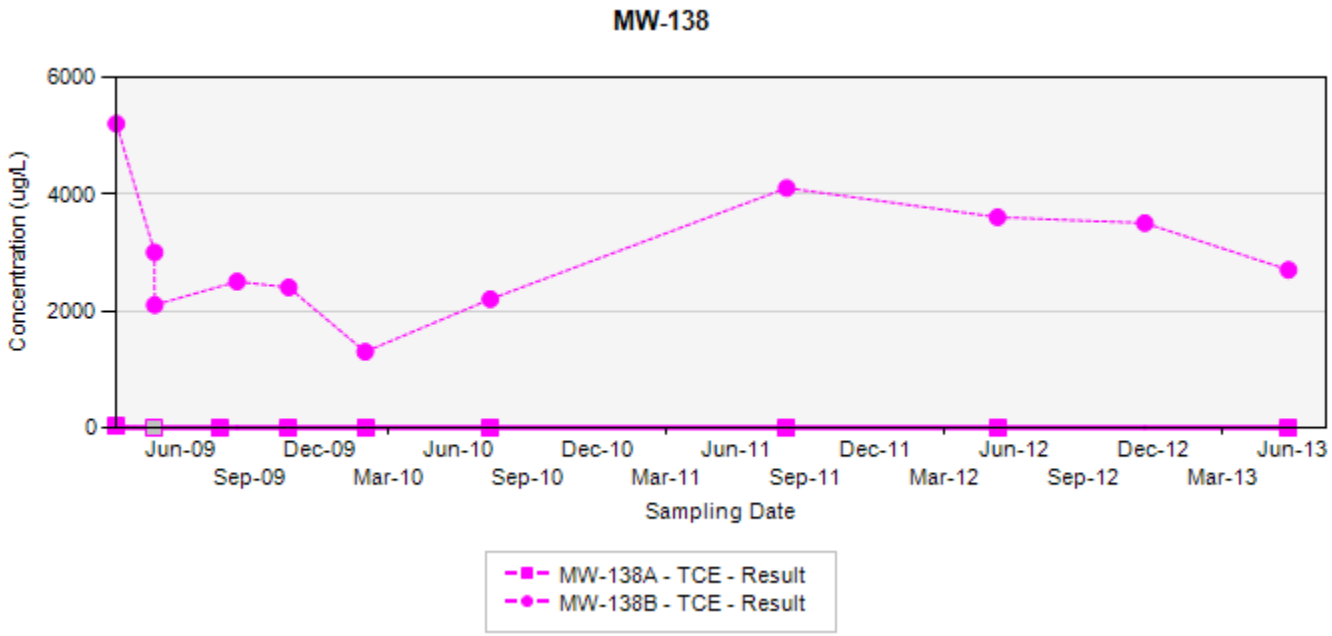

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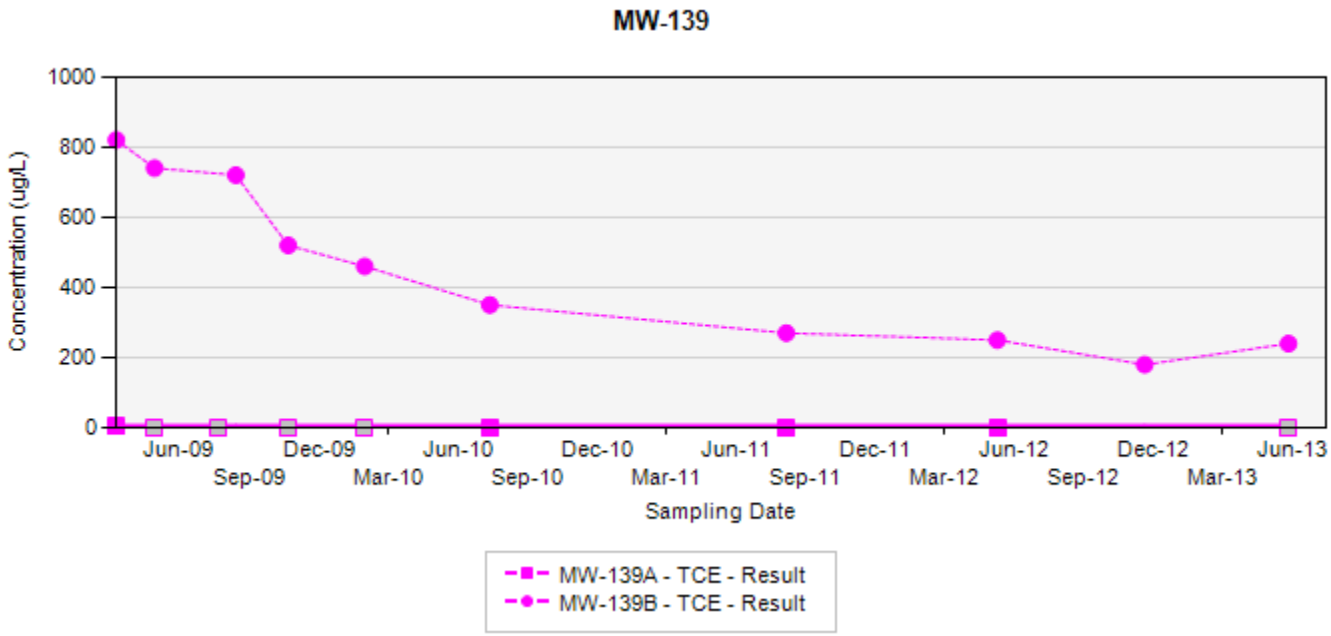

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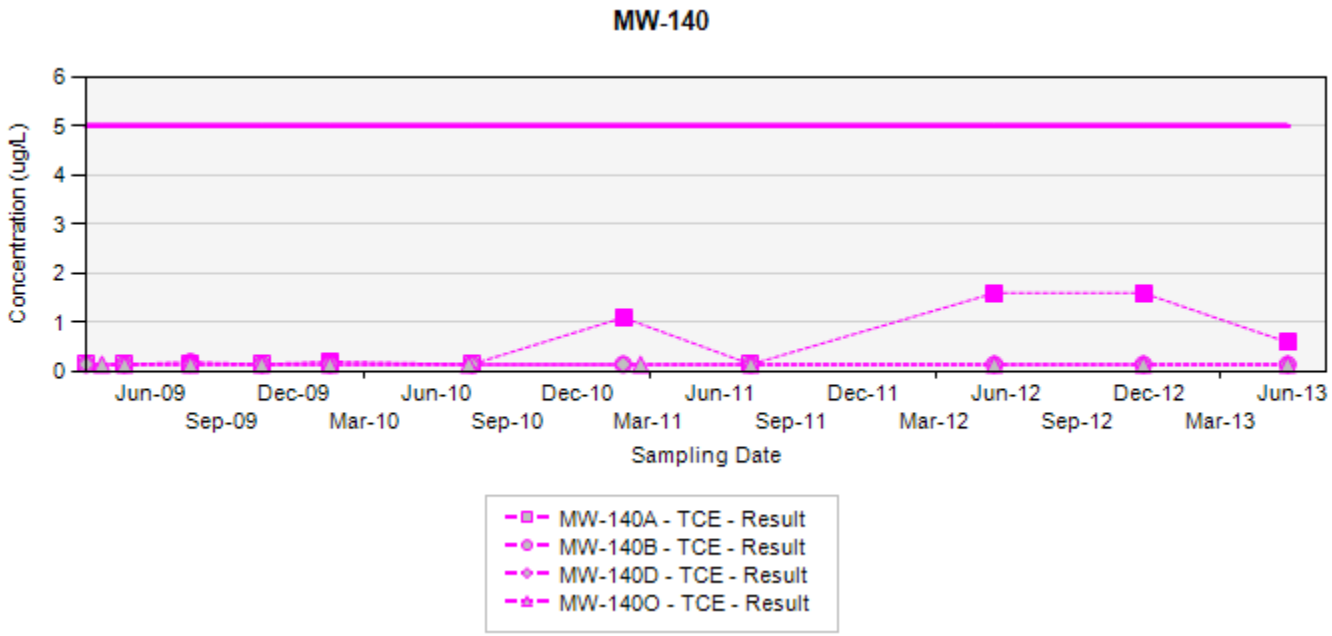

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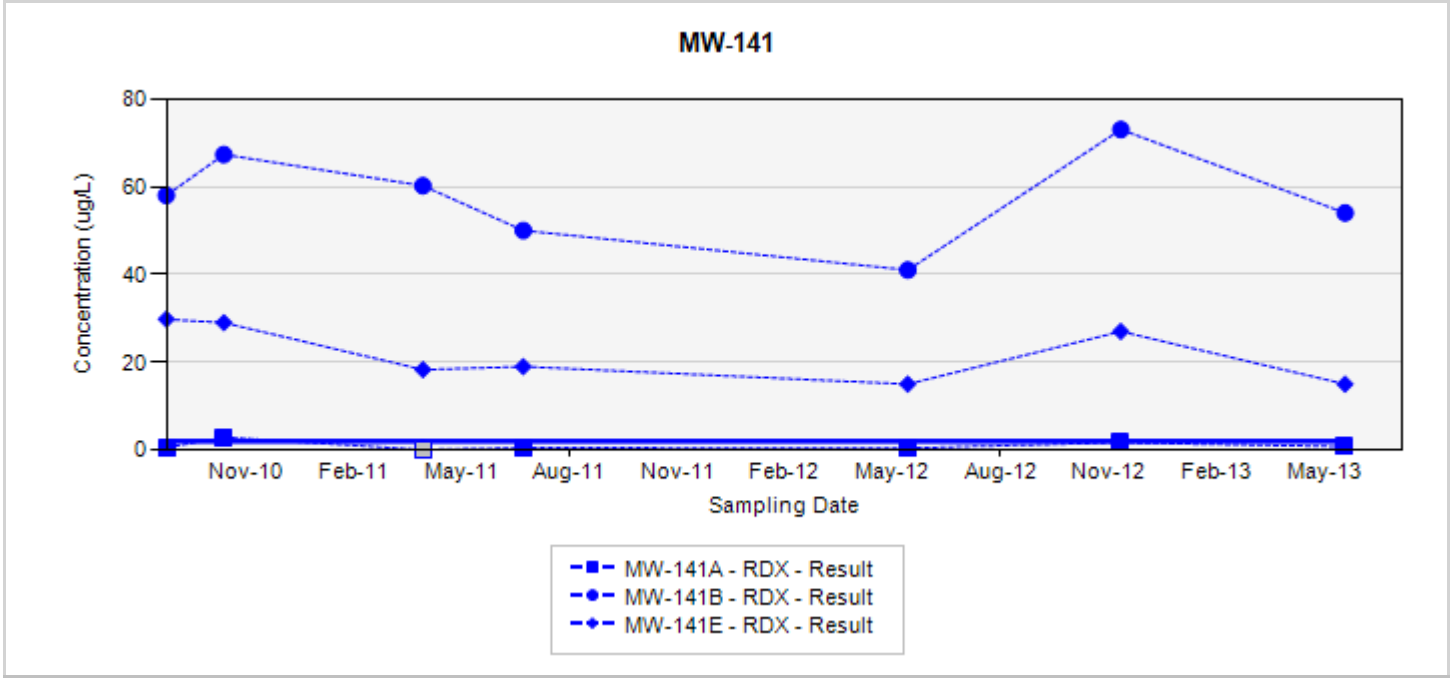

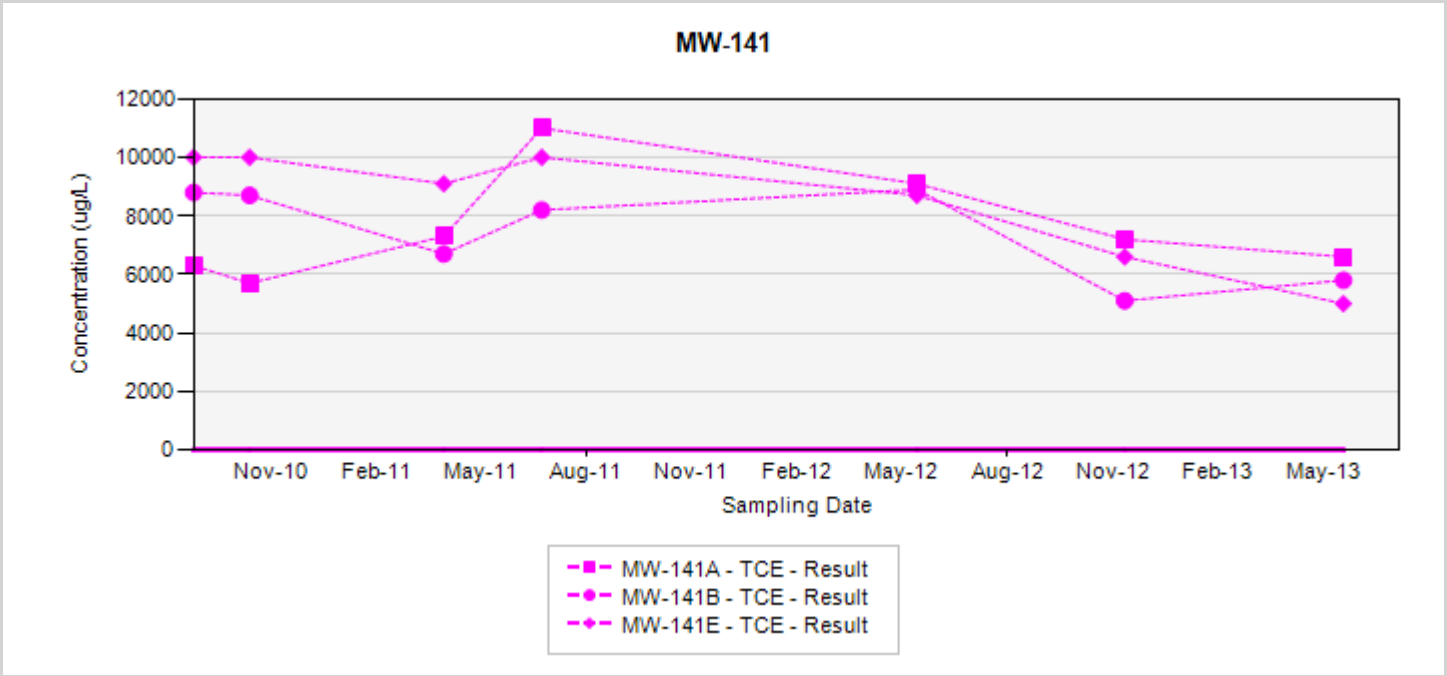

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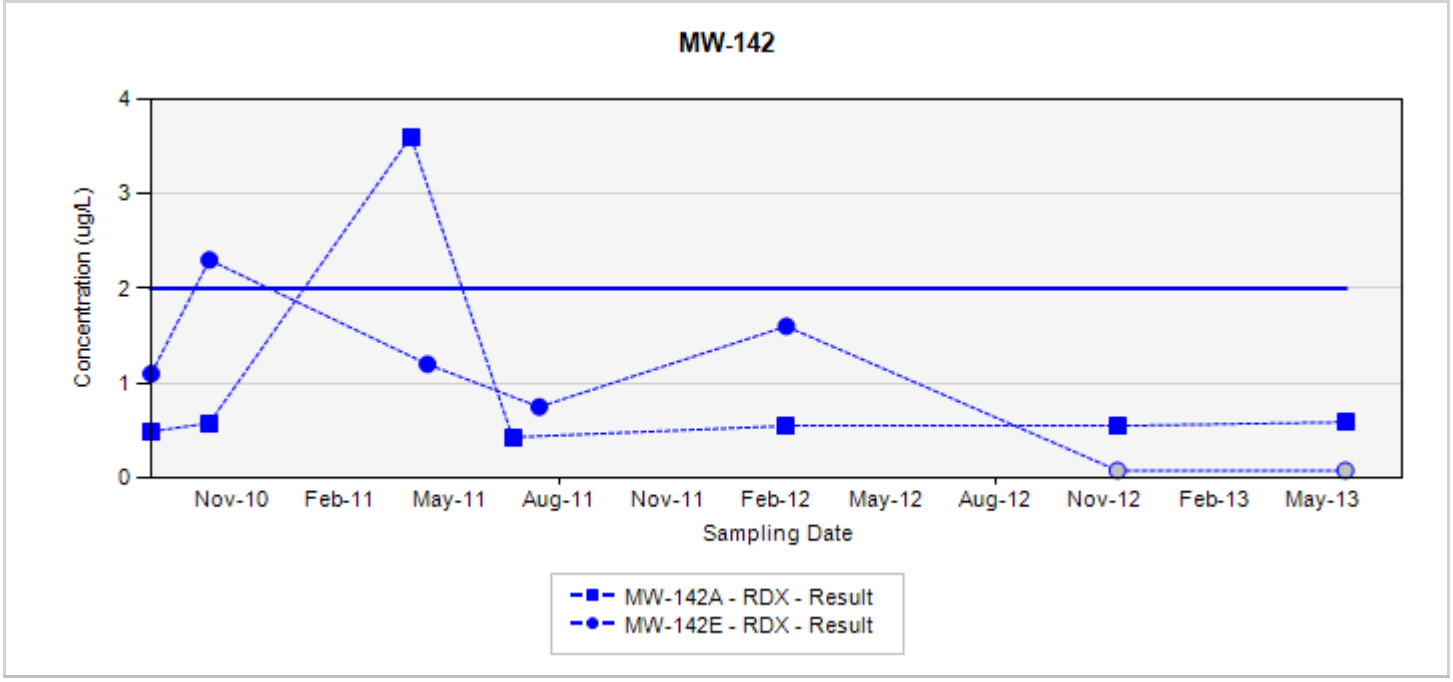

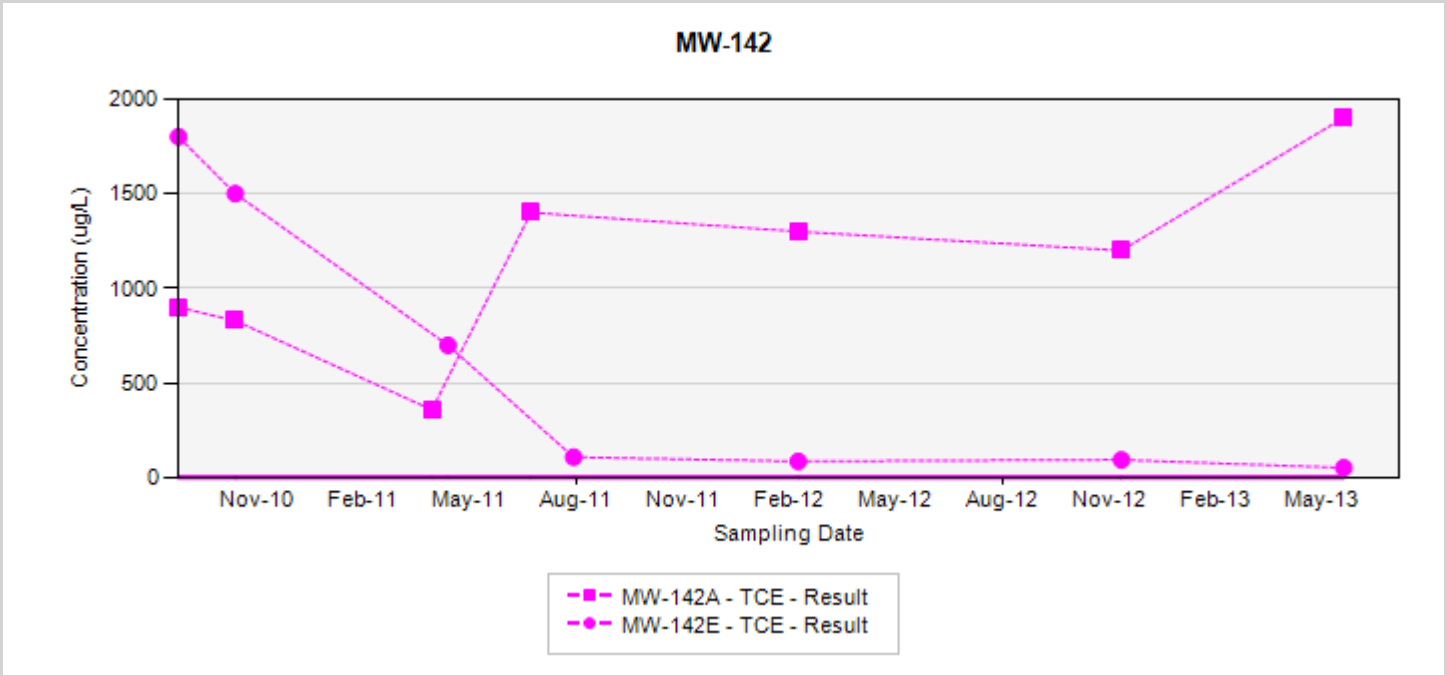

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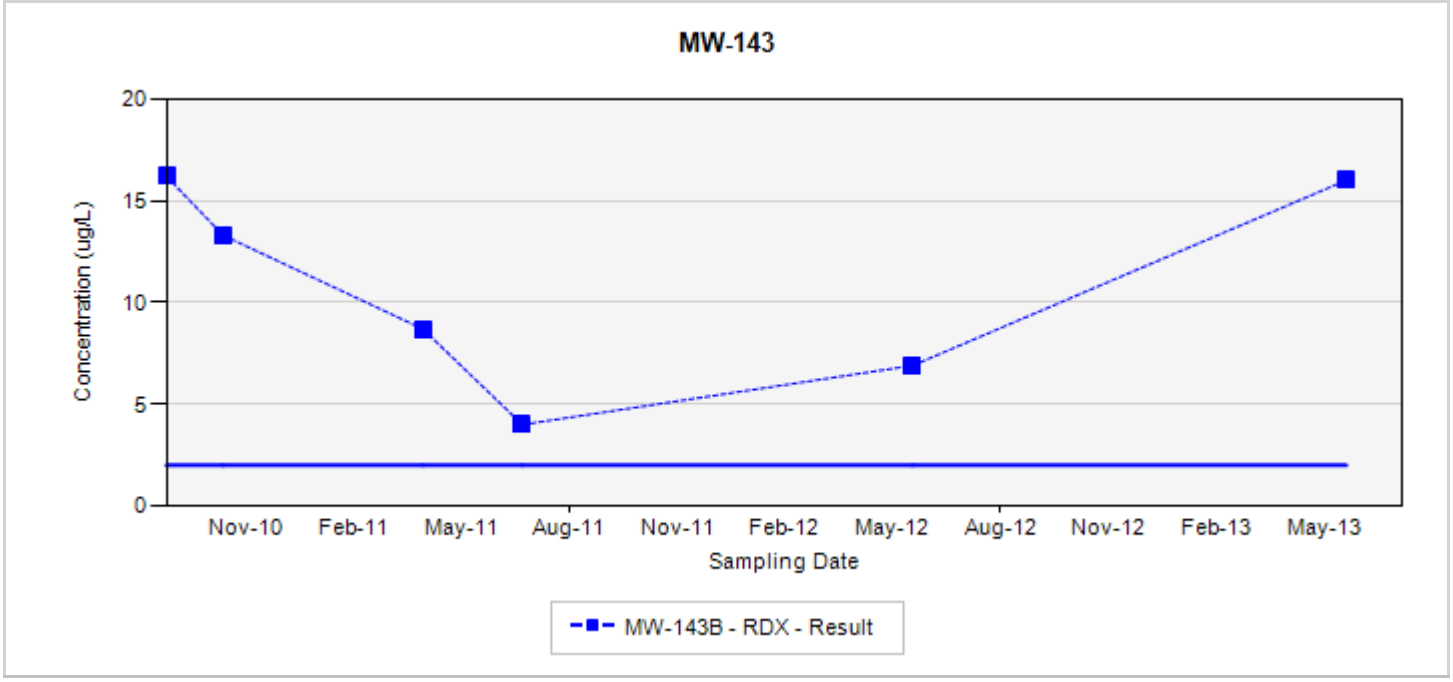

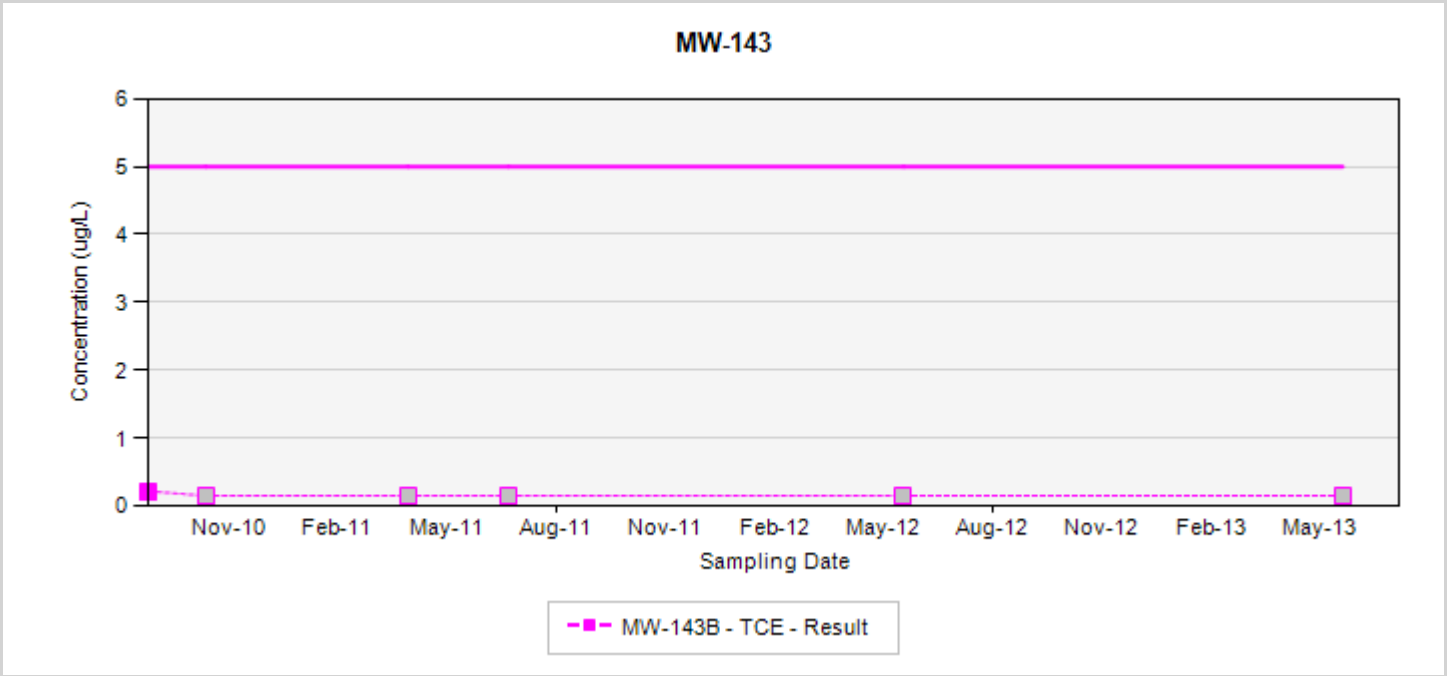

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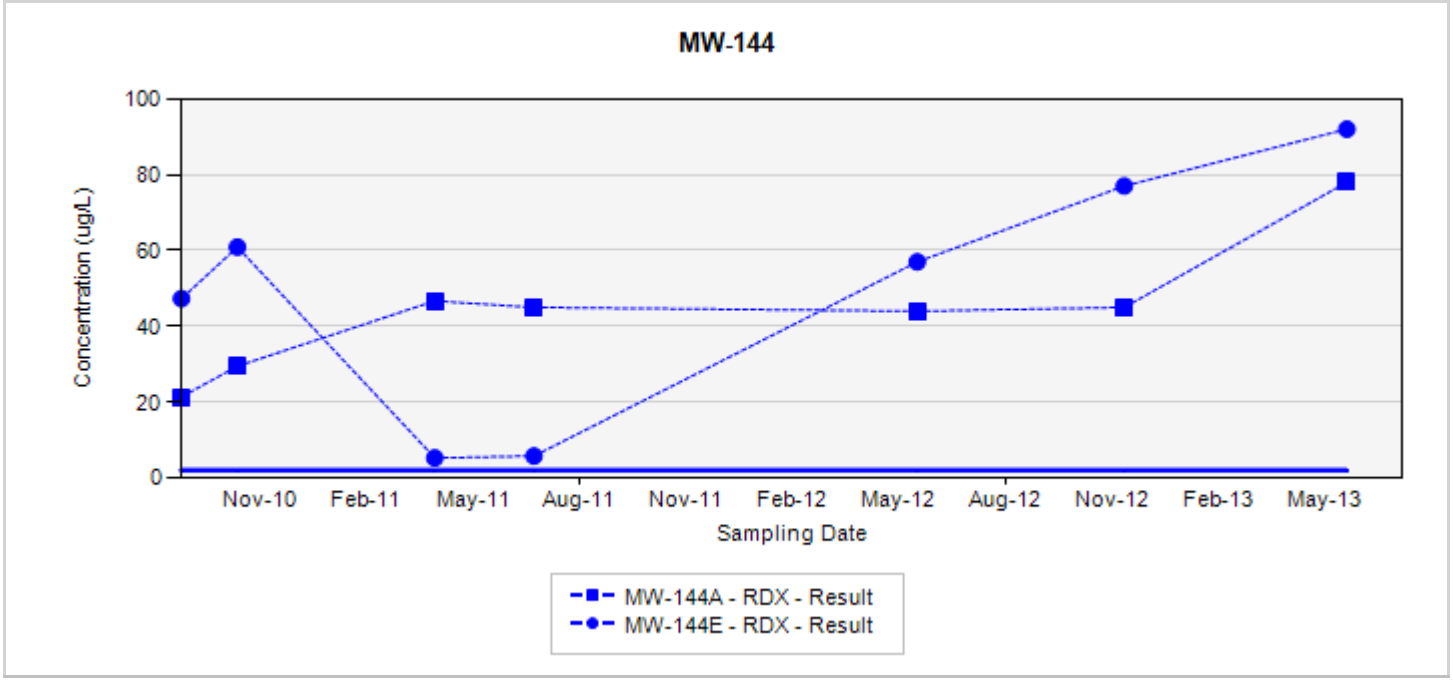

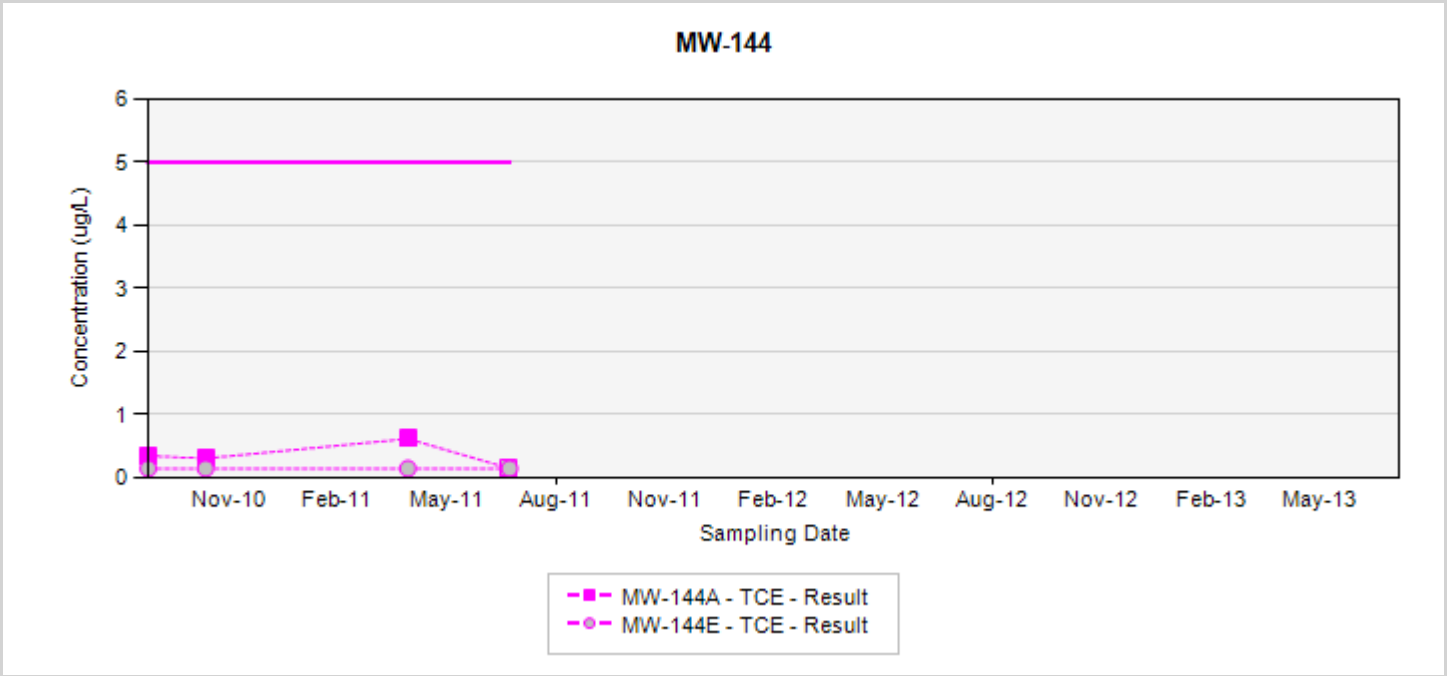

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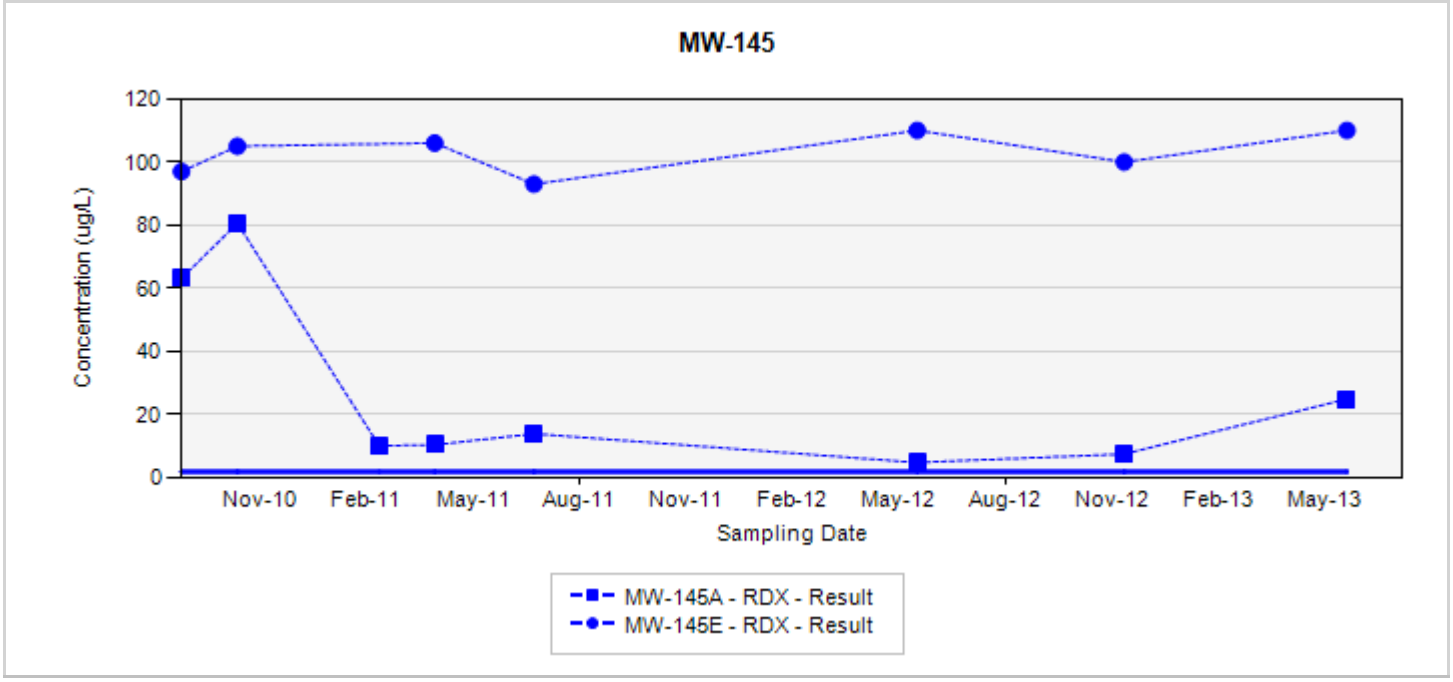

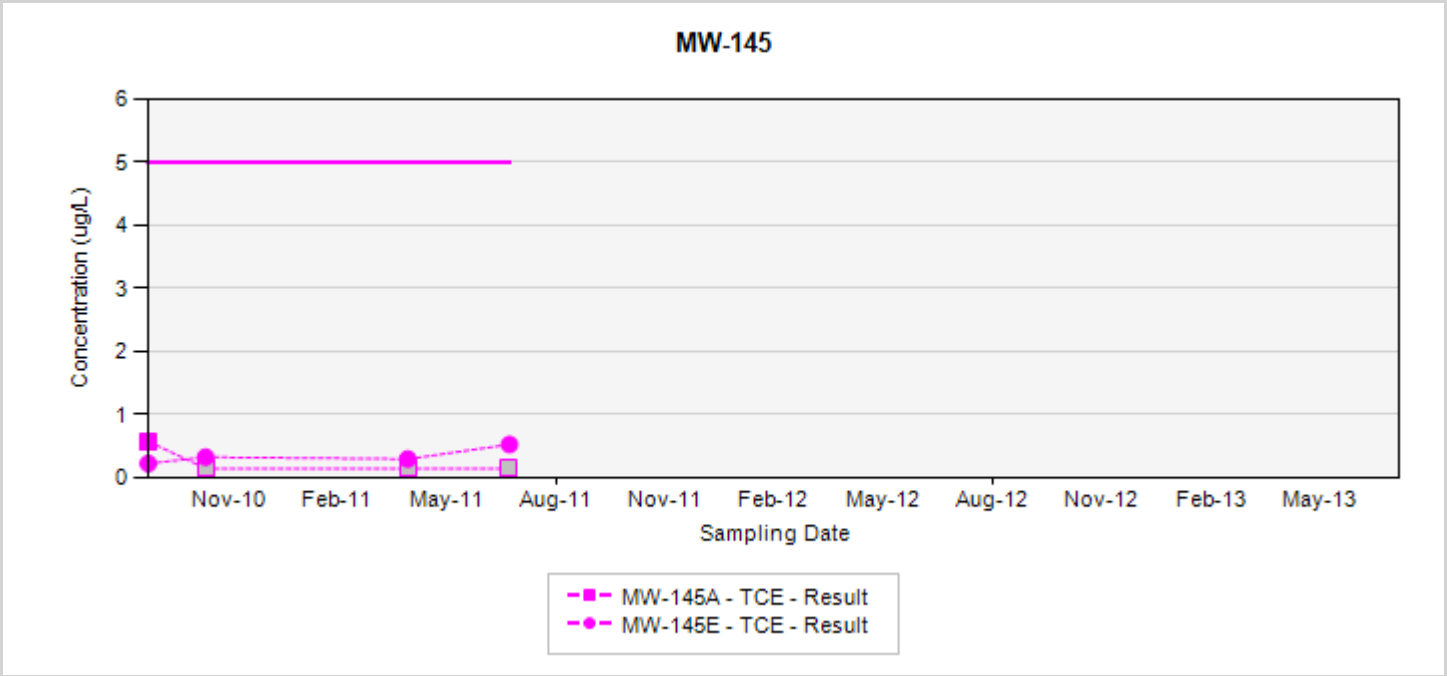

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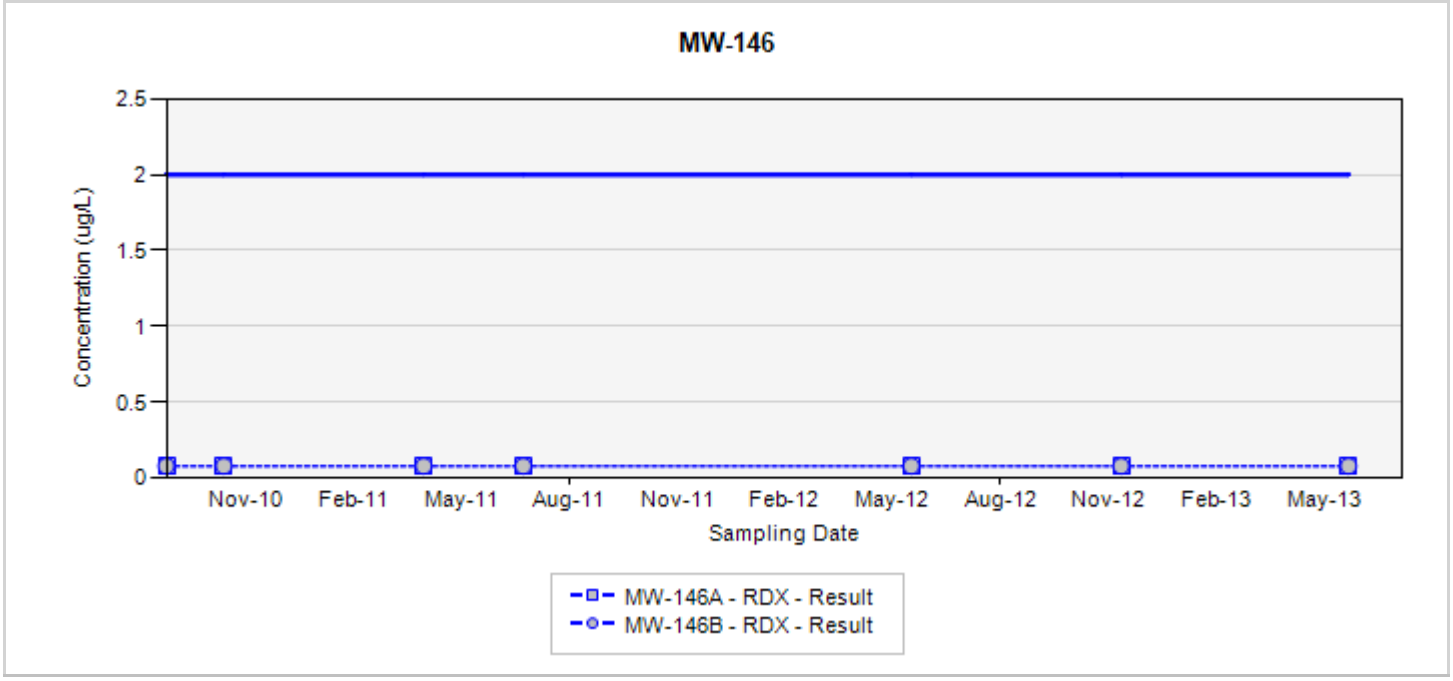

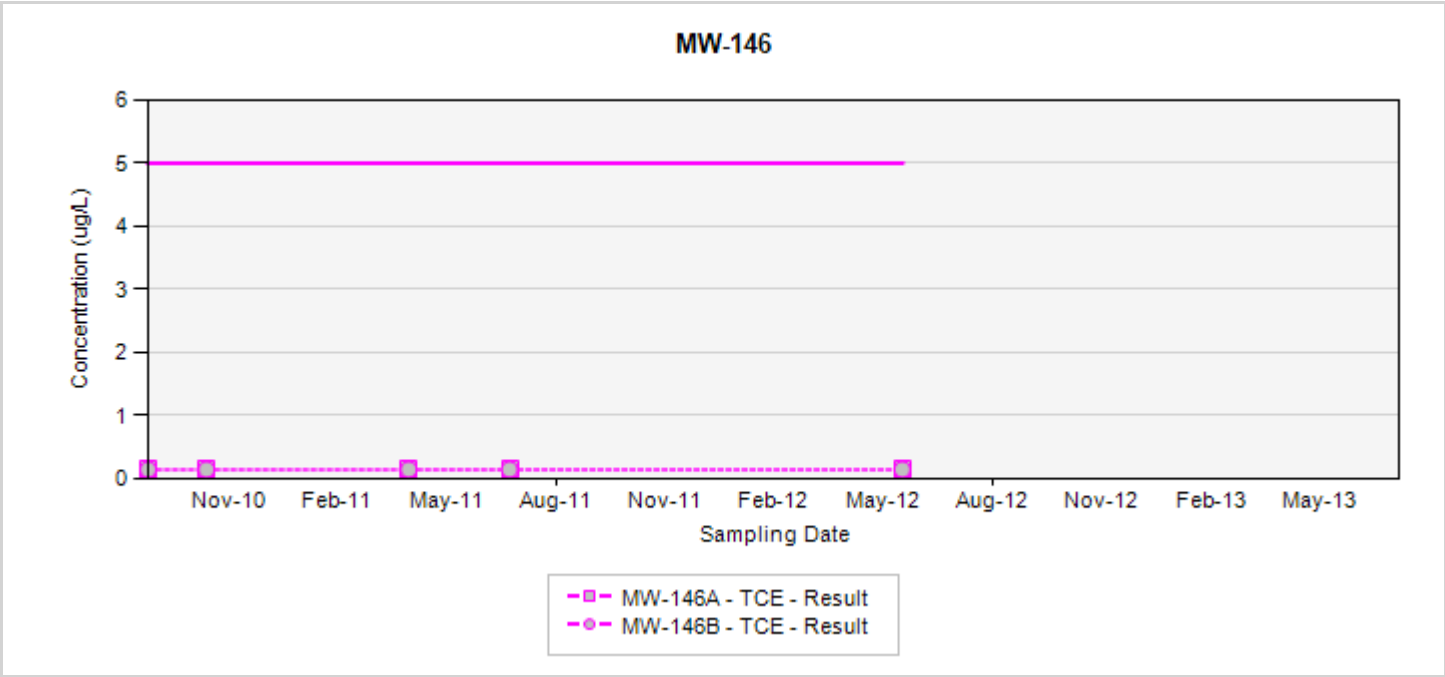

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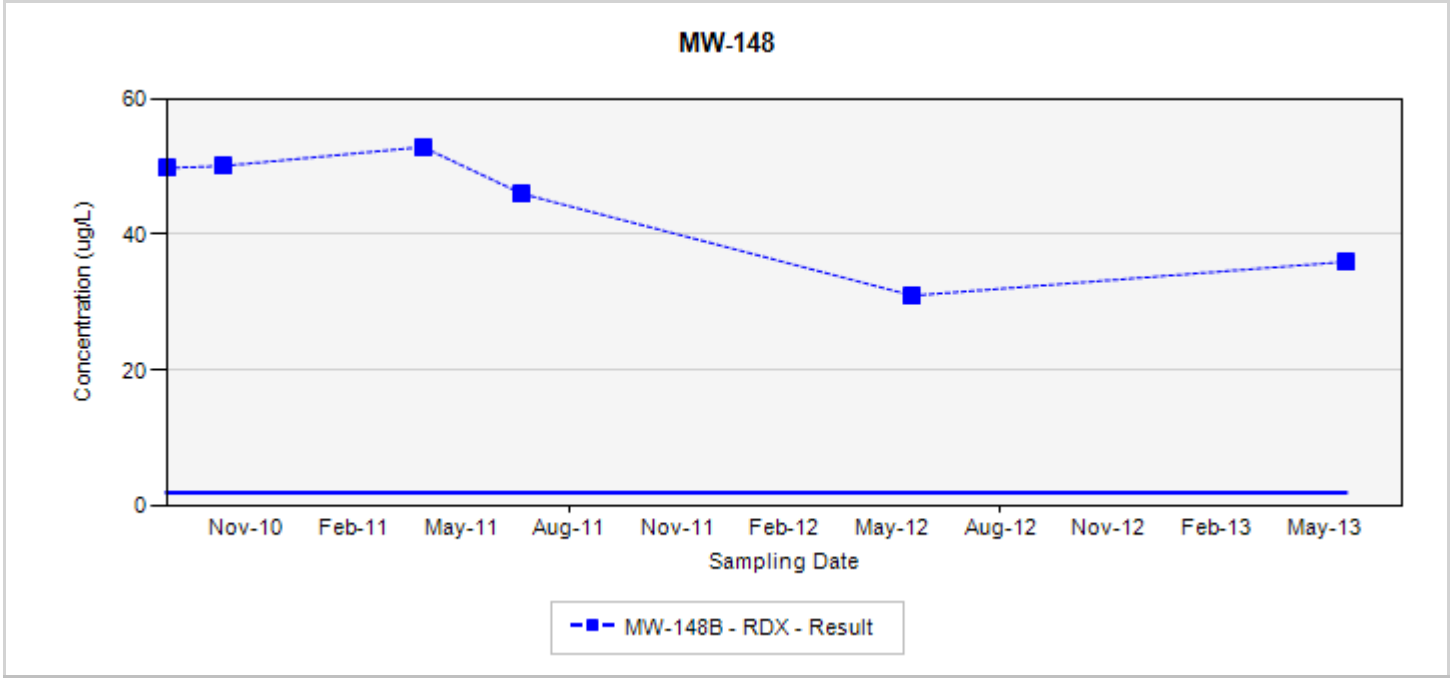

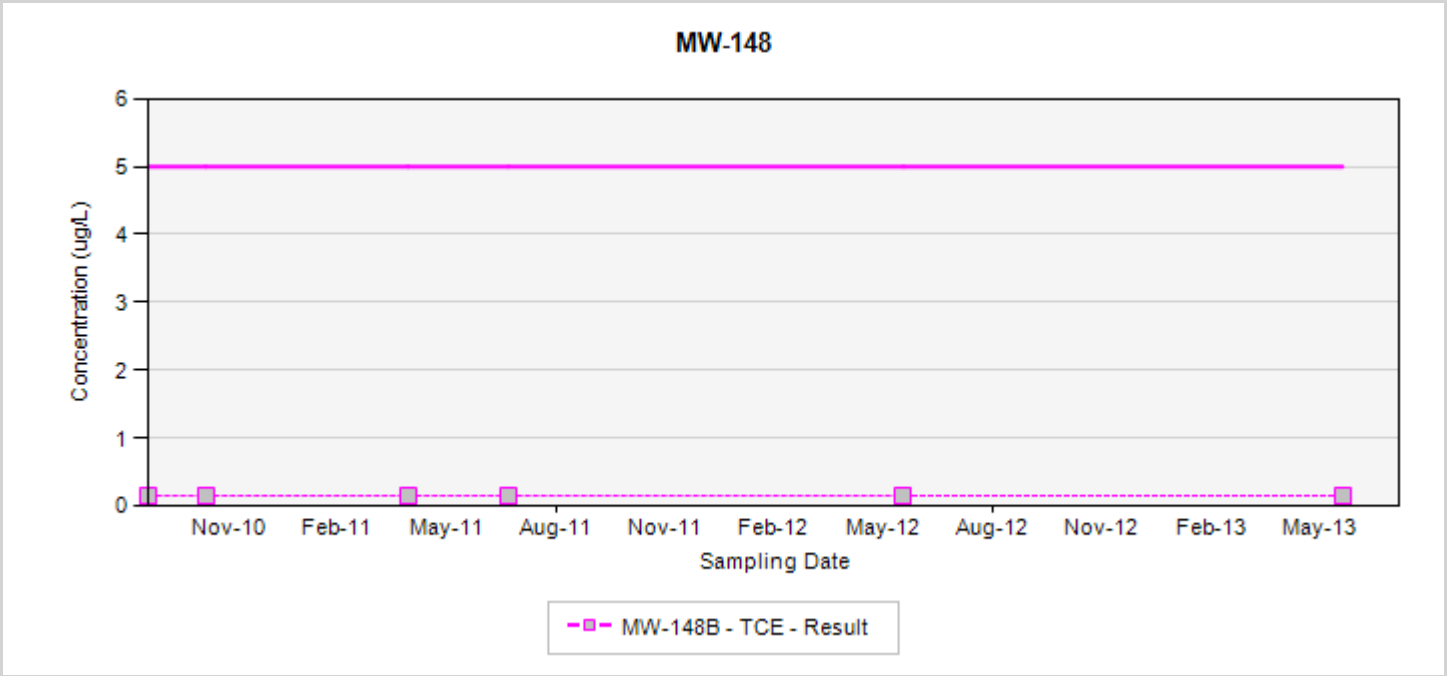

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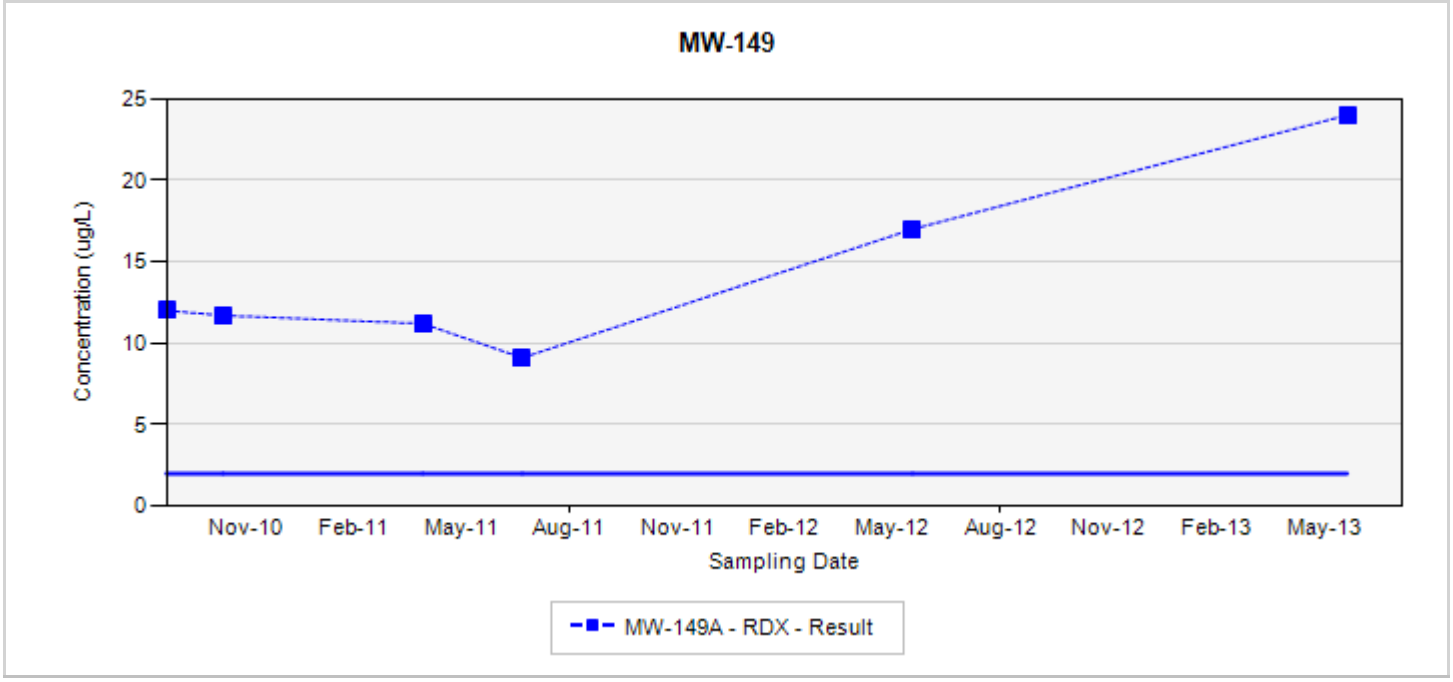

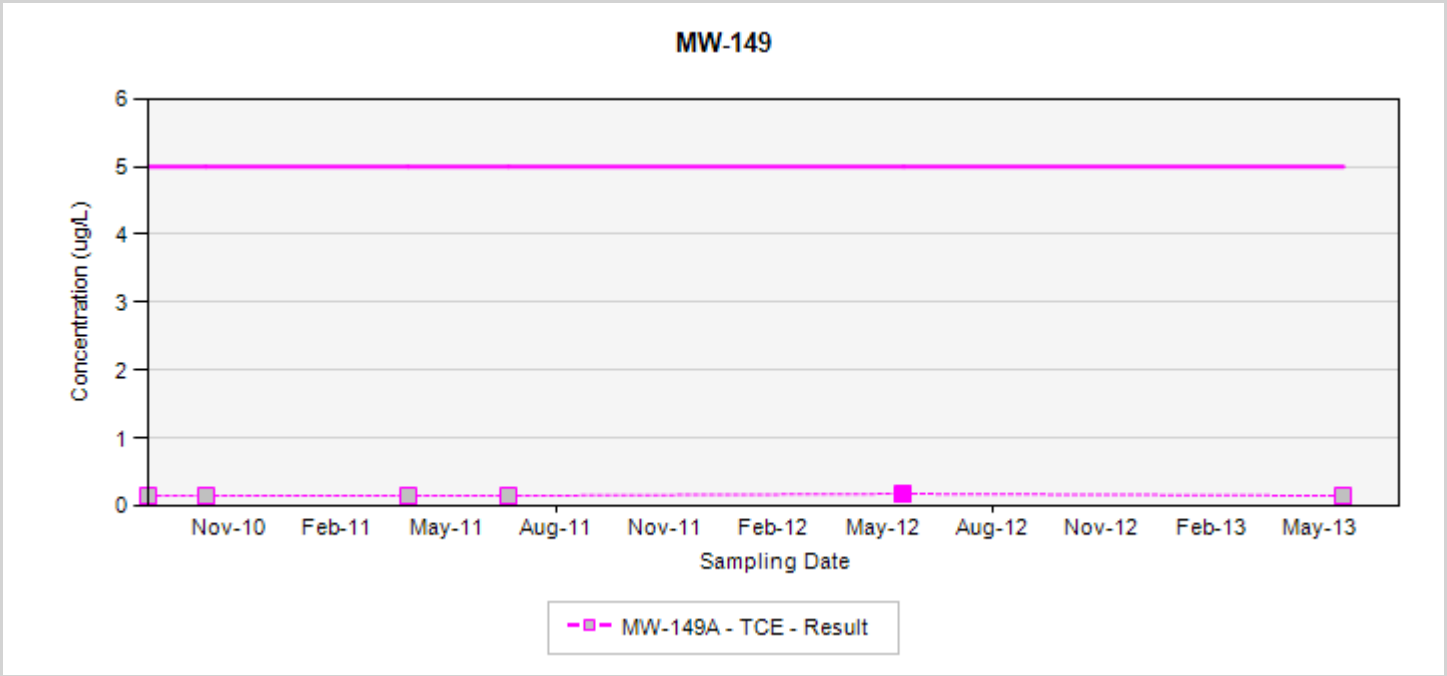

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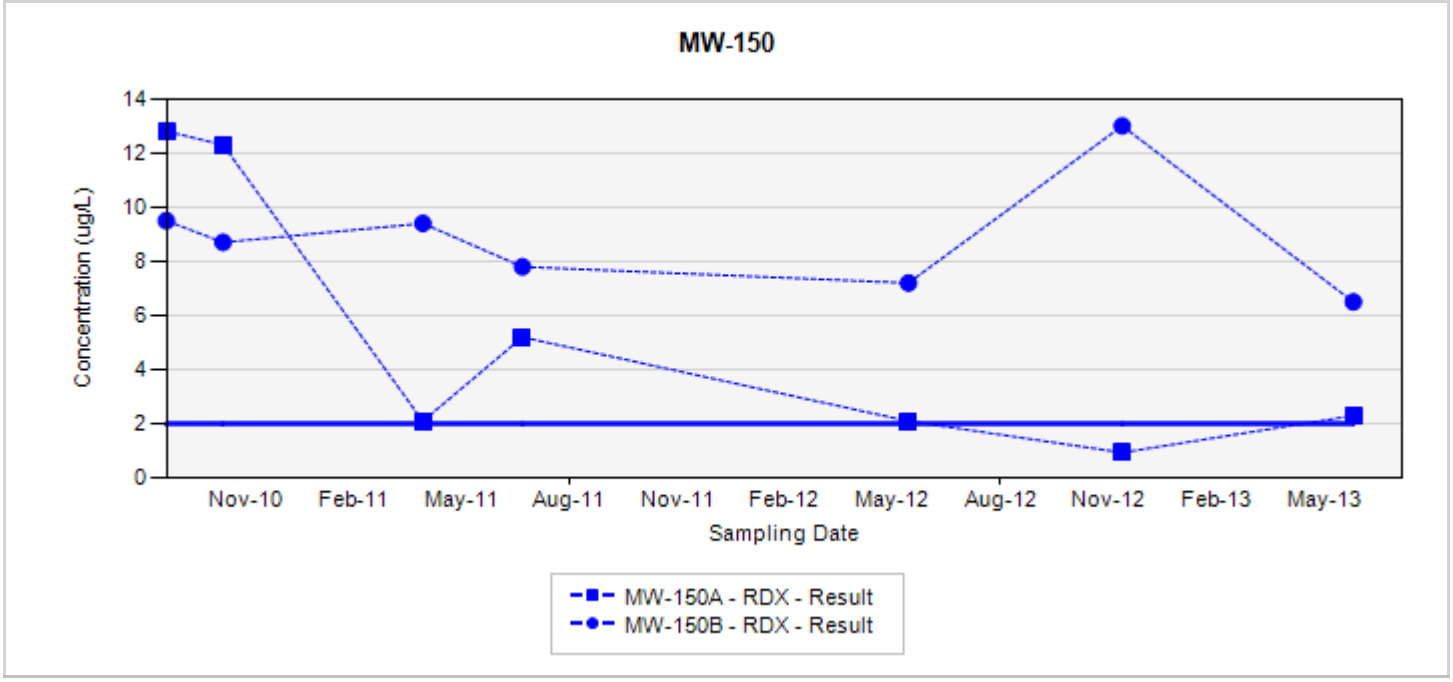

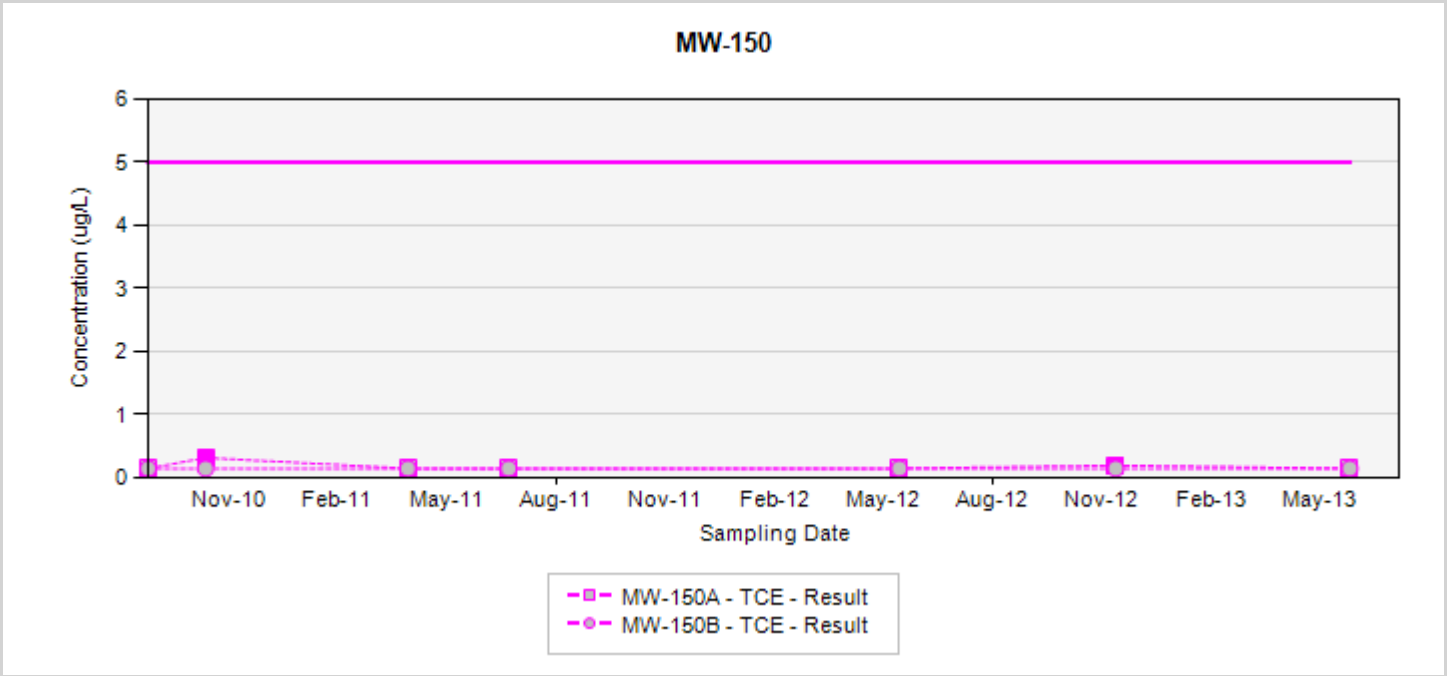

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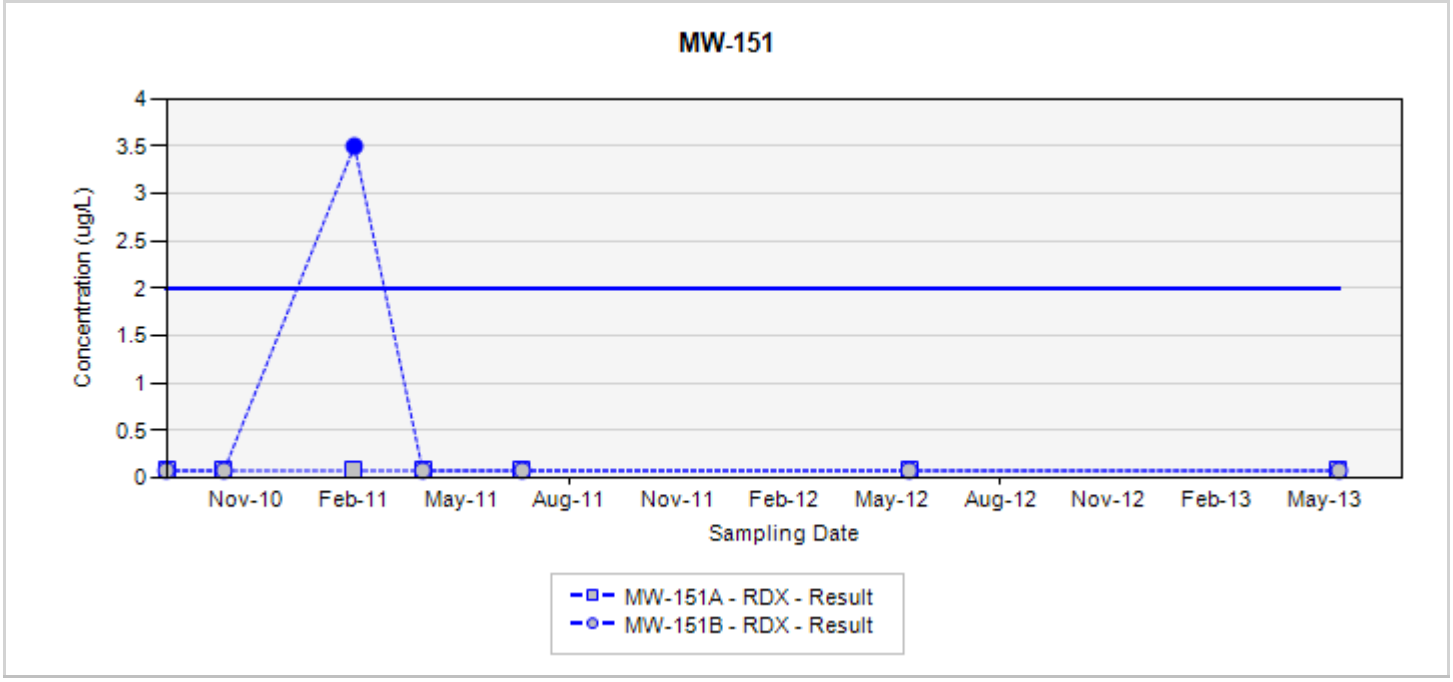

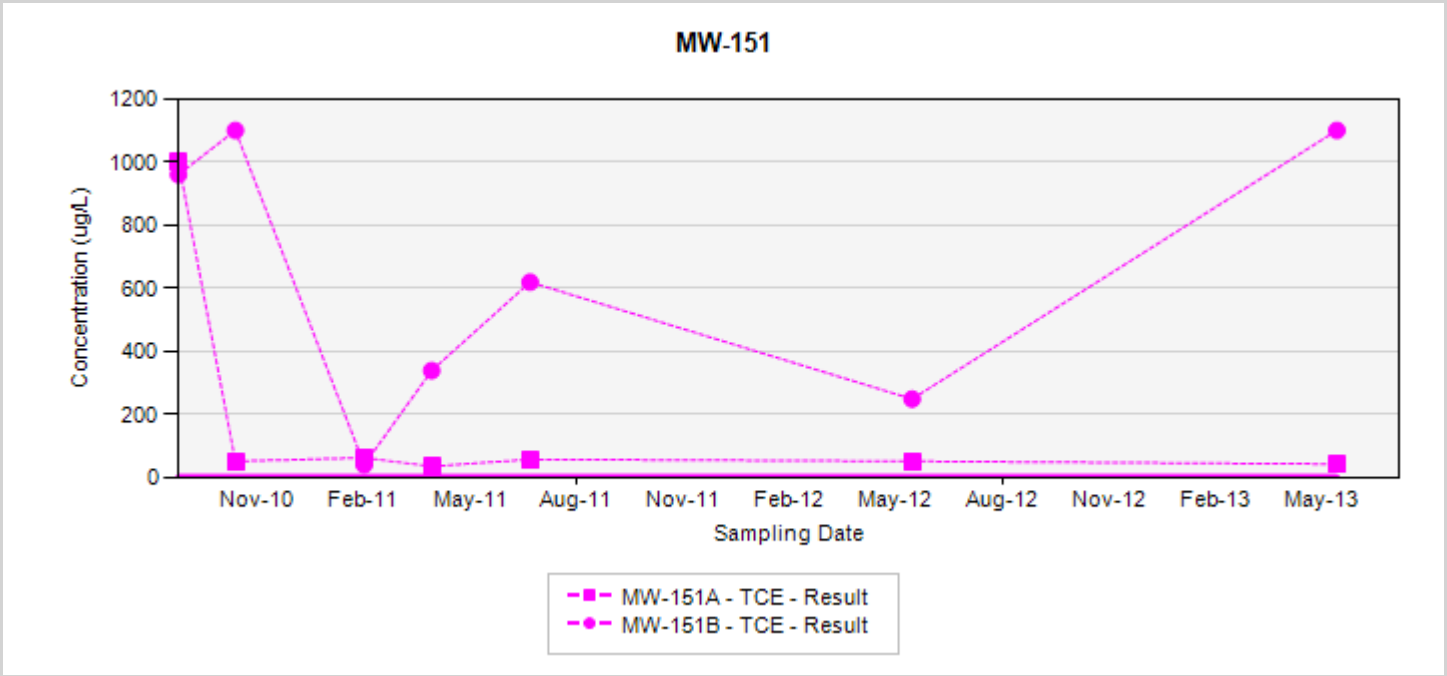

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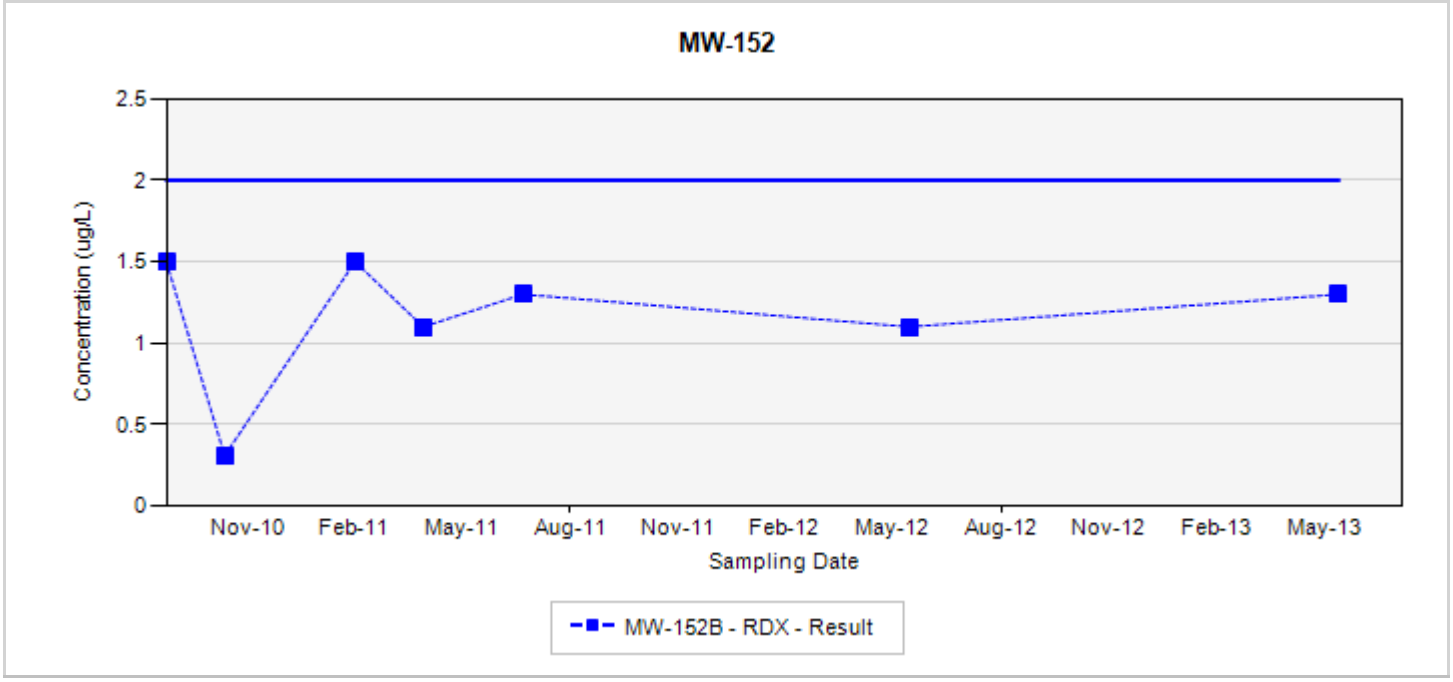

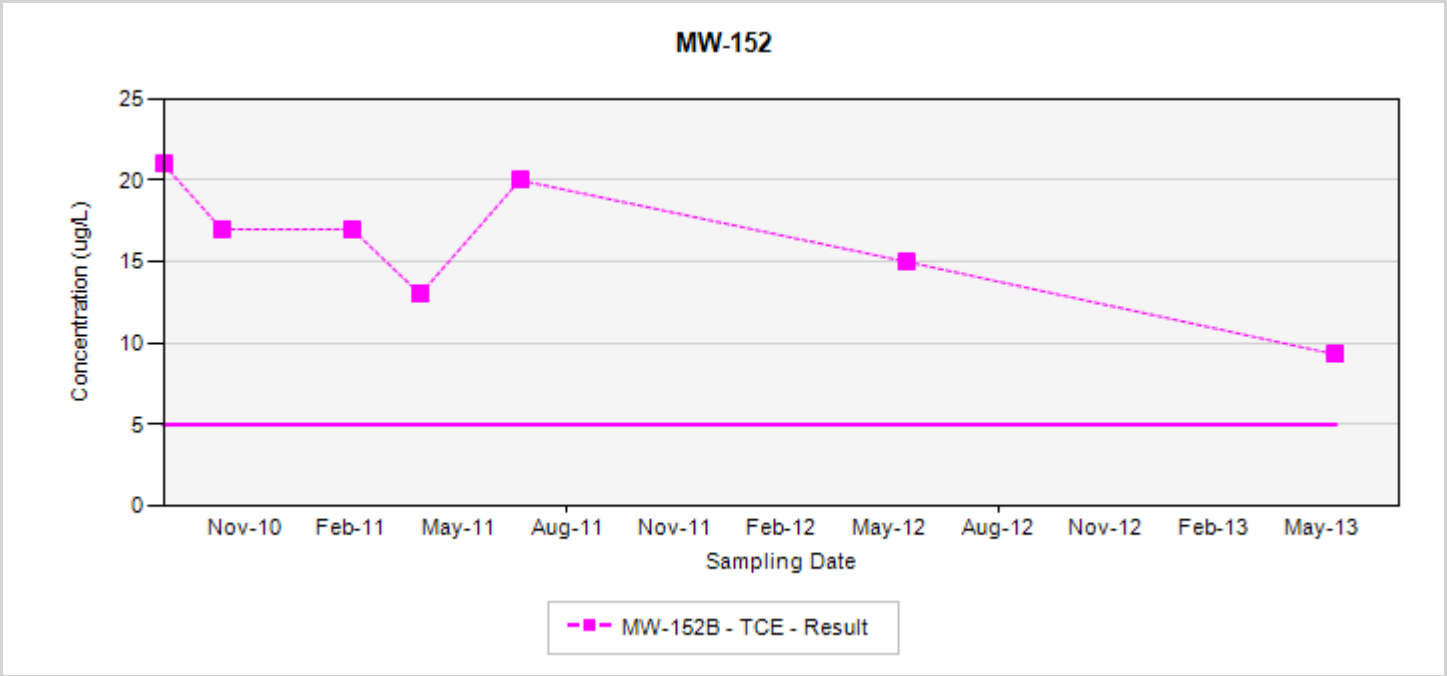

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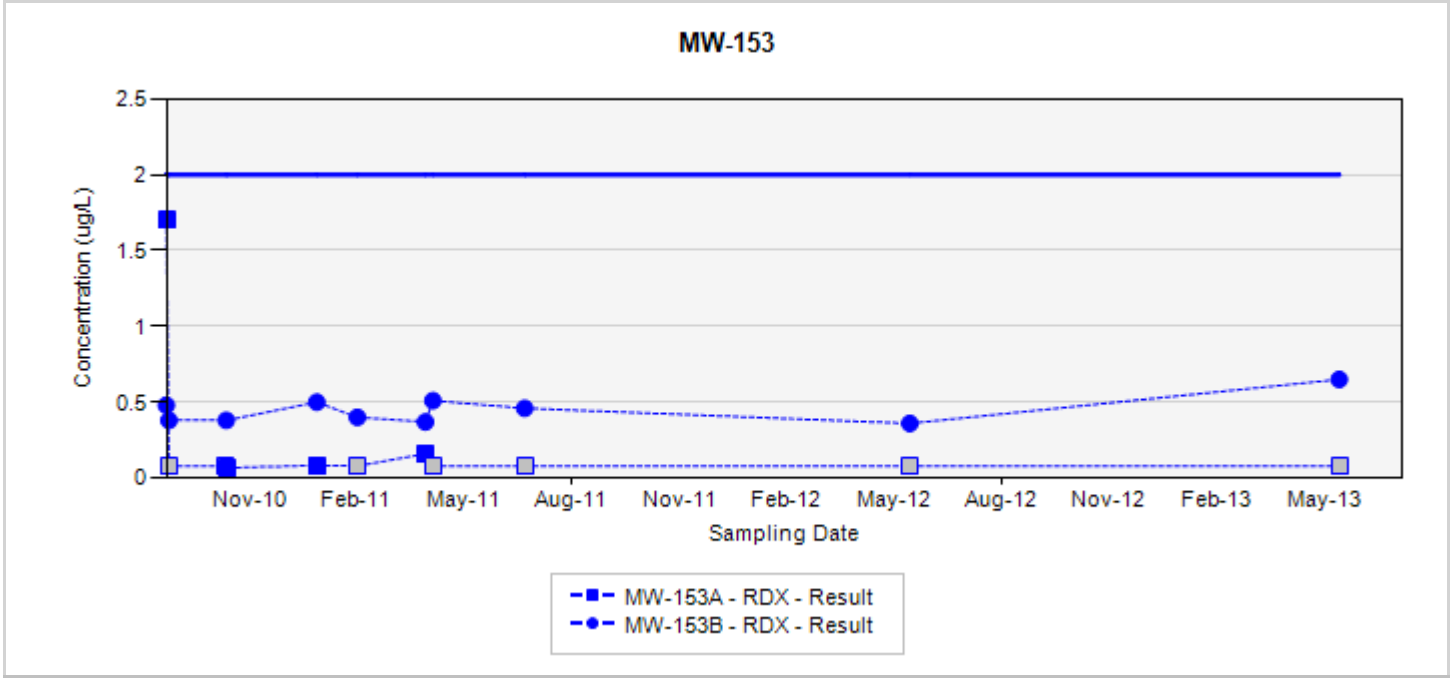

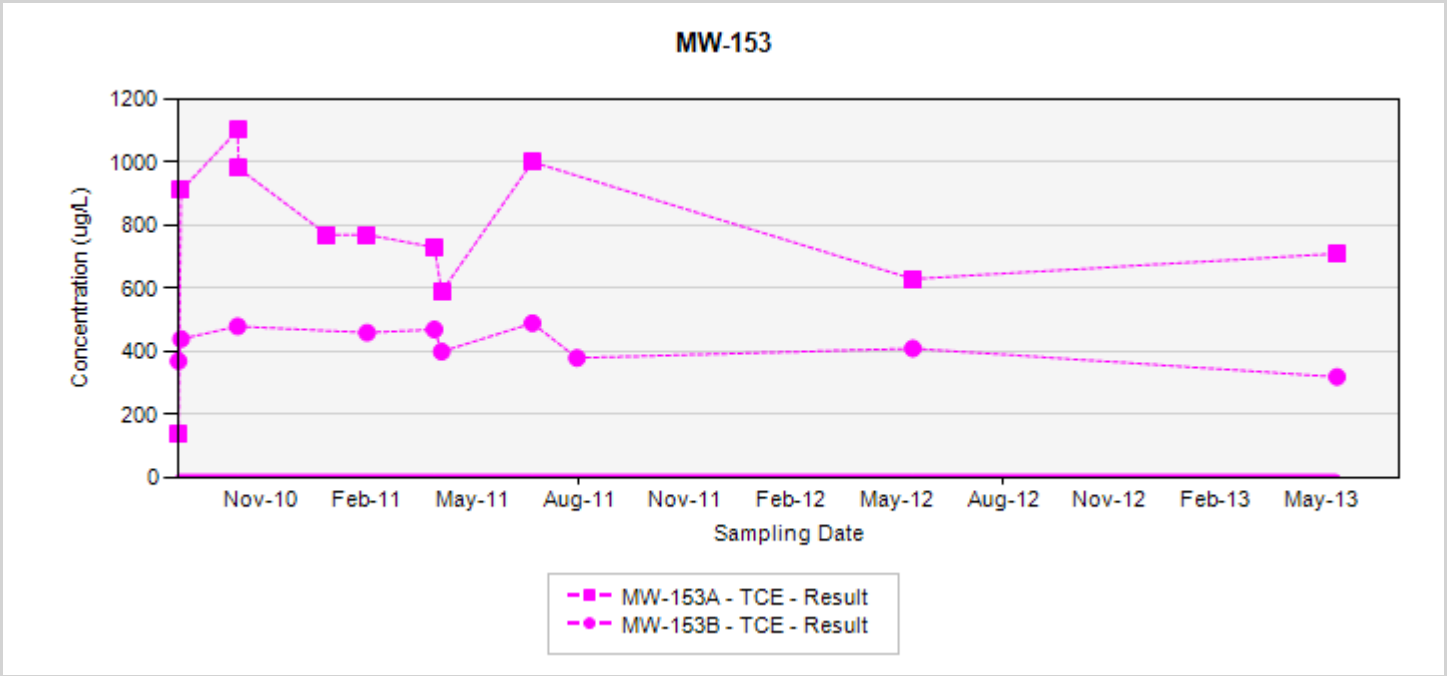

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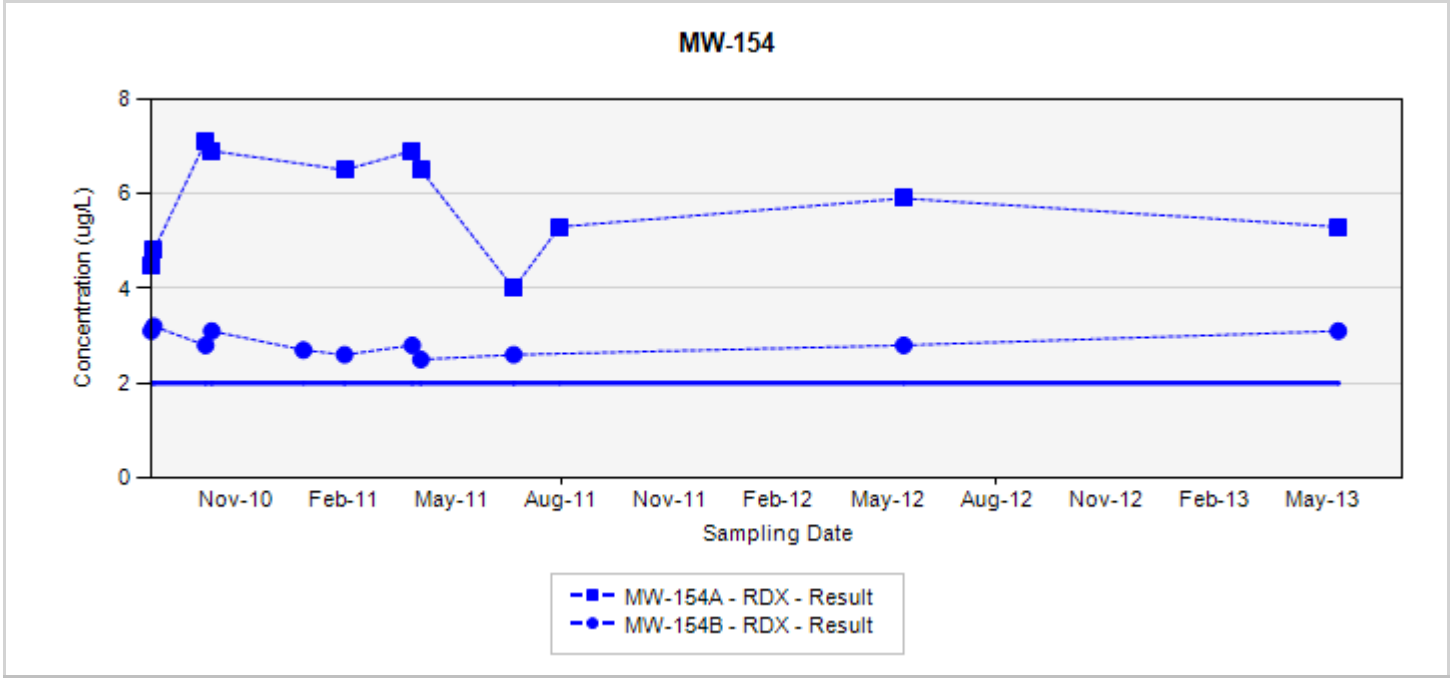

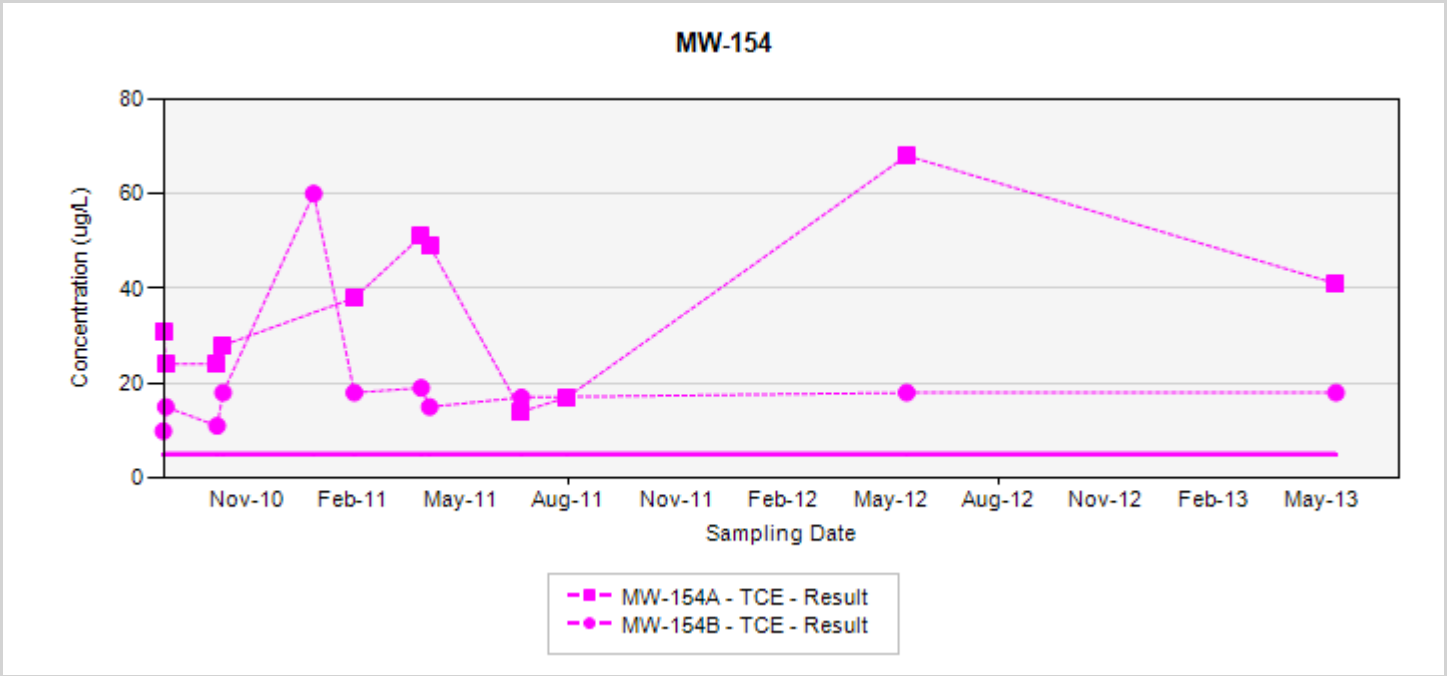

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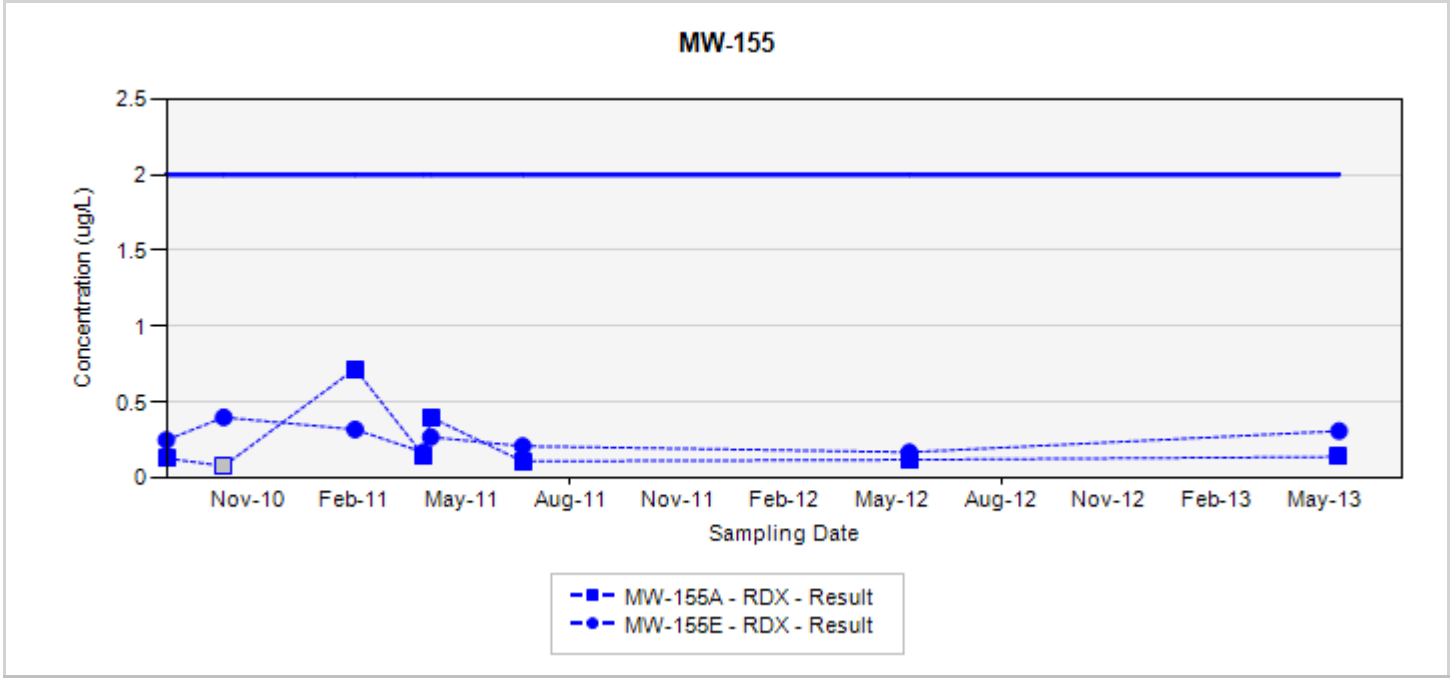

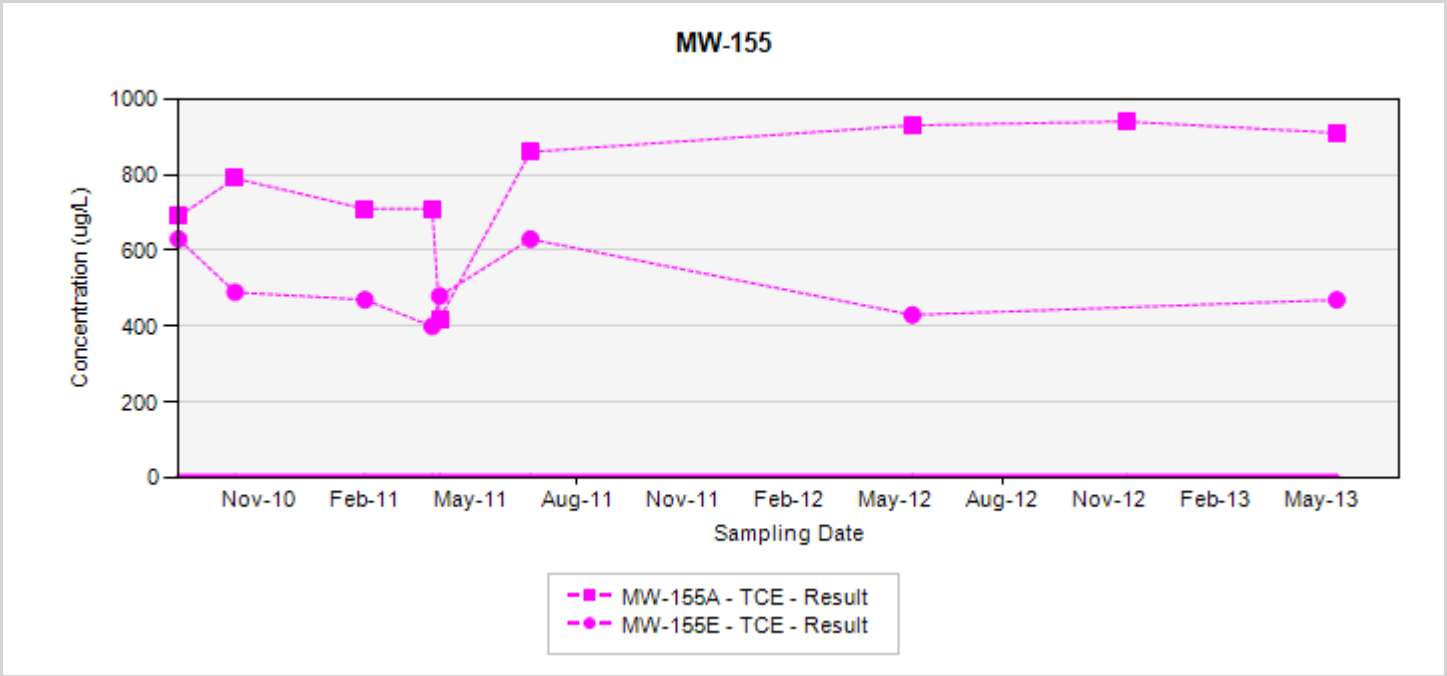

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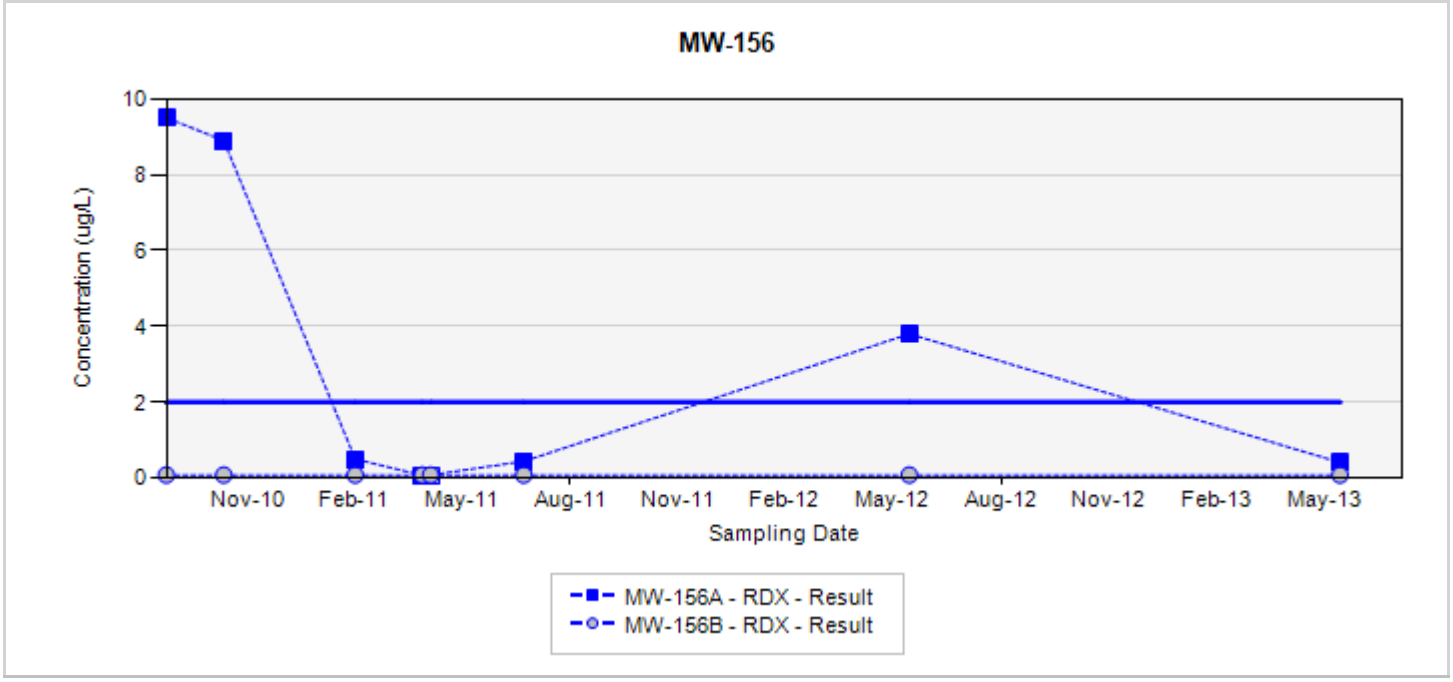

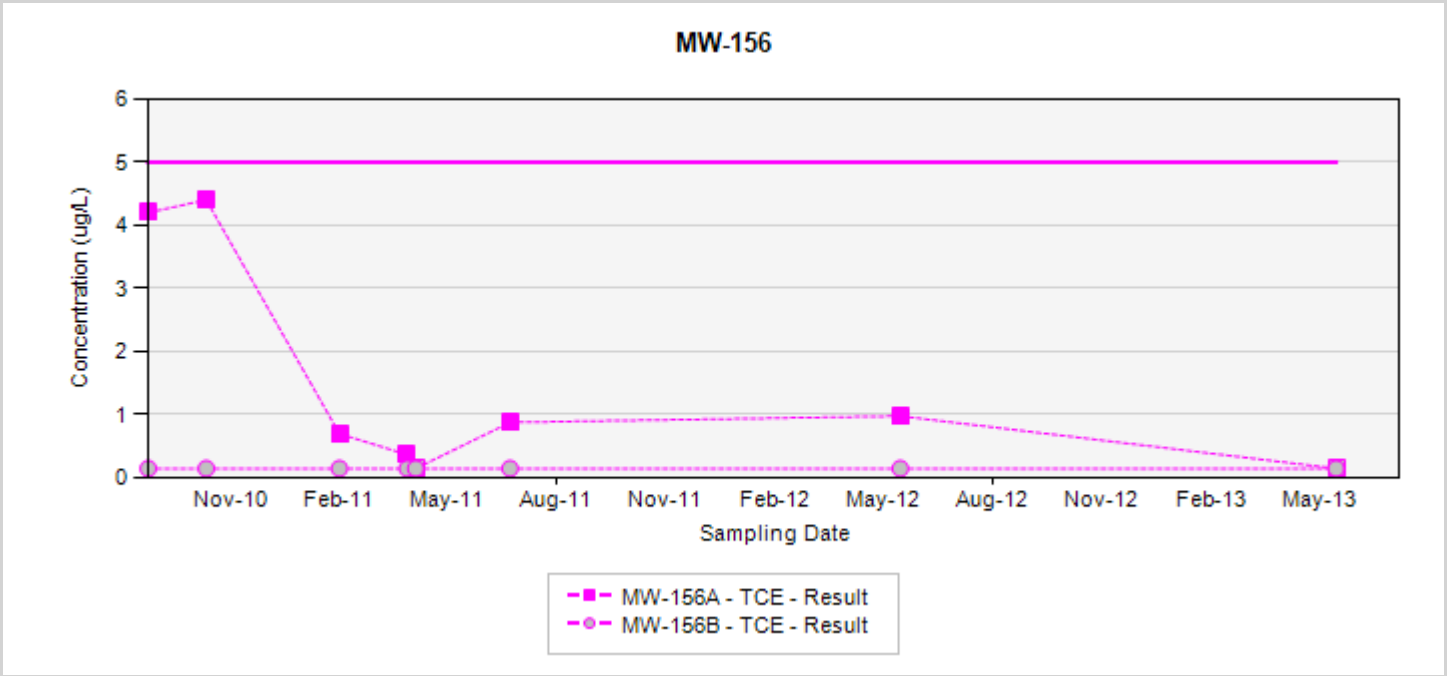

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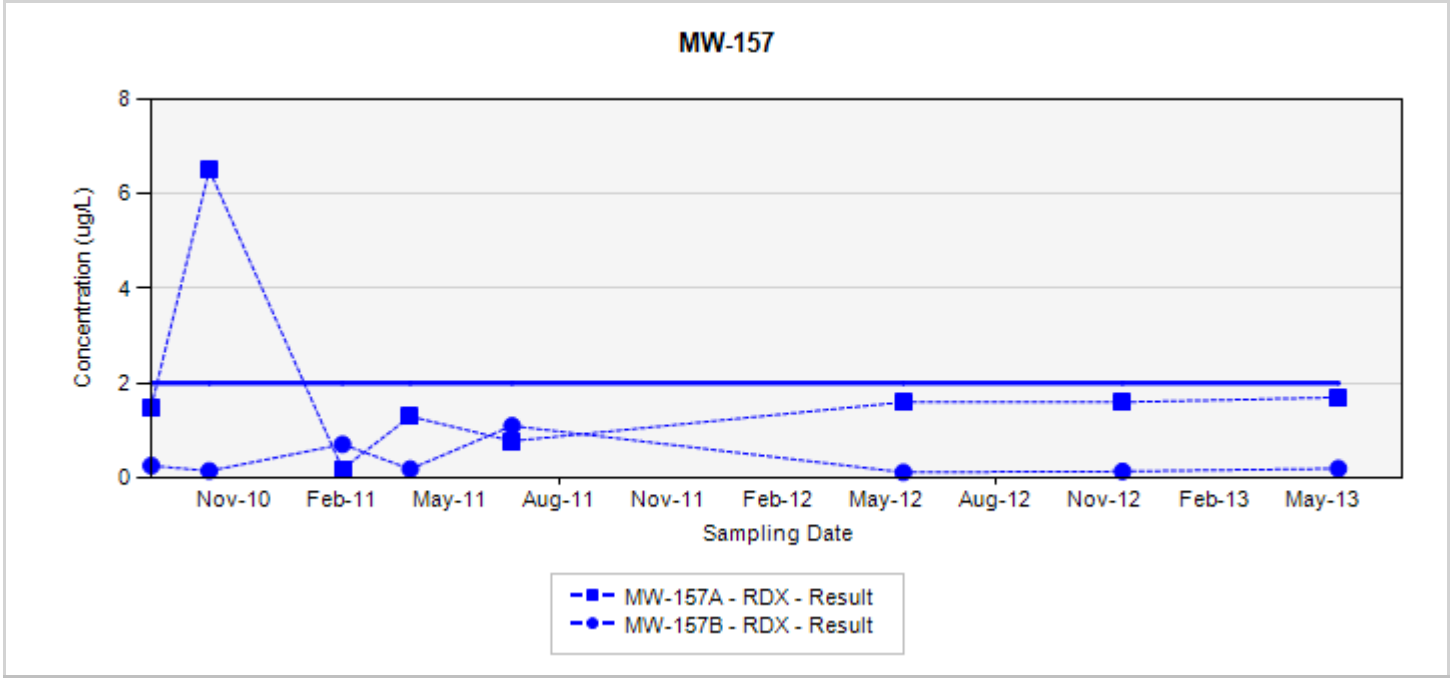

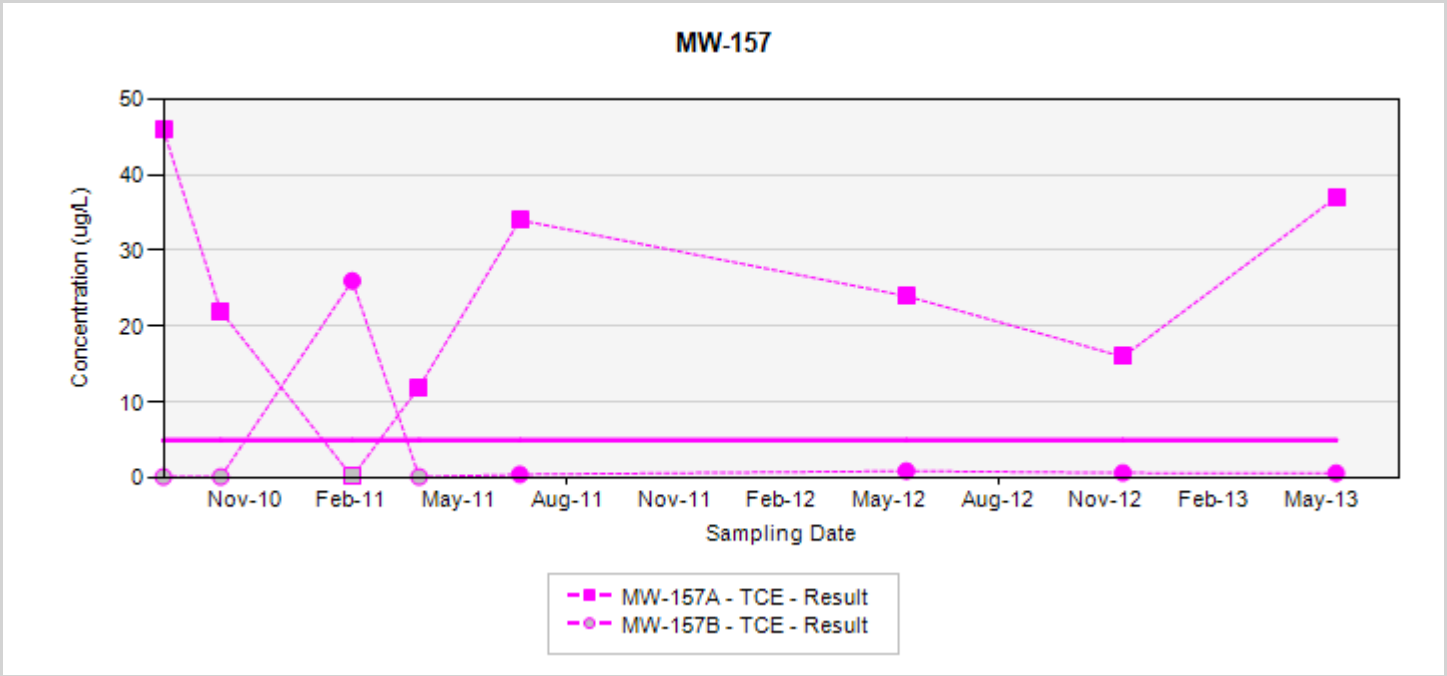

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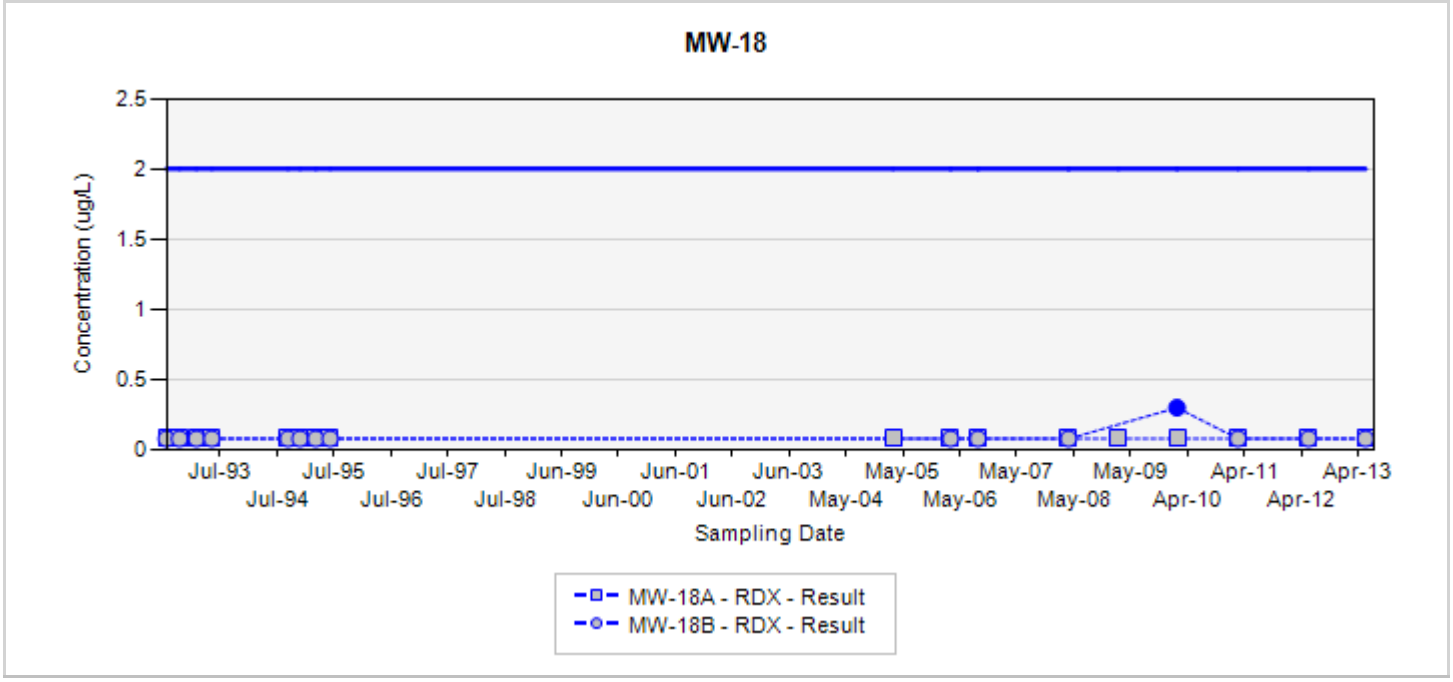

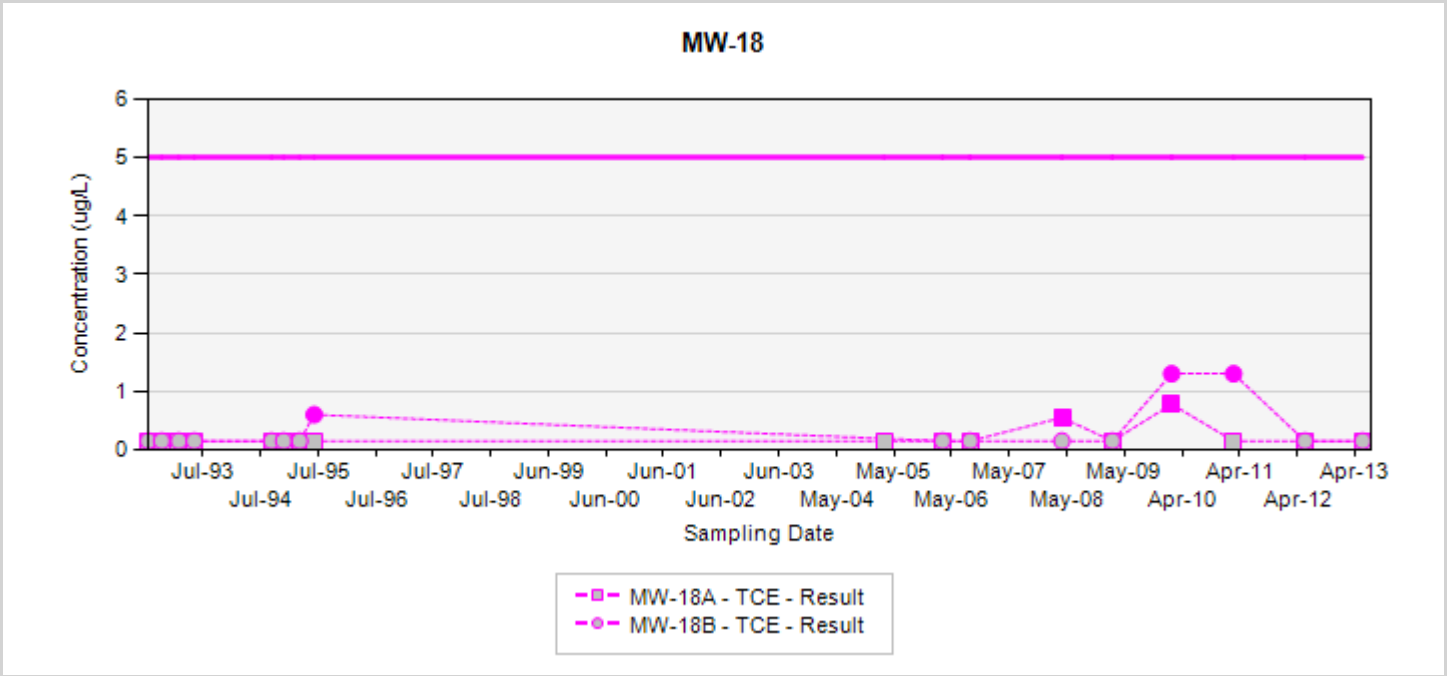

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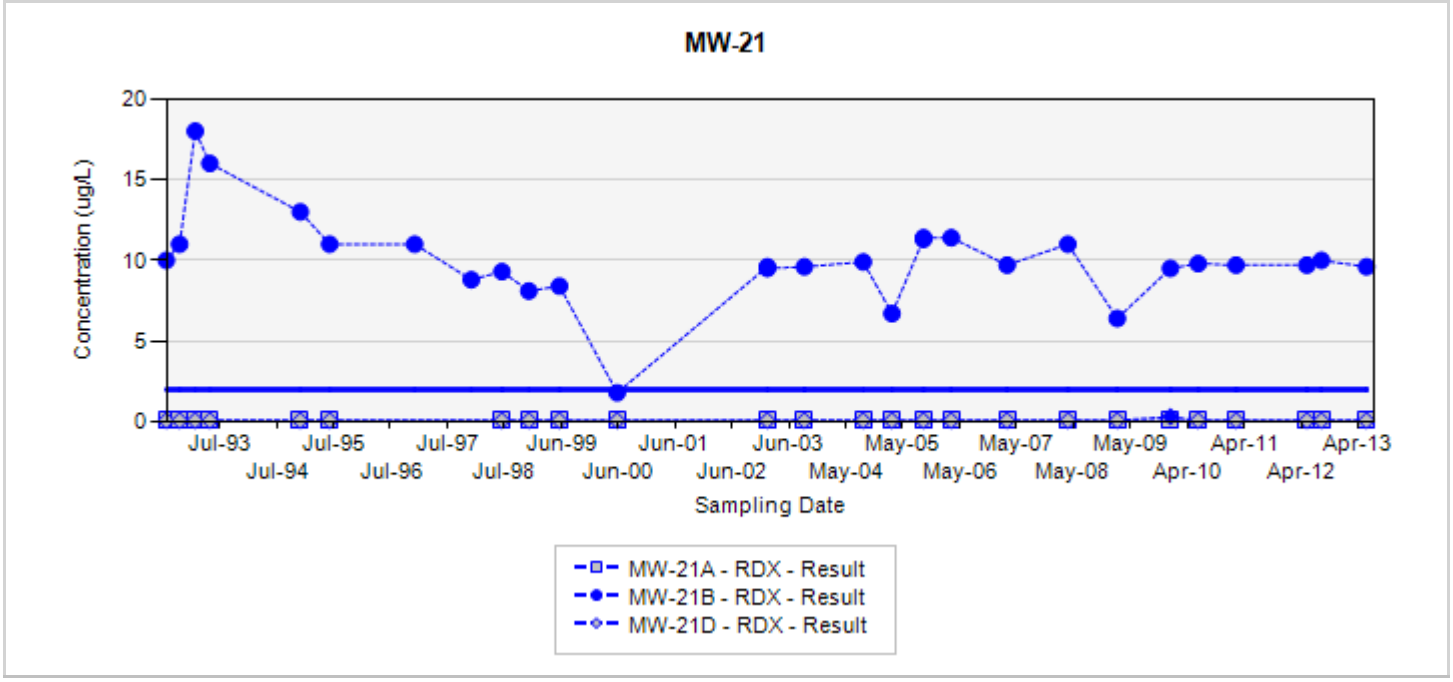

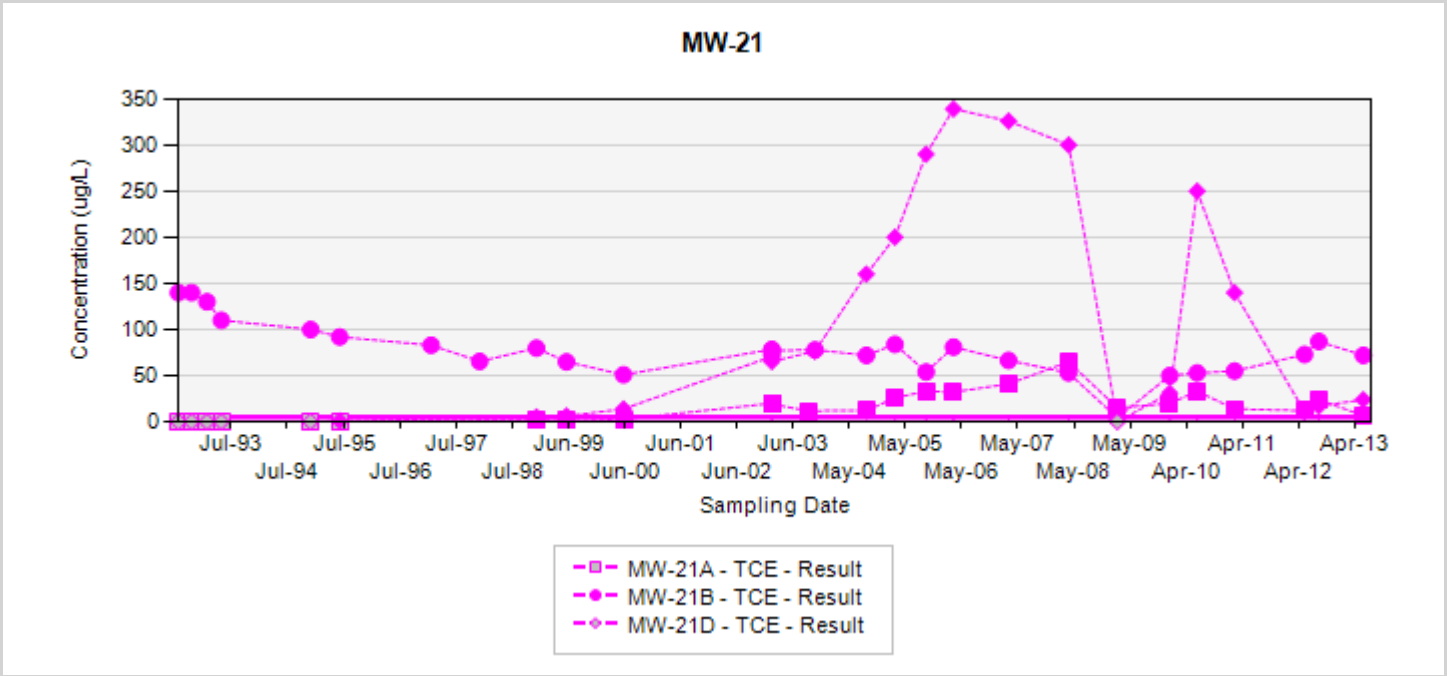

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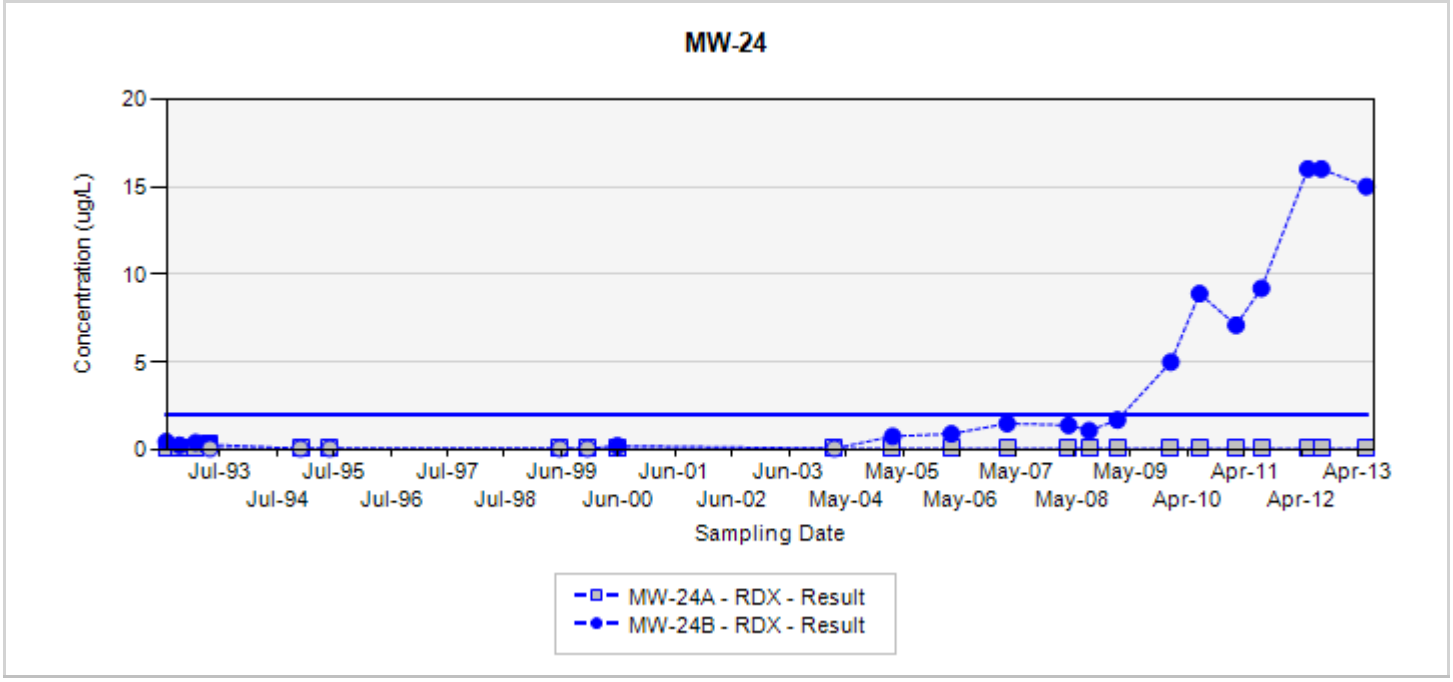

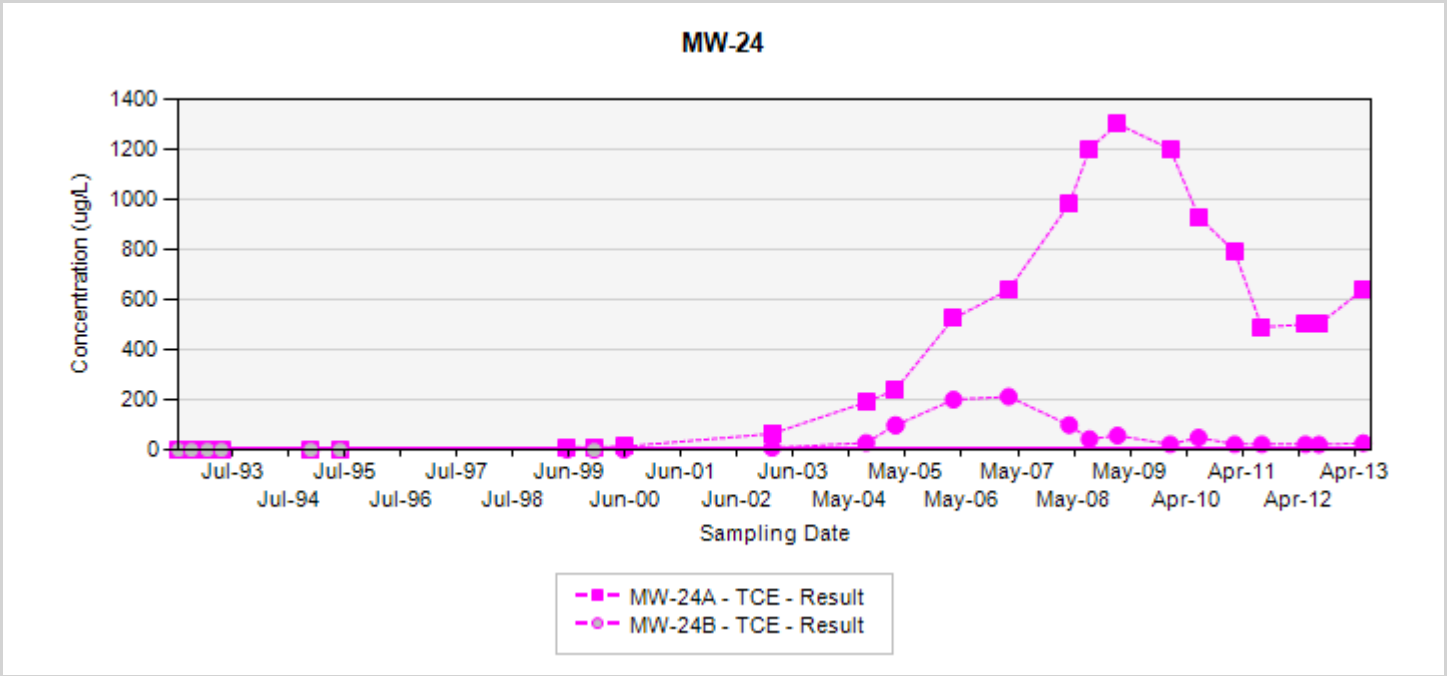

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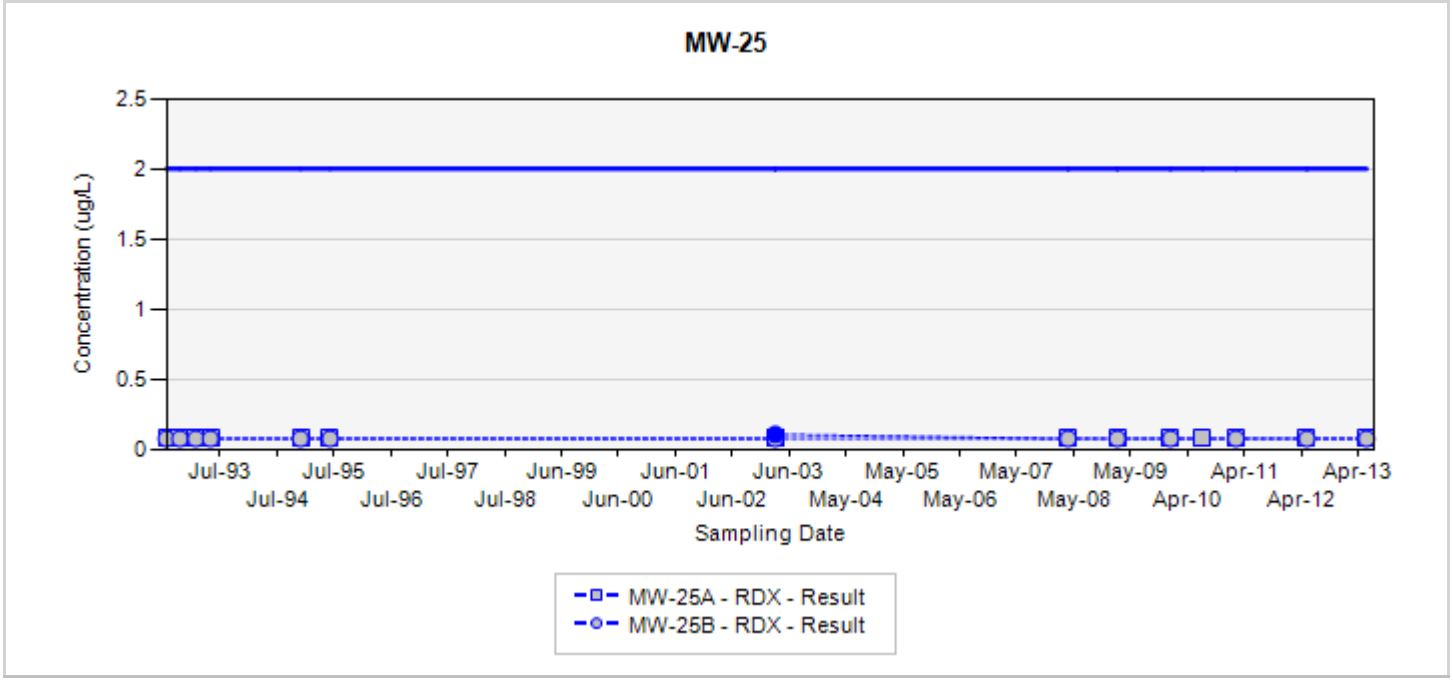

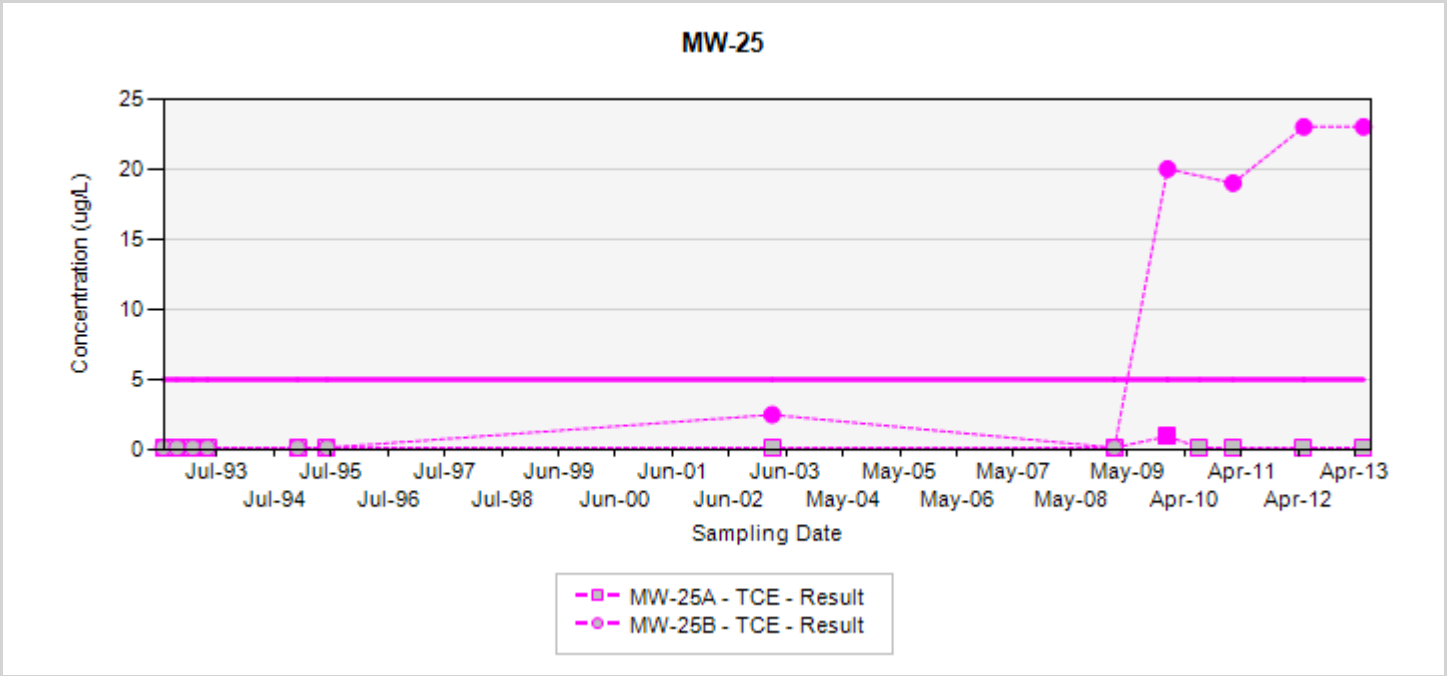

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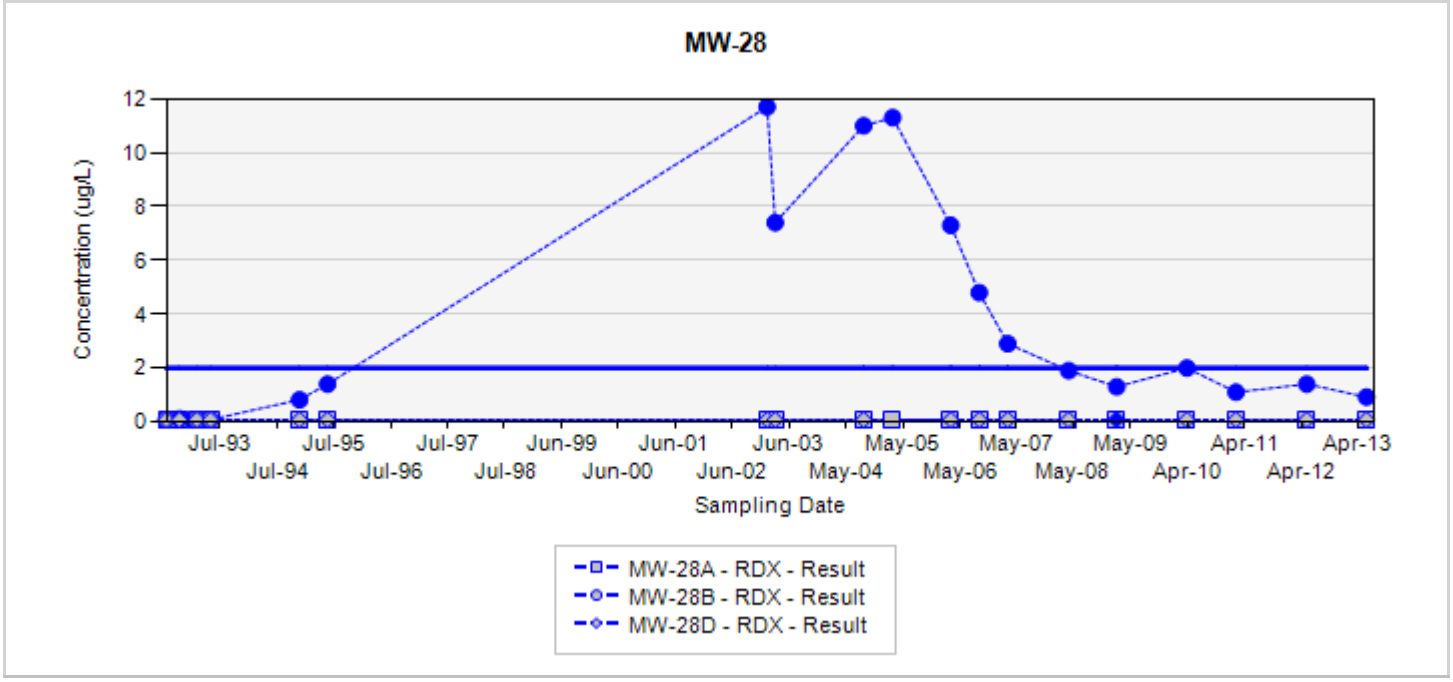

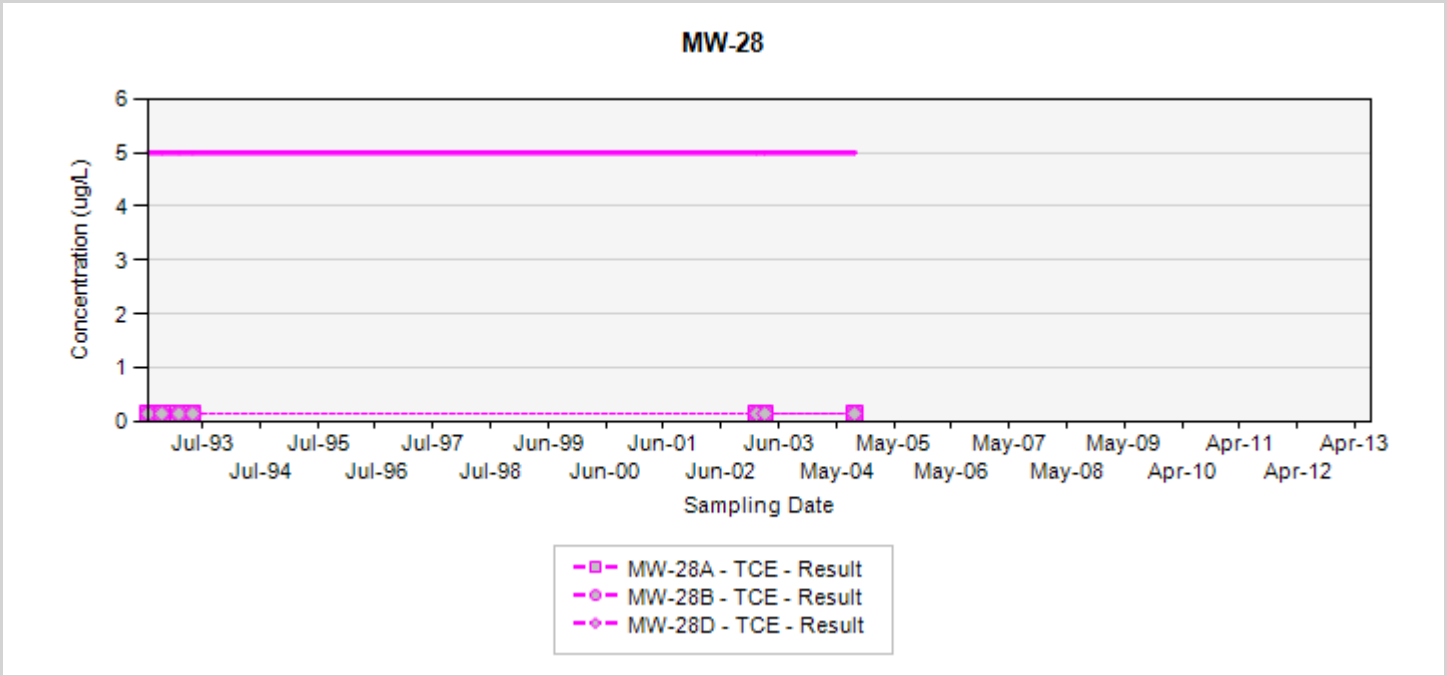

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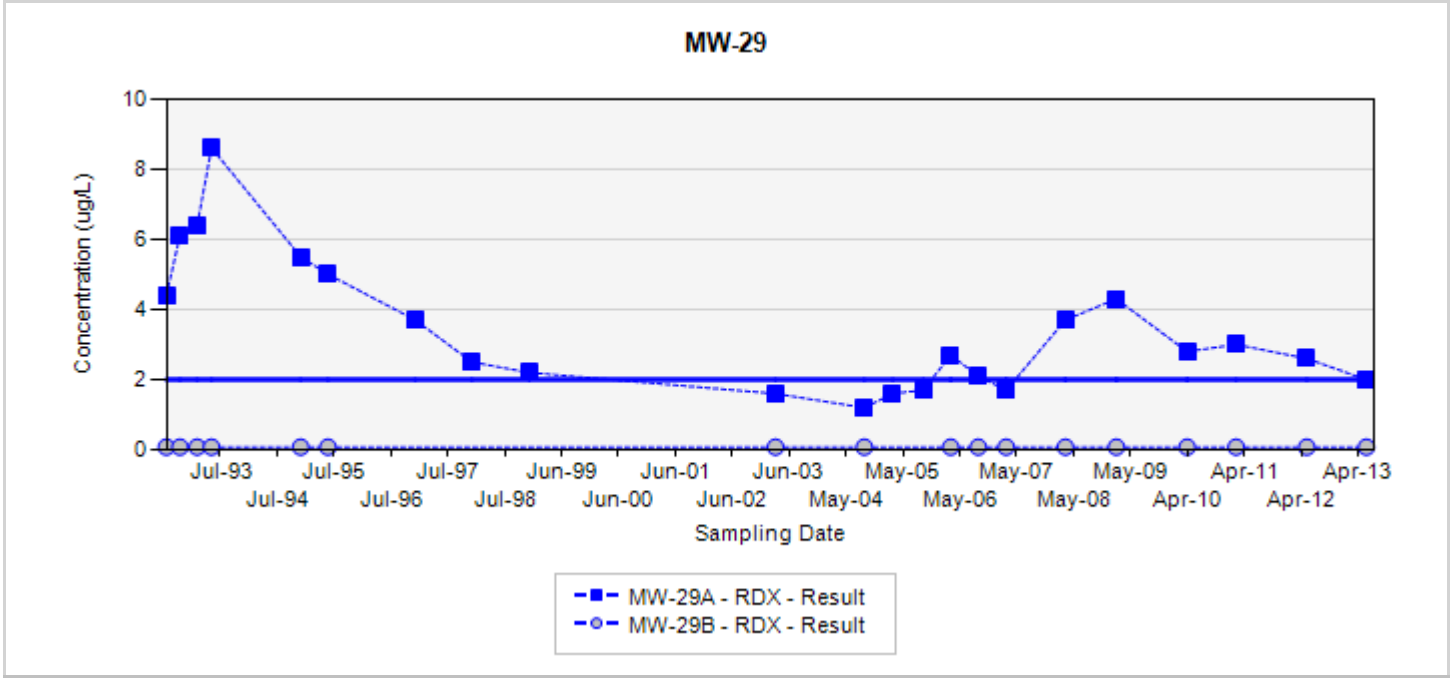

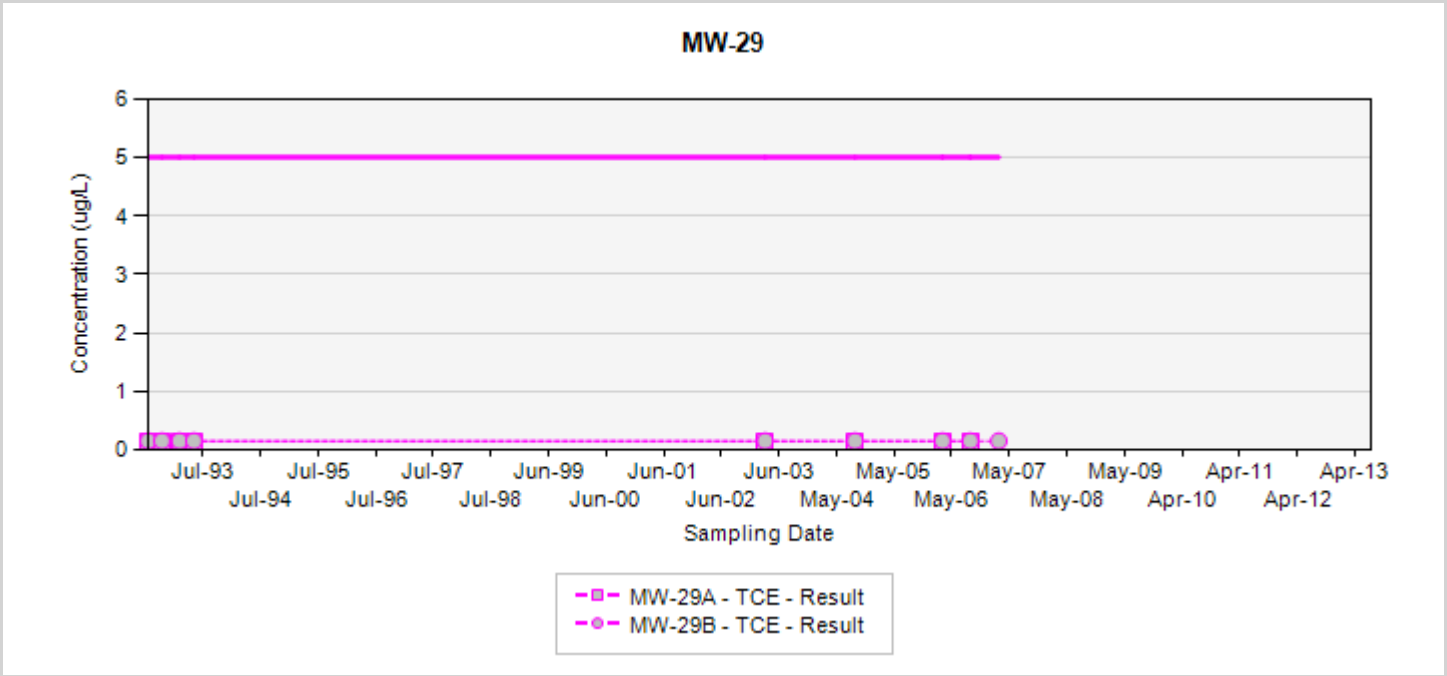

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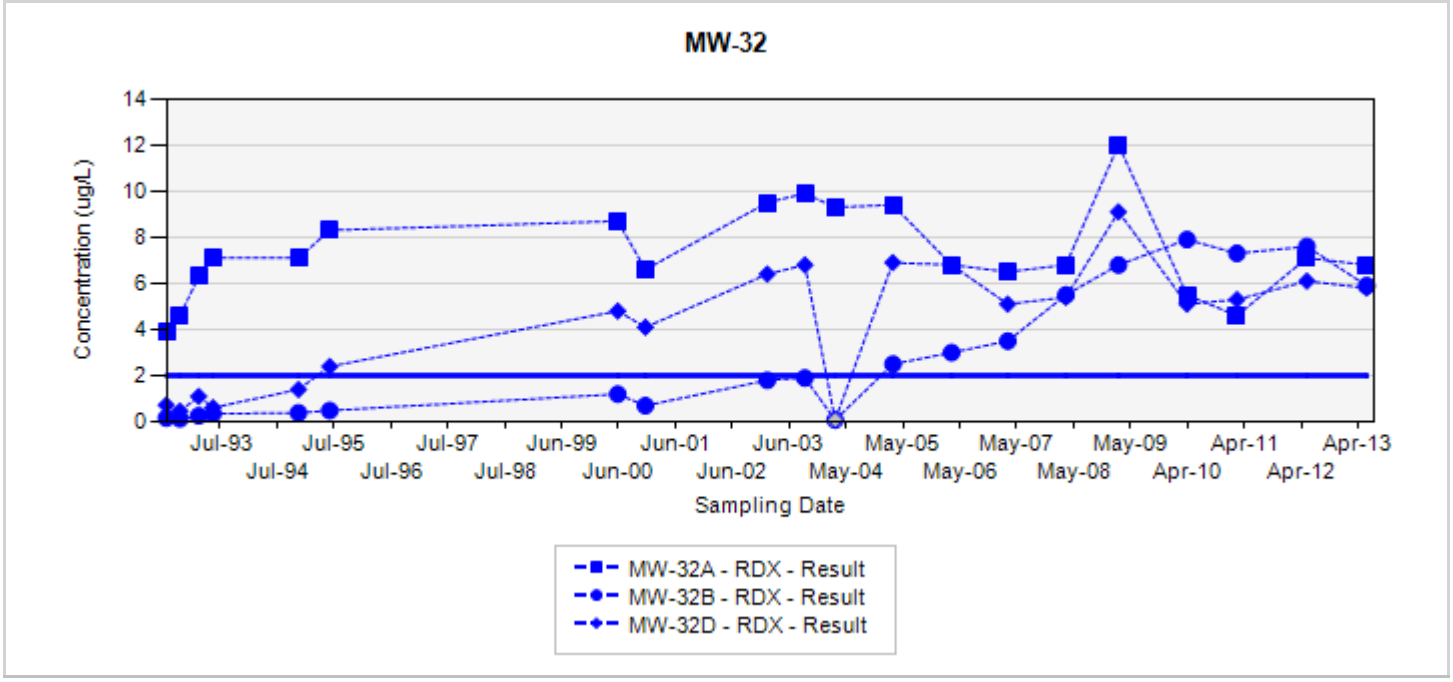

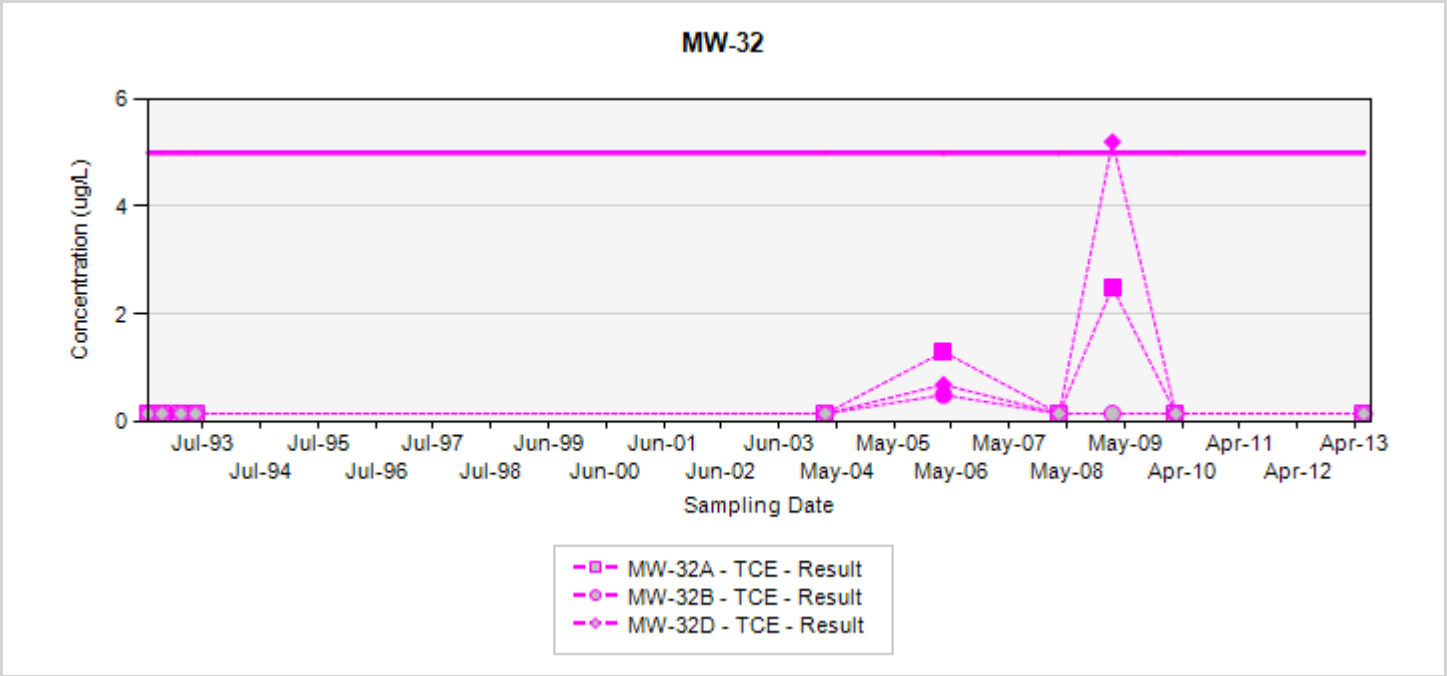

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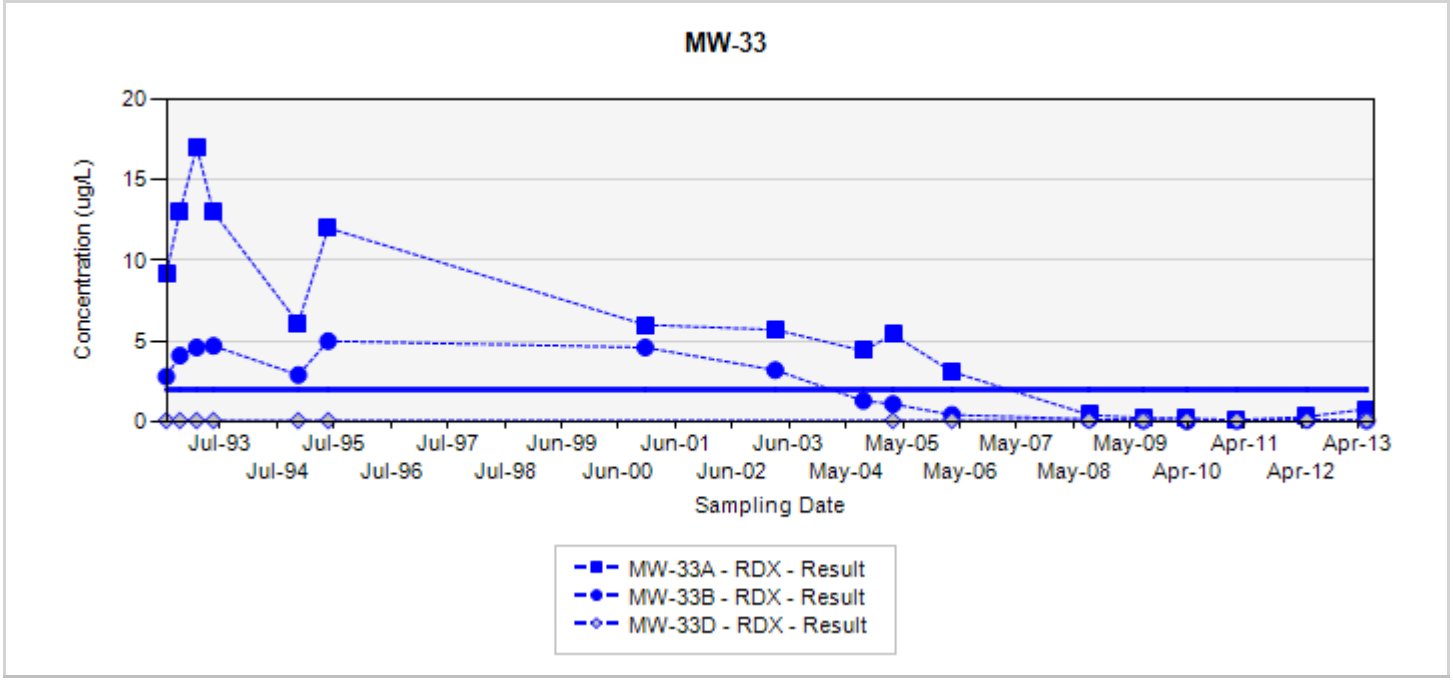

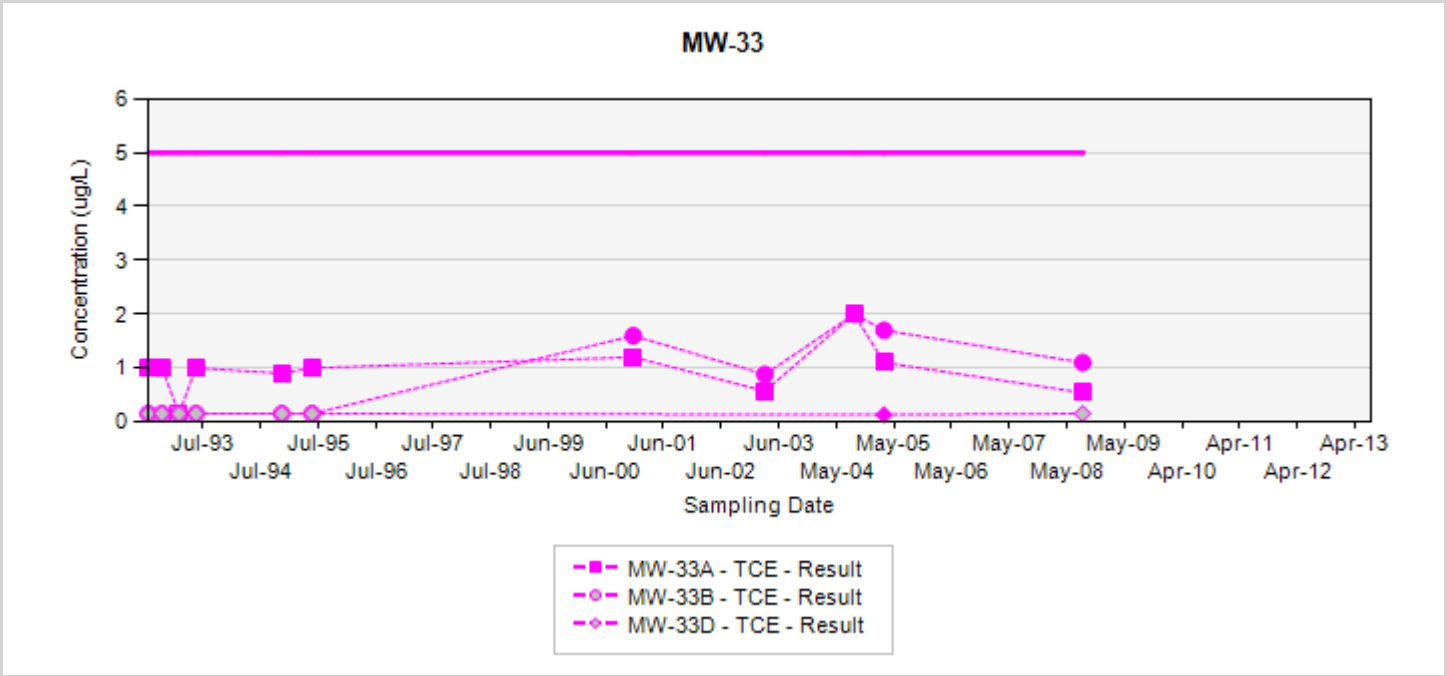

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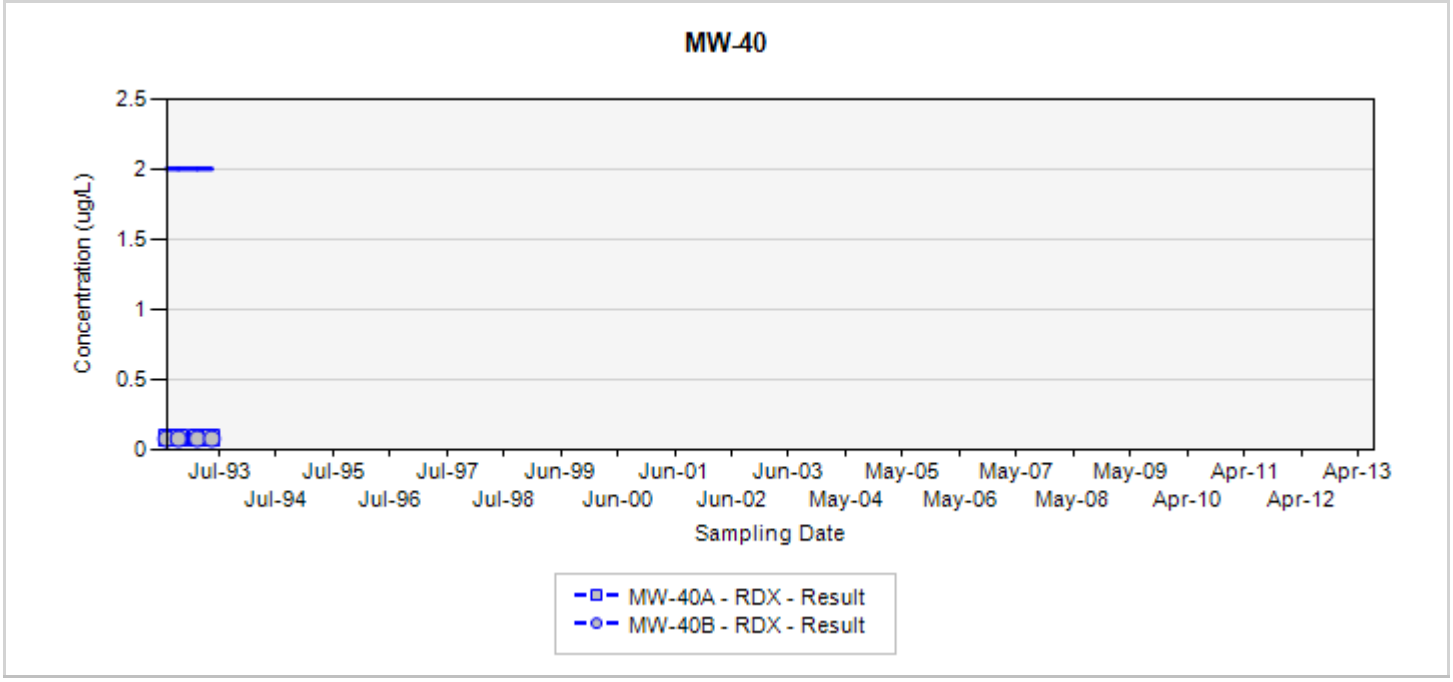

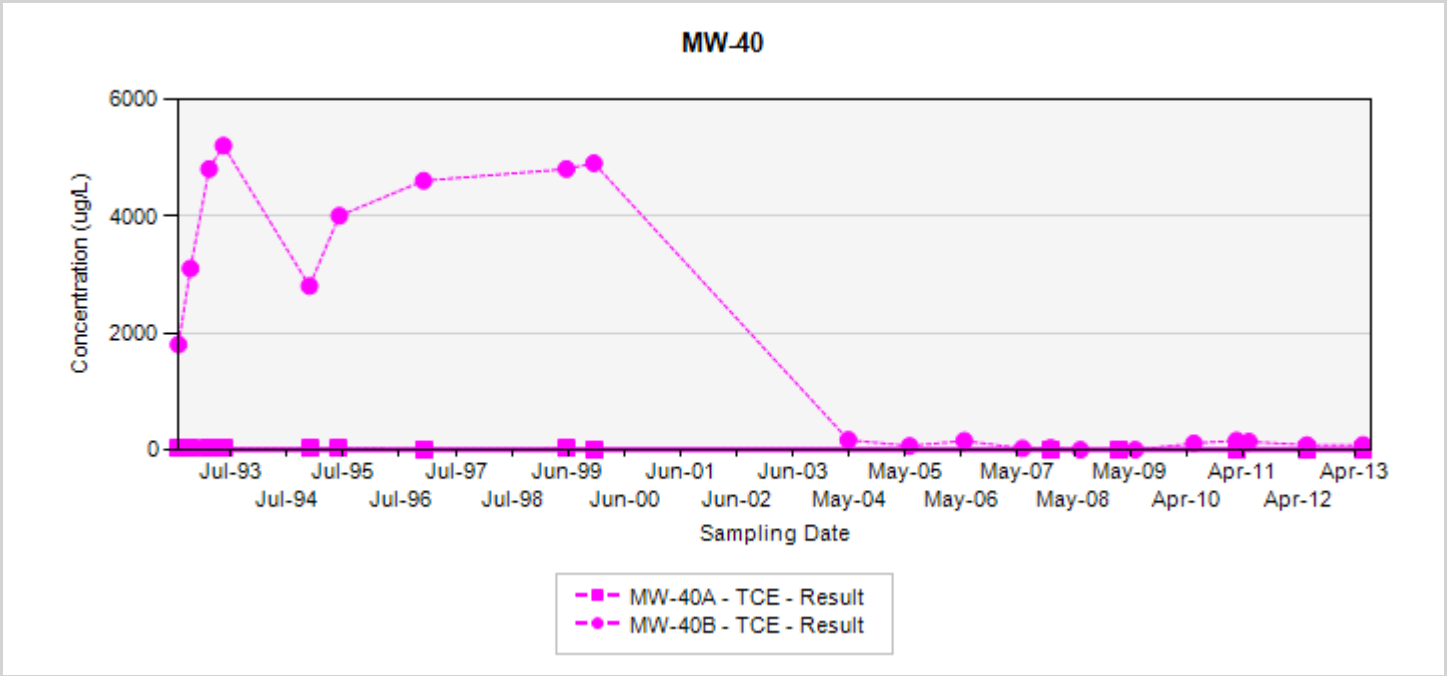

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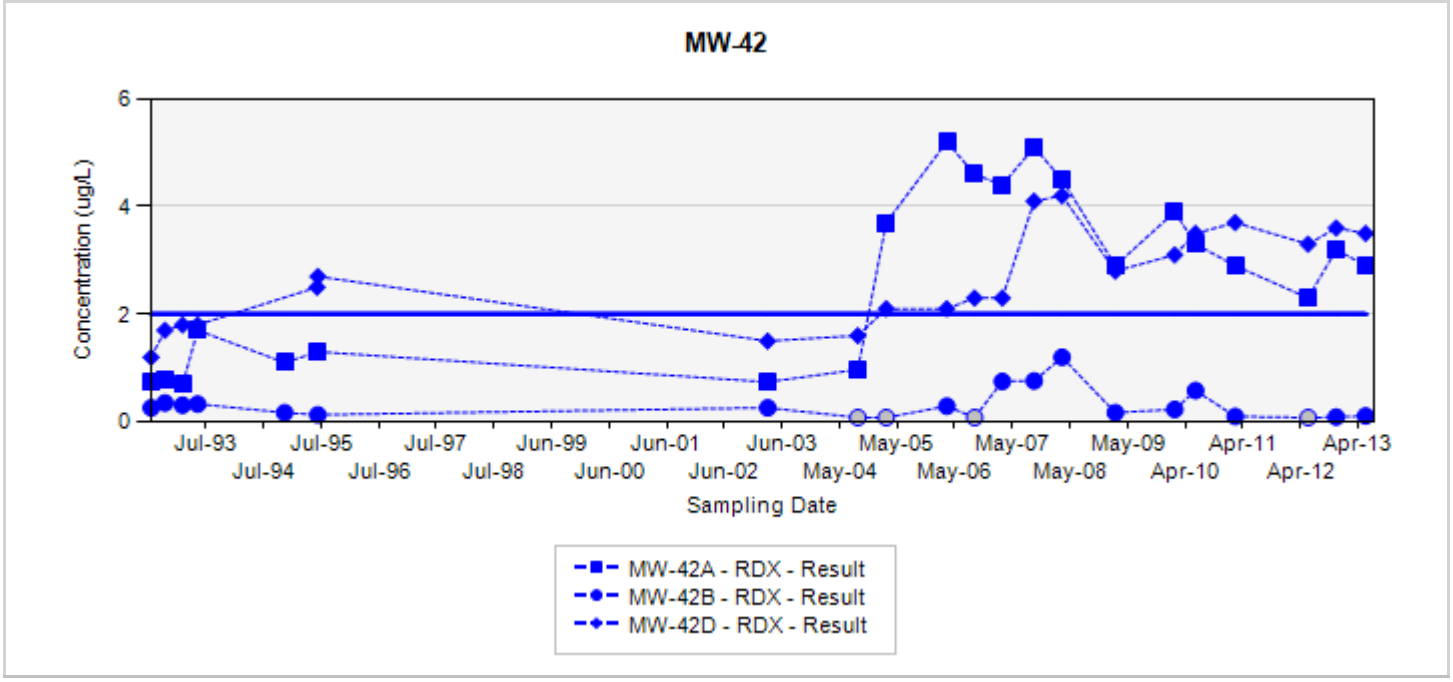

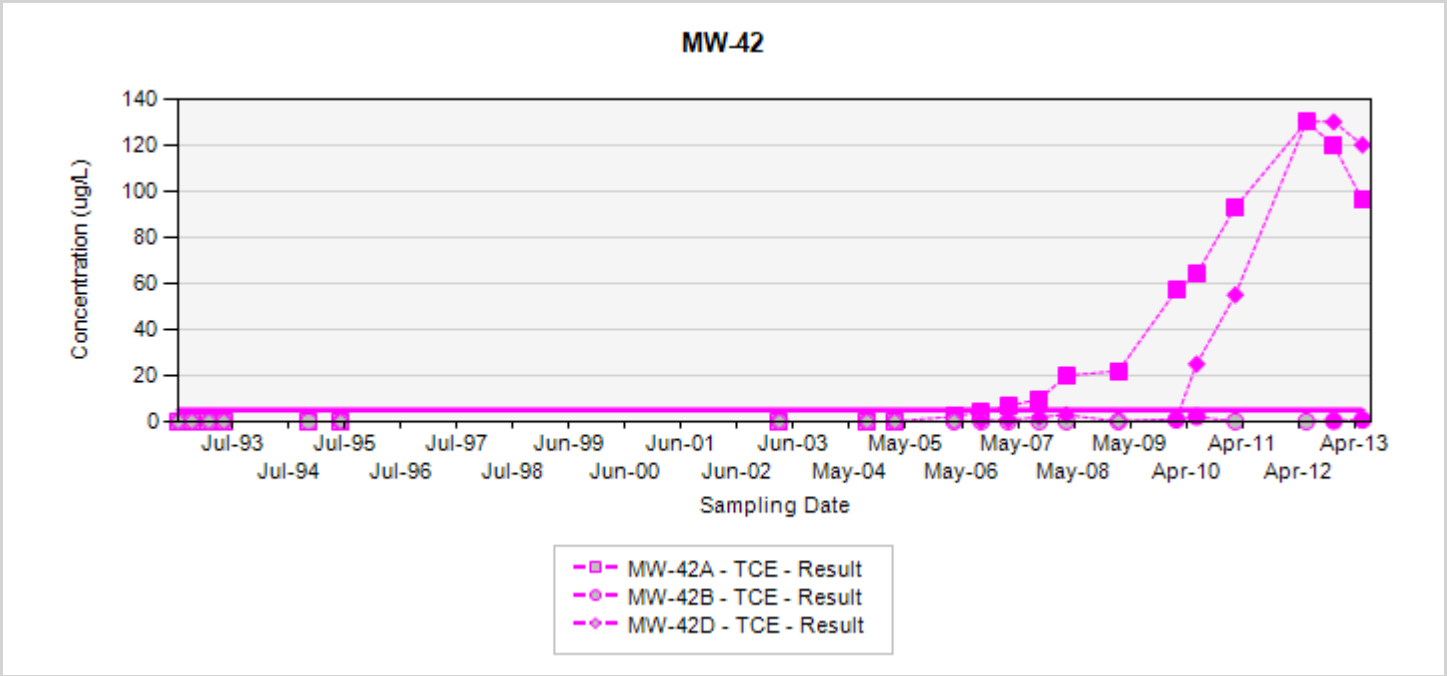

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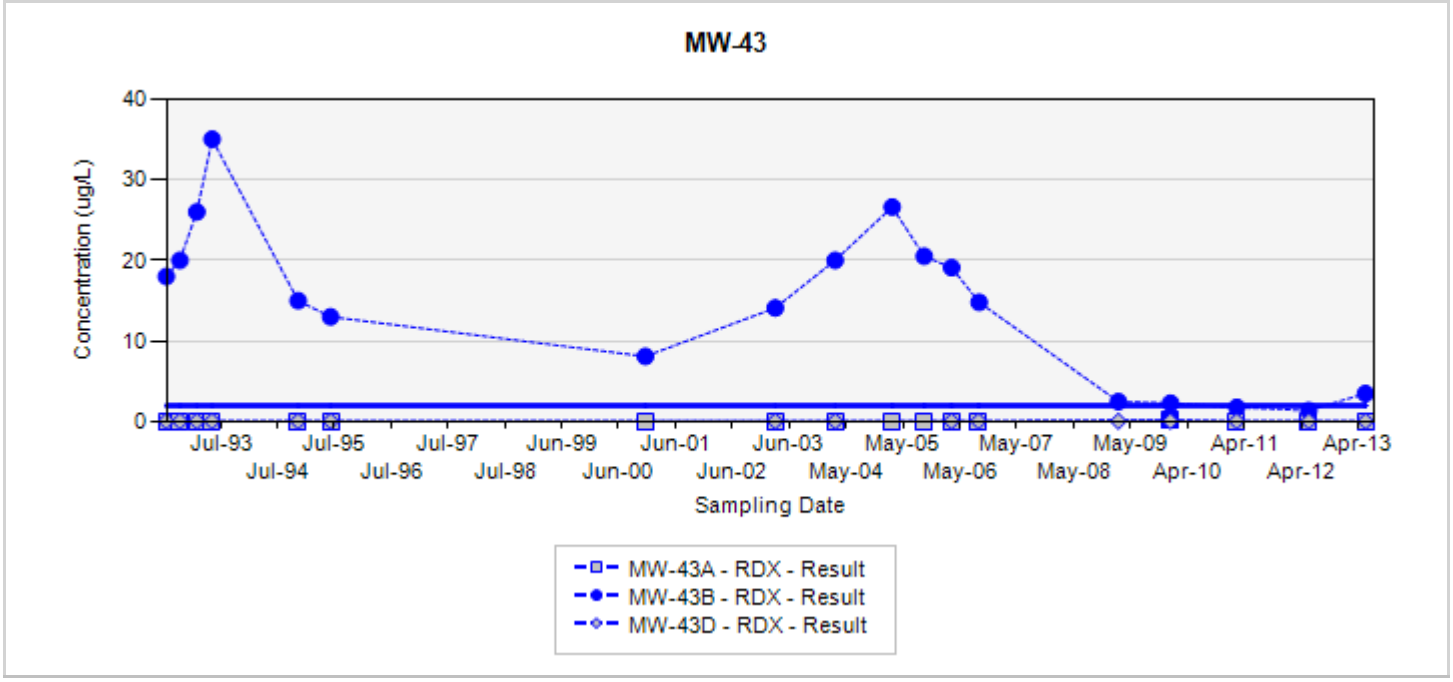

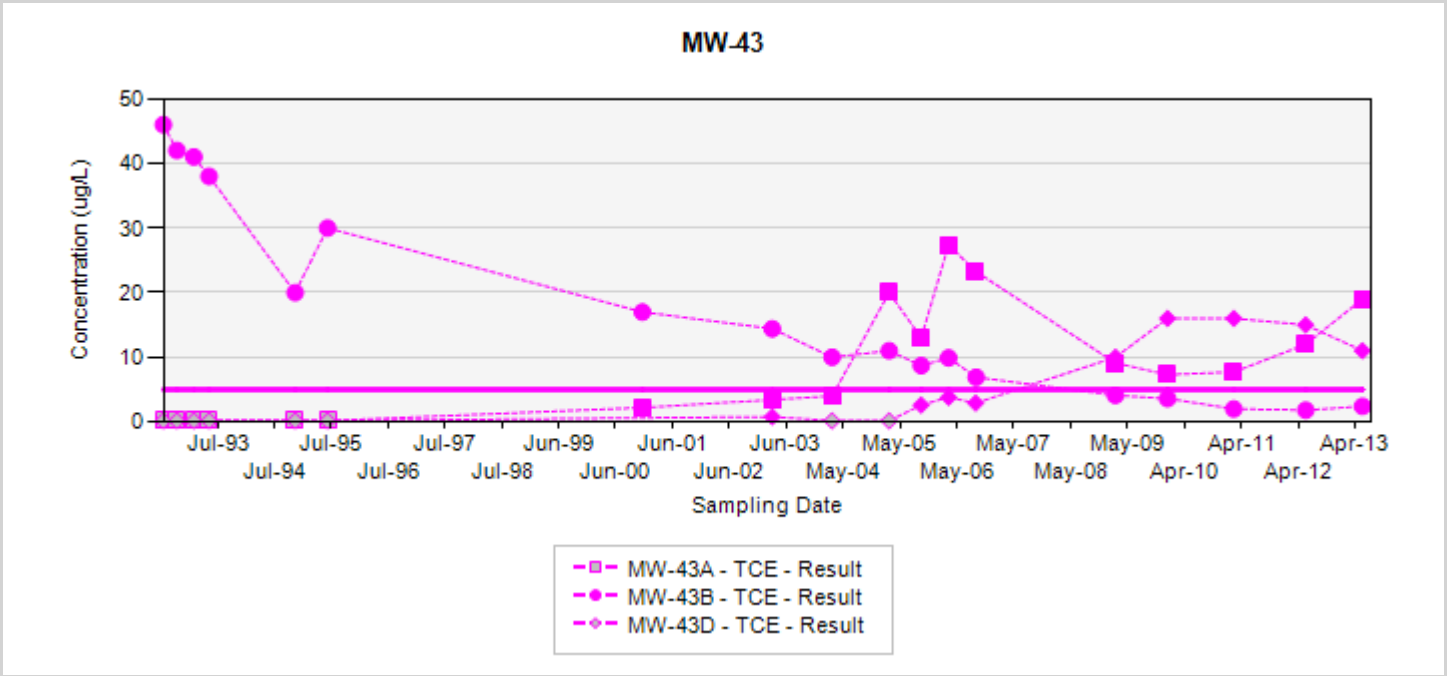

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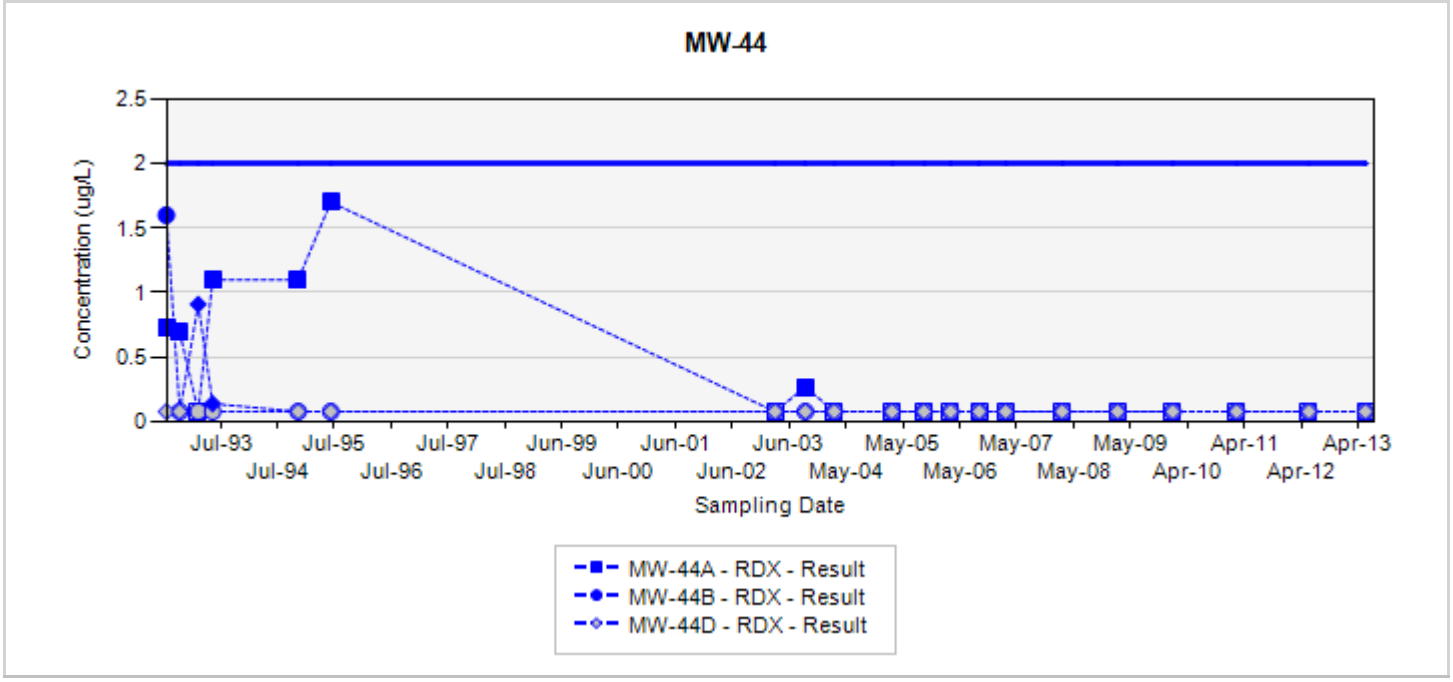

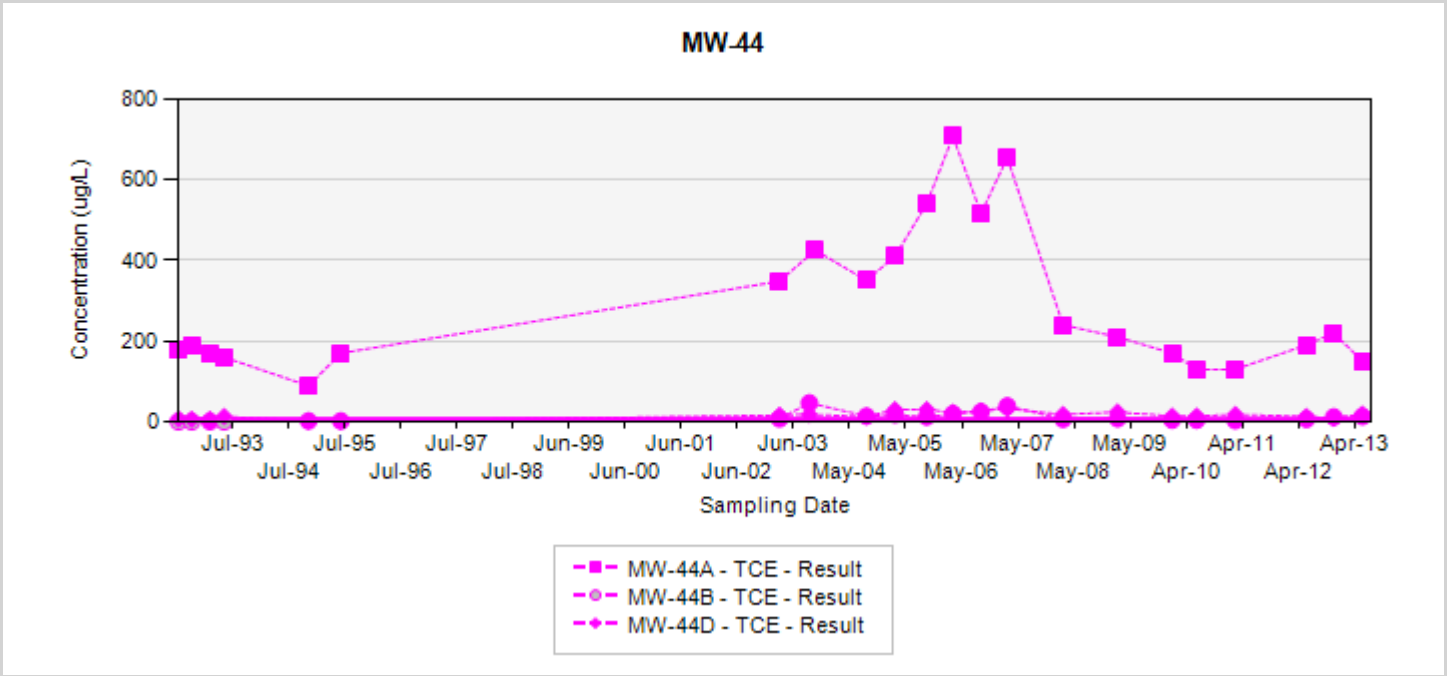

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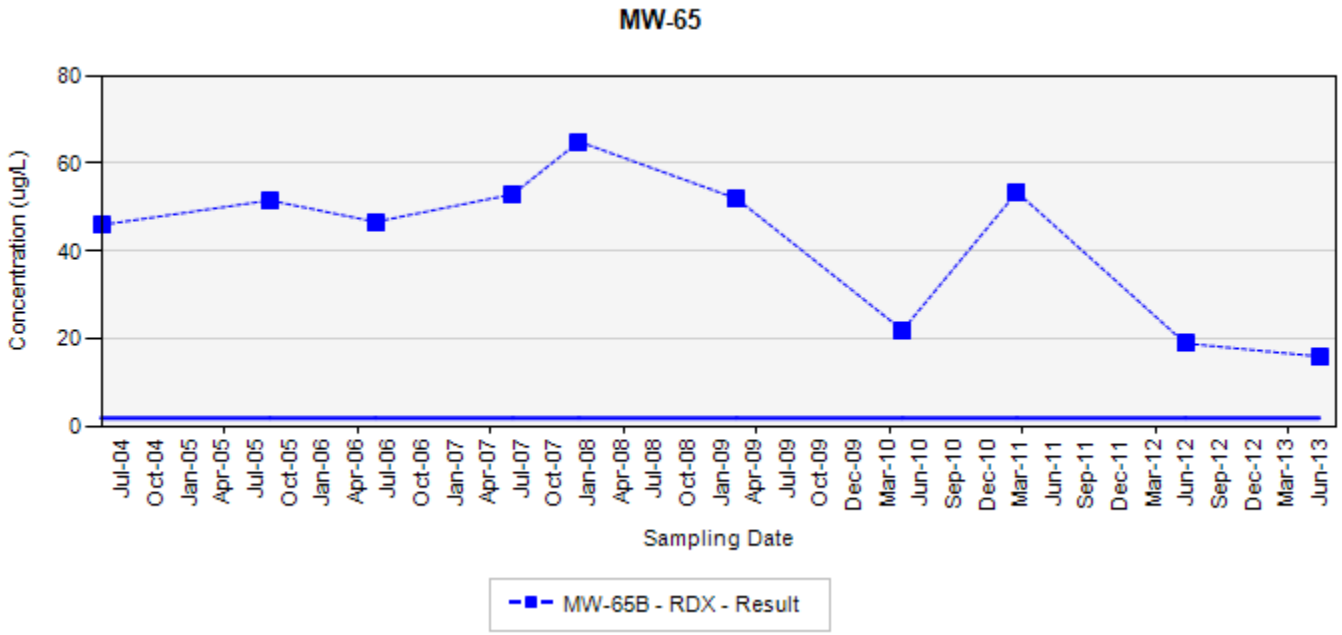

RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
Final Target Groundwater Cleanup Goals for RDX is 2 UG/L

In the event that both a normal sample and a field duplicate were collected, the higher of the two results will be displayed on the chart

ug/L: micrograms per liter
Silver markers indicate non-detected results

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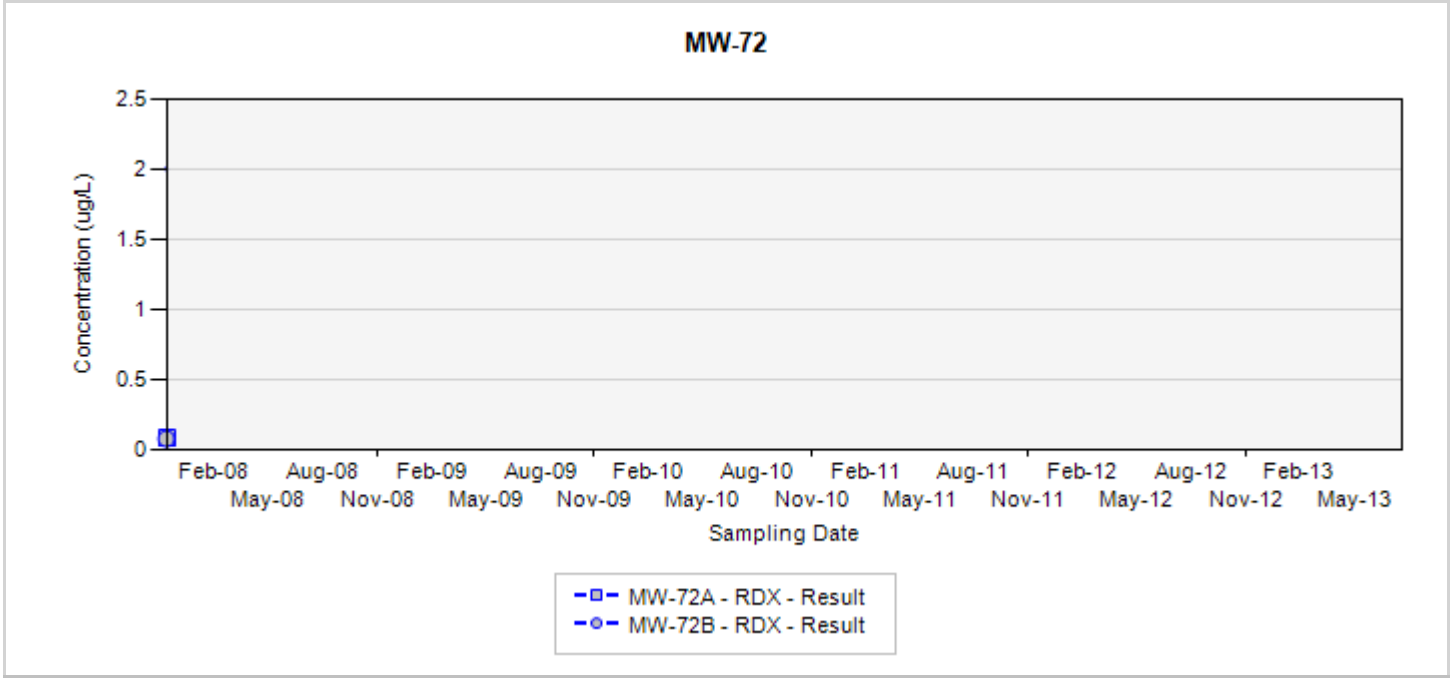
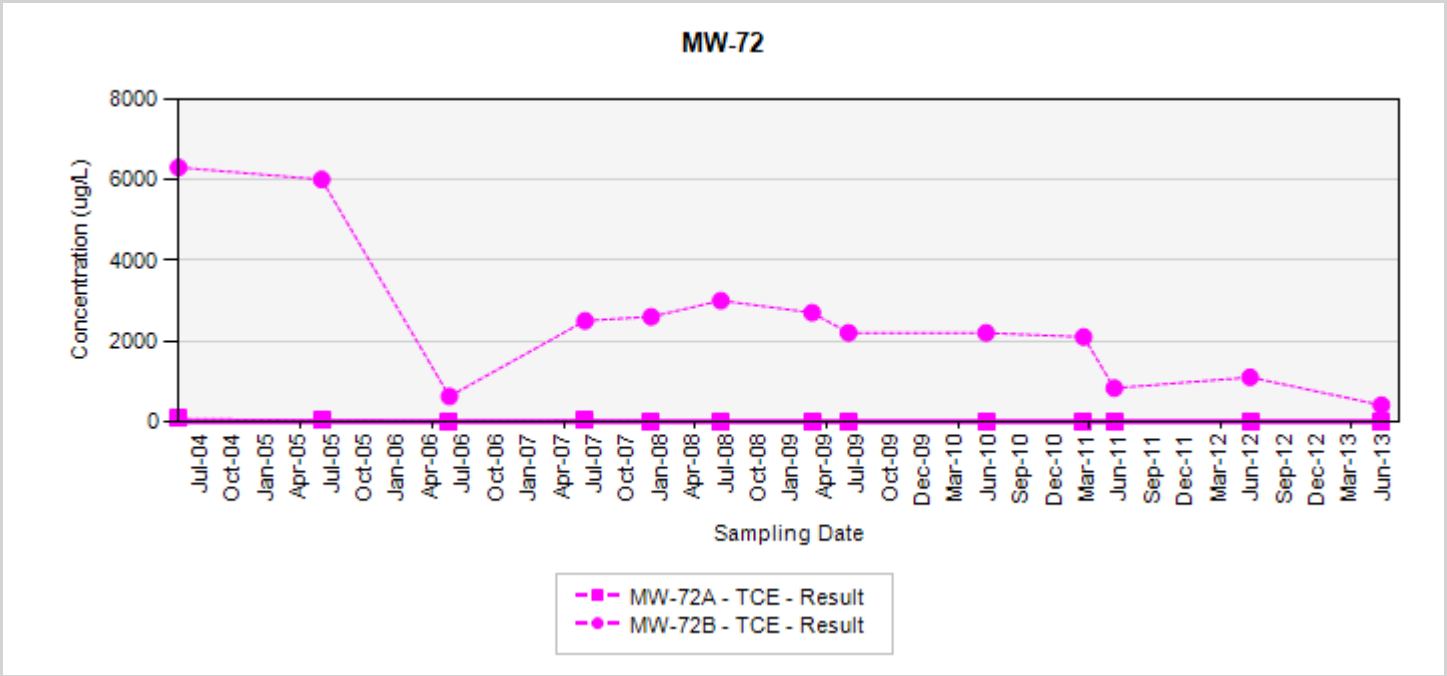
Concentration Trend Charts for Monitoring Wells





TCE - trichloroethene
RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
Final Target Groundwater Cleanup Goals for TCE is 5 UG/L
Final Target Groundwater Cleanup Goals for RDX is 2 UG/L

In the event that both a normal sample and a field duplicate were collected, the higher of the two results will be displayed on the chart

ug/L: micrograms per liter
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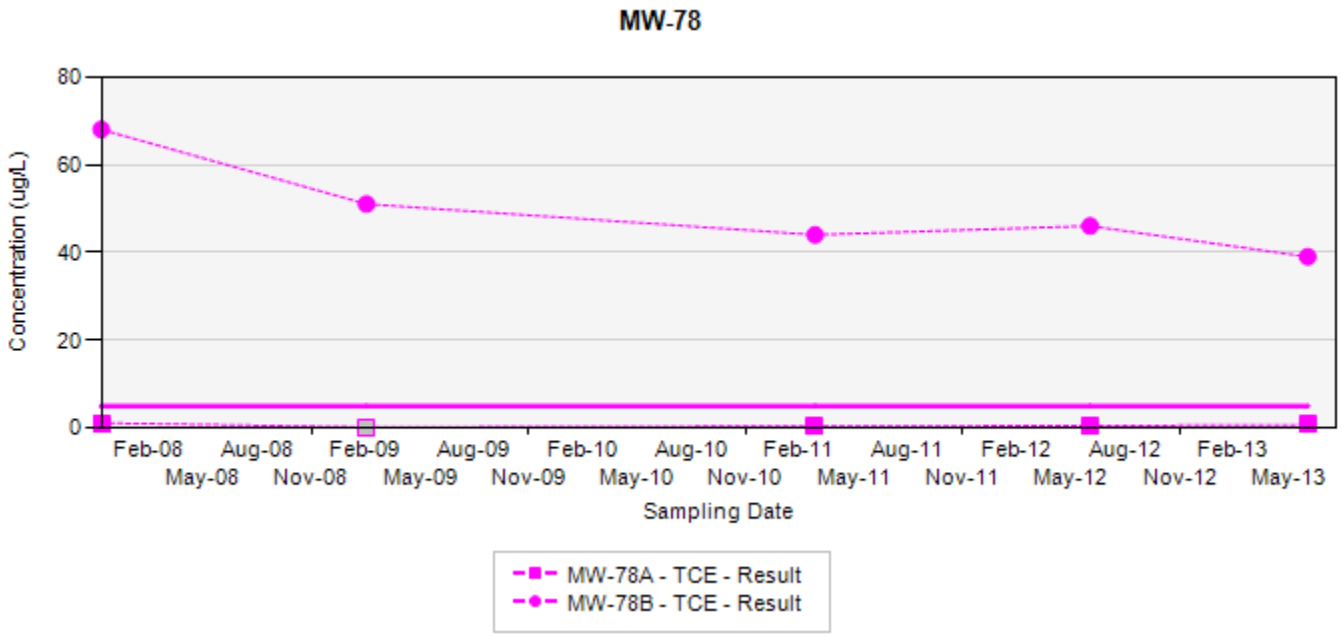

TCE - trichloroethene

Final Target Groundwater Cleanup Goals for TCE is 5 UG/L

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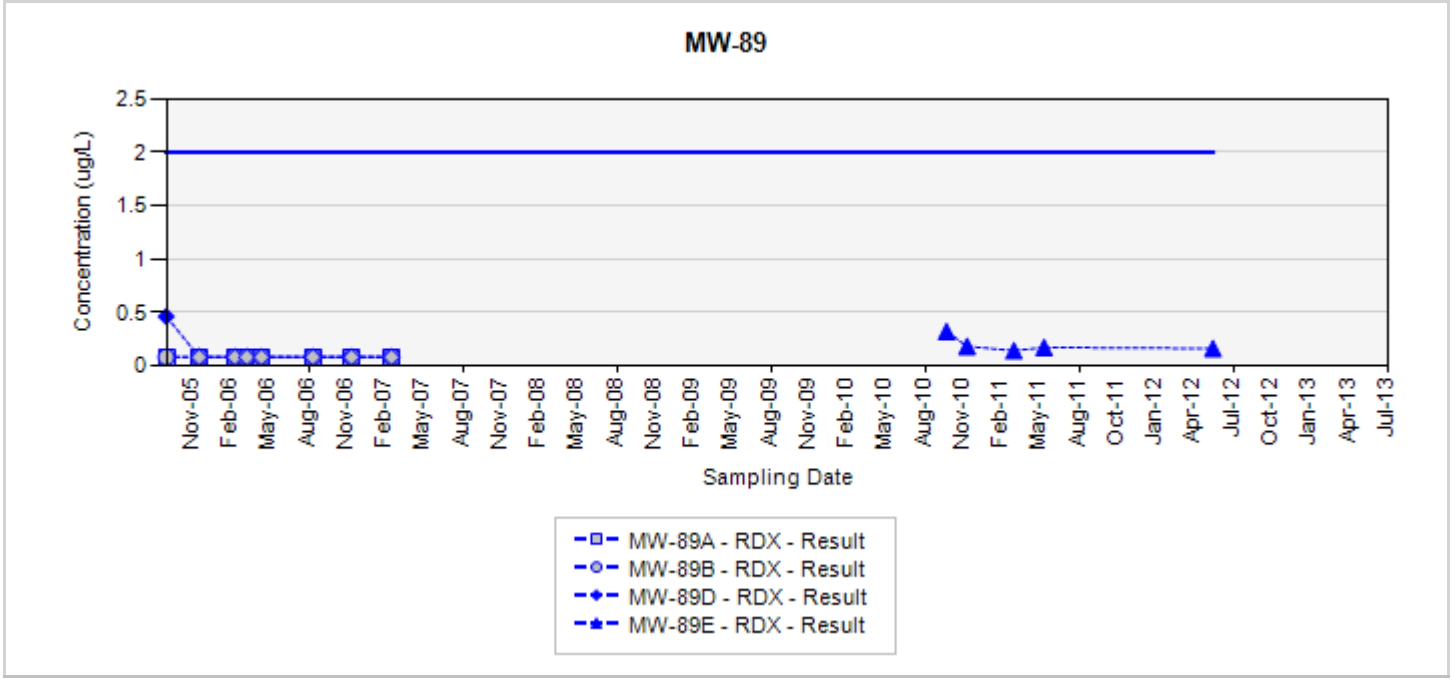

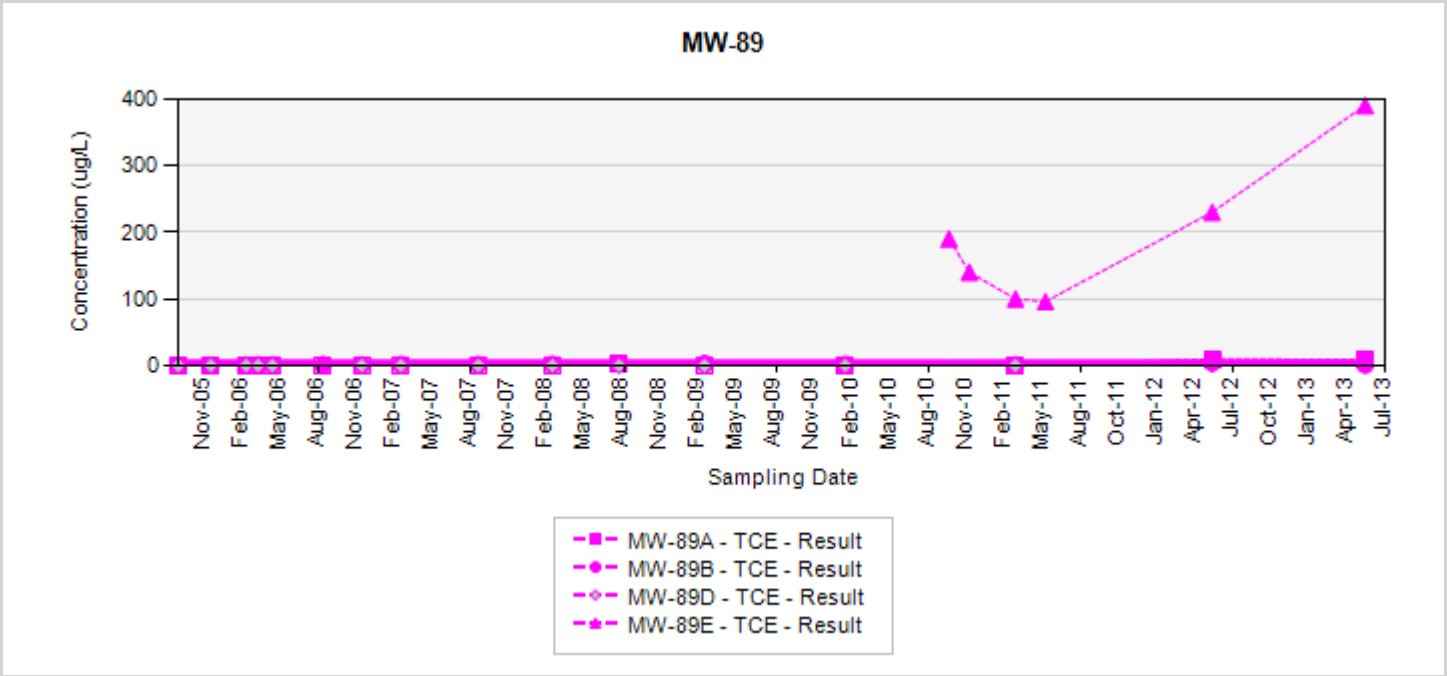

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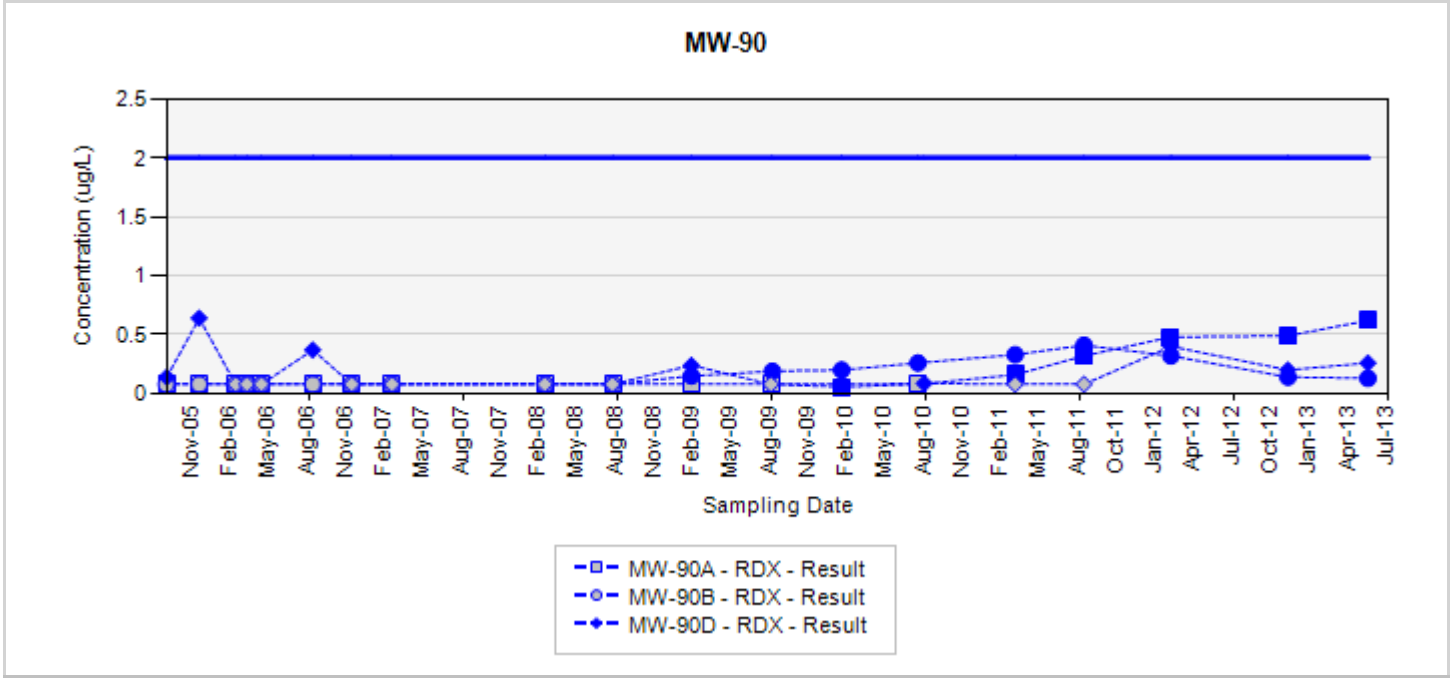

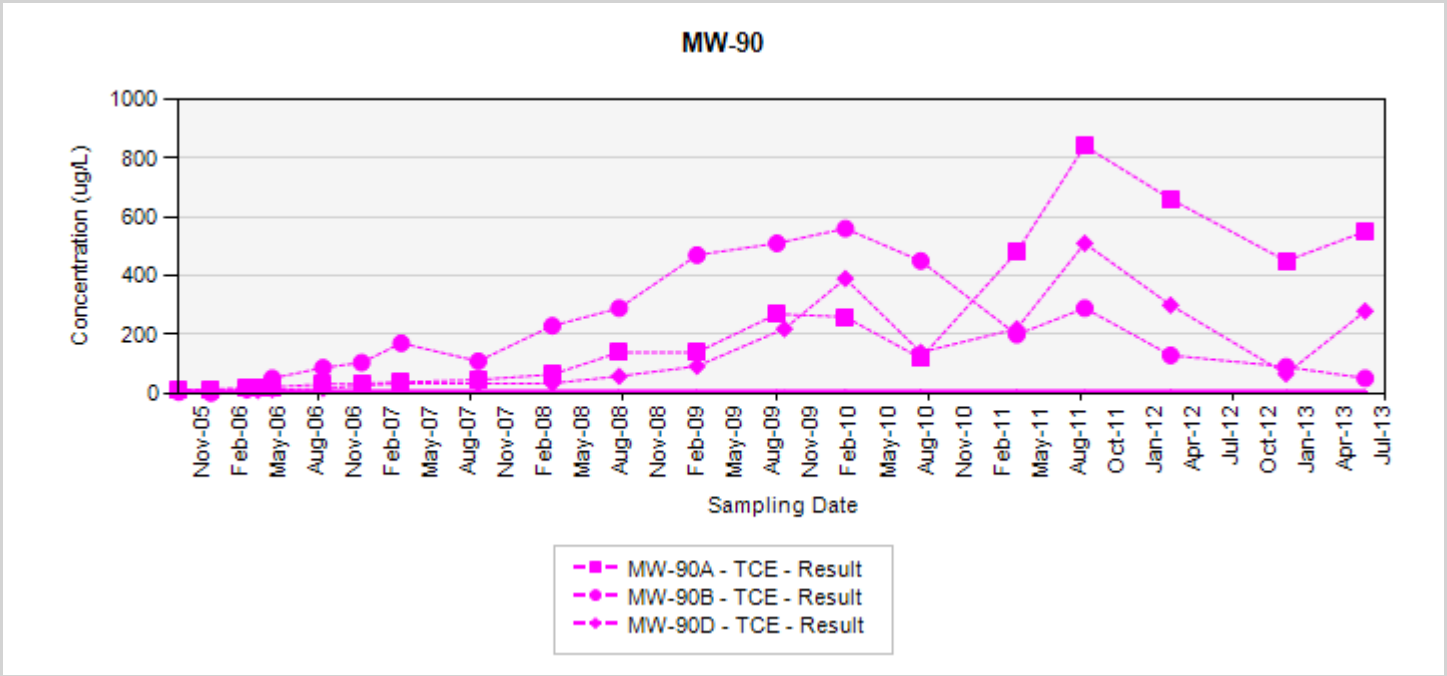

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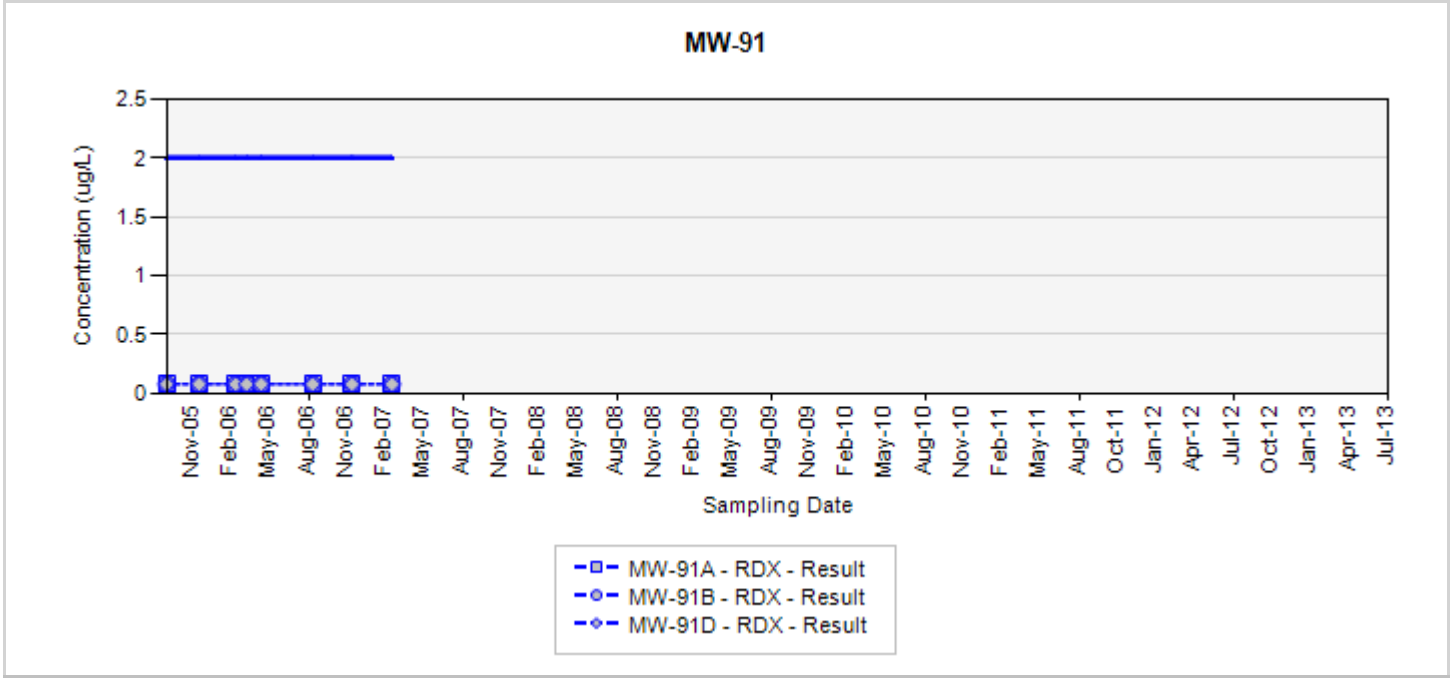

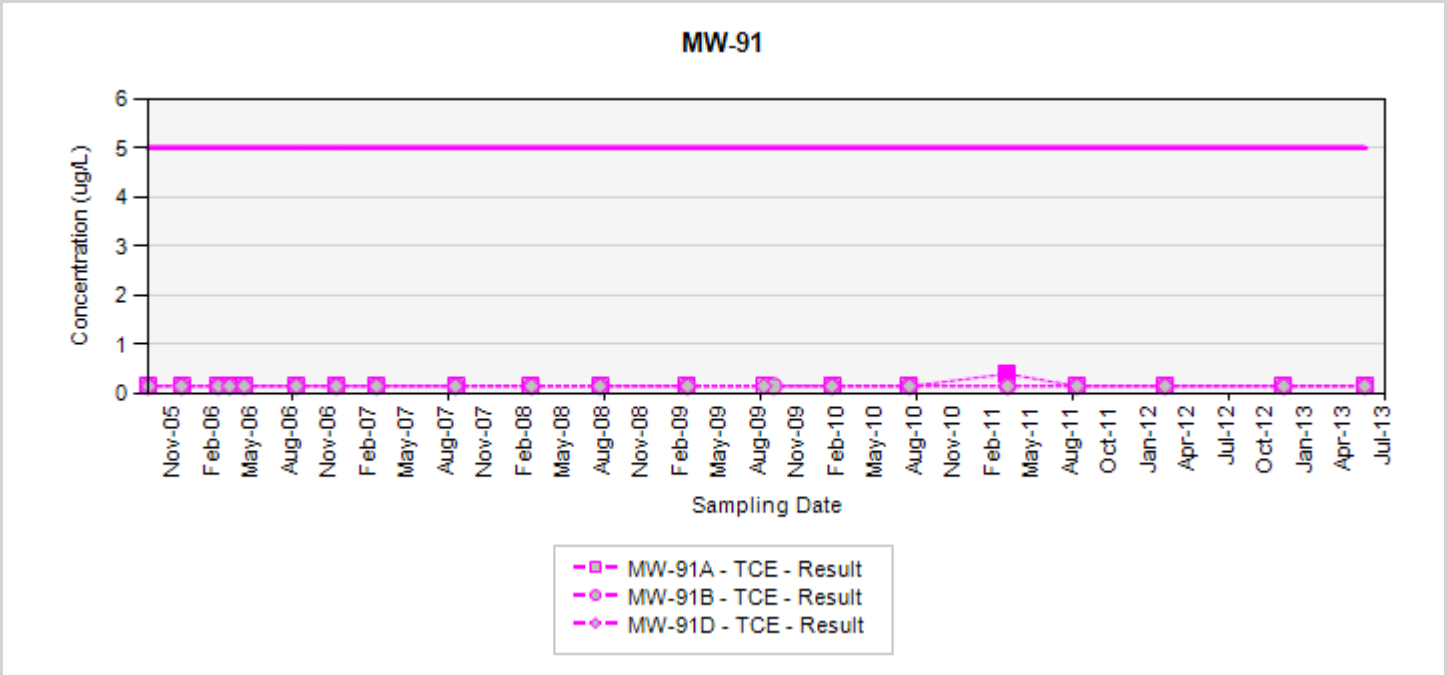

TCE - trichloroethene
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Final Target Groundwater Cleanup Goals for TCE is 5 UG/L
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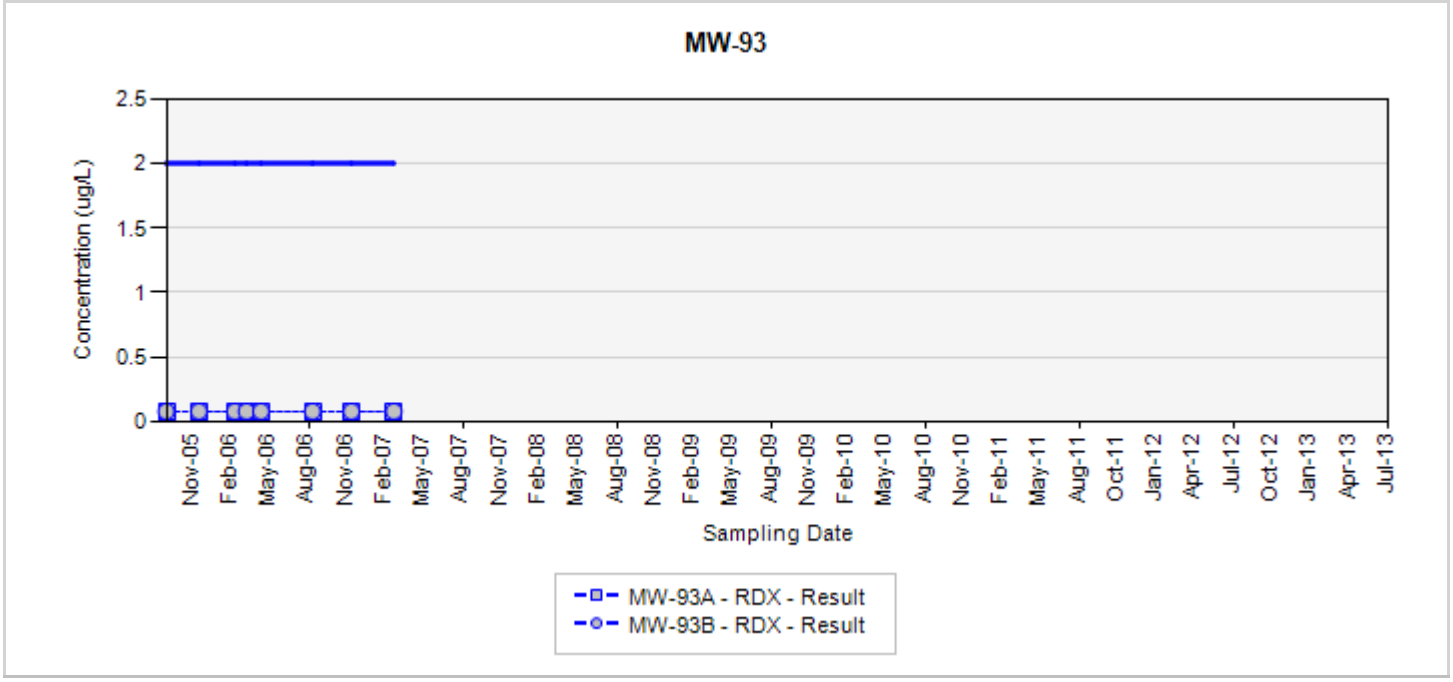

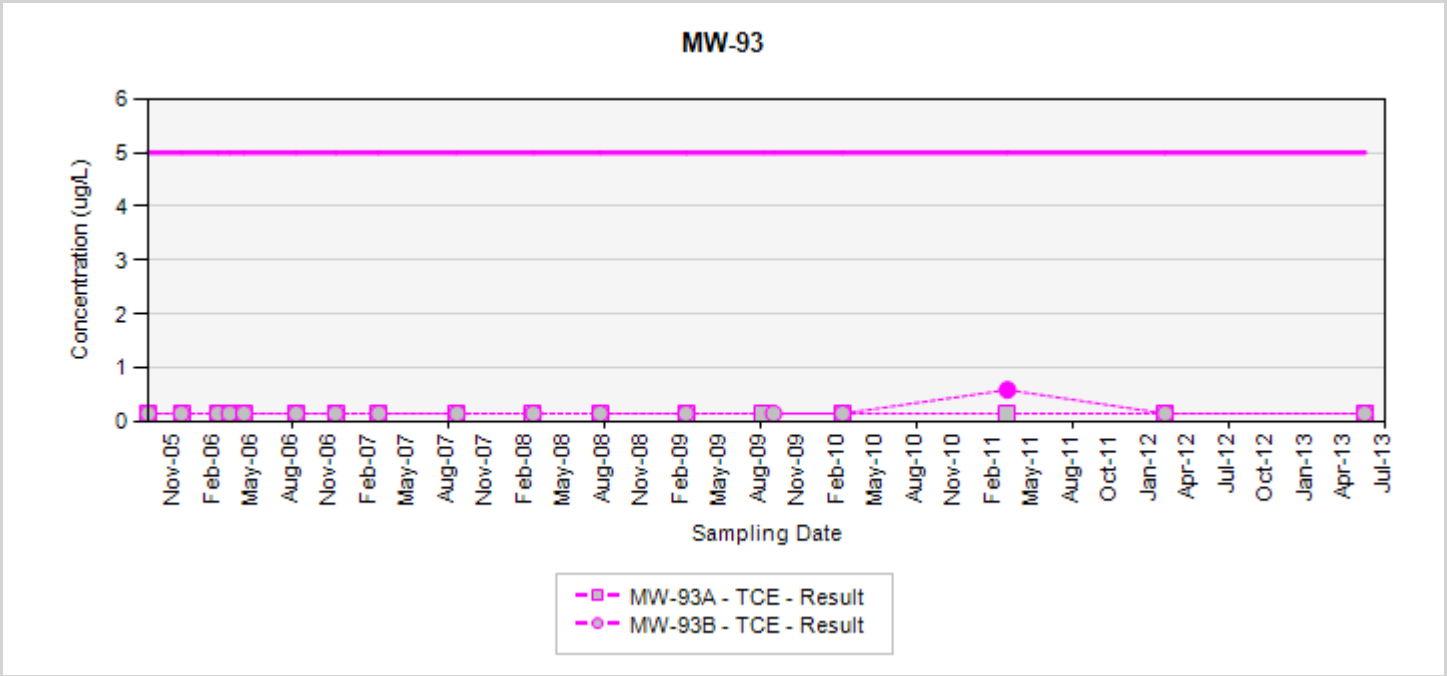

TCE - trichloroethene
RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
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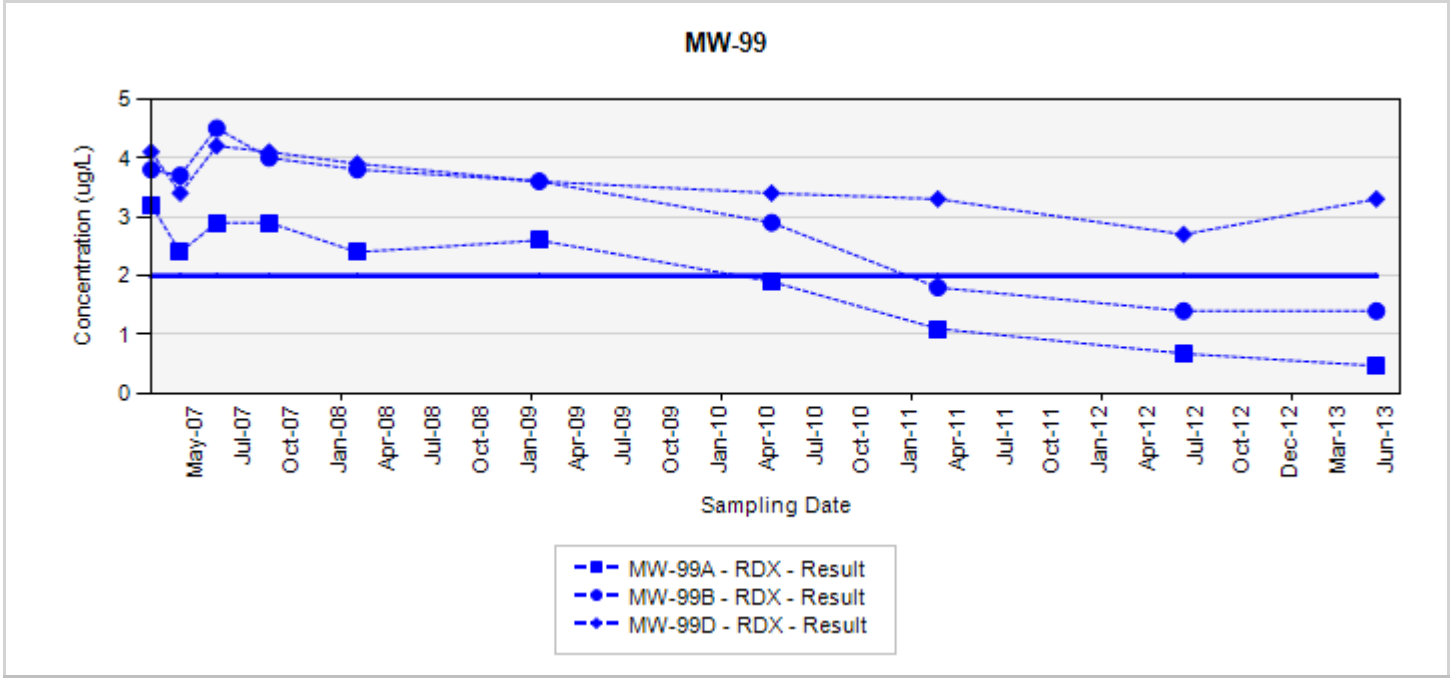

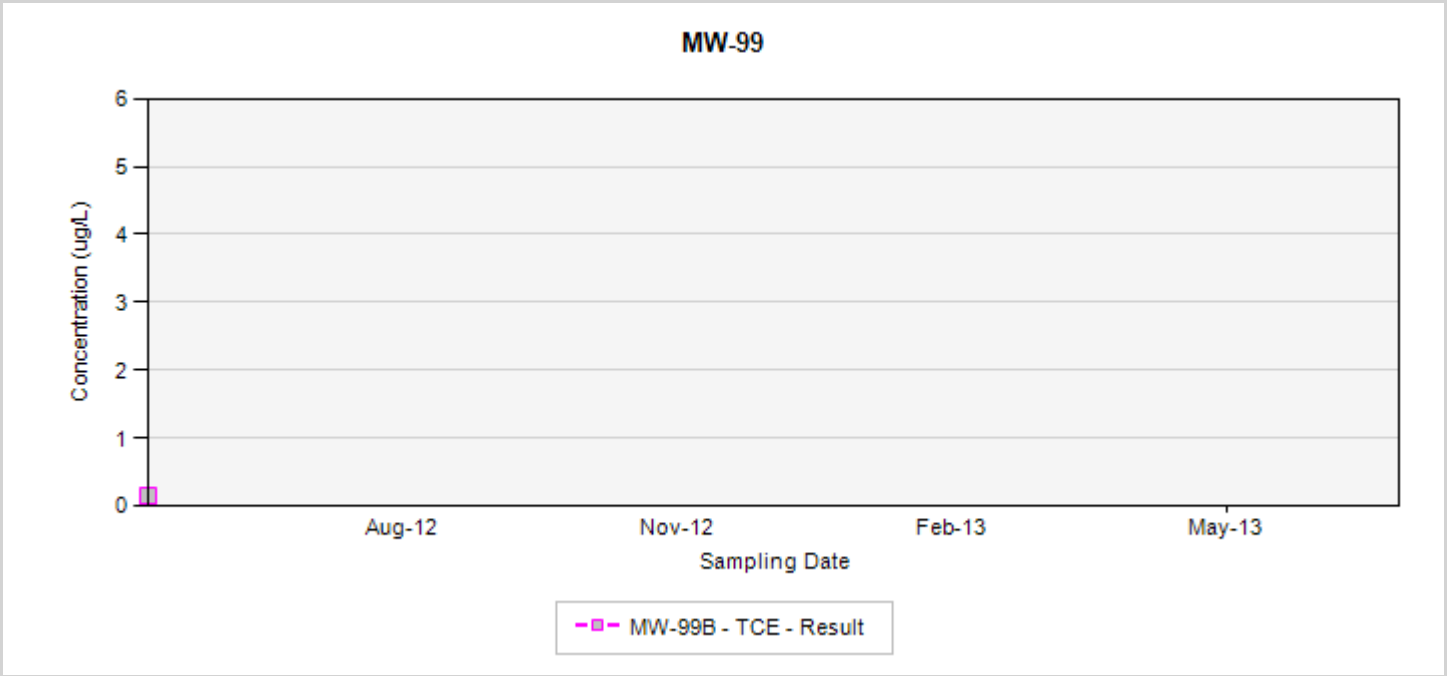

TCE - trichloroethene
RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
Final Target Groundwater Cleanup Goals for TCE is 5 UG/L
Final Target Groundwater Cleanup Goals for RDX is 2 UG/L

In the event that both a normal sample and a field duplicate were collected, the higher of the two results will be displayed on the chart

ug/L: micrograms per liter
Silver markers indicate non-detected results

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Appendix B
Concentration Trend Charts for Select Water Supply Wells

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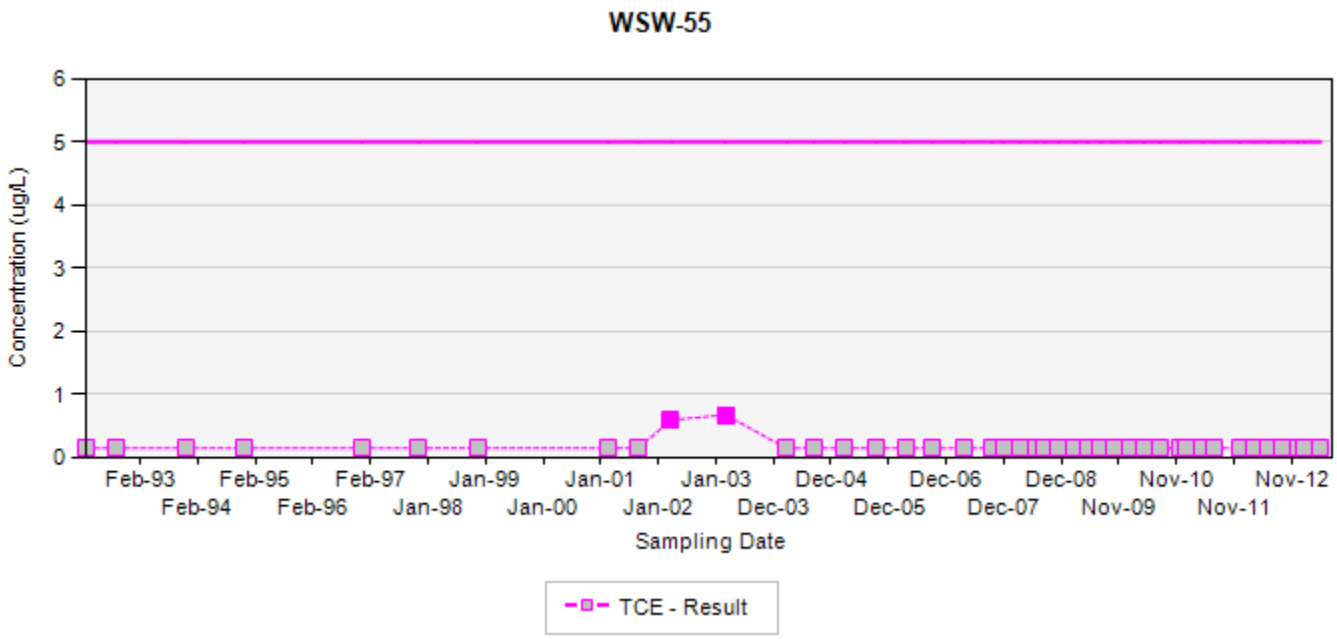
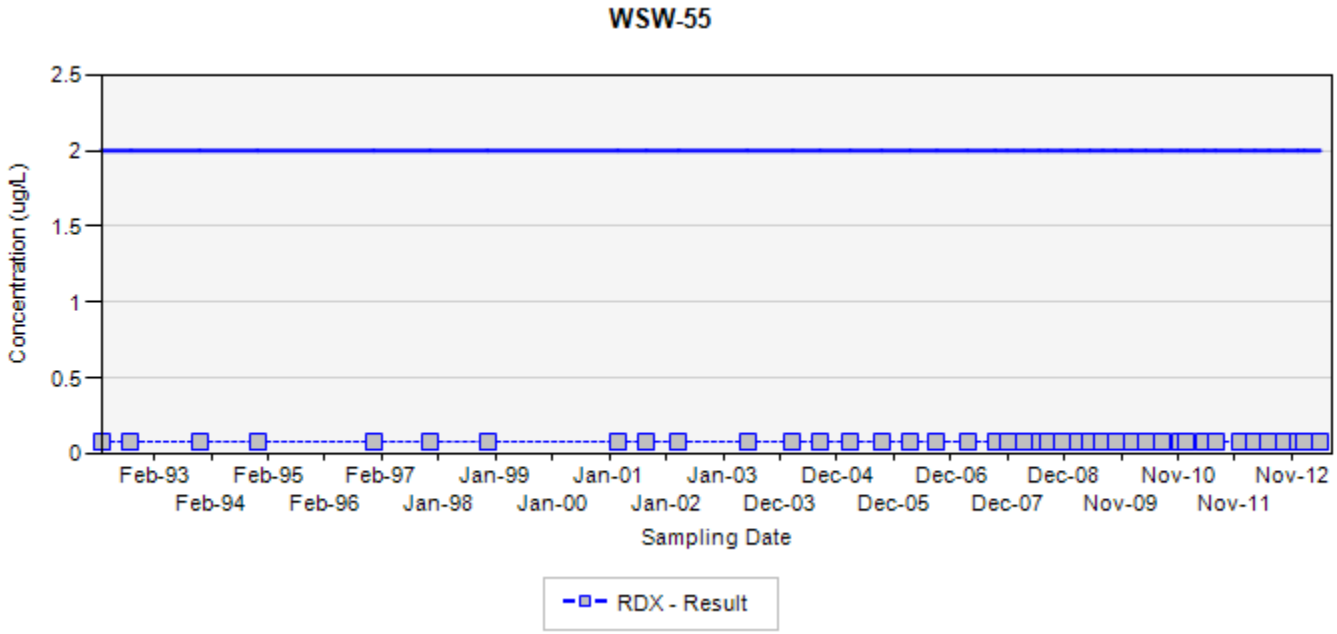
Appendix B
Concentration Trend Charts for Water Supply Wells





TCE - trichloroethene
RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
Final Target Groundwater Cleanup Goals for TCE is 5 UG/L
Final Target Groundwater Cleanup Goals for RDX is 2 UG/L

In the event that both a normal sample and a field duplicate were collected, the higher of the two results will be displayed on the chart

ug/L: micrograms per liter
Silver markers indicate non-detected results

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Appendix C

Quality Control Summary Report Second Quarter 2013 Groundwater Monitoring Program Sampling Events, Former Nebraska Ordnance Plant

(on CD)

FINAL
QUALITY CONTROL SUMMARY REPORT
SECOND QUARTER 2013

GROUNDWATER MONITORING PROGRAM
SAMPLING EVENTS

FORMER NEBRASKA ORDNANCE PLANT
MEAD, NEBRASKA

Prepared for

United States Army Corps of Engineers
Kansas City District

August 2013

Quality Control Summary Report
Second Quarter 2013 Groundwater Monitoring Sampling Events
Former Nebraska Ordnance Plant, Mead, Nebraska

1.0 INTRODUCTION

Monitoring well sampling was conducted between May 30 and June 11, 2013 at the former Nebraska Ordnance Plant, near Mead, Nebraska. All sampling activities were performed in accordance with the *Site Wide Work Plan, Revision 01, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2013). This Quality Control Summary Report presents a summary of the chemical data quality review for the Second Quarter 2013 monitoring well sampling event.

TestAmerica of South Burlington, Vermont analyzed the samples for one or more of the following constituents:

- Volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Solid Waste (SW)-846 Method 8260B; and
- Explosives by EPA SW-846 Method 8330.

Table 1-1 presents a complete list of the monitoring wells planned for sample collection, the corresponding sample identifications (IDs), and the requested analyses for the Second Quarter 2013 monitoring well sampling event.

The chain-of-custody and field notes are included as Appendices A and B, respectively. Appendix C presents an explanation of data validation qualifiers and drinking water standards. Appendix D contains a compact disc (CD) with all analytical data.

2.0 FIELD SAMPLING ACTIVITIES

The field sampling team collected samples for chemical analyses from 200 monitoring wells during the Second Quarter 2013 monitoring well sampling event. VOCs were sampled in 148 of the wells and 151 wells were sampled for explosives. The team also collected 17 field duplicate samples VOCs and 17 field duplicate samples for explosives and nine matrix spike (MS)/matrix spike duplicate (MSD) pairs with the monitoring well samples. Additionally, ten trip blanks were included with the VOC sample shipments.

The sampling location monitoring well (MW)-18C was listed on the sampling schedule but was not collected as planned. According to the field team, the well was full of roots preventing hydrasleeves from reaching the water.

Table 2-1 summarizes the following information listed for the Second Quarter 2013 Monitoring Well sampling event:

- Field Sample IDs;
- MS/MSD sample information;
- Quality control (QC) split sample information;
- Dates of sample collection and sample receipt by the laboratory;
- Laboratory Sample IDs;
- Laboratory sample delivery group (SDG) numbers; and
- Requested analyses.

3.0 DATA QUALITY EVALUATION PROCEDURES

The following subsections present results of the data quality evaluation. This evaluation was performed in accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by United States Army Corps of Engineers [USACE] 2007). Qualifiers were assigned based on laboratory QC criteria. Data quality evaluation results are presented in Table 3-1, and the QC outliers for the explosives and VOC analyses are presented in Tables 3-2 and 3-3.

3.1 Sample Receipt at the Laboratory

The laboratories received all samples in good condition and within the recommended temperature range of 4 ± 2 °C or just below 2° C, but not frozen.

3.2 Holding Times

The laboratories performed extractions and analyses of all samples within required method-specific holding times for the initial analyses. Several samples for VOCs were initially analyzed at a dilution within holding times. The more concentrated analyses were performed to achieve reporting limits (RL) within project action limit; however, they were analyzed outside applicable holding times. Associated sample results were qualified as estimated (J/UJ). Table 3-1 presents data quality evaluation results and associated qualified samples. Table 3-3 presents the VOC QC outliers and associated samples for all assigned qualifiers.

3.3 Tuning and Calibration

According to the *Mead Validation Guidelines* (ECC, 2007), assessment of tune and calibration information is performed using the laboratory case-narrative. The laboratory did not report any deviations for the calibration and tuning of pertinent instrumentation in the case narratives.

3.4 Laboratory Method Blanks

A laboratory method blank is an analyte-free matrix that is carried through the entire preparation and analysis sequence for the purpose of identifying potential contamination introduced during preparation and analysis. Method blanks were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than 5 times the concentration in the associated blank. For common laboratory contaminants, detections are qualified as non-detect (U) if the concentration in the sample is less than 10 times the concentration in the associated blank. Sample results that are either non-detect (U), or greater than 5 or 10 times the blank result do not require qualification.

Methylene chloride was detected in several method blanks; however, no qualifications were required since methylene chloride was not detected in any of the samples associated with these blanks.

3.5 Trip Blanks

A trip blank is an analyte-free matrix that accompanies samples through the sample collection and transportation process to identify potential VOC contamination. In accordance with the *Mead Validation Guidelines* (ECC, 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than 5 times the concentration in the associated blank (10 times for common laboratory contaminants). Sample results that are either non-detect (U), or greater than 5 or 10 times the blank result do not require qualification.

There were no detections of target analytes in the volatile trip blanks.

3.6 Surrogates

Surrogates are compounds not normally found in the environment that are added (spiked) into samples prior to extraction (for extractable methods) or prior to analysis (for non-extractable methods). The percent recovery (% REC) of each surrogate is used to assess the success of the sample preparation process for an individual sample.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for associated analytes in the affected samples are J-coded (estimated) for detects and UJ-coded (estimated non-detect) for non-detects if the surrogate %RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded (rejected) if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for associated analytes in the affected samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects.

The % REC for surrogate 1,2-dinitrobenzene on the primary column in one sample exceeded the laboratory QC limits. Associated sample results were qualified as described above. Table 3-1 presents data quality evaluation results and associated qualified samples. Table 3-2 presents the explosive QC outliers and associated samples for all assigned qualifiers. Several surrogate %RECs on the confirmation column in the explosive analyses exceeded the laboratory QC limits. However, no further qualifications were required, because all associated results were reported from the primary column, which met the surrogate %REC criteria for these samples.

3.7 Laboratory Control Sample / Laboratory Control Sample Duplicate

A laboratory control sample (LCS) consists of a matrix, similar to that of the field sample, which is spiked with known concentrations of analytes. The LCS % REC is a measure of the accuracy of the preparation and analytical methods. The laboratory control sample duplicate (LCSD) is a duplicate preparation and analysis of the LCS. The differences between the LCS and LCSD recoveries are used to calculate the relative percent differences (RPD), which is a measure of the precision of the preparation and analytical methods. LCS samples were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS %RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if the %RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds 30%.

All LCS/LCSD %RECs and RPDs were within laboratory QC limits.

3.8 Matrix Spike / Matrix Spike Duplicate

MS and MSD samples were analyzed for both volatile organic analyses and explosives. A field sample is split into three portions (original, MS, and MSD) and known amounts of analytes are added (spiked) into the MS and MSD portions of the sample. The analytical results of these two portions are compared to each other for reproducibility using the RPD. These results are also compared against the un-spiked portion of the sample for % REC of the spiked analytes. MS/MSD analyses were performed on the appropriate samples collected as listed on Table 2-1. Several additional explosive MS/MSD analyses were performed by the laboratory.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the parent sample are J-coded for detects and UJ-coded for non-detects if the MS/MSD % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the parent sample are J-coded for detects if the MS/MSD % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated parent samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds QC limits.

All % RECs and all RPDs were within QC limits except for and elevated % REC for trichloroethene (TCE) in one MS/MSD pair. Associated sample results were qualified as described above. Table 3-1 presents data quality evaluation results and associated qualified sample. Table 3-3 presents the VOC QC outliers and associated samples for all assigned qualifiers.

3.9 Field Duplicates

Field duplicates provide information regarding the reproducibility of analytical results and account for error introduced from handling, shipping, preparing, and analyzing field samples.

The following field duplicate pairs were collected during the Second Quarter 2013 monitoring well sampling event:

- BMW-009-042013 / BMW-209-042013 (VOCs);
- AMW-021-042013 / AMW-221-042013 (VOCs and Explosives);
- AMW-032-042013 / AMW-232-042013 (VOCs and Explosives);
- AMW-042-042013 / AMW-242-042013 (VOCs and Explosives);
- AMW-044-042013 / AMW-244-042013 (VOCs and Explosives);
- BMW-072-042013 / BMW-272-042013 (VOCs);
- BMW-078-042013 / BMW-278-042013 (VOCs);
- AMW-090-042013 / AMW-290-042013 (VOCs, Explosives);
- AMW-0104-042013 / AMW-2104-042013 (VOCs, Explosives);
- AMW-0111-042013 / AMW-2111-042013 (VOCs, Explosives);
- AMW-0121-042013 / AMW-2121-042013 (VOCs, Explosives);
- AMW-0122-042013 / AMW-2122-042013 (VOCs, Explosives);
- AMW-0128-042013 / AMW-2128-042013 (Explosives);
- AMW-0129-042013 / AMW-2129-042013 (Explosives);
- AMW-0130-042013 / AMW-2130-042013 (Explosives);
- AMW-0131-042013 / AMW-2131-042013 (Explosives);
- BMW-0133-042013 / BMW-2133-042013 (VOCs);
- AMW-0141-042013 / AMW-2141-042013 (VOCs, Explosives);
- AMW-0142-042013 / AMW-2142-042013 (VOCs, Explosives);
- AMW-0160-042013 / AMW-2160-042013 (VOCs and Explosives); and
- AMW-0161-042013 / AMW-2161-042013 (VOCs and Explosives).

The field duplicate precision criteria (RPD of < 50%) was met in the all duplicate pairs with the exceptions: hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) in field duplicate pair AMW-0141-042013 / AMW-2141-042013 (80.4%), RDX field duplicate pair AMW-0160-042013 / AMW-2160-042013 (56%), TCE in field duplicate pair AMW-0141-042013 / AMW-2141-042013 (77.9%) and TCE in field duplicate pair AMW-0142-042013 / AMW-2142-042013 (53.3%). Field sample analytical results are not qualified due to field duplicate RPD exceedances. Field duplicate results are considered acceptable when one result is not detected and the other result is detected below the limit of quantitation (LOQ) or if both results are less than the LOQ.

3.10 Dilutions and Re-analyses

Qualifiers assigned as a result of calibration range exceedance are not used in the calculation of analytical data completeness percentages if there are acceptable results from diluted sample analyses.

Twelve water samples required a dilution analysis because the concentration of RDX was above the calibration range. Sixty-six water samples were initially analyzed at a dilution due to high level of TCE. Thirty-four of the 66 samples were reanalyzed: 17 samples required a further dilution and 17 were analyzed at a more concentrated level. According to the *Mead Validation Guidelines* (ECC, 2007) results exceeding the calibrations range are not used for reporting or project decisions when acceptable results from dilutions are available. The final dilution analysis results are reported for RDX and TCE, and the more concentrated analysis results are reported for all other sample results. Reporting limits were raised, as appropriate. [Note: Only the appropriately diluted results were reported by the laboratory.]

3.11 Other Quality Control Parameters

All detected explosive results were confirmed on a second column. A column comparison between the detected explosive results was made using explosive identification summary forms. The validator confirmed all reported explosive detections for both columns and the inter-column RPDs.

Detected results with the intercolumn RPDs exceeding 40% are qualified as estimated (J). Table 3-1 presents data quality evaluation results and associated qualified samples. Table 3-2 presents the explosive QC outliers and associated samples for all assigned qualifiers. These qualifiers were not used to determine analytical completeness or project completeness.

RDX was detected in sample DMW-0126-042013 at 34 J micrograms per liter. Upon review of the photo diode array confirmation from the laboratory, it was determined that this detection is a false positive and the sample result is qualified as non-detect (U).

3.12 Laboratory Qualifiers

Analytes detected below the LOQ, but above the detection limit (DL) were quantified and results were assigned an estimated (J) qualifier by the laboratory. These qualifiers were carried over by the validator and were not used to determine analytical completeness or project completeness (Section 4.0).

4.0 OVERALL ASSESSMENT

The following subsections present the field completeness, analytical completeness, and project completeness determinations for the Second Quarter 2013 monitoring well sampling event.

4.1 Field Completeness

Field completeness for sample collection is assessed by comparing the number of samples collected to the number of samples planned for collection. Field completeness for the monitoring well sampling event was 99.4% for both VOCs and explosives. The overall field completeness percentage is 99.4% for the Second Quarter 2013 monitoring well sampling event due to an obstruction preventing the sampling of MW-18C. All field completeness percentages exceed the field completeness goal of 95%. Section 2.0 presents the field sampling activities, including any deviations from planned sampling if applicable. Table 4-1 presents field completeness values for the monitoring well sampling event.

4.2 Analytical Completeness

Analytical completeness is calculated as both acceptable data completeness and quality data completeness.

Acceptable data is a measure of laboratory contract compliance. Acceptable data includes data that have not been rejected or qualified as estimated (J). Qualified data are considered acceptable if appropriate corrective actions were taken by the laboratory. Acceptable data completeness percentage for VOCs was 89.4% which was below the acceptable completeness goal of 90% and for explosives was 99.4% which exceeded the acceptable data completeness goals for each analytical method of 90%.

Quality data is a measure of the percentage of usable data points. Usable data points include all non-rejected data. Rejected data points with replacement data do not count against the quality data completeness. No data were rejected for the Second Quarter 2013 monitoring well sampling event based on analytical data evaluation. The quality data completeness percentage for both VOCs and explosives is 100%. Overall quality data completeness is therefore 100%, which exceeds the quality data completeness goal of 80%. Table 4-2 presents analytical data completeness.

4.3 Project Completeness

Project completeness combines sampling and analytical protocols to assess the project as a whole. Project completeness is assessed by comparing the percentage of samples/measurements that are determined to be usable to the total number of samples/measurements planned. Project completeness is calculated using field completeness and analytical completeness (quality data) percentages. The project completeness percentage of 99.4% exceeded the project completeness goal of 90%. Table 4-3 presents project completeness percentage.

5.0 CONCLUSIONS

Data are valid for use, as qualified. Overall field completeness is 99.4%, acceptable data completeness is 94.4%, quality data completeness is 100%, and the overall project completeness is 99.4% for the Second Quarter 2013 monitoring well sampling event.

Sixty-six sample results for TCE and twelve sample results for RDX were reported from a dilution due to calibration range exceedance. These results do not affect analytical or project completeness. Detected results qualified as estimated for inter-column RPD exceedances do not affect analytical or project completeness.

6.0 REFERENCES

ECC, 2007 *Mead Validation Guidelines*, (approved by USACE 2007).

ECC, 2013, *Site Wide Work Plan, Revision 01, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska*. August.

Tables

List of Acronyms for Tables

Term	Definition
µg/L	micrograms per liter
C-RPD	column relative percent difference
GC/MS	gas chromatography–mass spectrometry
HPLC	high-performance liquid chromatography
ID	identification/identifier
IS	Internal standard
J	estimated
Lab	laboratory
LCS	laboratory control sample
LOD	limit of detection
MS/MSD	matrix spike/matrix spike duplicate
MS	mass-spectrometry
MW	monitoring well
% REC	percent recovery
QC	quality control
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
RPD	relative percent difference
SDG	sample delivery group
TCE	trichloroethene
U	not detected at laboratory limit of detection
UCL	upper control limit
UJ	qualified as estimated and not detected at laboratory limit of detection
UWL	upper warning limit

Table 1-1
Sample Locations, Sample IDs, and Analyses
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
MW-02A	AMW-002-042013	Explosives, Volatiles
MW-02B	BMW-002-042013	Explosives, Volatiles
MW-03A	AMW-003-042013	Explosives, Volatiles
MW-03B	BMW-003-042013	Explosives, Volatiles
MW-08A	AMW-008-042013	Explosives, Volatiles
MW-08B	BMW-008-042013	Explosives, Volatiles
MW-09A	AMW-009-042013	Volatiles
MW-09B	BMW-009-042013	Volatiles
MW-09D	DMW-009-042013	Volatiles
MW-104A	AMW-0104-042013	Explosives, Volatiles
MW-104B	BMW-0104-042013	Explosives, Volatiles
MW-104D	DMW-0104-042013	Explosives, Volatiles
MW-104O	OMW-0104-042013	Explosives, Volatiles
MW-105A	AMW-0105-042013	Explosives, Volatiles
MW-105B	BMW-0105-042013	Explosives, Volatiles
MW-105O	OMW-0105-042013	Explosives, Volatiles
MW-109A	AMW-0109-042013	Explosives, Volatiles
MW-109B	BMW-0109-042013	Explosives, Volatiles
MW-11	MW-011-042013	Explosives
MW-111A	AMW-0111-042013	Explosives, Volatiles
MW-111B	BMW-0111-042013	Explosives, Volatiles
MW-116A	AMW-0116-042013	Volatiles
MW-116B	BMW-0116-042013	Volatiles
MW-116D	DMW-0116-042013	Volatiles
MW-119A	AMW-0119-042013	Explosives, Volatiles
MW-119B	BMW-0119-042013	Explosives, Volatiles
MW-120A	AMW-0120-042013	Explosives, Volatiles
MW-120B	BMW-0120-042013	Explosives, Volatiles
MW-120D	DMW-0120-042013	Explosives, Volatiles
MW-120E	EMW-0120-042013	Explosives, Volatiles
MW-121A	AMW-0121-042013	Explosives, Volatiles
MW-121B	BMW-0121-042013	Explosives, Volatiles
MW-121E	EMW-0121-042013	Explosives, Volatiles
MW-122A	AMW-0122-042013	Explosives, Volatiles
MW-122B	BMW-0122-042013	Explosives, Volatiles
MW-123A	AMW-0123-042013	Explosives, Volatiles
MW-123B	BMW-0123-042013	Explosives, Volatiles
MW-124A	AMW-0124-042013	Explosives, Volatiles
MW-124B	BMW-0124-042013	Explosives, Volatiles
MW-124D	DMW-0124-042013	Explosives, Volatiles
MW-125A	AMW-0125-042013	Explosives, Volatiles
MW-125B	BMW-0125-042013	Explosives, Volatiles
MW-125D	DMW-0125-042013	Explosives, Volatiles
MW-126A	AMW-0126-042013	Explosives, Volatiles
MW-126B	BMW-0126-042013	Explosives, Volatiles
MW-126D	DMW-0126-042013	Explosives, Volatiles
MW-127A	AMW-0127-042013	Explosives, Volatiles
MW-127B	BMW-0127-042013	Explosives, Volatiles
MW-127E	EMW-0127-042013	Explosives, Volatiles
MW-128A	AMW-0128-042013	Explosives
MW-128B	BMW-0128-042013	Explosives

Table 1-1
Sample Locations, Sample IDs, and Analyses
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Sample Locations	Sample IDs	Analyses
MW-129A	AMW-0129-042013	Explosives
MW-129B	BMW-0129-042013	Explosives
MW-129D	DMW-0129-042013	Explosives
MW-130A	AMW-0130-042013	Explosives
MW-130B	BMW-0130-042013	Explosives
MW-130D	DMW-0130-042013	Explosives
MW-131A	AMW-0131-042013	Explosives
MW-131B	BMW-0131-042013	Explosives
MW-131D	DMW-0131-042013	Explosives
MW-133A	AMW-0133-042013	Volatiles
MW-133B	BMW-0133-042013	Volatiles
MW-133D	DMW-0133-042013	Volatiles
MW-134A	AMW-0134-042013	Volatiles
MW-134B	BMW-0134-042013	Volatiles
MW-134D	DMW-0134-042013	Volatiles
MW-135A	AMW-0135-042013	Volatiles
MW-135B	BMW-0135-042013	Volatiles
MW-135D	DMW-0135-042013	Volatiles
MW-136A	AMW-0136-042013	Volatiles
MW-136B	BMW-0136-042013	Volatiles
MW-136D	DMW-0136-042013	Volatiles
MW-136E	EMW-0136-042013	Volatiles
MW-137A	AMW-0137-042013	Volatiles
MW-137B	BMW-0137-042013	Volatiles
MW-137E	EMW-0137-042013	Volatiles
MW-138A	AMW-0138-042013	Volatiles
MW-138B	BMW-0138-042013	Volatiles
MW-139A	AMW-0139-042013	Volatiles
MW-139B	BMW-0139-042013	Volatiles
MW-140A	AMW-0140-042013	Volatiles
MW-140B	BMW-0140-042013	Volatiles
MW-140D	DMW-0140-042013	Volatiles
MW-140O	OMW-0140-042013	Volatiles
MW-141A	AMW-0141-042013	Explosives, Volatiles
MW-141B	BMW-0141-042013	Explosives, Volatiles
MW-141E	EMW-0141-042013	Explosives, Volatiles
MW-142A	AMW-0142-042013	Explosives, Volatiles
MW-142E	EMW-0142-042013	Explosives, Volatiles
MW-143B	BMW-0143-042013	Explosives, Volatiles
MW-144A	AMW-0144-042013	Explosives
MW-144E	EMW-0144-042013	Explosives
MW-145A	AMW-0145-042013	Explosives
MW-145B	BMW-0145-042013	Explosives
MW-145E	EMW-0145-042013	Explosives
MW-146A	AMW-0146-042013	Explosives
MW-146B	BMW-0146-042013	Explosives
MW-148A	AMW-0148-042013	Explosives
MW-148B	BMW-0148-042013	Explosives, Volatiles
MW-149A	AMW-0149-042013	Explosives, Volatiles
MW-150A	AMW-0150-042013	Explosives, Volatiles
MW-150B	BMW-0150-042013	Explosives, Volatiles

Table 1-1
Sample Locations, Sample IDs, and Analyses
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Sample Locations	Sample IDs	Analyses
MW-151A	AMW-0151-042013	Explosives, Volatiles
MW-151B	BMW-0151-042013	Explosives, Volatiles
MW-152B	BMW-0152-042013	Explosives, Volatiles
MW-153A	AMW-0153-042013	Explosives, Volatiles
MW-153B	BMW-0153-042013	Explosives, Volatiles
MW-154A	AMW-0154-042013	Explosives, Volatiles
MW-154B	BMW-0154-042013	Explosives, Volatiles
MW-155A	AMW-0155-042013	Explosives, Volatiles
MW-155B	BMW-0155-042013	Explosives, Volatiles
MW-155E	EMW-0155-042013	Explosives, Volatiles
MW-156A	AMW-0156-042013	Explosives, Volatiles
MW-156B	BMW-0156-042013	Explosives, Volatiles
MW-157A	AMW-0157-042013	Explosives, Volatiles
MW-157B	BMW-0157-042013	Explosives, Volatiles
MW-160A	AMW-0160-042013	Explosives, Volatiles
MW-160B	BMW-0160-042013	Explosives, Volatiles
MW-161A	AMW-0161-042013	Explosives, Volatiles
MW-161B	BMW-0161-042013	Explosives, Volatiles
MW-162A	AMW-0162-042013	Explosives
MW-163A	AMW-0163-042013	Explosives
MW-164A	AMW-0164-042013	Explosives
MW-165B	BMW-0165-042013	Explosives
MW-166A	AMW-0166-042013	Explosives
MW-166B	BMW-0166-042013	Explosives
MW-167A	AMW-0167-042013	Explosives
MW-167B	BMW-0167-042013	Explosives
MW-168A	AMW-0168-042013	Explosives
MW-168B	BMW-0168-042013	Explosives
MW-169A	AMW-0169-042013	Explosives
MW-169B	BMW-0169-042013	Explosives
MW-170A	AMW-0170-042013	Explosives
MW-171A	AMW-0171-042013	Explosives
MW-171B	BMW-0171-042013	Explosives
MW-172A	AMW-0172-042013	Explosives
MW-172B	BMW-0172-042013	Explosives
MW-173A	AMW-0173-042013	Explosives
MW-174A	AMW-0174-042013	Explosives
MW-174B	BMW-0174-042013	Explosives
MW-175A	AMW-0175-042013	Explosives, Volatiles
MW-175B	BMW-0175-042013	Explosives, Volatiles
MW-176A	AMW-0176-042013	Explosives, Volatiles
MW-176B	BMW-0176-042013	Explosives, Volatiles
MW-177A	AMW-0177-042013	Volatiles
MW-177B	BMW-0177-042013	Volatiles
MW-178B	BMW-0178-042013	Explosives, Volatiles
MW-179A	AMW-0179-042013	Volatiles
MW-179B	BMW-0179-042013	Volatiles
MW-18A	AMW-018-042013	Explosives, Volatiles
MW-18B	BMW-018-042013	Explosives, Volatiles
MW-21A	AMW-021-042013	Explosives, Volatiles
MW-21B	BMW-021-042013	Explosives, Volatiles

Table 1-1
Sample Locations, Sample IDs, and Analyses
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Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
MW-21D	DMW-021-042013	Explosives, Volatiles
MW-24A	AMW-024-042013	Explosives, Volatiles
MW-24B	BMW-024-042013	Explosives, Volatiles
MW-25A	AMW-025-042013	Explosives, Volatiles
MW-25B	BMW-025-042013	Explosives, Volatiles
MW-28A	AMW-028-042013	Explosives
MW-28B	BMW-028-042013	Explosives
MW-28D	DMW-028-042013	Explosives
MW-29A	AMW-029-042013	Explosives
MW-29B	BMW-029-042013	Explosives
MW-32A	AMW-032-042013	Explosives, Volatiles
MW-32B	BMW-032-042013	Explosives, Volatiles
MW-32D	DMW-032-042013	Explosives, Volatiles
MW-33A	AMW-033-042013	Explosives
MW-33B	BMW-033-042013	Explosives
MW-33D	DMW-033-042013	Explosives
MW-40A	AMW-040-042013	Volatiles
MW-40B	BMW-040-042013	Volatiles
MW-42A	AMW-042-042013	Explosives, Volatiles
MW-42B	BMW-042-042013	Explosives, Volatiles
MW-42D	DMW-042-042013	Explosives, Volatiles
MW-43A	AMW-043-042013	Explosives, Volatiles
MW-43B	BMW-043-042013	Explosives, Volatiles
MW-43D	DMW-043-042013	Explosives, Volatiles
MW-44A	AMW-044-042013	Explosives, Volatiles
MW-44B	BMW-044-042013	Explosives, Volatiles
MW-44D	DMW-044-042013	Explosives, Volatiles
MW-65B	BMW-065-042013	Explosives
MW-72A	AMW-072-042013	Volatiles
MW-72B	BMW-072-042013	Volatiles
MW-78A	AMW-078-042013	Volatiles
MW-78B	BMW-078-042013	Volatiles
MW-89A	AMW-089-042013	Volatiles
MW-89B	BMW-089-042013	Volatiles
MW-89D	DMW-089-042013	Volatiles
MW-89E	EMW-089-042013	Volatiles
MW-90A	AMW-090-042013	Explosives, Volatiles
MW-90B	BMW-090-042013	Explosives, Volatiles
MW-90D	DMW-090-042013	Explosives, Volatiles
MW-91A	AMW-091-042013	Volatiles
MW-91B	BMW-091-042013	Volatiles
MW-91D	DMW-091-042013	Volatiles
MW-93A	AMW-093-042013	Volatiles
MW-93B	BMW-093-042013	Volatiles
MW-99A	AMW-099-042013	Explosives
MW-99B	BMW-099-042013	Explosives
MW-99D	DMW-099-042013	Explosives

Notes:

Volatiles	SW8260B	Volatile Organic Compounds by Capillary GC/MS
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC

Table 2-1
Sample Collection Summary
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Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
			Field Samples					
AMW-043-042013			5/30/2013	6/1/2013	200-16746-2	16746-1	•	•
BMW-043-042013			5/30/2013	6/1/2013	200-16746-3	16746-1	•	•
AMW-042-042013			5/30/2013	6/1/2013	200-16746-12	16746-1	•	•
		AMW-242-042013	5/30/2013	6/1/2013	200-16746-13	16746-1	•	•
DMW-043-042013			5/30/2013	6/1/2013	200-16746-4	16746-1	•	•
BMW-042-042013	BMW-042-042013		5/30/2013	6/1/2013	200-16746-14	16746-1	•	•
AMW-0154-042013			5/30/2013	6/1/2013	200-16746-5	16746-1	•	•
DMW-042-042013			5/30/2013	6/1/2013	200-16746-15	16746-1	•	•
BMW-0154-042013			5/30/2013	6/1/2013	200-16746-6	16746-1	•	•
AMW-0155-042013			5/30/2013	6/1/2013	200-16746-16	16746-1	•	•
BMW-0155-042013			5/30/2013	6/1/2013	200-16746-17	16746-1	•	•
EMW-0155-042013			5/30/2013	6/1/2013	200-16746-18	16746-1	•	•
AMW-044-042013			5/30/2013	6/1/2013	200-16746-7	16746-1	•	•
		AMW-244-042013	5/30/2013	6/1/2013	200-16746-8	16746-1	•	•
BMW-044-042013	BMW-044-042013		5/30/2013	6/1/2013	200-16746-9	16746-1	•	•
AMW-018-042013			5/30/2013	6/1/2013	200-16746-19	16746-1	•	•
BMW-018-042013			5/30/2013	6/1/2013	200-16746-20	16746-1	•	•
DMW-044-042013			5/30/2013	6/1/2013	200-16746-10	16746-1	•	•
BMW-0178-042013			5/30/2013	6/1/2013	200-16746-30	16746-2	•	•
AMW-0176-042013			5/30/2013	6/1/2013	200-16746-21	16746-1	•	•
BMW-0152-042013			5/30/2013	6/1/2013	200-16746-31	16746-2	•	•
BMW-0176-042013			5/30/2013	6/1/2013	200-16746-22	16746-1	•	•
AMW-0151-042013			5/30/2013	6/1/2013	200-16746-32	16746-2	•	•
AMW-0157-042013			5/30/2013	6/1/2013	200-16746-23	16746-2	•	•
BMW-0151-042013			5/30/2013	6/1/2013	200-16746-33	16746-2	•	•
BMW-0157-042013			5/30/2013	6/1/2013	200-16746-24	16746-2	•	•
AMW-0153-042013			5/30/2013	6/1/2013	200-16746-34	16746-2	•	•
BMW-0153-042013			5/30/2013	6/1/2013	200-16746-35	16746-2	•	•
AMW-0156-042013			5/31/2013	6/1/2013	200-16746-36	16746-2	•	•
BMW-0156-042013			5/31/2013	6/1/2013	200-16746-37	16746-2	•	•
AMW-0104-042013			5/31/2013	6/1/2013	200-16746-38	16746-2	•	•
		AMW-2104-042013	5/31/2013	6/1/2013	200-16746-39	16746-2	•	•
BMW-0104-042013	BMW-0104-042013		5/31/2013	6/1/2013	200-16746-40	16746-2	•	•

Table 2-1
Sample Collection Summary
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
OMW-0104-042013			5/31/2013	6/1/2013	200-16746-25	16746-2	•	•
DMW-0104-042013			5/31/2013	6/1/2013	200-16746-26	16746-2	•	•
AMW-0111-042013			5/31/2013	6/1/2013	200-16746-27	16746-2	•	•
		AMW-2111-042013	5/31/2013	6/1/2013	200-16746-28	16746-2	•	•
BMW-0111-042013	BMW-0111-042013		5/31/2013	6/1/2013	200-16746-29	16746-2	•	•
AMW-009-042013			5/31/2013	6/1/2013	200-16746-41	16746-2		•
BMW-009-042013			5/31/2013	6/1/2013	200-16746-42	16746-2		•
		BMW-209-042013	5/31/2013	6/1/2013	200-16746-43	16746-2		•
DMW-009-042013			5/31/2013	6/1/2013	200-16746-44	16746-2		•
AMW-008-042013			5/31/2013	6/1/2013	200-16746-45	16746-2	•	•
BMW-008-042013			5/31/2013	6/1/2013	200-16746-46	16746-2	•	•
AMW-0134-042013			5/31/2013	6/1/2013	200-16746-47	16746-2		•
BMW-0134-042013			5/31/2013	6/1/2013	200-16746-48	16746-2		•
DMW-0134-042013			5/31/2013	6/1/2013	200-16746-49	16746-2		•
AMW-0133-042013			5/31/2013	6/1/2013	200-16746-50	16746-2		•
BMW-0133-042013			5/31/2013	6/1/2013	200-16746-51	16746-2		•
		BMW-2133-042013	5/31/2013	6/1/2013	200-16746-52	16746-2		•
DMW-0133-042013			5/31/2013	6/1/2013	200-16746-53	16746-2		•
AMW-0105-042013			6/3/2013	6/5/2013	200-16811-2	16811	•	•
BMW-0105-042013			6/3/2013	6/5/2013	200-16811-3	16811	•	•
OMW-0105-042013			6/3/2013	6/5/2013	200-16811-4	16811	•	•
AMW-0116-042013			6/3/2013	6/5/2013	200-16811-7	16811		•
BMW-0116-042013			6/3/2013	6/5/2013	200-16811-8	16811		•
DMW-0116-042013			6/3/2013	6/5/2013	200-16811-9	16811		•
AMW-0109-042013			6/3/2013	6/5/2013	200-16811-5	16811	•	•
BMW-0109-042013			6/3/2013	6/5/2013	200-16811-6	16811	•	•
AMW-0140-042013			6/3/2013	6/5/2013	200-16811-20	16811		•
BMW-0140-042013			6/3/2013	6/5/2013	200-16811-21	16811		•
DMW-0140-042013			6/3/2013	6/5/2013	200-16811-22	16811		•
OMW-0140-042013			6/3/2013	6/5/2013	200-16811-23	16811		•
AMW-0137-042013			6/3/2013	6/5/2013	200-16811-17	16811		•
BMW-0137-042013			6/3/2013	6/5/2013	200-16811-18	16811		•
EMW-0137-042013			6/3/2013	6/5/2013	200-16811-19	16811		•
AMW-0135-042013			6/3/2013	6/5/2013	200-16811-10	16811		•

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Sample Collection Summary
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
BMW-0135-042013			6/3/2013	6/5/2013	200-16811-11	16811		•
DMW-0135-042013			6/3/2013	6/5/2013	200-16811-12	16811		•
AMW-040-042013			6/3/2013	6/5/2013	200-16811-24	16811		•
BMW-040-042013			6/3/2013	6/5/2013	200-16811-25	16811		•
AMW-072-042013			6/3/2013	6/5/2013	200-16811-26	16811		•
BMW-072-042013			6/3/2013	6/5/2013	200-16811-27	16811		•
		BMW-272-042013	6/3/2013	6/5/2013	200-16811-28	16811		•
AMW-0136-042013			6/3/2013	6/5/2013	200-16811-13	16811		•
BMW-0136-042013			6/3/2013	6/5/2013	200-16811-14	16811		•
DMW-0136-042013			6/3/2013	6/5/2013	200-16811-15	16811		•
EMW-0136-042013			6/3/2013	6/5/2013	200-16811-16	16811		•
MW-011-042013			6/4/2013	6/6/2013	200-16854-3	16854-1	•	
AMW-0177-042013			6/4/2013	6/6/2013	200-16854-27	16854-2		•
BMW-0177-042013			6/4/2013	6/6/2013	200-16854-28	16854-2		•
AMW-078-042013			6/4/2013	6/6/2013	200-16854-33	16854-2		•
AMW-0179-042013			6/4/2013	6/6/2013	200-16854-29	16854-2		•
BMW-0179-042013			6/4/2013	6/6/2013	200-16854-30	16854-2		•
BMW-078-042013			6/4/2013	6/6/2013	200-16854-34	16854-2		•
		BMW-278-042013	6/4/2013	6/6/2013	200-16854-35	16854-2		•
AMW-093-042013			6/4/2013	6/6/2013	200-16854-47	16854-2		•
AMW-0138-042013			6/4/2013	6/6/2013	200-16854-19	16854-1		•
BMW-093-042013			6/4/2013	6/6/2013	200-16854-48	16854-2		•
BMW-0138-042013			6/4/2013	6/6/2013	200-16854-20	16854-1		•
AMW-0139-042013			6/4/2013	6/6/2013	200-16854-21	16854-1		•
BMW-0139-042013			6/4/2013	6/6/2013	200-16854-22	16854-1		•
AMW-089-042013			6/4/2013	6/6/2013	200-16854-36	16854-2		•
BMW-089-042013			6/4/2013	6/6/2013	200-16854-37	16854-2		•
DMW-089-042013			6/4/2013	6/6/2013	200-16854-38	16854-2		•
AMW-0119-042013			6/4/2013	6/6/2013	200-16854-4	16854-1	•	•
EMW-089-042013			6/4/2013	6/6/2013	200-16854-39	16854-2		•
BMW-0119-042013			6/4/2013	6/6/2013	200-16854-5	16854-1	•	•
AMW-090-042013			6/4/2013	6/6/2013	200-16854-40	16854-2	•	•
		AMW-290-042013	6/4/2013	6/6/2013	200-16854-41	16854-2	•	•
AMW-0123-042013			6/4/2013	6/6/2013	200-16854-14	16854-1	•	•

Table 2-1
Sample Collection Summary
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
BMW-090-042013	BMW-090-042013		6/4/2013	6/6/2013	200-16854-42	16854-2	•	•
BMW-0123-042013			6/4/2013	6/6/2013	200-16854-15	16854-1	•	•
DMW-090-042013			6/4/2013	6/6/2013	200-16854-43	16854-2	•	•
AMW-0120-042013			6/4/2013	6/6/2013	200-16854-6	16854-1	•	•
BMW-0120-042013			6/4/2013	6/6/2013	200-16854-7	16854-1	•	•
AMW-091-042013			6/4/2013	6/6/2013	200-16854-44	16854-2		•
DMW-0120-042013			6/4/2013	6/6/2013	200-16854-8	16854-1	•	•
BMW-091-042013			6/4/2013	6/6/2013	200-16854-45	16854-2		•
DMW-091-042013			6/4/2013	6/6/2013	200-16854-46	16854-2		•
EMW-0120-042013			6/4/2013	6/6/2013	200-16854-9	16854-1	•	•
AMW-0125-042013			6/4/2013	6/6/2013	200-16854-16	16854-1	•	•
AMW-0121-042013			6/4/2013	6/6/2013	200-16854-10	16854-1	•	•
		AMW-2121-042013	6/4/2013	6/6/2013	200-16854-11	16854-1	•	•
BMW-0125-042013			6/4/2013	6/6/2013	200-16854-17	16854-1	•	•
DMW-0125-042013			6/4/2013	6/6/2013	200-16854-18	16854-1	•	•
BMW-0121-042013	BMW-0121-042013		6/4/2013	6/6/2013	200-16854-12	16854-1	•	•
AMW-024-042013			6/4/2013	6/6/2013	200-16854-31	16854-2	•	•
EMW-0121-042013			6/4/2013	6/6/2013	200-16854-13	16854-1	•	•
BMW-024-042013			6/4/2013	6/6/2013	200-16854-32	16854-2	•	•
AMW-0141-042013			6/4/2013	6/6/2013	200-16854-23	16854-1	•	•
		AMW-2141-042013	6/4/2013	6/6/2013	200-16854-24	16854-1	•	•
BMW-0141-042013			6/4/2013	6/6/2013	200-16854-25	16854-1	•	•
EMW-0141-042013			6/4/2013	6/6/2013	200-16854-26	16854-1	•	•
AMW-029-042013			6/5/2013	6/7/2013	200-16880-47	16880-2	•	
BMW-029-042013			6/5/2013	6/7/2013	200-16880-48	16880-2	•	
AMW-003-042013			6/5/2013	6/7/2013	200-16880-5	16880-1	•	•
BMW-003-042013			6/5/2013	6/7/2013	200-16880-6	16880-1	•	•
AMW-0122-042013			6/5/2013	6/7/2013	200-16880-7	16880-1	•	•
		AMW-2122-042013	6/5/2013	6/7/2013	200-16880-8	16880-1	•	•
AMW-002-042013			6/5/2013	6/7/2013	200-16880-3	16880-1	•	•
BMW-0122-042013	BMW-0122-042013		6/5/2013	6/7/2013	200-16880-9	16880-1	•	•
BMW-002-042013			6/5/2013	6/7/2013	200-16880-4	16880-1	•	•
AMW-0127-042013			6/5/2013	6/7/2013	200-16880-16	16880-1	•	•
AMW-0160-042013			6/5/2013	6/7/2013	200-16880-30	16880-2	•	•

Table 2-1
Sample Collection Summary
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
		AMW-2160-042013	6/5/2013	6/7/2013	200-16880-31	16880-2	•	•
BMW-0127-042013			6/5/2013	6/7/2013	200-16880-17	16880-1	•	•
EMW-0127-042013			6/5/2013	6/7/2013	200-16880-18	16880-1	•	•
BMW-0160-042013			6/5/2013	6/7/2013	200-16880-32	16880-2	•	•
AMW-0142-042013			6/5/2013	6/7/2013	200-16880-19	16880-1	•	•
		AMW-2142-042013	6/5/2013	6/7/2013	200-16880-20	16880-1	•	•
AMW-025-042013			6/5/2013	6/7/2013	200-16880-42	16880-2	•	•
BMW-025-042013			6/5/2013	6/7/2013	200-16880-43	16880-2	•	•
EMW-0142-042013			6/5/2013	6/7/2013	200-16880-21	16880-1	•	•
AMW-0161-042013			6/5/2013	6/7/2013	200-16880-33	16880-2	•	•
		AMW-2161-042013	6/5/2013	6/7/2013	200-16880-34	16880-2	•	•
BMW-0161-042013			6/5/2013	6/7/2013	200-16880-35	16880-2	•	•
AMW-028-042013			6/5/2013	6/7/2013	200-16880-44	16880-2	•	
BMW-028-042013			6/5/2013	6/7/2013	200-16880-45	16880-2	•	
DMW-028-042013			6/5/2013	6/7/2013	200-16880-46	16880-2	•	
AMW-021-042013			6/5/2013	6/7/2013	200-16880-38	16880-2	•	•
		AMW-221-042013	6/5/2013	6/7/2013	200-16880-39	16880-2	•	•
BMW-065-042013			6/5/2013	6/7/2013	200-16880-49	16880-2	•	
BMW-021-042013	BMW-021-042013		6/5/2013	6/7/2013	200-16880-40	16880-2	•	•
AMW-0144-042013			6/5/2013	6/7/2013	200-16880-23	16880-2	•	
EMW-0144-042013			6/5/2013	6/7/2013	200-16880-24	16880-2	•	
DMW-021-042013			6/5/2013	6/7/2013	200-16880-41	16880-2	•	•
AMW-0171-042013			6/5/2013	6/7/2013	200-16880-36	16880-2	•	
BMW-0171-042013			6/5/2013	6/7/2013	200-16880-37	16880-2	•	
AMW-0145-042013			6/5/2013	6/7/2013	200-16880-25	16880-2	•	
AMW-0126-042013			6/5/2013	6/7/2013	200-16880-13	16880-1	•	•
BMW-0145-042013			6/5/2013	6/7/2013	200-16880-26	16880-2	•	
BMW-0126-042013			6/5/2013	6/7/2013	200-16880-14	16880-1	•	•
EMW-0145-042013			6/5/2013	6/7/2013	200-16880-27	16880-2	•	
DMW-0126-042013			6/5/2013	6/7/2013	200-16880-15	16880-1	•	•
AMW-0148-042013			6/5/2013	6/7/2013	200-16880-28	16880-2	•	
BMW-0148-042013			6/5/2013	6/7/2013	200-16880-29	16880-2	•	•
AMW-0124-042013			6/5/2013	6/7/2013	200-16880-10	16880-1	•	•
BMW-0124-042013			6/5/2013	6/7/2013	200-16880-11	16880-1	•	•

Table 2-1
Sample Collection Summary
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
DMW-0124-042013			6/5/2013	6/7/2013	200-16880-12	16880-1	•	•
BMW-0143-042013			6/5/2013	6/7/2013	200-16880-22	16880-1	•	•
AMW-033-042013			6/6/2013	6/8/2013	200-16893-20	16893	•	
BMW-033-042013			6/6/2013	6/8/2013	200-16893-21	16893	•	
DMW-033-042013			6/6/2013	6/8/2013	200-16893-22	16893	•	
AMW-0149-042013			6/6/2013	6/8/2013	200-16893-2	16893	•	•
AMW-032-042013			6/6/2013	6/8/2013	200-16893-16	16893	•	•
		AMW-232-042013	6/6/2013	6/8/2013	200-16893-17	16893	•	•
BMW-032-042013	BMW-032-042013		6/6/2013	6/8/2013	200-16893-18	16893	•	•
DMW-032-042013			6/6/2013	6/8/2013	200-16893-19	16893	•	•
AMW-0168-042013			6/6/2013	6/8/2013	200-16893-11	16893	•	
BMW-0168-042013			6/6/2013	6/8/2013	200-16893-12	16893	•	
AMW-0163-042013			6/6/2013	6/8/2013	200-16893-4	16893	•	
AMW-0162-042013			6/6/2013	6/8/2013	200-16893-3	16893	•	
BMW-0165-042013			6/6/2013	6/8/2013	200-16893-6	16893	•	
AMW-0164-042013			6/6/2013	6/8/2013	200-16893-5	16893	•	
AMW-0166-042013			6/6/2013	6/8/2013	200-16893-7	16893	•	
BMW-0166-042013			6/6/2013	6/8/2013	200-16893-8	16893	•	
AMW-0167-042013			6/6/2013	6/8/2013	200-16893-9	16893	•	
BMW-0167-042013			6/6/2013	6/8/2013	200-16893-10	16893	•	
AMW-0169-042013			6/6/2013	6/8/2013	200-16893-13	16893	•	
BMW-0169-042013			6/6/2013	6/8/2013	200-16893-14	16893	•	
AMW-0170-042013			6/6/2013	6/8/2013	200-16893-15	16893	•	
AMW-099-042013			6/7/2013	6/8/2013	200-16892-22	16892	•	
BMW-099-042013			6/7/2013	6/8/2013	200-16892-23	16892	•	
DMW-099-042013			6/7/2013	6/8/2013	200-16892-24	16892	•	
AMW-0173-042013			6/7/2013	6/8/2013	200-16892-17	16892	•	
AMW-0131-042013			6/7/2013	6/8/2013	200-16892-9	16892	•	
		AMW-2131-042013	6/7/2013	6/8/2013	200-16892-10	16892	•	
BMW-0131-042013			6/7/2013	6/8/2013	200-16892-11	16892	•	
DMW-0131-042013			6/7/2013	6/8/2013	200-16892-12	16892	•	
AMW-0172-042013			6/7/2013	6/8/2013	200-16892-15	16892	•	
BMW-0172-042013			6/7/2013	6/8/2013	200-16892-16	16892	•	
AMW-0128-042013			6/7/2013	6/8/2013	200-16892-2	16892	•	

Table 2-1
Sample Collection Summary
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
		AMW-2128-042013	6/7/2013	6/8/2013	200-16892-3	16892	•	
BMW-0128-042013			6/7/2013	6/8/2013	200-16892-4	16892	•	
AMW-0174-042013			6/7/2013	6/8/2013	200-16892-18	16892	•	
BMW-0174-042013			6/7/2013	6/8/2013	200-16892-19	16892	•	
AMW-0175-042013			6/7/2013	6/8/2013	200-16892-20	16892	•	•
BMW-0175-042013			6/7/2013	6/8/2013	200-16892-21	16892	•	•
AMW-0146-042013			6/7/2013	6/8/2013	200-16892-13	16892	•	
BMW-0146-042013			6/7/2013	6/8/2013	200-16892-14	16892	•	
AMW-0129-042013			6/7/2013	6/8/2013	200-16892-5	16892	•	
		AMW-2129-042013	6/7/2013	6/8/2013	200-16892-6	16892	•	
BMW-0129-042013			6/7/2013	6/8/2013	200-16892-7	16892	•	
DMW-0129-042013			6/7/2013	6/8/2013	200-16892-8	16892	•	
AMW-0130-042013			6/10/2013	6/12/2013	200-16963-2	16963	•	
		AMW-2130-042013	6/10/2013	6/12/2013	200-16963-3	16963	•	
BMW-0130-042013			6/10/2013	6/12/2013	200-16963-4	16963	•	
DMW-0130-042013			6/10/2013	6/12/2013	200-16963-5	16963	•	
AMW-0150-042013			6/11/2013	6/12/2013	200-16963-6	16963	•	•
BMW-0150-042013			6/11/2013	6/12/2013	200-16963-7	16963	•	•
Trip Blanks								
TRB-242-042013			5/30/2013	6/1/2013	200-16746-11	16746-1		•
TRB-043-042013			5/30/2013	6/1/2013	200-16746-1	16746-1		•
TRB-0105-042013			6/3/2013	6/5/2013	200-16811-1	16811		•
TRB-2177-042013			6/4/2013	6/6/2013	200-16854-2	16854-1		•
TRB-011-042013			6/4/2013	6/6/2013	200-16854-1	16854-1		•
TRB-203-042013			6/5/2013	6/7/2013	200-16880-2	16880-1		•
TRB-029-042013			6/5/2013	6/7/2013	200-16880-1	16880-1		•
TRB-033-042013			6/6/2013	6/8/2013	200-16893-1	16893		•
TRB-099-042013			6/7/2013	6/8/2013	200-16892-1	16892		•
TRB-2150-042013			6/11/2013	6/12/2013	200-16963-1	16963		•

Notes:

Volatiles SW8260B

Explosives SW8330

• = Requested for the indicated analyses

Table 3-1
Data Quality Evaluation Results
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	%REC	C_RPD	IS_Surr	OTHER	Comments	Final Result
AMW-002-042013	6/5/2013	16880-1	200-16880-3	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.062	J		X			Column RPD	0.062 J
AMW-0122-042013	6/5/2013	16880-1	200-16880-7	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.11	J		X			Column RPD	0.11 J
AMW-0124-042013	6/5/2013	16880-1	200-16880-10	Volatiles	1,2-dichloropropane	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
AMW-0124-042013	6/5/2013	16880-1	200-16880-10	Volatiles	cis-1,2-dichloroethene	µg/L	20	J				X	Test Hold Time	20 J
AMW-0124-042013	6/5/2013	16880-1	200-16880-10	Volatiles	methylene chloride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
AMW-0124-042013	6/5/2013	16880-1	200-16880-10	Volatiles	trans-1,2-dichloroethene	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
AMW-0124-042013	6/5/2013	16880-1	200-16880-10	Volatiles	vinyl choride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
AMW-0126-042013	6/5/2013	16880-1	200-16880-13	Volatiles	1,2-dichloropropane	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
AMW-0126-042013	6/5/2013	16880-1	200-16880-13	Volatiles	cis-1,2-dichloroethene	µg/L	31	J				X	Test Hold Time	31 J
AMW-0126-042013	6/5/2013	16880-1	200-16880-13	Volatiles	methylene chloride	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
AMW-0126-042013	6/5/2013	16880-1	200-16880-13	Volatiles	trans-1,2-dichloroethene	µg/L	11	J				X	Test Hold Time	11 J
AMW-0126-042013	6/5/2013	16880-1	200-16880-13	Volatiles	vinyl choride	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
AMW-0141-042013	6/4/2013	16854-1	200-16854-23	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.052	J		X			Column RPD	0.052 J
AMW-0141-042013	6/4/2013	16854-1	200-16854-23	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.10	J		X			Column RPD	0.10 J
AMW-0141-042013	6/4/2013	16854-1	200-16854-23	Volatiles	1,2-dichloropropane	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
AMW-0141-042013	6/4/2013	16854-1	200-16854-23	Volatiles	methylene chloride	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
AMW-0141-042013	6/4/2013	16854-1	200-16854-23	Volatiles	trans-1,2-dichloroethene	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
AMW-0141-042013	6/4/2013	16854-1	200-16854-23	Volatiles	vinyl choride	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
AMW-0142-042013	6/5/2013	16880-1	200-16880-19	Volatiles	1,2-dichloropropane	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
AMW-0142-042013	6/5/2013	16880-1	200-16880-19	Volatiles	cis-1,2-dichloroethene	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
AMW-0142-042013	6/5/2013	16880-1	200-16880-19	Volatiles	methylene chloride	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ

Table 3-1
Data Quality Evaluation Results
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	%REC	C_RPD	IS_Surr	OTHER	Comments	Final Result
AMW-0142-042013	6/5/2013	16880-1	200-16880-19	Volatiles	trans-1,2-dichloroethene	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
AMW-0142-042013	6/5/2013	16880-1	200-16880-19	Volatiles	vinyl choride	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
AMW-0146-042013	6/7/2013	16892	200-16892-13	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.060	J		X			Column RPD	0.060 J
AMW-0148-042013	6/5/2013	16880-2	200-16880-28	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.078	J		X			Column RPD	0.078 J
AMW-0149-042013	6/6/2013	16893	200-16893-2	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.065	J		X			Column RPD	0.065 J
AMW-0153-042013	5/30/2013	16746-2	200-16746-34	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.059	J		X			Column RPD	0.059 J
AMW-0154-042013	5/30/2013	16746-1	200-16746-5	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.079	J		X			Column RPD	0.079 J
AMW-0156-042013	5/31/2013	16746-2	200-16746-36	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.097	J		X			Column RPD	0.097 J
AMW-0157-042013	5/30/2013	16746-2	200-16746-23	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.059	J		X			Column RPD	0.059 J
AMW-0160-042013	6/5/2013	16880-2	200-16880-30	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.38	J		X			Column RPD	0.38 J
AMW-0160-042013	6/5/2013	16880-2	200-16880-30	Volatiles	1,2-dichloropropane	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
AMW-0160-042013	6/5/2013	16880-2	200-16880-30	Volatiles	cis-1,2-dichloroethene	µg/L	2.4	J				X	Test Hold Time	2.4 J
AMW-0160-042013	6/5/2013	16880-2	200-16880-30	Volatiles	methylene chloride	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
AMW-0160-042013	6/5/2013	16880-2	200-16880-30	Volatiles	trans-1,2-dichloroethene	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
AMW-0160-042013	6/5/2013	16880-2	200-16880-30	Volatiles	vinyl choride	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
AMW-0161-042013	6/5/2013	16880-2	200-16880-33	Volatiles	1,2-dichloropropane	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
AMW-0161-042013	6/5/2013	16880-2	200-16880-33	Volatiles	cis-1,2-dichloroethene	µg/L	40	J				X	Test Hold Time	40 J
AMW-0161-042013	6/5/2013	16880-2	200-16880-33	Volatiles	methylene chloride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
AMW-0161-042013	6/5/2013	16880-2	200-16880-33	Volatiles	trans-1,2-dichloroethene	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
AMW-0161-042013	6/5/2013	16880-2	200-16880-33	Volatiles	trichloroethene	µg/L	8400	J				X	Test Hold Time	8400 J
AMW-0161-042013	6/5/2013	16880-2	200-16880-33	Volatiles	vinyl choride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ

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Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	%REC	C_RPD	IS_Surr	OTHER	Comments	Final Result
AMW-0168-042013	6/6/2013	16893	200-16893-11	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.052	J		X			Column RPD	0.052 J
AMW-042-042013	5/30/2013	16746-1	200-16746-12	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.084	J		X			Column RPD	0.084 J
AMW-2122-042013	6/5/2013	16880-1	200-16880-8	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.15	J		X			Column RPD	0.15 J
AMW-2128-042013	6/7/2013	16892	200-16892-3	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.43	J		X			Column RPD	0.43 J
AMW-2141-042013	6/4/2013	16854-1	200-16854-24	Volatiles	1,2-dichloropropane	µg/L	3.7	UJ				X	Test Hold Time	3.7 UJ
AMW-2141-042013	6/4/2013	16854-1	200-16854-24	Volatiles	methylene chloride	µg/L	3.7	UJ				X	Test Hold Time	3.7 UJ
AMW-2141-042013	6/4/2013	16854-1	200-16854-24	Volatiles	trans-1,2-dichloroethene	µg/L	3.7	UJ				X	Test Hold Time	3.7 UJ
AMW-2141-042013	6/4/2013	16854-1	200-16854-24	Volatiles	vinyl choride	µg/L	3.7	UJ				X	Test Hold Time	3.7 UJ
AMW-2142-042013	6/5/2013	16880-1	200-16880-20	Volatiles	1,2-dichloropropane	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
AMW-2142-042013	6/5/2013	16880-1	200-16880-20	Volatiles	cis-1,2-dichloroethene	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
AMW-2142-042013	6/5/2013	16880-1	200-16880-20	Volatiles	methylene chloride	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
AMW-2142-042013	6/5/2013	16880-1	200-16880-20	Volatiles	trans-1,2-dichloroethene	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
AMW-2142-042013	6/5/2013	16880-1	200-16880-20	Volatiles	vinyl choride	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
AMW-2160-042013	6/5/2013	16880-2	200-16880-31	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.25	J		X			Column RPD	0.25 J
AMW-2160-042013	6/5/2013	16880-2	200-16880-31	Volatiles	1,2-dichloropropane	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
AMW-2160-042013	6/5/2013	16880-2	200-16880-31	Volatiles	cis-1,2-dichloroethene	µg/L	2.2	J				X	Test Hold Time	2.2 J
AMW-2160-042013	6/5/2013	16880-2	200-16880-31	Volatiles	methylene chloride	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
AMW-2160-042013	6/5/2013	16880-2	200-16880-31	Volatiles	trans-1,2-dichloroethene	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
AMW-2160-042013	6/5/2013	16880-2	200-16880-31	Volatiles	vinyl choride	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
AMW-2161-042013	6/5/2013	16880-2	200-16880-34	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.050	J		X			Column RPD	0.050 J
AMW-2161-042013	6/5/2013	16880-2	200-16880-34	Volatiles	1,2-dichloropropane	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ

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AMW-2161-042013	6/5/2013	16880-2	200-16880-34	Volatiles	cis-1,2-dichloroethene	µg/L	37	J				X	Test Hold Time	37 J
AMW-2161-042013	6/5/2013	16880-2	200-16880-34	Volatiles	methylene chloride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
AMW-2161-042013	6/5/2013	16880-2	200-16880-34	Volatiles	trans-1,2-dichloroethene	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
AMW-2161-042013	6/5/2013	16880-2	200-16880-34	Volatiles	vinyl choride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
AMW-242-042013	5/30/2013	16746-1	200-16746-13	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.099	J		X			Column RPD	0.099 J
AMW-290-042013	6/4/2013	16854-2	200-16854-41	Volatiles	1,2-dichloropropane	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
AMW-290-042013	6/4/2013	16854-2	200-16854-41	Volatiles	cis-1,2-dichloroethene	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
AMW-290-042013	6/4/2013	16854-2	200-16854-41	Volatiles	methylene chloride	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
AMW-290-042013	6/4/2013	16854-2	200-16854-41	Volatiles	trans-1,2-dichloroethene	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
AMW-290-042013	6/4/2013	16854-2	200-16854-41	Volatiles	vinyl choride	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
BMW-002-042013	6/5/2013	16880-1	200-16880-4	Explosives	2,4-dinitrotoluene	µg/L	0.22	J		X			Column RPD	0.22 J
BMW-003-042013	6/5/2013	16880-1	200-16880-6	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.098	J		X			Column RPD	0.098 J
BMW-0119-042013	6/4/2013	16854-1	200-16854-5	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.095	J		X			Column RPD	0.095 J
BMW-0120-042013	6/4/2013	16854-1	200-16854-7	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.053	J		X			Column RPD	0.053 J
BMW-0120-042013	6/4/2013	16854-1	200-16854-7	Explosives	4-amino-2,6-dinitrotoluene	µg/L	3.0	J		X			Column RPD	3.0 J
BMW-0120-042013	6/4/2013	16854-1	200-16854-7	Volatiles	1,2-dichloropropane	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0120-042013	6/4/2013	16854-1	200-16854-7	Volatiles	cis-1,2-dichloroethene	µg/L	5.4	J				X	Test Hold Time	5.4 J
BMW-0120-042013	6/4/2013	16854-1	200-16854-7	Volatiles	methylene chloride	µg/L	3.0	J				X	Test Hold Time	3.0 J
BMW-0120-042013	6/4/2013	16854-1	200-16854-7	Volatiles	trans-1,2-dichloroethene	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0120-042013	6/4/2013	16854-1	200-16854-7	Volatiles	vinyl choride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0122-042013	6/5/2013	16880-1	200-16880-9	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.34	J		X			Column RPD	0.34 J

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Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	%REC	C_RPD	IS_Surr	OTHER	Comments	Final Result
BMW-0124-042013	6/5/2013	16880-1	200-16880-11	Explosives	1,3,5-trinitrobenzene	µg/L	0.065	J		X			Column RPD	0.065 J
BMW-0124-042013	6/5/2013	16880-1	200-16880-11	Explosives	4-amino-2,6-dinitrotoluene	µg/L	1.9	J		X			Column RPD	1.9 J
BMW-0124-042013	6/5/2013	16880-1	200-16880-11	Volatiles	1,2-dichloropropane	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0124-042013	6/5/2013	16880-1	200-16880-11	Volatiles	cis-1,2-dichloroethene	µg/L	21	J				X	Test Hold Time	21 J
BMW-0124-042013	6/5/2013	16880-1	200-16880-11	Volatiles	methylene chloride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0124-042013	6/5/2013	16880-1	200-16880-11	Volatiles	trans-1,2-dichloroethene	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0124-042013	6/5/2013	16880-1	200-16880-11	Volatiles	vinyl choride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0125-042013	6/4/2013	16854-1	200-16854-17	Explosives	1,3,5-trinitrobenzene	µg/L	0.26	J		X			Column RPD	0.26 J
BMW-0125-042013	6/4/2013	16854-1	200-16854-17	Explosives	4-amino-2,6-dinitrotoluene	µg/L	3.5	J		X			Column RPD	3.5 J
BMW-0125-042013	6/4/2013	16854-1	200-16854-17	Volatiles	1,2-dichloropropane	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0125-042013	6/4/2013	16854-1	200-16854-17	Volatiles	cis-1,2-dichloroethene	µg/L	4.2	J				X	Test Hold Time	4.2 J
BMW-0125-042013	6/4/2013	16854-1	200-16854-17	Volatiles	methylene chloride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0125-042013	6/4/2013	16854-1	200-16854-17	Volatiles	trans-1,2-dichloroethene	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0125-042013	6/4/2013	16854-1	200-16854-17	Volatiles	vinyl choride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0126-042013	6/5/2013	16880-1	200-16880-14	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.15	J		X			Column RPD	0.15 J
BMW-0126-042013	6/5/2013	16880-1	200-16880-14	Explosives	4-amino-2,6-dinitrotoluene	µg/L	12	J		X			Column RPD	12 J
BMW-0126-042013	6/5/2013	16880-1	200-16880-14	Volatiles	1,2-dichloropropane	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
BMW-0126-042013	6/5/2013	16880-1	200-16880-14	Volatiles	cis-1,2-dichloroethene	µg/L	7.6	J				X	Test Hold Time	7.6 J
BMW-0126-042013	6/5/2013	16880-1	200-16880-14	Volatiles	methylene chloride	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ
BMW-0126-042013	6/5/2013	16880-1	200-16880-14	Volatiles	trans-1,2-dichloroethene	µg/L	2.4	J				X	Test Hold Time	2.4 J
BMW-0126-042013	6/5/2013	16880-1	200-16880-14	Volatiles	vinyl choride	µg/L	2.2	UJ				X	Test Hold Time	2.2 UJ

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BMW-0127-042013	6/5/2013	16880-1	200-16880-17	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.33	J		X			Column RPD	0.33 J
BMW-0127-042013	6/5/2013	16880-1	200-16880-17	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.31	J		X			Column RPD	0.31 J
BMW-0130-042013	6/10/2013	16963	200-16963-4	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.38	J		X			Column RPD	0.38 J
BMW-0138-042013	6/4/2013	16854-1	200-16854-20	Volatiles	1,2-dichloropropane	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
BMW-0138-042013	6/4/2013	16854-1	200-16854-20	Volatiles	cis-1,2-dichloroethene	µg/L	15	J				X	Test Hold Time	15 J
BMW-0138-042013	6/4/2013	16854-1	200-16854-20	Volatiles	methylene chloride	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
BMW-0138-042013	6/4/2013	16854-1	200-16854-20	Volatiles	trans-1,2-dichloroethene	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
BMW-0138-042013	6/4/2013	16854-1	200-16854-20	Volatiles	vinyl choride	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
BMW-0141-042013	6/4/2013	16854-1	200-16854-25	Explosives	4-amino-2,6-dinitrotoluene	µg/L	7.6	J		X			Column RPD	7.6 J
BMW-0141-042013	6/4/2013	16854-1	200-16854-25	Volatiles	1,2-dichloropropane	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
BMW-0141-042013	6/4/2013	16854-1	200-16854-25	Volatiles	cis-1,2-dichloroethene	µg/L	8.5	J				X	Test Hold Time	8.5 J
BMW-0141-042013	6/4/2013	16854-1	200-16854-25	Volatiles	methylene chloride	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
BMW-0141-042013	6/4/2013	16854-1	200-16854-25	Volatiles	trans-1,2-dichloroethene	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
BMW-0141-042013	6/4/2013	16854-1	200-16854-25	Volatiles	vinyl choride	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
BMW-0150-042013	6/11/2013	16963	200-16963-7	Explosives	2,4-dinitrotoluene	µg/L	0.32	J		X			Column RPD	0.32 J
BMW-0150-042013	6/11/2013	16963	200-16963-7	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.17	J		X			Column RPD	0.17 J
BMW-0154-042013	5/30/2013	16746-1	200-16746-6	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.043	J		X			Column RPD	0.043 J
BMW-0160-042013	6/5/2013	16880-2	200-16880-32	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.065	J		X			Column RPD	0.065 J
BMW-0161-042013	6/5/2013	16880-2	200-16880-35	Explosives	4-amino-2,6-dinitrotoluene	µg/L	4.1	J		X			Column RPD	4.1 J
BMW-0161-042013	6/5/2013	16880-2	200-16880-35	Volatiles	1,2-dichloropropane	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0161-042013	6/5/2013	16880-2	200-16880-35	Volatiles	cis-1,2-dichloroethene	µg/L	20	J				X	Test Hold Time	20 J

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BMW-0161-042013	6/5/2013	16880-2	200-16880-35	Volatiles	methylene chloride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0161-042013	6/5/2013	16880-2	200-16880-35	Volatiles	trans-1,2-dichloroethene	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0161-042013	6/5/2013	16880-2	200-16880-35	Volatiles	vinyl choride	µg/L	2.8	UJ				X	Test Hold Time	2.8 UJ
BMW-0171-042013	6/5/2013	16880-2	200-16880-37	Explosives	2,4,6-trinitrotoluene	µg/L	0.18	J		X			Column RPD	0.18 J
BMW-0175-042013	6/7/2013	16892	200-16892-21	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.068	J		X			Column RPD	0.068 J
BMW-0176-042013	5/30/2013	16746-1	200-16746-22	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.20	J		X			Column RPD	0.20 J
BMW-024-042013	6/4/2013	16854-2	200-16854-32	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.27	J		X			Column RPD	0.27 J
BMW-028-042013	6/5/2013	16880-2	200-16880-45	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.92	J		X			Column RPD	0.92 J
BMW-043-042013	5/30/2013	16746-1	200-16746-3	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.14	J		X			Column RPD	0.14 J
BMW-090-042013	6/4/2013	16854-2	200-16854-42	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.067	J		X			Column RPD	0.067 J
BMW-090-042013	6/4/2013	16854-2	200-16854-42	Volatiles	trichloroethene	µg/L	52	J	X				MS Recovery	52 J
DMW-0124-042013	6/5/2013	16880-1	200-16880-12	Explosives	2,4,6-trinitrotoluene	µg/L	0.073	J		X			Column RPD	0.073 J
DMW-0124-042013	6/5/2013	16880-1	200-16880-12	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.15	J		X			Column RPD	0.15 J
DMW-0124-042013	6/5/2013	16880-1	200-16880-12	Volatiles	1,2-dichloropropane	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
DMW-0124-042013	6/5/2013	16880-1	200-16880-12	Volatiles	cis-1,2-dichloroethene	µg/L	2.6	J				X	Test Hold Time	2.6 J
DMW-0124-042013	6/5/2013	16880-1	200-16880-12	Volatiles	methylene chloride	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
DMW-0124-042013	6/5/2013	16880-1	200-16880-12	Volatiles	trans-1,2-dichloroethene	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
DMW-0124-042013	6/5/2013	16880-1	200-16880-12	Volatiles	vinyl choride	µg/L	1.3	UJ				X	Test Hold Time	1.3 UJ
DMW-0125-042013	6/4/2013	16854-1	200-16854-18	Explosives	2,4,6-trinitrotoluene	µg/L	0.26	J		X			Column RPD	0.26 J
DMW-0125-042013	6/4/2013	16854-1	200-16854-18	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.15	J		X			Column RPD	0.15 J
DMW-0126-042013	6/5/2013	16880-1	200-16880-15	Explosives	1,3,5-trinitrobenzene	µg/L	0.055	J		X			Column RPD	0.055 J

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DMW-0126-042013	6/5/2013	16880-1	200-16880-15	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.12	J		X			Column RPD	0.12 J
DMW-0126-042013	6/5/2013	16880-1	200-16880-15	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	34	J		X			Column RPD	34 J
DMW-0130-042013	6/10/2013	16963	200-16963-5	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.16	J		X			Column RPD	0.16 J
DMW-0131-042013	6/7/2013	16892	200-16892-12	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.19	J		X			Column RPD	0.19 J
DMW-042-042013	5/30/2013	16746-1	200-16746-15	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.058	J		X			Column RPD	0.058 J
DMW-090-042013	6/4/2013	16854-2	200-16854-43	Explosives	1,3,5-trinitrobenzene	µg/L	0.047	J		X			Column RPD	0.047 J
DMW-090-042013	6/4/2013	16854-2	200-16854-43	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.88	J		X			Column RPD	0.88 J
DMW-090-042013	6/4/2013	16854-2	200-16854-43	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.26	J		X			Column RPD	0.26 J
EMW-0120-042013	6/4/2013	16854-1	200-16854-9	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.64	J		X			Column RPD	0.64 J
EMW-0120-042013	6/4/2013	16854-1	200-16854-9	Volatiles	1,2-dichloropropane	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
EMW-0120-042013	6/4/2013	16854-1	200-16854-9	Volatiles	cis-1,2-dichloroethene	µg/L	24	J				X	Test Hold Time	24 J
EMW-0120-042013	6/4/2013	16854-1	200-16854-9	Volatiles	methylene chloride	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
EMW-0120-042013	6/4/2013	16854-1	200-16854-9	Volatiles	trans-1,2-dichloroethene	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
EMW-0120-042013	6/4/2013	16854-1	200-16854-9	Volatiles	vinyl choride	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
EMW-0127-042013	6/5/2013	16880-1	200-16880-18	Explosives	1,3,5-trinitrobenzene	µg/L	180	J			X		Surrogate recovery outside project limits.	180 J
EMW-0127-042013	6/5/2013	16880-1	200-16880-18	Explosives	2,4,6-trinitrotoluene	µg/L	83	J			X		Surrogate recovery outside project limits.	83 J
EMW-0127-042013	6/5/2013	16880-1	200-16880-18	Explosives	2,4-dinitrotoluene	µg/L	0.24	J		X	X		Column RPD,Surrogate recovery outside project limits.	0.24 J
EMW-0127-042013	6/5/2013	16880-1	200-16880-18	Explosives	2-amino-4,6-dinitrotoluene	µg/L	3.1	J			X		Surrogate recovery outside project limits.	3.1 J
EMW-0127-042013	6/5/2013	16880-1	200-16880-18	Explosives	4-amino-2,6-dinitrotoluene	µg/L	1.7	J			X		Surrogate recovery outside project limits.	1.7 J
EMW-0127-042013	6/5/2013	16880-1	200-16880-18	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	5.6	J			X		Surrogate recovery outside project limits.	5.6 J

Table 3-1
Data Quality Evaluation Results
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	%REC	C_RPD	IS_Surr	OTHER	Comments	Final Result
EMW-0141-042013	6/4/2013	16854-1	200-16854-26	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.34	J		X			Column RPD	0.34 J
EMW-0141-042013	6/4/2013	16854-1	200-16854-26	Explosives	4-amino-2,6-dinitrotoluene	µg/L	3.3	J		X			Column RPD	3.3 J
EMW-0141-042013	6/4/2013	16854-1	200-16854-26	Volatiles	1,2-dichloropropane	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
EMW-0141-042013	6/4/2013	16854-1	200-16854-26	Volatiles	cis-1,2-dichloroethene	µg/L	10	J				X	Test Hold Time	10 J
EMW-0141-042013	6/4/2013	16854-1	200-16854-26	Volatiles	methylene chloride	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
EMW-0141-042013	6/4/2013	16854-1	200-16854-26	Volatiles	trans-1,2-dichloroethene	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
EMW-0141-042013	6/4/2013	16854-1	200-16854-26	Volatiles	vinyl choride	µg/L	4.4	UJ				X	Test Hold Time	4.4 UJ
EMW-0142-042013	6/5/2013	16880-1	200-16880-21	Explosives	1,3,5-trinitrobenzene	µg/L	1.1	J		X			Column RPD	1.1 J
EMW-0144-042013	6/5/2013	16880-2	200-16880-24	Explosives	1,3,5-trinitrobenzene	µg/L	0.11	J		X			Column RPD	0.11 J
EMW-0145-042013	6/5/2013	16880-2	200-16880-27	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.085	J		X			Column RPD	0.085 J

Note: The LOD values were used to display non detected lab results.

Reason for Qualification

%REC	LCS - low, LCS Recovery, MS - low, MS Recovery
C_RPD	Column RPD
IS_Surr	Internal standard, Surrogate recovery outside project limits.
OTHER	An analyte (non-common laboratory artifact) was detected in the sample at a concentration less than 5X the concentration detected in the associated method blank., Analyte not confirmed

Table 3-2
Explosives Quality Control Outliers
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
Confirmation Column Difference					
AMW-002-042013	16880-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	102 RPD
AMW-0122-042013	16880-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	74.3 RPD
AMW-0141-042013	16854-1	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	179 RPD
AMW-0141-042013	16854-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	193 RPD
AMW-0146-042013	16892	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	58.8 RPD
AMW-0148-042013	16880-2	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	42.4 RPD
AMW-0149-042013	16893	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	105 RPD
AMW-0153-042013	16746-2	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	198 RPD
AMW-0154-042013	16746-1	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	73.1 RPD
AMW-0156-042013	16746-2	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	67.6 RPD
AMW-0157-042013	16746-2	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	186 RPD
AMW-0160-042013	16880-2	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	141 RPD
AMW-0168-042013	16893	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	43.6 RPD
AMW-042-042013	16746-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	56.4 RPD
AMW-2122-042013	16880-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	53.7 RPD
AMW-2128-042013	16892	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	Confirmation Column Difference exceeds UCL	< 40 RPD	57.9 RPD
AMW-2160-042013	16880-2	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	126 RPD
AMW-2161-042013	16880-2	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	198 RPD
AMW-242-042013	16746-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	41.0 RPD
BMW-002-042013	16880-1	2,4-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	58.8 RPD
BMW-003-042013	16880-1	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	53.7 RPD
BMW-0119-042013	16854-1	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	71.2 RPD
BMW-0120-042013	16854-1	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	187 RPD
BMW-0120-042013	16854-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	114 RPD
BMW-0122-042013	16880-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	82.8 RPD
BMW-0124-042013	16880-1	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	76.6 RPD
BMW-0124-042013	16880-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	133 RPD
BMW-0125-042013	16854-1	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	73.7 RPD
BMW-0125-042013	16854-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	73.9 RPD
BMW-0126-042013	16880-1	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	184 RPD
BMW-0126-042013	16880-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	62.9 RPD
BMW-0127-042013	16880-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	50.0 RPD
BMW-0127-042013	16880-1	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	Confirmation Column Difference exceeds UCL	< 40 RPD	58.3 RPD

Table 3-2
Explosives Quality Control Outliers
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
BMW-0130-042013	16963	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	Confirmation Column Difference exceeds UCL	< 40 RPD	43.3 RPD
BMW-0141-042013	16854-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	52.4 RPD
BMW-0150-042013	16963	2,4-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	46.2 RPD
BMW-0150-042013	16963	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	45.5 RPD
BMW-0154-042013	16746-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	66.7 RPD
BMW-0160-042013	16880-2	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	142 RPD
BMW-0161-042013	16880-2	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	91.4 RPD
BMW-0171-042013	16880-2	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	89.2 RPD
BMW-0175-042013	16892	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	112 RPD
BMW-0176-042013	16746-1	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	Confirmation Column Difference exceeds UCL	< 40 RPD	42.4 RPD
BMW-024-042013	16854-2	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	43.5 RPD
BMW-028-042013	16880-2	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	Confirmation Column Difference exceeds UCL	< 40 RPD	54.0 RPD
BMW-043-042013	16746-1	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	48.6 RPD
BMW-090-042013	16854-2	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	48.6 RPD
DMW-0124-042013	16880-1	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	129 RPD
DMW-0124-042013	16880-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	195 RPD
DMW-0125-042013	16854-1	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	47.1 RPD
DMW-0125-042013	16854-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	127 RPD
DMW-0126-042013	16880-1	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	130 RPD
DMW-0126-042013	16880-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	194 RPD
DMW-0126-042013	16880-1	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	Confirmation Column Difference exceeds UCL	< 40 RPD	111 RPD
DMW-0130-042013	16963	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	Confirmation Column Difference exceeds UCL	< 40 RPD	51.0 RPD
DMW-0131-042013	16892	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	Confirmation Column Difference exceeds UCL	< 40 RPD	51.0 RPD
DMW-042-042013	16746-1	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	98.2 RPD
DMW-090-042013	16854-2	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	64.8 RPD
DMW-090-042013	16854-2	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	155 RPD
DMW-090-042013	16854-2	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	Confirmation Column Difference exceeds UCL	< 40 RPD	81.1 RPD
EMW-0120-042013	16854-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	183 RPD
EMW-0127-042013	16880-1	2,4-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	138 RPD
EMW-0141-042013	16854-1	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	117 RPD
EMW-0141-042013	16854-1	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	69.3 RPD

Table 3-2
Explosives Quality Control Outliers
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
EMW-0142-042013	16880-1	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	41.8 RPD
EMW-0144-042013	16880-2	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	119 RPD
EMW-0145-042013	16880-2	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	88.5 RPD
Surrogate					
EMW-0127-042013	16880-1	2,4-Dinitrotoluene	Surrogate exceeds UCL	1,2-Dinitrobenzene 70 - 115 %	138 %
EMW-0127-042013	16880-1	1,3,5-Trinitrobenzene	Surrogate exceeds UCL	1,2-Dinitrobenzene 70 - 115 %	138 %
EMW-0127-042013	16880-1	2,4,6-Trinitrotoluene	Surrogate exceeds UCL	1,2-Dinitrobenzene 70 - 115 %	138 %
EMW-0127-042013	16880-1	2-Amino-4,6-dinitrotoluene	Surrogate exceeds UCL	1,2-Dinitrobenzene 70 - 115 %	138 %
EMW-0127-042013	16880-1	4-Amino-2,6-Dinitrotoluene	Surrogate exceeds UCL	1,2-Dinitrobenzene 70 - 115 %	138 %
EMW-0127-042013	16880-1	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	Surrogate exceeds UCL	1,2-Dinitrobenzene 70 - 115 %	138 %

Table 3-3
Volatiles Quality Control Outliers
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
MS/MSD Recovery					
BMW-090-042013	16854-2	TCE	Matrix Spike exceeds UCL	80 - 120 %	140 %
BMW-090-042013	16854-2	TCE	Matrix Spike exceeds UCL	80 - 120 %	176 %
Test Hold Time					
AMW-0124-042013	16880-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	18.3 Days
AMW-0124-042013	16880-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	18.3 Days
AMW-0124-042013	16880-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	18.3 Days
AMW-0124-042013	16880-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	18.3 Days
AMW-0124-042013	16880-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	18.3 Days
AMW-0126-042013	16880-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	18.4 Days
AMW-0126-042013	16880-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	18.4 Days
AMW-0126-042013	16880-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	18.4 Days
AMW-0126-042013	16880-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	18.4 Days
AMW-0126-042013	16880-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	18.4 Days
AMW-0141-042013	16854-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.1 Days
AMW-0141-042013	16854-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.1 Days
AMW-0141-042013	16854-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.1 Days
AMW-0141-042013	16854-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.1 Days
AMW-0142-042013	16880-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	18.5 Days
AMW-0142-042013	16880-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	18.5 Days
AMW-0142-042013	16880-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	18.5 Days
AMW-0142-042013	16880-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	18.5 Days
AMW-0142-042013	16880-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	18.5 Days
AMW-0160-042013	16880-2	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	18.6 Days
AMW-0160-042013	16880-2	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	18.6 Days
AMW-0160-042013	16880-2	Methylene Chloride	Test Exceeds UWL	< 14 Days	18.6 Days
AMW-0160-042013	16880-2	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	18.6 Days
AMW-0160-042013	16880-2	Vinyl Chloride	Test Exceeds UWL	< 14 Days	18.6 Days
AMW-0161-042013	16880-2	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-0161-042013	16880-2	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-0161-042013	16880-2	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-0161-042013	16880-2	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-0161-042013	16880-2	TCE	Test Exceeds UWL	< 14 Days	14.9 Days
AMW-0161-042013	16880-2	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.3 Days

Table 3-3
Volatiles Quality Control Outliers
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
AMW-2141-042013	16854-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.2 Days
AMW-2141-042013	16854-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.2 Days
AMW-2141-042013	16854-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.2 Days
AMW-2141-042013	16854-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.2 Days
AMW-2142-042013	16880-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	18.6 Days
AMW-2142-042013	16880-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	18.6 Days
AMW-2142-042013	16880-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	18.6 Days
AMW-2142-042013	16880-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	18.6 Days
AMW-2142-042013	16880-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	18.6 Days
AMW-2160-042013	16880-2	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-2160-042013	16880-2	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-2160-042013	16880-2	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-2160-042013	16880-2	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-2160-042013	16880-2	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-2161-042013	16880-2	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-2161-042013	16880-2	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-2161-042013	16880-2	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-2161-042013	16880-2	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-2161-042013	16880-2	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.3 Days
AMW-290-042013	16854-2	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.4 Days
AMW-290-042013	16854-2	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	19.4 Days
AMW-290-042013	16854-2	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.4 Days
AMW-290-042013	16854-2	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.4 Days
AMW-290-042013	16854-2	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.4 Days
BMW-0120-042013	16854-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0120-042013	16854-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0120-042013	16854-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0120-042013	16854-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0120-042013	16854-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0124-042013	16880-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	18.3 Days
BMW-0124-042013	16880-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	18.3 Days
BMW-0124-042013	16880-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	18.3 Days
BMW-0124-042013	16880-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	18.3 Days
BMW-0124-042013	16880-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	18.3 Days

Table 3-3
Volatiles Quality Control Outliers
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
BMW-0125-042013	16854-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0125-042013	16854-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0125-042013	16854-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0125-042013	16854-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0125-042013	16854-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0126-042013	16880-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	18.4 Days
BMW-0126-042013	16880-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	18.4 Days
BMW-0126-042013	16880-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	18.4 Days
BMW-0126-042013	16880-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	18.4 Days
BMW-0126-042013	16880-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	18.4 Days
BMW-0138-042013	16854-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.4 Days
BMW-0138-042013	16854-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	19.4 Days
BMW-0138-042013	16854-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.4 Days
BMW-0138-042013	16854-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.4 Days
BMW-0138-042013	16854-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.4 Days
BMW-0141-042013	16854-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0141-042013	16854-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0141-042013	16854-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0141-042013	16854-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0141-042013	16854-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.2 Days
BMW-0161-042013	16880-2	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.3 Days
BMW-0161-042013	16880-2	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	19.3 Days
BMW-0161-042013	16880-2	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.3 Days
BMW-0161-042013	16880-2	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.3 Days
BMW-0161-042013	16880-2	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.3 Days
DMW-0124-042013	16880-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	18.3 Days
DMW-0124-042013	16880-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	18.3 Days
DMW-0124-042013	16880-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	18.3 Days
DMW-0124-042013	16880-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	18.3 Days
DMW-0124-042013	16880-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	18.3 Days
EMW-0120-042013	16854-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.2 Days
EMW-0120-042013	16854-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	19.2 Days
EMW-0120-042013	16854-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.2 Days
EMW-0120-042013	16854-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.2 Days

Table 3-3
Volatiles Quality Control Outliers
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
EMW-0120-042013	16854-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.2 Days
EMW-0141-042013	16854-1	1,2-Dichloropropane	Test Exceeds UWL	< 14 Days	19.2 Days
EMW-0141-042013	16854-1	cis-1,2-Dichloroethylene	Test Exceeds UWL	< 14 Days	19.2 Days
EMW-0141-042013	16854-1	Methylene Chloride	Test Exceeds UWL	< 14 Days	19.2 Days
EMW-0141-042013	16854-1	trans-1,2-Dichloroethene	Test Exceeds UWL	< 14 Days	19.2 Days
EMW-0141-042013	16854-1	Vinyl Chloride	Test Exceeds UWL	< 14 Days	19.2 Days

Table 4-1
Field Completeness
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned	Number of Samples Collected	Field Completeness
Explosives	169	168	99.4%
Volatiles	166	165	99.4%
Totals =	335	333	99.4%
Goal =			95%

Notes:
Number of Samples Planned includes field samples and field duplicate samples.

Table 4-2
Analytical Completeness
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Total Number of Parameters	Acceptable Data	Acceptable Data Completeness	Acceptable Data Completeness Goals	Quality Data	Quality Data Completeness	Quality Data Completeness Goals
Explosives (Analyte Count - 6)	1008	1002	99.4%	90%	1008	100%	80%
Volatiles (Analyte Count - 6)	990	885	89.4%	90%	990	100%	80%
Totals =	1998	1887	94.4%	90%	1998	100.0%	80%

Notes:

Total number of parameters includes field samples (includes data points from dilutions and/or reanalyses to be used in place of original data) and field duplicates (does not include field blanks or trip blanks).

Acceptable data includes data that has not been rejected or qualified as estimated (J/UJ). Data points for which the required corrective actions were taken or do not require corrective action do not count against the acceptable data completeness goal calculation (i.e., results exceeding the calibration range that were reanalyzed at dilutions within the calibration range).

Quality data is defined as all non-rejected data.

Table 4-3
Project Completeness
Second Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field	Analytical	Project Completeness
99.4%	100.0%	99.4%
Project Completeness Goal =		90%

Notes:

Analytical Completeness is the percentage of usable data (i.e. quality data completeness).
Project Completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples / measurements that are determined to be usable to the total number of samples / measurements planned.

Appendix A
Chain of Custody Records

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 5-30-13	COC No. 05 30 13
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	1 of 6 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8260 - VOCs	8330 - Explosives	Sample Specific Notes
TRB-043-042013	5-30-13	1005	G	w	~~5~~ 2	X		
AMW-043-042013	5-30	1010	G	w	5	X	X	
BMW-043-042013	5-30	1035	G	w	5	X	X	
DMW-043-042013	5-30	1100	G	w	5	X	X	
AMW-0154-042013	5-30	1125	G	w	5	X	X	
BMW-0154-042013	5-30	1145	G	w	5	X	X	
AMW-044-042013	5-30	1230	G	w	5	X	X	
AMW-244-042013	5-30	1230	G	w	5	X	X	
BMW-044-042013	5-30	1300	G	w	5	X	X	
BMW-044-042013MS	5-30	1300	G	w	~~5~~ 5	X	X	
BMW-044-042013MSD	5-30	1300	G	w	5	X	X	
DMW-044-042013	5-30	1335	G	w	5	X	X	

200-16746 COC

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1800

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
[signature]	ECC	5-31-13	Fed-ex 7998	9660	6/31
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
			[signature]	TAB	6/1/13 1015
Relinquished by	Company	Date/Time	Received by	Company	Date/Time

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660 1990 fax 802.660.1919

Groundwater samples

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 5-30-13	COC No: 053013
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	2 of 6 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8260 - VOCs	8330 - Explosives	Sample Specific Notes.
TRB-242-042013	5-30-13	1000	G	W	2	✓		
AMW-042-042013	↓	1040	G	W	5	✓	✓	
AMW-242-042013		1040	G	W	5	✓	✓	
BMW-042-042013		1110	G	W	5	✓	✓	
BMW-042-042013 MS		1110	G	W	4	✓	✓	
BMW-042-042013 MSD		1110	G	W	4	✓	✓	
DMW-042-042013		1130	G	W	5	✓	✓	
AMW-0155-042013		1200	G	W	5	✓	✓	
BMW-0155-042013		1210	G	W	5	✓	✓	
EMW-0155-042013		1225	G	W	5	✓	✓	
AMW-018-042013		1305	G	W	5	✓	✓	
BMW-018-042013	↓	1315	G	W	5	✓	✓	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1800

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
[signature]	ECC	5-31-13	Fed-ex 7998 9660 6431		
Relinquished by	Company	Date/Time	Received by [signature]	Company TABUR	Date/Time 6/1/13 1015
Relinquished by	Company	Date/Time	Received by	Company	Date/Time

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660 1990 fax 802.660 1919

Groundwater samples

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 5-30-13	COC No: 053013
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	3 of 6 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			SDG No.
(303) 298-7837 FAX	☐ 3 weeks			
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8260 - VOCs	8330 - Explosives	Sample Specific Notes
AMW-0176-042013	5-30	1400	G	w	5	X	X	
BMW-0176-042013	5-30	1415	G	w	5	X	X	
AMW-0157-042013	5-30	1445	G	w	5	X	X	
BMW-0157-042013	5-30	1505	G	w	5	X	X	
BMW-0104-042013MSD	5-31	0915	G	w	5	X	X	
CMW-0104-042013	5-31	0950	G	w	5	X	X	
DMW-0104-042013	5-31	1015	G	w	5	X	X	
AMW-0111-042013	5-31	1045	G	w	5	X	X	
AMW-2111-042013	5-31	1045	G	w	5	X	X	
BMW-0111-042013	5-31	1115	G	w	5	X	X	
BMW-0111-042013MS	5-31	1115	G	w	5	X	X	
BMW-0111-042013MSD	5-31	1115	G	w	5	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For _____ Months*

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time
[signature]	ECC	5-31-13	Fed-ex 7998	9160 6431	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[signature]	TA Bur	6/4/13 1015
Relinquished by	Company:	Date/Time	Received by:	Company:	Date/Time:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 5-30-13	COC No. 058013
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	4 of 6 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			SDG No.
(303) 298-7837 FAX	☐ 3 weeks			
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8260 - VOCs	8330 - Explosives	Sample Specific Notes:
BMW-0178-042013	5-30-13	1350	G	W	5	✓	✓	
BMW-0152-042013	↓	1415	G	W	5	✓	✓	
AMW-0151-042013		1445	G	W	5	✓	✓	
BMW-0151-042013		1455	G	W	5	✓	✓	
AMW-0153-042013		1520	G	W	5	✓	✓	
BMW-0153-042013	↓	1530	G	W	5	✓	✓	
AMW-0156-042013	5-31	0800	G	W	5	X	X	
BMW-0156-042013	"	0820	"	"	5	X	X	
AMW-0104-042013	"	0845	"	"	5	X	X	
AMW-2104-042013	"	0845	"	"	5	X	X	
BMW-0104-042013	"	0915	"	"	5	X	X	
BMW-0104-042013MS	"	0915	"	"	5	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1800

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
[signature]	ECC	5-30-13	Fed-ex 7998	9660 6431	
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
			[signature]	TABUR	6/1/13 1015
Relinquished by	Company	Date/Time	Received by	Company	Date/Time

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802 660.1990 fax 802 660 1919

Groundwater samples

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 5-31-13	COC No: 053013
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	5 of 6 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			SDG No.
(303) 298-7837 FAX	☐ 3 weeks			
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8260 - VOCs	8330 - Explosives	Sample Specific Notes.
AMW-009-042013	5-31	1205	G	W	3	X		
BMW-009-042013	5-31	1215	G	W	3	X		
BMW-209-042013	5-31	1215	G	W	3	X		
DMW-009-042013	5-31	1230	G	W	3	X		
AMW-008-042013	5-31	1300	G	W	5	X	X	
BMW-008-042013	5-31	1315	G	W	5	X	X	
AMW-0134-042013	5-31	1355	G	W	3	X		
BMW-0134-042013	5-31	1405	G	W	3	X		
DMW-0134-042013	5-31	1415	G	W	3	X		
AMW-0133-042013	5-31	1450	G	W	3	X		
BMW-0133-042013	5-31	1505	G	W	3	X		
BMW-2133-042013	5-31	1505	G	W	3	X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1800

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
[signature]	ECC	5-31-13	Fed-ex 7998	9660 6431	
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
			[signature]	TXBL	6/4/13 1015
Relinquished by	Company	Date/Time	Received by	Company	Date/Time

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802 660 1990 fax 802.660 1919

Groundwater samples

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 5-31-13	COC No: 053013
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	6 of 6 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8260 - VOCs	8330 - Explosives	Sample Specific Notes
DMW-0133-042013	5-31	1520	G	W	3	X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1800

Relinquished by	Company:	Date/Time	Received by	Company:	Date/Time
Toby R. Hinz	ECC	5-31-13	Fedex 7998	9660 6471	
Relinquished by	Company	Date/Time	Received by	Company:	Date/Time
			[illegible]	TA-BUR	6/1/13 1015
Relinquished by	Company	Date/Time	Received by	Company:	Date/Time

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060713

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

					Analytical Test Method	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds				
	Event: Second Quarter 2013						1				
	Sample ID	Matrix	Date	Time	Samp Init.			Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
1	TRB-099-042013	WQ	6/7/2013	8:05		X		FIELDQC	TB1	0.00	0.00
2	AMW-0128-042013	WG	6/7/2013	10:30			X	MW-128A	N1	96.20	106.20
3	AMW-2128-042013	WG	6/7/2013	10:30			X	MW-128A	FD1	96.20	106.20
4	BMW-0128-042013	WG	6/7/2013	10:45			X	MW-128B	N1	79.50	90.10
5	AMW-0129-042013	WG	6/7/2013	14:00			X	MW-129A	N1	89.50	99.50
6	AMW-2129-042013	WG	6/7/2013	14:00			X	MW-129A	FD1	89.50	99.50
7	BMW-0129-042013	WG	6/7/2013	14:15			X	MW-129B	N1	74.10	84.10
8	DMW-0129-042013	WG	6/7/2013	14:25			X	MW-129D	N1	106.00	111.00
9	AMW-0131-042013	WG	6/7/2013	9:15			X	MW-131A	N1	88.50	98.50
10	AMW-2131-042013	WG	6/7/2013	9:15			X	MW-131A	FD1	88.50	98.50
Cooler # 1		Turnaround Time:									

200-16892 COC

Relinquished by: *(Signature)*	Date	Time
T. H	6-7-13	1800

Received by: *(Signature)*	Date	Time
FABUR	6/8/13	1010

Shipping Date / Carrier / Airbill Number
Fed-ex 7999 5154 1942

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060713

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Analytical Test Method

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Event: Second Quarter 2013					SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds				
							1				
	Sample ID	Matrix	Date	Time	Samp Init.			Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
11	BMW-0131-042013	WG	6/7/2013	9:30			X	MW-131B	N1	70.50	80.50
12	DMW-0131-042013	WG	6/7/2013	9:40			X	MW-131D	N1	102.00	107.00
13	AMW-0146-042013	WG	6/7/2013	13:15			X	MW-146A	N1	97.00	125.00
14	BMW-0146-042013	WG	6/7/2013	13:25			X	MW-146B	N1	77.00	77.00
15	AMW-0172-042013	WG	6/7/2013	10:00			X	MW-172A	N1	0.00	0.00
16	BMW-0172-042013	WG	6/7/2013	10:10			X	MW-172B	N1	0.00	0.00
17	AMW-0173-042013	WG	6/7/2013	8:55			X	MW-173A	N1	0.00	0.00
18	AMW-0174-042013	WG	6/7/2013	11:15			X	MW-174A	N1	0.00	0.00
19	BMW-0174-042013	WG	6/7/2013	11:30			X	MW-174B	N1	0.00	0.00
20	AMW-0175-042013	WG	6/7/2013	11:40		X	X	MW-175A	N1	0.00	0.00
Cooler # 1		**Turnaround Time:**									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
T. H	6-7-13	1800	[illegible] TABUS	6/8/13	1010

Shipping Date / Carrier / Airbill Number

Fed-Ex 7999 5154 1942

Recevied by Laboratory: *(Signature, Date, Time)* **& condition**

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard. Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060713

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3" 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2" 2 X 250 mL Amber Glass Bottles, 4 Degrees C

					Analytical Test Method	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds				
	Event: Second Quarter 2013						1				
	Sample ID	Matrix	Date	Time	Samp Init.			Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
21	BMW-0175-042013	WG	6/7/2013	12:00		X	X	MW-175B	N1	0.00	0.00
22	AMW-099-042013	WG	6/7/2013	8:05			X	MW-99A	N1	102.00	112.00
23	BMW-099-042013	WG	6/7/2013	8:20			X	MW-99B	N1	75.00	85.00
24	DMW-099-042013	WG	6/7/2013	8:35			X	MW-99D	N1	118.50	123.50
Cooler # 1		**Turnaround Time:**									

Relinquished by: *(Signature)*	Date	Time	**Received by:** *(Signature)*	Date	Time	**Shipping Date / Carrier / Airbill Number**
J. H	6-7-13	1800	[signature]	6/8/13	1010	Fed-ex 7999 5154 1942
						Recevied by Laboratory: *(Signature, Date, Time)* **& condition**

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060313

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment: 200-16811 Chain of Custody

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

Analytical Test Method

Event: Second Quarter 2013

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
							1				
1	TRB-0105-042013	WQ	6/3/2013	8:00		X		FIELDQC	TB1	0.00	0.00
2	AMW-0105-042013	WG	6/3/2013	8:00		X	X	MW-105A	N1	30.17	39.67
3	BMW-0105-042013	WG	6/3/2013	8:15		X	X	MW-105B	N1	14.75	24.25
4	OMW-0105-042013	WG	6/3/2013	8:30		X	X	MW-105O	N1	5.00	6.60
5	AMW-0109-042013	WG	6/3/2013	10:00		X	X	MW-109A	N1	36.85	46.35
6	BMW-0109-042013	WG	6/3/2013	10:15		X	X	MW-109B	N1	19.20	28.70
7	AMW-0116-042013	WG	6/3/2013	9:10		X		MW-116A	N1	37.50	42.50
8	BMW-0116-042013	WG	6/3/2013	9:25		X		MW-116B	N1	27.00	32.00
9	DMW-0116-042013	WG	6/3/2013	9:30		X		MW-116D	N1	47.98	53.50
10	AMW-0135-042013	WG	6/3/2013	13:50		X		MW-135A	N1	99.70	109.70
Cooler # 1		**Turnaround Time:**									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
Tony D. Hiz	6-4-13	1800	Stephen Pomeroy [illegible]	6/5/13	1005	Fed-Ex 7999 1614 9193
						Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060313

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace.
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: Second Quarter 2013						1				
11	BMW-0135-042013	WG	6/3/2013	14:05		X		MW-135B	N1	60.00	70.00
12	DMW-0135-042013	WG	6/3/2013	14:15		X		MW-135D	N1	117.00	122.00
13	AMW-0136-042013	WG	6/3/2013	16:20		X		MW-136A	N1	99.50	109.00
14	BMW-0136-042013	WG	6/3/2013	16:30		X		MW-136B	N1	65.00	74.50
15	DMW-0136-042013	WG	6/3/2013	16:40		X		MW-136D	N1	120.00	124.40
16	EMW-0136-042013	WG	6/3/2013	16:50		X		MW-136E	N1	40.50	60.00
17	AMW-0137-042013	WG	6/3/2013	12:30		X		MW-137A	N1	93.20	102.70
18	BMW-0137-042013	WG	6/3/2013	12:45		X		MW-137B	N1	62.60	72.10
19	EMW-0137-042013	WG	6/3/2013	12:55		X		MW-137E	N1	42.35	62.05
20	AMW-0140-042013	WG	6/3/2013	10:45		X		MW-140A	N1	37.00	46.50
Cooler # 1		**Turnaround Time:**									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
Toby O Hiz	6-4-13	1800	Steph Pouhn TASUR	6/5/13	1005	Fed-Ex 7999 1614 9193
						Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060313

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

					Analytical Test Method	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds				
	Event: Second Quarter 2013						1				
	Sample ID	Matrix	Date	Time	Samp Init.			Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
21	BMW-0140-042013	WG	6/3/2013	11:00		X		MW-140B	N1	13.00	22.50
22	DMW-0140-042013	WG	6/3/2013	11:15		X		MW-140D	N1	57.10	61.50
23	OMW-0140-042013	WG	6/3/2013	11:30		X		MW-140O	N1	6.50	9.00
24	AMW-040-042013	WG	6/3/2013	14:45		X		MW-40A	N1	120.50	125.50
25	BMW-040-042013	WG	6/3/2013	14:55		X		MW-40B	N1	54.00	64.00
26	AMW-072-042013	WG	6/3/2013	15:25		X		MW-72A	N1	88.00	108.00
27	BMW-072-042013	WG	6/3/2013	15:40		X		MW-72B	N1	40.00	70.00
28	BMW-272-042013	WG	6/3/2013	15:40		X		MW-72B	FD1	40.00	70.00
Cooler # 1		**Turnaround Time:**									

Relinquished by: *(Signature)*	**Date**	**Time**	**Received by:** *(Signature)*	**Date**	**Time**	**Shipping Date / Carrier / Airbill Number**
Toby R [illegible]	6-4-13	1800	[illegible] TMBill	6/5/13	1005	Fed-Ex 7999 1614 9193
						Recevied by Laboratory: *(Signature, Date, Time)* **& condition**

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060413

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Analytical Test Method

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace.
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

Event: Second Quarter 2013

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
							1				
1	TRB-011-042013	WQ	6/4/2013	8:05		X		FIELDQC	TB2	0.00	0.00
2	TRB-2177-042013	WQ	6/4/2013	7:45		X		FIELDQC	TB1	0.00	0.00
3	MW-011-042013	WG	6/4/2013	8:05			X	MW-11	N1	18.80	48.00
4	AMW-0119-042013	WG	6/4/2013	10:45		X	X	MW-119A	N1	119.70	129.20
5	BMW-0119-042013	WG	6/4/2013	11:00		X	X	MW-119B	N1	74.00	83.50
6	AMW-0120-042013	WG	6/4/2013	12:15		X	X	MW-120A	N1	128.70	138.20
7	BMW-0120-042013	WG	6/4/2013	12:30		X	X	MW-120B	N1	65.50	75.00
8	DMW-0120-042013	WG	6/4/2013	12:45		X	X	MW-120D	N1	144.00	148.40
9	EMW-0120-042013	WG	6/4/2013	13:00		X	X	MW-120E	N1	95.30	104.80
10	AMW-0121-042013	WG	6/4/2013	14:00		X	X	MW-121A	N1	132.60	142.10

Cooler # 1 **Turnaround Time:**

200-16854 COC

Relinquished by: *(Signature)*	Date	Time
T. [illegible]	6-5-13	1800

Received by: *(Signature)*	Date	Time
Steph [illegible] TABER	6/6/13	1030

Shipping Date / Carrier / Airbill Number
Fed-ex 7999 2901 4325

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060413

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: Second Quarter 2013						1				
11	AMW-2121-042013	WG	6/4/2013	14:00		X	X	MW-121A	FD1	132.60	142.10
12	BMW-0121-042013	WG	6/4/2013	14:25		X	X	MW-121B	N1	75.70	85.20
13	BMW-0121-042013MS	WG	6/4/2013	14:25		X	X	MW-121B	MS1	75.70	85.20
14	BMW-0121-042013MSD	WG	6/4/2013	14:25		X	X	MW-121B	SD1	75.70	85.20
15	EMW-0121-042013	WG	6/4/2013	14:55		X	X	MW-121E	N1	105.50	115.00
16	AMW-0123-042013	WG	6/4/2013	11:30		X	X	MW-123A	N1	131.80	141.30
17	BMW-0123-042013	WG	6/4/2013	11:45		X	X	MW-123B	N1	90.10	99.60
18	AMW-0125-042013	WG	6/4/2013	13:45		X	X	MW-125A	N1	117.90	127.40
19	BMW-0125-042013	WG	6/4/2013	14:00		X	X	MW-125B	N1	76.70	86.20
20	DMW-0125-042013	WG	6/4/2013	14:15		X	X	MW-125D	N1	134.40	138.80
Cooler # 1		**Turnaround Time:**									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[illegible]	6-5-13	1800	[illegible] TABER	6/6/13	1030

Shipping Date / Carrier / Airbill Number

Fed-ex 7999 2901 4325

Recevied by Laboratory: *(Signature, Date, Time)* **& condition**

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060413

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: Second Quarter 2013						1				
21	AMW-0138-042013	WG	6/4/2013	9:35		X		MW-138A	N1	117.10	126.60
22	BMW-0138-042013	WG	6/4/2013	9:45		X		MW-138B	N1	64.49	73.99
23	AMW-0139-042013	WG	6/4/2013	10:05		X		MW-139A	N1	131.50	141.00
24	BMW-0139-042013	WG	6/4/2013	10:15		X		MW-139B	N1	71.33	81.20
25	AMW-0141-042013	WG	6/4/2013	15:35		X	X	MW-141A	N1	115.00	145.00
26	AMW-2141-042013	WG	6/4/2013	15:35		X	X	MW-141A	FD1	115.00	145.00
27	BMW-0141-042013	WG	6/4/2013	15:55		X	X	MW-141B	N1	60.00	60.00
28	EMW-0141-042013	WG	6/4/2013	16:15		X	X	MW-141E	N1	90.00	90.00
29	AMW-0177-042013	WG	6/4/2013	8:30		X		MW-177A	N1	0.00	0.00
30	BMW-0177-042013	WG	6/4/2013	8:45		X		MW-177B	N1	0.00	0.00
Cooler # 1		**Turnaround Time:**									

Relinquished by: *(Signature)*	Date	Time
[illegible]	6-5-13	1800

Received by: *(Signature)*	Date	Time
[illegible] TMOUC	6/6/13	1030

Shipping Date / Carrier / Airbill Number
Fed-ex 7999 2901 4325

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060413

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: Second Quarter 2013						1				
31	AMW-0179-042013	WG	6/4/2013	9:05		X		MW-179A	N1	0.00	0.00
32	BMW-0179-042013	WG	6/4/2013	9:15		X		MW-179B	N1	0.00	0.00
33	AMW-024-042013	WG	6/4/2013	14:45		X	X	MW-24A	N1	111.50	121.50
34	BMW-024-042013	WG	6/4/2013	15:05		X	X	MW-24B	N1	56.00	66.00
35	AMW-078-042013	WG	6/4/2013	9:00		X		MW-78A	N1	85.00	105.00
36	BMW-078-042013	WG	6/4/2013	9:15		X		MW-78B	N1	40.00	70.00
37	BMW-278-042013	WG	6/4/2013	9:15		X		MW-78B	FD1	40.00	70.00
38	AMW-089-042013	WG	6/4/2013	10:15		X		MW-89A	N1	129.20	139.20
39	BMW-089-042013	WG	6/4/2013	10:25		X		MW-89B	N1	65.00	75.70
40	DMW-089-042013	WG	6/4/2013	10:35		X		MW-89D	N1	145.00	150.60
Cooler # 1		**Turnaround Time:**									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
T. Kiu	6-5-13	1800	Stuart Porter TABUL	6/6/13	1030

Shipping Date / Carrier / Airbill Number

Fed-ex 7999 2901 4325

Recevied by Laboratory: *(Signature, Date, Time)* **& condition**

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060413

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

					Analytical Test Method	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds				
	Event: Second Quarter 2013						1				
	Sample ID	Matrix	Date	Time	Samp Init.			Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
41	EMW-089-042013	WG	6/4/2013	10:45		X		MW-89E	N1	95.00	95.00
42	AMW-090-042013	WG	6/4/2013	11:10		X	X	MW-90A	N1	112.20	123.40
43	AMW-290-042013	WG	6/4/2013	11:10		X	X	MW-90A	FD1	112.20	123.40
44	BMW-090-042013	WG	6/4/2013	11:30		X	X	MW-90B	N1	65.35	75.45
45	BMW-090-042013MS	WG	6/4/2013	11:30		X	X	MW-90B	MS1	65.35	75.45
46	BMW-090-042013MSD	WG	6/4/2013	11:30		X	X	MW-90B	SD1	65.35	75.45
47	DMW-090-042013	WG	6/4/2013	12:00		X	X	MW-90D	N1	130.20	135.20
48	AMW-091-042013	WG	6/4/2013	12:30		X		MW-91A	N1	109.20	119.20
49	BMW-091-042013	WG	6/4/2013	12:45		X		MW-91B	N1	67.60	77.60
50	DMW-091-042013	WG	6/4/2013	12:55		X		MW-91D	N1	125.20	130.20
Cooler # 1		**Turnaround Time:**									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
Toby Hiz	6-5-13	1800	Steph Pouchin TMBVC	6/6/13	1030

Shipping Date / Carrier / Airbill Number

Fed-ex 7999 2901 4325

Recevied by Laboratory: *(Signature, Date, Time)* **& condition**

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060413

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Proservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

						Analytical Test Method	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds				
Event: Second Quarter 2013								1				
	Sample ID	Matrix	Date	Time	Samp Init.				Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
51	AMW-093-042013	WG	6/4/2013	9:30			X		MW-93A	N1	84.20	94.20
52	BMW-093-042013	WG	6/4/2013	9:40			X		MW-93B	N1	60.00	70.00
Cooler # 1		**Turnaround Time:**										

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
T. Hiz	6-5-13	1800	Steph Pauline TABUK	6/6/13	1030	Fed-ex 7999 2901 [illegible]
						Recevied by Laboratory: *(Signature, Date, Time)* **& condition**

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060613

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3" 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace.
1	2" 2 X 250 mL Amber Glass Bottles, 4 Degrees C

					Analytical Test Method	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds				
Event: Second Quarter 2013							1				
	Sample ID	Matrix	Date	Time	Samp Init.			Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
1	TRB-033-042013	WQ	6/6/2013	8:05		X		FIELDQC	TB1	0.00	0.00
2	AMW-0149-042013	WG	6/6/2013	9:20		X	X	MW-149A	N1	90.00	100.00
3	AMW-0162-042013	WG	6/6/2013	12:15			X	MW-162A	N1	0.00	0.00
4	AMW-0163-042013	WG	6/6/2013	11:55			X	MW-163A	N1	0.00	0.00
5	AMW-0164-042013	WG	6/6/2013	12:45			X	MW-164A	N1	0.00	0.00
6	BMW-0165-042013	WG	6/6/2013	12:30			X	MW-165B	N1	0.00	0.00
7	AMW-0166-042013	WG	6/6/2013	13:05			X	MW-166A	N1	0.00	0.00
8	BMW-0166-042013	WG	6/6/2013	13:25			X	MW-166B	N1	0.00	0.00
9	AMW-0167-042013	WG	6/6/2013	13:45			X	MW-167A	N1	0.00	0.00
10	BMW-0167-042013	WG	6/6/2013	13:55			X	MW-167B	N1	0.00	0.00
Cooler # 1		**Turnaround Time:**									

200-16893 COC

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
Toby Irwin	6-7-13	1800	[illegible] TABUL	6/8/13	1010	Fed-ex 7999 4875 3293
						Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060613

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3" 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2" 2 X 250 mL Amber Glass Bottles, 4 Degrees C

					Analytical Test Method	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds				
Event: Second Quarter 2013							1				
	Sample ID	Matrix	Date	Time	Samp Init.			Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
11	AMW-0168-042013	WG	6/6/2013	11:25			X	MW-168A	N1	0.00	0.00
12	BMW-0168-042013	WG	6/6/2013	11:35			X	MW-168B	N1	0.00	0.00
13	AMW-0169-042013	WG	6/6/2013	14:20			X	MW-169A	N1	0.00	0.00
14	BMW-0169-042013	WG	6/6/2013	14:40			X	MW-169B	N1	0.00	0.00
15	AMW-0170-042013	WG	6/6/2013	15:05			X	MW-170A	N1	0.00	0.00
16	AMW-032-042013	WG	6/6/2013	10:00		X	X	MW-32A	N1	88.50	98.50
17	AMW-232-042013	WG	6/6/2013	10:00		X	X	MW-32A	FD1	88.50	98.50
18	BMW-032-042013	WG	6/6/2013	10:20		X	X	MW-32B	N1	71.00	81.00
19	BMW-032-042013MS	WG	6/6/2013	10:20		X	X	MW-32B	MS1	71.00	81.00
20	BMW-032-042013MSD	WG	6/6/2013	10:20		X	X	MW-32B	SD1	71.00	81.00
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
Toby Mu	6-7-13	1800	[illegible] FASTAR	6/8/13	1010	Fed-Ex 7999 4885-3293
						Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 060613

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Analytical Test Method

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3" 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2" 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: Second Quarter 2013						1				
21	DMW-032-042013	WG	6/6/2013	10:55		X	X	MW-32D	N1	106.50	111.50
22	AMW-033-042013	WG	6/6/2013	8:05			X	MW-33A	N1	100.50	110.50
23	BMW-033-042013	WG	6/6/2013	8:20			X	MW-33B	N1	73.50	83.50
24	DMW-033-042013	WG	6/6/2013	8:35			X	MW-33D	N1	120.00	125.00
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
Toby R [illegible]	6-7-13	1800	[illegible]	6/8/13	1010	Fed-ex 7999 4885 3293
						Recevied by Laboratory: *(Signature, Date, Time)* & condition

Appendix B
Field Forms

Location Mead FNOP Date 5-30-13

Project / Client 2nd Quarter Sampling Event 2013

Mike Daugherty

0930 Arrive @ Treatment plant, Safety meet
(storms this morning earlier)
Load-up Gator, field planning
1000 TRB-242-042013 2-VOCs
Left Treatment Plant
1030 MW-42 A WL = 53.81
MW-42 B WL = 53.93
MW-42 D WL = 53.63
1040 AMW-042-042013 3-VOCs, 2-Exp.
AMW-242-042013 3-VOC, 2-Exp.
1110 BMW-042-042013 3-VOCs, 2-Exp.
BMW-042-042013MS 3-VOCs, 1-Exp
BMW-042-042013MSD 3-VOCs, 1-Exp
1130 DMW-042-042013 3-VOCs, 2-Exp.
1145 MW-155A WL = 48.56
MW-155 B WL = 48.32
MW-155 E WL = 48.42
1200 AMW-0155-042013 3-VOCs, 2-Exp.
1210 BMW-0155-042013 3-VOCs, 2-Exp
1225 EMW-0155-042013 3-VOCs, 2-Exp.
1245 MW-18 A WL = 44.62
MW-18 B WL = 45.09
MW-18 C WL = 42.79 (?)
MW-18C [illegible]

Location Mead FNOP Date 5-30-13

Project / Client 2nd Quarter Sampling 2013

Mike Daugherty

1305 AMW-018-042013 3-VOCs, 2-Exp.
1315 BMW-018-042013 3-VOCs, 2-Exp
1330 CMW-018-042013 no sample,
apparently well is choked with roots, preventing hydrosleeve from reaching water
1345 MW-178B WL = 43.81
1350 BMW-0178-042013 3-VOCs, 2-Exp.
1405 MW-152B WL = 43.37
BMW-0152-042013 3-VOCs, 2-Exp.
1430 MW-151 A WL = 45.64
MW-151 B WL = 45.71
1445 AMW-0151-042013 3-VOCs, 2-Exp.
1455 BMW-0151-042013 3-VOCs, 2-Exp
1510 MW-153A WL = 46.72
MW-153 B WL = 46.86
1520 AMW-0153-042013 3-VOCs, & 2-Exp.
1530 BMW-0153-042013 3-VOCs, 2-Exp
1540 To Treatment plant & unload
1545 End of Day

Location Mead - FNOP Date 5-30-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

09:30 Arrived at Mead Treatment Plant
1000 Left Treatment Plant
1010 MW-43A WL - 46.77
AMW-043-042013 Exp-2 Voc-3
1035 MW-43B WL- 46.64
BMW-043-042013 Exp-2 Voc-3
1160 MW-43D WL-46.82
DMW-043-042013 Exp-2 Voc-3
1125 MW-154A WL-48.81
AMW-0154-042013 Exp-2 Voc-3
1145 MW-154B WL-48.37
BMW-0154-042013 Exp-2 Voc-3
1230 MW-44A WL-10.07
AMW-044-042013 Exp-2 Voc-3
AMW-244-042013 Exp-2 Voc-3
1300 MW-44B WL-10.97
BMW-044-042013 Exp-2 Voc-3
BMW-044-042013MS Exp-2 Voc-3
BMW-044-042013MSD Exp-2 Voc-3
1335 MW-44D WL- 8.87
DMW-044-042013 Exp-2 Voc-3
1400 MW-176A WL- 9.68
AMW-0176-042013 Exp-2 Voc-3

Location Mead FNOP Date 5-30-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

1415 MW-176B WL- 10.17
BMW-0176-042013 Exp-2 Voc-3
1445 MW-157A WL- 19.87
AMW-0157-042013 Exp-2 Voc-3
1505 MW-157B WL- 19.13
BMW-0157-042013 Exp-2 Voc-3
1530 Arrived back at Treatment Plant
1545 Left Treatment Plant
RF

Date 5-31-13

ter Sampling

eatment Plant
Plant
L- 6.87
Exp-2 Voc-3
)L-6.13
Exp-2 Voc-3
WL- 2.68
Exp-2 Voc-3
Exp-2 Voc-3
- 2.71
Exp-2 Voc-3
Exp-2 Voc-3
Exp-2 Voc-3
WL- 7.66
Exp-2 Voc-3
L- 3.25
Exp-2 Voc-3
3.90
Exp-2 Voc-3
-2 Voc-3
.65
-2 Voc-3
-2 Voc-3
-2 Voc-3

Location Mead FNC

Project / Client 2nd Quar

Ronnie Fiscus

1205 ~~MW-08~~ MW-
AMW-009-042013
1215 MW-09B W
BMW-009-042013
BMW-209-042013
1230 MW-009D
DMW-009-0420
1300 ~~MW-008~~ MW-008
AMW-008-042013
1315 MW-008B
BMW-008-042013
1355 MW-134A
AMW-0134-042013
1405 MW-134B
BMW-0134-042013
1415 MW-134D
DMW-0134-042013
1450 MW-133A
AMW-0133-042013
1505 MW-133B WL-
BMW-0133-042013
BMW-2133-042013
1520 MW-133D

Location Mead FNOP Date 5-31-13

Project / Client 2nd Quarter Sampling
Ronnie Fiscus

1550 Returned to Treatment Plant
1600 Left Treatment Plant
RAF

Location Mead FNOP Date 6-3-13

Project / Client 2nd ~~Sam~~ Quarter Sampling
Ronnie Fiscus

0730 Arrived at Treatment Plant
0745 Left Treatment Plant
0800 MW-105A WL-4.09
AMW-0105-042013 Exp-2 Voc-3
0815 MW-105B WL-4.21
BMW-0105-042013 Exp-2 Voc-3
0830 MW-105D WL-8.43
DMW-0105-042013 Exp-2 Voc-3
0910 MW-116A WL-5.36
AMW-0116-042013 Voc-3
0925 MW-116B WL-5.32
BMW-0116-042013 Voc-3
0930 MW-116D WL-5.33
DMW-0116-042013 Voc-3
1000 MW-109A WL-2.97
AMW-0109-042013 Exp-2 Voc-3
1015 MW-109B WL-2.97
BMW-0109-042013 Exp-2 Voc-3
1045 MW-140A WL-6.28
AMW-0140-042013 Voc-3
1100 MW-140B WL-6.60
BMW-0140-042013 Voc-3
1115 MW-140D WL-6.58
DMW-0140-042013 Voc-3

Location Mead FNOP Date 6-3-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

1130 MW-140 O WL-8.62

OMW-0140-042013 Voc-3

1230 MW-137A WL-38.16

AMW-0137-042013 Voc-3

1245 MW-137B WL-38.10

BMW-0137-042013 Voc-3

1255 MW-137E WL-38.21

EMW-0137-042013 Voc-3

1350 MW-135A WL-45.93

AMW-0135-042013 Voc-3

1405 MW-135B WL-45.89

BMW-0135-042013 Voc-3

1415 MW-135D WL-45.08

DMW-0135-042013 Voc-3

1445 MW-40A WL-43.56

AMW-040-042013 Voc-3

1455 MW-40B WL-43.82

BMW-040-042013 Voc-3

1525 MW-72A WL-42.19

AMW-072-042013 Voc-3

1540 MW-72B WL-41.72

BMW-072-042013 Voc-3

BMW-272-042013 Voc-3

Location Mead FNOP Date 6-3-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

1620 MW-136A WL-45.52

AMW-0136-042013 Voc-3

1630 MW-136B WL-45.49

BMW-0136-042013 Voc-3

1640 MW-136D WL-45.12

DMW-0136-042013 Voc-3

1650 MW-136E WL-45.54

EMW-0136-042013 Voc-3

Arrived back at Treatment Plant

1715

1730 Left for the day.

RAF

Location Mead FNOP Date 6-4-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

0730 Arrived at Treatment Plant
0745 Left Treatment Plant
0805 MW-11 WL-33.61
MW-011-042013 ~~wt~~ Exp-2
0900 MW-78A WL-37.53
AMW-078-042013 Voc-3
0915 MW-78B WL-37.64
BMW-078-042013 Voc-3
BMW-278-042013 Voc-3
0935 MW-138A WL-44.22
AMW-0138-042013 Voc 3
0945 MW-138B WL-44.62
BMW-0138-042013 Voc-3
1005 MW-139A WL-45.24
AMW-0139-042013 Voc-3
1015 MW-139B WL-45.44
BMW-0139-042013 Voc-3
1045 MW-119A WL-44.22
AMW-0119-042013 Exp-2 Voc 3
1100 MW-119B WL-44.29
BMW-0119-042013 Exp 2 Voc-3
1130 MW-123A WL-54.69
AMW-0123-042013 Exp-2 Voc-3

Location Mead FNOP Date 6-4-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

1145 MW-123B WL-54.54
BMW-0123-042013 Exp-2 Voc-3
1215 MW-120A WL-52.78
AMW-0120-042013 Exp-2 Voc-3
1230 MW-120B WL-52.78
BMW-0120-042013 Exp-2 Voc-3
1245 MW-120D WL-53.27
DMW-0120-042013 Exp-2 Voc-3
1300 MW-120E WL-52.41
EMW-0120-042013 Exp-2 Voc-3
1400 MW-121A WL-55.20
AMW-0121-042013 Exp-2 Voc-3
AMW-2121-042013 Exp-2 Voc 3
1425 MW-121B WL-55.27
BMW-0121-042013 Exp-2 Voc-3
BMW-0121-042013 MS Exp-2 Voc-3
BMW-0121-042013 MSD Exp-2 Voc-3
1455 MW-121E WL-54.96
EMW-0121-042013 Exp-2 Voc-3
1515 Returned to Treatment Plant
Left at 1520

RAF

Location Mead FNOP Date 6-4-13

Project / Client 2nd Quarter Sampling - 2013

Mike Daugherty

0730 Arrive @ Treatment Plant, Safety Meeting
Load-up Gator & field planning -
0745 TRB-2177-042013 2-VOCs
0810 Gas for Gator, Left Treatment Plant
0820 MW-177A WL = 5.95
MW-177B WL = 5.67
0830 AMW-0177-042013 3-VOCs
0845 BMW-0177-042013 3-VOCs
0855 MW-179A WL = 10.33
MW-179B WL = 10.75
0905 AMW-0179-042013 3-VOCs
0915 BMW-0179-042013 3-VOCs
0925 MW-93A WL = 21.40
MW-93B WL = 21.11
0930 AMW-093-042013 3-VOCs
0940 BMW-093-042013 3-VOCs
1005 MW-89A WL = 56.55
MW-89B WL = 57.11
MW-89D WL = 56.14
MW-89E WL = 53.24
1015 AMW-089-042013 3-VOCs
1025 BMW-089-042013 3-VOCs
1035 DMW-089-042013 3-VOCs
1045 EMW-089-042013 3-VOCs

Location Mead FNOP Date 6-4-13

Project / Client 2nd Quarter Sampling - 2013

Mike Daugherty

1055 MW-90A WL = 46.48
MW-90B WL = 46.68
MW-90D WL = 46.65
1110 AMW-090-042013 3-VOCs, 2-Exp
AMW-290-042013 3-VOCs, 2-Exp.
1130 BMW-090-042013 3-VOCs, 2-Exp
BMW-090-042013MS 3-VOCs, 2-Exp
BMW-090-042013MSD 3-VOCs, 1-Exp
1200 DMW-090-042013 3-VOCs, 2-Exp.
1220 MW-91A WL = 47.48
MW-91B WL = 47.57
MW-91D WL = 47.15
Re-attached flag, which had fallen off
1230 AMW-091-042013 3-VOCs
1245 BMW-091-042013 3-VOCs
1255 DMW-091-042013 3-VOCs
1335 MW-125A WL = 45.78
MW-125B WL = 45.95
MW-125D WL = 45.52
1345 AMW-0125-042013 3-VOCs, 2-Exp.
1400 BMW-0125-042013 3-VOCs, 2-Exp.
1415 DMW-0125-042013 3-VOCs, 2-Exp.

Cont. →

Location [illegible] Date 6-4-15

Project / Client 2nd Quarter Sampling - 2013

Mike Daugherty

1435	MW-24 A	WL = 41.41
	MW-24 B	WL = 41.19
1445	AMW-024-042013	3-VOCs, 2-Exp
1505	BMW-024-042013	3-VOCs, 2-Exp
1520	MW-141 A	WL = 37.81
	MW-141 B	WL = 37.82
	MW-141 E	WL = 37.79
1535	AMW-0141-042013	3-VOCs, 2-Exp.
	AMW-2141-042013	3 VOCs, 1-Exp.
	(MW-141 A hydrosleeve was leaky)	
1555	BMW-0141-042013	3-VOCs, 2-Exp
1615	EMW-0141-042013	3-VOCs, 2-Exp
1635	Return to Treatment Plant & unload Samples & gear	
1645	Left Plant - End of Day	

MD

Location _____ Date _____

Project / Client _____

Location Mead FNOP Date 6-5-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

0730 Arrive at Treatment Plant
3755 Left Treatment Plant
0805 MW-29A WL-50.14
AMW-029-042013 Exp-2
3820 MW-29B WL-51.06
BMW-029-042013 Exp-2
0850 MW-122A WL-54.43
AMW-0122-042013 Exp-2 Voc-3
AMW-2122-042013 Exp-2 Voc-3
3920 MW-122B WL-55.17
BMW-0122-042013 Exp-2 Voc 3
3MW-0122-042013MS Exp 2 Voc-3
3MW-0122-042013MSD Exp-2 Voc-3
1015 MW-160A WL-48.92
AMW-0160-042013 Exp-2 Voc-3
AMW-2160-042013 Exp-2 Voc-3
'045 MW-160B WL-48.82
3MW-0160-042013 Exp-2 Voc-3
'110 MW-142A WL-47.60
AMW-0142-042013 Exp-2 Voc-3
AMW-2142-042013 Exp-2 Voc-3
'135 MW-142E WL-47.33
EMW-0142-042013 Exp-2 Voc-3

Location Mead FNOP Date 6-5-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

1215 MW-28A WL-51.49
AMW-028-042013 Exp-2
1225 MW-28B WL-52.01
BMW-028-042013 Exp-2
1240 MW-28D WL-51.25
DMW-028-042013 Exp-2
1300 MW-65B WL-34.62
BMW-065-042013 Exp-2
1320 MW-144A WL-40.91
AMW-0144-042013 Exp-2
1330 MW-144E WL-41.22
EMW-0144-042013 Exp-2
1345 MW-171A WL-45.09
AMW-0171-042013 Exp-2
1355 MW-171B WL-44.90
BMW-0171-042013 Exp-2
1415 MW-145A WL-48.39
AMW-0145-042013 Exp-2
1425 MW-145B WL-48.12
BMW-0145-042013 Exp-2
1440 MW-145E WL-48.53
EMW-0145-042013 Exp-2
1500 MW-148A WL-44.59

Location Mead FNOP Date 6-5-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

1515 MW-148B WL-44.10

BMW-0148-042013 Exp-2 Voc-3

1555 MW-143B WL-46.36

BMW-0143-042013 Exp-2 Voc-3

1630 Returned to Treatment Plant

1700 Left Treatment Plant

RAF

Location Date

Project / Client

Location Mead FNOP Date 6-4-13

Project / Client 2nd Quarter Sampling - 2013

Mike Daugherty

1435 MW-24 A WL = 41.41
MW-24 B WL = 41.19
1445 AMW-024-042013 3-VOCs, 2-Exp
1505 BMW-024-042013 3-VOCs, 2-Exp
1520 MW-141 A WL = 37.81
MW-141 B WL = 37.82
MW-141 E WL = 37.79
1535 AMW-0141-042013 3-VOCs, 2-Exp.
AMW-2141-042013 3 VOCs, 1-Exp.
(MW-141A hydrolene was leaky)
1555 BMW-0141-042013 3-VOCs, 2-Exp
1615 EMW-0141-042013 3-VOCs, 2-Exp
1635 Return to Treatment Plant & unload Samples & gear
1645 Left Plant - End of Day

Location Mead FNOP Date 6-5-13

Project / Client 2nd Quarter Sampling - 2013

Mike Daugherty

0730 Arrive @ Treatment Plant, load up gear, safety meeting
0745 TRB-203-042013 2-VOCs
0800 Left Treatment Plant for field
0825 MW-03A WL = 43.34
MW-03B WL = 43.41
0835 AMW-003-042013 3-VOCs, 2-Exp
0850 BMW-003-042013 3-VOCs, 2-Exp.
0905 MW-02A WL = 40.02
MW-02B WL = 40.45
0915 AMW-002-042013 3-VOCs, 2-Exp
0930 BMW-002-042013 3-VOCs, 2-Exp.
0955 MW-127A WL = 32.63
MW-127B WL = 32.94
MW-127E WL = 33.20
MW-127E - probe has bentonite on it...
1015 AMW-0127-042013 3-VOCs, 2-Exp
1025 BMW-0127-042013 3-VOCs, 2-Exp
1040 EMW-0127-042013 3-VOCs, 2-Exp
1105 MW-25A WL = 44.99
MW-25B WL = 44.39
1115 AMW-025-042013 3-VOCs, 2-Exp
1125 BMW-025-042013 3-VOCs, 2-Exp

Location Mead Not Date 6-5-13

Project / Client 2nd Quarter Sampling Event - 2013

Mike Daugherty

1145	MW-161A	WL = 43.80
	MW-161B	WL = 43.98
1155	AMW-0161-042013	3-VOCs, 2-Exp
	AMW-2161-042013	3-VOCs, 2-Exp
1210	BMW-0161-042013	3-VOCs, 2-Exp
1230	MW-21A	WL = 36.67
	MW-21B	WL = 36.66
	MW-21D	WL = 36.65
1245	AMW-021-042013	3-VOCs, 2-Exp
	AMW-221-042013	3-VOCs, 2-Exp.
1305	BMW-021-042013	3-VOCs, 2-Exp
	BMW-021-042013MS	3-VOCs, 2-Exp
	BMW-021-042013MSD	3-VOCs, 1-Exp
1335	DMW-021-042013	3-VOCs, 2-Exp.
1410	MW-126A	WL = 40.55
	MW-126B	WL = 40.91
	MW-126D	WL = 39.78
1420	AMW-0126-042013	3-VOCs, 2-Exp
1440	BMW-0126-042013	3-VOCs, 2-Exp
1450	DMW-0126-042013	3-VOCs, 2-Exp
1515	MW-124A	WL = 42.66
	MW-124B	WL = 42.36
	MW-124D	WL = 43.00

cont →

Location Mead Not Date 6-5-13

Project / Client 2nd Quarter Sampling - 2013

Mike Daugherty

1525	AMW-0124-042013 3-VOCs, 2-Exp.
1540	BMW-0124-042013 3-VOCs, 2-Exp
1555	DMW-0124-042013 3-VOCs, 2-Exp
1620	Return to Plant & unload samples & gear
1630	End of Day

MMd

Location Mead FNOP Date 6-5-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

1515 MW-148B WL-44.10

BMW-0148-042013 Exp-2 Voc-3

1555 MW-143B WL-46.36

BMW-0143-042013 Exp-2 Voc-3

1630 Returned to Treatment Plant

1700 Left Treatment Plant

RAF

Location Mead FNOP Date 6-6-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

0730 Arrived at Treatment Plant

0750 Load material, left Treatment Plant

0805 MW-33A WL-52.86

AMW-033-042013 Exp-2

0820 MW-33B WL-52.90

BMW-033-042013 Exp-2

0835 MW-33D WL-54.63

DMW-033-042013 Exp-2

0920 MW-149A WL-46.26

AMW-0149-042013 Exp-2 Voc-3

1000 MW-32A WL-48.90

AMW-032-042013 Exp-2 Voc-3

AMW-232-042013 Exp-2 Voc-3

1020 MW-32B WL-48.83

BMW-032-042013 Exp-2 Voc-3

BMW-032-042013MS Exp-2 Voc-3

BMW-032-042013MSD Exp-2 Voc-3

1055 MW-32D WL-48.75

DMW-032-042013 Exp-2 Voc-3

1125 MW-168A WL-53.44

AMW-0168-042013 Exp-2

1135 MW-168B WL-53.26

BMW-0168-042013 Exp-2

Location Mead FNOP Date 6-6-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

1155 MW-163A WL- 56.65

AMW-0163-042013 Exp-2

1215 MW-162A WL-45.73

AMW-0162-042013 Exp-2

1230 MW-165B WL-45.70

BMW-0165-042013 Exp-2

1245 MW-164A WL-45.88

AMW-0164-042013 Exp-2

1305 MW-166A WL-50.82

AMW-0166-042013 Exp-2

1325 MW-166B WL-50.73

BMW-0166-042013 Exp-2

1345 MW-167A WL-47.52

AMW-0167-042013 Exp-2

1355 MW-167B WL-47.69

~~BMW-0167B~~ BMW-0167-042013 Exp-2

1420 MW-169A WL- 49.98

AMW-0169-042013 Exp-2

1440 MW-169B WL-49.95

BMW-0169-042013 Exp-2

1505 MW-170A WL-

AMW-0170-042013 Exp-2

1530 Returned to Treatment Plant

Location Date

Project / Client

Location Mead FNOP Date 6-6-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

1155 mw-163A WL- 56.65

AMW-0163-042013 Exp-2

1215 mw-162A WL-45.73

AMW-0162-042013 Exp-2

1230 mw-165B WL-45.70

BMW-0165-042013 Exp-2

1245 MW-164A WL-45.88

AMW-0164-042013 Exp-2

1305 mw-166A WL-50.82

AMW-0166-042013 Exp-2

1325 mw-166B WL-50.73

BMW-0166-042013 Exp-2

1345 MW-167A WL-47.52

AMW-0167-042013 Exp.-2

1355 MW-167B WL-47.69

~~BMW-0167B~~ BMW-0167-042013 Exp-2

1420 MW-169A WL- 49.98

AMW-0169-042013 Exp-2

1440 MW-169B WL-49.95

BMW-0169-042013 Exp-2

1505 MW-170A WL-51.22

AMW-0170-042013 Exp-2

1530 Returned to Treatment Plant

Location Mead FNOP Date 6-7-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

0730 Arrived at Treatment Plant

0745 Left Treatment Plant

0805 MW-99A WL-71.16

AMW-099-042013 Exp-2

0820 MW-99B WL-71.31

BMW-099-042013 Exp-2

0835 MW-99D WL-70.94

DMW-099-042013 Exp-2

0855 MW-173A WL-60.73

AMW-0173-042013 Exp-2

0915 MW-131A WL-56.87

AMW-0131-042013 ~~Exp-2~~ Exp-2

AMW-2131-042013 Exp-2

0930 MW-131B WL-56.71

BMW-0131-042013 Exp-2

0940 MW-131D WL-56.82

DMW-0131-042013 Exp-2

1000 MW-172A WL-58.10

AMW-0172-042013 Exp-2

1010 MW-172B WL-57.67

BMW-0172-042013 Exp-2

1030 MW-128A WL-62.13

AMW-0128-042013 Exp-2

Location Mead FNOP Date 6-7-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

1045 MW-128B WL-62.14

BMW-0128-042013 Exp-2

1140 MW-175A WL-51.17

AMW-0175-042013 Exp-2 Voc3

1200 MW-175B WL-51.38

BMW-0175-042013 Exp-2 Voc3

1115 MW-174A WL-48.87

AMW-0174-042013 Exp-2

1130 MW-174B WL-49.03

BMW-0174-042013 Exp-2

1315 MW-146A WL-48.51

AMW-0146-042013 Exp-2

1325 MW-146B WL-48.33

BMW-0146-042013 Exp-2

1400 MW-129A WL-60.99

AMW-0129-042013 Exp-2

AMW-2129-042013 Exp-2

1415 MW-129B WL-60.94

BMW-0129-042013 Exp-2

1425 MW-129D WL-60.54

DMW-0129-042013 Exp-2

1445 Returned to Treatment Plant

1515 Left Treatment Plant for day.

Location Date

Project / Client

Location Mead FNOP Date 6-7-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

1045 MW-128B WL-62.14

BMW-0128-042013 Exp-2

1140 MW-175A WL- 51.17

AMW-0175-042013 Exp-2 Voc-3

1200 MW-175B WL- 51.38

BMW-0175-042013 Exp-2 Voc-3

1115 MW-174A WL-48.87

AMW-0174-042013 Exp-2

1130 MW-174B WL- 49.03

BMW-0174-042013 Exp-2

1315 MW-146A WL- 48.51

AMW-0146-042013 Exp-2

1325 MW-146B WL-48.33

BMW-0146-042013 Exp-2

1400 MW-129A WL-60.99

AMW-0129-042013 Exp-2

AMW-2129-042013 Exp-2

1415 MW-129B WL-60.94

BMW-0129-042013 Exp-2

1425 MW-129D WL-60.54

DMW-0129-042013 Exp-2

1445 Returned to Treatment Plant

1515 Left Treatment Plant for day.

RAF S

Location Mead FNOP Date 6-10-13

Project / Client 2nd Quarter Sampling

Ronnie Fiscus

0815 Arrived at Treatment Plant

0830 Left Treatment Plant

0845 MW-130A WL-58.40

AMW-0130-042013 Exp-2

AMW-2130-042013 Exp-2

0905 MW-130B WL-58.77

BMW-0130-042013 Exp-2

0920 MW-130D WL-58.04

DMW-0130-042013 Exp-2

0940 Returned to Treatment Plant to drop off Water Samples. Before I start putting well labels on.

0945 RAF Left Treatment Plant

Location Mead FUOR Date 6-11-13

Project / Client 2nd QTR SP 2013.

Toby D. Hinz

0700 Toby D. Hinz on site

~~0700~~ 1159 Lewis Turner (BOM)

on site for Audit

1315 Sampling mw's 150

2" wells with Hydrasleeves.

Cloudy 82°F 5-10 wind

1320 mw-150 A

A mw-0150-0412013 2 Exp/3 vol's

wl = 49.24 8260B/8330

1330 mw-150B

B mw-0150-0412013 2 Exp's/3 vol's

wl = 49.11 8260B/8330

Location Date

Project / Client

Appendix C
Reference Sheet
Data Validation Qualifiers
Drinking Water Standards

Data Qualifiers and Drinking Water Standards Reference Sheet
Former Nebraska Ordnance Plant, Mead, Nebraska

Any qualifiers (i.e., U, J, or R) listed after a result are assigned during the data validation process. Data validation is a procedure which involves the review of quality control data provided by the laboratory. This review is followed by the assignment of data qualifiers (if necessary) which indicate the reliability of a result to the reader. Data validation is performed by a chemist employed outside of the laboratory or associated government installations to ensure accuracy in data reporting. A description of qualifiers is provided below.

No qualifier

- If a result has no assigned qualifier, the contaminant was detected, and the reader can be confident that the concentration is exact.

"U"

- A result followed by a "U" qualifier means that the contaminant was undetected, or not detected by the instrument.

"UJ"

- A result followed by a "UJ" qualifier means that the contaminant was not detected, but the associated detection level is not certain (estimated). For example, if a value is followed by a "UJ", the contaminant was not detected, but the associated detection level is in question. The detection level is in question because one or more of the laboratory quality control indicators do not meet acceptance criteria. The amount that the indicator fell outside of the criteria may be used as a rough estimate of how much the actual detection level differs from the stated one. Typically, this is a 10-30% difference.

"UR"

- A result followed by a "UR" qualifier means that the contaminant was not detected, but there is strong doubt that the associated detection level is accurate. For example, if a value is followed by a "UR", the contaminant was not detected, but the associated detection level is in strong doubt. The detection level is in doubt because results are unacceptable for a quality control indicator. In this case, the detection level cannot be estimated.

"J"

- A result followed by only a "J" qualifier means that the contaminant was detected, but there is some question that the stated concentration is exact. For example, if a result is "0.5 J", the contaminant was detected, but there is some question that the concentration is exactly 0.5. A "J" qualifier may be applied for two reasons: (1) the contaminant was detected below the reporting limit; or (2) the contaminant was detected, but one or more quality control indicators did not meet acceptance criteria. The reporting limit is equal to the concentration of the lowest standard used by the laboratory to calibrate the instrument. The reporting limit is the minimum concentration that can be stated with complete confidence.

"R"

- A result followed by only an "R" qualifier means that the contaminant was detected, but there is strong doubt that the concentration is exact. For example, if a result is "0.5 R", the contaminant was detected, but there is strong doubt that the concentration is exactly 0.5. The concentration is in doubt because results are unacceptable for a quality control indicator. In this case, the detected concentration cannot be estimated. For comparison purposes, detected results are reported in the results letters with available Environmental Protection Agency drinking water standards. These standards include the maximum contaminant level (MCL) and various health advisories (HA). A description of the drinking water standards is provided below.

"MCL"

- The maximum contaminant level is the highest concentration of a contaminant that is allowed in drinking water. Maximum contaminant levels are enforceable Federal standards.

"HA"

- Health advisories provide estimates of acceptable drinking water concentrations for a chemical substance based on health effects information. Health advisories are not enforceable Federal standards, but serve as a technical guidance to assist Federal, State, and local officials.

Appendix D
Analytical Results on Compact Disc Summary Forms and Raw Data

Appendix D

Quality Control Summary Report Second Quarter 2013 Water Supply Well Sampling Event, Former Nebraska Ordnance Plant (on CD)

FINAL
QUALITY CONTROL SUMMARY REPORT
SECOND QUARTER 2013

WATER SUPPLY WELL PROGRAM SAMPLING EVENT

FORMER NEBRASKA ORDNANCE PLANT
MEAD, NEBRASKA

Prepared for

United States Army Corps of Engineers
Kansas City District

June 2013

1.0 INTRODUCTION

Water supply well sampling was conducted on May 8, 2013 at the former Nebraska Ordnance Plant, Mead, Nebraska. All sampling activities were performed in accordance with the *Site-Wide Work Plan, Revision 01, Support Services, Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2013). This Quality Control Summary Report presents a summary of the chemical data quality review for the Second Quarter 2013 water supply well sampling event.

Samples were analyzed for the following constituents:

- Selected volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Drinking Water Method 524.2
- Selected explosives by EPA Method 8330

TestAmerica of South Burlington, Vermont performed the explosives analyses and TestAmerica of Savannah, Georgia performed the VOC analyses. Table 1-1 presents a list of the water supply wells planned for sample collection, the corresponding sample identification (ID) numbers, and the requested analyses for each sampled well. Appendix A includes associated chain of custody records. Appendix B presents an explanation of data validation qualifiers and drinking water standards and Appendix C contains a compact disk with analytical data package, including summary forms, and raw data, for the Second Quarter 2013 water supply well sampling event.

2.0 SAMPLING ACTIVITIES

The field sampling team collected samples for chemical analyses from one location during the Second Quarter 2013 water supply well sampling event. In addition, a field duplicate sample, a matrix spike (MS) / matrix spike duplicate (MSD) sample pair, and one trip blank were collected.

Table 2-1 provides the following information listed by date sampled and laboratory sample ID for ease of comparison to laboratory data packages and field notes:

- Field Sample IDs,
- MS/MSD sample information;
- Quality control (QC) split (Field Duplicate) sample information;
- Dates of sample collection and sample receipt by the laboratory;
- Laboratory Sample IDs;
- Laboratory sample delivery group numbers; and
- Requested analyses.

3.0 DATA QUALITY EVALUATION PROCEDURES

The following subsections present the data quality evaluation procedures performed in accordance with the *Mead Validation Guidelines*, (ECC, 2007), approved by the U.S. Army Corps of Engineers in 2007. Both project specified limits and laboratory control limits were used to assess data quality.

There were no QC outliers for the VOC and explosives sample analyses and results qualifications were not required.

3.1 Sample Receipt at the Laboratory

All samples met the custodial possession and transfer requirements. The samples were received within the recommended temperature range of 4 ± 2 °C. Sample preservation was not indicated on the COC; however, the case narrative stated that the sample were received properly preserved.

3.2 Holding Times

All extractions and analyses were performed within method-specific holding times.

3.3 Tuning and Calibration

According to the *Mead Validation Guidelines* (ECC, 2007), assessment of tune and calibration information is assessed using the laboratory case-narrative or summary forms. No deviations for the calibration and tuning of pertinent instrumentation were reported by the laboratory in the case narrative and evaluation of the calibration summary forms indicated that all project criteria were met.

3.4 Laboratory Method Blanks

A laboratory method blank is an analyte-free matrix that is carried through the entire preparation and analysis sequence for the purpose of identifying potential contamination introduced during preparation and analysis. Method blanks were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than 5 times the concentration in the associated blank. For common laboratory contaminants, detections are qualified as non-detect (U) if the concentration in the sample is less than 10 times the concentration in the associated blank. Sample results that are either non-detect (U), or greater than 5 or 10 times the blank result do not require qualification.

There were no detections of target analytes in the laboratory method blanks.

3.5 Trip Blanks

A trip blank is an analyte-free matrix that accompanies samples through the sample collection and transportation process to identify potential VOC contamination. In accordance with the *Mead Validation Guidelines*(ECC, 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than 5 times the concentration in the associated blank (10 times for common laboratory contaminants). Sample results that are either non-detect (U), or greater than 5 times the blank result do not require qualification.

There were no detections of target analytes in the volatile trip blank.

3.6 Surrogates

Surrogates are compounds not normally found in the environment that are added (spiked) into samples prior to extraction (for extractable methods) or prior to analysis (for non-extractable methods). The percent recovery (% REC) of each surrogate is used to assess the success of the sample preparation process for an individual sample. Surrogates were analyzed for each sample batch for VOCs and explosives.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for associated analytes in the affected samples are J-coded for detects and UJ-coded for non-detects if the surrogate % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for associated analytes in the affected samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects.

All surrogate percent recoveries were within laboratory QC limits.

3.7 Laboratory Control Samples and Laboratory Control Sample Duplicates

A laboratory control sample (LCS) consists of a matrix, similar to that of the field sample, which is spiked with known concentrations of analytes. The LCS % REC is a measure of the accuracy of the preparation and analytical methods. The laboratory control sample duplicate (LCSD) is a duplicate preparation and analysis of the LCS. The differences between the LCS and LCSD recoveries are used to calculate the relative percent difference (RPD), which is a measure of the precision of the preparation and analytical methods. LCS samples were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS/LCSD RPD exceeds 30%.

All LCS/LCSD % RECs were within laboratory QC limits and all RPDs were less than 30%.

3.8 Matrix Spikes and Matrix Spike Duplicates

MS/MSD analyses measure method accuracy and precision for a project-specific matrix. A field sample is split into three portions (original, MS, and MSD) and known amounts of analytes are added (spiked) into the MS and MSD portions of the sample. The analytical results of these two portions are compared to each other for reproducibility using the RPD. These results are also compared against the unspiked portion of the sample for % REC of the spiked analytes. MS/MSD samples were analyzed for each sample delivery group for all analyses. MS/MSD results were provided for all analyses.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the parent sample are J-coded for detects and UJ-coded for non-detects if the MS/MSD % RECs are below the laboratory QC limits but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the parent sample are J-coded for detects if the MS/MSD % RECs are greater than the QC limits. No action is required for non-detects.

All % RECs were within laboratory QC limits and all RPDs were less than 30%.

3.9 Field Duplicates

Field duplicate analytical results provide information on the ability to reproduce field results and account for error introduced from handling, shipping, preparing, and analyzing field samples. One field duplicate pair, 055-042013 / 255-042013, was collected this quarter and analyzed for both VOCs and explosives.

The field duplicate precision criteria (RPD of < 50%) was met in the duplicate pair. No sample qualifications were required based on field duplicate findings since corrective action is not required by the laboratory for field duplicate findings.

3.10 Dilutions and Re-analyses

No dilutions or re-analyses were required for this data set.

4.0 OVERALL ASSESSMENT

The following subsections present the field completeness, analytical completeness, and project completeness determinations for the Second Quarter 2013 water supply well sampling event.

4.1 Field Completeness

Field completeness for sample collection was assessed by comparing the number of samples properly collected to the number of samples planned for collection. Only one sample location was scheduled for VOC and explosive analysis sampling this quarter. This sample location, along with the appropriate QC samples, was collected as requested. Therefore, the field completeness for the VOCs and the field completeness for the explosives is 100%. The overall

field completeness percentage is 100%, which exceeds the field completeness goal of 95%.

Section 2.0 presents the field sampling activities. Table 4-1 presents the field completeness.

4.2 Analytical Completeness

Acceptable data is a measure of laboratory contract compliance. Acceptable data includes data that has not been rejected or qualified as estimated (J). Qualified data is considered acceptable if no corrective actions by the laboratory are required or appropriate corrective actions were taken by the laboratory. The acceptable data completeness percentages for both the VOCs and explosives analyses are 100% which exceed the acceptable data completeness goals of 90% for each analytical method. Overall acceptable data completeness is 100%, which exceeds the overall acceptable data completeness goal of 95%.

Quality data is a measure of the percentage of usable data. Quality data includes all data except rejected data points, and does not include analyses for which replacement data points are available. Quality data completeness percentages for both the VOCs and explosives are 100%, as no sample results were rejected. These exceed the quality data completeness goals of 80% for each analytical method. Overall quality data completeness is also 100%, which exceeds the overall quality data completeness goal of 80%.

Table 4-2 presents acceptable and quality data completeness.

4.3 Project Completeness

Project completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples/measurements that are determined to be usable to the total number of samples/ measurements planned. Project completeness is calculated using the field completeness and analytical completeness (quality data) completeness percentages. Overall project completeness is 100%. The overall project completeness exceeds the project completeness goal of 90%.

Table 4-3 presents the project completeness percentages.

5.0 CONCLUSIONS

The data are acceptable. Overall quality data completeness is 100%. Overall acceptable data completeness is 100% and over all field completeness is 100%, both of which exceed project goals. The overall project completeness at 100% exceeds the project goal of 90%.

6.0 REFERENCES

ECC, 2007 *Mead Validation Guidelines*, (approved by the U.S. Army Corps of Engineers 2007)

ECC, 2013. *Site-Wide Work Plan, Revision 01, Support Services, Former Nebraska Ordnance Plant, Mead, Nebraska*. April.

Tables

List of Acronyms for Tables

Term	Definition
µg/L	micrograms per liter
GC/MS	Gas chromatography–mass spectrometry
HPLC	high-performance liquid chromatography
ID	identification/identifier
Lab	laboratory
MS/MSD	matrix spike/matrix spike duplicate
SDG	sample delivery group
WSW	water supply well

Table 1-1
Sample Locations, Sample IDs, and Analyses
Second Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
WSW-55	055-042013	Explosives, Volatiles

Notes:

Explosives	SW8330	Nitroaromatics and Nitramines by HPLC
Volatiles	E524.2	Volatile Organic Compounds by Purge & Trap Capillary Column GC/MS

Table 2-1
Sample Collection Summary
Second Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
Field Samples								
055-042013	055-042013		5/8/2013	5/9/2013	200-16381-1	16381	•	•
		255-042013	5/8/2013	5/9/2013	200-16381-2	16381	•	•
Trip Blank								
TRB-255-042013			5/8/2013	5/9/2013	200-16381-3	16381		•

Notes:

Volatiles	E524.2	Volatile Organic Compounds by Purge & Trap Capillary Column GC/MS
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC
• = Requested for the indicated analyses		

Table 4-1
Field Completeness
Second Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned	Number of Samples Collected	Field Completeness
Explosives	2	2	100%
Volatiles	2	2	100%
Totals =	4	4	100%
Goal =			95%

Notes:

Number of Samples Planned includes field samples and field duplicate samples.

Table 4-2
Analytical Completeness
Second Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Total Number of Parameters	Acceptable Data	Acceptable Data Completeness	Acceptable Data Completeness Goals	Quality Data	Quality Data Completeness	Quality Data Completeness Goals
Explosives (Analyte Count - 6)	12	12	100%	90%	12	100%	80%
Volatiles (Analyte Count - 6)	12	12	100%	90%	12	100%	80%
Totals =	24	24	100%	90%	24	100%	80%

Notes:

Total number of parameters includes field samples (includes data points from dilutions and/or reanalyses to be used in place of original data) and field duplicates (does not include field blanks or trip blanks).
Acceptable data includes data that has not been rejected or qualified as estimated (J/UJ). Data points for which the required corrective actions were taken or do not require corrective action do not count against the acceptable data completeness goal calculation (i.e., results exceeding the calibration range that were reanalyzed at dilutions within the calibration range).
Quality data is defined as all non-rejected data.

Table 4-3
Project Completeness
Second Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field	Analytical	Project Completeness
100.0%	100.0%	100.0%
Project Completeness Goal =		90%

Notes:

Analytical Completeness is the percentage of usable data (i.e. quality data completeness).
Project Completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples / measurements that are determined to be usable to the total number of samples / measurements planned.

Appendix A
Chain of Custody Records

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

2nd QTR WSW Samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 5-08-2013	COC No: 050813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	1 of 1 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			SDG No.
(303) 298-7837 FAX	☐ 3 weeks			
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
055-042013	5/8/2013	1230	G	W	2	X	
255-042013	5/8/2013	1230	G	W	2	X	
055-042013 MS	5/8/2013	1230	G	W	2	X	
055-042013 MSD	5/8/2013	1230	G	W	2	X	

200-16381 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	5-9-13 1700	Fed-Ex 7997 1367 2190		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TABWL	5/9/13 1045
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Savannah
5102 LaRoche Ave.
Savannah, GA 31404

Phone (912) 354 7858

2nd QTR WSW Samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 5-08-2013	COC No: 050813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Abbie Yant	Carrier: FedEx	1 of 1 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			SDG No.
(303) 298-7837 FAX	☐ 3 weeks			
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	5242 - VOCs	Sample Specific Notes:
TRB-255-042013	5/8/2013	1230	G	W	2	X	
055-042013	5/8/2013	1230	G	W	3	X	
255-042013	5/8/2013	1230	G	W	3	X	
055-042013 MS	5/8/2013	1230	G	W	3	X	
055-042013 MSD	5/8/2013	1230	G	W	3	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

3.4c

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby D. Hinz	ECC	5-9-13 1700	Fedex 7987	1370	4752
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				OH	05/09/13 0936
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Appendix B
Reference Sheet
Data Validation Qualifiers
Drinking Water Standards

Data Qualifiers and Drinking Water Standards Reference Sheet
Former Nebraska Ordnance Plant, Mead, Nebraska

Any qualifiers (i.e. U, J, or R) listed after a result are assigned during the data validation process. Data validation is a procedure which involves the review of quality control data provided by the laboratory. This review is followed by the assignment of data qualifiers (if necessary) which indicate the reliability of a result to the reader. Data validation is performed by a chemist employed outside of the laboratory or associated government installations to ensure accuracy in data reporting. A description of qualifiers is provided below.

No qualifier

- If a result has no assigned qualifier, the contaminant was detected, and the reader can be confident that the concentration is exact.

"U"

- A result followed by a "U" qualifier means that the contaminant was undetected, or not detected by the instrument.

"UJ"

- A result followed by a "UJ" qualifier means that the contaminant was not detected, but the associated detection level is not certain (estimated). For example, if a value is followed by a "UJ", the contaminant was not detected, but the associated detection level is in question. The detection level is in question because one or more of the laboratory quality control indicators do not meet acceptance criteria. The amount that the indicator fell outside of the criteria may be used as a rough estimate of how much the actual detection level differs from the stated one. Typically, this is a 10-30% difference.

"UR"

- A result followed by a "UR" qualifier means that the contaminant was not detected, but there is strong doubt that the associated detection level is accurate. For example, if a value is followed by a "UR", the contaminant was not detected, but the associated detection level is in strong doubt. The detection level is in doubt because results are unacceptable for a quality control indicator. In this case, the detection level cannot be estimated.

"J"

- A result followed by only a "J" qualifier means that the contaminant was detected, but there is some question that the stated concentration is exact. For example, if a result is "0.5 J", the contaminant was detected, but there is some question that the concentration is exactly 0.5. A "J" qualifier may be applied for two reasons: (1) the contaminant was detected below the reporting limit; or (2) the contaminant was detected, but one or more quality control indicators did not meet acceptance criteria. The reporting limit is equal to the concentration of the lowest standard used by the laboratory to calibrate the instrument. The reporting limit is the minimum concentration that can be stated with complete confidence.

“R”

- A result followed by only an “R” qualifier means that the contaminant was detected, but there is strong doubt that the concentration is exact. For example, if a result is “0.5 R”, the contaminant was detected, but there is strong doubt that the concentration is exactly 0.5. The concentration is in doubt because results are unacceptable for a quality control indicator. In this case, the detected concentration cannot be estimated. For comparison purposes, detected results are reported in the results letters with available Environmental Protection Agency drinking water standards. These standards include the maximum contaminant level (MCL) and various health advisories (HA). A description of the drinking water standards is provided below.

“MCL”

- The maximum contaminant level is the highest concentration of a contaminant that is allowed in drinking water. Maximum contaminant levels are enforceable Federal standards.

“HA”

- Health advisories provide estimates of acceptable drinking water concentrations for a chemical substance based on health effects information. Health advisories are not enforceable Federal standards, but serve as a technical guidance to assist Federal, State, and local officials.

Appendix C
Analytical Results on Compact Disc Summary Forms and Raw Data

Appendix E

Quality Control Summary Report Second Quarter 2013 Operations and Maintenance Sampling Events, Former Nebraska Ordnance Plant (on CD)

FINAL
QUALITY CONTROL SUMMARY REPORT
SECOND QUARTER 2013

OPERATIONS AND MAINTENANCE PROGRAM
SAMPLING EVENTS

FORMER NEBRASKA ORDNANCE PLANT
MEAD, NEBRASKA

Prepared for

United States Army Corps of Engineers
Kansas City District

August 2013

Quality Control Summary Report
Second Quarter 2013 Operations and Maintenance Sampling Events
Former Nebraska Ordnance Plant
Mead, Nebraska

1.0 INTRODUCTION

Sampling was conducted at the Main Groundwater Treatment Plant (GTP), Load Line (LL) 1 GTP, LL4 GTP, Groundwater Circulation Well (GCW) 1, and the Advanced Oxidation Process (AOP) GTP for the Operations and Maintenance (O&M) program at the former Nebraska Ordnance Plant, near Mead, Nebraska. Sampling activities were performed in accordance with the *Site Wide Work Plan, Revision 01, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2013). This Quality Control Summary Report is a summary of the chemical data quality review for the Second Quarter 2013 O&M monthly sampling events.

TestAmerica analyzed the samples for one or more of the following constituents:

- Total Suspended Solids (TSS) by Standard Method 2540D;
- Metals (iron and manganese) by U.S. Environmental Protection Agency (EPA) Solid Waste (SW)-846 Method 6010C;
- Volatile organic compounds (VOCs) by EPA SW-846 Method 8260B;
- Trichloroethene (TCE) by EPA Compendium Method Toxic Organic (TO)-15;
- Explosives by EPA SW-846 Method 8330;
- Nitrate by SW-846 Method 9056; and
- Total Organic Carbon (TOC) by SW-846 Method 9060

TestAmerica of South Burlington, Vermont performed the VOCs, explosives, metals, TSS, and TOC analyses. TestAmerica of Denver, Colorado performed the nitrate analyses.

Table 1-1 lists the sample locations, the corresponding sample identifications (IDs), and the requested analyses for the Second Quarter 2013 O&M sampling event.

The chain-of-custody and field notes are included as Appendices A and B, respectively. Appendix C presents an explanation of data validation qualifiers and drinking water standards. Appendix D contains a compact disk with all analytical data.

2.0 FIELD SAMPLING ACTIVITIES

The field sampling team collected the following field samples during the Second Quarter 2013 O&M sampling events:

- One water sample from each of the following extraction wells (EW) and focused extraction wells (FEW): EW-1R, EW-4, EW-7, EW-9, FEW-11, and FEW-14.
- One water sample was collected during a startup and performance test following a construction completion for extraction well EW-17.
- One water sample from each of the following granular activated carbon (GAC) units in April and May 2013: 320, 340, and 360.
- One water sample from each of the following GAC units in June 2013: 310, 330, and 350.
- One influent water sample and one effluent water sample from the Main GTP during each month of this quarter.
- One influent water sample and one effluent water sample from GCW-1 in June 2013.
- One influent water sample and one effluent water sample from the LL1 GTP during each month of this quarter.
- One influent air sample, one effluent air sample, and one field duplicate sample from the LL1 GTP.
- One influent water sample and one effluent water sample from the LL4 GTP during each month of this quarter.
- One effluent air sample from the LL4 GTP in April 2013.
- One influent and one effluent water from the AOP GTP in April and June 2013. Only the effluent water sample was collected in May because the associated influent water sample was collected from FEW-11.

A trip blank was included in each shipment that contained field samples scheduled for analysis of VOCs. The required frequency of collection for quality control (QC) samples (field duplicate and matrix spike/matrix spike duplicate [MS/MSD]) is 10% and 5%, respectively. Five QC field duplicate samples and MS/MSD for each parameter was collected for the Main GTP and LL1 GTP sampling events. Field duplicates and MS/MSD samples were not collected for the AOP GTP or LL4 GTP sampling events. The required field QC frequency was met overall for the Second Quarter 2013 O&M sampling events.

Table 2-1 summarizes the following data for the Second Quarter 2013 sampling events:

- Field sample IDs;
- MS/MSD sample information;
- QC (field duplicate) sample information;
- Dates of sample collection and sample receipt by the laboratory;
- Laboratory sample IDs;

- Laboratory sample delivery group numbers; and
- Requested analyses.

3.0 DATA QUALITY EVALUATION PROCEDURES

The following subsections present the results of the data quality evaluation. This evaluation was performed in accordance with *Mead Validation Guidelines* (ECC, 2007). Qualifiers were assigned based on project QC limits and laboratory QC criteria. The data quality evaluation results are presented in Table 3-1. The QC outliers are presented in Tables 3-2 and 3-3.

3.1 Sample Receipt at the Laboratory

The laboratory received all samples in good condition, with proper preservatives, and within the recommended temperature range of 4 ± 2 °C.

3.2 Holding Times

The laboratory prepared and analyzed all samples within the required holding times.

3.3 Tuning and Calibration

The laboratory did not report any deviations for the calibration and tuning of instrumentations in the case narratives. The evaluation of the calibration summary forms indicated that all calibrations met the project criteria.

3.4 Laboratory Blanks

A laboratory method blank is an analyte-free matrix that is carried through the entire preparation and analysis sequence for the purpose of identifying potential contamination introduced during preparation and analysis. Method blanks were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), detections were qualified as non-detect (U) if the concentration in the sample was less than 5 times the concentration in the associated blank. For common laboratory contaminants, results were qualified as described above if the concentration in the sample was less than 10 times the concentration in the associated blank. Sample results that were either non-detect (U), or greater than 5 or 10 times the blank result did not require qualification.

Methylene chloride was detected in several method blanks below the limit of quantitation (LOQ); however, there were no methylene chloride detections in any of the associated samples and did not require qualifications.

3.5 Trip Blanks

A trip blank is an analyte-free matrix that accompanies samples through the sample collection and transportation process to identify potential VOC contamination. In accordance with the *Mead Validation Guidelines* (ECC, 2007), detections were qualified as non-detect (U) if the concentration in the sample was less than 5 times the concentration in the associated blank. Sample results that were either non-detect (U), or greater than 5 times the blank result did not require qualification.

There were no detects for target analytes in the trip blanks.

3.6 Surrogates

Surrogates are compounds not normally found in the environment that are added (spiked) into samples prior to extraction (for extractable methods) and prior to analysis (for non-extractable methods). The percent recovery (% REC) of each surrogate is used to assess the success of the sample preparation process for an individual sample. Samples spiked with surrogate compounds were analyzed for VOCs and explosives.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for associated analytes in the affected samples are J-coded for detects and UJ-coded for non-detects if the surrogate % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for associated analytes in the affected samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects.

The % REC for surrogate toluene-d8 in the VOC analysis was below the laboratory QC limit in one sample. Table 3-1 presents data quality evaluation results and associated qualified samples. Table 3-3 presents the VOC QC outliers and associated samples for all assigned qualifiers. All other surrogate % RECs were within QC limits.

3.7 Laboratory Control Sample / Laboratory Control Sample Duplicate

A laboratory control sample (LCS) consists of a matrix, similar to that of the field sample, which is spiked with known concentrations of analytes. The LCS % REC is a measure of the accuracy of the preparation and analytical methods. The laboratory control sample duplicate (LCSD) is a duplicate preparation and analysis of the LCS. The differences between the LCS and LCSD recoveries are used to calculate the relative percent difference (RPD), which is a measure of the precision of the preparation and analytical methods. LCS samples were analyzed for each sample batch for all analyses. LCSD samples were requested for analysis with each analytical batch that did not contain an MS/MSD.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines*

(ECC, 2007), results for the affected analyte in the associated samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds 30%.

All LCS and LCSD % RECs were within laboratory QC limits. All RPDs, if applicable, were less than 30%. No qualifications were required.

3.8 Matrix Spike / Matrix Spike Duplicate Analyses

MS and MSD samples are analyzed for organic and inorganic analyses. A field sample is split into three portions (original, MS, and MSD) and known amounts of analytes are added (spiked) into the MS and MSD portions of the sample. The analytical results of these two portions are compared to each other for reproducibility using the RPD. These results are also compared against the un-spiked portion of the sample for % REC of the spiked analytes. MS/MSD samples were analyzed for Anions, VOCs, explosives, metals, TSS, and TOC.

For organic analyses:
In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the parent sample are J-coded for detects and UJ-coded for non-detects if the MS/MSD % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the parent sample are J-coded for detects if the MS/MSD % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated parent samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds the QC limit.

For inorganic analyses:
In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated parent samples are J-coded for detects and UJ-coded for non-detects if the MS/MSD % RECs are below the laboratory limits, but greater than 30%. Non-detects are R-coded if % RECs are less than 30%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated parent samples are J-coded for detects if the MS/MSD % RECs are greater than the laboratory QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated parent samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds the laboratory QC limit.

All % RECs and RPDs were within QC limits.

3.9 Field Duplicate Results

Field duplicate results provide information on the ability to reproduce field sample results and account for error introduced from handling, shipping, storage, preparation, and analysis of field samples. The team collected five field duplicate pairs during the Second Quarter 2013 monthly O&M sampling events. The field duplicate pairs are listed below:

- 5447-0513-INF-147 / 5447-0513-2INF-147 (Explosives, VOCs);
- 5447-0513-EFF-147 / 5447-0513-2EFF-147 (Nitrate);
- 5447-0513-LL1-INF-091 / 5447-0513-LL1-2INF-091 (Explosives, VOCs);
- 5447-0513-LL1-EFF-091 / 5447-0513-LL1-2EFF-091 (Nitrate);
- 5447-0513-LL1-AIR-EFF-091 / 5447-0513-LL1-2AIR-EFF-091 (VOC)

All field duplicate pairs met the precision criteria. No qualification is required for the field duplicate findings.

Note: Field duplicate results are considered acceptable when one result is a non-detect and the other result is a detect at a concentration below the limit of quantitation (LOQ).

3.10 Dilutions and Reanalyses

Qualifiers assigned as a result of calibration range exceedances are not used in the calculation of analytical data completeness percentages if there are acceptable results from diluted sample analyses.

One water sample for explosives analysis required a dilution because the RDX concentration was above the calibration range. Eleven water samples for VOCs were initially analyzed at a dilution due to high level of TCE. One sample was reanalyzed undiluted to achieve lower reporting limits for the nondetect compounds. Three of these samples required a secondary dilution analysis. According to the *Mead Validation Guidelines* (ECC, 2007) results exceeding the calibrations range are not used for reporting or project decisions when acceptable results from dilutions are available.

Three air samples were analyzed at a dilution because the concentrations of TCE were above the calibration range. Only the dilution analyses were reported for the air samples. No qualifiers were assigned because acceptable results from diluted sample analyses were provided.

Three nitrate were analyzed at a dilution because the concentrations were above the calibration range. Only the dilution analyses were reported for the samples. No qualifiers were assigned because acceptable results from diluted sample analyses were provided.

3.11 Other Quality Control Parameters

All detected explosive results were confirmed on a second column. A column comparison between the detected explosive results was made using explosive identification summary forms. The validator verified that the laboratory performed confirmation for all reported explosive detections and the reported inter-column RPDs.

Detected results with the inter-column RPDs exceeding 40% are qualified as estimated (J). Table 3-1 presents the data quality evaluation results and qualified samples. Table 3-2 presents the explosive QC outliers and associated samples for all assigned qualifiers. These qualifiers were not used to determine analytical completeness or project completeness in the Overall Assessment in Section 4.0.

3.12 Laboratory Qualifiers

The laboratory quantified and assigned an estimated (J) qualifiers for analytes detected below the LOQ, but above the detection limit. The validator carried over these qualifiers but were not used to determine analytical or project completeness in the Overall Assessment in Section 4.0.

4.0 OVERALL ASSESSMENT

The following subsections discuss the field completeness, analytical completeness, and project completeness determinations for the Second Quarter 2013 O&M sampling events. An evaluation of field, analytical, and project completeness is presented in Tables 4-1, 4-2, and 4-3.

4.1 Field Completeness

Field completeness is assessed by comparing the number of samples properly collected to the number of samples planned for collection. Field completeness is presented in Table 4-1 for the O&M sampling events.

Field completeness for the Second Quarter 2013 O&M sampling events was 100% for each analysis which exceeds the field completeness goal of 95%.

4.2 Analytical Completeness

Analytical completeness was calculated as both acceptable data completeness and quality data completeness. Analytical completeness is presented in Table 4-2. The overall acceptable data completeness percentage goal is 95% (90% for each method), and the overall quality data completeness percentage goal is 80%.

Acceptable data completeness is a measure of laboratory contract compliance. Acceptable data includes data that have not been rejected or qualified as estimated (J). Qualified data are considered acceptable if appropriate corrective actions were taken by the laboratory. Acceptable data completeness percentages for the O&M sampling events are as follows:

- Nitrate: 100%
- Explosives: 100%
- Metals: 100%
- TOC: 100%
- TSS: 100%
- VOCs: 97.7%
- VOC-Air: 100%

All analyses exceed the 90% criteria for the individual methods. The overall acceptable data completeness is 98.8% which exceeds the 95% criteria.

Quality data is a measure of the percentage of usable data points. Usable data points include all non-rejected data. Rejected data points with replacement data do not count against the quality data completeness. No data were rejected for the Second Quarter 2013 O&M sampling events. The quality data completeness percentages for nitrate, explosives, metals, TOC, TSS, and VOCs 100% and overall quality data completeness is 100% for the Second Quarter 2013 O&M sampling events.

4.3 Project Completeness

Project completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples/measurements that are determined to be usable to the total number of samples/ measurements planned. Project completeness is calculated using the field completeness and analytical completeness (quality data) completeness percentages.

The O&M project completeness percentage is 100%, which exceed the project completeness goal of 90%. Table 4-3 presents project completeness values.

5.0 CONCLUSIONS

No data points were qualified as rejected (R). Data are valid for use, as qualified. Overall field completeness is 100%. Overall quality data completeness is 100% which is above the quality data completeness goal of 80%. Project completeness is 100% which exceeds the project completeness goal of 90%.

A surrogate recovery outlier was present in one volatile analysis, which resulted in a qualification of the compounds in one sample. Fifteen explosive results were qualified as estimated for inter-column RPDs exceedances. The qualifiers as a result of inter-column RPDs were not used to determine analytical completeness or project completeness.

6.0 REFERENCES

ECC, 2007, *Mead Validation Guidelines*, (approved by United States Army Corps of Engineers 2007).

ECC, 2013, *Site Wide Work Plan, Revision 01, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska*. April.

Tables

List of Acronyms for Tables

Term	Definition
µg/L	micrograms per liter
AOP	Advanced Oxidation Process
C-RPD	column relative percent difference
EFF	effluent
EW	extraction well
FEW	focused extraction well
GC/MS	gas chromatography–mass spectrometry
GCW	groundwater circulation well
GTP	groundwater treatment plant
HPLC	high-performance liquid chromatography
ID	identification/identifier
INF	influent
IS	Internal standard
J	estimated
Lab	laboratory
LOD	limit of detection
LL	Load Line
LWL	lower warning level
MDL	minimum detection limit
MS/MSD	matrix spike/matrix spike duplicate
MS	mass-spectrometry
QC	quality control
RPD	relative percent difference
SDG	sample delivery group
Surr	surrogate
SW	solid waste
TO	toxic organic
TOC	total organic compound
TSS	total suspended solids
U	not detected at laboratory limit of detection
UCL	upper control limit

Table 1-1
Sample Locations, Sample IDs, and Analyses
Second Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

O&M Locations	Sample IDs	Analyses
AOP-EFF	5447-0413-AOP-EFF2-146	Explosives, Volatiles
AOP-EFF	5447-0513-AOP-EFF2-147	Explosives, Volatiles
AOP-EFF	5447-0613-AOP-EFF2-148	Explosives, Volatiles
AOP-INF	5447-0413-AOP-INF-146	Explosives, Volatiles
AOP-INF	5447-0613-AOP-INF-148	Explosives, Volatiles
EW-17	5447-0513-LL1-EW17	Explosives, Volatiles
EW-1R	5447-0513-EW1R-147	Explosives, Volatiles
EW-4	5447-0513-EW04-147	Explosives, Volatiles
EW-7	5447-0513-EW07-147	Explosives, Volatiles
EW-9	5447-0513-EW09-147	Explosives, Volatiles
EW-9	5447-0513-EW09-147A	Explosives
FEW-11	5447-0513-EW11-147	Explosives, Volatiles
FEW-14	5447-0513-EW14-147	Explosives, Volatiles
GCW1-EFF	GCW1-EFF-062013	Volatiles
GCW1-INF	GCW1-INF-062013	Volatiles
GTP-310	5447-0613-310-148	Explosives, Volatiles
GTP-320	5447-0413-320-146	Explosives, Volatiles
GTP-320	5447-0513-320-147	Explosives, Volatiles
GTP-330	5447-0613-330-148	Explosives, Volatiles
GTP-340	5447-0413-340-146	Explosives, Volatiles
GTP-340	5447-0513-340-147	Explosives, Volatiles
GTP-350	5447-0613-350-148	Explosives, Volatiles
GTP-360	5447-0413-360-146	Explosives, Volatiles
GTP-360	5447-0513-360-147	Explosives, Volatiles
GTP-EFF	5447-0413-EFF-146	Anions, Explosives, Volatiles
GTP-EFF	5447-0513-EFF-147	Anions, Explosives, Volatiles
GTP-EFF	5447-0613-EFF-148	Anions, Explosives, Volatiles
GTP-INF	5447-0413-INF-146	Explosives, Volatiles
GTP-INF	5447-0513-INF-147	Explosives, Volatiles
GTP-INF	5447-0613-INF-148	Explosives, Metals, TOC, TSS, Volatiles
LL1_AIR_EF	5447-0513-LL1-AIR-EFF-091	Volatiles-Air
LL1-EFF	5447-0413-LL1-EFF-090	Anions, Volatiles
LL1-EFF	5447-0513-LL1-EFF	Explosives, Volatiles
LL1-EFF	5447-0513-LL1-EFF-091	Anions, Explosives, Volatiles
LL1-EFF	5447-0613-LL1-EFF-1	Volatiles
LL1-INF	5447-0413-LL1-INF-090	Volatiles
LL1-INF	5447-0513-LL1-INF-091	Explosives, Volatiles
LL1-INF	5447-0613-LL1-INF-1	Volatiles
LL4_AIR_EF	5447-0413-LL4-AIR-EFF	Volatiles-Air
LL4-EFF	5447-0413-LL4-EFF	Anions, Volatiles
LL4-EFF	5447-0513-LL4-EFF	Anions, Explosives, Volatiles
LL4-EFF	5447-0613-LL4-EFF	Anions, Volatiles
LL4-INF	5447-0413-LL4-INF	Volatiles
LL4-INF	5447-0513-LL4-INF	Explosives, Volatiles
LL4-INF	5447-0613-LL4-INF	Metals, TOC, TSS, Volatiles

Notes:

TSS	A2540D	Total Suspended Solids Dried at 103-105 C
Metals	SW6010C	Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry
Volatiles	SW8260B	Volatile Organic Compounds by Capillary GC/MS
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC
Anions	SW9056	Anion Chromatography
TOC	SW9060	Total Organic Carbon
Volatiles-Air	TO15	Determination of Volatile Organic Compounds in Air Collected in Specially-Prepared Canisters and Analyzed by GC/MS

Table 2-1
Sample Collection Summary
Second Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Anions	Explosives	Metals	TOC	TSS	Volatiles	Volatiles-Air
			Field Samples										
5447-0413-INF-146			4/1/2013	4/2/2013	200-15812-1	15812		•				•	
		5447-0513-2INF-147	5/1/2013	5/2/2013	200-16279-2	16279		•				•	
5447-0513-INF-147	5447-0513-INF-147		5/1/2013	5/2/2013	200-16279-1	16279		•				•	
5447-0613-INF-148	5447-0613-INF-148		6/3/2013	6/4/2013	200-16785-1	16785_final		•	•	•	•	•	
5447-0413-320-146			4/1/2013	4/2/2013	200-15812-2	15812		•				•	
5447-0513-320-147			5/1/2013	5/2/2013	200-16279-3	16279		•				•	
5447-0413-340-146			4/1/2013	4/2/2013	200-15812-3	15812		•				•	
5447-0513-340-147			5/1/2013	5/2/2013	200-16279-4	16279		•				•	
5447-0413-360-146			4/1/2013	4/2/2013	200-15812-4	15812		•				•	
5447-0513-360-147			5/1/2013	5/2/2013	200-16279-5	16279		•				•	
5447-0413-EFF-146			4/1/2013	4/2/2013	200-15812-5	15812	•	•				•	
		5447-0513-2EFF-147	5/1/2013	5/2/2013	200-16279-16	16279	•						
5447-0513-EFF-147	5447-0513-EFF-147		5/1/2013	5/2/2013	200-16279-6	16279	•	•				•	
5447-0613-EFF-148			6/3/2013	6/4/2013	200-16785-5	16785_final	•	•				•	
5447-0413-LL1-INF-090			4/1/2013	4/2/2013	200-15813-1	15813						•	
		5447-0513-LL1-2INF-091	5/1/2013	5/2/2013	200-16285-2	16285		•				•	
5447-0513-LL1-INF-091	5447-0513-LL1-INF-091		5/1/2013	5/2/2013	200-16285-1	16285		•				•	
5447-0613-LL1-INF-1			6/11/2013	6/12/2013	200-16950-1	16950						•	
5447-0413-LL1-EFF-090			4/1/2013	4/2/2013	200-15813-2	15813	•					•	
		5447-0513-LL1-2EFF-091	5/1/2013	5/2/2013	200-16285-5	16285	•						
5447-0513-LL1-EFF-091	5447-0513-LL1-EFF-091		5/1/2013	5/2/2013	200-16285-3	16285	•	•				•	
5447-0513-LL1-EFF			5/22/2013	5/23/2013	200-16609-2	16609		•				•	
5447-0613-LL1-EFF-1			6/11/2013	6/12/2013	200-16950-2	16950						•	
5447-0413-AOP-EFF2-146			4/1/2013	4/2/2013	200-15812-7	15812		•				•	
5447-0513-AOP-EFF2-147			5/1/2013	5/2/2013	200-16279-7	16279		•				•	
5447-0613-AOP-EFF2-148			6/3/2013	6/4/2013	200-16785-7	16785_final		•				•	
5447-0413-AOP-INF-146			4/1/2013	4/2/2013	200-15812-6	15812		•				•	
5447-0613-AOP-INF-148			6/3/2013	6/4/2013	200-16785-6	16785_final		•				•	
5447-0413-LL4-INF			4/1/2013	4/2/2013	200-15815-1	15815						•	
5447-0513-LL4-INF			5/1/2013	5/2/2013	200-16287-1	16287		•				•	
5447-0613-LL4-INF			6/3/2013	6/4/2013	200-16787-1	16787_final			•	•	•	•	
5447-0413-LL4-EFF			4/1/2013	4/2/2013	200-15815-2	15815	•					•	
5447-0513-LL4-EFF	5447-0513-LL4-EFF		5/1/2013	5/2/2013	200-16287-2	16287	•	•				•	
5447-0613-LL4-EFF			6/3/2013	6/4/2013	200-16787-2	16787_final	•					•	
5447-0413-LL4-AIR-EFF			4/1/2013	4/2/2013	200-15818-1	15818							•
5447-0513-EW1R-147			5/1/2013	5/2/2013	200-16279-9	16279		•				•	
5447-0513-EW04-147			5/1/2013	5/2/2013	200-16279-10	16279		•				•	
5447-0513-EW14-147			5/1/2013	5/2/2013	200-16279-14	16279		•				•	

Table 2-1
Sample Collection Summary
Second Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Anions	Explosives	Metals	TOC	TSS	Volatiles	Volatiles-Air
5447-0513-EW11-147			5/1/2013	5/2/2013	200-16279-13	16279		•				•	
5447-0513-EW09-147			5/1/2013	5/2/2013	200-16279-11	16279		•				•	
5447-0513-EW09-147A			5/1/2013	5/2/2013	200-16279-12	16279		•					
5447-0513-EW07-147			5/1/2013	5/2/2013	200-16279-15	16279		•				•	
		5447-0513-LL1-2AIR-EFF-091	5/1/2013	5/2/2013	200-16294-2	16294							•
5447-0513-LL1-AIR-EFF-091			5/1/2013	5/2/2013	200-16294-1	16294							•
5447-0513-LL1-EW17			5/22/2013	5/23/2013	200-16609-1	16609		•				•	
5447-0613-310-148			6/3/2013	6/4/2013	200-16785-2	16785_final		•				•	
5447-0613-330-148			6/3/2013	6/4/2013	200-16785-3	16785_final		•				•	
5447-0613-350-148			6/3/2013	6/4/2013	200-16785-4	16785_final		•				•	
GCW1-INF-062013			6/3/2013	6/4/2013	200-16785-8	16785_final						•	
GCW1-EFF-062013			6/3/2013	6/4/2013	200-16785-9	16785_final						•	
			Trip Blanks										
TRB-2INF-042013			4/1/2013	4/2/2013	200-15812-8	15812						•	
TRB-LL1-2INF-042013			4/1/2013	4/2/2013	200-15813-3	15813						•	
TRB-LL4-2INF-042013			4/1/2013	4/2/2013	200-15815-3	15815						•	
TRB-2INF-052013			5/1/2013	5/2/2013	200-16279-8	16279						•	
TRB2-LL1-2INF-052013			5/1/2013	5/2/2013	200-16285-4	16285						•	
TRB-LL4-2INF-052013			5/1/2013	5/2/2013	200-16287-3	16287						•	
TRB-LL1-2INF-052013			5/22/2013	5/23/2013	200-16609-3	16609						•	
TRB-2INF-062013			6/3/2013	6/4/2013	200-16785-10	16785_final						•	
TRB-LL4-2INF-062013			6/3/2013	6/4/2013	200-16787-3	16787_final						•	
TRB-LL1-2INF-062013			6/11/2013	6/12/2013	200-16950-3	16950						•	

Notes:

TSS	A2540D	Total Suspended Solids Dried at 103-105 C
Metals	SW6010C	Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry
Volatiles	SW8260B	Volatile Organic Compounds by Capillary GC/MS
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC
Anions	SW9056	Anion Chromatography
TOC	SW9060	Total Organic Carbon
Volatiles-Air	TO15	Determination of Volatile Organic Compounds in Air Collected in Specially-Prepared Canisters and Analyzed by GC/MS

• = Requested for the indicated analyses

Table 3-1
Data Quality Evaluation Results
Second Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	C_RPD	IS_Surr	Comments	Final Result
5447-0413-320-146	4/1/2013	15812	200-15812-2	Volatiles	1,2-dichloropropane	µg/L	0.25	UJ		X	Surrogate recovery outside project limits.	0.25 UJ
5447-0413-320-146	4/1/2013	15812	200-15812-2	Volatiles	cis-1,2-dichloroethene	µg/L	0.25	UJ		X	Surrogate recovery outside project limits.	0.25 UJ
5447-0413-320-146	4/1/2013	15812	200-15812-2	Volatiles	methylene chloride	µg/L	0.25	UJ		X	Surrogate recovery outside project limits.	0.25 UJ
5447-0413-320-146	4/1/2013	15812	200-15812-2	Volatiles	trans-1,2-dichloroethene	µg/L	0.25	UJ		X	Surrogate recovery outside project limits.	0.25 UJ
5447-0413-320-146	4/1/2013	15812	200-15812-2	Volatiles	trichloroethene	µg/L	0.31	J		X	Surrogate recovery outside project limits.	0.31 J
5447-0413-320-146	4/1/2013	15812	200-15812-2	Volatiles	vinyl choride	µg/L	0.25	UJ		X	Surrogate recovery outside project limits.	0.25 UJ
5447-0413-AOP-EFF2-146	4/1/2013	15812	200-15812-7	Explosives	2,4,6-trinitrotoluene	µg/L	0.10	J	X		Column RPD	0.10 J
5447-0413-AOP-INF-146	4/1/2013	15812	200-15812-6	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.035	J	X		Column RPD	0.035 J
5447-0413-AOP-INF-146	4/1/2013	15812	200-15812-6	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.92	J	X		Column RPD	0.92 J
5447-0513-AOP-EFF2-147	5/1/2013	16279	200-16279-7	Explosives	1,3,5-trinitrobenzene	µg/L	0.039	J	X		Column RPD	0.039 J
5447-0513-AOP-EFF2-147	5/1/2013	16279	200-16279-7	Explosives	2,4,6-trinitrotoluene	µg/L	0.095	J	X		Column RPD	0.095 J
5447-0513-EW09-147A	5/1/2013	16279	200-16279-12	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.071	J	X		Column RPD	0.071 J
5447-0513-EW11-147	5/1/2013	16279	200-16279-13	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.034	J	X		Column RPD	0.034 J
5447-0513-EW11-147	5/1/2013	16279	200-16279-13	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.92	J	X		Column RPD	0.92 J
5447-0513-EW14-147	5/1/2013	16279	200-16279-14	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.059	J	X		Column RPD	0.059 J
5447-0513-LL1-2INF-091	5/1/2013	16285	200-16285-2	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.075	J	X		Column RPD	0.075 J
5447-0513-LL1-EFF-091	5/1/2013	16285	200-16285-3	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.077	J	X		Column RPD	0.077 J
5447-0613-AOP-EFF2-148	6/3/2013	16785_final	200-16785-7	Explosives	1,3,5-trinitrobenzene	µg/L	0.033	J	X		Column RPD	0.033 J
5447-0613-AOP-EFF2-148	6/3/2013	16785_final	200-16785-7	Explosives	2,4,6-trinitrotoluene	µg/L	0.094	J	X		Column RPD	0.094 J
5447-0613-AOP-INF-148	6/3/2013	16785_final	200-16785-6	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.031	J	X		Column RPD	0.031 J
5447-0613-AOP-INF-148	6/3/2013	16785_final	200-16785-6	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.90	J	X		Column RPD	0.90 J

Note: The LOD values were used to display non detected lab results.

Reason for Qualification	
C_RPD	Column RPD
IS_Surr	Internal standard, Surrogate recovery outside project limits.

Table 3-2
Explosives Quality Control Outliers
Second Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
Confirmation Column Difference					
5447-0413-AOP-EFF2-146	15812	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	94.1 RPD
5447-0413-AOP-INF-146	15812	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	185 RPD
5447-0413-AOP-INF-146	15812	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	147 RPD
5447-0513-AOP-EFF2-147	16279	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	51.6 RPD
5447-0513-AOP-EFF2-147	16279	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	90.1 RPD
5447-0513-EW09-147A	16279	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	43.1 RPD
5447-0513-EW11-147	16279	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	160 RPD
5447-0513-EW11-147	16279	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	69.5 RPD
5447-0513-EW14-147	16279	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	112 RPD
5447-0513-LL1-2INF-091	16285	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	Confirmation Column Difference exceeds UCL	< 40 RPD	53.7 RPD
5447-0513-LL1-EFF-091	16285	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	Confirmation Column Difference exceeds UCL	< 40 RPD	75.3 RPD
5447-0613-AOP-EFF2-148	16785_final	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	46.5 RPD
5447-0613-AOP-EFF2-148	16785_final	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	78.5 RPD
5447-0613-AOP-INF-148	16785_final	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	177 RPD
5447-0613-AOP-INF-148	16785_final	4-Amino-2,6-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	188 RPD

Table 3-3

Volatile Organic Compounds Quality Control Outliers

Second Quarter 2013 Operations and Maintenance Sampling Event

Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
Blank					
5447-0613-310-148	16785_final	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.28 µg/L
5447-0613-330-148	16785_final	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.28 µg/L
5447-0613-350-148	16785_final	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.28 µg/L
5447-0613-AOP-EFF2-148	16785_final	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.28 µg/L
5447-0613-AOP-INF-148	16785_final	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.28 µg/L
5447-0613-EFF-148	16785_final	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.28 µg/L
5447-0613-INF-148	16785_final	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.28 µg/L
5447-0613-LL1-EFF-1	16950	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.28 µg/L
5447-0613-LL1-INF-1	16950	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.28 µg/L
5447-0613-LL4-EFF	16787_final	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.27 µg/L
5447-0613-LL4-INF	16787_final	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.27 µg/L
GCW1-EFF-062013	16785_final	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.24 µg/L
GCW1-INF-062013	16785_final	Methylene Chloride	Lab Blank > MDL	< 0.21 µg/L	0.28 µg/L
Surrogate					
5447-0413-320-146	15812	1,2-Dichloropropane	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	84.0 %
5447-0413-320-146	15812	cis-1,2-Dichloroethylene	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	84.0 %
5447-0413-320-146	15812	Methylene Chloride	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	84.0 %
5447-0413-320-146	15812	trans-1,2-Dichloroethene	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	84.0 %
5447-0413-320-146	15812	Trichloroethene (TCE)	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	84.0 %
5447-0413-320-146	15812	Vinyl Chloride	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	84.0 %

Table 4-1
Field Completeness
Second Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned	Number of Samples Collected	Field Completeness
Anions	10	10	100%
Explosives	35	35	100%
Metals	2	2	100%
TOC	2	2	100%
TSS	2	2	100%
Volatiles	44	44	100%
Volatiles-Air	3	3	100%
Totals =	98	98	100.0%
Goal =			95%

Notes:

Number of Samples Planned includes field samples and field duplicate samples.

Table 4-2
Analytical Completeness
Second Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Total Number of Parameters	Acceptable Data	Acceptable Data Completeness	Acceptable Data Completeness Goals	Quality Data	Quality Data Completeness	Quality Data Completeness Goals
Anions (Analyte Count - 1)	10	10	100%	90%	10	100%	80%
Explosives (Analyte Count - 6)	210	210	100%	90%	210	100%	80%
Metals (Analyte Count - 2)	4	4	100%	90%	4	100%	80%
TOC (Analyte Count - 1)	2	2	100%	90%	2	100%	80%
TSS (Analyte Count - 1)	2	2	100%	90%	2	100%	80%
Volatiles (Analyte Count - 6)	264	258	97.7%	90%	264	100%	80%
Volatiles-Air (Analyte Count - 1)	3	3	100%	90%	3	100%	80%
Totals =	495	489	98.8%	90%	495	100.0%	80%

Notes:

Total number of parameters includes field samples (includes data points from dilutions and/or reanalyses to be used in place of original data) and field duplicates (does not include field blanks or trip blanks).

Acceptable data includes data that has not been rejected or qualified as estimated (J/UJ). Data points for which the required corrective actions were taken or do not require corrective action do not count against the acceptable data completeness goal calculation (i.e., results exceeding the calibration range that were reanalyzed at dilutions within the calibration range).

Quality data is defined as all non-rejected data.

Table 4-3
Project Completeness
Second Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field	Analytical	Project Completeness
100.0%	100.0%	100.0%
Project Completeness Goal =		90%

Notes:

Analytical Completeness is the percentage of usable data (i.e. quality data completeness).
Project Completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples / measurements that are determined to be usable to the total number of samples / measurements planned.

Appendix A
Chain of Custody Records

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Tyler	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FNUP Mead	Project #: 5447002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Explosives 8330	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
5447-0413-INF-146	4-1-13	0734	G	W			3	2		
5447-0413-320-146	4-1-13	0737	G	W			3	2		
5447-0413-340-146	4-1-13	0740	G	W			3	2		
5447-0413-360-146	4-1-13	0743	G	W			3	2		
5447-0413-EFF-146	4-1-13	0750	G	W			3	2		
5447-0413-AOP-INF-146	4-1-13	0857	G	W			3	2		
5447-0413-AOP-EFF2-146	4-1-13	0851	G	W			3	2		
TRB-2INF-042013	4-1-13	0734	G	W			2			
	11									

200-15812 COC — 200-15812 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4-1-13 1500	ECC	FedEx AS, B.11 B 845-365-1900	4-1-13 1500	FedEx
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 4/2/13 1115	Company TABUR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

3.7 D-186 4/2/13

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: ENVIRO Mod	Project #: 5440002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrate, 9056/300.0	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5440-0413-EFF-14-6	4-1-13	0750	G	W			2		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4-1-13 1500	ECC	FedEx Air Bill 8625-3615-7684	4-1-13 1500	FedEx
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 4/2/13 0900	Company TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TJ/VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: ENDP Mead	Project #: 5440002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Total Number of containers	Special Instructions/Note:
Preservation Code:									
5440-0413-LL-INF-090	4-1-13	0840	G	W			3		
5440-0413-LL-ECA-090	4-1-13	0844	G	W			3		
TRB-LL-2INF-042013	4-1-13	0840	G	W			2		

200-15813 Chain of Custody

200-15813 COC

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4-1-13 1500	ECC	Fed Ex Air Bill # 5605-3615-1700	4-1-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	4/2/13 1115	TA-BUR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

3.7
D-186
4/2/13

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TTS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Robin Ryder	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FNOU Mead	Project #: 54470002			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOC 8260B/8260C	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5447-0413-LL1-EFF-090	4-1-13	0844	G	W			2		

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4-1-13 1500	ECC	FedEx Air Bill 8605136154 1684	4-1-13 1500	FedEx
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 4/2/13 0900	Company TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: T/VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 702-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7601	PO #:			
Email:	WO #:			
Project Name: FNOP Mead	Project #: 54702002			
Site:	SSOW#:			

Analysis Requested

VOCs 8260B

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5442-0413-224-INF	4-1-13	0902	G	W			3		
5442-0413-224-EFF	4-1-13	0905	G	W			3		
TRB-224-2INF-042013	4-1-13	0902	G	W			2		

200-15815 Chain of Custody

200-15815 COC

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4-1-13 1500	ECC	Fed Ex A.: 8.11 A 8675 3615 1200	4-1-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: Steph Fowler	4/2/13 1115	TABUR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

3.7 lm
D-186
4/2/13

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TI / VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FMUP Mead	Project #: 5447002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrate, 9056/353.2	Total Number of containers	Special Instructions/Note:
			Preservation Code						
5447-0413-LL4-EFF	4-1-13	0905	G	W			2		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4-1-13 1500	ECC	Fed Ex Airbill 8675-7316-15	4-1-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 4213 0900	Company TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: John Ryder	Samples Collected By: Tim Thomas
Company: ECC	Phone:	1 of 1 COCs
Address: 1746 Cole Blvd Bldg 1 Suite 350	Email:	
City/State/Zip Lakewood CO 80401		
Phone: 303-298-7607	Site Contact: Tim Thomas	
FAX: 303-298-7830	TA Contact:	
Project Name: FNDP Mach	Analysis Turnaround Time	
Site: 5442-002	Standard (Specify)	
PO #	Rush (Specify)	

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
5442-0413-LL4-AIR-EEF	4-1-13	0908	-	30	0	-	3581	1											

Temperature (Fahrenheit)	Interior	Ambient	
Start			
Stop			

Pressure (Inches of Hg)	Interior	Ambient	
Start			
Stop			

Special Instructions/QC Requirements & Comments:

Samples Shipped by:	Date/Time: 4-1-13 1500	Samples Received by: FedEx A.. 0.11 8625-3615-1695
Samples Relinquished by:	Date/Time:	Received by: 4/2/13 1115 TABUR
Relinquished by:	Date/Time:	Received by:

200-15818 COC

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information

Client Contact: John Ryder
Company: ECC
Address: 1746 Cole Blvd Bld 21 Suite 350
City: Lakewood
State, Zip: Co 80401
Phone: 303-298-7607
Email:
Project Name: ENDP Mod
Site:

Sampler: TT/VS
Phone: 702-944-2964
Due Date Requested:
TAT Requested (days):
PO #:
WO #:
Project #: 5440002
SSOW#:

Lab PM:
E-Mail:
Carrier Tracking No(s):
COC No:
Page: 1 of 2
Job #:

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (w=water, s=solid, o=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Explosives 8330	Total Number of containers
			Preservation Code:						
5440-0513-INF-140	5-1-13	0858	G	W			3	2	
5440-0513-2INF-140	5-1-13	0858	G	W			3	2	
5440-0513-INF-MS	5-1-13	0858	G	W			3	2	
5440-0513-INF-MSD	5-1-13	0858	G	W			3	2	
5440-0513-320-140	5-1-13	0904	G	W			3	2	
5440-0513-340-140	5-1-13	0906	G	W			3	2	
5440-0513-360-140	5-1-13	0909	G	W			3	2	
5440-0513-EFF-140	5-1-13	0914	G	W			3	2	
5440-0513-AOP-EFF2-140	5-1-13	1240	G	W			3	2	
TRB-2INF-052013	5-1-13	0858	G	W			2		

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2SO3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4-5
Z - other (specify)
Other:

Special Instructions/Note:

200-16279 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5-1-13 1500	ECC	Fed Ex 8675 3615 1721	5-1-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
			[signature]	5/2/13 1005	TAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information				
Client Contact: John Ryder	Sampler: TT / VS	Lab PM:	Carrier Tracking No(s):	COC No:
Company: ECC	Phone: 700-944-2964	E-Mail:		Page: 2 of 2
Address: 1746 Cole Blvd Bld 21, Suite 350	Due Date Requested:			Job #:
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: ENOU Mead	Project #: 5447002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Explosives 8330	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
5447-0513-EW1R-147	5-1-13	0942	G	W			3	2		
5447-0513-EW04-147	5-1-13	0952	G	W			3	2		
5447-0513-EW09-147	5-1-13	1056	G	W			3	2		
5447-0513-EW09-147A	5-1-13	1056	G	W			3	2		
5447-0513-EW11-147	5-1-13	1043	G	W			3	2		
5447-0513-EW14-147	5-1-13	0958	G	W			3	2		
(11)										
5447-0513-EW07-147 (11)	5-1-13	1103	G	W			3	2		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5-1-15 1500	ECC	FedEx 8625 3615 1721	5-1-15 1500	FedEx
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 5/2/15 1005	Company TABUR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:

J 16279

2.3
FR1 SG 5/2/13

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TT / VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 702-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FNDD Mead	Project #: 5440002			
Site:	SSOW#:			

Analysis Requested: Nitrate by 353.2

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrate by 353.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5440-0513-EFF-147	5-1-13	0914	G	W			2		
5440-0513-2EFF-147	5-1-13	0914	G	W			2		
5440-0513-EFF-MS	5-1-13	0914	G	W			2		
5440-0513-EFF-MSD	5-1-13	0914	G	W			2		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	5-1-13 1500	ECC	Fed Ex 8605-3605-1970	5-1-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 5/2/13 1000	Company TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TT/VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 S-1350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: ENDP Mod	Project #: 5447002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Explosives 8330	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
5447-0513-LL1-INF-091	5-1-13	1143	G	W			3	2		
5447-0513-LL1-2INF-091	5-1-13	1143	G	W			3	2		
5447-0513-LL1-INF-MS	5-1-13	1143	G	W			3	2		
5447-0513-LL1-INF-MSD	5-1-13	1143	G	W			3	2		
5447-0513-LL1-EFF-091	5-1-13	1150	G	W			3	2		
TRB-LL1-2INF-052013	5-1-13	1143	G	W			2			

200-16285 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5-1-13 1500	ECC	Fed Ex Air Bill 8675-3615-1721	5-1-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	5/2/13 1005	TASBL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

J 16285

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FNDD Mead	Project #: 5440002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrates 5056 352.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5440-0513-211-EFF-091	5-1-13	1152	G	W			2		
5440-0513-211-EFF-091	5-1-13	1152	G	W			2		
5440-0513-211-EFF-MS	5-1-13	1152	G	W			2		
5440-0513-211-EFF-MSD	5-1-13	1152	G	W			2		
	TT								

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5-1-13 1500	ECC	Fed Ex Air Bill 8625-9618-6318	5-1-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	5/2/13 1000	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TT/VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 702-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21, Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FNDP Mead	Project #: 5447002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Explosives 8330	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
5447-0513-224-INF	5-1-13	1244	G	W			3	2		
5447-0513-224-EFR	5-1-13	1248	G	W			3	2		
TRB-224-2INF-052013	5-1-13	1244	G	W			2			

200-16287 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5-1-13 1500	ECC	Fed Ex Dir. 8:11 8675-3612-1321	5-1-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: Steph Tourbes	5/2/13 1005	TAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:

J 16287

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information				
Client Contact: John Ryder	Sampler: TVS	Lab PM:	Carrier Tracking No(s):	COC No:
Company: ECC	Phone: 402-944-2964	E-Mail:		Page: 7 of 1
Address: 1746 Cole Blvd Bld 21 Ste 350	Due Date Requested:			Job #:
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: Enviro Metal	Project #: 5440002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (w=water, s=solid, o=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	IV: Fatty 905b/3532	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5440-0513-LL4-EFF	5-1-13	1248	G	W			2		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5-7-13 1020	ECC	FedEx Airbill 8625 3615 [illegible]	5-1-13-15	FedEx
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 5/2/13 1000	Company TTI
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: John Ryder	Samples Collected By: TT / VS	1 of 1 COCs
Company: ECC	Phone:		
Address: 1746 Cole Blvd Bld 2 / Suite 350	Email:		
City/State/Zip Lakewood CO 80401			
Phone: 303-298-7600	Site Contact: Tim Thera		
FAX: 303-298-7820	TA Contact:		
Project Name: FNUP Mesa	**Analysis Turnaround Time**		
Site: 5447 002	Standard (Specify)		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
5447-0513-LL1-AIR-EFF-091	5-1-13	1204		28	0		4959	X											
5447-0513-LL2-JAIR-EFF-091	5-1-13	1204		25	0		4665	X											

Temperature (Fahrenheit)	Interior	Ambient	
Start			
Stop			

Pressure (Inches of Hg)	Interior	Ambient	
Start			
Stop			

200-16294 Chain of Custody

Special Instructions/QC Requirements & Comments:

Samples Shipped by:	Date/Time: 5-1-13 1500	Samples Received by: Laura A. Bell 8675-3625-1232
Samples Relinquished by:	Date/Time:	Received by: Steph Rankin 5/2/13 1005
Relinquished by:	Date/Time:	Received by:

Lab Use Only Shipper Name: Opened by: Condition:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Vincent Stallbaumer	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:		Page:
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 200	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email: 303-298-7837	WO #:			
Project Name: FWUP Mead	Project #: 5447 002			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOC's 8260B	Explosives 8330	Total Number of containers
			Preservation Code:						
5447-0513-LL1-EW17	5-22-13	0857	G	W			3	2	
5447-0513-LL1-EFF	5-22-13	0905	G	W			3	2	
TRB-LL1-2INF-052013	5-22-13	0857	G	W			2		

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Special Instructions/Note:

200-16609 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/22/2013 1500	ECC	Fed Ex 8625-3613-4534		Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 5/23/13 1030	Company TABUR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information				
Client Contact: John Ryder	Sampler: Vincent Stallbaumer	Lab PM:	Carrier Tracking No(s):	COC No:
Company: ECC	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			Job #:
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email: 303-298-7837	WO #:			
Project Name: FNOP Mod	Project #: 5447 002			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Explosives 8330	TOC 9060	TSS SM2540D	Metals 6010B	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
5447-0613-INF-148	6-3-13	0815	G	W			3	2	1	1	1		
5447-0613-310-148	6-3-13	0818	G	W			3	2					
5447-0613-330-148	6-3-13	0823	G	W			3	2					
5447-0613-350-148	6-3-13	0830	G	W			3	2					
5447-0613-EFF.148	6-3-13	0835	G	W			3	2					
5447-0613-AOP-INF-148	6-3-13	0937	G	W			3	2					
5447-0613-AOP-EFF-148	6-3-13	0930	G	W			3	2					
GCW1-INF-062013	6-3-13	0910	G	W			3						
GCW1-EFF.062013	6-3-13	0915	G	W			3						
TRB-2INF-062013	6-3-13	0815	G	W			2						

200-16785 COC

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	06-3-13 / 1500	ECC	Fed Ex 8675-3615-4525		Fed Ex
Relinquished by:	Date/Time:	Company	Received by: Steph Rourke	06/4/13 1030	TAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information			
Sampler: Vincent Stallbaumer	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:	Page: 1 of 1
Company: ECC			Job #:
Address: 1746 Cole Blvd Bld 21 Suite 200	Due Date Requested:		
City: Lakewood	TAT Requested (days):		
State, Zip: CO 80401			
Phone: 303-298-9607	PO #:		
Email: 303-298-7837	WO #:		
Project Name: FNOP Mead	Project #: 5449 002		
Site:	SSOW#:		

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrate 9056	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5449-0613-EFF-148	6-3-2013	0835	G	W					

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-3-13/1500	ECC	FedEx 8675-3615-4514		FedEx
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 6/4/13 0950	Company TTAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information

Client Contact: John Ryder
Company: ECC
Address: 1776 Cole Blvd Bld 21 Suite 200
City: Lakewood
State, Zip: CO 80401
Phone: 303-298-9607
Email: 303-298-7837
Project Name: FNUP Mod
Site:

Sampler:
Phone: 402-944-2964
Lab PM:
E-Mail:
Carrier Tracking No(s):
COC No:
Page: 1 of 1
Job #:

Due Date Requested:
TAT Requested (days):
PO #:
WO #:
Project #: 5447 002
SSOW#:

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOC's 8260B	Metals 6010B	TSS SM2540D	TOC 9060	Total Number of containers
			Preservation Code:								
5447-0613-LL4-INF	6-3-2013	0942	G	W			3	1	1	1	
5447-0613-LL4-EFF	6-3-2013	0948	G	W			3	-	-	-	
TRB-LL4-2 INF-062013	6-3-2013	0942	G	W			2	-	-	-	

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Special Instructions/Note:

200-16787 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-3-2013/1500	ECC	Fed Ex 8675 3615 4525		Fed Ex
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
			[signature]	6/4/13 1030	TAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Vincent Stellhamer	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 210	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email: 303-298-7837	WO #:			
Project Name: FNUP Mod	Project #: 5447 002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrate 9056	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5447-0613-224 EFF	6-3-2013	0948	G	W			2		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6-3-13 / 1500	ECC	Fed Ex 8675-3615-4514		Fed Ex
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				6/4/13 0930	TAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 10 SK 7 RO 6/4/13

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information

Client Contact: John Ryder
Company: ECC
Address: 1746 Cole Blvd. Bld 21 Suite 350
City: Lakewood
State, Zip: Co. 80401
Phone: 303-298-7607
Email: 303-298-7837
Project Name: FNOP Mead
Site:

Sampler: Vincent Stallhammer
Phone: 402-944-2864
Lab PM:
E-Mail:
Carrier Tracking No(s):
COC No:
Page:
Job #:

Due Date Requested:
TAT Requested (days): 1 DAY TAT
PO #:
WO #:
Project #: 5447-002
SSOW#:

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOC's 8260B	Total Number of containers
			Preservation Code:					
5447-0613-LLI-INF-1	6-11-2013	1151	G	W			3	
5447-0613-LLI-EFF-1	6-11-2013	1203	G	W			3	
TRB-LLI-2INF-062013	6-11-2013	1151	G	W			2	

Last Item

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2SO3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4-5
Z - other (specify)
Other:

Special Instructions/Note:

200-16950 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1500 / 6-11-2013	ECC	Fedex #867336154569		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
			Steph Poulin	6/12/13 1120	TMBUR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Appendix B
Field Notes

4-1-13 Sampling Event # 90

Time Calibrate pH & Sond meters

0730 pH 7.0 = 6.96/7.0 Sond 1409 = 1409

0840 Sampled plant Influent 5447-0413-221-INF-090

0844 Sampled plant Effluent 5447-0413-221-EFF-090

Sampling Summary Bottles Filled

ID	Time	pH	Sond	Temp	VOCs	Nitrates
INF	0840	7.0	586	13.1	3	-
EFF	0844	8.2	579	11.5	3	2

VOC's shipped overnight to Test America Burlington via FedEx Air Bill # 8675-3615-1700

Nitrates shipped overnight to Test America Denver via FedEx Air Bill # 8675-3615-1684

23° Sunny
N @ 9mph
88% Humidity

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Report:
Client:
Report No. 090

Leader:
Date: April 1, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL1 Plant

Weather Information:
Sky: Sunny
Precipitation: None
Humidity: 88%

Temp. Max/Min: 23 degrees
Wind Speed/Direction: N @ 9 mph

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity	pH	Temp	Scond
0840	Sampled Influent 5447-0413-LL1-INF-090	7.0	13.1	586
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
0844	Sampled Effluent 5447-0413-LL1-EFF-090	8.2	11.5	579
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	1 – 1Lt poly bottle – no preservative – Nitrates			
	1 – 250ml poly bottle – H2SO4 – Nitrates			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0730– 0735 Calibrate pH and S cond meters
pH 7.0 =6.9/7.0 S cond. 1409 = 1409

Remarks: Water samples sent to Test America Burlington. Nitrates were sent to Test America Denver.

Total Hours Worked: 2

Prepared by: (Signature) (Print) Tim Thares

Chain of Custody's on file at the plant.

4-1-13 Sample LLH

Time Calibrate pH & Sond meters

0730 pH = 7.0 = 6.96/7.0 Sond 1409 = 1409

0902 Sample plant Influent 5447-0413-LLH-INF

0905 Sample plant Effluent 5447-0413-LLH-EFF

0908 Sample Carbon Air 5447-0413-LLH-AIR-EFF

Sampling Summary Bottles Filled

ID	Time	pH	Sond	Temp	VOC	Nitrates	TKN
INF	0902	7.1	607	8.9	3	-	—
EFF	0905	5.1	603	11.0	3	2	—
AIR EFF	0908	-	—	—	-	-	1

VOC's shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1700

Nitrates shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615 1684

Air Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1685

83° Sunny
W @ 9mph
88% Humidity

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Report:
Client:
Report No. 0

Leader:
Date: April 1, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL4 Plant

Weather Information:
Sky: Sunny
Precipitation: None
Humidity: 88%

Temp. Max/Min: 23 degrees
Wind Speed/Direction: N.@ 9 mph

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity	pH	Temp	Scond
0902	Sampled Influent 5447-0413-LL4-INF	7.1	9.9	607
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
0905	Sampled Effluent 5447-0413-LL4-EFF	8.1	11.0	603
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	1 – 1Lt poly bottle – no preservative – Nitrates			
	1 – 250ml poly bottle – H2SO4 – Nitrates			
0908	Sampled Air Influent 5447-0413-LL4-AIR- INF			
	Influent sample – 1 – 1 Lt Canister – No Preservative – Air Sample			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0730– 0735 Calibrate pH and S cond meters
pH 7.0 = 6.9/7.0 S cond. 1409 = 1409

Remarks: Water samples sent to Test America Burlington. Nitrates were sent to Test America Denver.
Air samples shipped to Test America Burlington.

Total Hours Worked: 2

Prepared by: (Signature) (Print) Tim Thares

Chain of Custody's on file at the plant.

4-1-13 Sample Event # 146

Time	Calibrate pH & Cond meter
0730	pH 2.0 - 6.86/10 Cond 1408 = 1409
0734	Sample plant Influent 5447-0413-INF-146
0737	Sample FAC 320 5447-0413-320-146
0740	Sample FAC 340 5447-0413-340-146
0743	Sample GAC 360 5447-0413-360-146
0750	Sample plant Effluent 5447-0413-EFF-146
0857	Sample AOP influent 5447-0413-AOP-INF-146
0851	Sample AOP Effluent 5447-0413-AOP-EFF-146

23° ~~Clear~~ Sunny

N @ 9 mph

88 % Humidity

4-1-13 Sample Event # 146 cont.

Sampling Summary Bottles Filled

ID	Time	pH	Scud	Temp	VOCs	Explosives	Nitrates
INF	0734	7.1	598	15.2	3	2	—
320	0737	7.1	596	13.2	3	2	—
340	0740	7.1	599	12.6	3	2	—
360	0743	7.1	598	12.2	3	2	—
EFF	0750	7.1	594	12.6	3	2	2
AOP-INF	0857	7.0	668	10.2	3	2	—
AOP-EFF	0851	7.1	652	9.4	3	2	—

Samples shipped to Test America overnight via Fed Ex Air Bill # 8675-3615-1200

Nitrates shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-1684

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Report: _____
Client: _____
Report No. 146

Leader: _____
Date: April 1, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled main plant

Weather Information:
Sky: Sunny
Precipitation: None
Humidity: 88%

Temp. Max/Min: 23 degrees
Wind Speed/Direction: N. @ 9 mph

Contractor/Subcontractor and Area of Responsibility: _____

Work Performed Today: Indicate location and description of work performed.

Time	Activity	pH	Temp	Scond
0734	Sampled Influent 5447-0413-INF-146	7.1	15.2	598
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative – Explosives			
0737	Sampled GAC Vessel 320 Lead 5447-0413-320-146	7.1	13.2	596
0740	Sampled GAC Vessel 340 Lead 5447-0413-340-146	7.1	12.6	599
0743	Sampled GAC Vessel 360 Lead 5447-0413-360-146	7.1	12.2	596
	All GAC Vessel samples – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative – Explosives			
0750	Sampled Effluent 5447-0413-EFF-146	7.1	12.0	594
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			
	1 – 500ml poly bottle – no preservative – Nitrates			
	1 – 500ml poly bottle – H2SO4 – Nitrates			
0857	Sampled AOP Influent 5447-0413-AOP-INF-146	7.0	10.2	668
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			

0851	Sampled AOP Effluent	5447-0413-AOP-EFF2-146	7.1	9.6	652
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative - Explosives				

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0730– 0735 Calibrate pH and S cond meters
pH 7.0 = 6.9/7.0 S cond. 1409 = 1409

Remarks: Samples shipped to Test America Burlington
Nitrate samples shipped to Test America Denver
GAC 380 not sample due to being off line

Total Hours Worked: 5

Prepared by: (Signature) _____ (Print) Tim Thares

Chain of Custody's on file at the plant.

5-1-13 Sample Event #147 cont.

Time

Calibrate pH & Cond meter

0805 pH 7.0 = 7.0 Cond 1408? 1438/1409

0942 Sampled EW1R 5447-0513-EW1R-147

0952 Sampled EW4 5447-0513-EW04-147

1103 Sampled EW7 5447-0513-EW07-147

1056 Sampled EW-9 5447-0513-EW09-147

1056 Sample EW 9* 5447-0513-EW09-147A

1043 Sampled EW 11 5447-0513-EW11-147

0958 Sampled EW 14 5447-0513-EW14-147

46° Cloudy

NNE @ 20 mph

81% Humidity

5-1-13 Sample Event # 147 cont.

Sampling Summary Bottles, Filled

ID	Time	pH	Sund	Temp	SO_4^{2-}	Employee
EW1R	0942	7.1	784	12.8	3	2
EW04	0952	7.1	475	11.7	3	2
EW07	1103	7.2	570	11.9	3	2
EW09	1054	7.1	438	12.6	3	2
EW09A	1056	7.1	438	12.6	-	2
EW11	1043	7.2	672	13.5	3	2
EW14	0958	7.1	477	11.5	3	2

Samples shipped overnight to Test America Burlington via Fed Ex. Air Bill # 8675 3615 1721

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 05-01-13 ECC Project # 5447-002 Weather 20 & Cloudy
Client/Site Mead NOP Purpose of sampling Test for TCE & RDX
Other activities underway at site today _____
Applicable Work Plan dated _____ Initial sampling event? Yes **No**

Well ID EW – 1R Sample extraction through petcock/valve? **Yes** No

Purged prior to sampling? **Yes** No Bladder pump _____ dedicated? Yes **No**

# of casing volumes purged 4 Other (describe) _____

Media Micron size

SAMPLE FILTERING

Media N/A Micron size N/A

WATER QUALITY MEASUREMENTS

TIME 24 hr format	pH	TEMP. °C	TDS conductivity Mmhos/cm
0942	7.1	12.8	786
Instrument ID			
Calibration Date	05/01/13	05/01/13	05/01/13

*Denote conditions at time of sampling by adding an "S" to the time box

Data record continued on back of sheet? Yes **No**

Other Field Measurements _____

Parameter Test Method Results

Fluid collected for laboratory analysis: # & type of containers Raw water -5 Total 5 glass
Analytes/parameters requested: -- Voc's & Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 05/01/13
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: _____ Reviewed by _____

Date 05/01/13 Date _____

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 05-01-13 ECC Project # 5447-002 Weather 20 & Cloudy
Client/Site Mead NOP Purpose of sampling Test for TCE & RDX
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW – 4 Sample extraction through petcock/valve? **Yes** No

Purged prior to sampling? **Yes** No Bladder pump ____ dedicated? Yes **No**

# of casing volumes purged 4 Other (describe)

Media Micron size

SAMPLE FILTERING

Media N/A Micron size N/A

WATER QUALITY MEASUREMENTS

TIME 24 hr format	pH	TEMP. °C	TDS conductivity Mmhos/cm
0952	7.1	11.7	475
Instrument ID			
Calibration Date	05/01/13	05/01/13	05/01/13

*Denote conditions at time of sampling by adding an "S" to the time box Data record continued on back of sheet? Yes **No**

Other Field Measurements

Parameter Test Method Results

Fluid collected for laboratory analysis: # & type of containers Raw water -5 Total 5 glass
Analytes/parameters requested: -- Voc's & Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 05/01/13
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 05/01/13 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 05-01-13 ECC Project # 5447-002 Weather 20 & Cloudy
Client/Site Mead NOP Purpose of sampling Test for TCE & RDX
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW – 7 Sample extraction through petcock/valve? **Yes** No

Purged prior to sampling? **Yes** No Bladder pump ____ dedicated? Yes **No**

# of casing volumes purged 4 Other (describe)

Media Micron size

SAMPLE FILTERING

Media N/A Micron size N/A

WATER QUALITY MEASUREMENTS

TIME 24 hr format	pH	TEMP. °C	TDS conductivity Mmhos/cm
1103	7.2	11.9	510
Instrument ID			
Calibration Date	05/01/13	05/01/13	05/01/13

*Denote conditions at time of sampling by adding an "S" to the time box Data record continued on back of sheet? Yes **No**

Other Field Measurements

Parameter Test Method Results

Fluid collected for laboratory analysis: # & type of containers Raw water -5 Total 5 glass
Analytes/parameters requested: -- Voc's & Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 05/01/13
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 05/01/13 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 05-01-13 ECC Project # 5447-002 Weather 20 & Cloudy
Client/Site Mead NOP Purpose of sampling Test for TCE & RDX
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW – 9 Sample extraction through petcock/valve? **Yes** No

Purged prior to sampling? **Yes** No Bladder pump ____ dedicated? Yes **No**

# of casing volumes purged 4 Other (describe) ____

Media Micron size

SAMPLE FILTERING

Media N/A Micron size N/A

WATER QUALITY MEASUREMENTS

TIME 24 hr format	pH	TEMP. °C	TDS conductivity Mmhos/cm
1056	7.1	12.6	438
Instrument ID			
Calibration Date	05/01/13	05/01/13	05/01/13

*Denote conditions at time of sampling by adding an "S" to the time box

Data record continued on back of sheet? Yes **No**

Other Field Measurements

Parameter Test Method Results

Fluid collected for laboratory analysis: # & type of containers Raw water -5 Total 5 glass
Analytes/parameters requested: -- Voc's & Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 05/01/13
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 05/01/13 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 05-01-13 ECC Project # 5447-002 Weather 20 & Cloudy
Client/Site Mead NOP Purpose of sampling Test for TCE & RDX
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW – 11 Sample extraction through petcock/valve? **Yes** No

Purged prior to sampling? **Yes** No Bladder pump ____ dedicated? Yes **No**

# of casing volumes purged 4 Other (describe)

Media Micron size

SAMPLE FILTERING

Media N/A Micron size N/A

WATER QUALITY MEASUREMENTS

TIME 24 hr format	pH	TEMP. °C	TDS conductivity Mmhos/cm
1043	7.2	13.5	672
Instrument ID			
Calibration Date	05/01/13	05/01/13	05/01/13

*Denote conditions at time of sampling by adding an "S" to the time box

Data record continued on back of sheet? Yes **No**

Other Field Measurements

Parameter Test Method Results

Fluid collected for laboratory analysis: # & type of containers Raw water -5 Total 5 glass
Analytes/parameters requested: -- Voc's & Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 05/01/13
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 05/01/13 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 05-01-13 ECC Project # 5447-002 Weather 20 & Cloudy
Client/Site Mead NOP Purpose of sampling Test for TCE & RDX
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW – 14 Sample extraction through petcock/valve? **Yes** No

Purged prior to sampling? **Yes** No Bladder pump ____ dedicated? Yes **No**

# of casing volumes purged 4 Other (describe)

Media Micron size

SAMPLE FILTERING

Media N/A Micron size N/A

WATER QUALITY MEASUREMENTS

TIME 24 hr format	pH	TEMP. °C	TDS conductivity Mmhos/cm
0958	7.1	11.5	477
Instrument ID			
Calibration Date	05/01/13	05/01/13	05/01/13

*Denote conditions at time of sampling by adding an "S" to the time box Data record continued on back of sheet? Yes **No**

Other Field Measurements

Parameter Test Method Results

Fluid collected for laboratory analysis: # & type of containers Raw water -5 Total 5 glass
Analytes/parameters requested: -- Voc's & Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 05/01/13
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 05/01/13 Date

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Report:
Client:
Report No. 147

Leader:
Date: May 1, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled Extraction Wells

Weather Information:
Sky: Cloudy
Precipitation: None
Humidity: 81%

Temp. Max/Min: 46 degrees
Wind Speed/Direction: NNE. @ 20 mph

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time		Activity	pH	Temp	Scond
0942	Sampled EW-1R	5447-0513-EW01-147	7.1	12.8	786
0952	Sampled EW-4	5447-0513-EW04-147	7.1	11.7	475
1103	Sampled EW-7	5447-0513-EW07-147	7.2	11.9	510
1056	Sampled EW-9	5447-0513-EW09-147	7.1	12.6	438
1056	Sampled EW-9	5447-0513-EW09-147-A	7.1	12.6	438
1043	Sampled EW-11	5403-0513-EW11-147	7.2	13.5	672
0958	Sampled EW-14	5447-0513-EW14-147	7.1	11.5	477
	All well samples	3 – 40ml bottles –HCL – VOC'S			
		2 – 1Lt amber glass bottle – no preservative – Explosives			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0805 – 0810 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1438/1409

Remarks: Samples shipped to Test America Burlington

Total Hours Worked: 6

Prepared by: (Signature) (Print) Tim Thares

Chain of Custody's on file at the plant.

8/1-13 Sample Event # 147

Time Calibrate pH & Cond meter

0805 pH 7.0 = 2.0 Cond 1409 = 1438/1489

0858 Sample plant Influent 5447-0513-INF 147

0858 Sample plant Influent 5447-0513-2INF 147

0858 Sample plant Influent 5447-0513-INF-MS

0858 Sample plant Influent 5447-0513-INF-MSD

0904 Sample GAC 320 5447-0513-320-147

0906 Sample GAC 340 5447-0513-340-147

0909 Sample GAC 360 5447-0513-340-147

0914 Sample plant Effluent 5447-0513-Eff-147

0914 Sample plant Effluent 5447-0513-2Eff-147

0914 Sample plant Effluent 5447-0513-Eff-MS

0914 Sample plant Effluent 5447-0513-Eff-MSD

1240 Sample AOP Effluent 5447-0513-AOP Eff 2-147

46° Cloudy

NNE @ 20 mph

81% Humidity

5-1-13 Sample Event #147

Sampling Summary Bottles Filled

ID	Time	pH	Cond	Temp	VOCs	Explosives	Nitrates
INF	0858	7.2	610	13.7	3	2	–
2INF	0858	7.2	610	13.7	3	2	–
INFMS	0858	7.2	610	13.7	3	2	–
INFMSD	0858	7.2	610	13.7	3	2	–
320	0904	7.2	592	13.1	3	2	–
340	0906	7.1	591	12.9	3	2	–
360	0909	7.1	598	13.2	3	2	–
EFF	0914	7.0	591	12.5	3	2	–
2EFF	0914	7.0	591	12.5	–	–	2
EFFMS	0914	7.0	591	12.5	–	–	2
EFFMSD	0914	7.0	591	12.5	–	–	2
AWP-EFF2	1240	7.1	695	11.3	3	2	–

Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1721

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-1710

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Leader: _____
Report: _____
Date: May 1, 2013.
Client: _____
Contract No: 5447-002.
Report No. 147.
Site: Mead NOP.

Description and Location of Work: Sampled main plant.

Weather Information:
Sky: Cloudy.
Temp. Max/Min: 46 degrees.
Precipitation: None.
Wind Speed/Direction: NNE. @ 20 mph.
Humidity: 81%.

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity		pH	Temp	Scond
0858	Sampled Influent	5447-0513-INF-147	7.2	13.7	610
0858	Sampled Influent	5447-0513-INF-147	7.2	13.7	610
0858	Sampled Influent	5447-0513-INF-MS	7.2	13.7	610
0858	Sampled Influent	5447-0513-INF-MSD	7.2	13.7	610
	Influent samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0904	Sampled GAC Vessel 320 Lead	5447-0513-320-147	7.2	13.1	592
0906	Sampled GAC Vessel 340 Lead	5447-0513-340-147	7.1	12.9	591
0909	Sampled GAC Vessel 360 Lead	5447-0513-360-147	7.1	13.2	598
	All GAC Vessel samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0914	Sampled Effluent	5447-0513-EFF-147	7.0	12.5	591
0914	Sampled Effluent	5447-0513-EFF-147	7.0	12.5	591
0914	Sampled Effluent	5447-0513-EFF-147	7.0	12.5	591
0914	Sampled Effluent	5447-0513-EFF-147	7.0	12.5	591
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative - Explosives				
	1 – 500ml poly bottle – no preservative – Nitrates				
	1 – 500ml poly bottle – H2SO4 – Nitrates				

1240	Sampled AOP Effluent 5447-0513-AOP-EFF2-147	7.1	11.3	695
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0805– 0810 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1438/1409

Remarks: Samples shipped to Test America Burlington
Nitrate samples shipped to Test America Denver

Total Hours Worked: 6

Prepared by: (Signature) _____ (Print) Tim Thares

Chain of Custody's on file at the plant.

5-1-13 Sample LL4

Time 0805 Calibrate pH + Sond meters.

pH 7.0 = 7.0 Sond 1409 = 1438/1409

Sample plot Influent 5447-0513-LL4-INF

Sample plot Effluent 5447-0513-LL4-EFF

Sampling Summary Bottles Filled

ID	Time	pH	Sond	Temp	SOC's	Ex phosphorus	Nitrates
INF	1244	7.1	604	11.6	3	2	-
EFF	1248	8.2	598	11.9	3	2	2

Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1721

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-1710

46° Cloudy

NNE @ 20 mph

81% Humidity

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Report: _____
Client: _____
Report No. 0

Leader: _____
Date: May 1, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL4 Plant

Weather Information:
Sky: Cloudy
Precipitation: None
Humidity: 81%

Temp. Max/Min: 46 degrees
Wind Speed/Direction: NNE.@ 20 mph

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity	pH	Temp	Scond
1244	Sampled Influent 5447-0513-LL4-INF	7.1	11.6	604
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative – Explosives			
1248	Sampled Effluent 5447-0513-LL4-EFF	8.2	11.9	598
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative – Explosives			
	1 – 1Lt poly bottle – no preservative – Nitrates			
	1 – 250ml poly bottle – H2SO4 – Nitrates			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0805– 0810 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1438/1409

Remarks: Water samples sent to Test America Burlington. Nitrates were sent to Test America Denver.

Total Hours Worked: 3

Prepared by: (Signature) (Print) Tim Thares

Chain of Custody's on file at the plant.

5-1-13 Sampling Event # 91

Time	
	Calibrate pH & Cond. meter
0805	pH 7.0 = 7.0 Cond 1409 = 1438 / 1409
1143	Sample plant Influent 5447-0513-441-INF-091
1143	Sample plant Influent 5447-0513-441-INF-091
1143	Sample plant Influent 5447-0513-441-INF-MS
1143	Sample plant Influent 5447-0513-441-INF-MSD
1152	Sample plant Effluent 5447-0513-441-EFF-091
1152	Sample plant Effluent 5447-0513-441-EFF-091
1152	Sample plant Effluent 5447-0513-441-EFF-MS
1152	Sample plant Effluent 5447-0513-441-EFF-MSD
1204	Sample carbon Air 5447-0513-441-AIR-EFF-091
1204	Sample Carbon Air 5447-0513-441-AIR-EFF-091

46° Cloudy
NNE @ 20mph
81% Humidity

5-1-13 Sample Event # 91

Sampling Summary Bottle Filled

ID	Time	pH	Cond	Temp	Total	Total Coliform	Nitrate	Lab
INF	1143	6.7	581	12.5	3	2	-	-
2INF	1143	6.7	581	12.5	3	2	-	-
INF-MS	1143	6.7	581	12.5	3	2	-	-
INF-MSD	1143	6.7	581	12.5	3	2	-	-
EFF	1152	8.2	574	12.2	3	2	2	-
2EFF	1152	8.2	574	12.2	-	-	2	-
EFF-MS	1152	8.2	574	12.2	-	-	2	-
EFF-MSD	1152	8.2	574	12.2	-	-	2	-
Air	1204	-	-	-	-	-	-	1
2AIR	1204	-	-	-	-	-	-	1

Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1721

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-1710

Air samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1732

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Report: _____
Client: _____
Report No. 091

Leader: _____
Date: May 1, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL1 Plant

Weather Information:
Sky: Cloudy
Precipitation: None
Humidity: 81%

Temp. Max/Min: 46 degrees
Wind Speed/Direction: NNE @ 20 mph

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity		pH	Temp	Scond
1143	Sampled Influent	5447-0513-LL1-INF-091	6.7	12.5	581
1143	Sampled Influent	5447-0513-LL1-2INF-091	6.7	12.5	581
1143	Sampled Influent	5447-0513-LL1-INF-MS	6.7	12.5	581
1143	Sampled Influent	5447-0513-LL1-INF-MSD	6.7	12.5	581
	Influent samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0850	Sampled Effluent	5447-0513-LL1-Eff-091	8.2	12.2	574
0850	Sampled Effluent	5447-0513-LL1-2Eff-091	8.2	12.2	574
0850	Sampled Effluent	5447-0513-LL1-Eff-MS	8.2	12.2	574
0850	Sampled Effluent	5447-0513-LL1-Eff-MSD	8.2	12.2	574
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative - Explosives				
	1 – 1Lt poly bottle – no preservative – Nitrates				
	1 – 250ml poly bottle – H2SO4 – Nitrates				
	QC and MS/MSD Nitrates only				
1204	Sampled Carbon Air Effluent	5447-0513-AIR-EFF-091			
1204	Sampled Carbon Air Effluent	5447-0513-2AIR-EFF-091			
	Air sample – 1 – 1 Lt Canister no preservative Air sample				

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0805– 0810 Calibrate pH and S cond meters
pH 7.0 =7.0 S cond. 1409 = 1438/1409

Remarks: Water samples sent to Test America Burlington. Nitrates were sent to Test America Denver. Air samples sent to Test America Burlington.

Total Hours Worked: 6

Prepared by: (Signature) (Print) Tim Thares

Chain of Custody's on file at the plant.

Time
0805 Calibrate pH + Sond meters.
pH 7.0 = 7.0 Sond 1409 = 1438/1409

Sample plant Influent 5447-0513-LL4-INF
Sample plant Effluent 5447-0513-LL4-EFF

Sampling Summary Bottles Filled

ID	Time	pH	Sond	Temp	VOCs	Explosives	Nitrates
INF	1244	7.1	604	11.6	3	2	-
EFF	1248	8.2	598	11.9	3	2	2

Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1721

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-1710

46° Cloudy
NNE @ 20 mph
81% Humidity

Sample 224

Time calibrate pH & Sond meters

pH 7.0 = Sond 1408 =

Sample plant Influent 5447-0613-224-INF

Sample plant Effluent 5447-0613-224-EFF

Sampling Summary BaHCl, Filed

ID	Time	pH	Sond	Temp	Jars	Metals	TSS	TOC	Nitrate
INF	0942	7.1	653	13.2	3	1	1	1	–
EFF	0948	8.2	616	13.0	3	–	–	–	2

Samples shipped overnight to Test America Burlington via FedEx Air Bill # 8675-3615-4525

Nitrate samples shipped overnight to Test America Denver via FedEx Air Bill # 8675-3615-4514

52° F Sunny
86% humidity
S @ 6 mph

Sample Event 148

Time | Calibrate pH & Cond meters

0740 | pH 7.0 = 7.06/7.00 Cond - 1409 = 1389/

Sample plant Influent 5447-0613-INF-1

Sample GAC 320 5447-0613-320-2

Sample GAC 340 5447-0613-340-1

Sample GAC 360 5447-0613-360-2

Sample plant Effluent 5447-0613-EFF-1

Sample ~~plant~~ AOP Influent 5447-0613-AOP-INF

Sample AOP-Effluent 5447-0613-AOP-EFF2

Sample GCW1 Influent GCW1-INF-062013

Sample GCW1 Effluent GCW1-EFF-062013

52° F Sunny

86% humidity

5 @ 6mph

6-3-2013 Sample Event #148

Sampling Summary Bottles Filled

ID	Time	pH	Scond	Temp	VOCs	Explosives	TOC	TSS	Metals	Water Tox
INF	0815	7.1	610	14.4	3	2	1	1	1	–
310	0818	7.1	611	12.9	3	2	–	–	–	–
330	0823	7.1	614	12.9	3	2	–	–	–	–
350	0830	7.1	610	12.9	3	2	–	–	–	–
EFF	0835	7.0	610	12.8	3	2	–	–	–	2
AOP-INF	0937	7.2	679	15.2	3	2	–	–	–	–
AOP-EFF	0930	7.1	691	14.3	3	2	–	–	–	–
CWI-INF	0910	7.2	476	14.0	3	–	–	–	–	–
CWI-EFF	0915	8.1	471	13.8	3	–	–	–	–	–

Samples shipped overnight to Test America Burlington via Fed Ex Air, Bill # 8625 3615 - 4525

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8625 3615 - 4514

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Vince Stallbaumer
Report:
Client:
Report No. 0

Leader:
Date: June 3, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL4 Plant

Weather Information:
Sky: Sunny
Precipitation: None
Humidity: 86%

Temp. Max/Min: 52 degrees
Wind Speed/Direction: S.@ 6 mph

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity	pH	Temp	Scond
0942	Sampled Influent 5447-0613-LL4-INF	7.1	13.2	653
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
	1 – 1Lt poly bottle – no preservative – T.S.S.			
	1 – 250ml amber bottle – H2SO4 - TOC			
	1 – 250ml poly bottle – HNO3 - Metals			
0948	Sampled Effluent 5447-0613-LL4-EFF	8.2	13.0	616
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	1 – 1Lt poly bottle – no preservative – Nitrates			
	1 – 250ml poly bottle – H2SO4 – Nitrates			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0730– 0735 Calibrate pH and S cond meters
pH 7.0 = 7.06/7.0 S cond. 1389 = 1409

Remarks: Water samples sent to Test America Burlington. Nitrates were sent to Test America Denver.

Total Hours Worked: 2

Prepared by: (Signature) (Print) Vincent Stallbaumer

Chain of Custody's on file at the plant.

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Vince Stallbaumer
Leader: _____
Report: _____
Date: June 3, 2013
Client: _____
Contract No: 5447-002
Report No. 148
Site: Mead NOP

Description and Location of Work: Sampled main plant

Weather Information:
Sky: Sunny
Temp. Max/Min: 52 degrees
Precipitation: None
Wind Speed/Direction: S. @ 6 mph
Humidity: 86%

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity		pH	Temp	Scond
0815	Sampled Influent	5447-0613-INF-148	7.1	14.4	610
	Influent samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
	1 – 1Lt poly bottle – no preservative – T.S.S.				
	1 – 250ml amber bottle – H2SO4 - TOC				
	1 – 250ml poly bottle – HNO3 - Metals				
0818	Sampled GAC Vessel 310 Lead	5447-0613-320-148	7.1	12.9	611
0823	Sampled GAC Vessel 330 Lead	5447-0613-340-148	7.1	12.9	614
0830	Sampled GAC Vessel 350 Lead	5447-0613-360-148	7.1	12.9	610
	All GAC Vessel samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0835	Sampled Effluent	5447-0613-EFF-148	7.0	12.8	610
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative - Explosives				
	1 – 500ml poly bottle – no preservative – Nitrates				
	1 – 500ml poly bottle – H2SO4 – Nitrates				
0937	Sampled AOP Influent	5447-0613-AOP-INF-148	7.2	15.2	674
	Influent sample – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative - Explosives				

0930	Sampled AOP Effluent 5447-0613-AOP-EFF2-148	7.1	14.0	691
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			
0910	Sampled Influent GCW1-INF-062013	7.2	14.0	476
	Influent sample – 3 – 40ml bottles –HCL – VOC'S			
0915	Sampled Effluent GCW1-EFF-062013	8.1	13.8	471
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0730– 0735 Calibrate pH and S cond meters
pH 7.0 = 7.06/7.0 S cond. 1389 = 1409

Remarks: Samples shipped to Test America Burlington
Nitrate samples shipped to Test America Denver
GAC 380 not sample due to being off line

Total Hours Worked: 5

Prepared by: (Signature) _____ (Print) Vincent Stallbaumer

Chain of Custody's on file at the plant.

Appendix C
Reference Sheet
Data Validation Qualifiers
Drinking Water Standards

Data Qualifiers and Drinking Water Standards Reference Sheet
Former Nebraska Ordnance Plant, Mead, Nebraska

Any qualifiers (i.e. U, J, or R) listed after a result are assigned during the data validation process. Data validation is a procedure which involves the review of quality control data provided by the laboratory. This review is followed by the assignment of data qualifiers (if necessary) which indicate the reliability of a result to the reader. Data validation is performed by a chemist employed outside of the laboratory or associated government installations to ensure accuracy in data reporting. A description of qualifiers is provided below.

No qualifier

- If a result has no assigned qualifier, the contaminant was detected, and the reader can be confident that the concentration is exact.

"U"

- A result followed by a "U" qualifier means that the contaminant was undetected, or not detected by the instrument.

"UJ"

- A result followed by a "UJ" qualifier means that the contaminant was not detected, but the associated detection level is not certain (estimated). For example, if a value is followed by a "UJ", the contaminant was not detected, but the associated detection level is in question. The detection level is in question because one or more of the laboratory quality control indicators do not meet acceptance criteria. The amount that the indicator fell outside of the criteria may be used as a rough estimate of how much the actual detection level differs from the stated one. Typically, this is a 10-30% difference.

"UR"

- A result followed by a "UR" qualifier means that the contaminant was not detected, but there is strong doubt that the associated detection level is accurate. For example, if a value is followed by a "UR", the contaminant was not detected, but the associated detection level is in strong doubt. The detection level is in doubt because results are unacceptable for a quality control indicator. In this case, the detection level cannot be estimated.

"J"

- A result followed by only a "J" qualifier means that the contaminant was detected, but there is some question that the stated concentration is exact. For example, if a result is "0.5 J", the contaminant was detected, but there is some question that the concentration is exactly 0.5. A "J" qualifier may be applied for two reasons: (1) the contaminant was detected below the reporting limit; or (2) the contaminant was detected, but one or more quality control indicators did not meet acceptance criteria. The reporting limit is equal to the concentration of the lowest standard used by the laboratory to calibrate the instrument. The reporting limit is the minimum concentration that can be stated with complete confidence.

“R”

- A result followed by only an “R” qualifier means that the contaminant was detected, but there is strong doubt that the concentration is exact. For example, if a result is “0.5 R”, the contaminant was detected, but there is strong doubt that the concentration is exactly 0.5. The concentration is in doubt because results are unacceptable for a quality control indicator. In this case, the detected concentration cannot be estimated. For comparison purposes, detected results are reported in the results letters with available Environmental Protection Agency drinking water standards. These standards include the maximum contaminant level (MCL) and various health advisories (HA). A description of the drinking water standards is provided below.

“MCL”

- The maximum contaminant level is the highest concentration of a contaminant that is allowed in drinking water. Maximum contaminant levels are enforceable Federal standards.

“HA”

- Health advisories provide estimates of acceptable drinking water concentrations for a chemical substance based on health effects information. Health advisories are not enforceable Federal standards, but serve as a technical guidance to assist Federal, State, and local officials.

Appendix D

Analytical Results on Compact Disc Summary Forms and Raw Data

Appendix F

Historical Detections spreadsheet of TCE and RDX for Monitoring Wells, Water Supply Wells and Surface Water Locations (on CD)