FINAL

QUARTERLY SUMMARY REPORT
FIRST QUARTER 2012 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

June 2012

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I hereby certify that the enclosed *Quarterly Summary Report First Quarter 2012 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:

ECC Project Manager — Date 8/11/12

Accepted as a submittal:

USACE Contracting Officer — Date

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LIST OF ACRONYMS AND ABBREVIATIONS

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
µg/L	micrograms per liter
MS/MSD	matrix spike/matrix spike duplicate
NDEQ	Nebraska Department of Environmental Quality
NOP	Nebraska Ordnance Plant
O&M	operations and maintenance
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, surface water locations, and operations and maintenance (O&M) locations sampled during the First Quarter 2012 at the former Nebraska Ordnance Plant (NOP). Historical data and information prior to 2012 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 2011.

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 Concentration Trend Charts for Select Surface Water Locations;
- Appendix D contains the Quality Control Summary Report First Quarter 2012 Groundwater Monitoring Program Sampling Events (on compact disk [CD]);
- Appendix E contains the Quality Control Summary Report First Quarter 2012 Water Supply Well Sampling Event (on CD);
- Appendix F contains the Quality Control Summary Report First Quarter 2012 Operations and Maintenance Sampling Events (on CD); and
- Appendix G 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 CD).

The following sections 2.0, 3.0, and 4.0 contain a summary of results for the First Quarter 2012 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* (ECC, 2009a), 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 FIRST QUARTER 2012 GROUNDWATER MONITORING WELL SAMPLING EVENT

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

2.1 Field Sampling

Samples from 114 groundwater monitoring wells were collected during the First Quarter 2012 monitoring well sampling event and are summarized below:

- One hundred fourteen groundwater monitoring wells were sampled for volatile organic compounds (VOCs);
- Ninety-four groundwater monitoring wells were sampled for explosives;
- Thirteen field duplicate samples were collected;
- Eight matrix spike (MS)/matrix spike duplicate (MSD) pairs were collected;
- Four trip blanks were included with the volatile shipments.

2.2 Analytical Results

The First Quarter 2012 groundwater monitoring well validated analytical results for all site specific compounds are presented in Tables 2-1 through 2-4. 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 2012 GMP Plan included in the *Site-Wide Work Plan, Support Services, Former Nebraska Ordnance Plant, Mead, Nebraska Attachment 1 Field Sampling Plan, Appendix L* (ECC, 2009):

- 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 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 First Quarter 2012 sampling event:

- Seventy-one Perimeter groundwater monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-1);
- Thirty-three Compliance groundwater monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-2);
- Five LL1 Interior Plume groundwater monitoring wells monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-3); and

- Five Upgradient, Sidegradient and Downgradient groundwater monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-4).

No LL2 and LL3 Interior Plume, LL4/Atlas Missile Area/Landfill Interior Plume, or Focused Extraction groundwater monitoring wells were sampled during the First Quarter 2012 sampling event.

2.3 Groundwater Monitoring Well Summary

The following is a summary of the groundwater monitoring well results for the First Quarter 2012 sampling event:

- Explosives COCs were detected in 14 Perimeter groundwater monitoring wells and VOCs were detected in three Perimeter groundwater monitoring wells. Additional explosive site specific compounds were detected in the Perimeter groundwater monitoring wells. All explosives and VOCs were detected below the Final Target Groundwater Cleanup Goals. Results for all Perimeter groundwater monitoring wells are presented in Table 2-1.
- Explosives COCs were detected in eight of the Compliance groundwater monitoring wells sampled. All detections were below the Final Target Groundwater Cleanup Goals. VOCs were detected below the Final Target Groundwater Cleanup Goals in one of the Compliance groundwater monitoring wells sampled. Results for all Compliance groundwater monitoring wells are presented in Table 2-2.
- TCE exceeded the Final Target Groundwater Cleanup Goals in all of the five LL1 Interior Plume groundwater monitoring well locations. Additional site specific compounds were detected including COCs detected below the Final Target Groundwater Cleanup Goals in the LL1 Interior Plume groundwater monitoring wells. Results for all LL1 Interior Plume groundwater monitoring wells are presented in Table 2-3.
- No COCs or additional site specific compounds were detected in the Upgradient, Sidegradient and Downgradient groundwater monitoring wells. Results for all Upgradient, Sidegradient and Downgradient groundwater monitoring wells are presented in Table 2-4.

Historical results are presented for all sampling locations in Appendix G. Appendix A contains trending charts for groundwater monitoring wells sampled during the First Quarter 2012 sampling event. All trending charts require four or more data points to be included in this report.

3.0 SUMMARY OF FIRST QUARTER 2012 WATER SUPPLY WELL SAMPLING EVENT

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

3.1 Field Sampling

During the water supply well sampling event, 57 water supply well locations were sampled. In addition, the following samples were collected:

- Six field duplicate samples;
- Three MS/MSD samples; and
- Three trip blanks.

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 wells sampled during the First Quarter 2012 sampling event.

The sampling locations water supply well (WSW)-29A, WSW-97, and WSW-116 were listed on the sampling schedule but were not collected as planned. The water was turned off at the WSW-29A and WSW-97 sampling locations and WSW-116 sampling location was not accessible to the field crew.

3.3 Water Supply Well Summary

During the water supply well sampling event, there were multiple detections of COCs and other site specific compounds. TCE and/or RDX exceeded the Final Target Groundwater Cleanup Goal in pre-treatment granular activated carbon (GAC) system samples at three locations (WSW-52C-B, WSW-53B, and WSW-54B). WSW-50B had a detection of RDX at 2.2 micrograms per liter (µg/L) which exceeded the Final Target Groundwater Cleanup Goal of 2.0 µg/L for RDX. WSW-50B is part of the Alternate Water Supply program and bottled water is provided to this resident. WSW-50B will be re-sampled during the Second Quarter 2012 sampling event. There were no detections of TCE and/or RDX exceeding the Final Target Groundwater Cleanup Goal in any post GAC treatment system samples or any other samples collected during the water supply well sampling event. WSW-51 had a detection of methylene chloride at 9.5 µg/L which is above the Final Target Groundwater Cleanup Goal of 5 µg/L. A confirmation sample from WSW-51 was collected during the Second Quarter 2012 sampling event to verify the methylene chloride result. These results will be provided in the Second Quarter 2012 Quarterly Summary Report. Results for the water supply well sampling event are presented in Tables 3-1. Historical results are presented for all sampling locations in Appendix G. Appendix B contains trending charts for water supply wells sampled during the First Quarter 2012 sampling event. All trending charts require four or more data points to be included in this report.

4.0 SUMMARY OF FIRST QUARTER 2012 SURFACE WATER SAMPLING EVENT

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

4.1 Field Sampling

During the surface water sampling event, 12 surface water locations were sampled. All samples were collected as planned. In addition, the following samples were collected:

- Two field duplicate samples;
- One MS/MSD sample; and
- One trip blank.

4.2 Analytical Results

The surface water validated analytical results for site-specific compounds are presented in Table 4-1. Figure 4-1 illustrates all surface water locations sampled during the First Quarter 2012 sampling event.

4.3 Surface Water Summary

During the surface water sampling event there were no detections of COCs exceeding the site-specific surface water standards. TCE results are compared to the Nebraska Department of Environmental Quality (NDEQ) surface water criteria (chronic) "for the protection of aquatic life and their uses (e.g., fish consumption)", which is 810 µg/L (NDEQ, 2009). This source does not establish a value for RDX. Therefore, RDX analytical results for surface water samples are compared to the Final Effluent Limitations Monitoring Requirements provided by the State of Nebraska on October 5, 1998, which is 100 µg/L (NDEQ, 1998). Results for all surface water locations sampled during the First Quarter 2012 are presented in Tables 4-1. Historical results are presented for all sampling locations in Appendix G. Appendix C contains trending charts for surface water wells sampled during the First Quarter 2012. All trending charts require four or more data points to be included in this report.

5.0 SUMMARY OF FIRST QUARTER 2012 OPERATIONS AND MAINTENANCE SAMPLING EVENTS

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

5.1 Field Sampling

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

- Water samples were collected from the following extraction wells and focused extraction wells during the O&M sampling event: extraction well (EW)-1, EW-3, EW-4, EW-6, EW-7, EW-9, FEW-11, FEW-14, and EW-16.
- Water samples were collected from EW-1R (replacement extraction well to EW-1) during March 2012, at pumping rates of 300 and 471 gallons per minute.
- One water sample was collected from each of the following GAC units: 310, 330, and 350 during each month of this quarter.

- One influent water sample and one effluent water sample were collected from the Main Groundwater Treatment Plant (GTP) during each month of this quarter.
- One influent water sample and one effluent water sample were collected from the LL1 GTP during each month of this quarter as well as two field duplicate samples (one influent sample and one effluent sample) during February 2012.
- One effluent air sample and a field duplicate sample were collected at the LL1 GTP.
- One influent water sample and one effluent water sample were collected from the LL4 GTP during each month of this quarter.
- One effluent air sample was collected at the LL4 GTP during January 2012.
- One influent water sample and one effluent water sample were collected from the Advanced Oxidation Process (AOP) GTP during each month of this quarter with the exception of the February sampling event. Only the effluent water sample from the AOP GTP was collected in February. Groundwater from FEW-11 is representative of AOP influent groundwater and the February influent sample was collected from the FEW-11sample location.

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 samples (field duplicate and MS/MSD) is one per quarter. At least one quality control field duplicate sample and one MS/MSD for each parameter were 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.

5.2 Analytical Results

The O&M validated analytical results for site-specific compounds are presented in Table 5-1. Figure 5-1 illustrates all O&M locations sampled during the First Quarter 2012.

5.3 Operations and Maintenance Summary

All extracted groundwater was treated on-site using GAC adsorption, AOP, or air stripping during the O&M sampling events. Treated groundwater was properly disposed of through surface discharge or beneficial re-use. During the First Quarter 2012 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 air sample results 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 NDEQ permitted threshold of 5 tons/year. All air effluent sampling results are presented in Table 5-1.

6.0 DATA VALIDATION RESULTS

Data from the First Quarter 2012 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 First Quarter 2012 Groundwater Monitoring Program Sampling Events* is included as Appendix D, *Quality Control Summary Report First Quarter 2012 Water Supply Well Sampling Event,* is included as Appendix E, and the *Quality Control Summary Report First Quarter 2012 Operations and Maintenance Sampling Events,* is included as Appendix F. All of these reports are included on 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 data qualifiers, sample collection summaries, data summary tables, and completeness calculations. Each Quality Control Summary Reports contains appendices which include the sample Chain-of-Custody Records; field sampling documents, water quality parameter forms, and daily field logbook pages, data validation qualifiers reference sheet; and the complete analytical laboratory report for the associated sampling events.

7.0 FIRST QUARTER 2012 SAMPLING EVENTS SUMMARY.

Based on the results of the First Quarter 2012 GMP and O&M sampling events, the 2012 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.

WSW-51 and WSW-50B were added to the Second Quarter 2012 water supply well sampling event to confirm the First Quarter 2012 detections that exceeded the Final Target Groundwater Cleanup Goals. All other GMP and O&M sampling programs will continue as planned for the remaining 2012 quarterly sampling events.

8.0 REFERENCES

ECC, 2007. *Mead Validation Guidelines.* 2007

ECC, 2009. *Final Site-Wide Work Plan, Support Services, Former Nebraska Ordnance Plant, Mead, Nebraska*. October.

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.

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
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
SW	surface water
TCE	trichloroethene
TNB	1,3,5-trinitrobenzene
TNT	2,4,6-trinitrotoluene
Trans-1,2-DCE	trans-1,2-dichloroethene
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 water 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 First Quarter 2012 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-106A	03/06/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-106B	03/06/2012	0.11 U	0.11 U	0.056 U	0.056 U	0.056 U	0.11 U
MW-106D	03/06/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-107A	03/06/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-107B	03/06/2012	0.12 U	0.12 U	0.060 U	0.060 U	0.060 U	0.12 U
MW-107D	03/06/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-108A	03/06/2012	0.10 U	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-108B	03/06/2012	0.11 U	0.11 U	**0.081 J**	0.053 U	0.053 U	0.11 U
MW-108D	03/06/2012	0.11 U	0.11 U	0.053 U	0.053 U	0.053 U	0.11 U
MW-110A	03/06/2012	0.10 U	**0.071 J**	0.051 U	0.051 U	**0.11 J**	**0.14 J**
MW-110B	03/06/2012	0.11 U	**0.11 J**	**0.071 J**	**0.29 J**	0.053 U	0.11 U
MW-110D	03/06/2012	0.11 U	0.11 U	**0.074 J**	0.053 U	0.053 U	0.11 U
MW-112A	03/05/2012	0.10 U	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-112B	03/05/2012	**0.059 J**	0.098 U	0.049 U	0.049 U	0.049 U	0.098 U
MW-113A	03/05/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-113B	03/05/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-113D	03/05/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-114A	03/05/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-114B	03/05/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-114D	03/05/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-115A	03/05/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-115B	03/05/2012	0.098 U	0.098 U	0.049 U	0.049 U	0.049 U	0.098 U
MW-115D	03/05/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-116A	03/06/2012	0.11 U	0.11 U	0.055 U	0.055 U	0.055 U	0.11 U
MW-116B	03/06/2012	0.10 U	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-116D	03/06/2012	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

Table 2-1 Perimeter Monitoring Wells

Results for First Quarter 2012 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-117A	03/06/2012	0.10 U	0.10 U	0.052 U	**0.14 J**	0.052 U	0.10 U
MW-117B	03/06/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-117D	03/06/2012	0.10 U	0.10 U	0.050 U	**0.12 J**	0.050 U	0.10 U
MW-118A	03/06/2012	0.10 U	0.10 U	**0.13 J**	**0.67**	0.051 U	0.10 U
MW-118B	03/06/2012	0.11 U	0.11 U	**0.18 J**	**0.81**	0.057 U	0.11 U
MW-147A	03/07/2012	0.10 U	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-147B	03/07/2012	0.11 U	0.11 U	0.053 U	0.053 U	0.053 U	0.11 U
MW-147D	03/07/2012	0.11 U	0.11 U	0.056 U	0.056 U	0.056 U	0.11 U
MW-159A	03/06/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-159B	03/06/2012	0.10 U	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-35A	03/05/2012	**0.070 J**	0.10 U	0.050 U	**0.40 J**	0.050 U	0.10 U
MW-35B	03/05/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-35D	03/05/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-38A	03/05/2012	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-38D	03/05/2012	0.11 U	0.11 U	0.056 U	0.056 U	0.056 U	0.11 U
MW-46A	03/05/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-46B	03/05/2012	0.11 U	0.11 U	0.055 U	0.055 U	0.055 U	0.11 U
MW-46D	03/05/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-83A	03/02/2012	0.10 U	0.10 U	0.050 U	**0.24 J**	0.050 U	0.10 U
MW-83B	03/02/2012	0.10 U	0.10 U	0.051 U	**0.15 J**	0.051 U	0.10 U
MW-83D	03/02/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-84A	03/02/2012	0.10 U	0.10 U	0.050 U	**0.34 J**	0.050 U	0.10 U
MW-84B	03/02/2012	0.10 U	0.10 U	**0.070 J**	0.050 U	0.050 U	0.10 U
MW-84D	03/02/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-85A	03/01/2012	0.098 U	0.098 U	0.049 U	**0.91**	0.049 U	0.098 U
MW-85B	03/01/2012	0.10 U	0.10 U	**0.17 J**	**1.4**	0.050 U	0.10 U
MW-85D	03/01/2012	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

Table 2-1 Perimeter Monitoring Wells

Results for First Quarter 2012 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-95A	03/07/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-95B	03/07/2012	0.10 U	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-95D	03/07/2012	0.10 U	0.10 U	0.051 U	**0.11 J**	0.051 U	0.10 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

Table 2-1 Perimeter Monitoring Wells

Results for First Quarter 2012 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-102A	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-102B	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-102D	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-103A	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-103B	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-103D	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-106A	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-106B	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-106D	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-107A	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-107B	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-107D	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-108A	03/06/2012	0.25 UJ	0.25 UJ	0.25 UJ	0.25 UJ	0.25 UJ	0.25 UJ
MW-108B	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-108D	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-110A	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-110B	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-110D	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-112A	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-112B	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-113A	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-113B	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-113D	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-114A	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-114B	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-114D	03/05/2012	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

Table 2-1 Perimeter Monitoring Wells

Results for First Quarter 2012 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-115A	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-115B	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-115D	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-116A	03/06/2012	0.25 U	0.25 U	0.25 U	**1.4**	0.25 U	0.25 U
MW-116B	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-116D	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-117A	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-117B	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-117D	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-118A	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-118B	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-147A	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-147B	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-147D	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-159A	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	**1.6**
MW-159B	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-35A	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-35B	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-35D	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-38A	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-38D	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-41A	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-41B	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-41D	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-46A	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-46B	03/05/2012	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

Table 2-1 Perimeter Monitoring Wells

Results for First Quarter 2012 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-46D	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-80A	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-80B	03/07/2012	0.25 U	0.25 U	0.25 U	**0.99 J**	0.25 U	0.25 U
MW-80D	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-81A	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-81B	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-81D	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-83A	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-83B	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-83D	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-84A	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-84B	03/02/2012	0.25 UJ	0.25 UJ	0.25 UJ	0.25 UJ	0.25 UJ	0.25 UJ
MW-84D	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-85A	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-85B	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-85D	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-95A	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-95B	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-95D	03/07/2012	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

Table 2-2 Compliance Monitoring Wells

Results for First Quarter 2012 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-100A	03/01/2012	0.10 U	0.10 U	0.050 U	**0.077 J**	0.050 U	0.10 U
MW-100B	03/01/2012	0.10 U	0.10 U	0.050 U	**0.16 J**	0.050 U	0.10 U
MW-100D	03/01/2012	0.10 U	0.10 U	0.050 U	**0.093 J**	0.050 U	0.10 U
MW-101A	03/07/2012	0.10 U	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-101B	03/07/2012	**0.061 J**	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-101D	03/07/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-158A	03/06/2012	0.10 U	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-158B	03/06/2012	0.10 U	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-158D	03/06/2012	0.10 U	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-20A	03/02/2012	0.10 U	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-20B	03/02/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	**0.090 J**
MW-20C	03/02/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-61A	03/07/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-61B	03/07/2012	0.10 U	0.10 U	0.052 U	0.052 U	0.052 U	0.10 U
MW-61D	03/07/2012	0.13 U	0.13 U	0.063 U	0.063 U	0.063 U	0.13 U
MW-82A	03/02/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-82B	03/02/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-82D	03/02/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-86A	03/05/2012	0.098 U	0.098 U	0.049 U	0.049 U	0.049 U	0.098 U
MW-86B	03/05/2012	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-86D	03/05/2012	0.10 U	0.10 U	0.050 U	**1.3**	0.050 U	0.10 U
MW-88A	03/05/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-88B	03/05/2012	0.11 U	0.11 U	0.055 U	0.055 U	0.055 U	0.11 U
MW-88D	03/05/2012	0.098 U	0.098 U	0.049 U	0.049 U	0.049 U	0.098 U
MW-96A	03/02/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-96B	03/02/2012	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

Table 2-2 Compliance Monitoring Wells

Results for First Quarter 2012 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-96D	03/02/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-97A	03/01/2012	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-97B	03/01/2012	**0.063 J**	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U
MW-97D	03/01/2012	0.10 U	**0.10 J**	0.050 U	0.050 U	0.050 U	0.10 U
MW-98A	03/01/2012	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-98B	03/01/2012	0.10 U	0.10 U	0.051 U	0.051 U	0.051 U	0.10 U
MW-98D	03/01/2012	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

Table 2-2 Compliance Monitoring Wells

Results for First Quarter 2012 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-100A	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-100B	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-100D	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-101A	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-101B	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-101D	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-158A	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-158B	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-158D	03/06/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-20A	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-20B	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-20C	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-61A	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-61B	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-61D	03/07/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-82A	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-82B	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-82D	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-86A	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-86B	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-86D	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-88A	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-88B	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-88D	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-96A	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-96B	03/02/2012	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

Table 2-2 Compliance Monitoring Wells

Results for First Quarter 2012 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-96D	03/02/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-97A	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-97B	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-97D	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-98A	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-98B	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-98D	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	**0.36 J**

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

Table 2-3 LL1 Interior Plume Monitoring Wells

Results for First Quarter 2012 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-142A	03/01/2012	0.10 U	0.10 U	**0.062 J**	**0.55**	0.050 U	0.10 U
MW-142E	03/01/2012	0.10 U	0.10 U	**0.25 J**	**1.6**	0.050 U	0.10 U
MW-90A	03/01/2012	0.10 U	**0.15 J**	0.050 U	**0.48**	0.050 U	0.10 U
MW-90B	03/01/2012	0.10 U	0.10 U	0.050 U	**0.32 J**	0.050 U	0.10 U
MW-90D	03/01/2012	0.10 U	**0.35 J**	**0.91 J**	**0.40 J**	0.050 U	**0.27 J**

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

Table 2-3 LL1 Interior Plume Monitoring Wells

Results for First Quarter 2012 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-142A	03/01/2012	1.3 U	**1.7 J**	1.3 U	**1300**	1.3 U	1.3 U
MW-142E	03/01/2012	0.25 U	0.25 U	0.25 U	**88.0**	0.25 U	0.25 U
MW-90A	03/01/2012	1.3 U	1.3 U	1.3 U	**660**	1.3 U	1.3 U
MW-90B	03/01/2012	0.50 U	0.50 U	0.50 U	**130**	0.50 U	0.50 U
MW-90D	03/01/2012	0.93 U	**1.6 J**	0.93 U	**300**	0.93 U	0.93 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

Table 2-4 Upgradient, Downgradient, and Sidegradient Monitoring Wells

Results for First Quarter 2012 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-91A	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-91B	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-91D	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-93A	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-93B	03/01/2012	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

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Table 3-1 Water Supply Wells

Results for First Quarter 2012 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
UNFL-09A	03/26/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
UNFL-10A	03/26/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
UNFL-12	03/26/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
UNFL-23	03/26/2012	0.048 U	**0.16 J**	**0.15 J**	**0.034 J**	0.024 U	0.048 U
UNFL-27	03/26/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-100	03/21/2012	0.048 U	0.048 U	0.024 U	**0.044 J**	0.024 U	0.048 U
WSW-103	03/21/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-104	03/21/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-105	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-106	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-109	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-110	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-112	03/26/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-113	03/21/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-114	03/26/2012	0.048 U	0.048 U	0.024 U	**0.13 J**	**0.018 J**	0.048 U
WSW-115	03/26/2012	0.048 U	0.048 U	**0.023 J**	0.024 U	0.024 U	0.048 U
WSW-117	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-29	03/21/2012	0.048 U	0.048 U	0.024 U	**0.16 J**	0.024 U	0.048 U
WSW-50A	03/21/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-50B	03/21/2012	0.048 U	0.048 U	0.024 U	**2.2**	**0.037 J**	0.048 U
WSW-51	03/21/2012	0.048 U	0.048 U	0.024 U	**0.32**	0.024 U	0.048 U
WSW-51A	03/21/2012	0.048 U	0.048 U	0.024 U	**1.2**	0.024 U	0.048 U
WSW-52A	03/26/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-52A-B	03/26/2012	0.048 U	0.048 U	0.024 U	**0.23**	0.024 U	0.048 U
WSW-52B	03/21/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-52C	03/28/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

Table 3-1 Water Supply Wells

Results for First Quarter 2012 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-52C-B	03/28/2012	0.048 U	0.048 U	**0.027 J**	0.024 U	0.024 U	0.048 U
WSW-53	03/26/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-53-B	03/26/2012	0.048 U	0.048 U	**0.25**	**8.2**	0.024 U	0.048 U
WSW-54	03/26/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-54-B	03/26/2012	0.048 U	**0.055 J**	**0.22**	**3.8**	0.024 U	0.048 U
WSW-55	03/21/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-56	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-57	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-58	03/26/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-59	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-60	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-61	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-62	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-65	03/21/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-66	03/21/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-67	03/21/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-68	03/21/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-73	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-74	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-75	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-76	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-77	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-79	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-86	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-87	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-89	03/26/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-91	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

Table 3-1 Water Supply Wells

Results for First Quarter 2012 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-92	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-95	03/21/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-96	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
WSW-99	03/22/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

Table 3-1 Water Supply Wells

Results for First Quarter 2012 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
UNFL-09A	03/26/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
UNFL-10A	03/26/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
UNFL-12	03/26/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
UNFL-23	03/26/2012	0.45 U	0.37 U	0.36 U	**0.51**	0.24 U	0.33 U
UNFL-27	03/26/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-100	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-103	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-104	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-105	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-106	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-109	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-110	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-112	03/26/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-113	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-114	03/26/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-115	03/26/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-117	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-29	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-50A	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-50B	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-51	03/21/2012	0.45 U	0.37 U	**9.5**	**0.75**	0.24 U	0.33 U
WSW-51A	03/21/2012	0.45 U	0.37 U	0.36 U	**2.2**	0.24 U	0.33 U
WSW-52A	03/26/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-52A-B	03/26/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-52B	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-52C	03/28/2012	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

Table 3-1 Water Supply Wells

Results for First Quarter 2012 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-52C-B	03/28/2012	0.45 U	**2.3**	0.36 U	**140**	0.24 U	0.33 U
WSW-53	03/26/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-53-B	03/26/2012	0.45 U	**0.45 J**	0.36 U	**2.5**	0.24 U	0.33 U
WSW-54	03/26/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-54-B	03/26/2012	0.45 U	0.37 U	0.36 U	**7.0**	0.24 U	0.33 U
WSW-55	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-56	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-57	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-58	03/26/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-59	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-60	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-61	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-62	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-65	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-66	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-67	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-68	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-73	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-74	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-75	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-76	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-77	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-79	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-86	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-87	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-89	03/26/2012	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

Table 3-1 Water Supply Wells

Results for First Quarter 2012 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-91	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-92	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-95	03/21/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-96	03/22/2012	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-99	03/22/2012	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

Table 4-1 Surface Water

Results for First Quarter 2012 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
ARTESIAN	03/05/2012	0.048 U	0.048 U	**0.063 J**	**2.0**	0.024 U	0.048 U
SCW-04	03/05/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
SCW-05	03/05/2012	0.048 U	0.048 U	**0.045 J**	0.024 U	0.024 U	0.048 U
SCW-06	03/05/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
SW-05	03/05/2012	0.048 U	0.048 U	0.024 U	**1.0 J**	0.024 U	0.048 U
SW-06	03/05/2012	**0.033 J**	0.048 U	0.024 U	**0.36 J**	0.024 U	0.048 U
SW-08	03/05/2012	0.048 U	0.048 U	**0.096 J**	**1.6**	0.024 U	0.048 U
SW-09	03/05/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
SW-10	03/05/2012	0.048 U	0.048 U	**0.065 J**	**1.3**	0.024 U	0.048 U
SW-11	03/05/2012	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
SW-12	03/05/2012	0.048 U	0.048 U	**0.049 J**	**0.74**	0.024 U	0.048 U
SW-13	03/05/2012	0.048 U	0.048 U	**0.086 J**	**1.1**	0.024 U	0.048 U

Detects are displayed in bold font

Table 4-1 Surface Water

Results for First Quarter 2012 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**Methylene Chloride**	**TRANS-1,2-DCE**	**Vinyl Chloride**	**CIS-1,2-DCE**	**TCE**
ARTESIAN	03/05/2012	0.73 U	0.73 U	0.73 U	0.73 U	**0.71 J**	**180**
SCW-04	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
SCW-05	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
SCW-06	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
SW-05	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
SW-06	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
SW-08	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	**0.29 J**	**14**
SW-09	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
SW-10	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	**0.41 J**	**17**
SW-11	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
SW-12	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	**6.0**
SW-13	03/05/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Detects are displayed in bold font

Table 5-1 Operations and Maintenance

Results for First Quarter 2012 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	01/03/2012	0.060 U	0.048 U	0.048 U	**3.0**	**0.048 J**	**0.099 J**
AOP-EFF	02/01/2012	0.060 U	0.048 U	0.048 U	**3.0**	**0.044 J**	**0.11 J**
AOP-EFF	03/01/2012	0.048 U	0.048 U	0.024 U	**2.8**	**0.043 J**	**0.099 J**
AOP-INF	01/03/2012	0.060 U	**0.041 J**	**0.94 J**	**3.6**	0.048 U	0.048 U
AOP-INF	03/01/2012	**0.040 J**	**0.057 J**	**0.95 J**	**3.6**	0.024 U	0.048 U
EW-16	02/01/2012	0.060 U	0.048 U	**0.21**	**1.6**	0.048 U	0.048 U
EW-3	02/01/2012	0.060 U	0.048 U	**0.073 J**	**0.97**	0.048 U	0.048 U
EW-4	02/01/2012	0.060 U	**0.033 J**	**0.54**	**4.0**	0.048 U	0.048 U
EW-6	02/01/2012	0.060 U	0.048 U	**0.23**	**1.3**	0.048 U	0.048 U
EW-7	02/01/2012	0.060 U	0.048 U	**0.067 J**	**6.9**	0.048 U	0.048 U
EW-9	02/01/2012	0.060 U	0.048 U	**0.14 J**	**21.0**	0.048 U	0.048 U
EW-9	03/01/2012	0.048 U	0.048 U	**0.092 J**	**6.1**	0.024 U	0.048 U
FEW-11	02/01/2012	0.060 U	**0.058 J**	**0.95 J**	**3.6**	0.048 U	0.048 U
FEW-14	02/01/2012	0.060 U	**0.075 J**	**0.74**	**5.7**	0.048 U	0.048 U
GTP-310	01/03/2012	0.060 U	0.048 U	0.048 U	**0.93**	0.048 U	0.048 U
GTP-310	02/01/2012	0.060 U	0.048 U	0.048 U	**1.3**	0.048 U	0.048 U
GTP-310	03/01/2012	0.048 U	0.048 U	0.024 U	**1.4**	0.024 U	0.048 U
GTP-330	01/03/2012	0.060 U	0.048 U	0.048 U	**1.1**	0.048 U	0.048 U
GTP-330	02/01/2012	0.060 U	0.048 U	0.048 U	**1.3**	0.048 U	0.048 U
GTP-330	03/01/2012	0.048 U	0.048 U	0.024 U	**1.2**	0.024 U	0.048 U
GTP-350	01/03/2012	0.060 U	0.048 U	0.048 U	**1.1**	0.048 U	0.048 U
GTP-350	02/01/2012	0.060 U	0.048 U	0.048 U	**1.2**	0.048 U	0.048 U
GTP-350	03/01/2012	0.048 U	0.048 U	0.024 U	**1.4**	0.024 U	0.048 U
GTP-EFF	01/03/2012	0.060 U	0.048 U	0.048 U	**1.0**	0.048 U	0.048 U
GTP-EFF	02/01/2012	0.060 U	0.048 U	0.048 U	**1.3**	0.048 U	0.048 U
GTP-EFF	03/01/2012	0.048 U	0.048 U	0.024 U	**1.3**	0.024 U	0.048 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

Table 5-1 Operations and Maintenance

Results for First Quarter 2012 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	01/03/2012	0.060 U	0.048 U	**0.14 J**	**4.3**	0.048 U	0.048 U
GTP-INF	02/01/2012	0.060 U	**0.035 J**	**0.17 J**	**4.4**	0.048 U	**0.052 J**
GTP-INF	03/01/2012	0.048 U	0.048 U	**0.18 J**	**3.7**	0.024 U	0.048 U
LL1-EFF	02/01/2012	0.060 U	0.048 U	0.048 U	**0.060 J**	0.048 U	0.048 U
LL1-INF	02/01/2012	0.060 U	0.048 U	**0.039 J**	**0.066 J**	0.048 U	0.048 U
LL4-EFF	02/01/2012	0.060 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
LL4-INF	02/01/2012	0.060 U	0.048 U	**0.037 J**	0.048 U	0.048 U	0.048 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

Table 5-1 Operations and Maintenance

Results for First Quarter 2012 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	01/03/2012	0.25 U	0.25 U	0.25 U	**0.49 J**	0.25 U	0.25 U
AOP-EFF	02/01/2012	0.25 U	0.25 U	0.25 U	**0.57 J**	0.25 U	0.25 U
AOP-EFF	03/01/2012	0.25 U	0.25 U	0.25 U	**0.25 J**	0.25 U	0.25 U
AOP-INF	01/03/2012	1.1 U	**4.6**	1.1 U	**1700**	1.1 U	1.1 U
AOP-INF	03/01/2012	1.3 U	**4.6 J**	1.3 U	**1600**	1.3 U	1.3 U
EW-1	01/03/2012	0.25 U	0.25 U	0.25 U	**3.8**	0.25 U	0.25 U
EW-1	02/01/2012	0.25 U	0.25 U	0.25 U	**3.8**	0.25 U	0.25 U
EW-1R	03/08/2012	0.25 U	0.25 U	0.25 U	**4.1**	0.25 U	0.25 U
EW-1R	03/19/2012	0.25 U	0.25 U	0.25 U	**3.9**	0.25 U	0.25 U
FEW-11	02/01/2012	0.25 U	**4.8**	0.25 U	**1600**	**0.26 J**	0.25 U
GTP-310	01/03/2012	0.25 U	0.25 U	0.25 U	**0.54 J**	0.25 U	0.25 U
GTP-310	02/01/2012	0.25 U	0.25 U	0.25 U	**0.72 J**	0.25 U	0.25 U
GTP-310	03/01/2012	0.25 UJ	0.25 UJ	0.25 UJ	**0.65 J**	0.25 UJ	0.25 UJ
GTP-330	01/03/2012	0.25 U	0.25 U	0.25 U	**0.51 J**	0.25 U	0.25 U
GTP-330	02/01/2012	0.25 U	0.25 U	0.25 U	**0.66 J**	0.25 U	0.25 U
GTP-330	03/01/2012	0.25 UJ	0.25 UJ	0.25 UJ	**0.52 J**	0.25 UJ	0.25 UJ
GTP-350	01/03/2012	0.25 U	0.25 U	0.25 U	**0.55 J**	0.25 U	0.25 U
GTP-350	02/01/2012	0.25 U	0.25 U	0.25 U	**0.64 J**	0.25 U	0.25 U
GTP-350	03/01/2012	0.25 U	0.25 U	0.25 U	**0.63 J**	0.25 U	0.25 U
GTP-EFF	01/03/2012	0.25 U	0.25 U	0.25 U	**0.51 J**	0.25 U	0.25 U
GTP-EFF	02/01/2012	0.25 U	0.25 U	0.25 U	**0.65 J**	0.25 U	0.25 U
GTP-EFF	03/01/2012	0.25 U	0.25 U	0.25 U	**0.53 J**	0.25 U	0.25 U
GTP-INF	01/03/2012	0.25 U	0.25 U	0.25 U	**0.60 J**	0.25 U	0.25 U
GTP-INF	02/01/2012	0.25 U	0.25 U	0.25 U	**0.68 J**	0.25 U	0.25 U
GTP-INF	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
LL1_AIR_EF (Air)	02/01/2012	-	-	-	**29.0**	-	-

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

Table 5-1 Operations and Maintenance

Results for First Quarter 2012 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**
LL1_AIR_EF (Air)	02/01/2012	-	-	-	**25.0**	-	-
LL1-EFF	01/03/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
LL1-EFF	02/01/2012	0.25 U	0.25 U	0.25 U	**0.21 J**	0.25 U	0.25 U
LL1-EFF	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
LL1-INF	01/03/2012	0.25 U	0.25 U	0.25 U	**85.0**	0.25 U	0.25 U
LL1-INF	02/01/2012	0.25 U	0.25 U	0.25 U	**86.0**	0.25 U	0.25 U
LL1-INF	03/01/2012	1.3 U	1.3 U	1.3 U	**92.0**	1.3 U	1.3 U
LL4_AIR_EF (Air)	01/03/2012	-	-	-	**450**	-	-
LL4-EFF	01/03/2012	0.25 U	0.25 U	0.25 U	**0.91 J**	0.25 U	0.25 U
LL4-EFF	02/01/2012	0.25 U	0.25 U	0.25 U	**0.87 J**	0.25 U	0.25 U
LL4-EFF	03/01/2012	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
LL4-INF	01/03/2012	0.50 U	**2.4**	0.50 U	**450**	0.50 U	0.50 U
LL4-INF	02/01/2012	1.3 U	**2.7 J**	1.3 U	**430**	1.3 U	1.3 U
LL4-INF	03/01/2012	1.3 U	**2.4 J**	1.3 U	**450**	1.3 U	1.3 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

FIGURES

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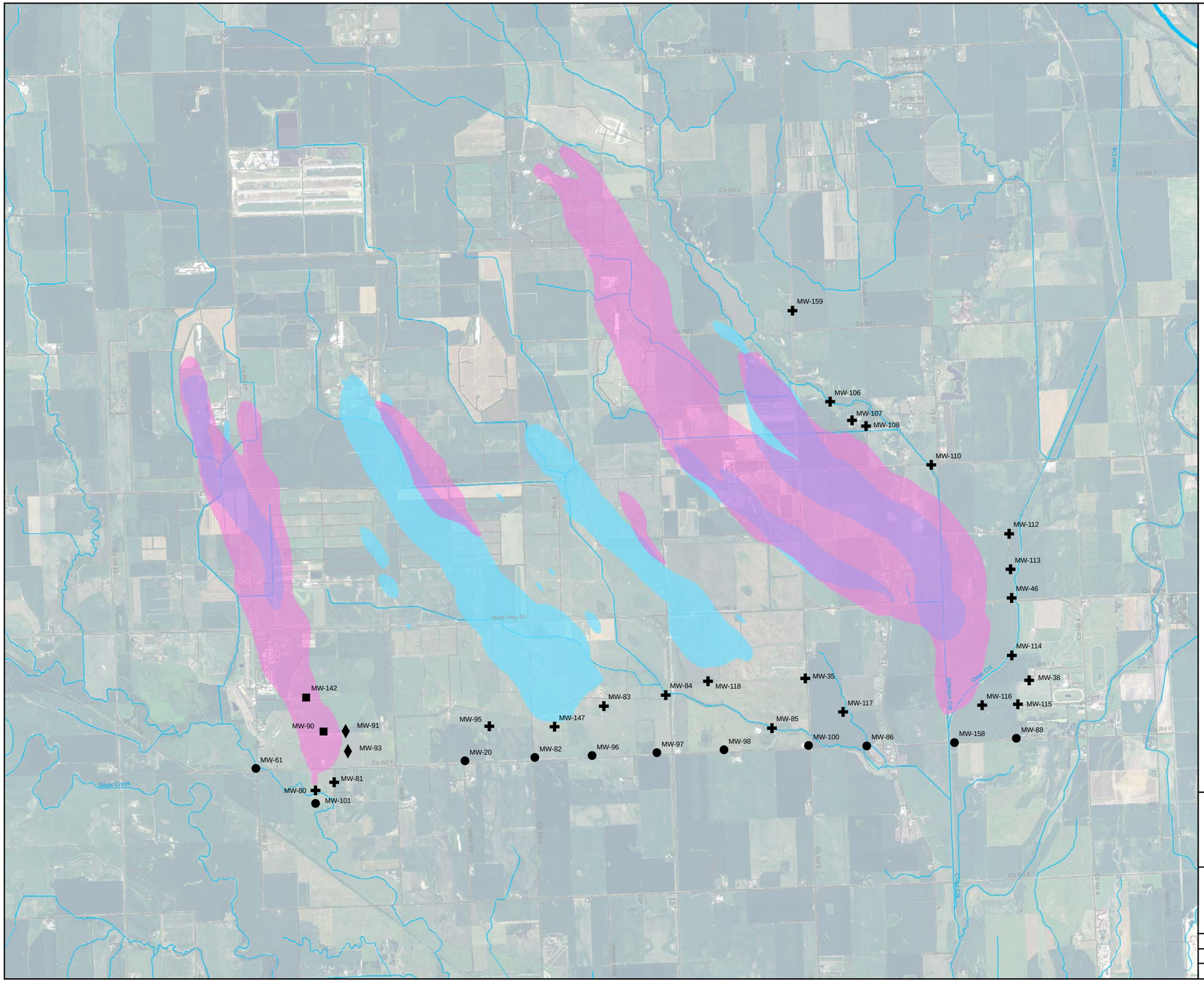

EXPLANATION

- ● Compliance Well
- ■ 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
- ▲ Focused Extraction Monitoring Well
- ✚ Perimeter Monitoring Well
- ♦ Upgradient/Sidegradient/Downgradient 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
First Quarter 2012 Sampling Locations

Drawn by: M Johanson	Reviewed by: S Carter	Notes and Sources Projection: North American Datum 1983 Nebraska State Plane Units: Feet
Date: 5/3/2012	Date: 5/4/2012	
Version:	Revision Date / Initials: 5/10/2012 MGJ	

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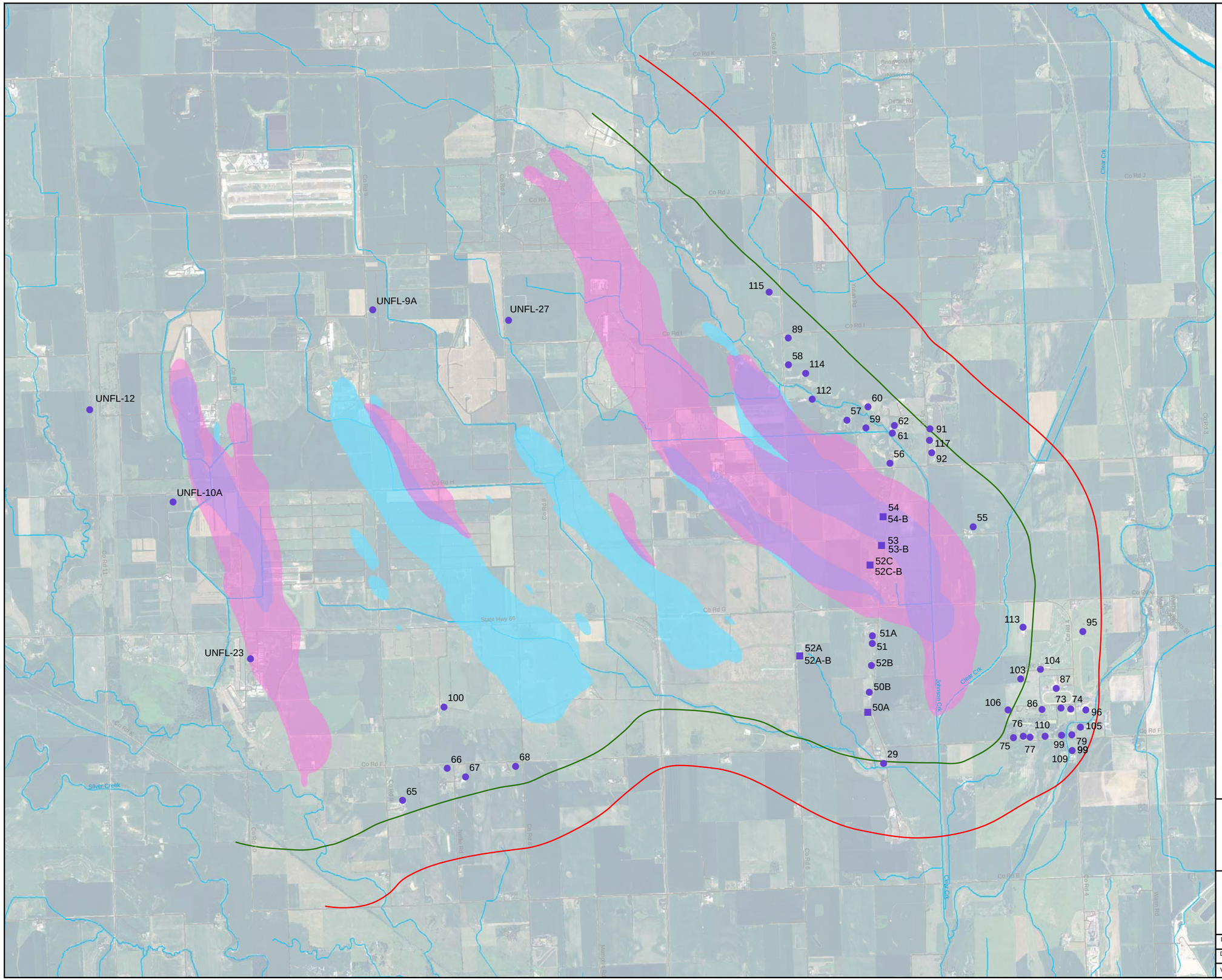

EXPLANATION

- Water Supply Well
- Alternate 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
First Quarter 2012 Sampling Locations

Drawn by: M Johanson	Reviewed by: S Carter	Notes and Sources Projection: North American Datum 1983 Nebraska State Plane Units: Feet
Date: 5/2/2012	Date: 5/22/2012	
Version:	Revision Date / Initials: 5/22/2012 MGJ	

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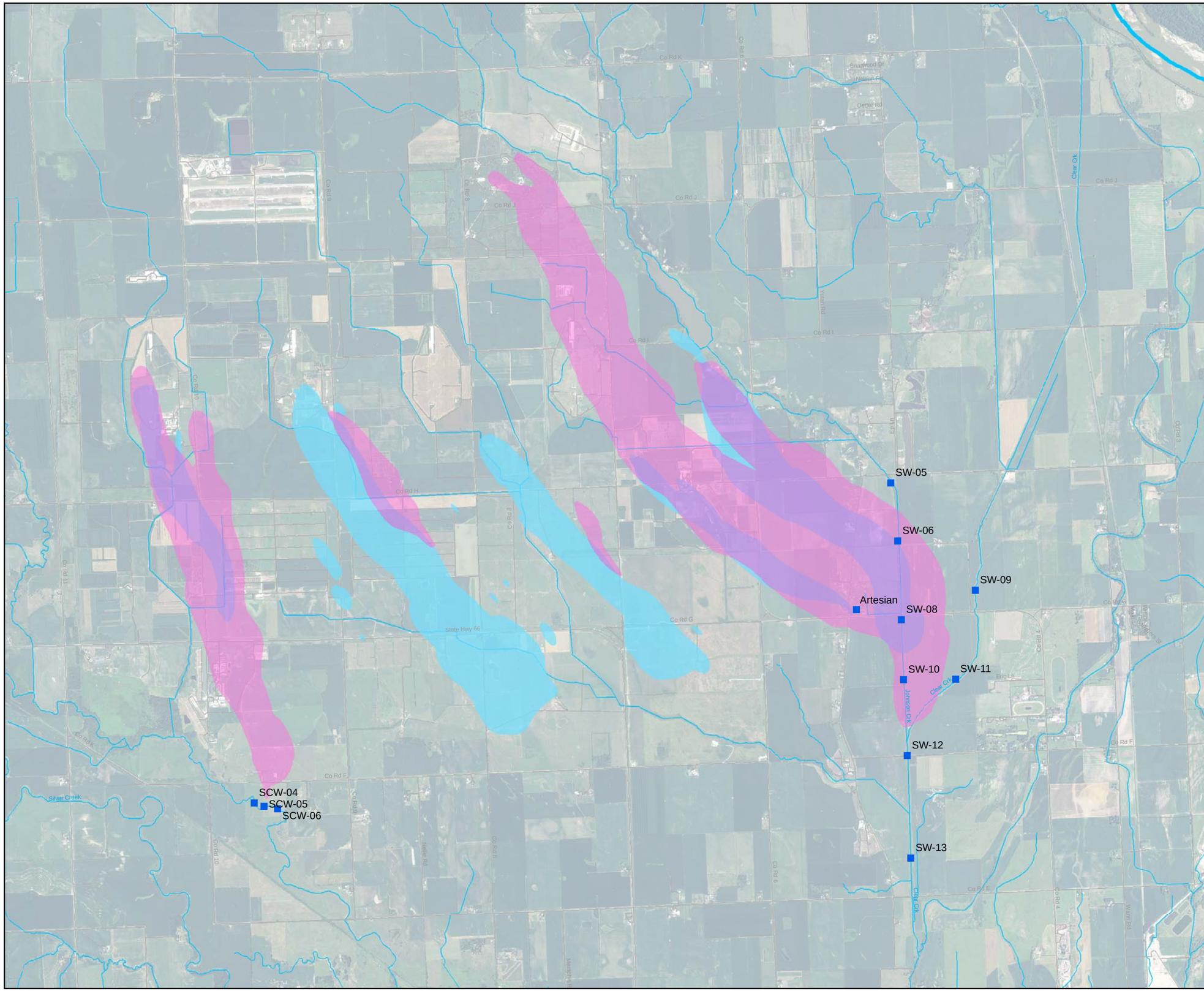

EXPLANATION

- Surface Water Sample Location
- 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 4-1
Surface Water
First Quarter 2012 Sampling Locations

Drawn by: M Johanson	Reviewed by:	Notes and Sources Projection: North American Datum 1983 Nebraska State Plane Units: Feet
Date: 5/2/2012	Date:	
Version:	Revision Date / Initials:	

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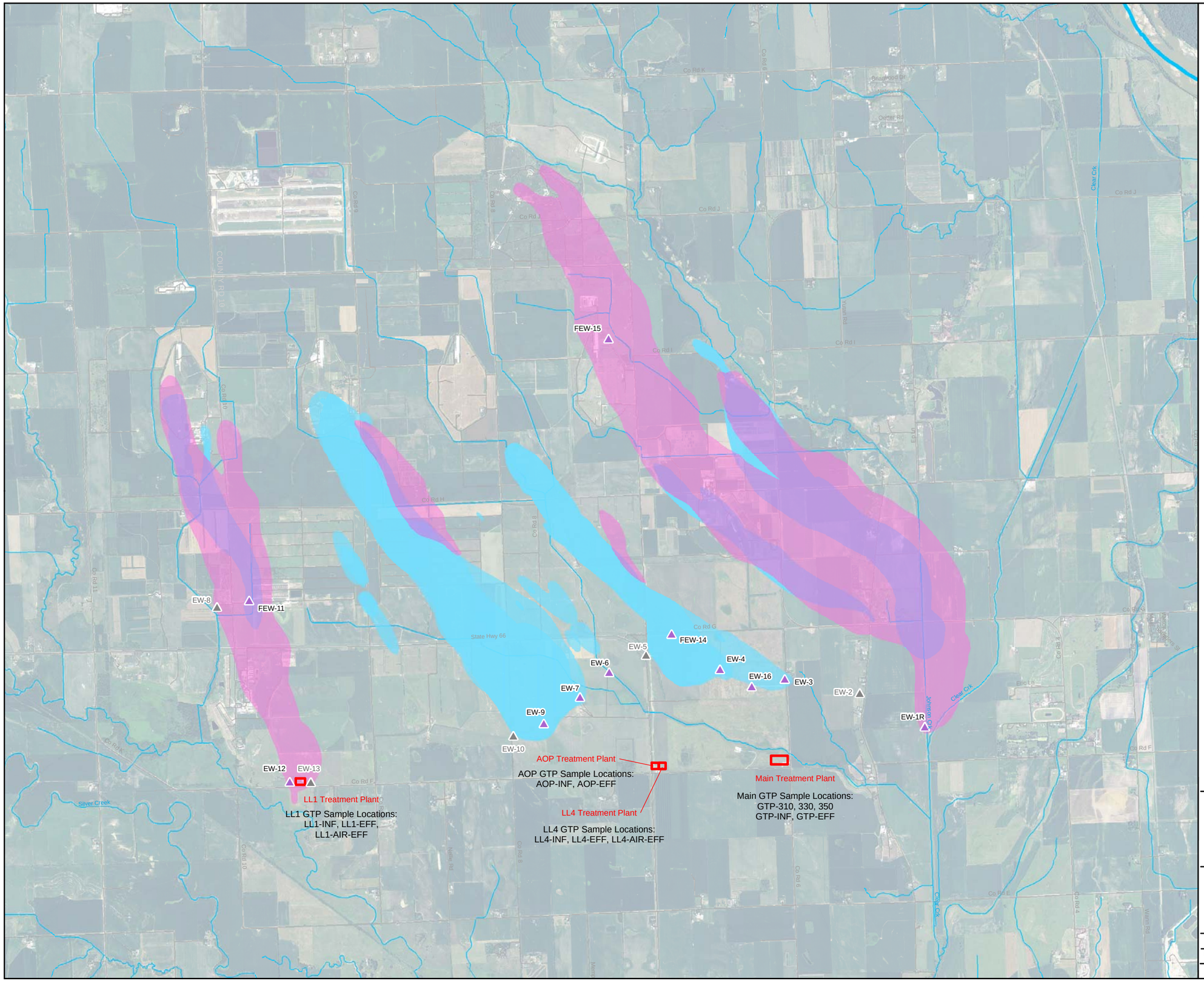

EXPLANATION

- Groundwater Circulation Well
- Active Groundwater Extraction Well (Sampled)
- Inactive 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 5-1
Operations and Maintenance
First Quarter 2012 Sampling Locations

Drawn by: M Johanson	Reviewed by:	Notes and Sources Projection: North American Datum 1983 Nebraska State Plane Units: Feet
Date: 5/2/2012	Date:	
Version:	Revision Date / Initials:	

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Appendix A
Concentration Trend Charts for Select Monitoring Wells

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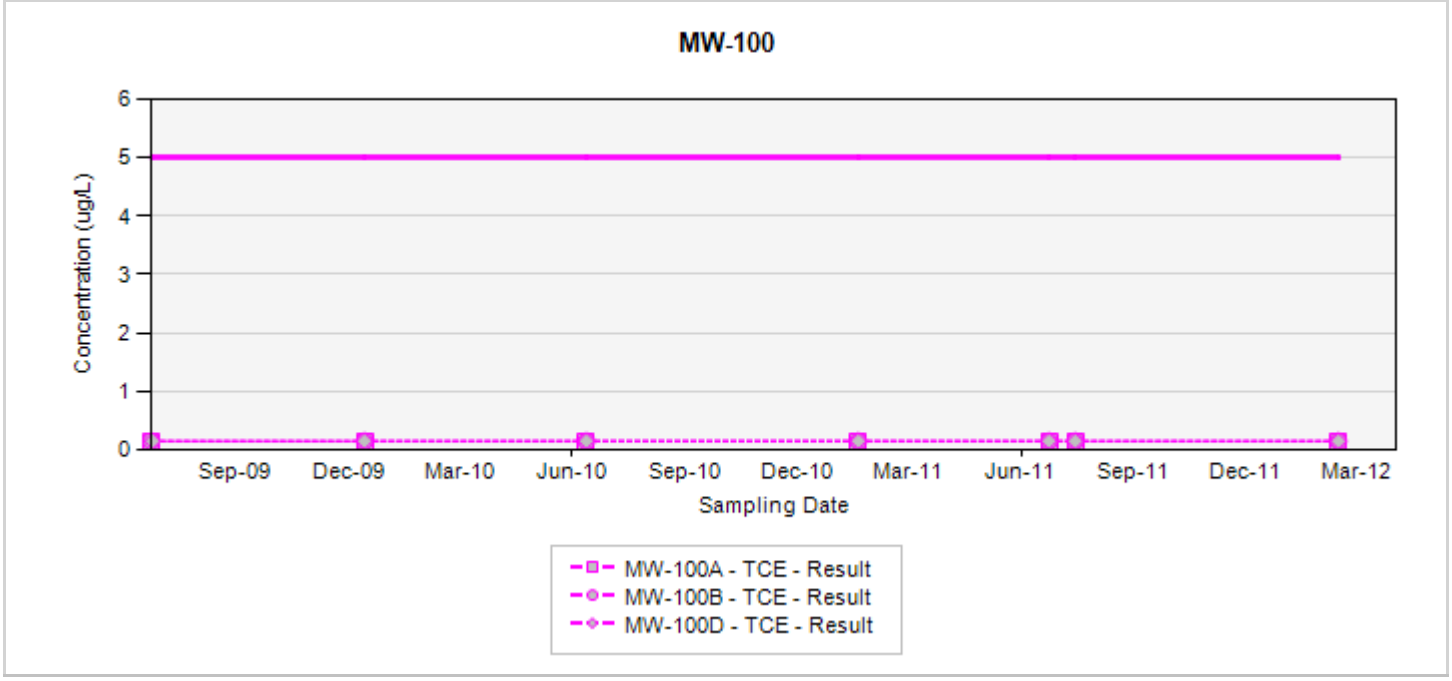
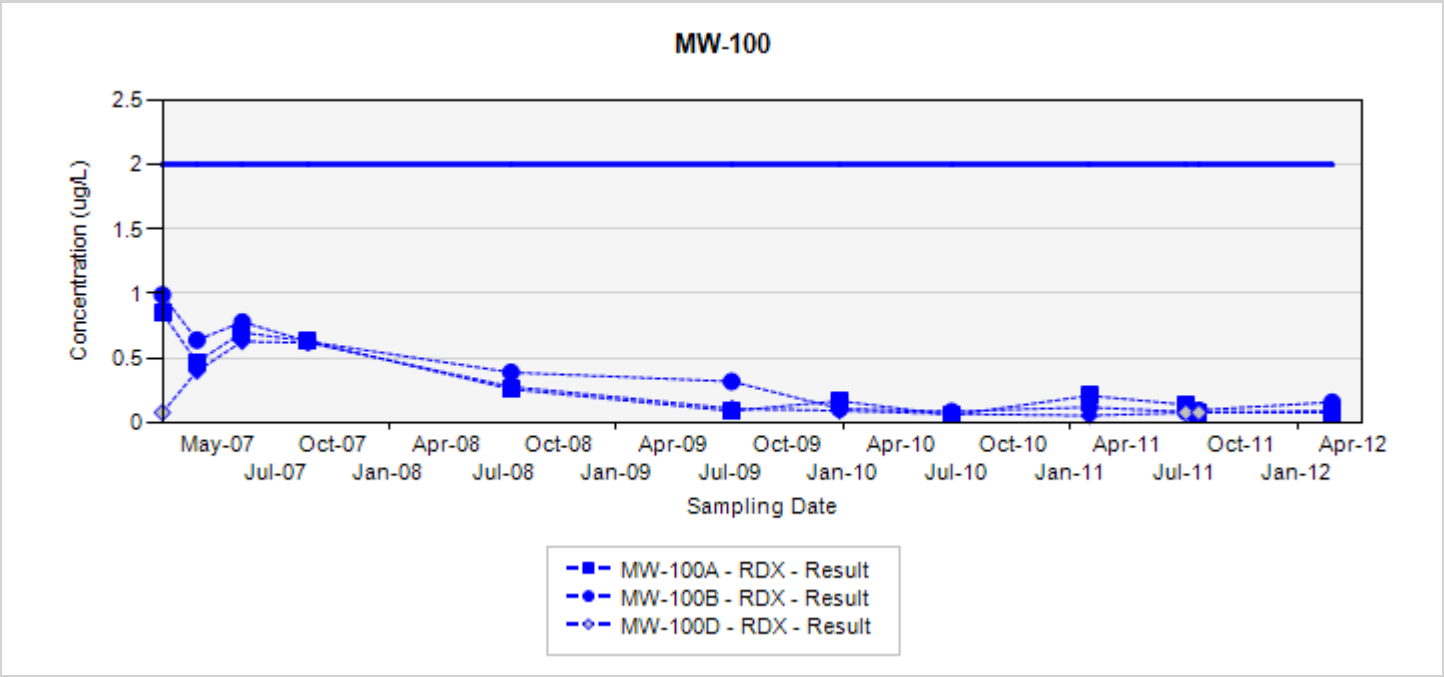
Appendix A
Concentration Trend Charts for Monitoring Well Locations



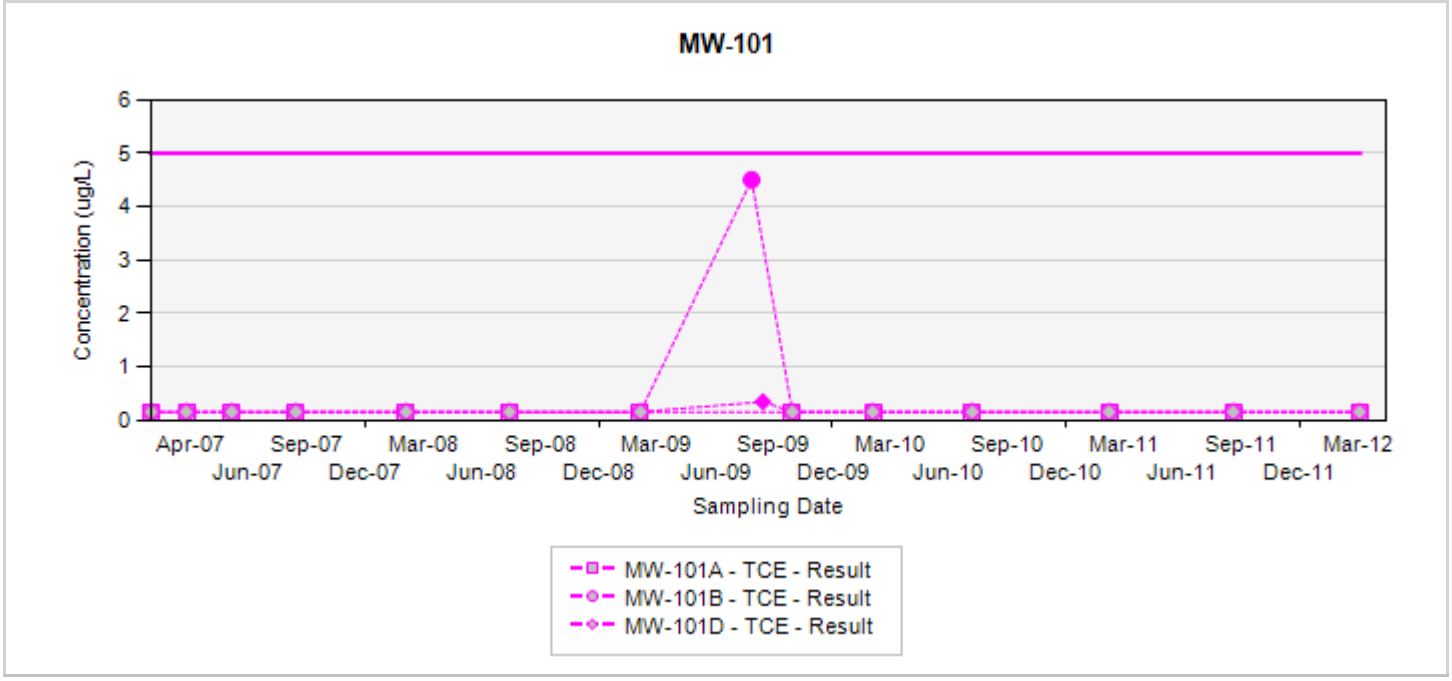


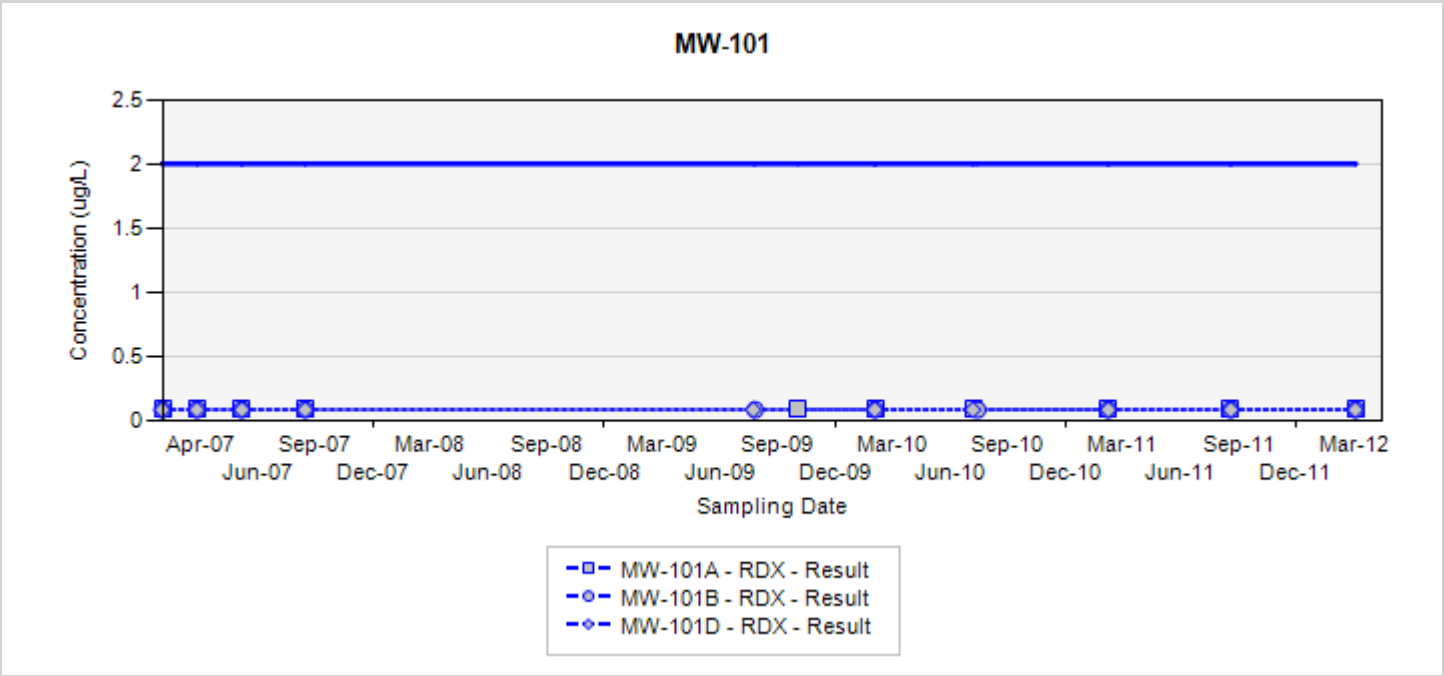
TCE - trichloroethene
RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
Final Target Groundwater Cleanup Goals for TCE is 5 UG/L
Final Target Groundwater Cleanup Goals for RDX is 2 UG/L

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

Appendix A
Concentration Trend Charts for Monitoring Well Locations





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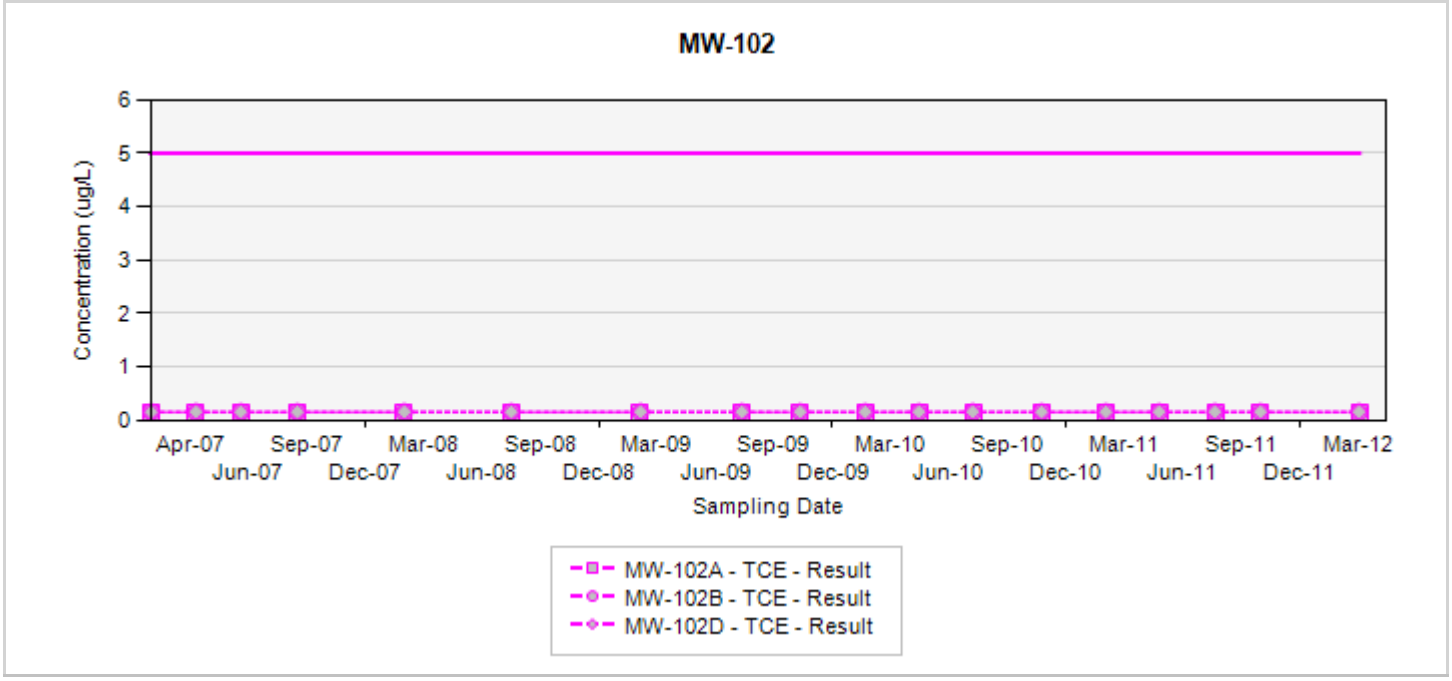

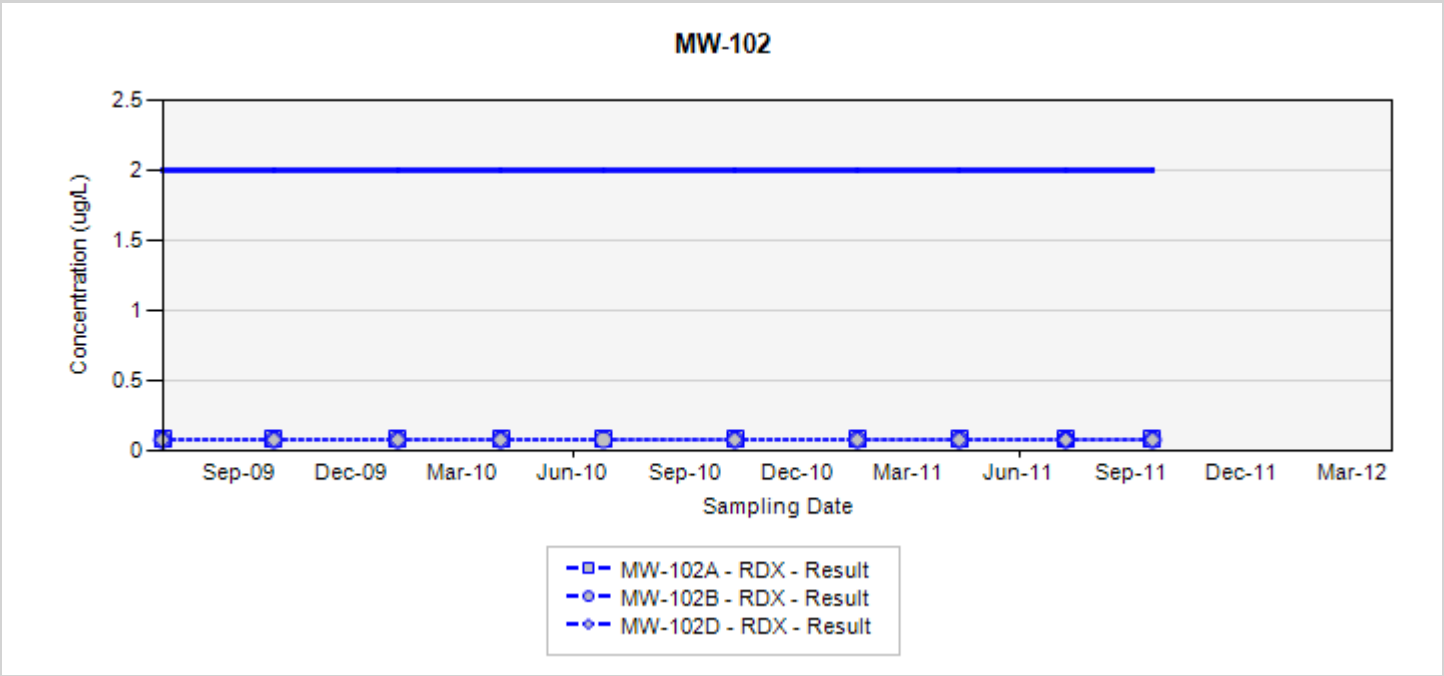

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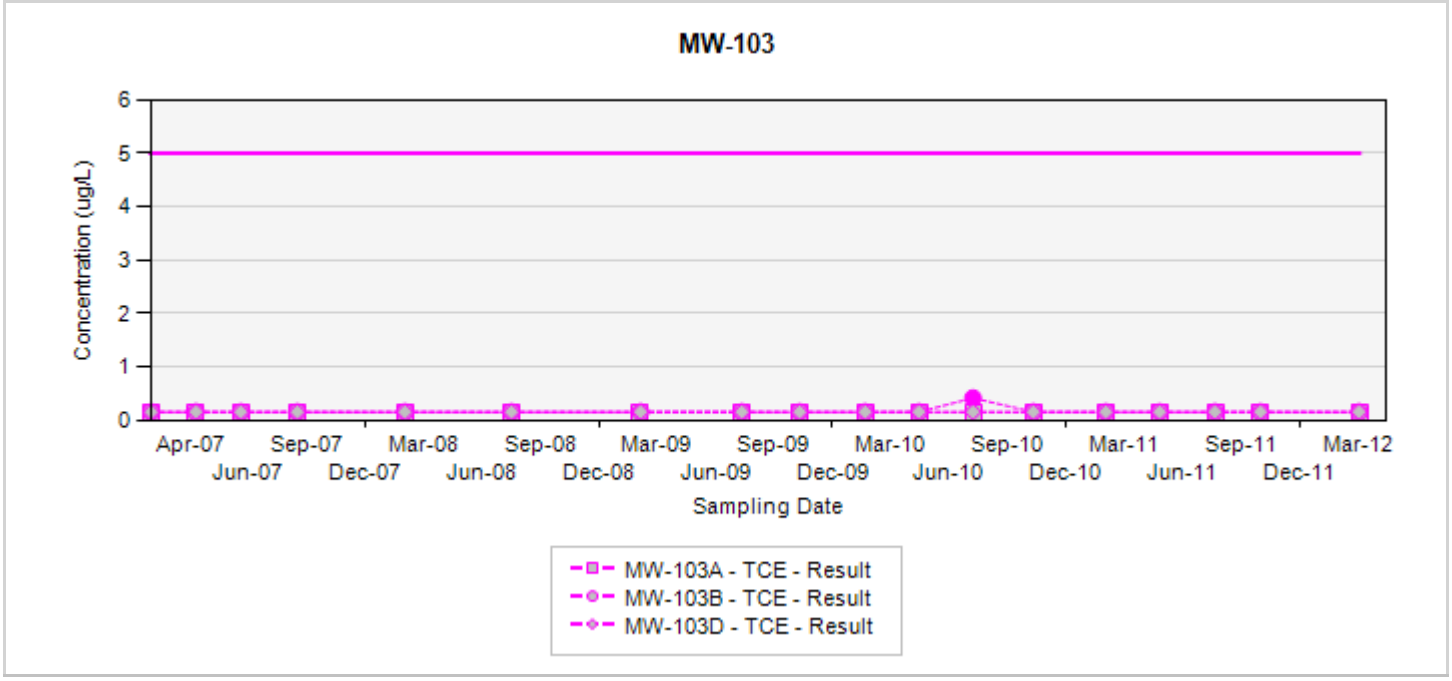

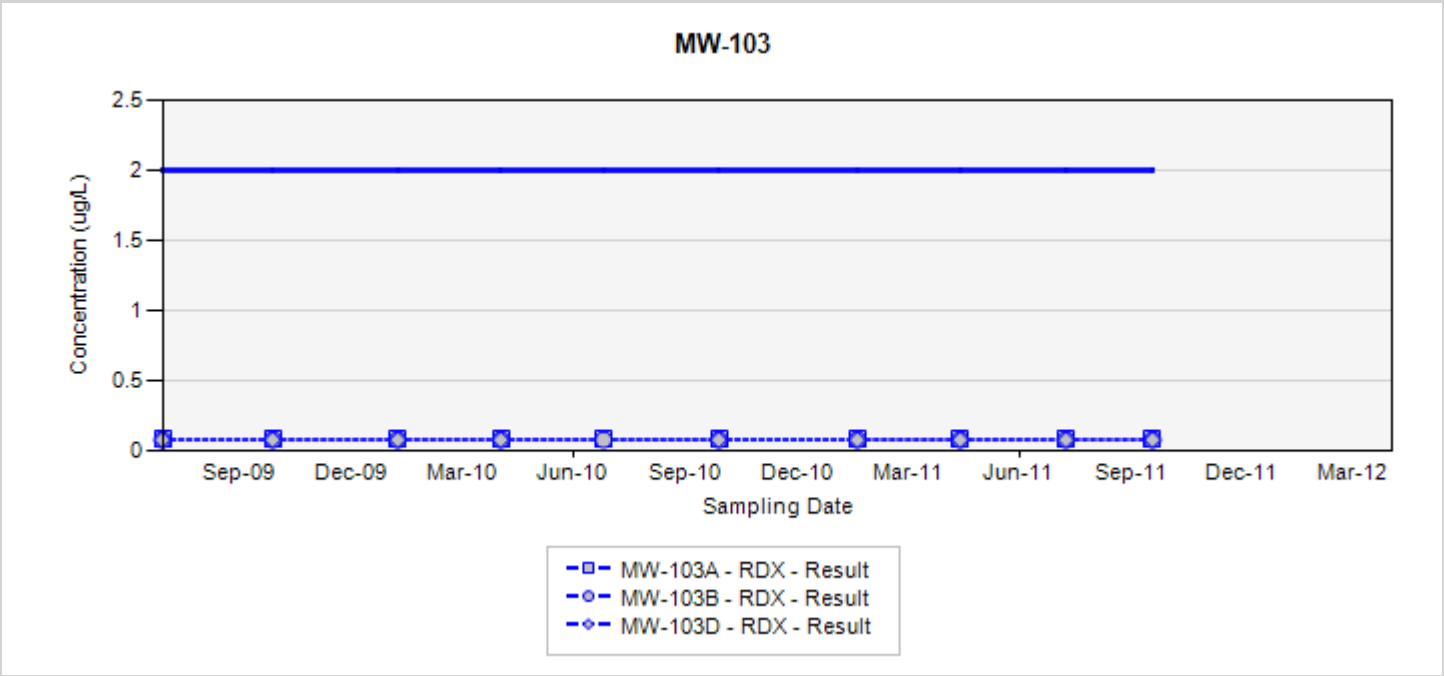

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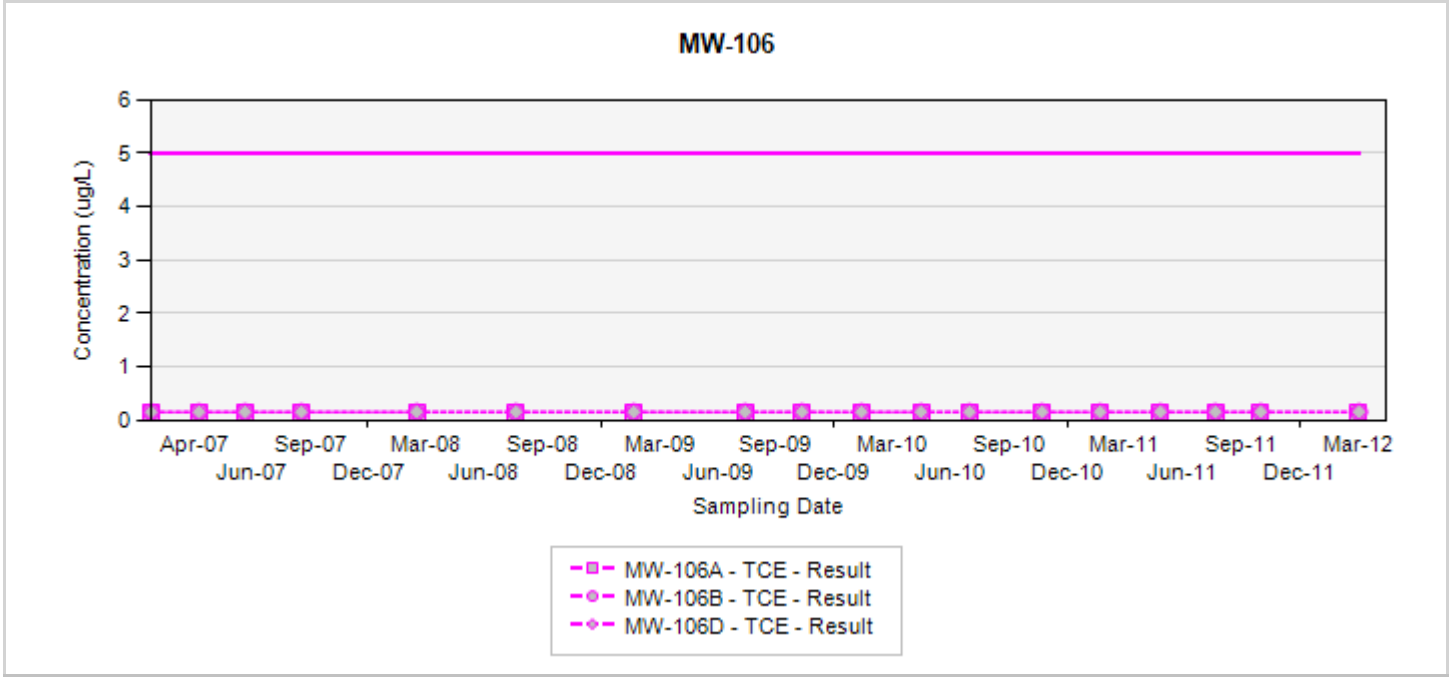

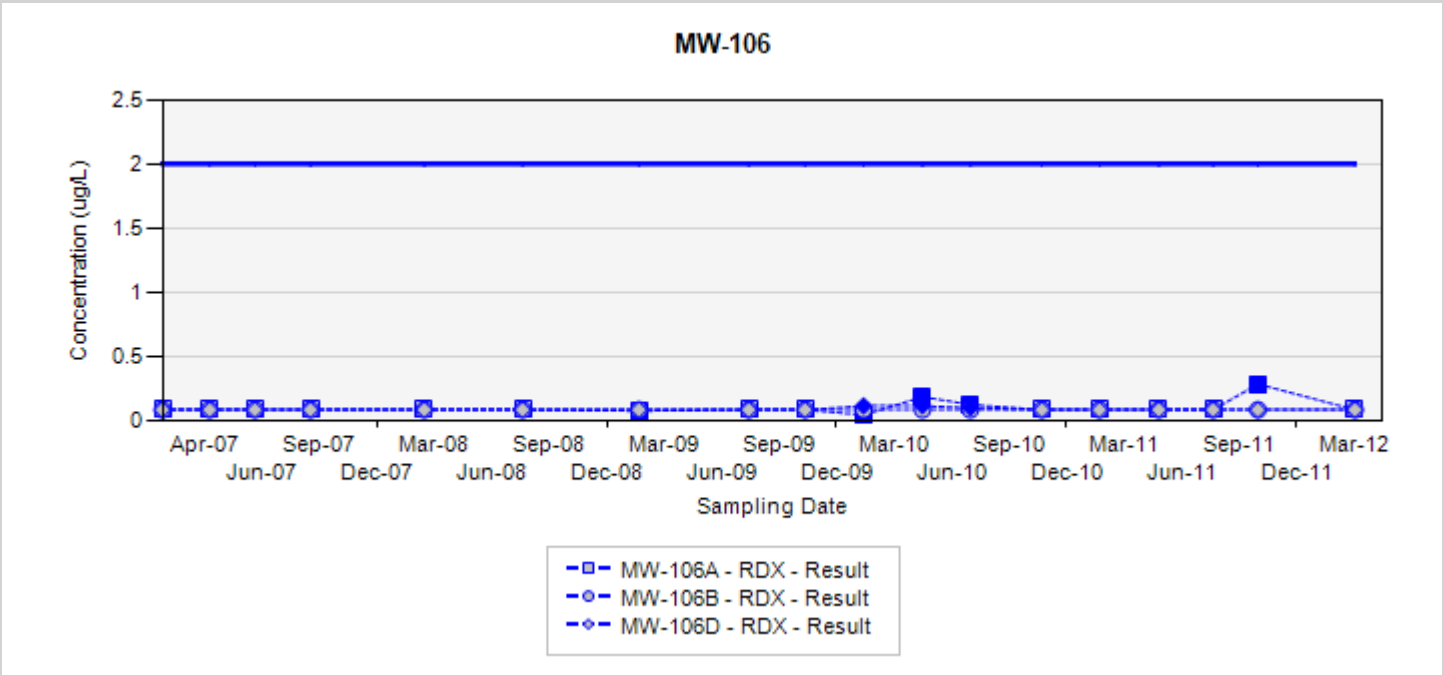

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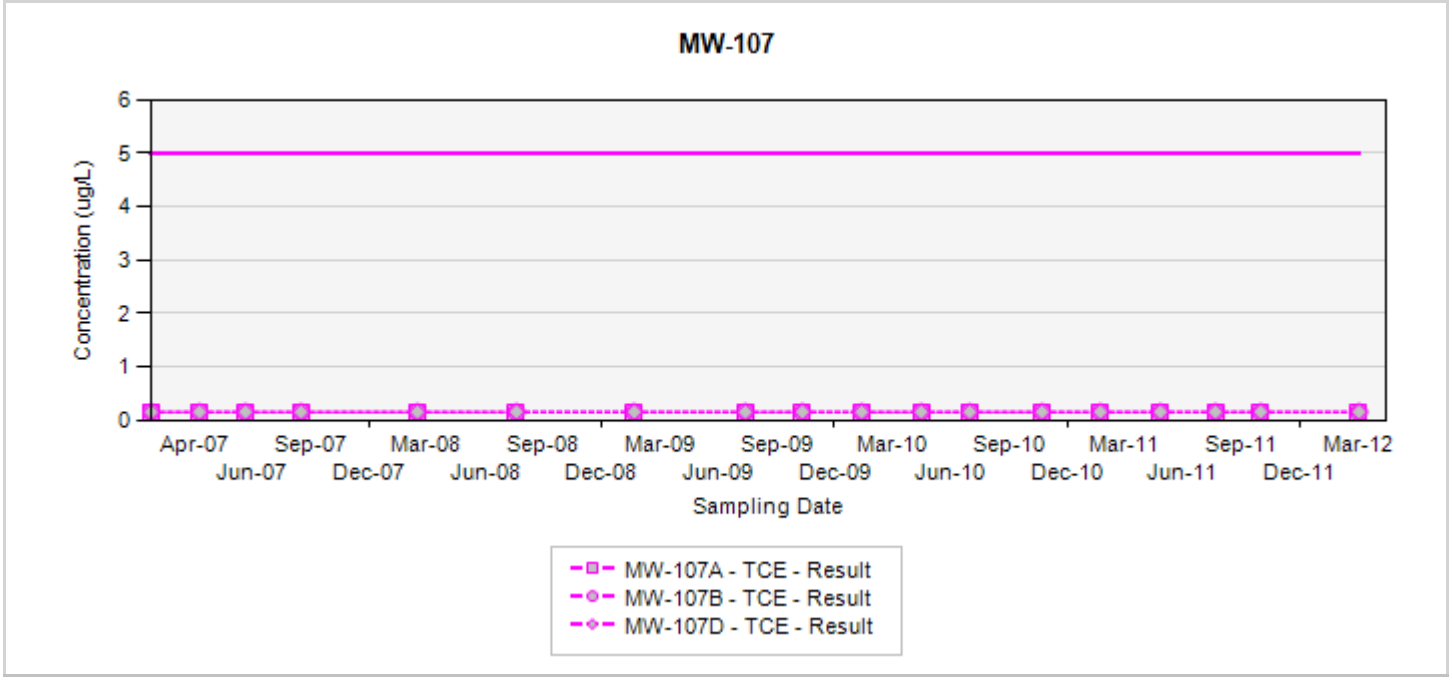

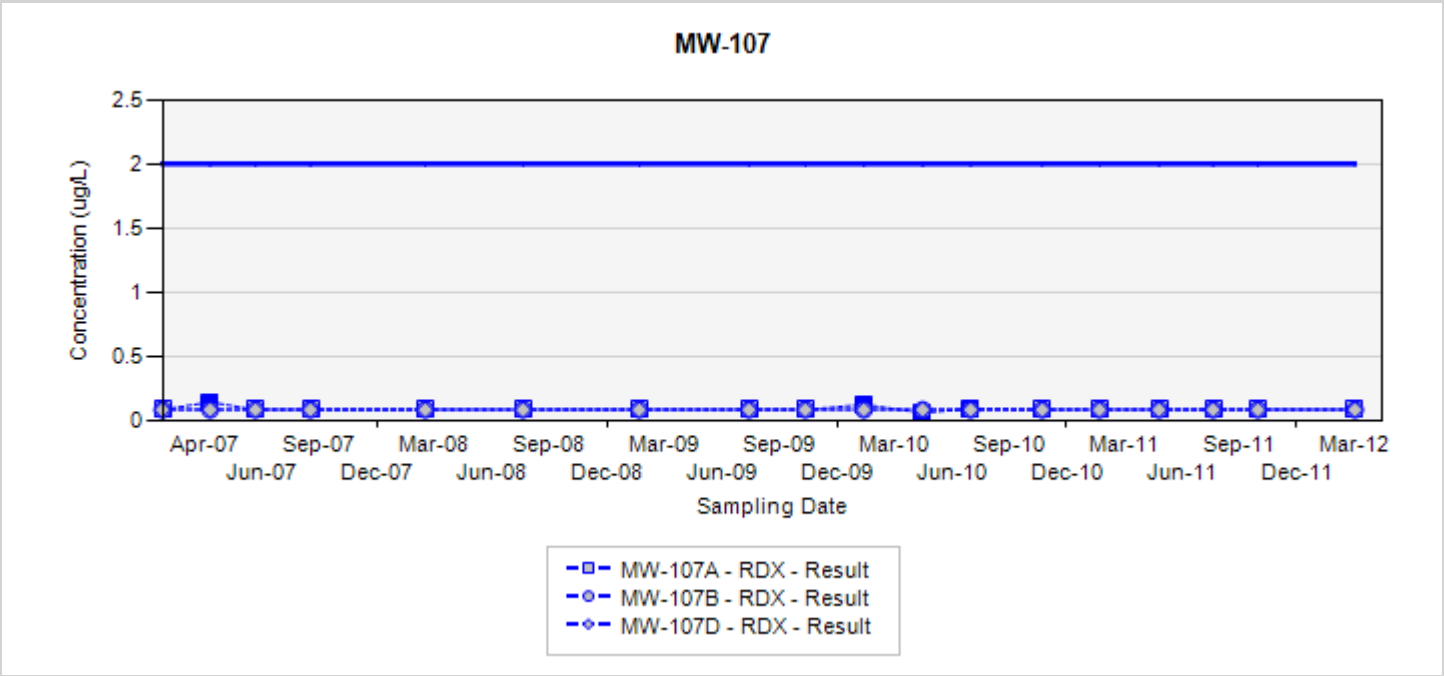

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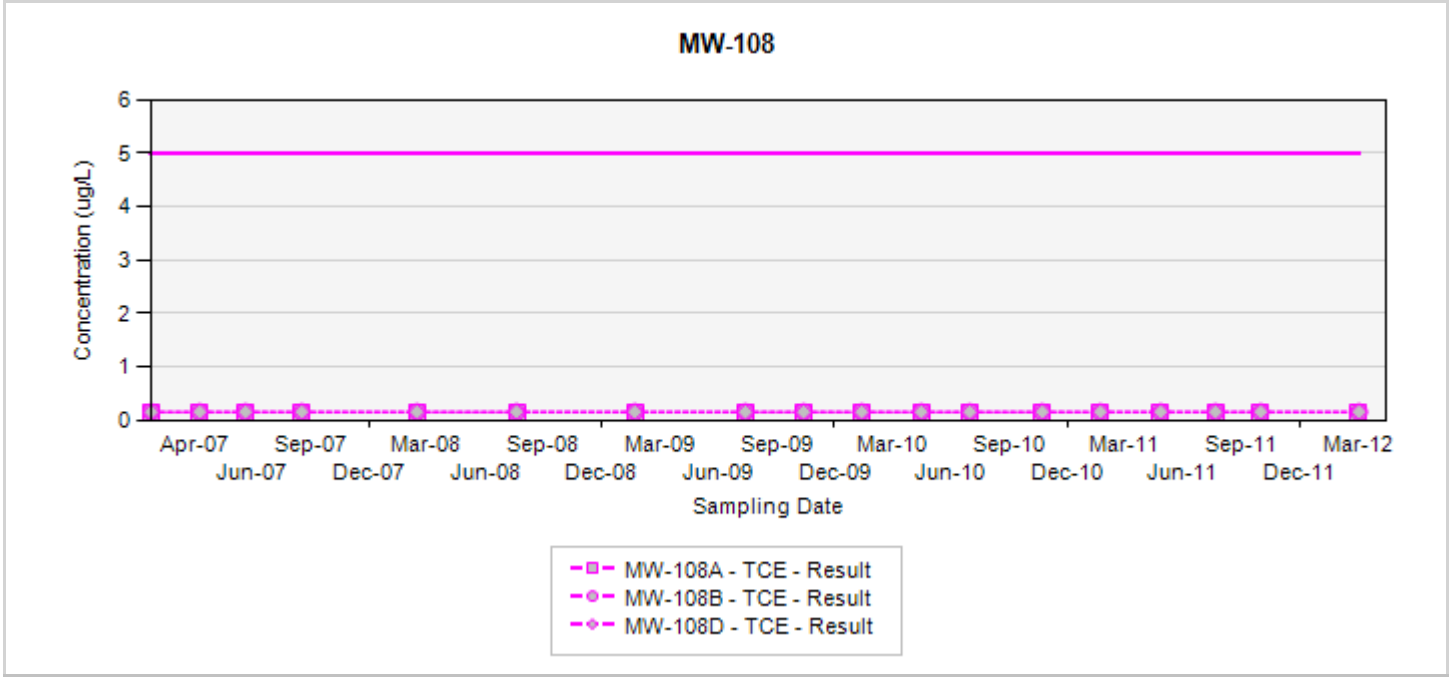

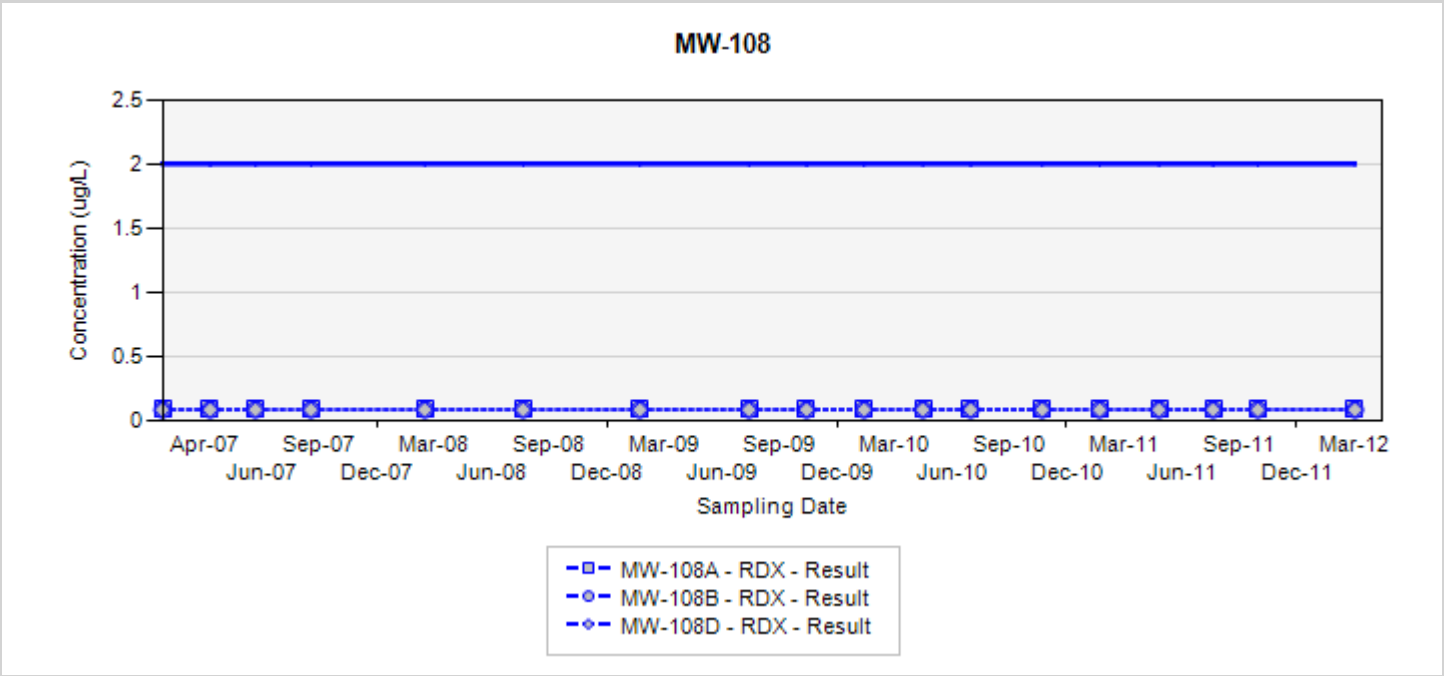

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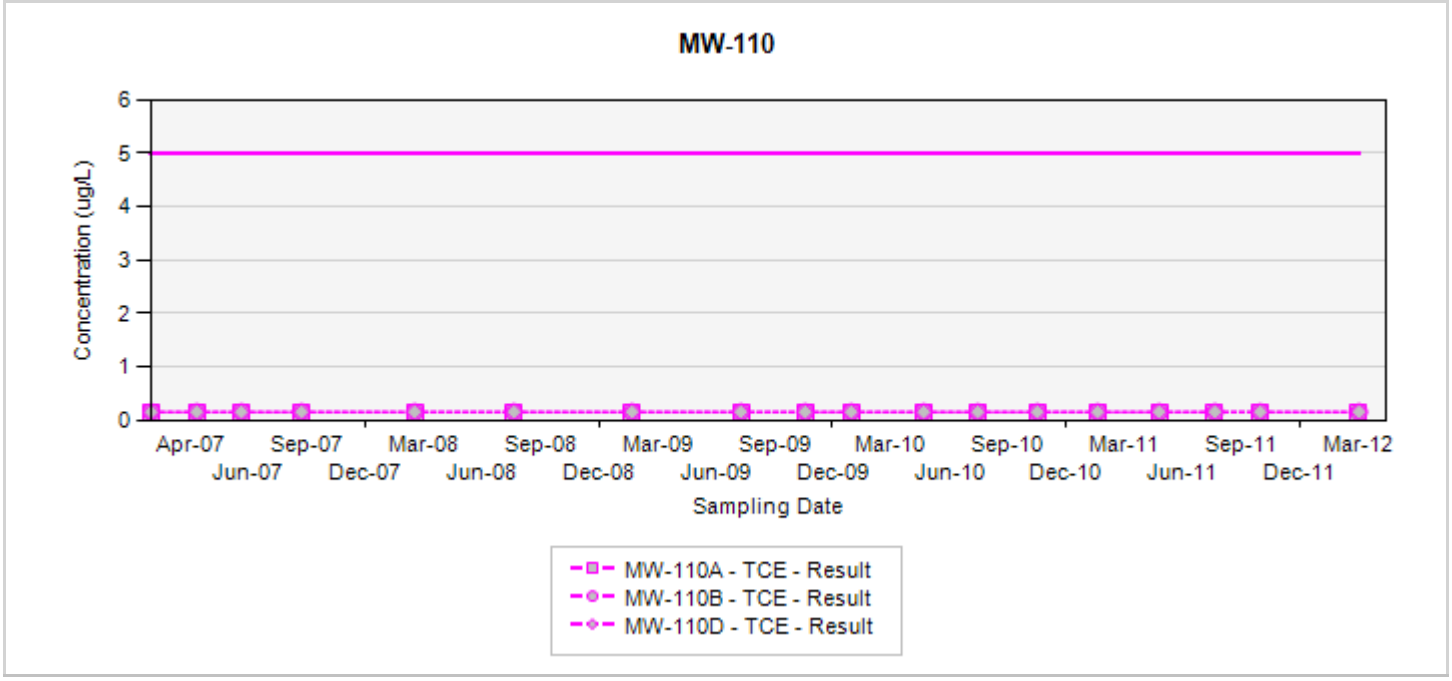

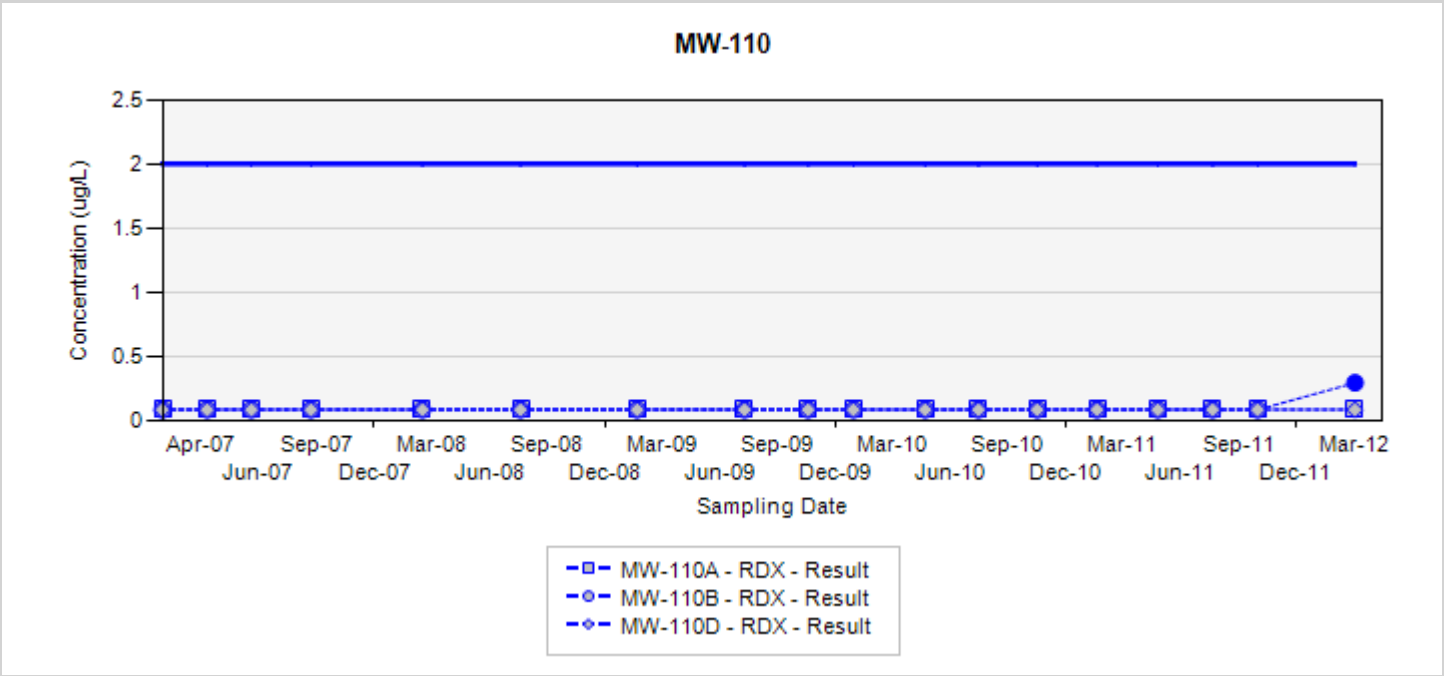

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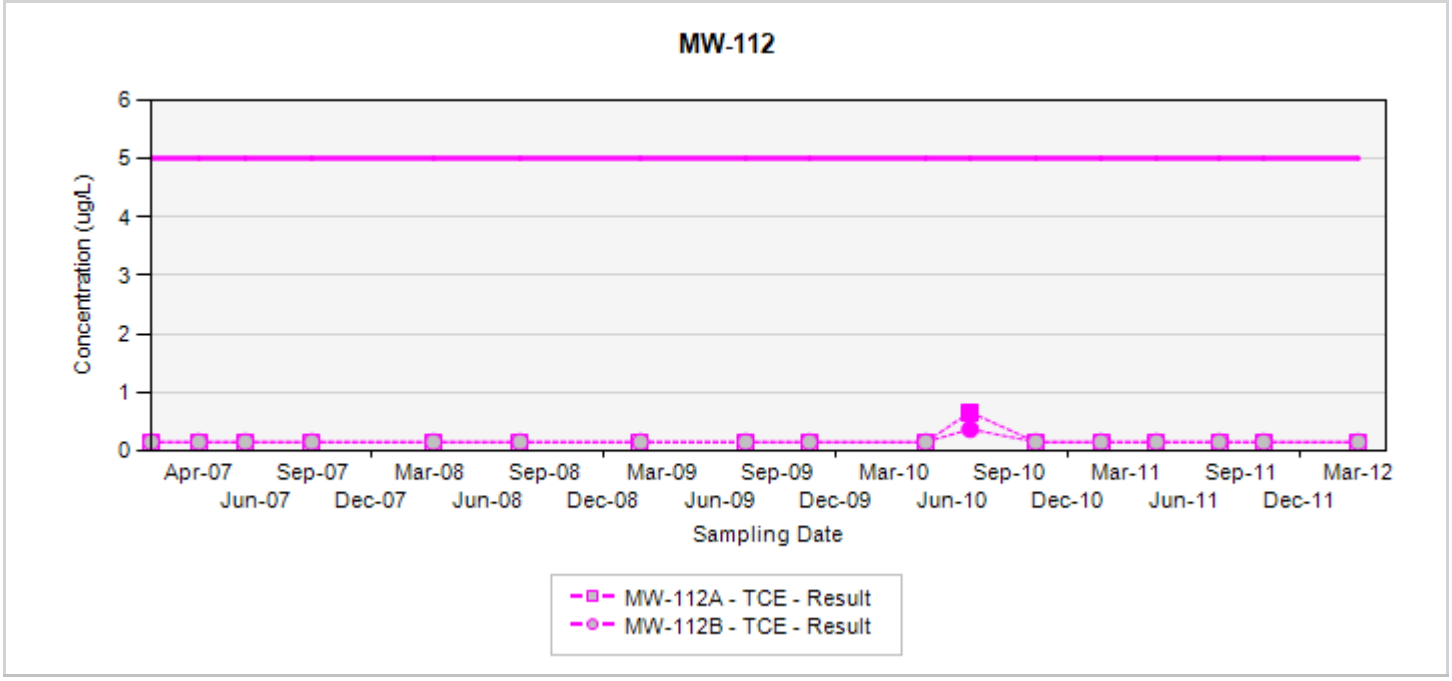

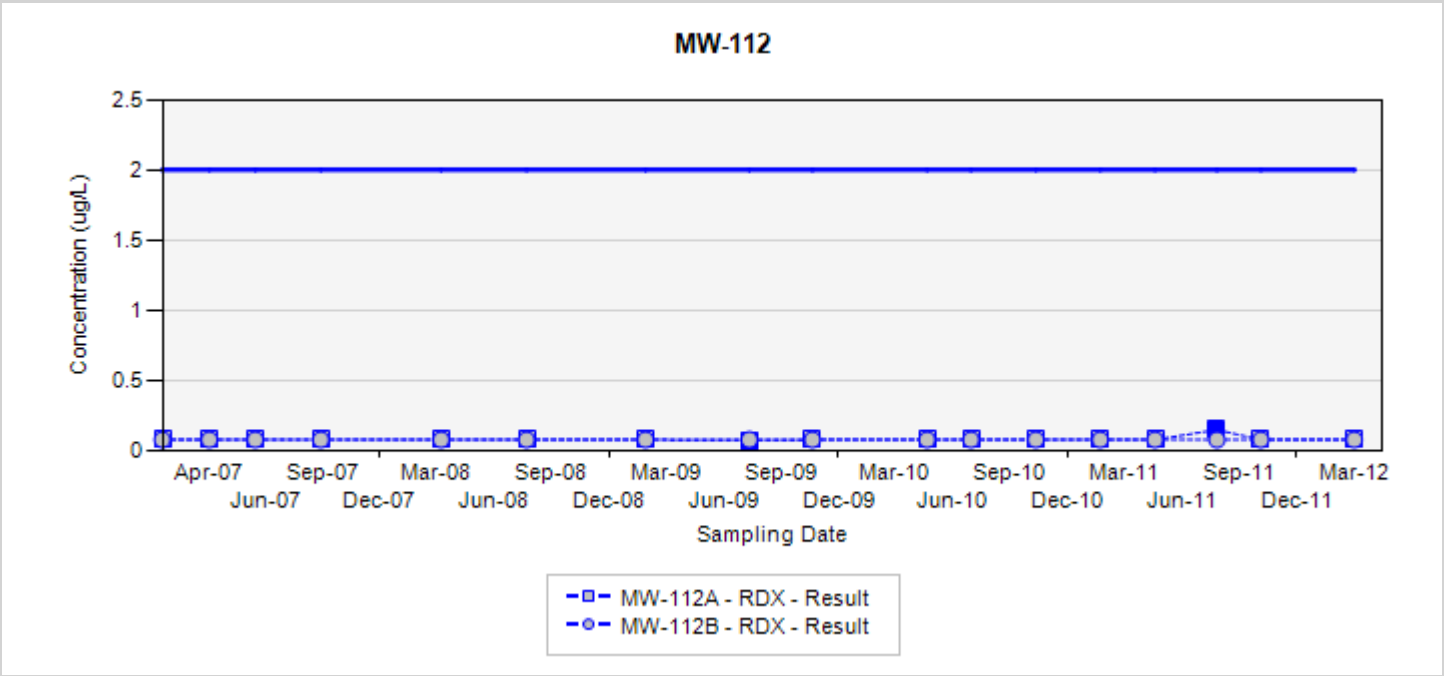

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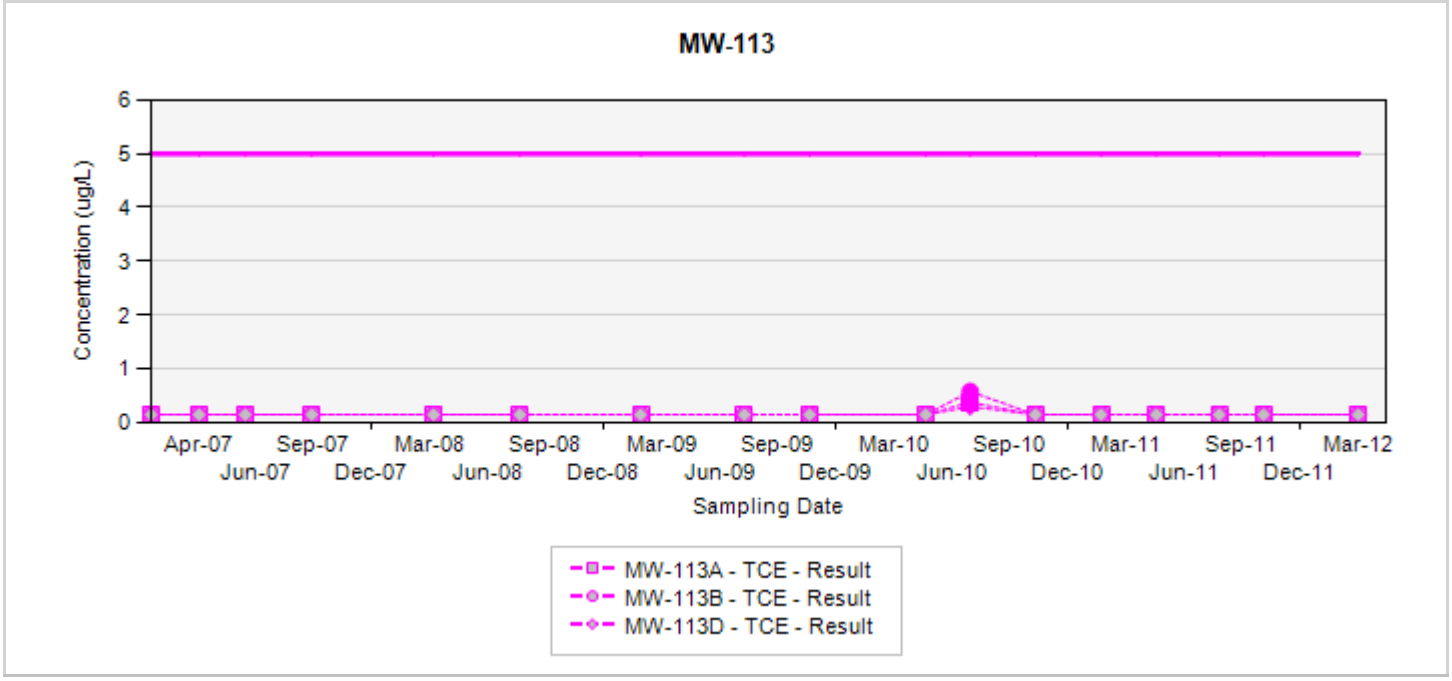

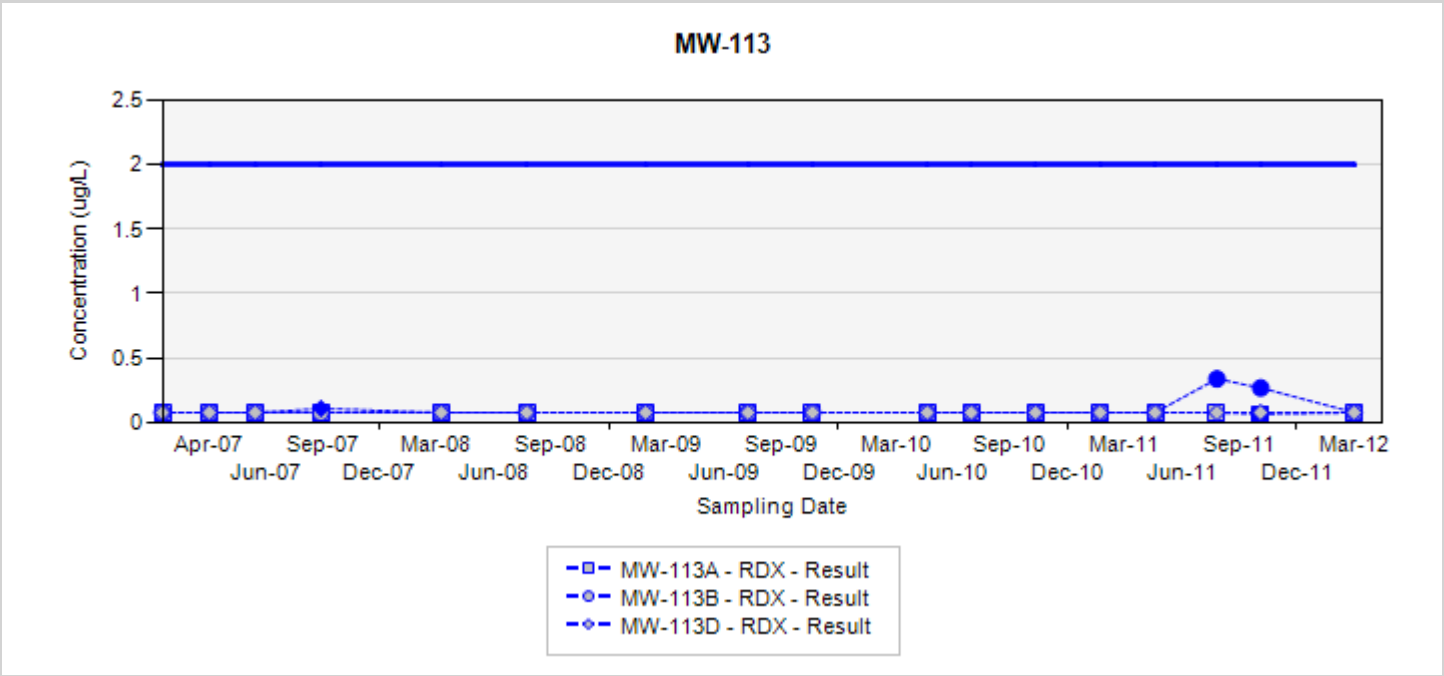

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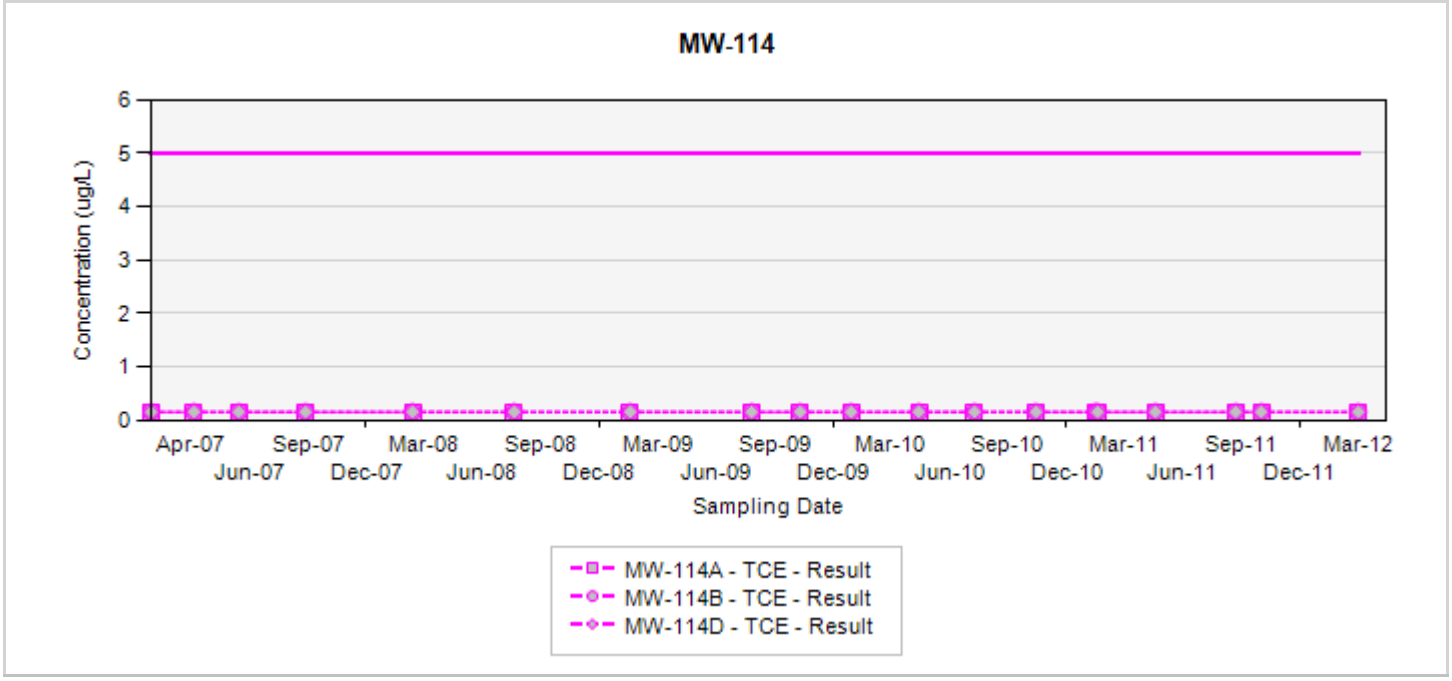

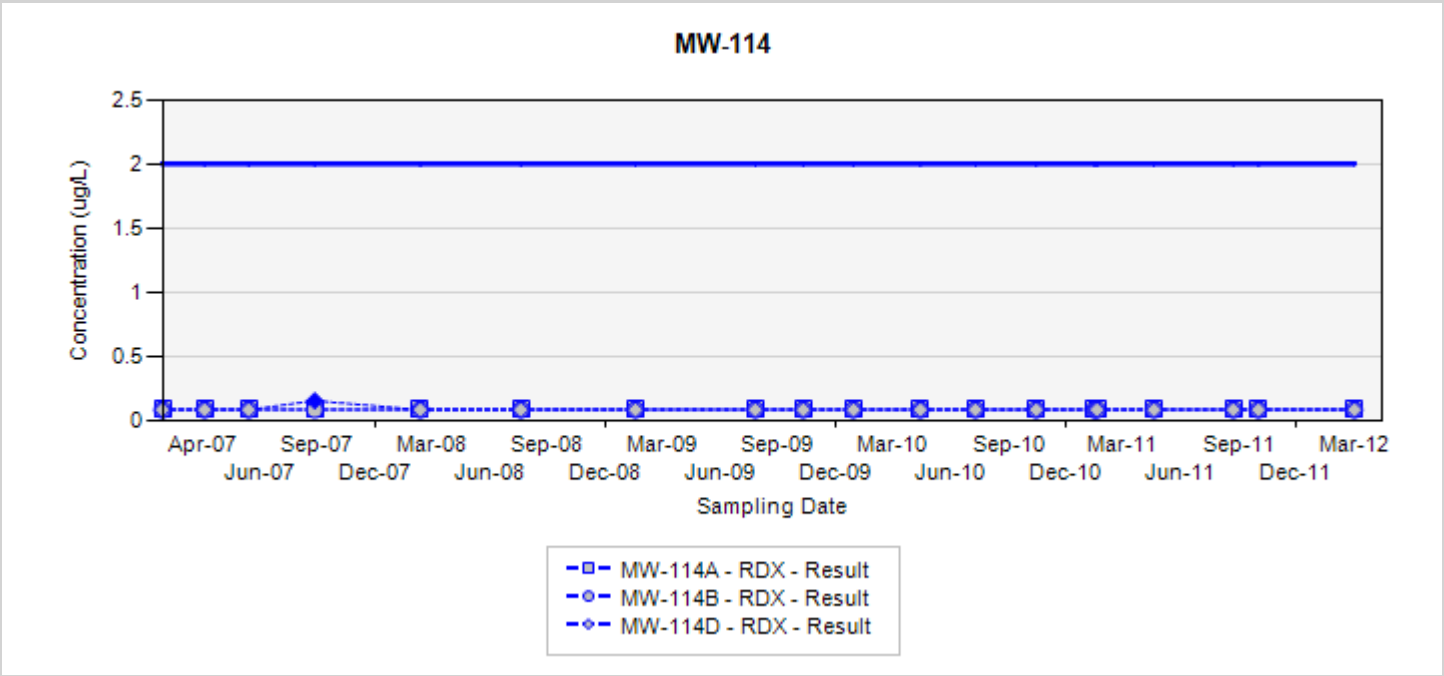

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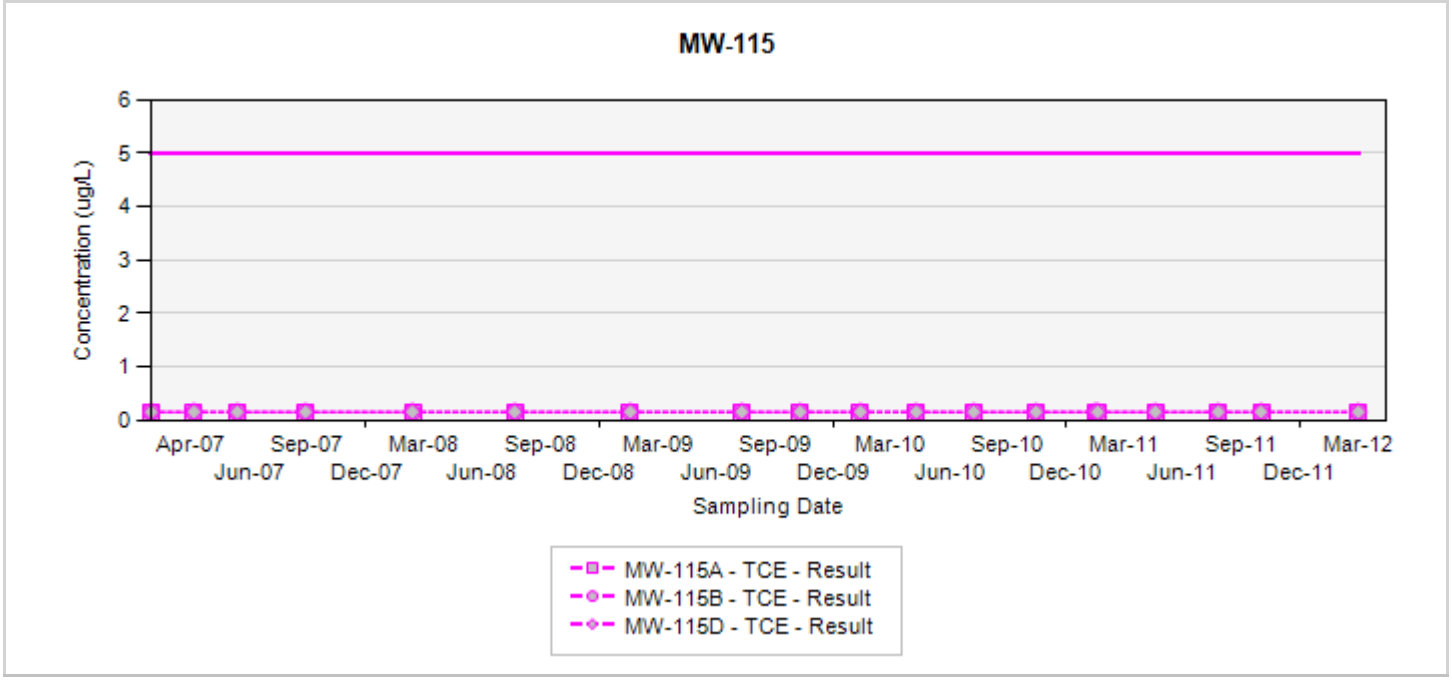

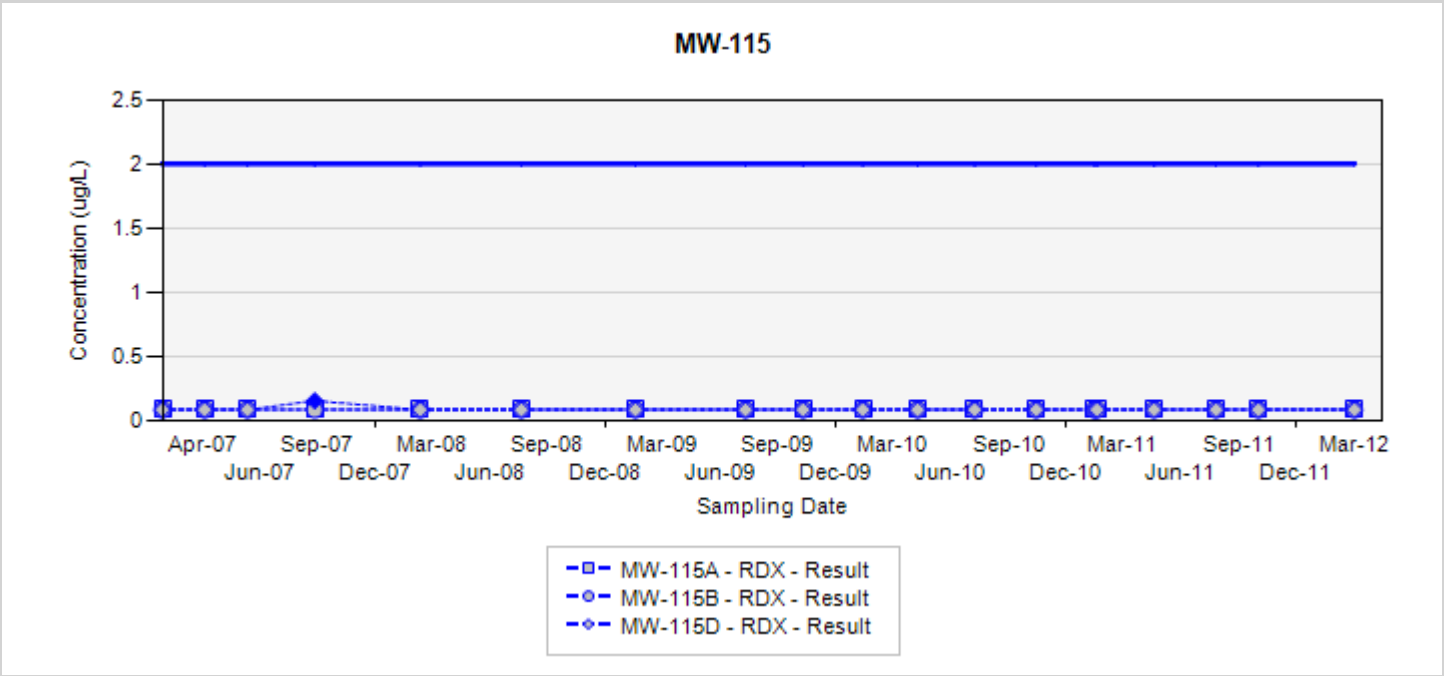

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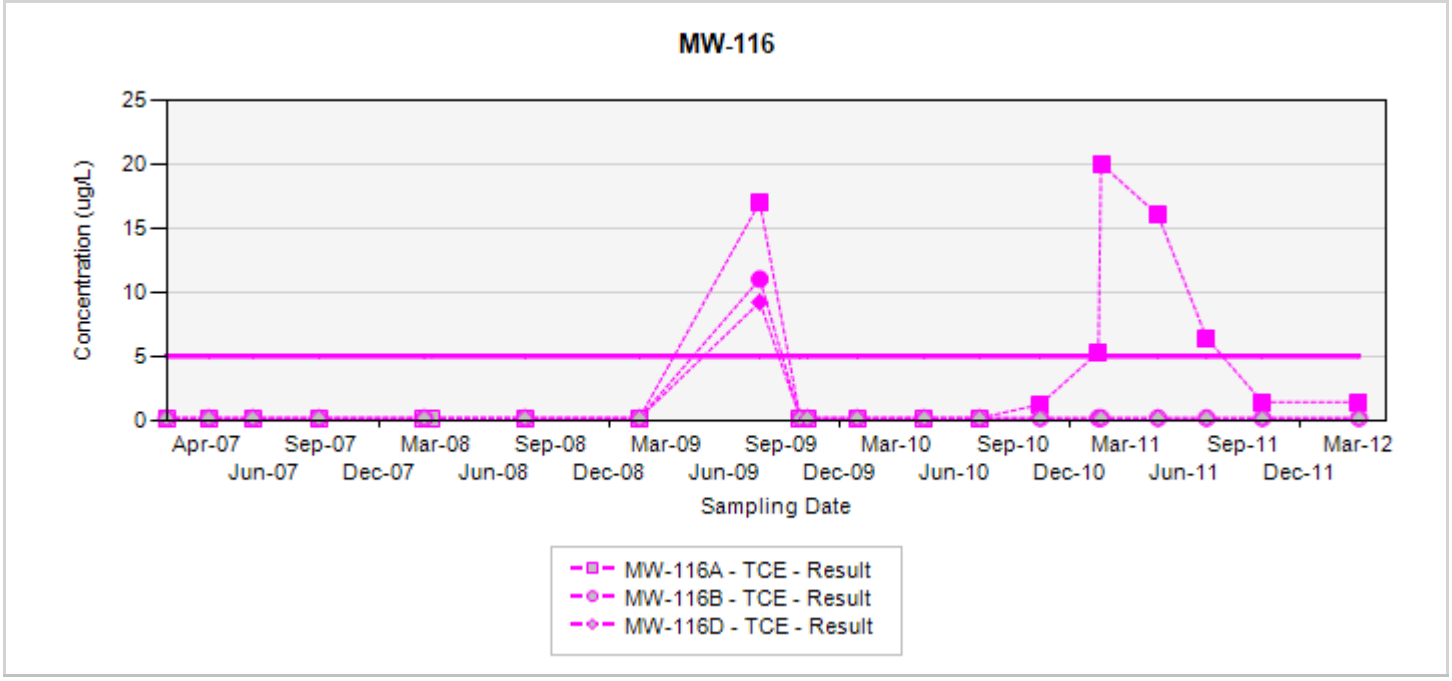

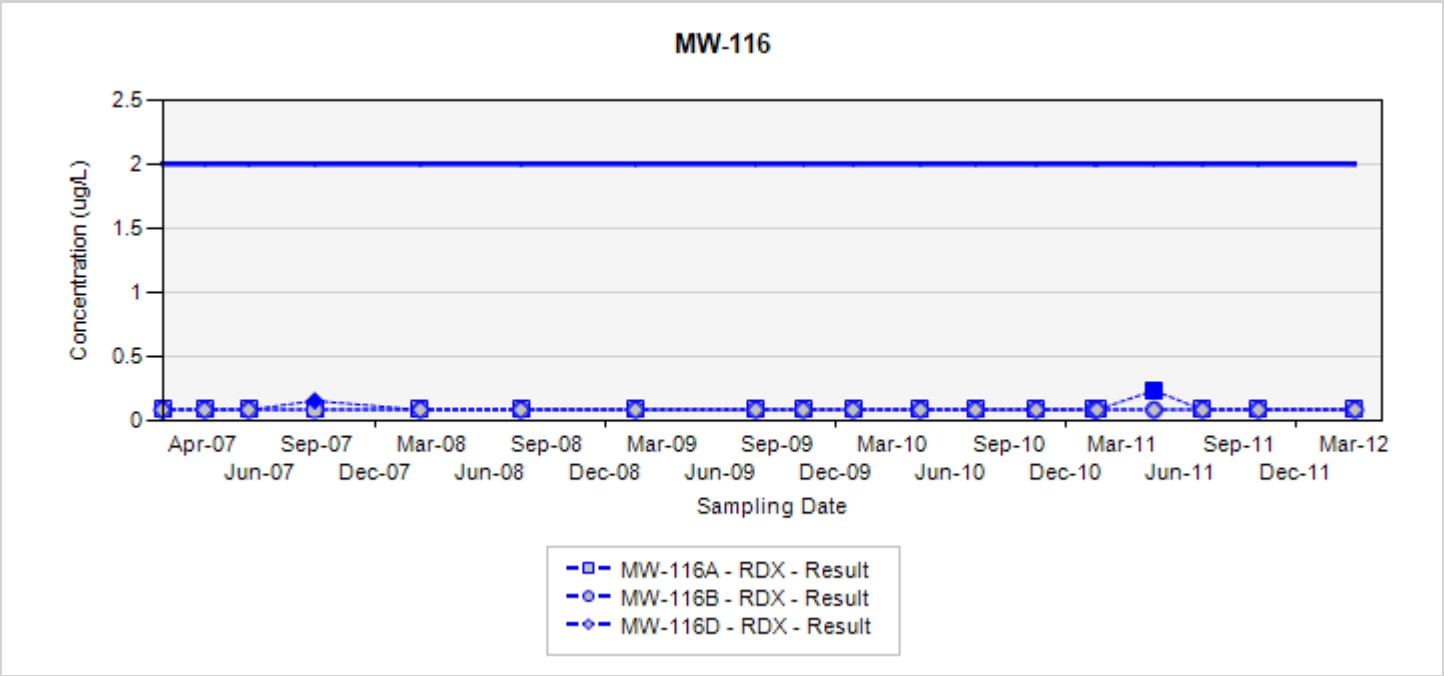

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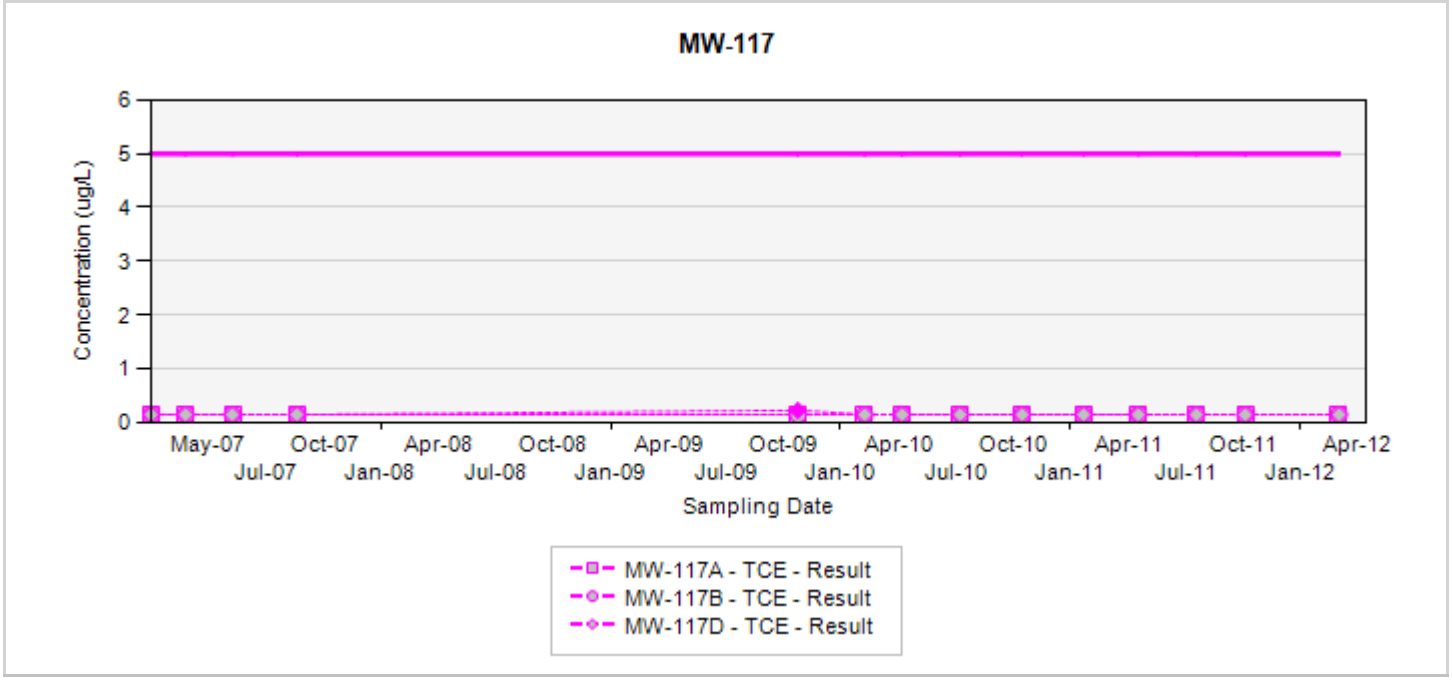

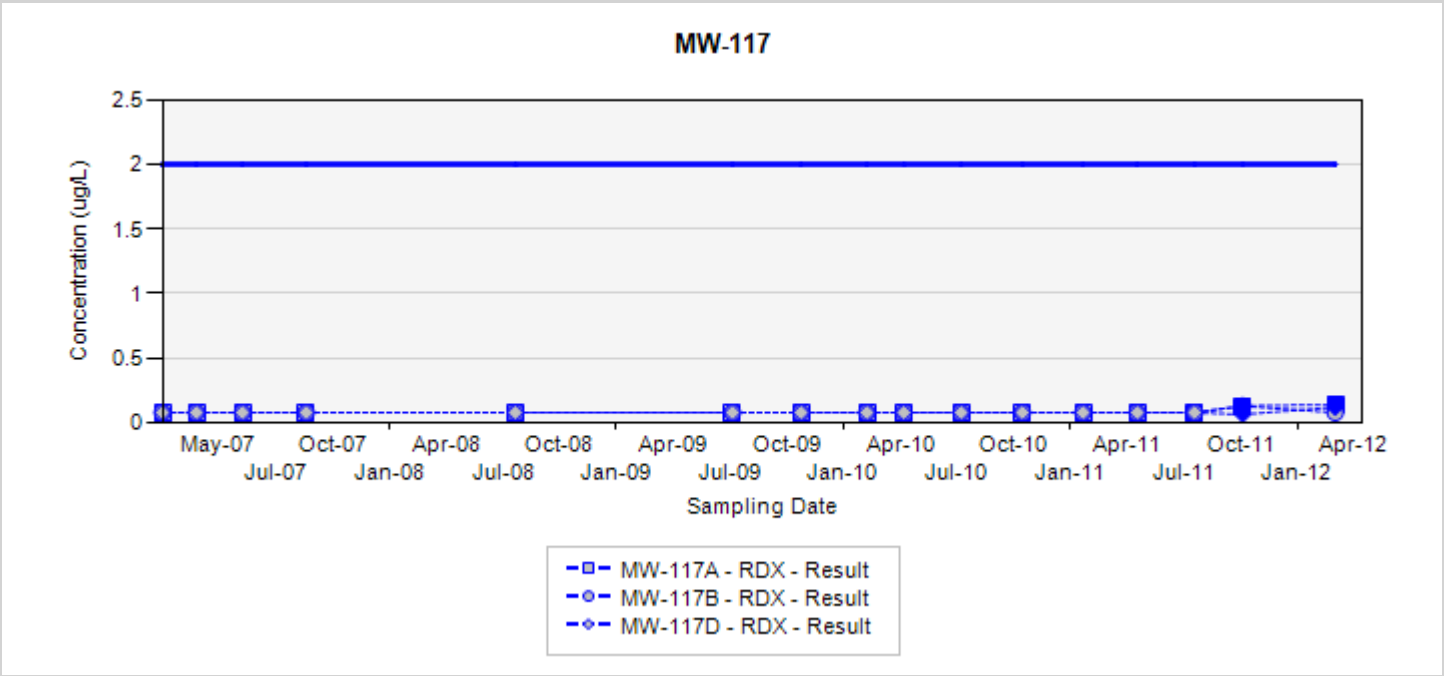

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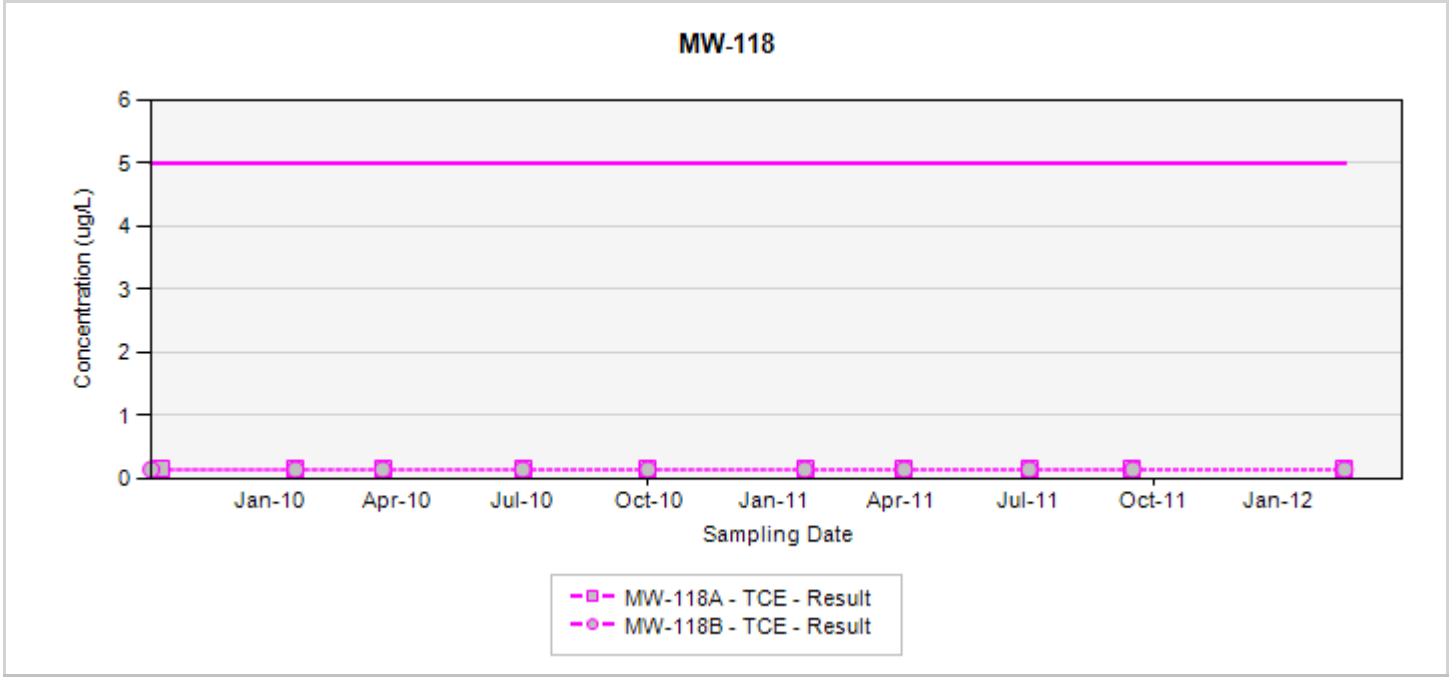

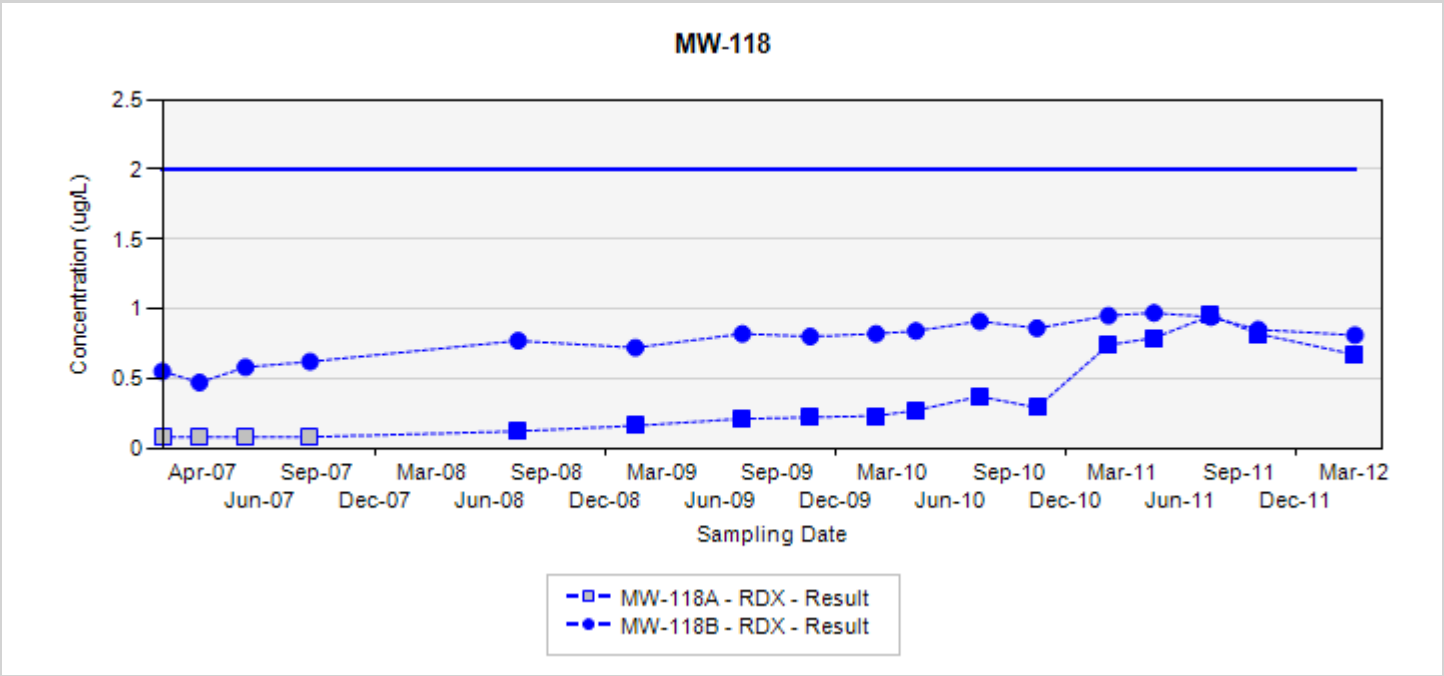

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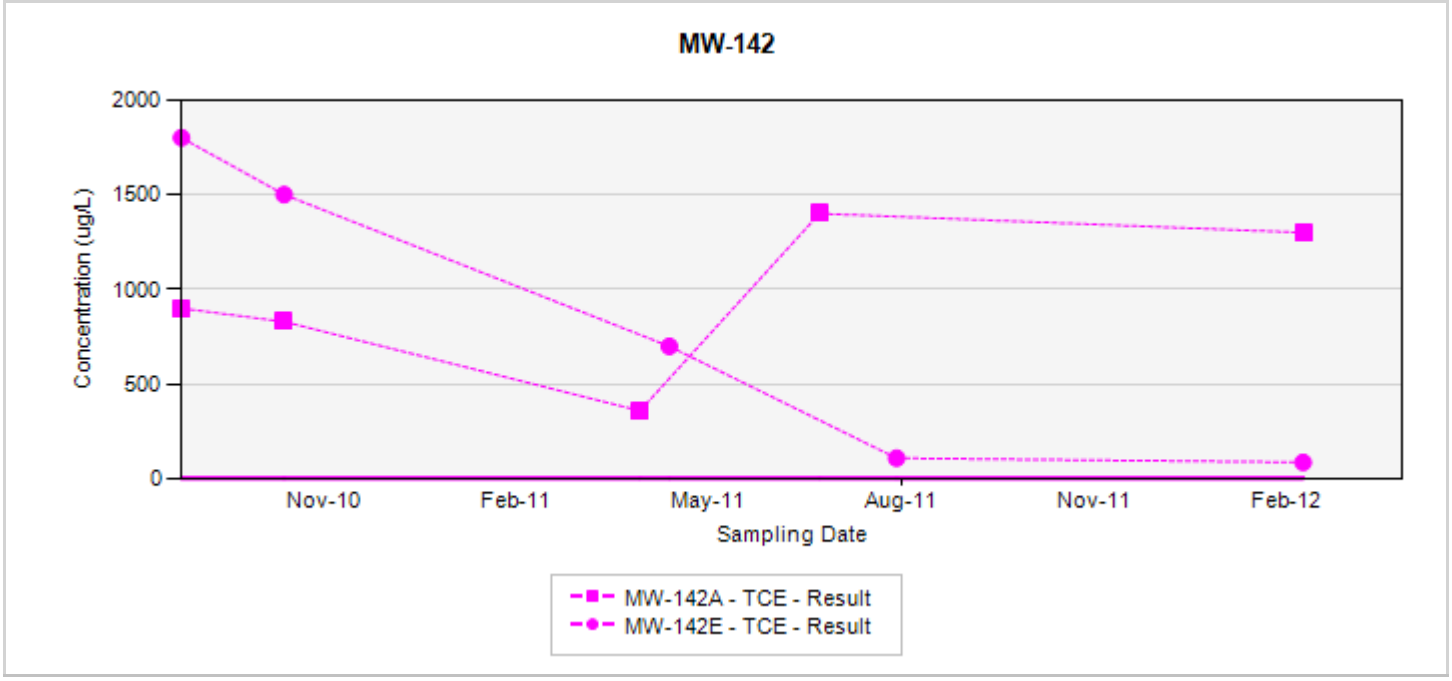

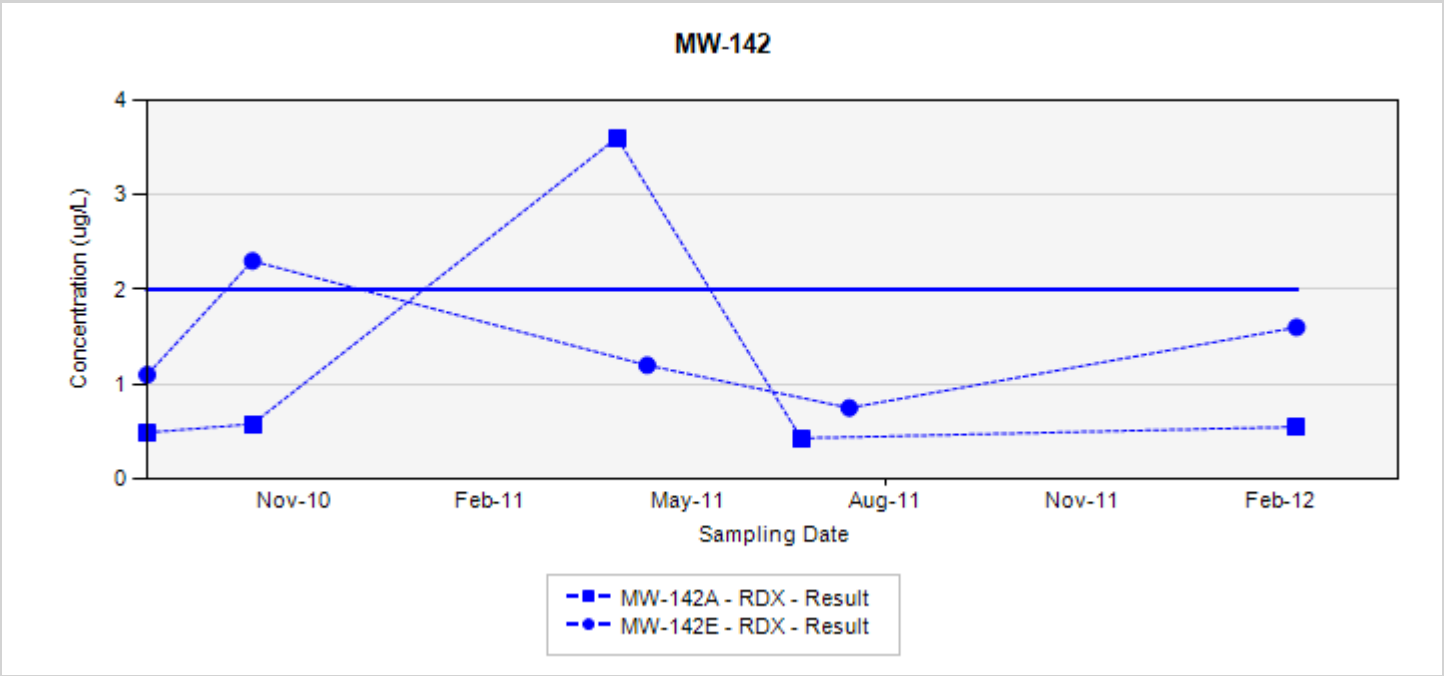

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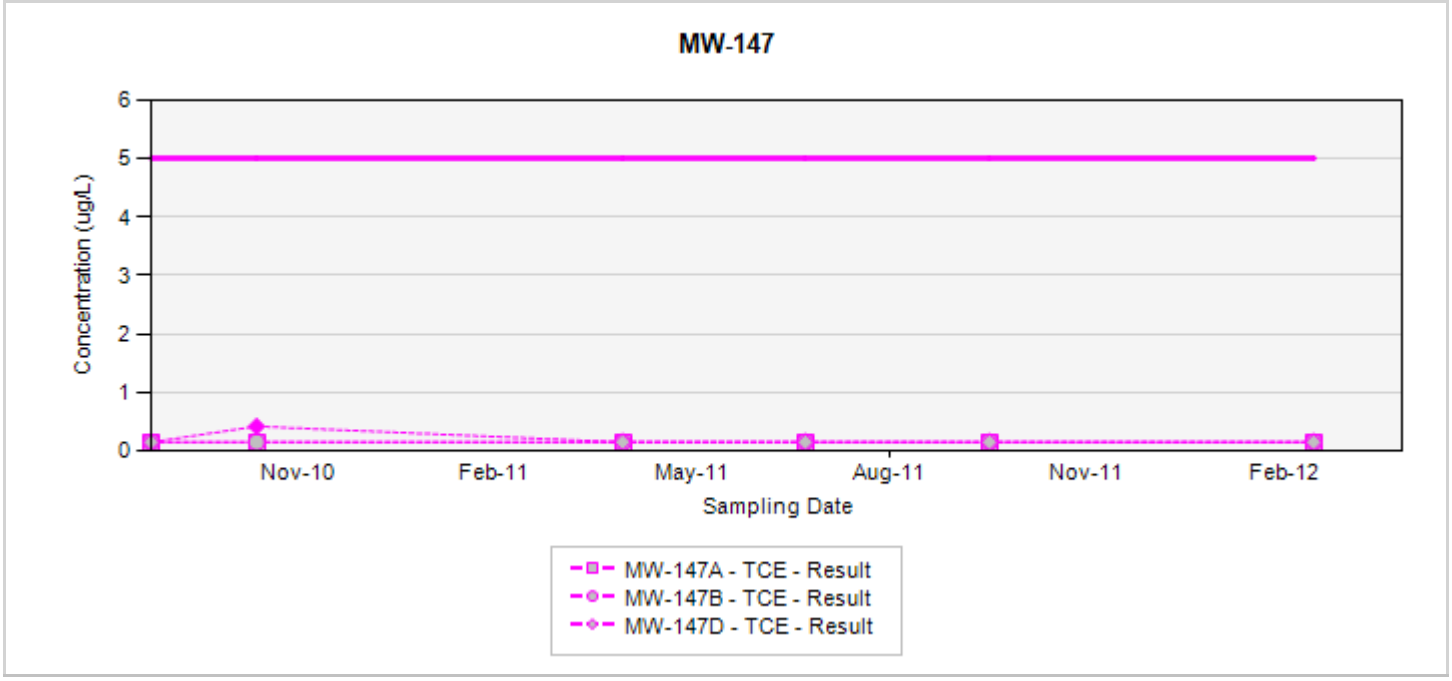

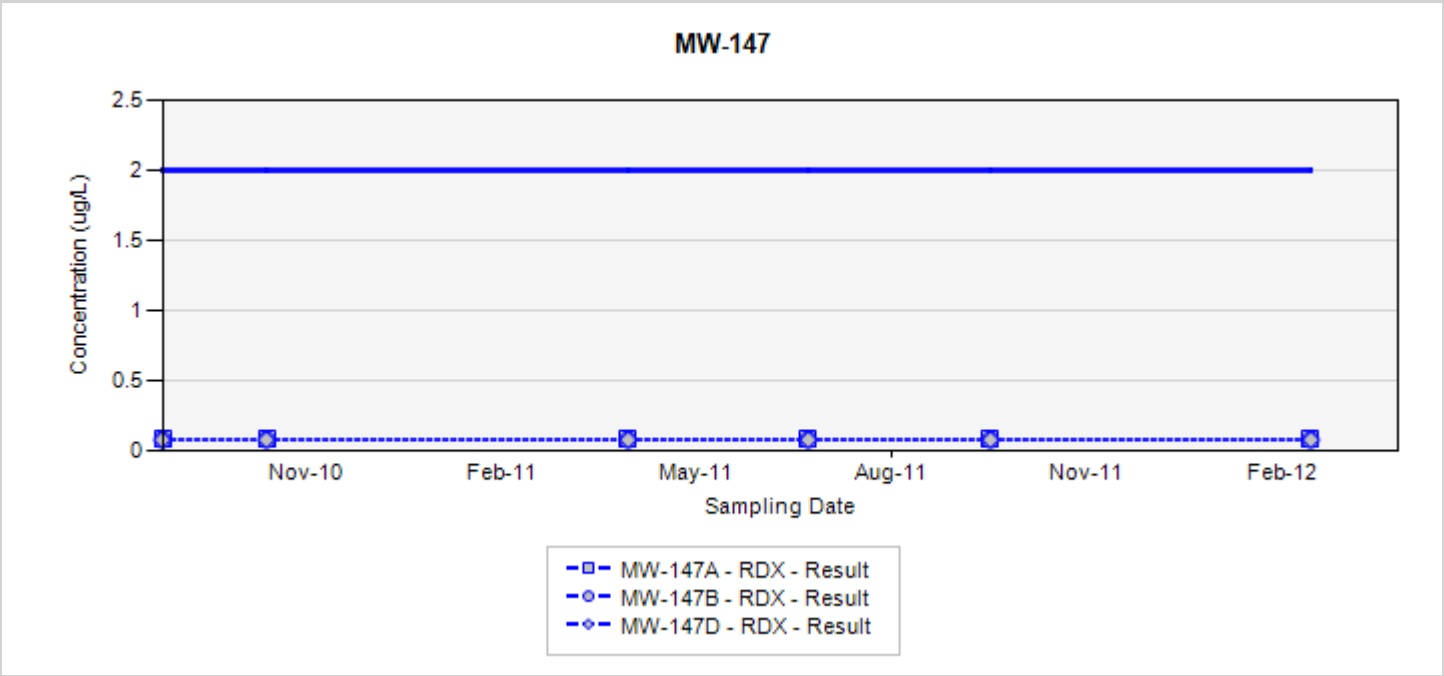

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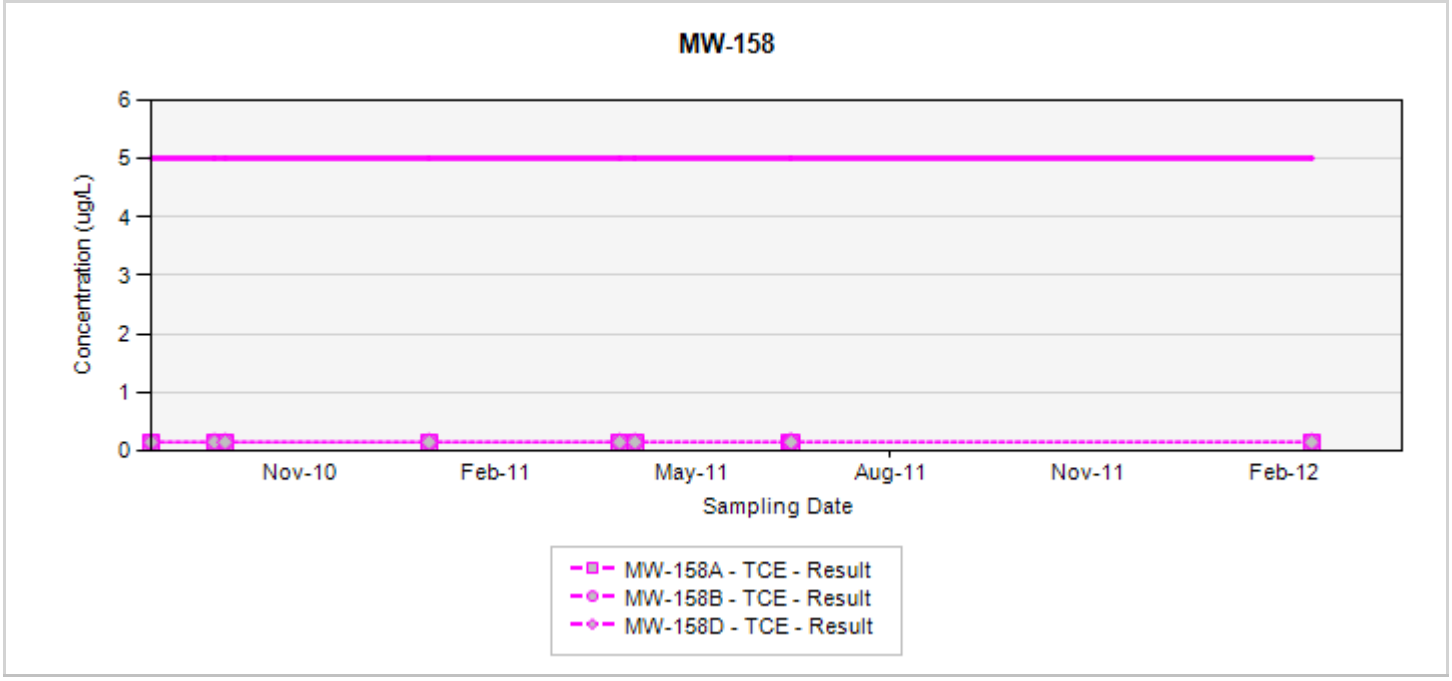

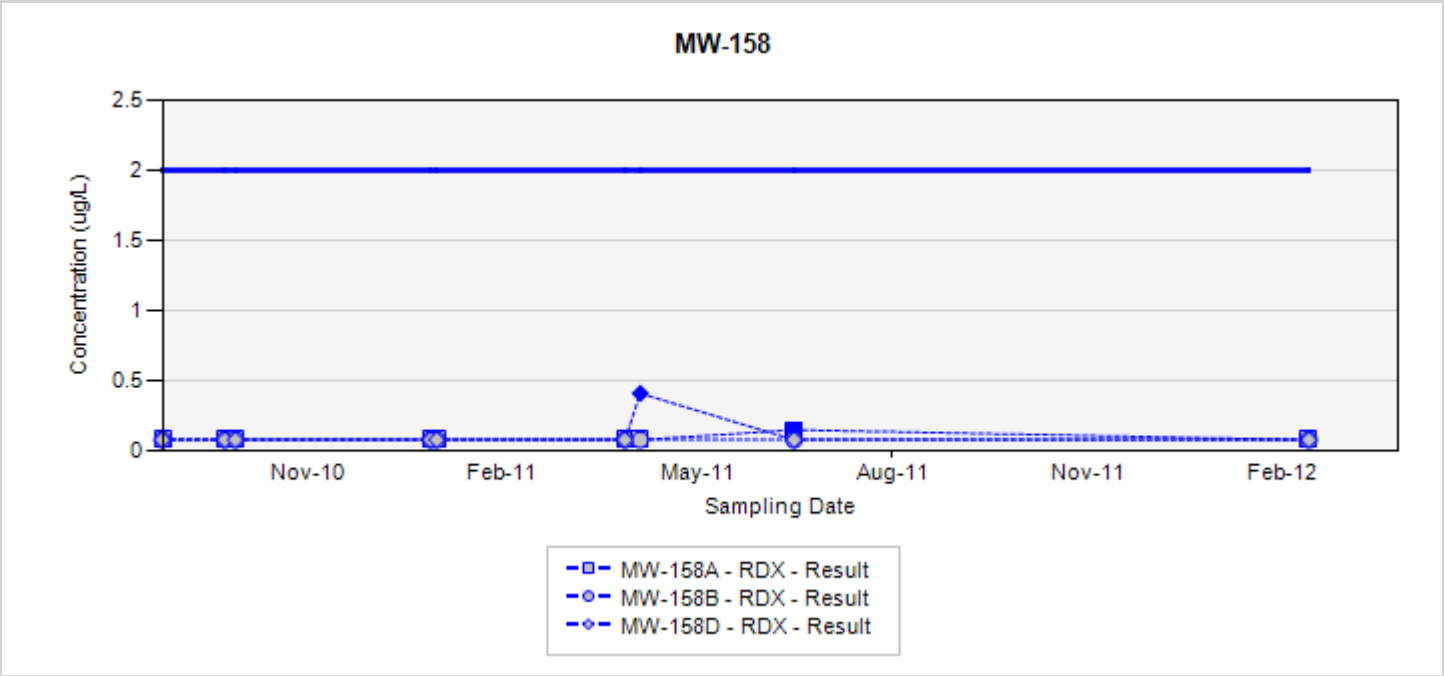

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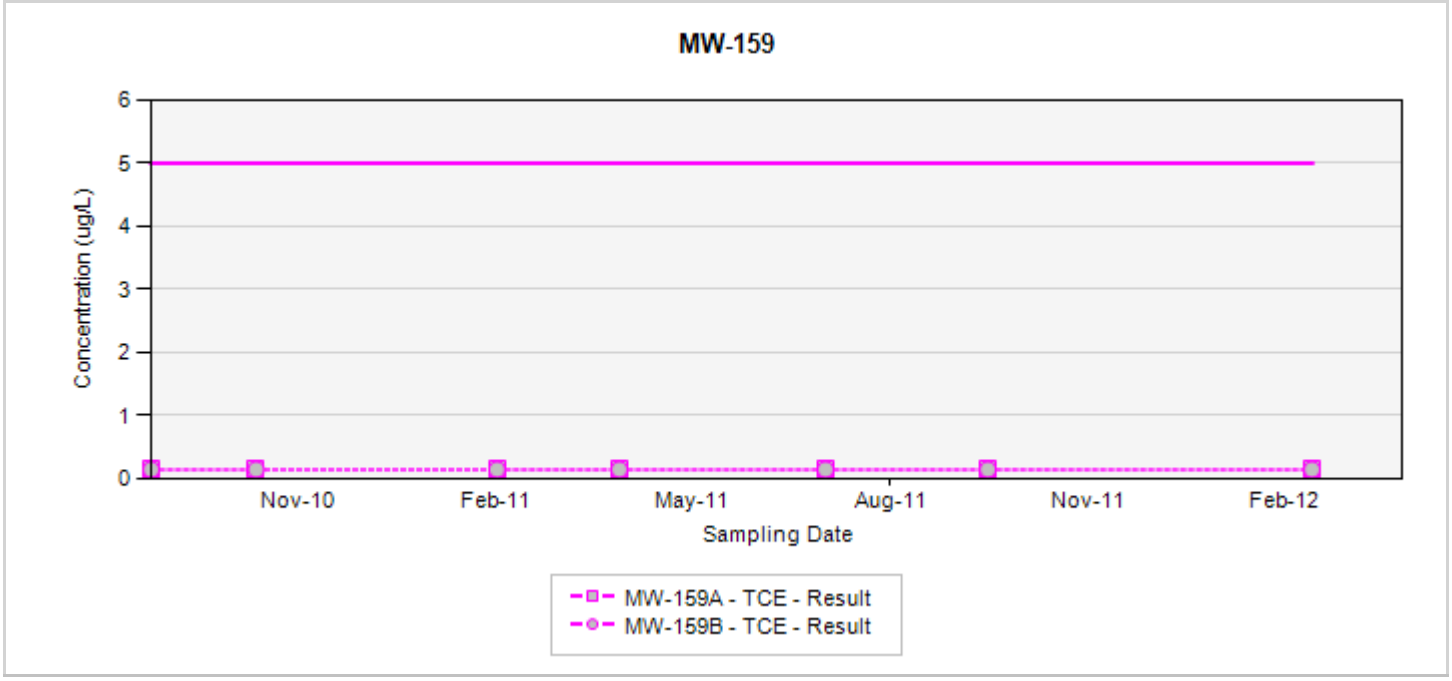

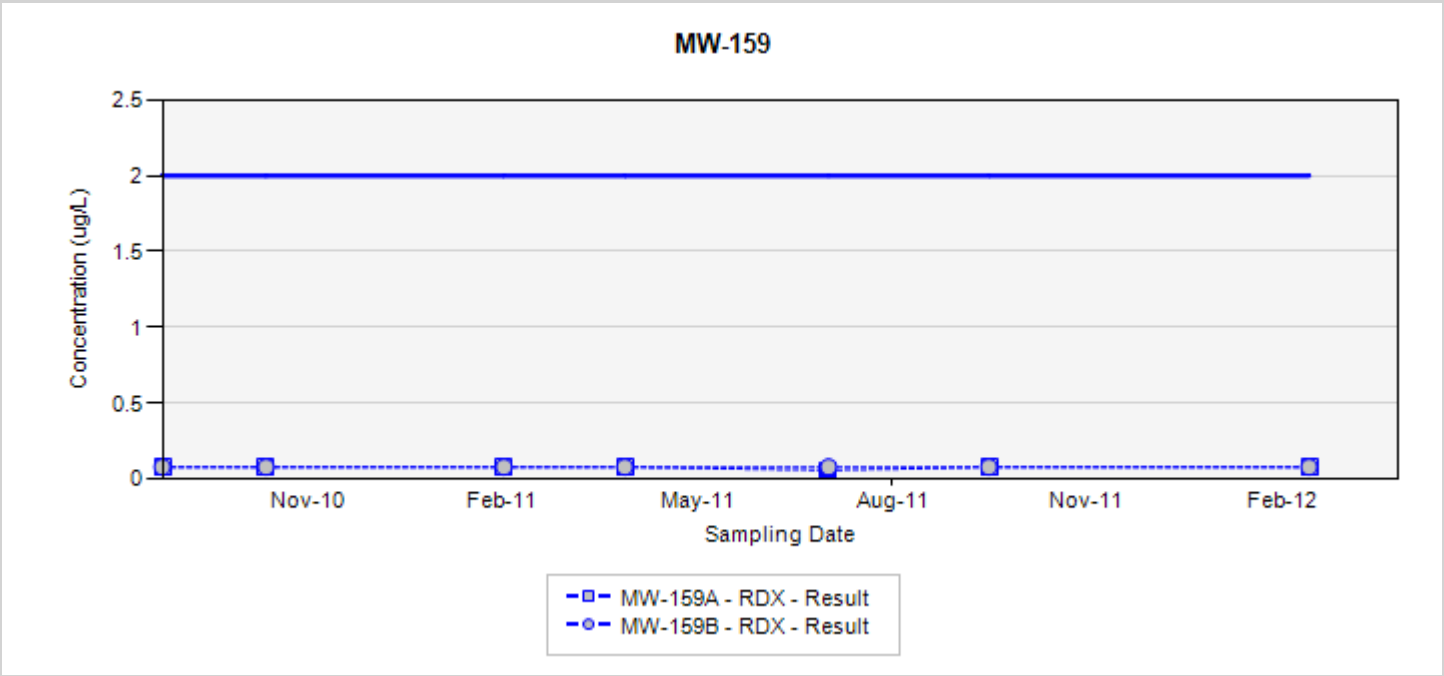

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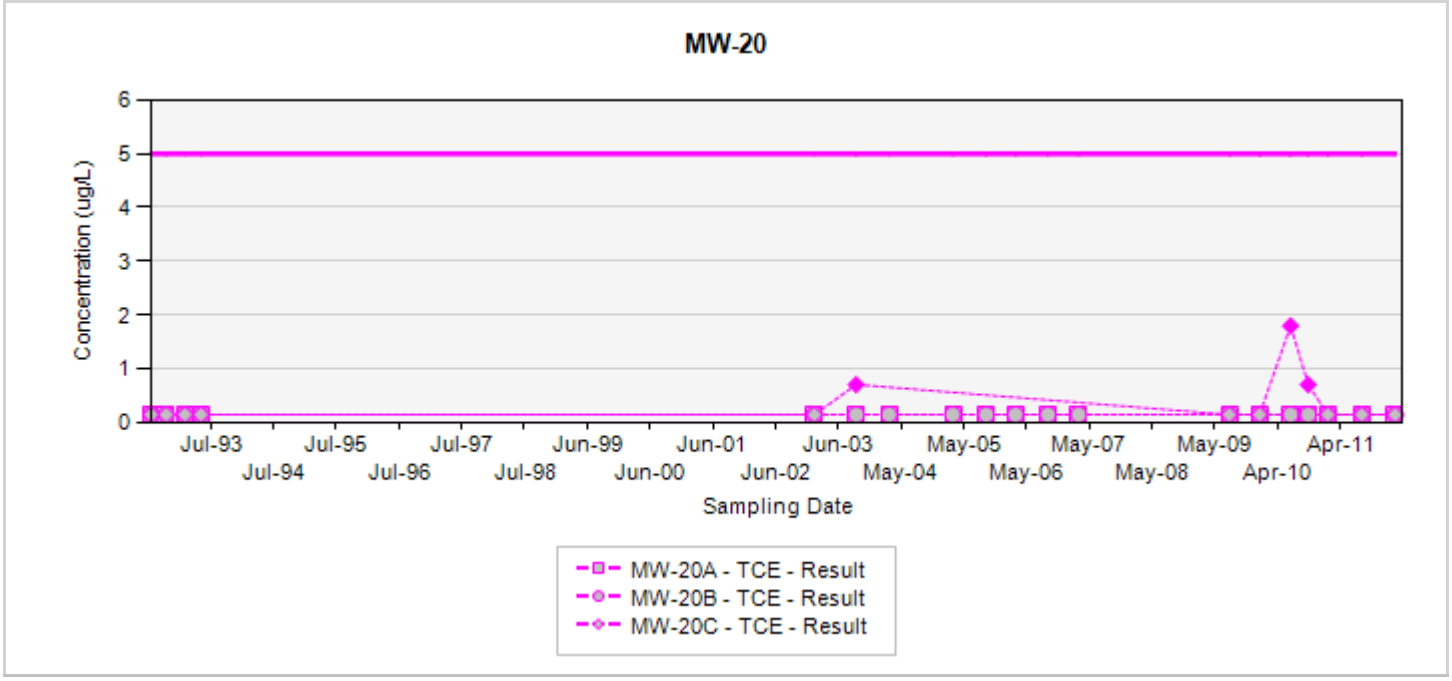

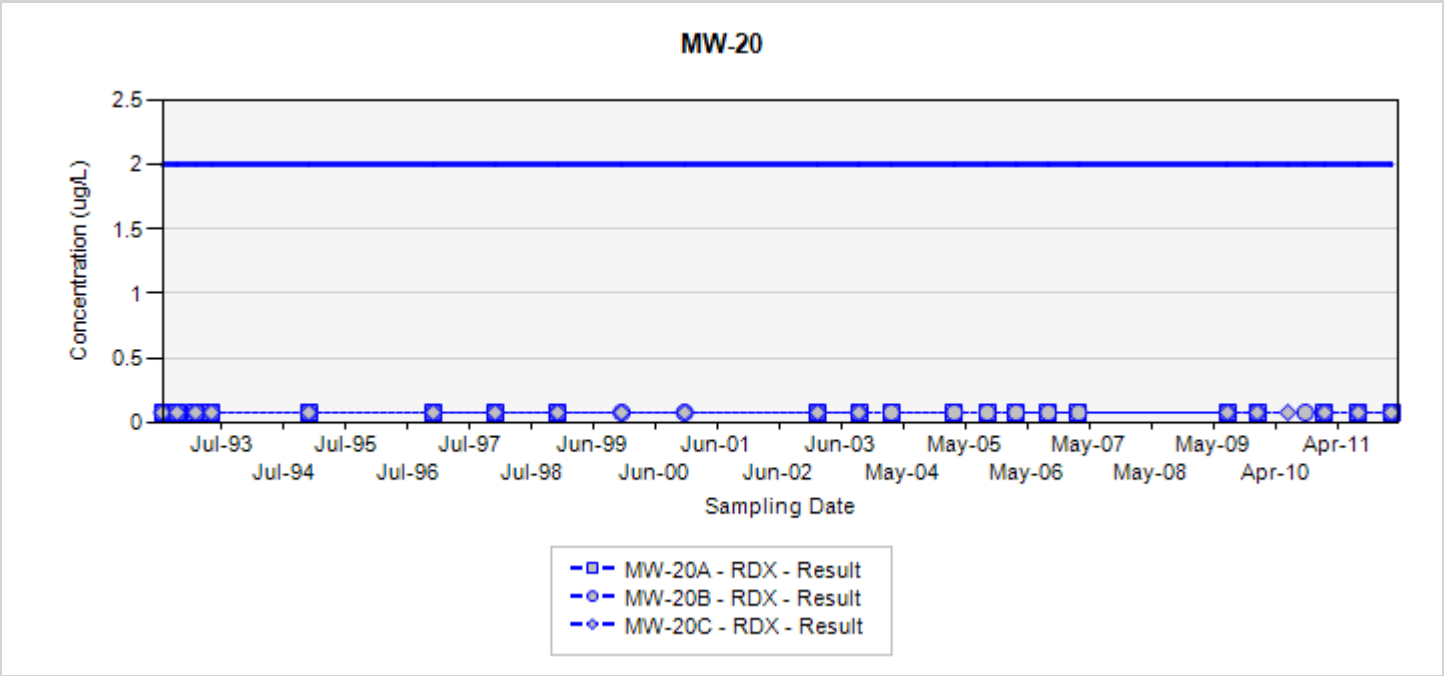

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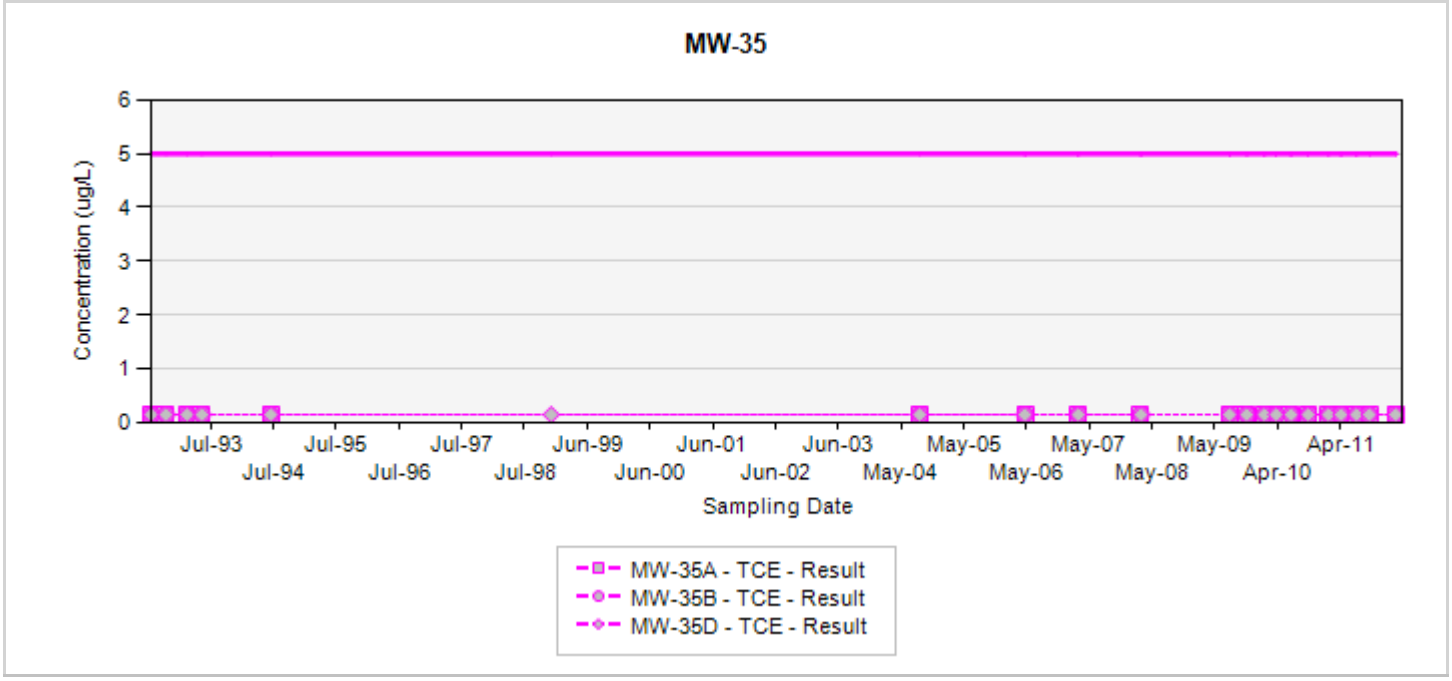

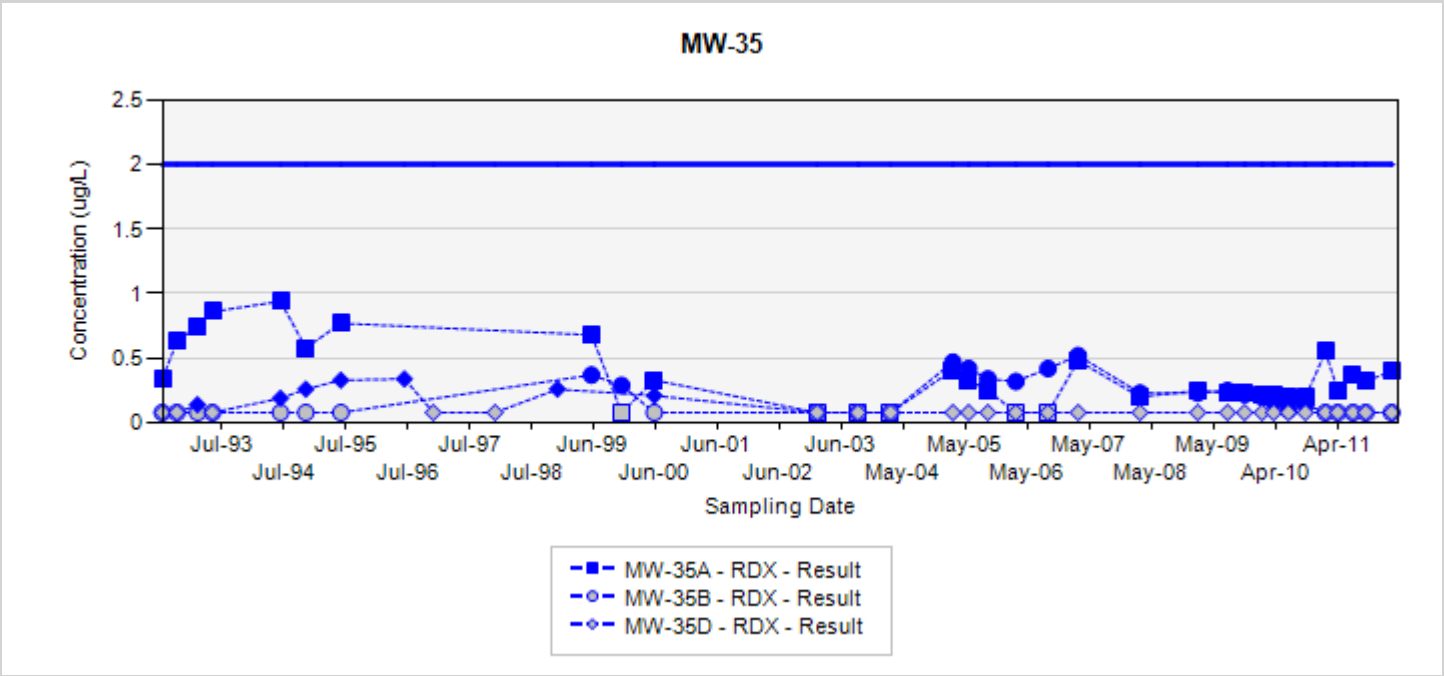

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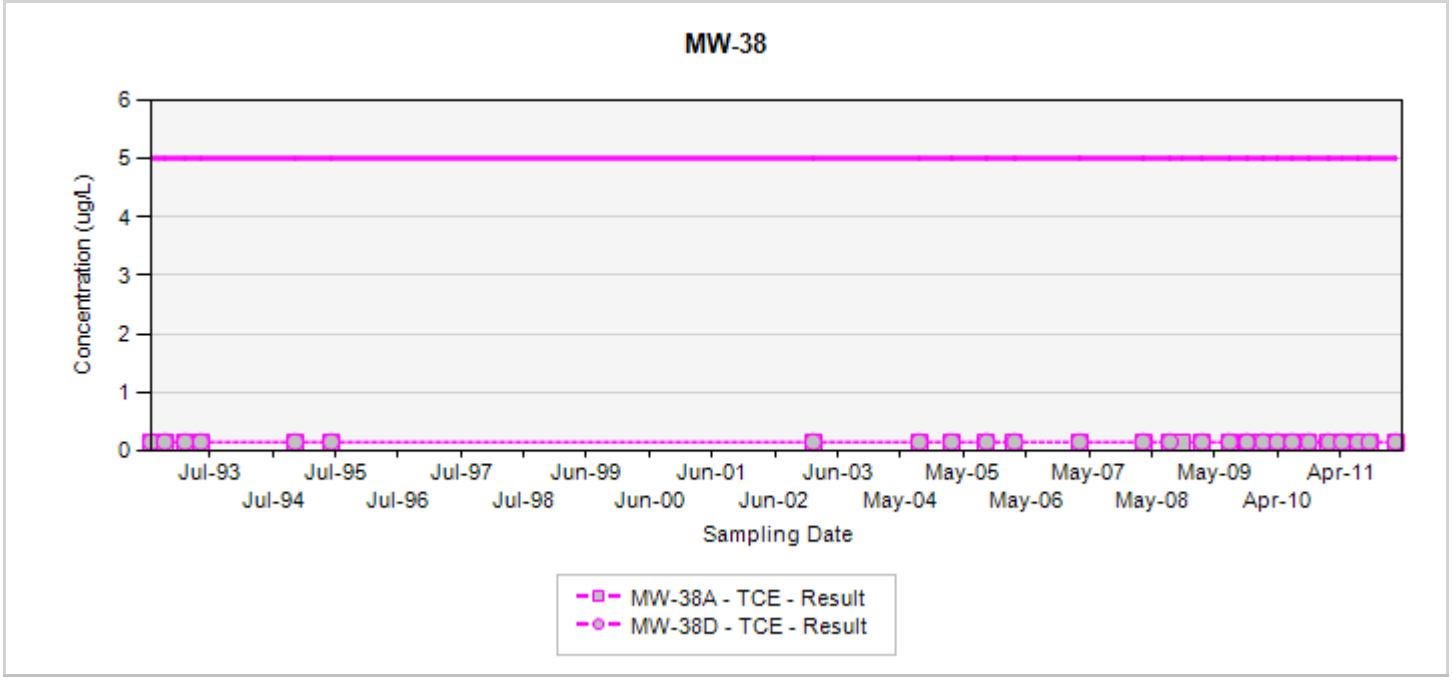

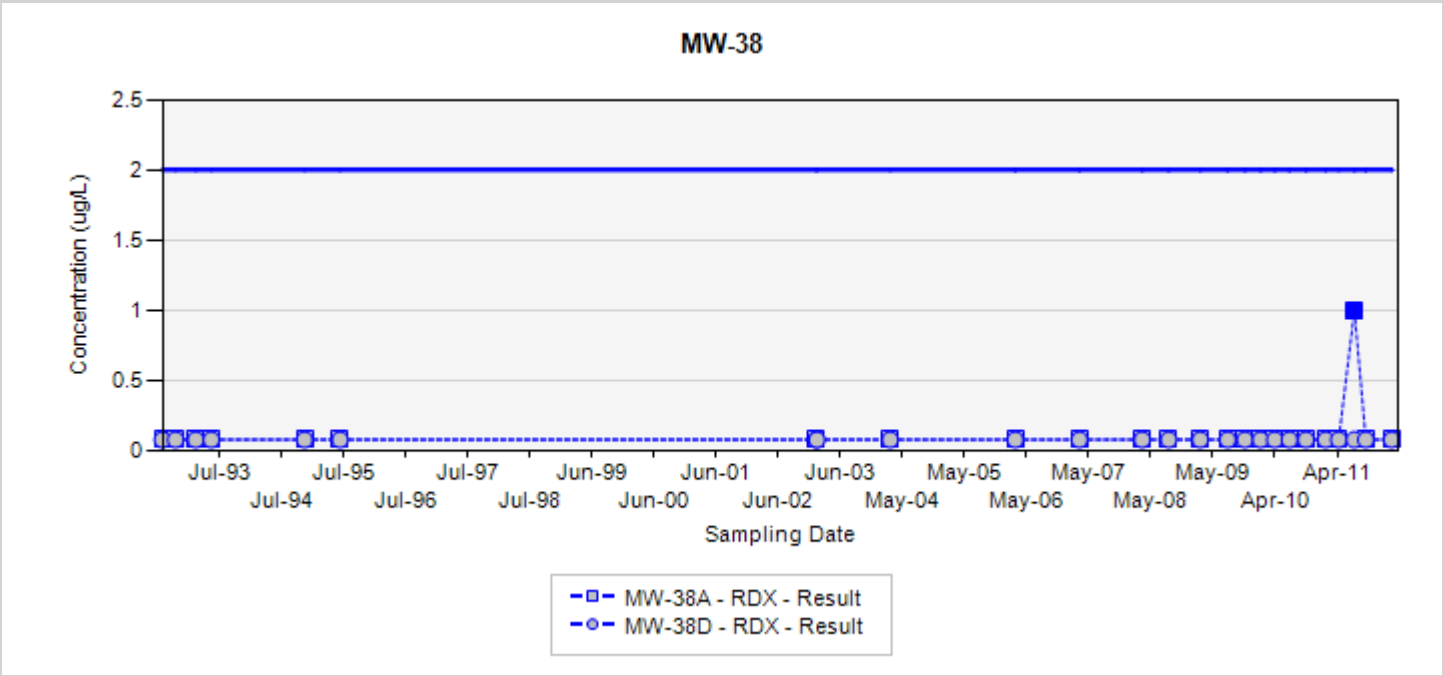

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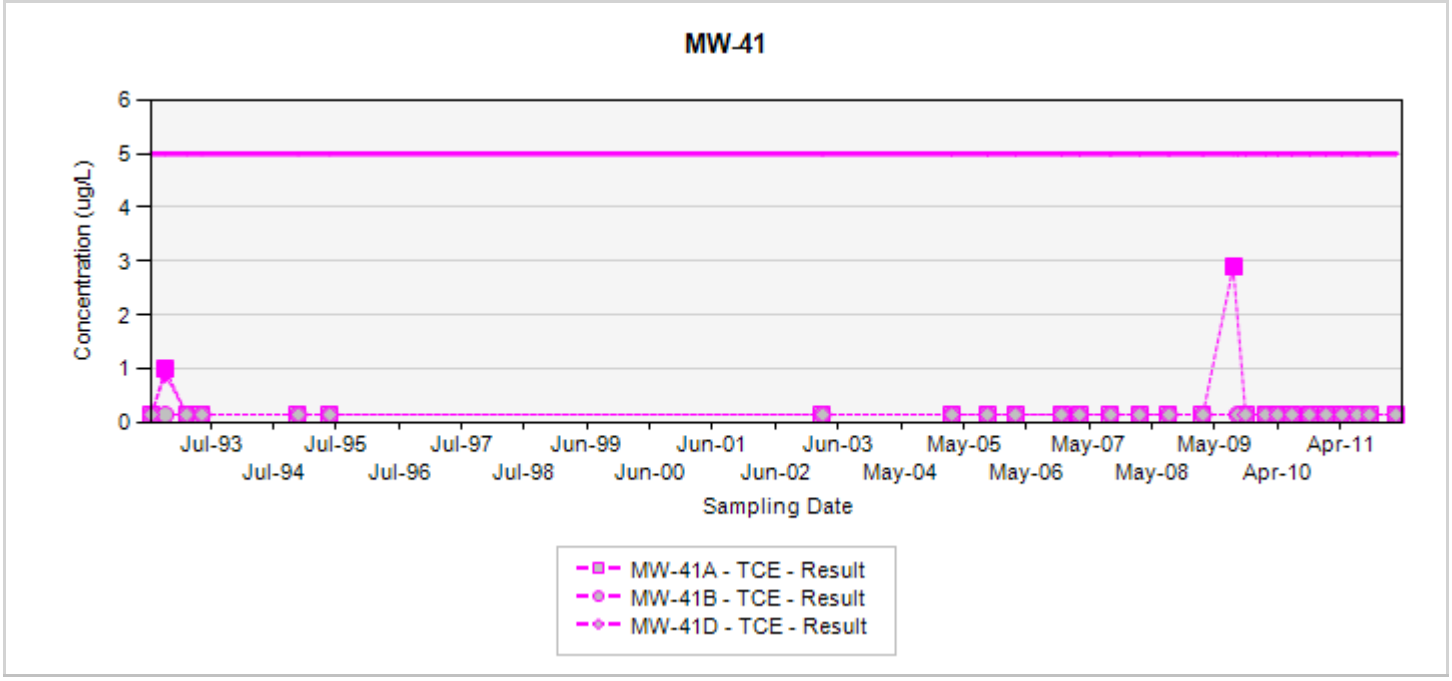

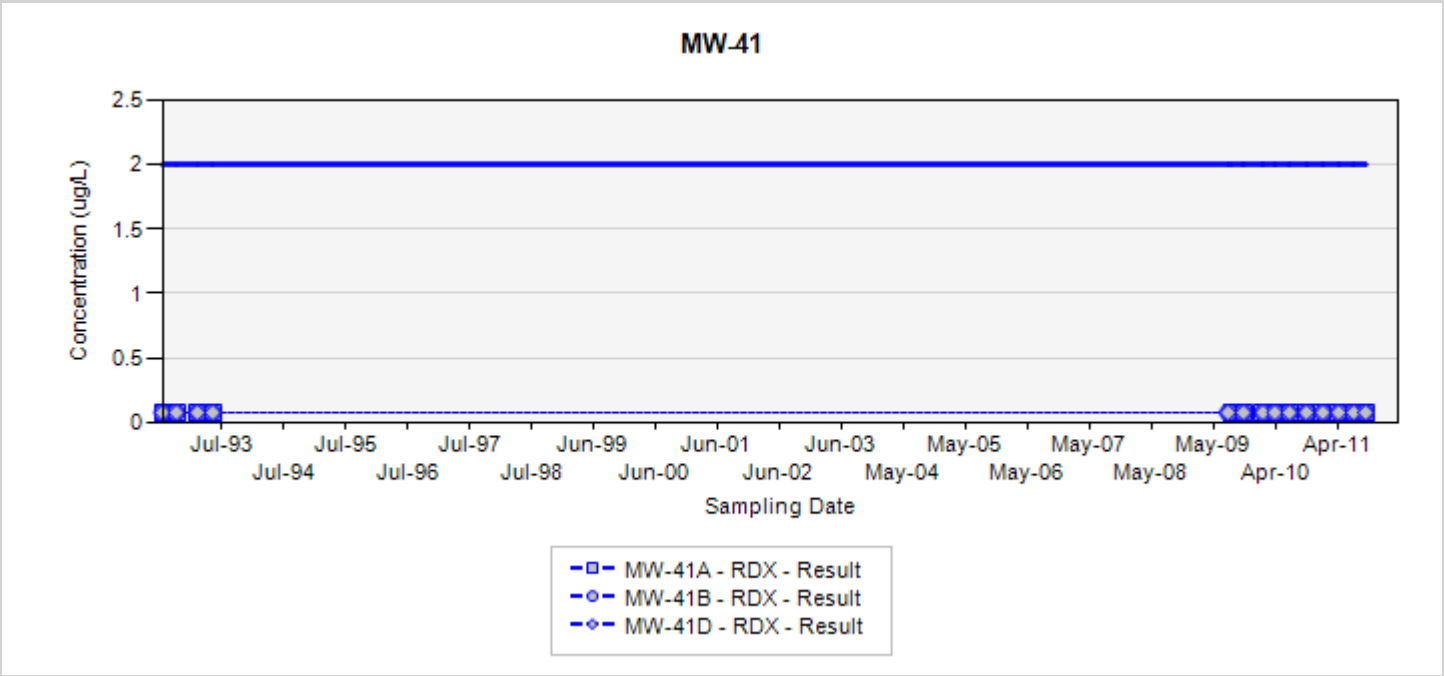

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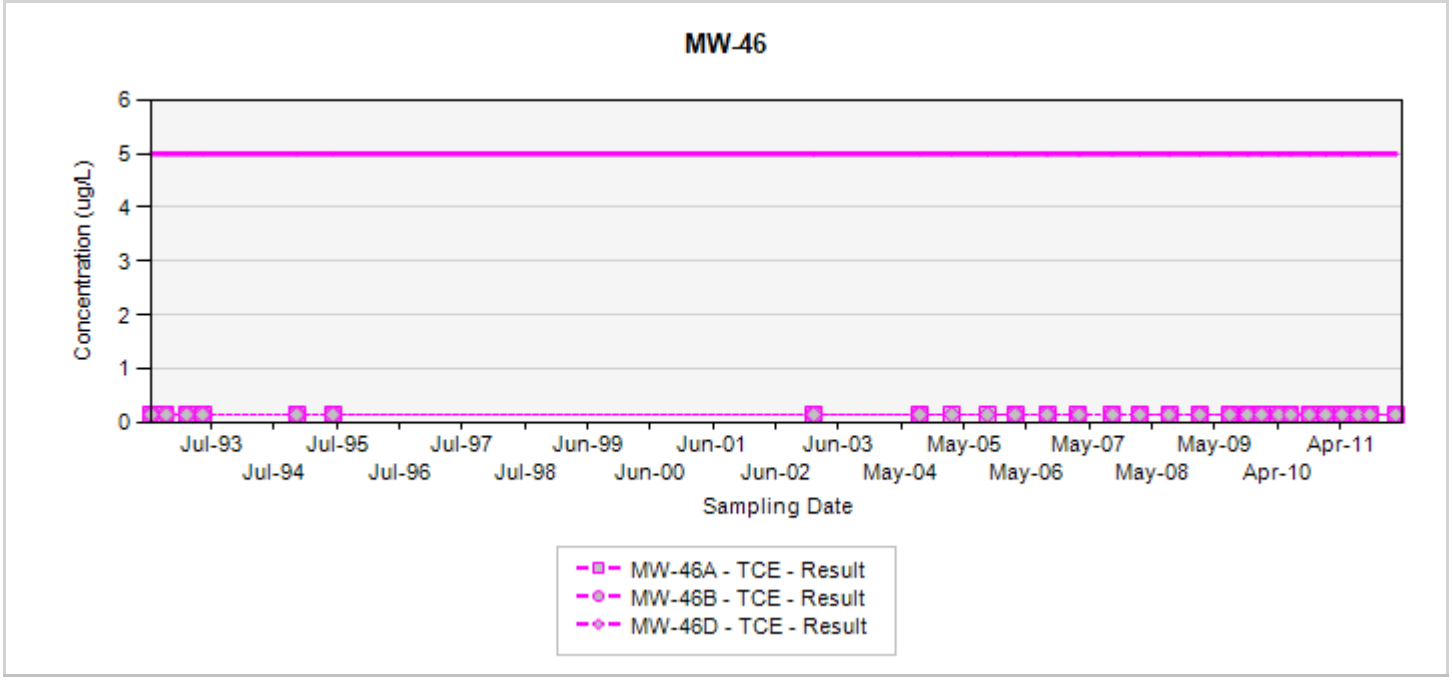

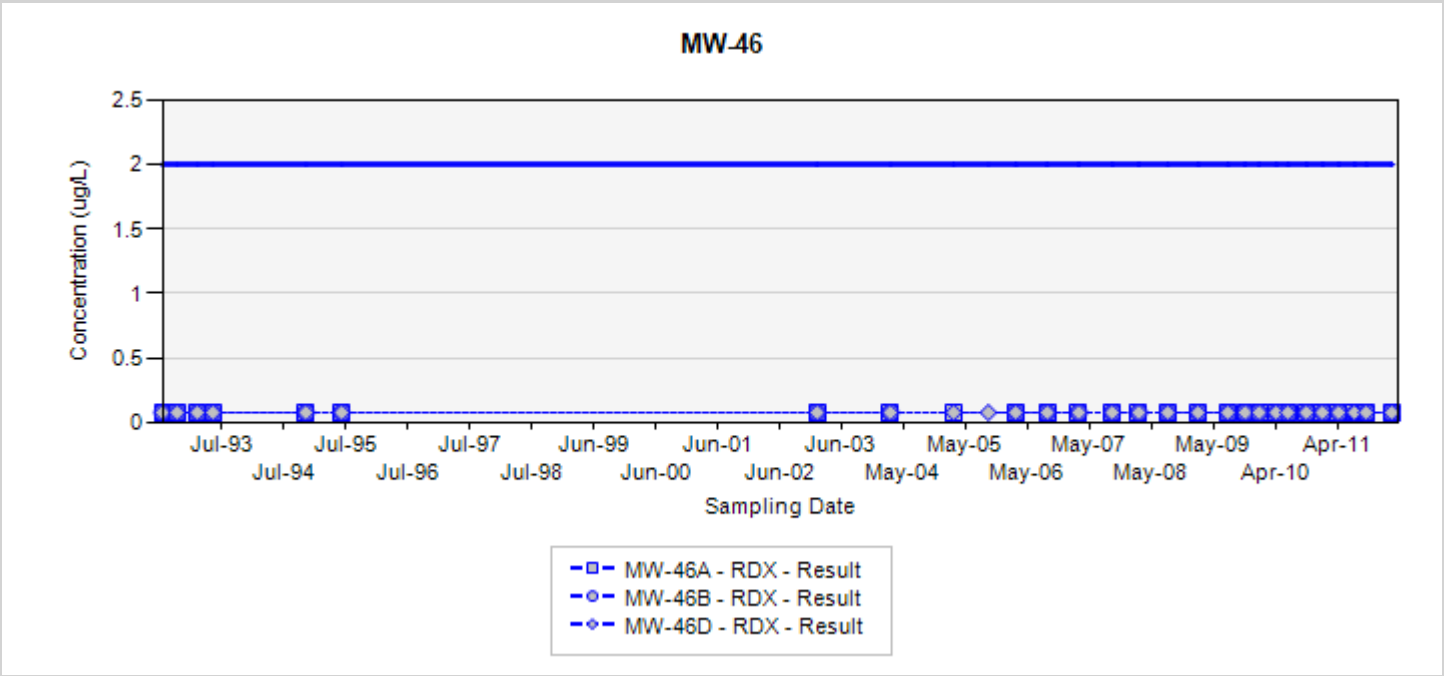

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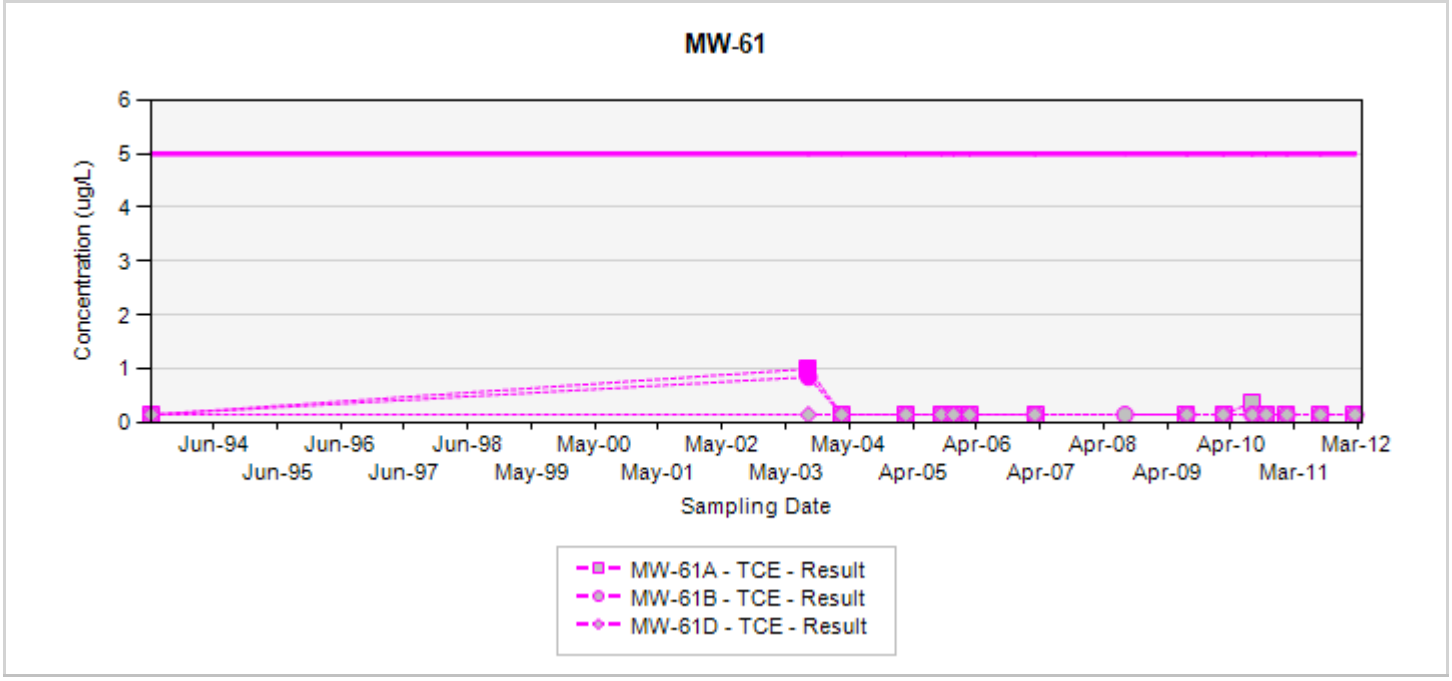

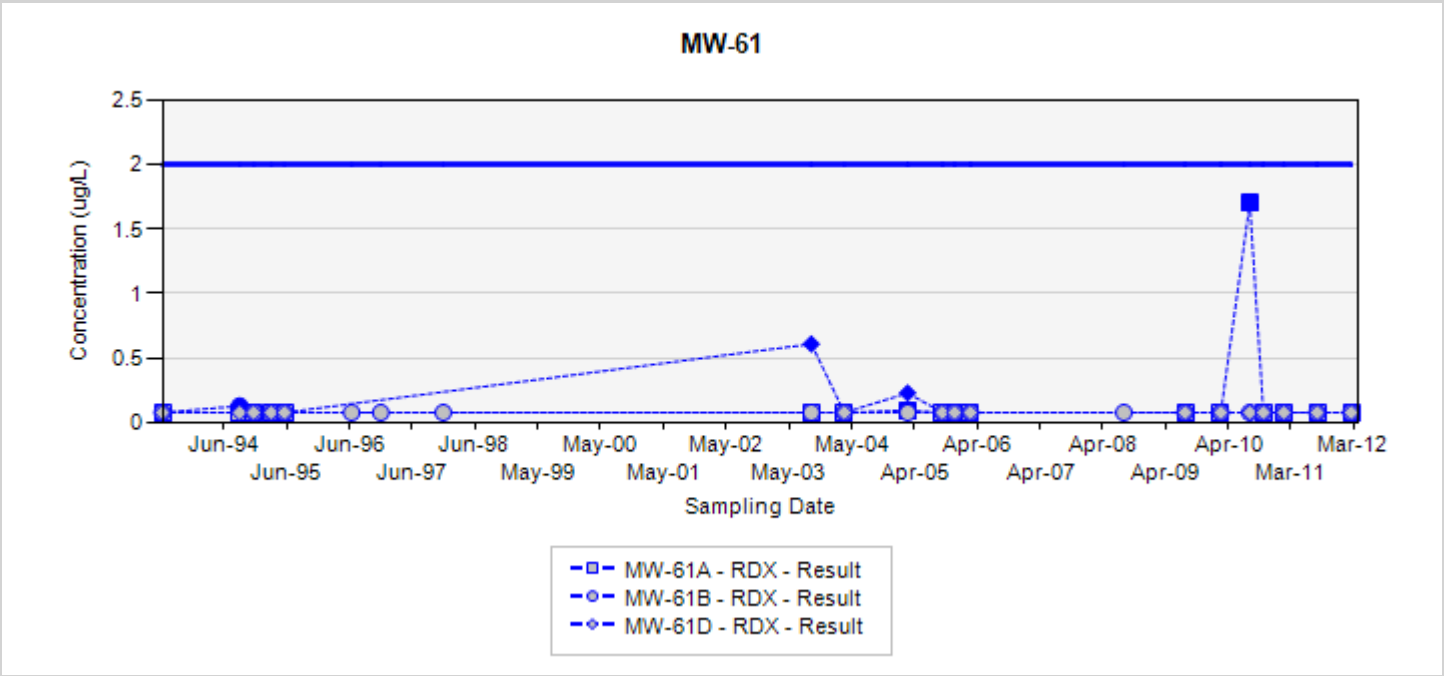

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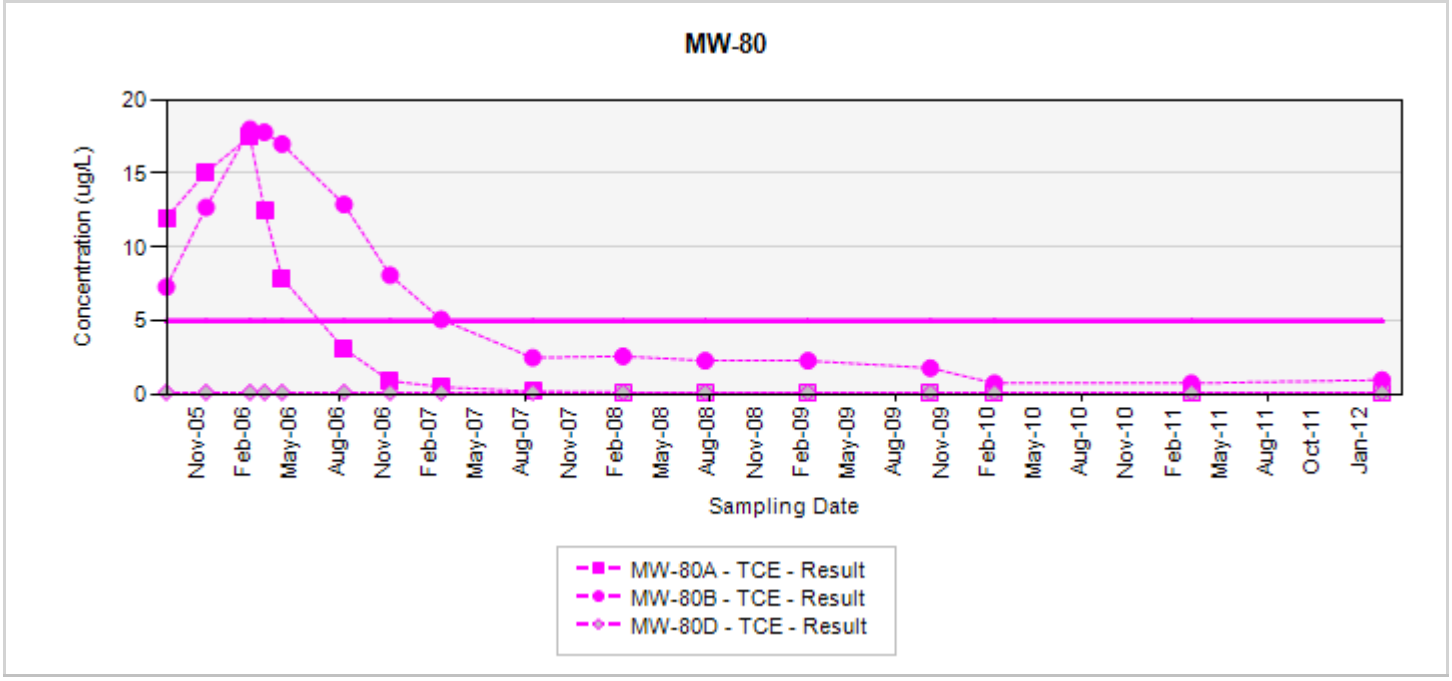

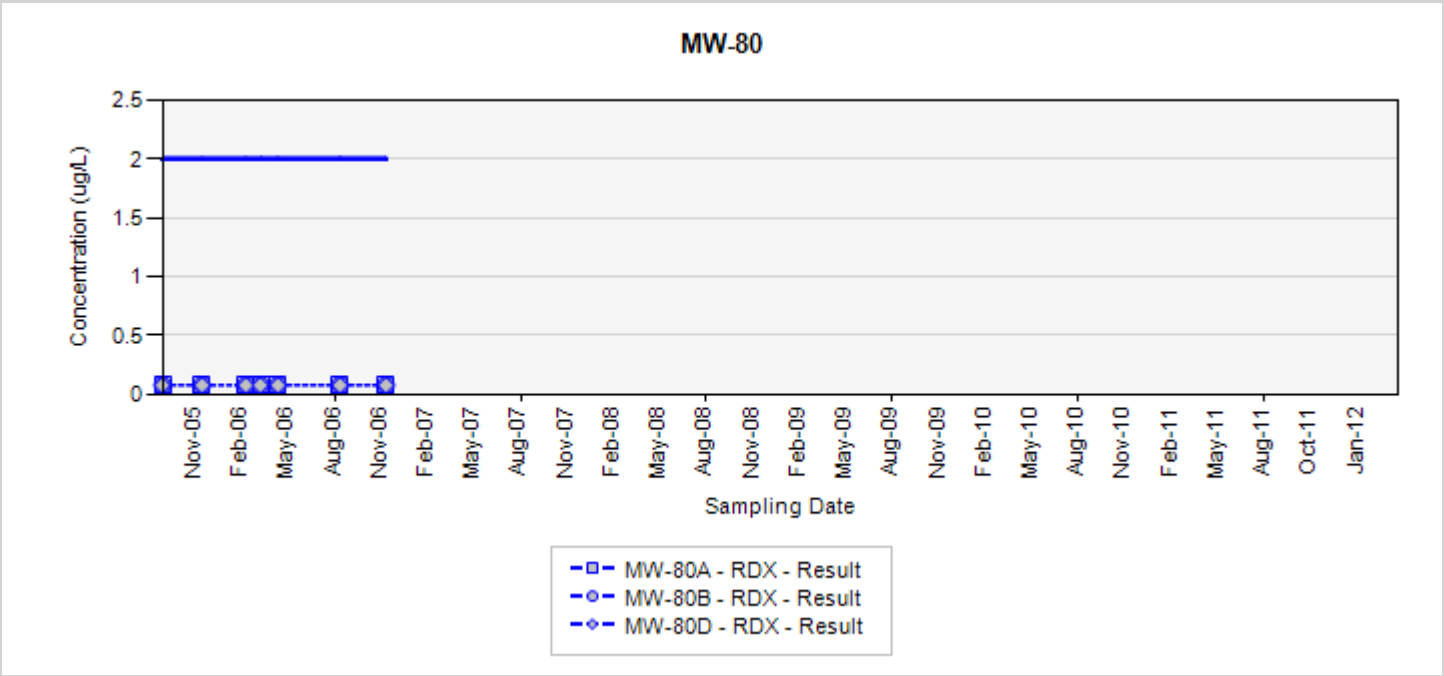

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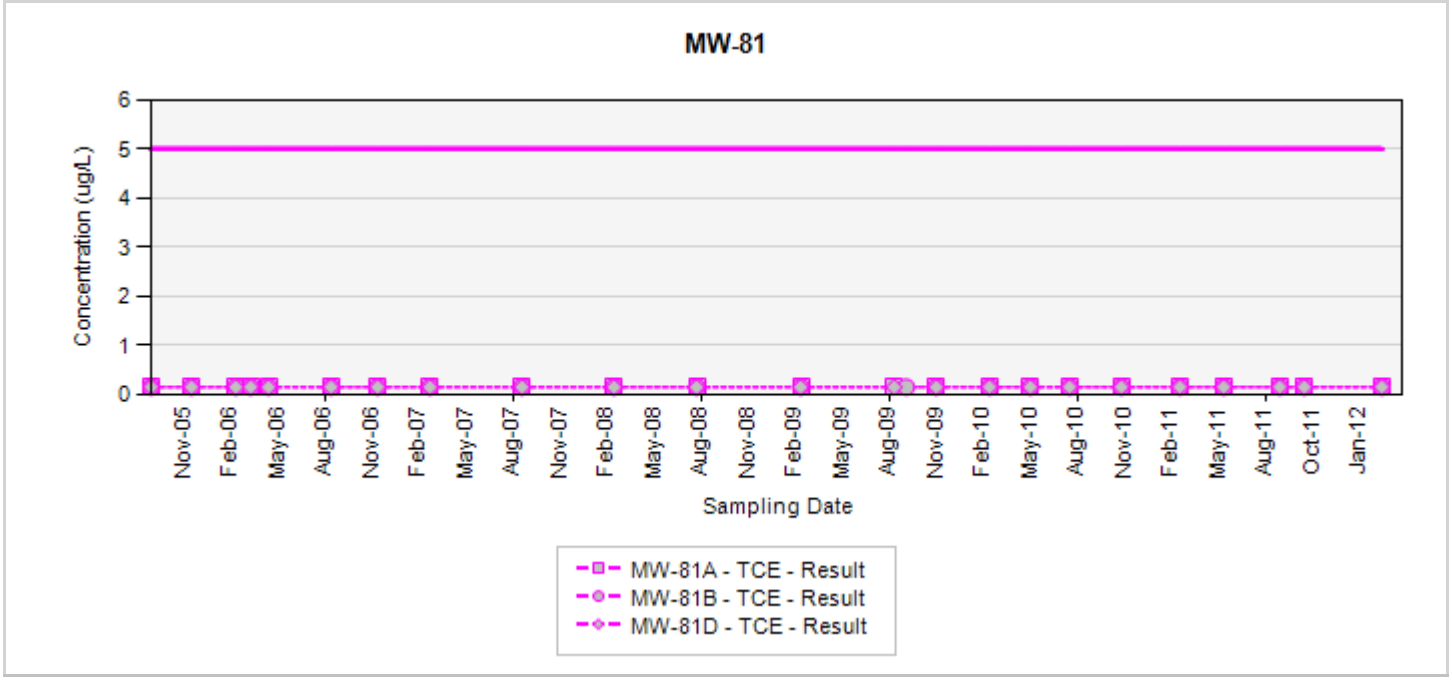

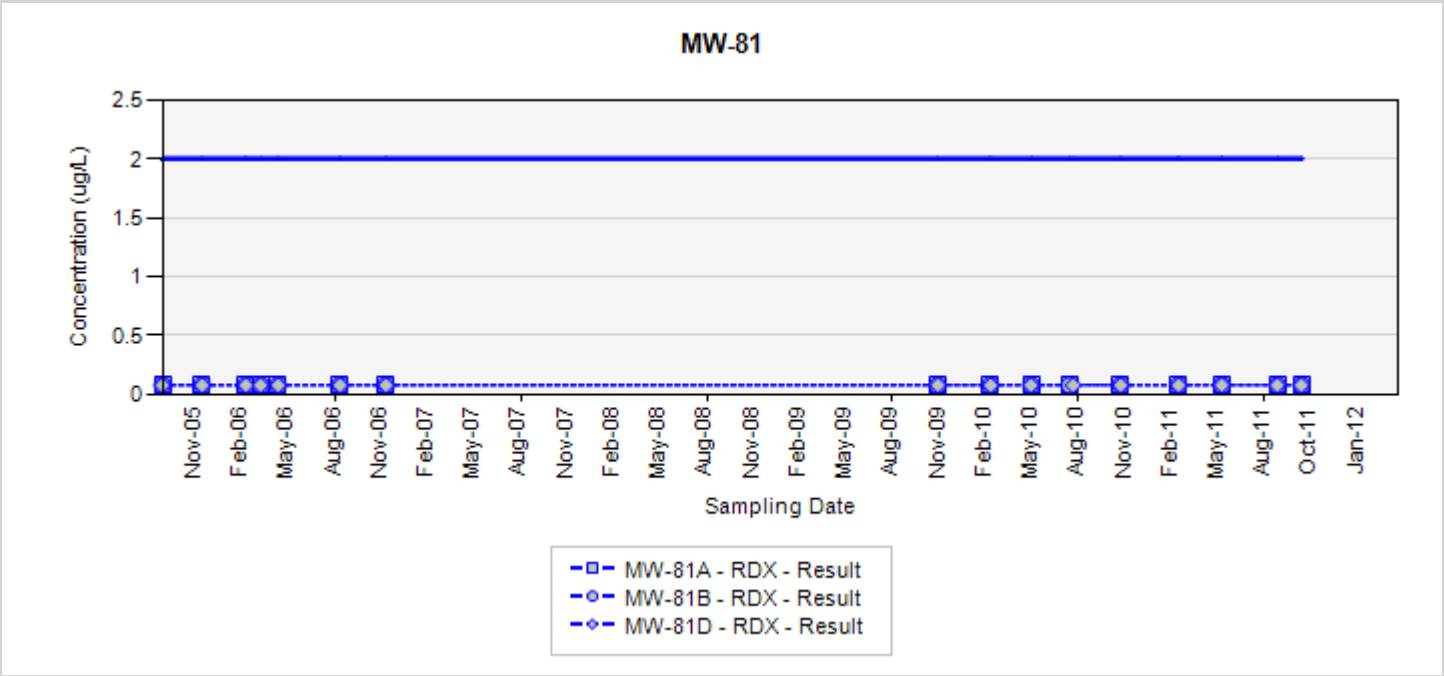

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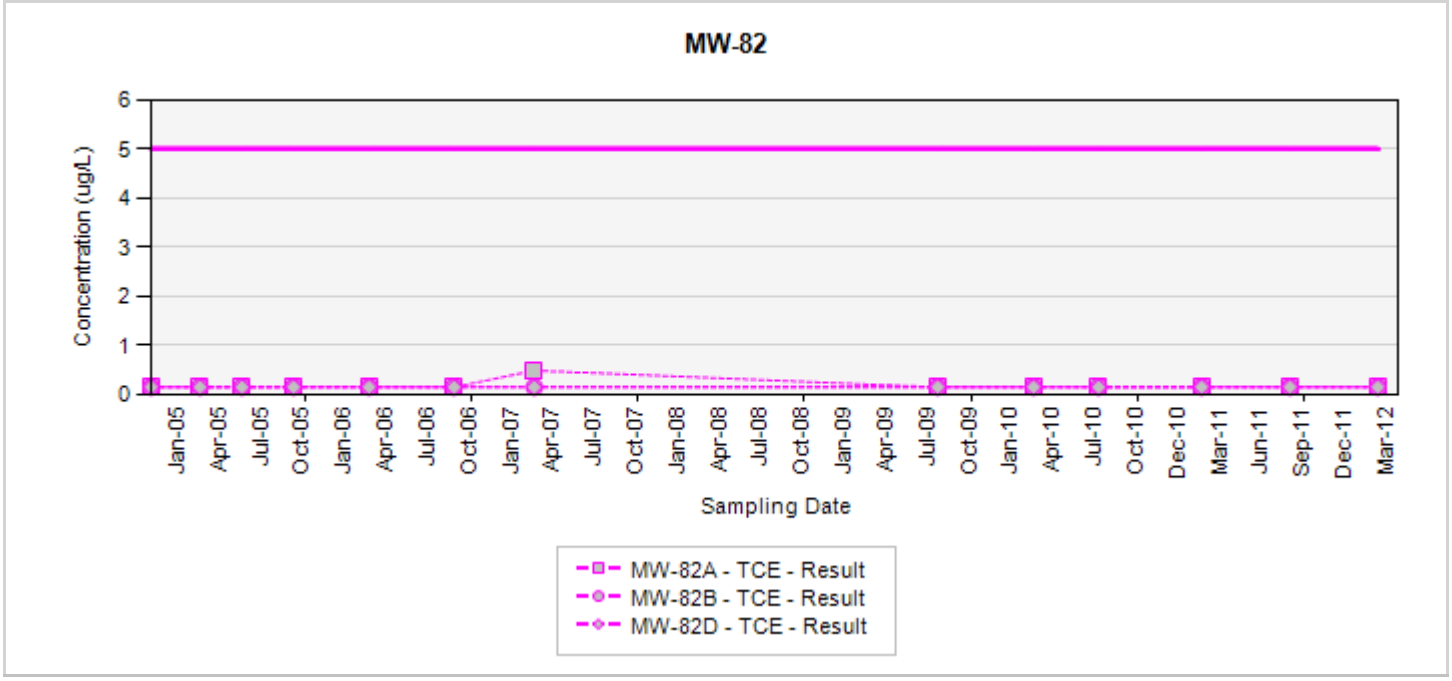

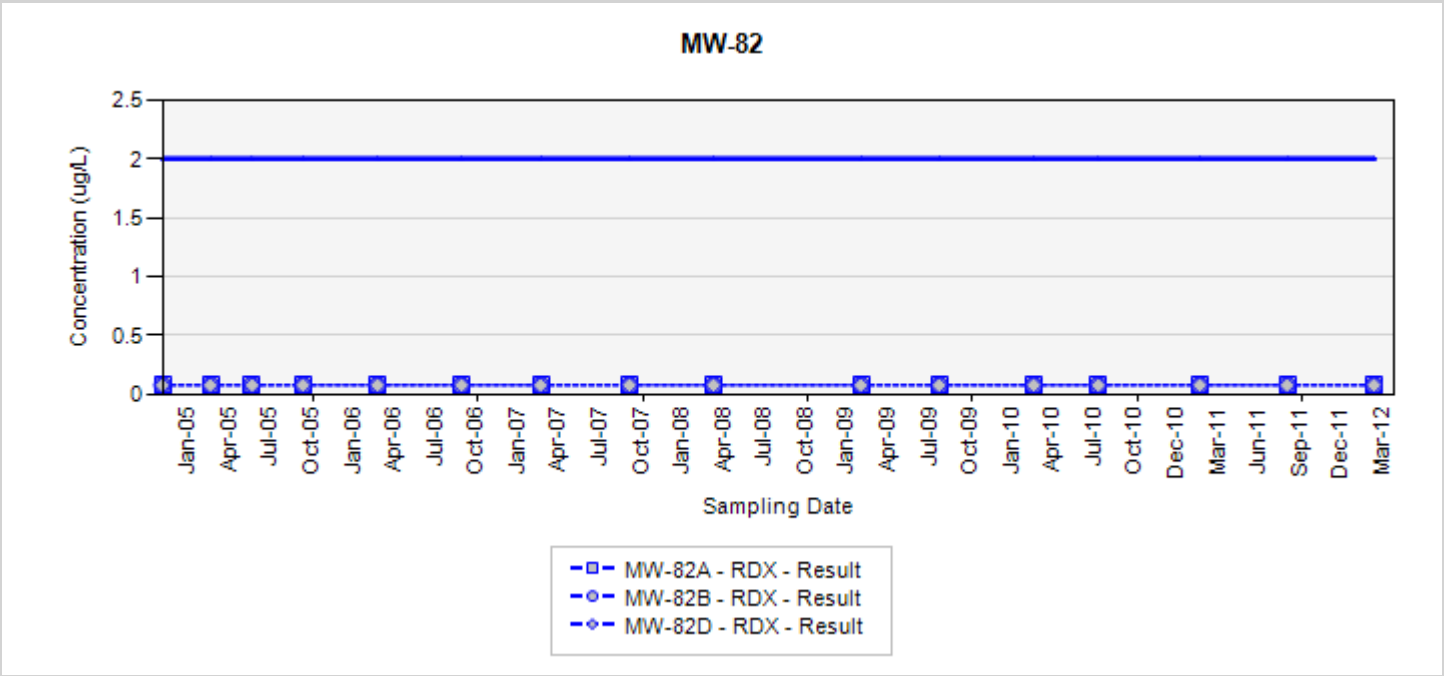

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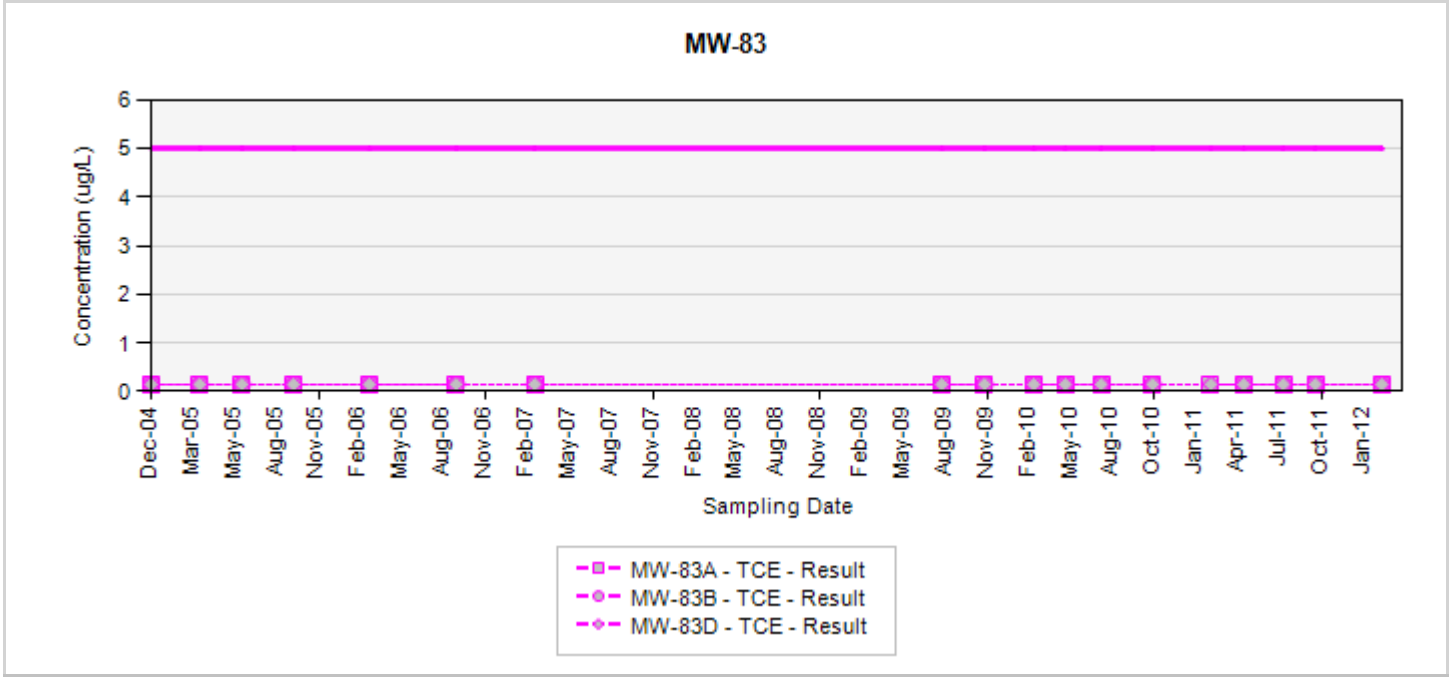

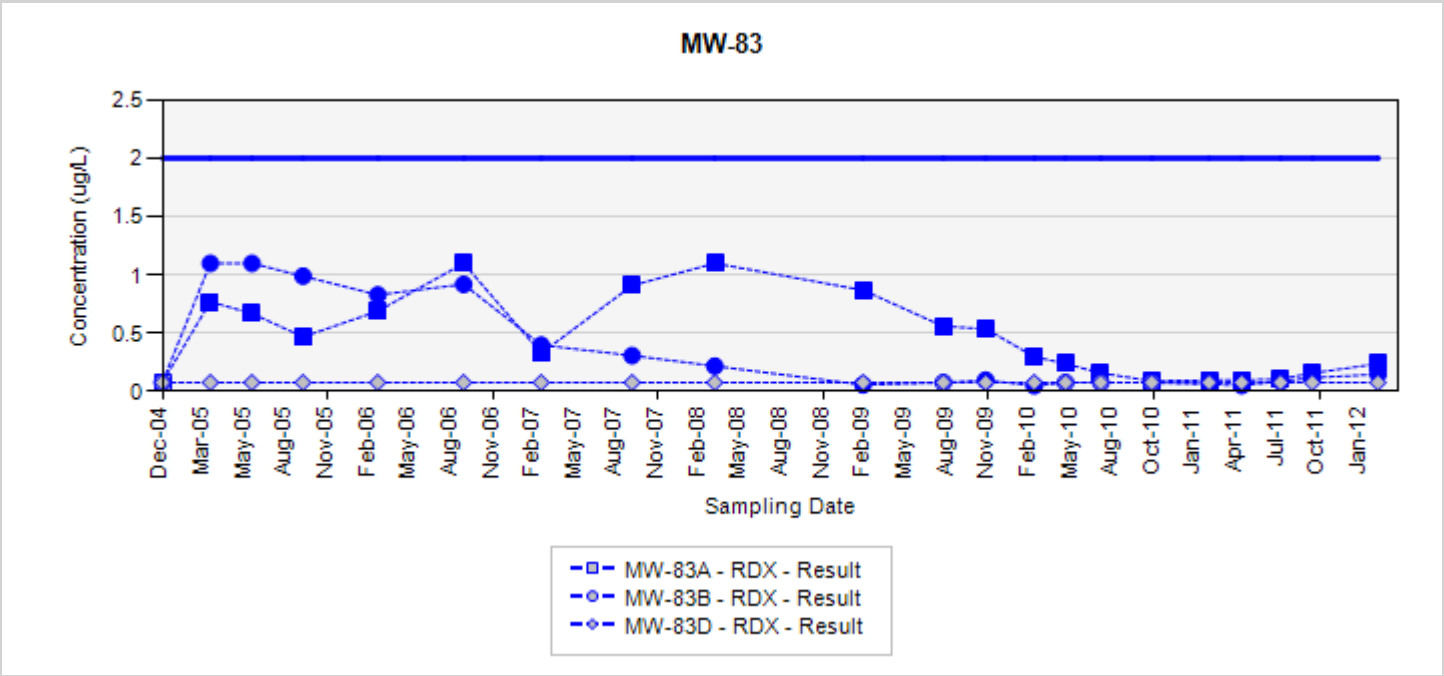

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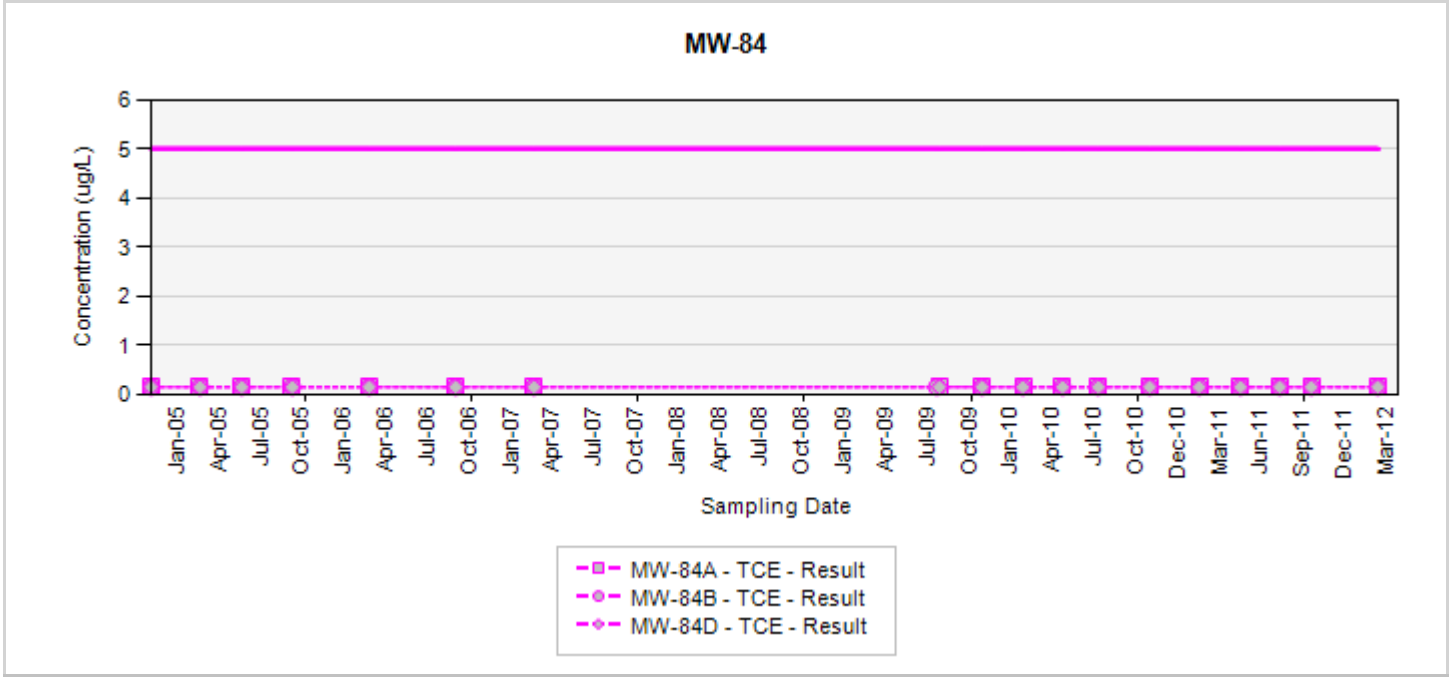

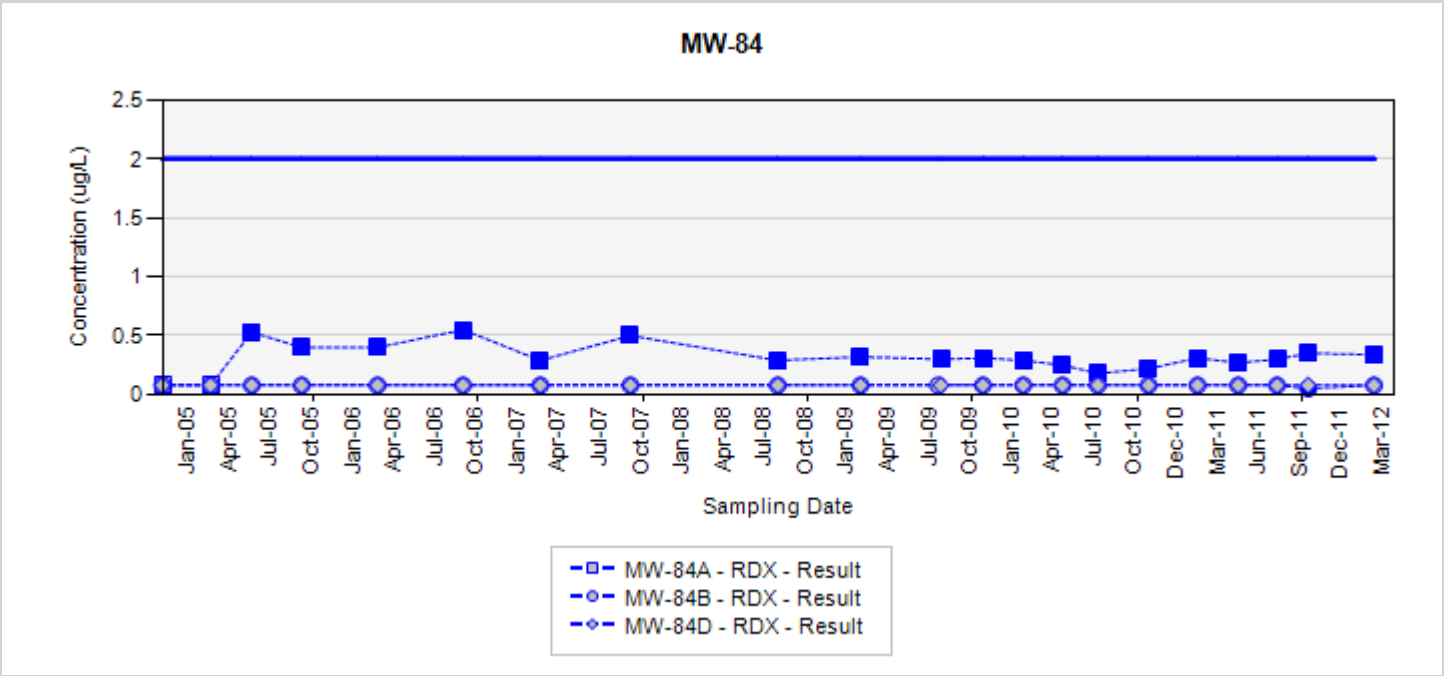

TCE - trichloroethene
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Final Target Groundwater Cleanup Goals for TCE is 5 UG/L
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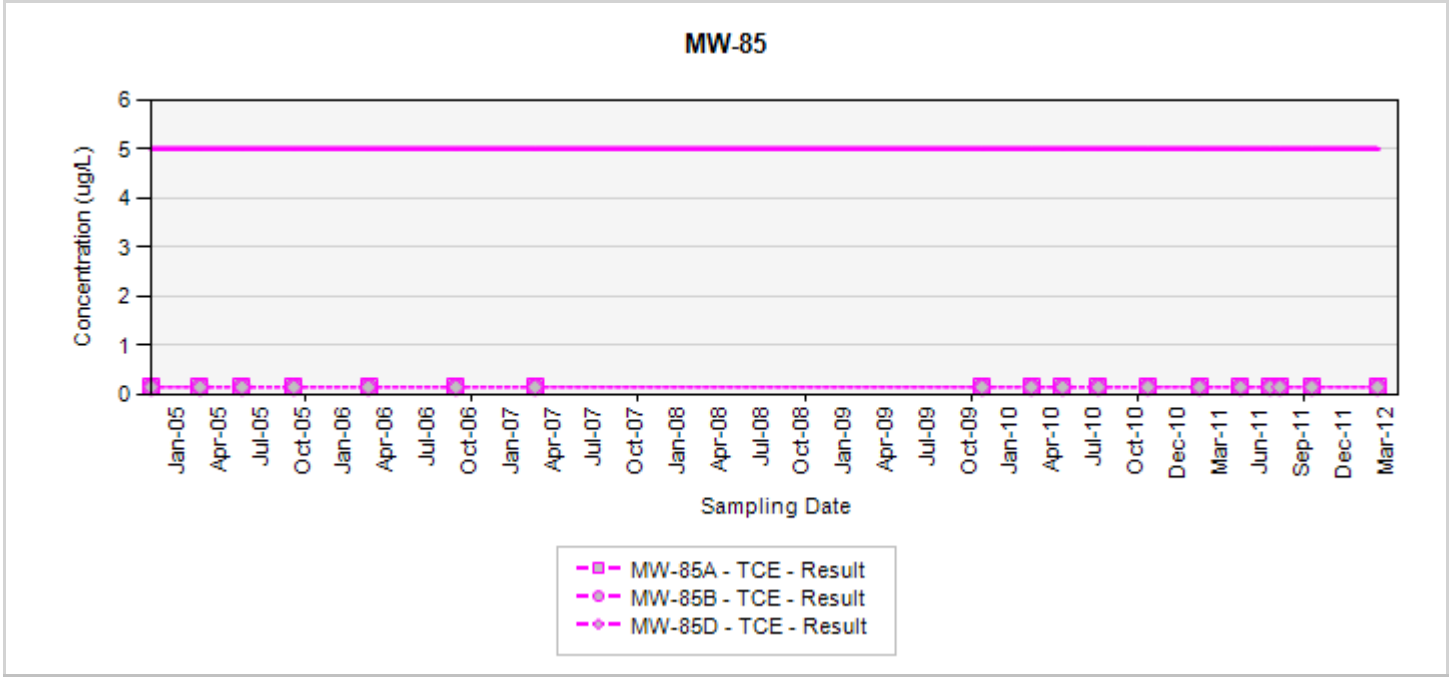

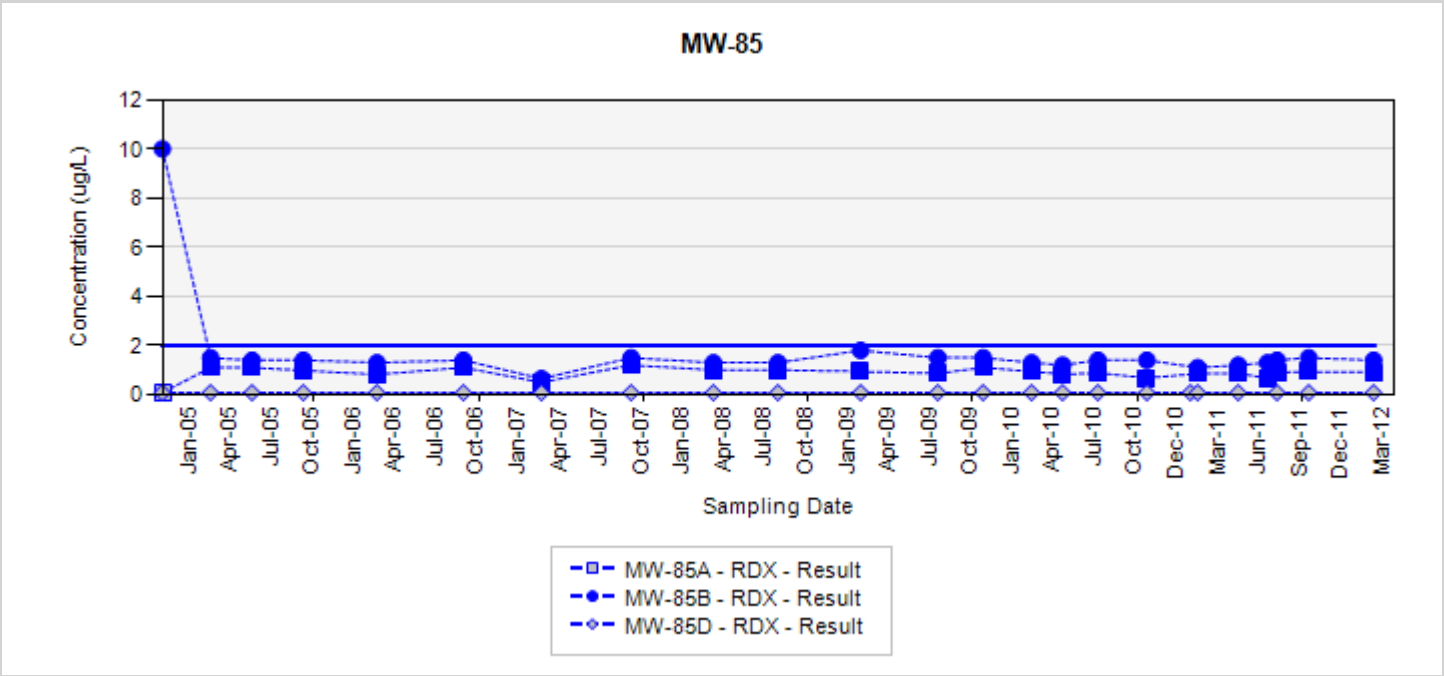

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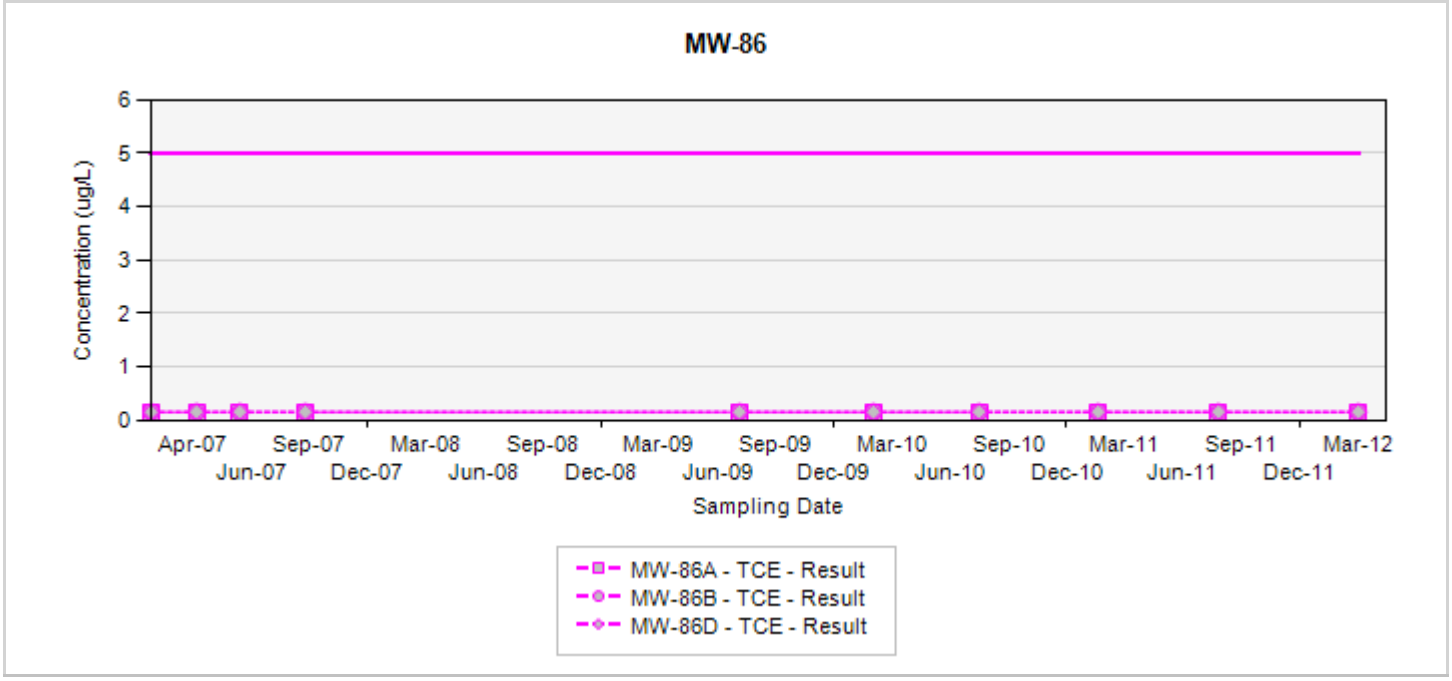

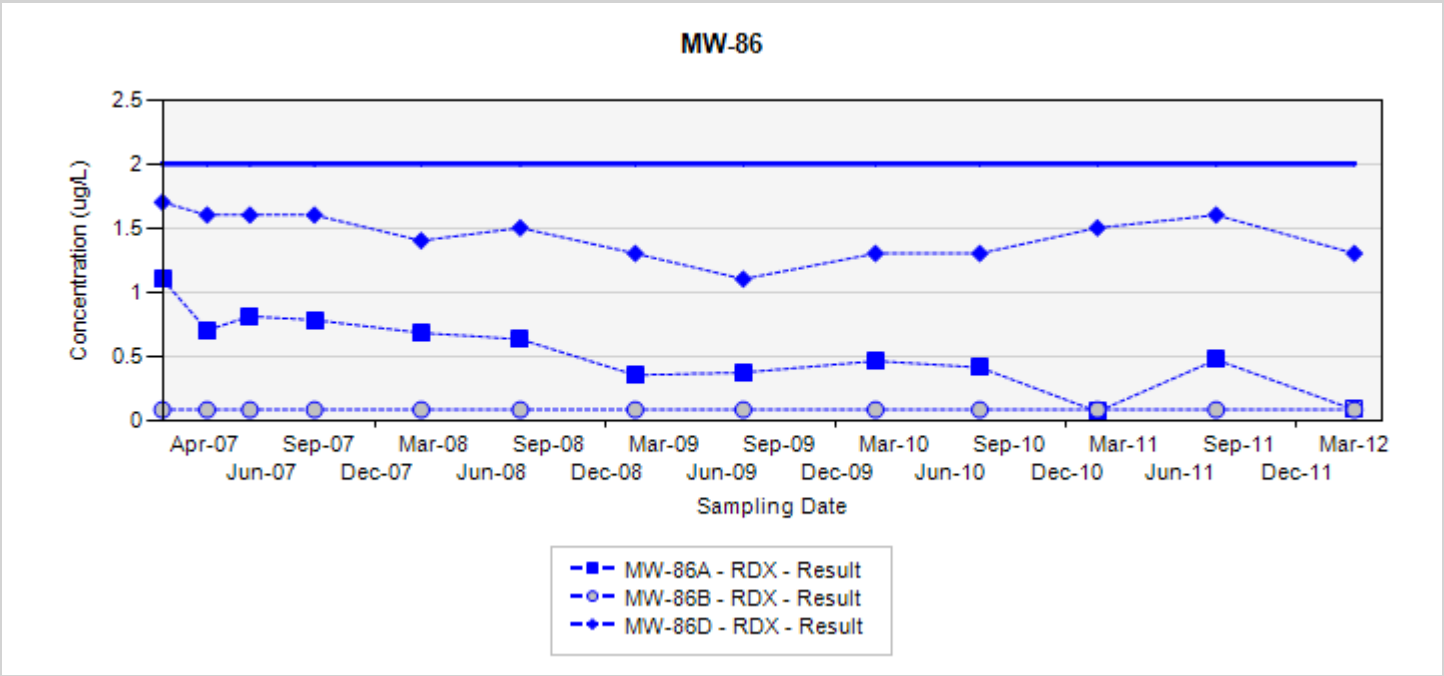

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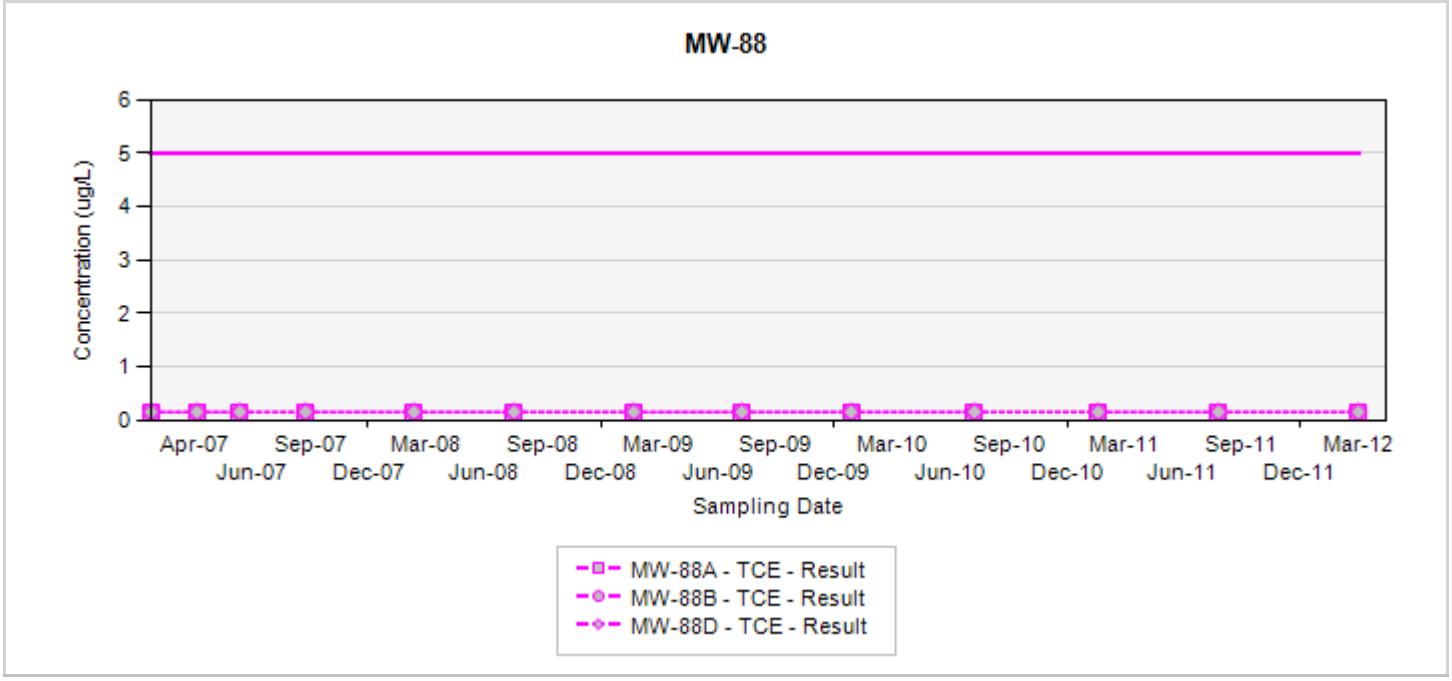

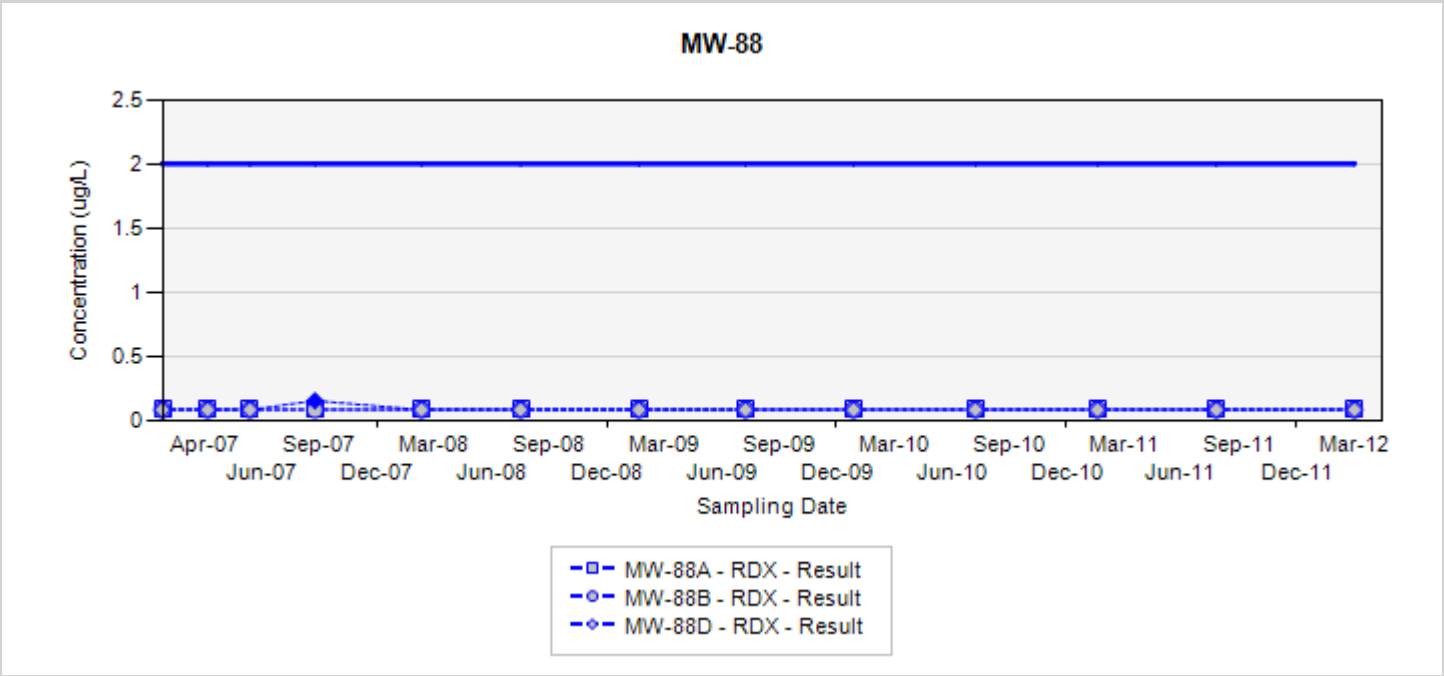

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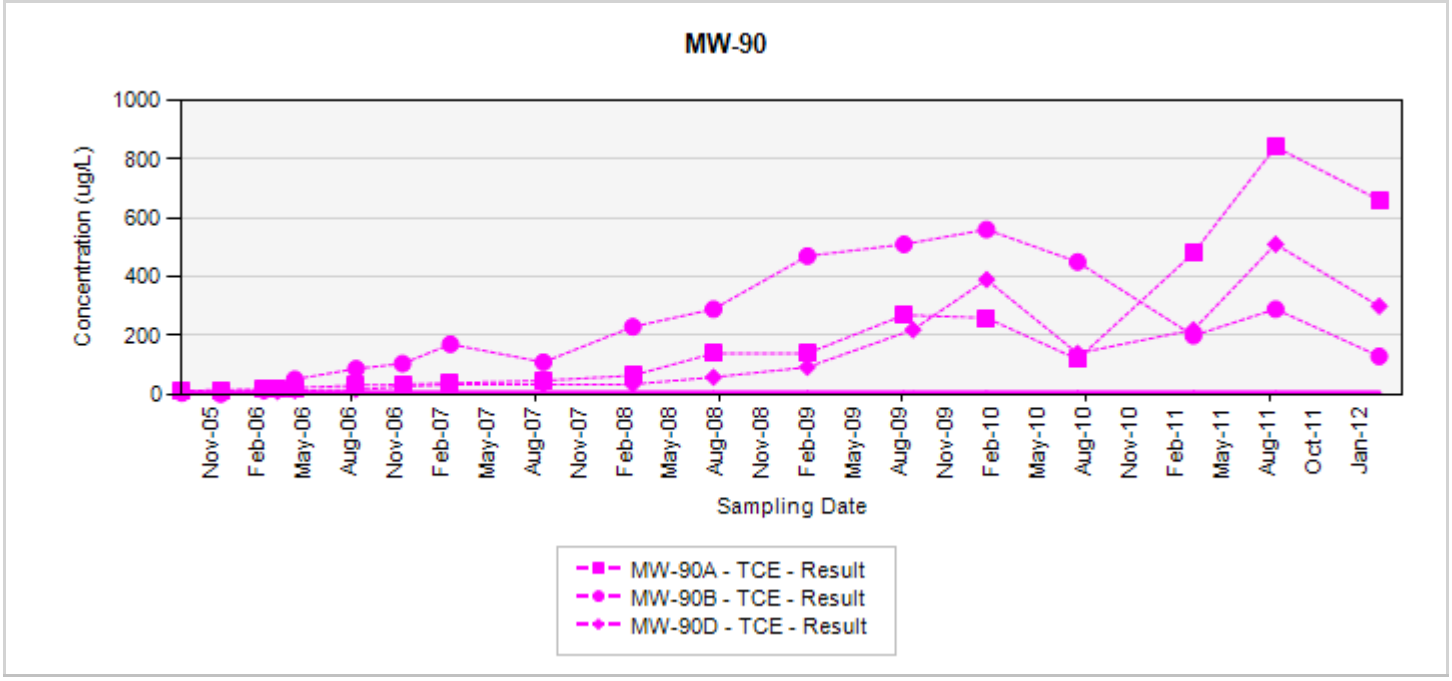

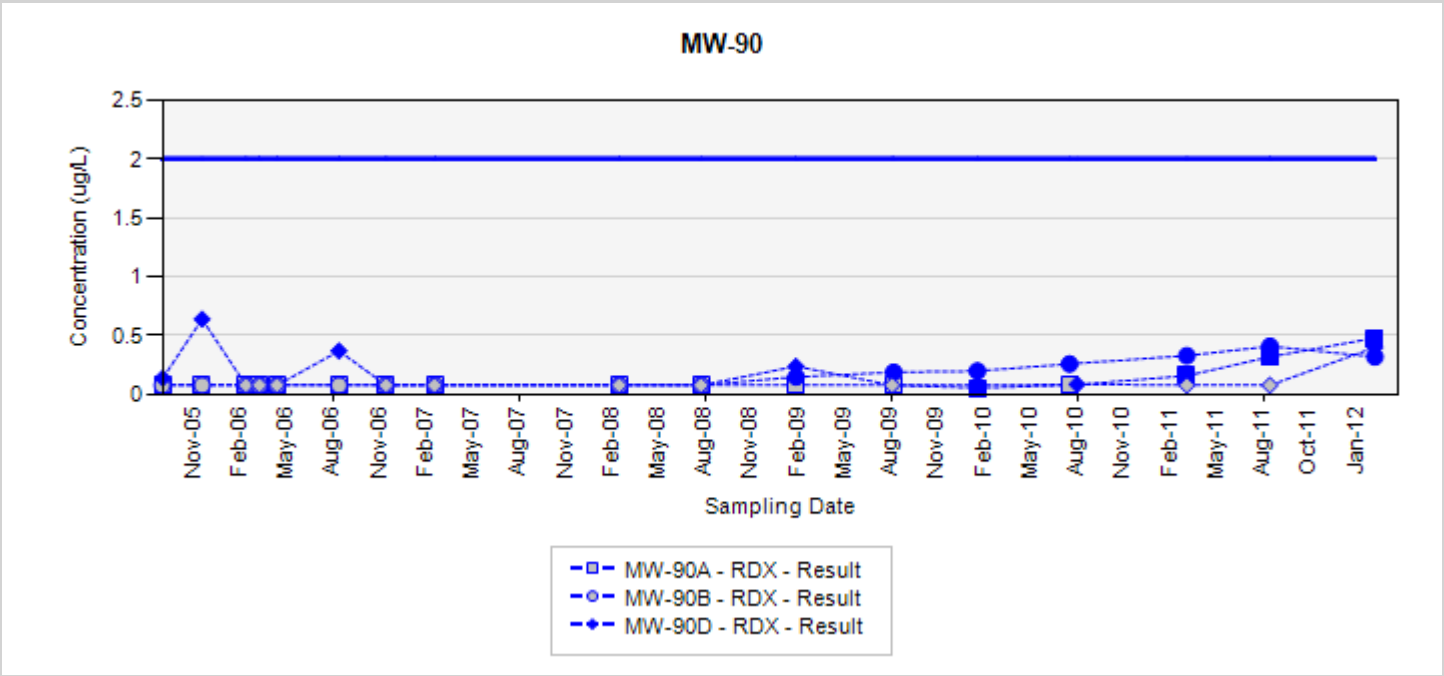

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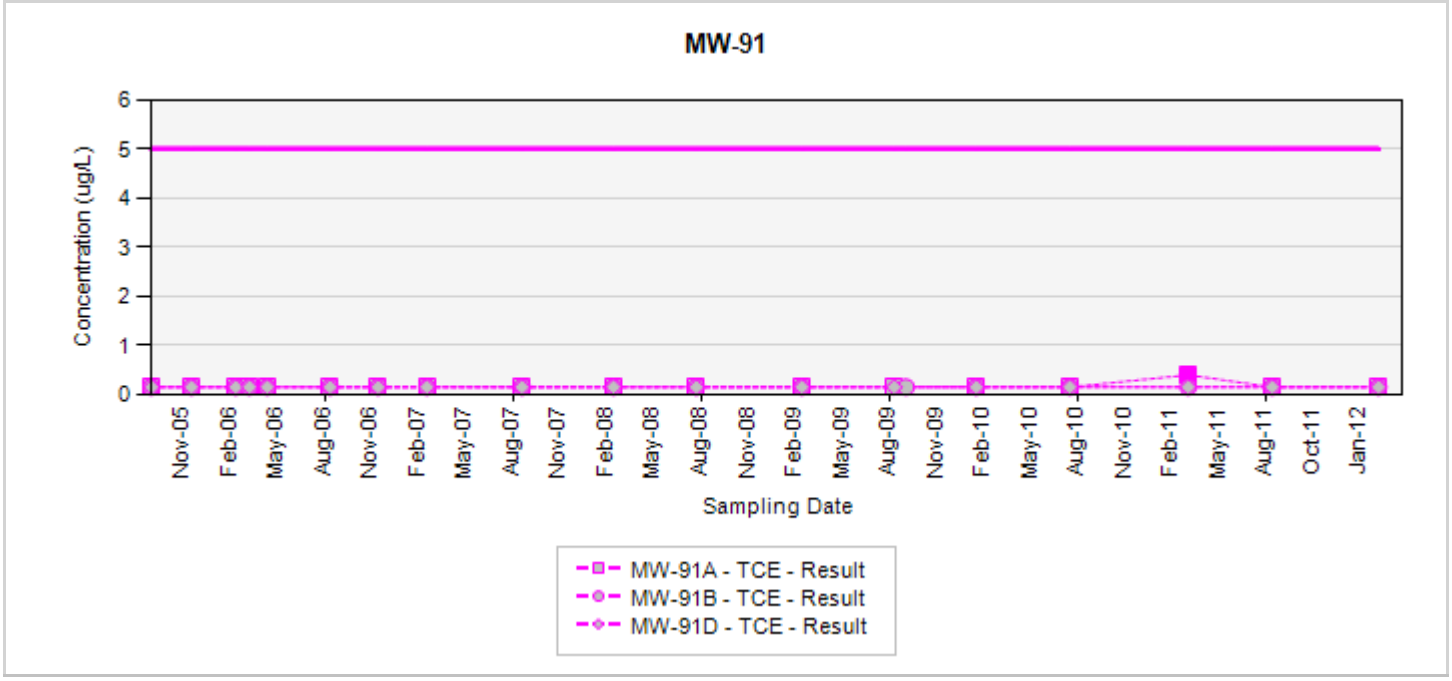

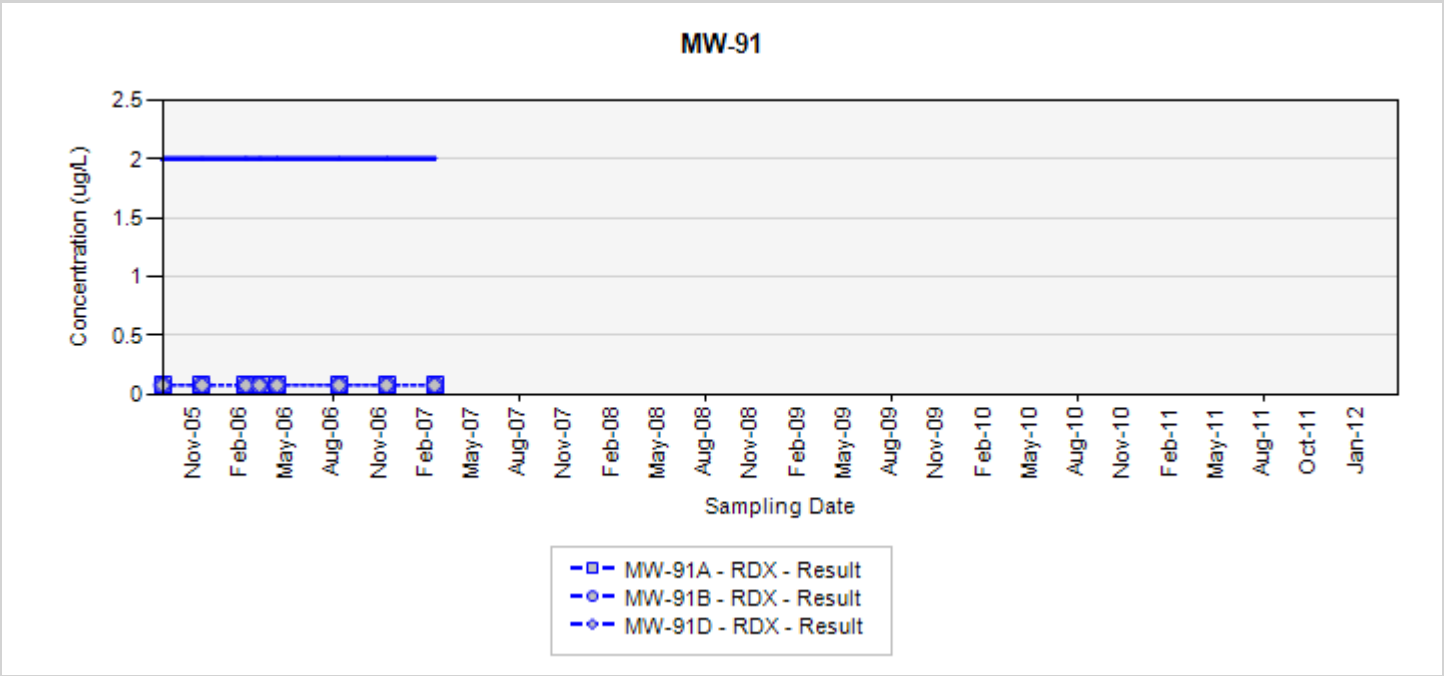

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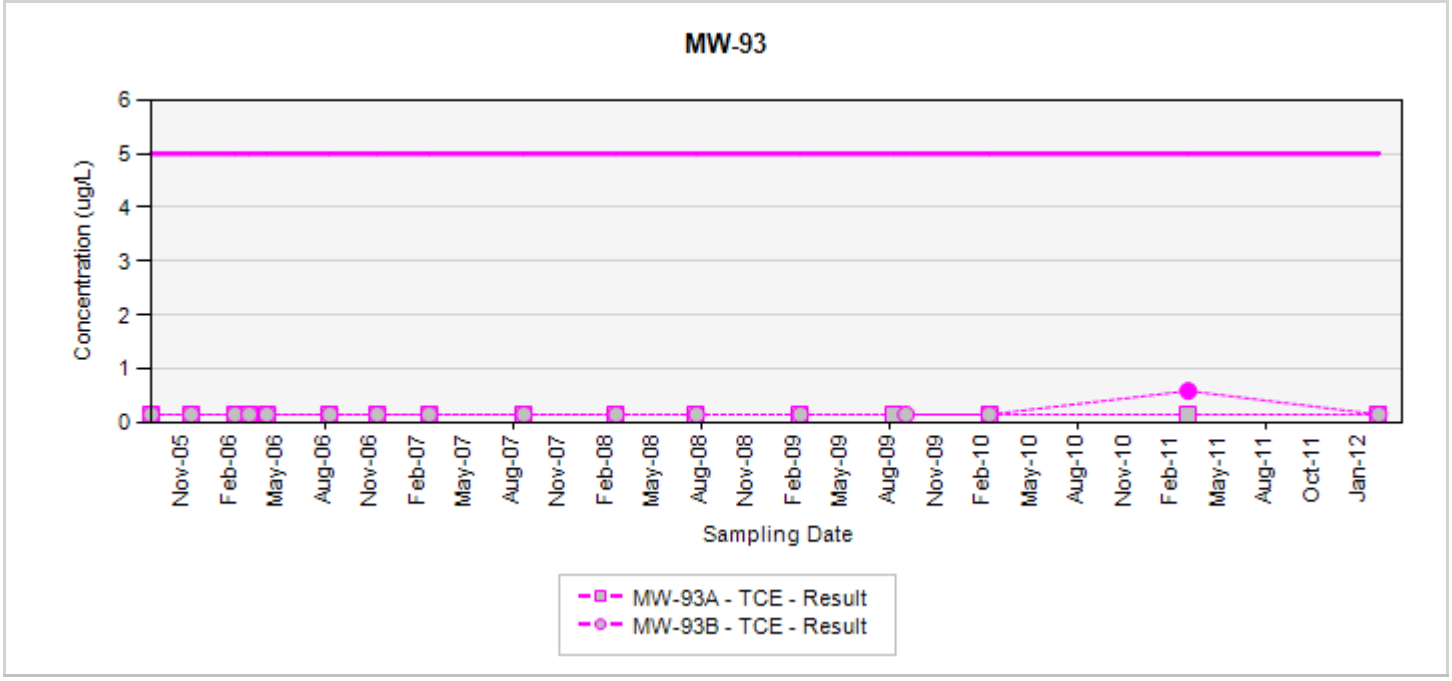

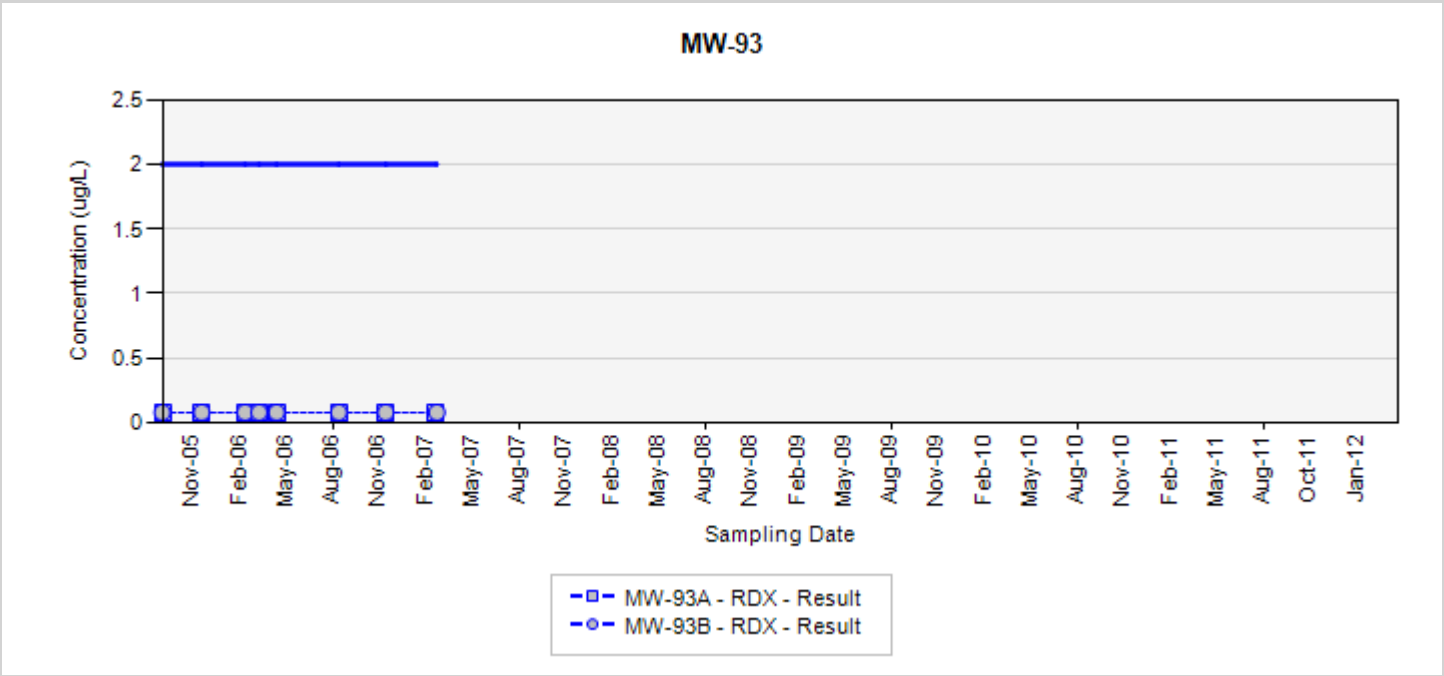

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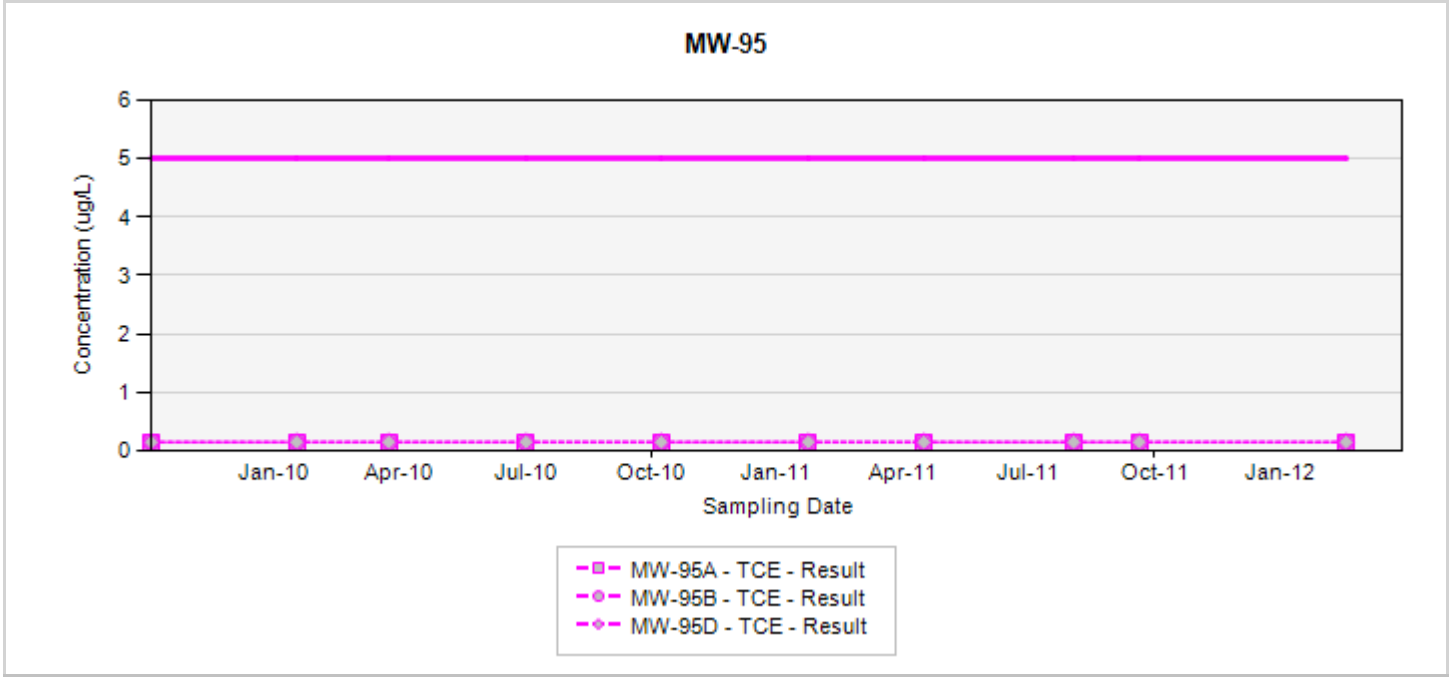

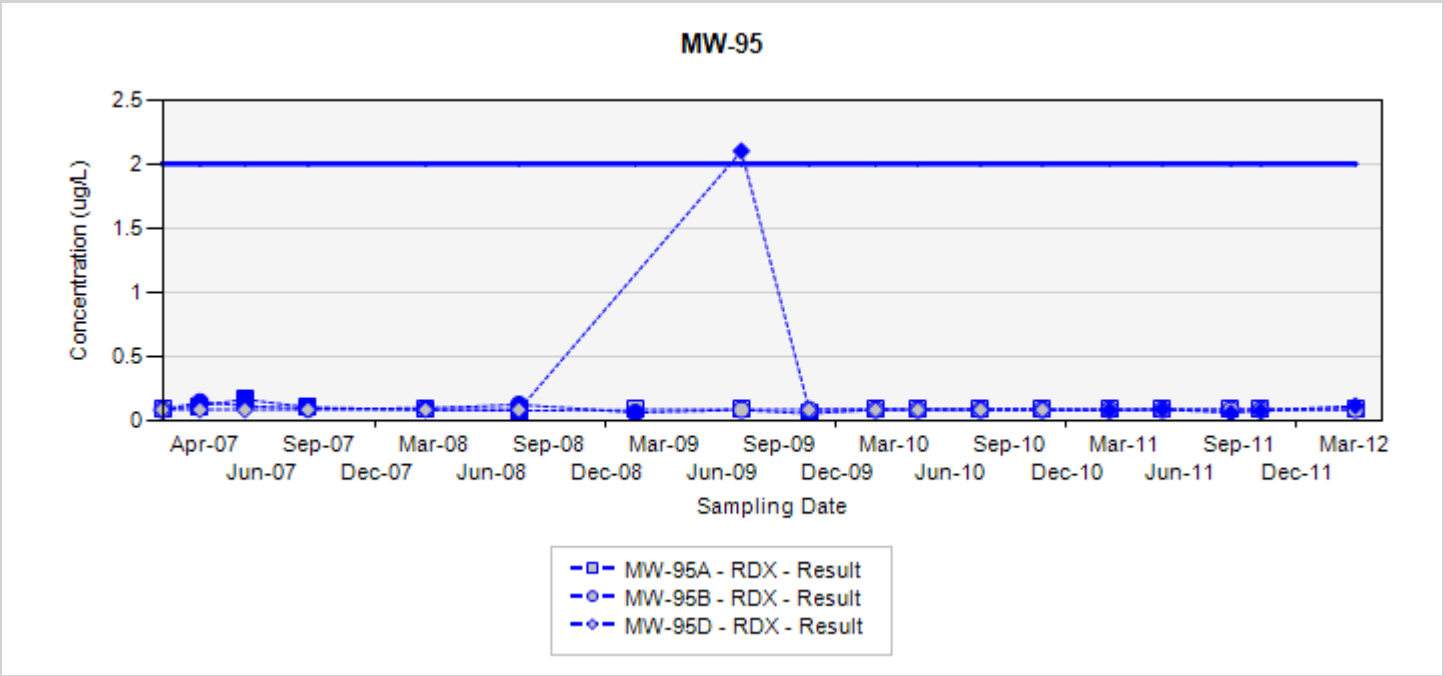

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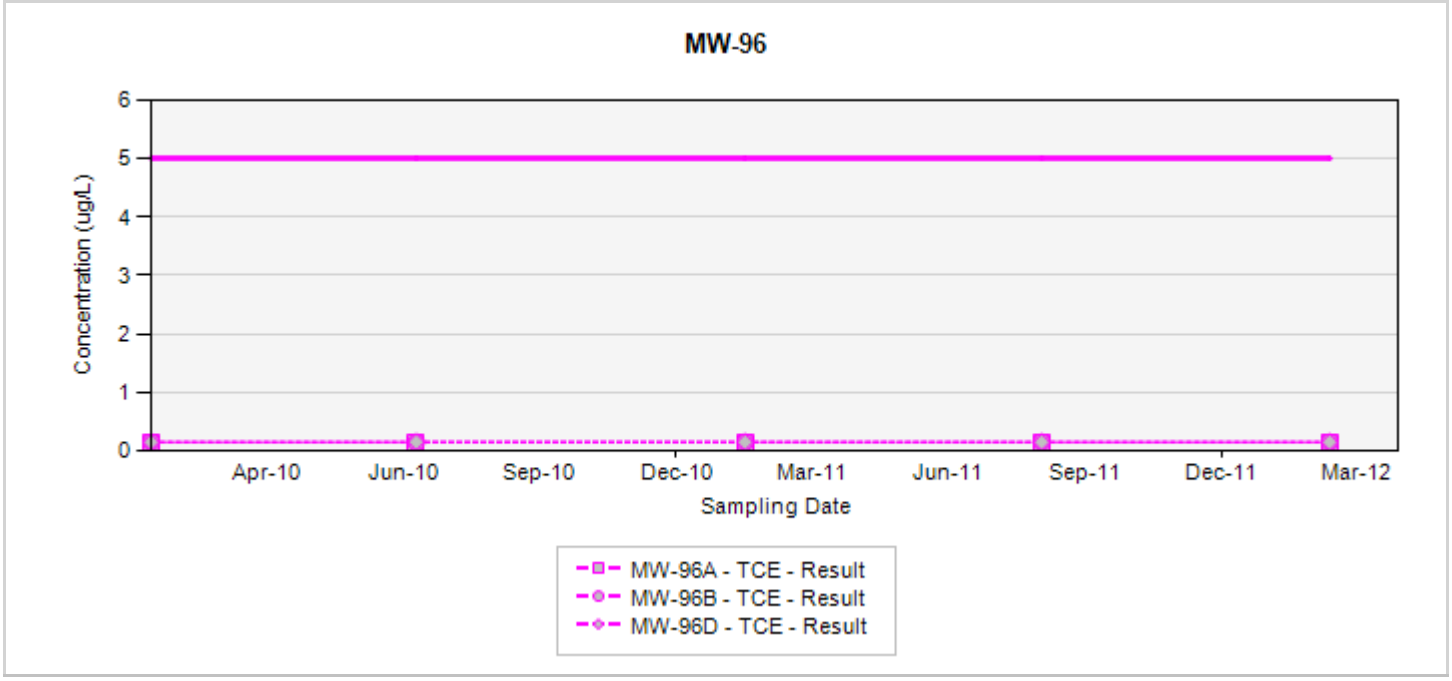

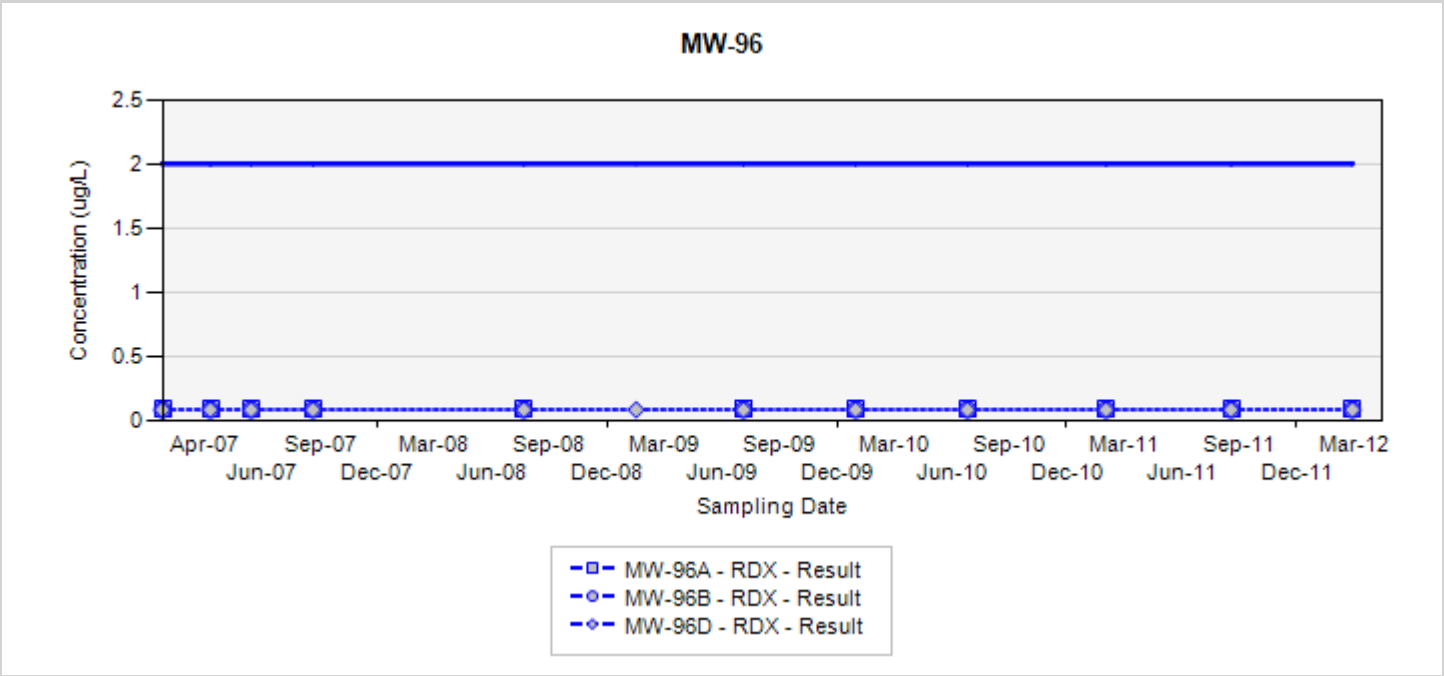

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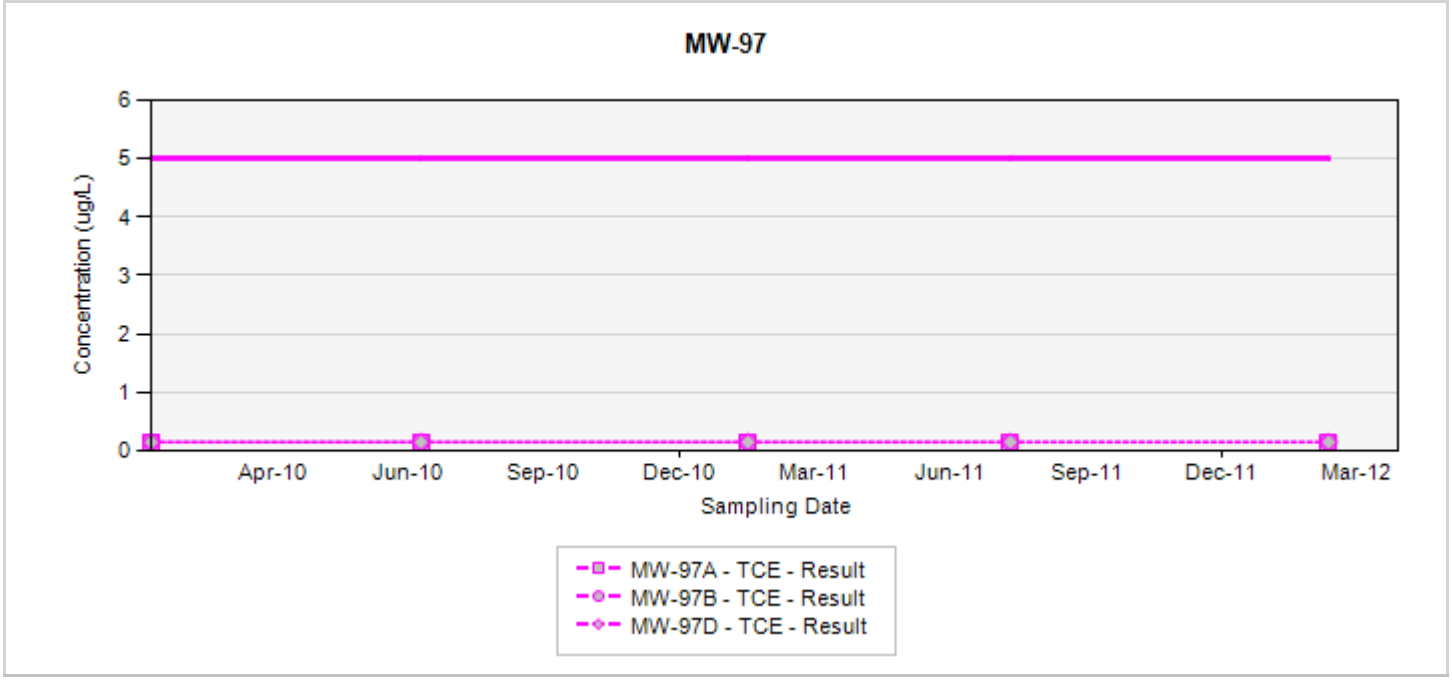

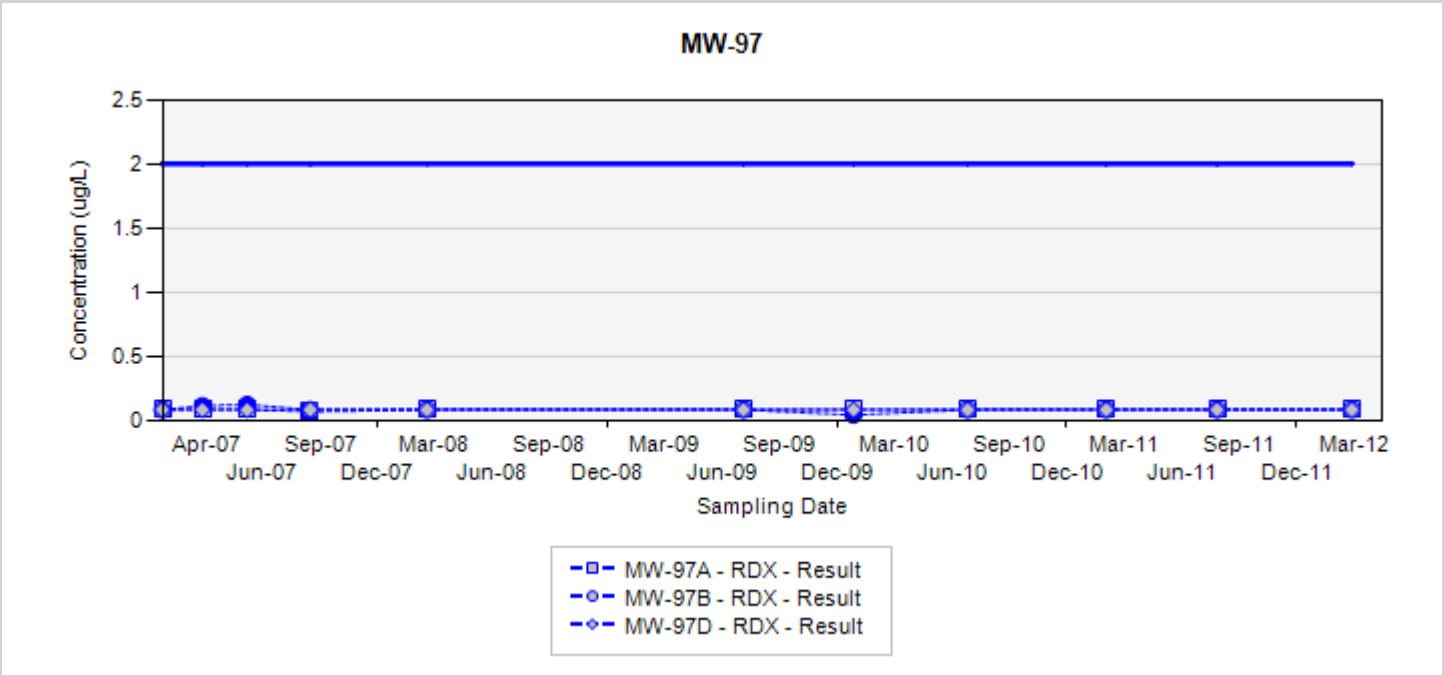

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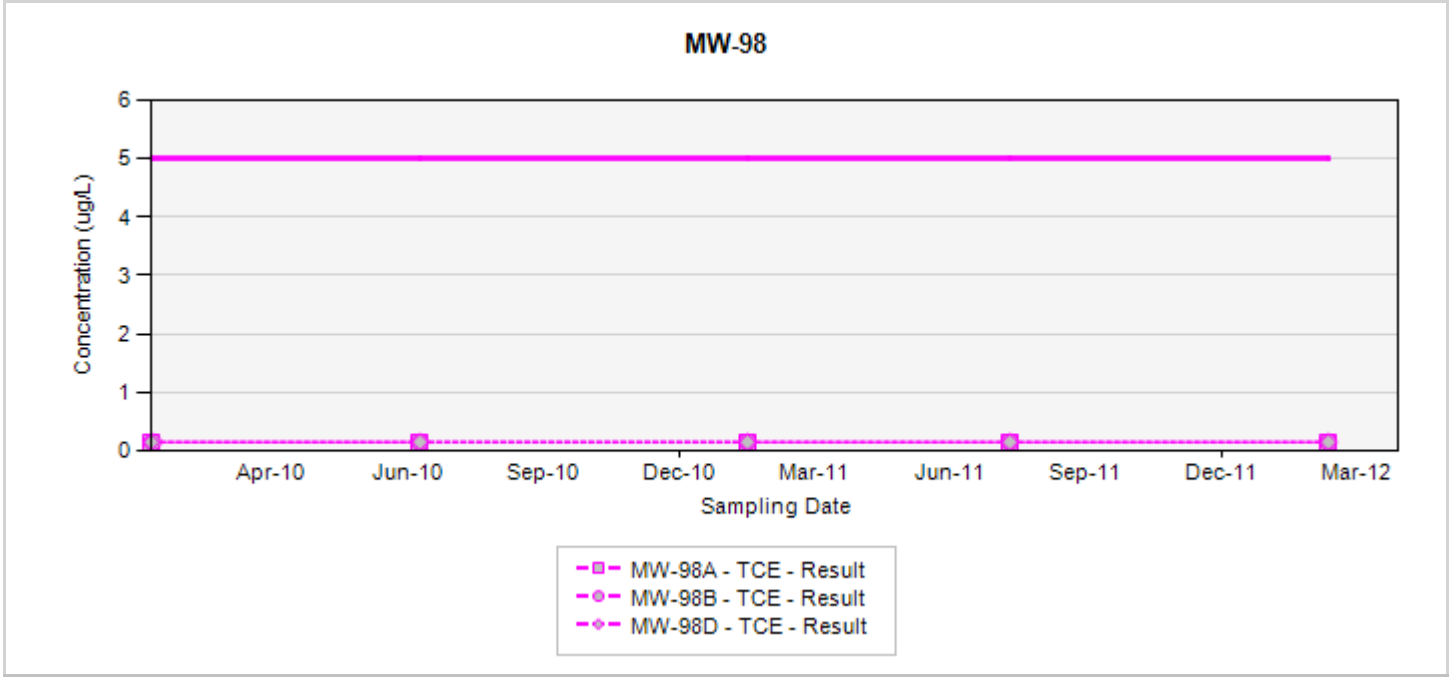

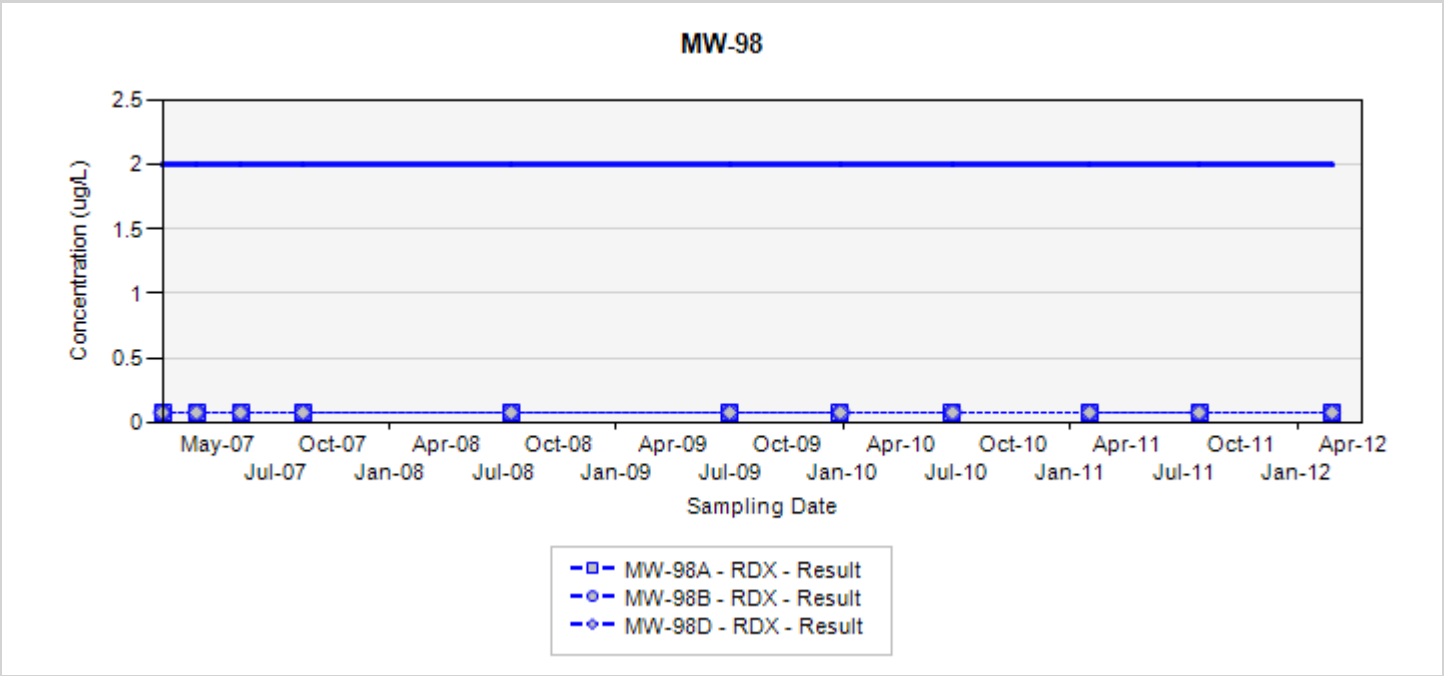

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Appendix B
Concentration Trend Charts for Select Water Supply Wells

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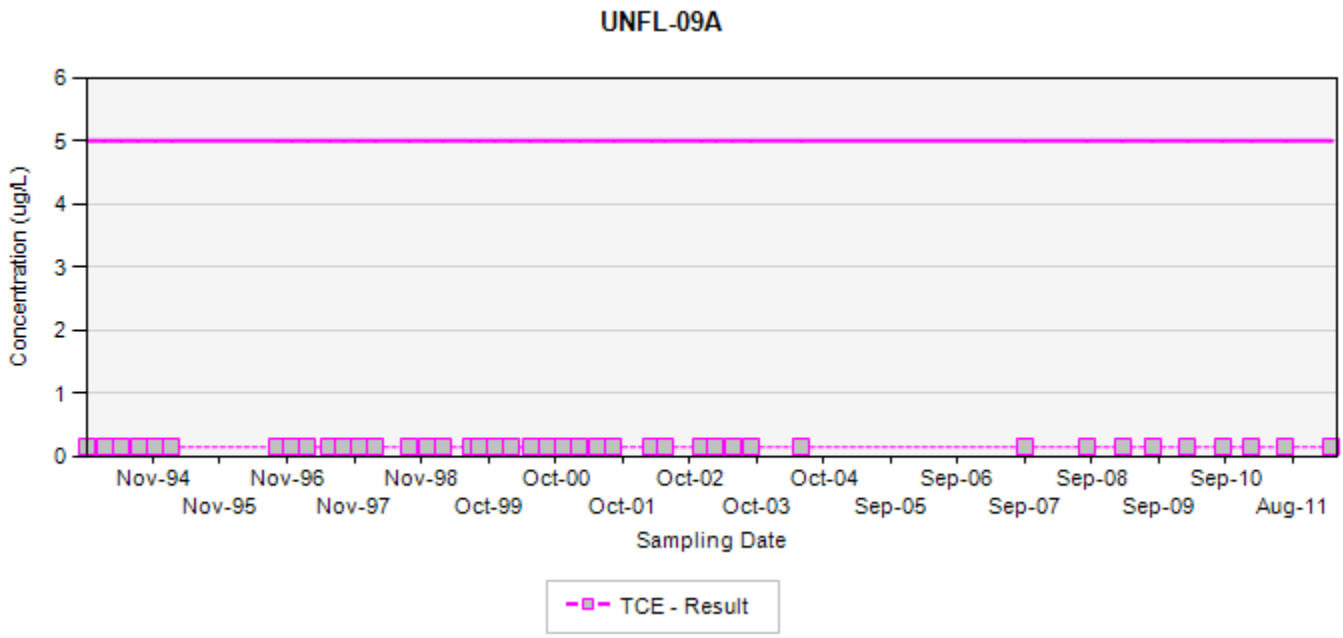
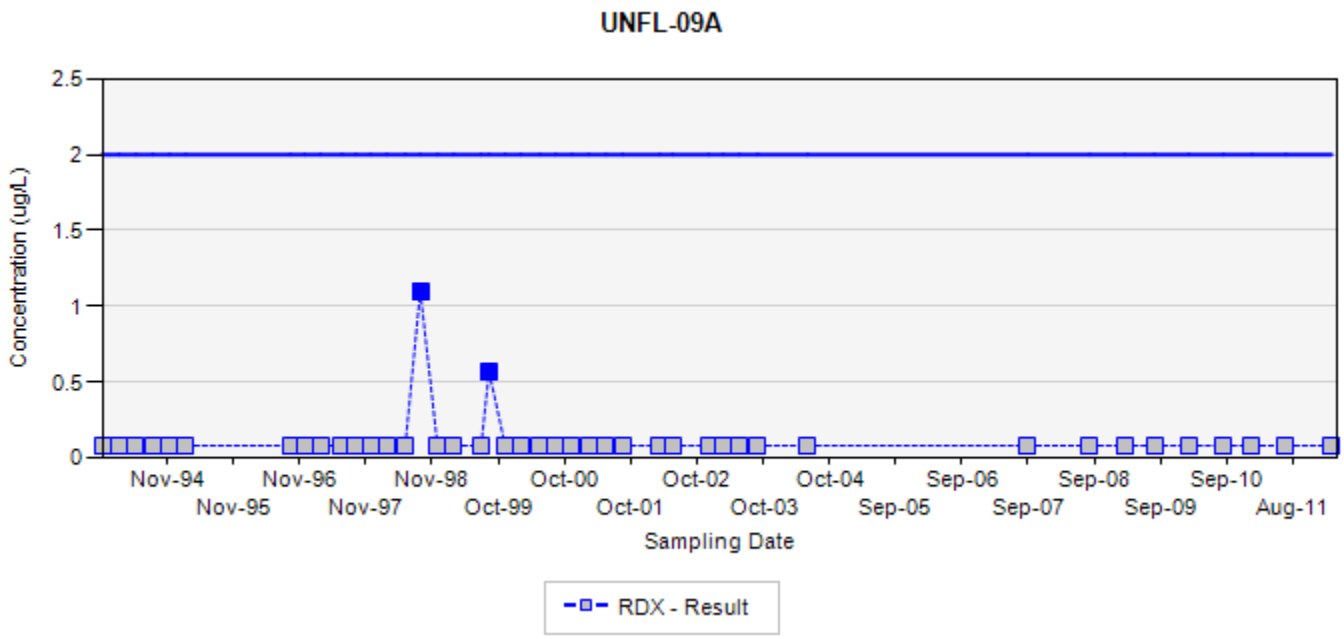
Appendix B
Concentration Trend Charts for Water Supply Wells





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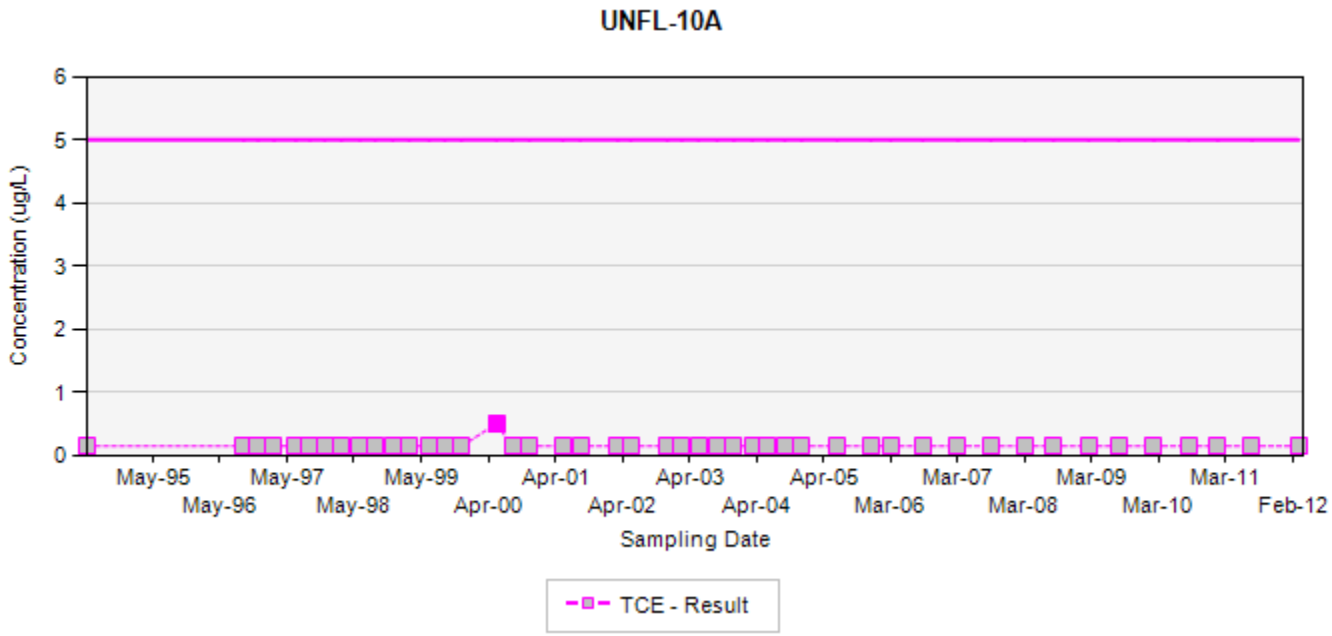

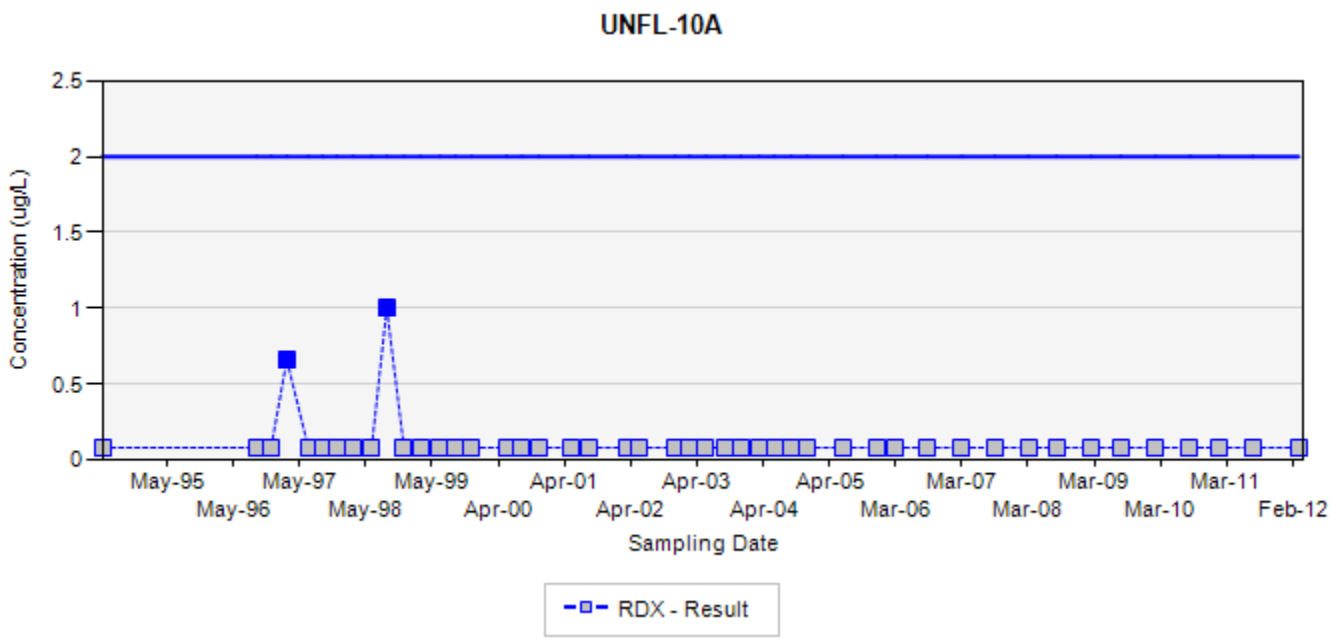

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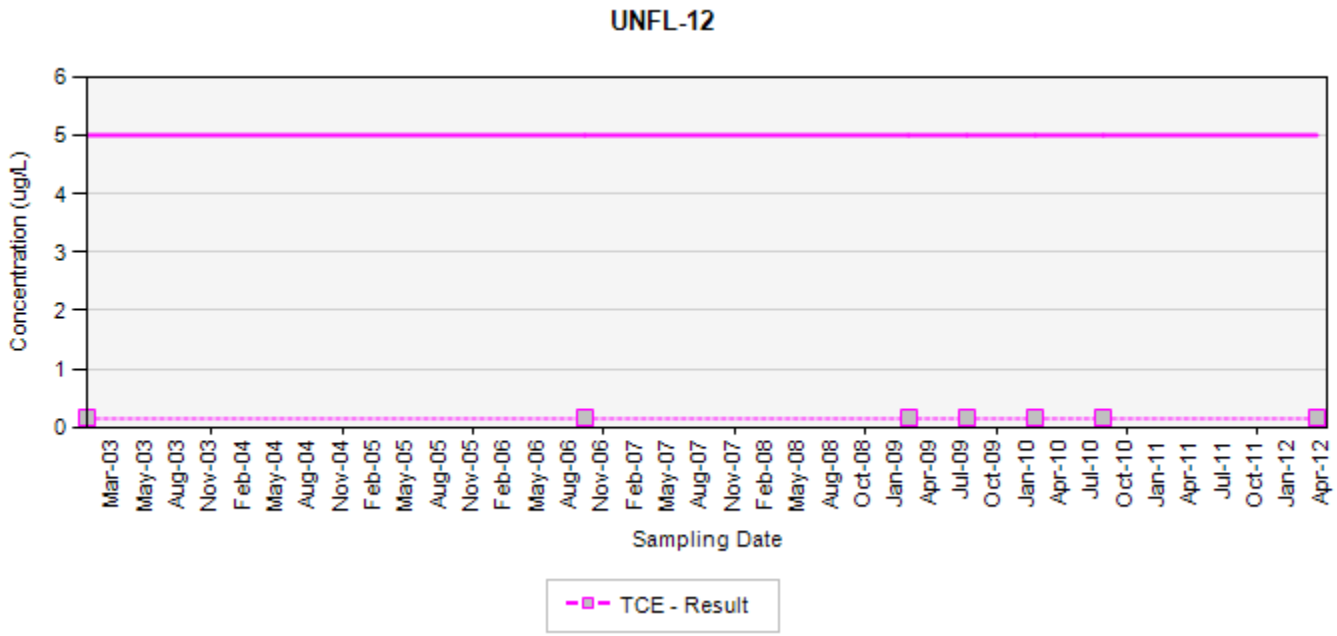

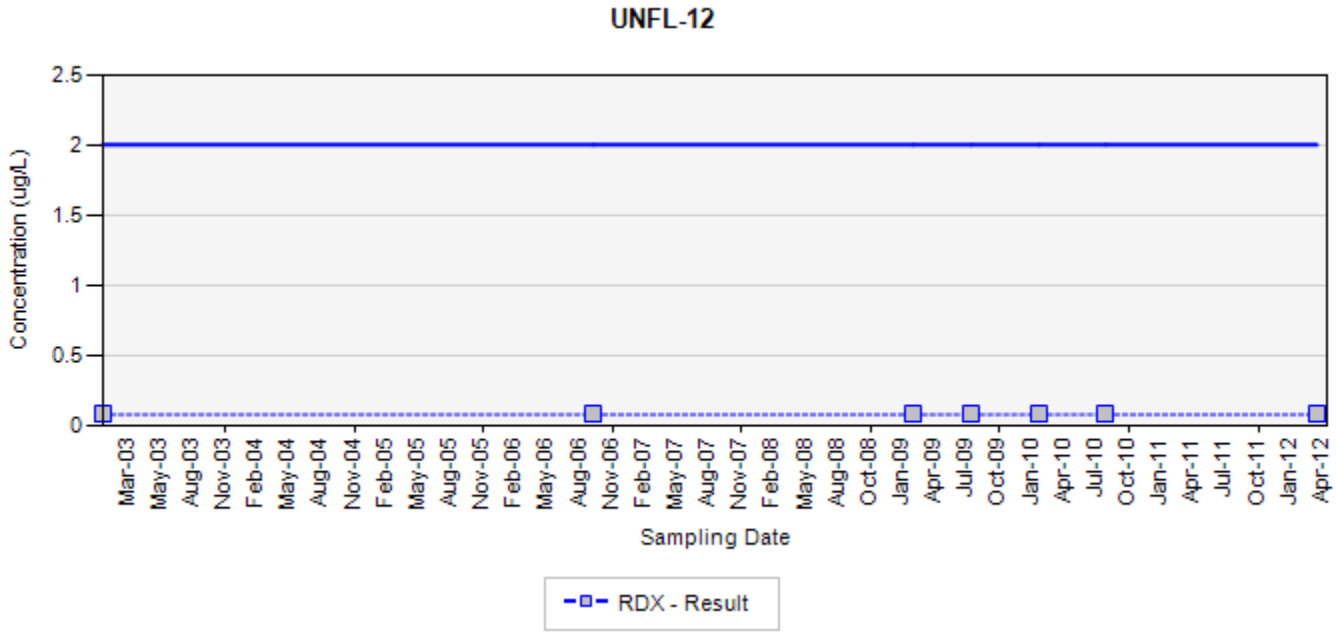

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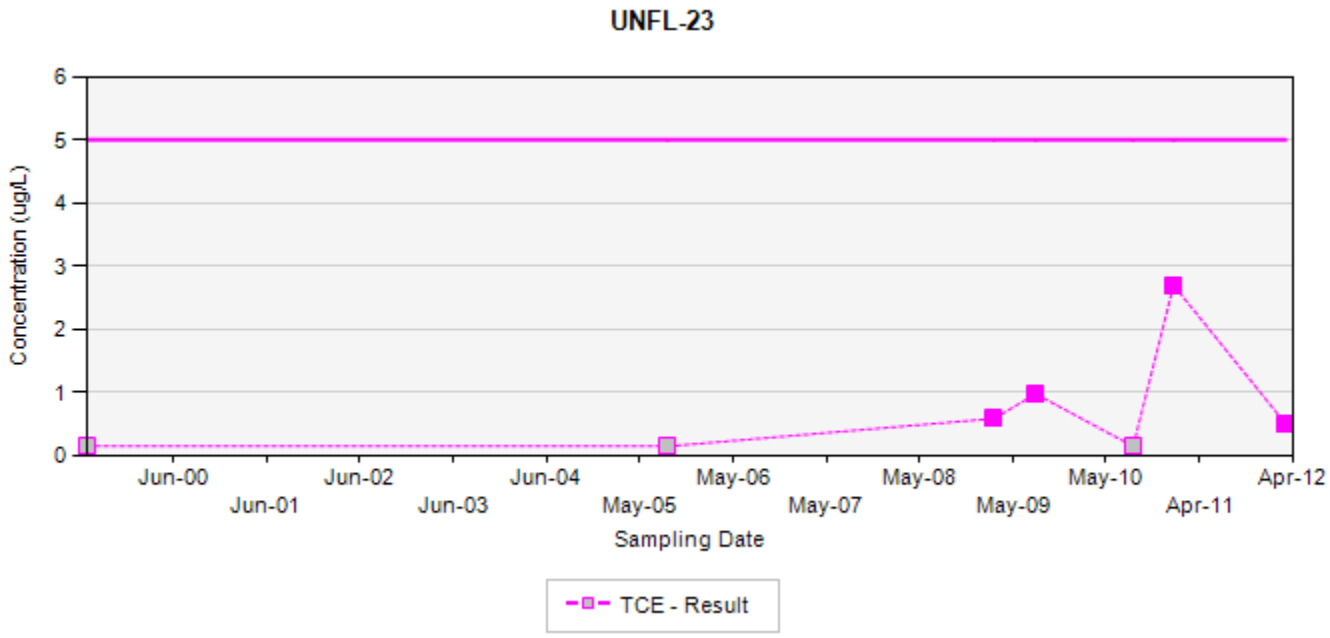

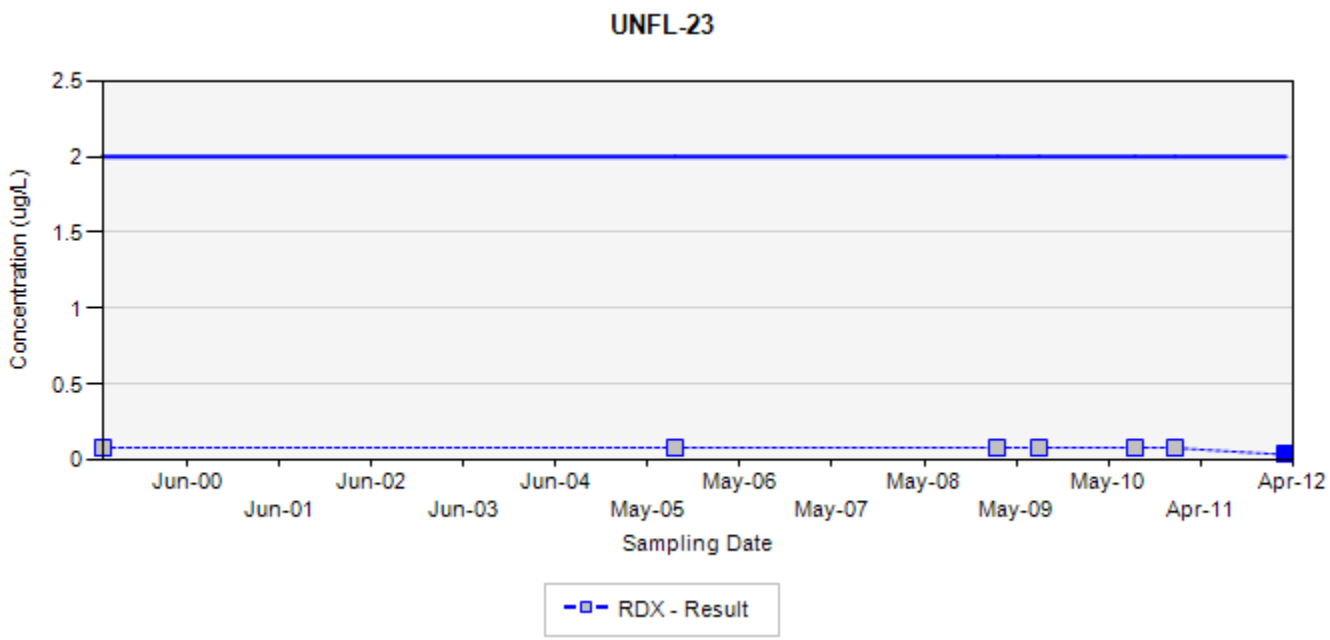

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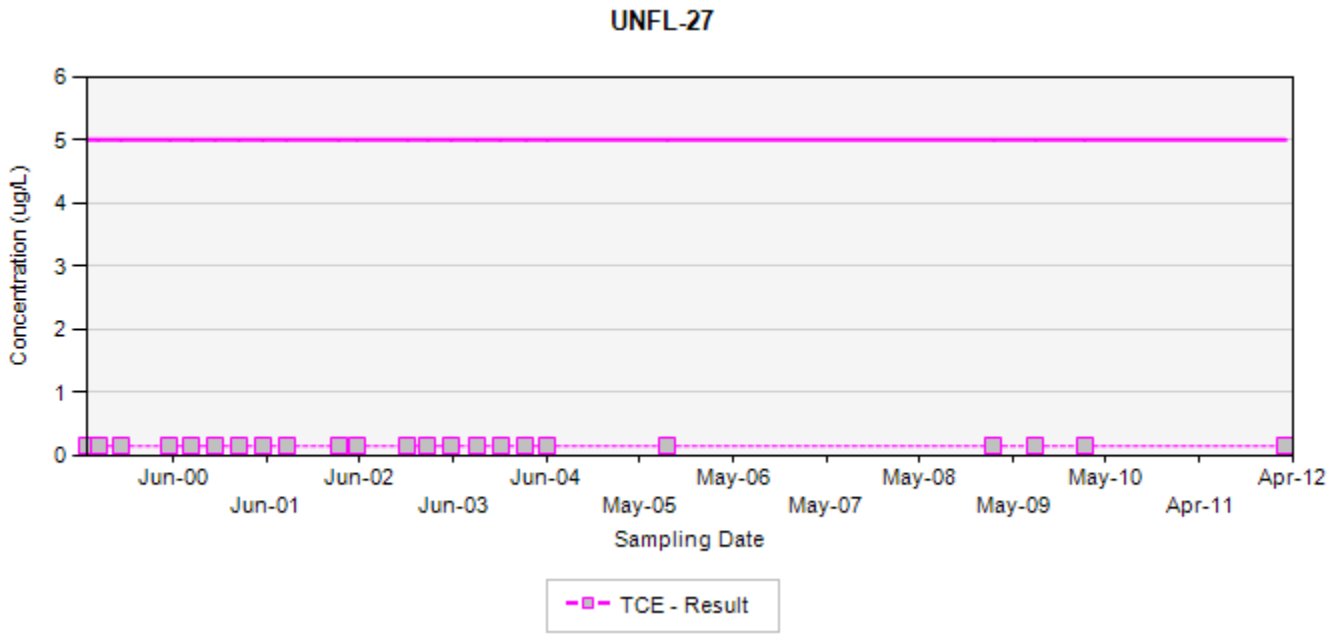

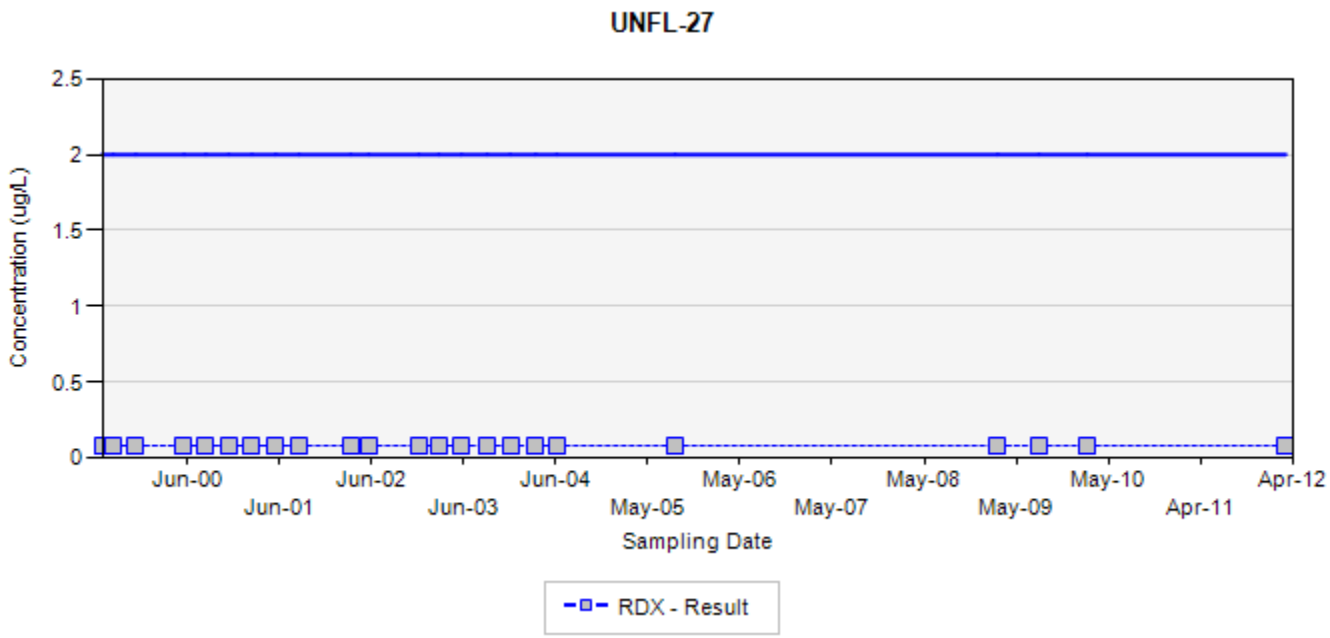

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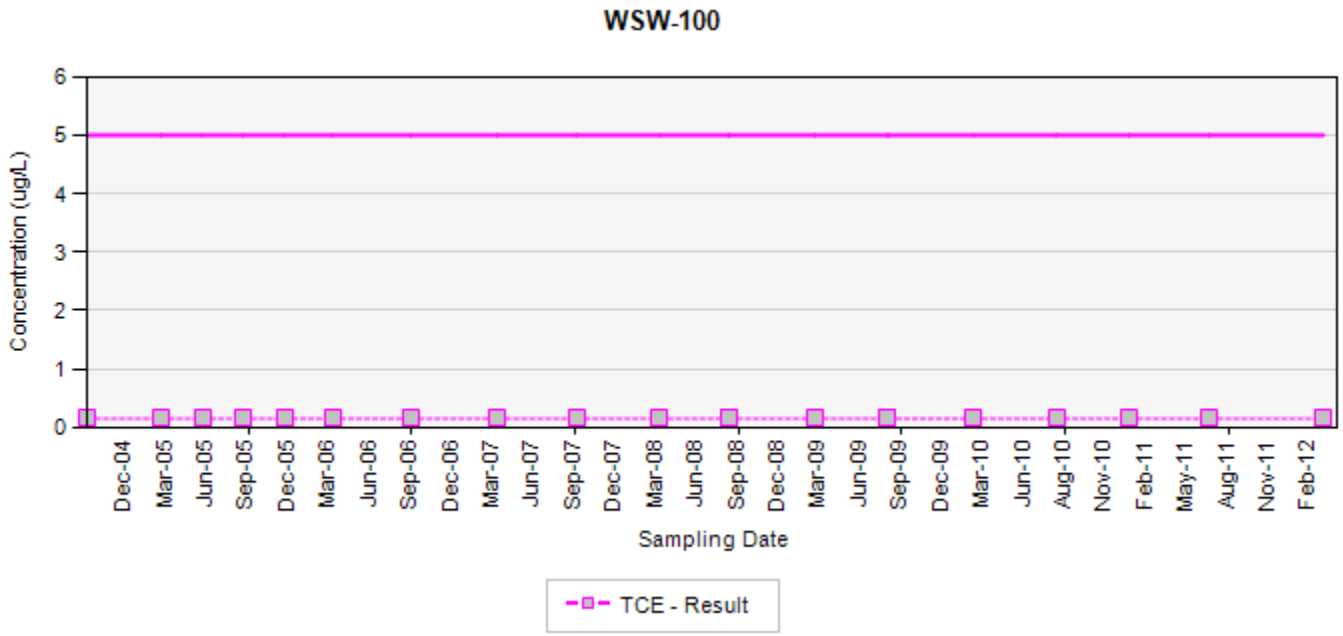

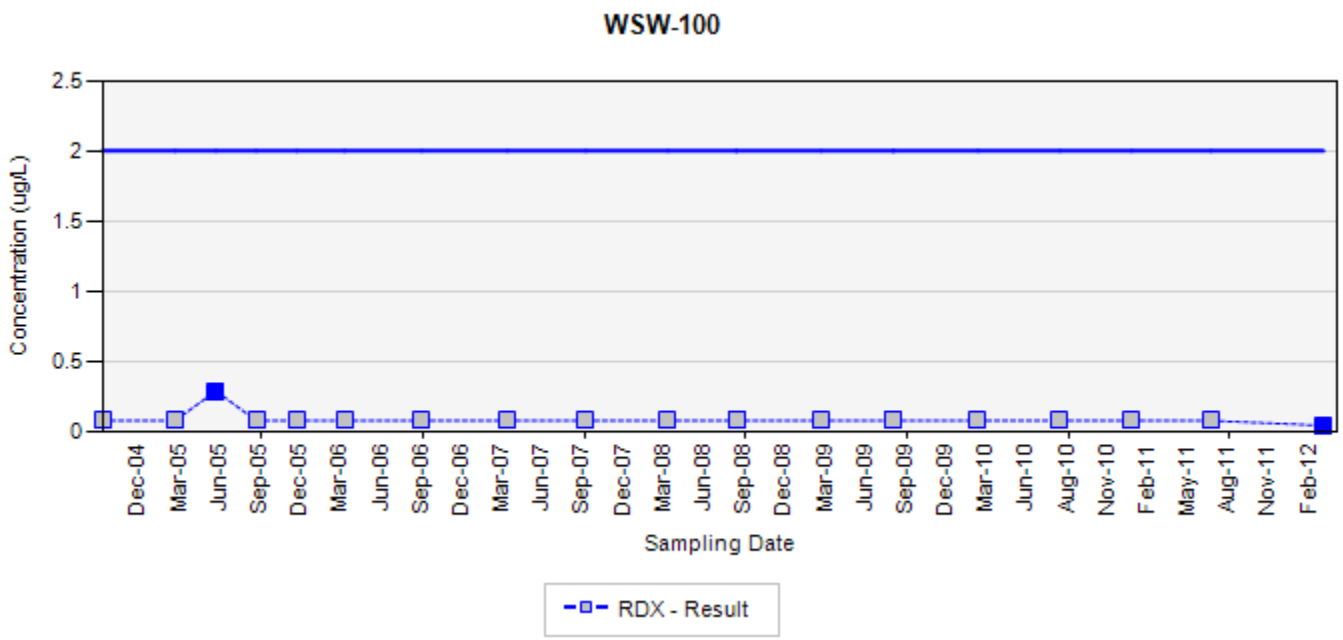

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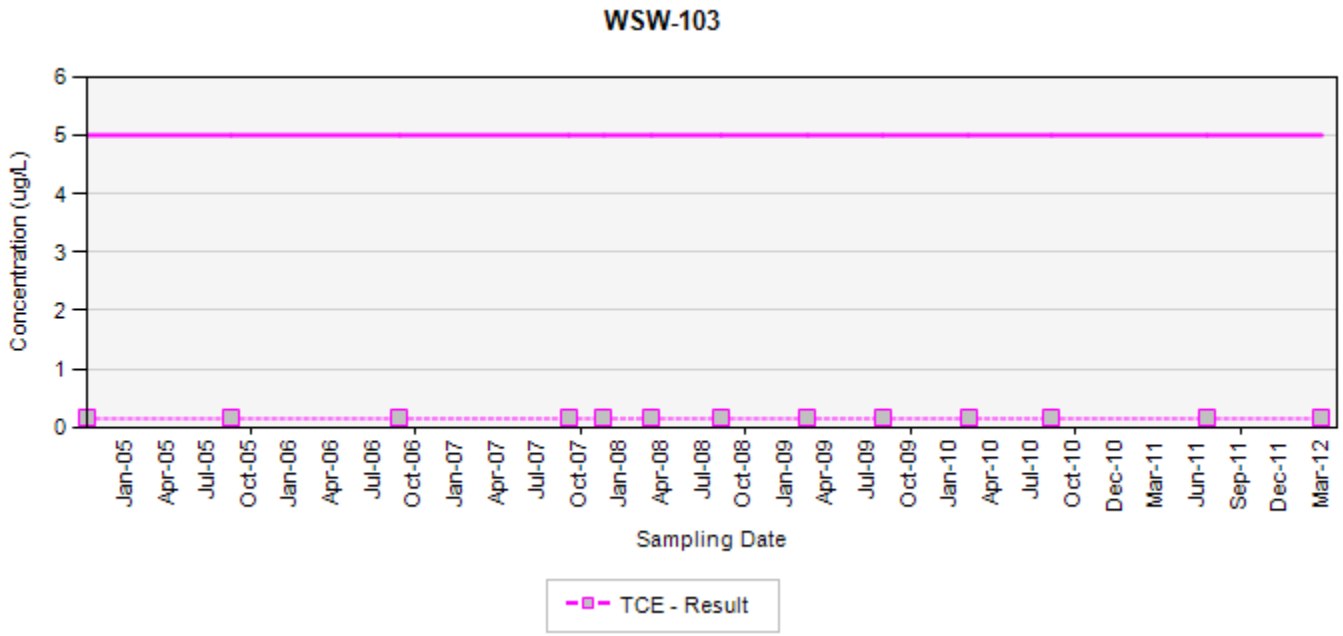

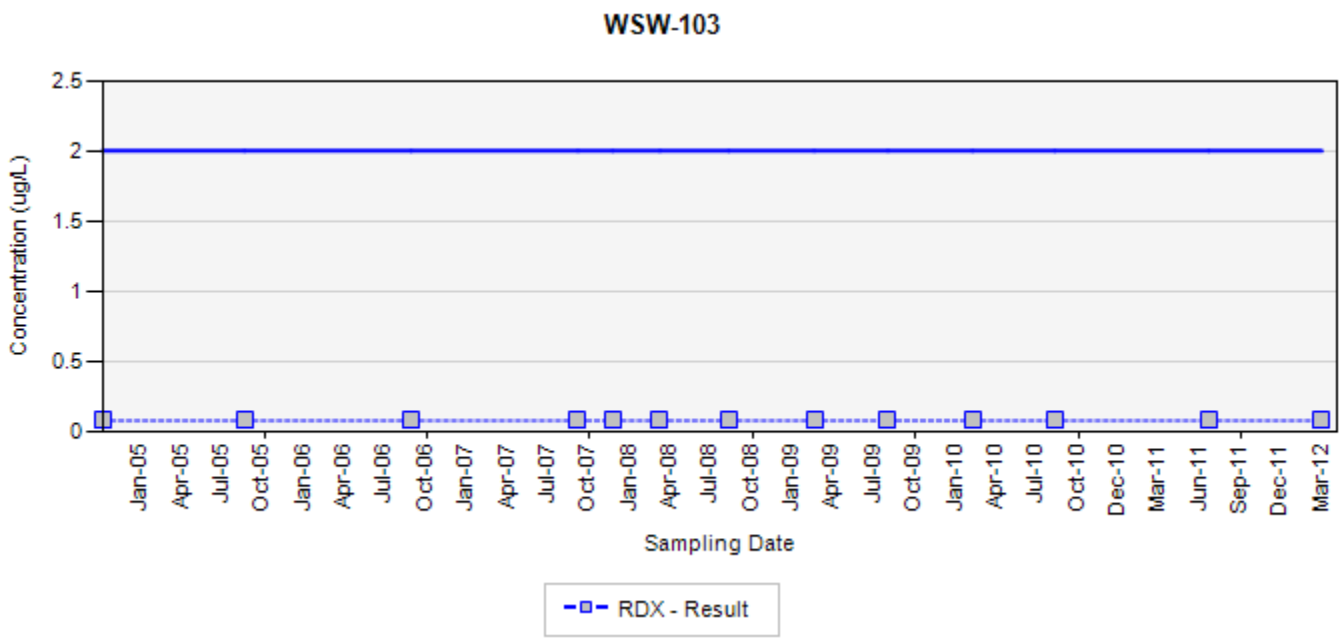

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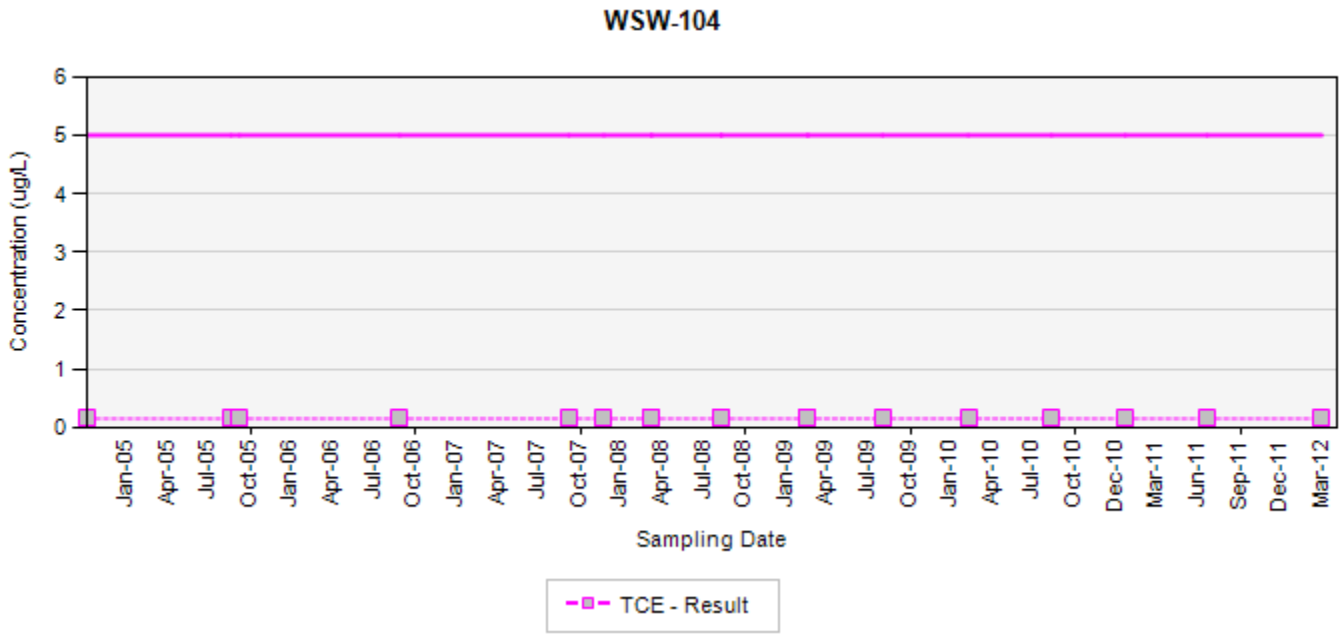

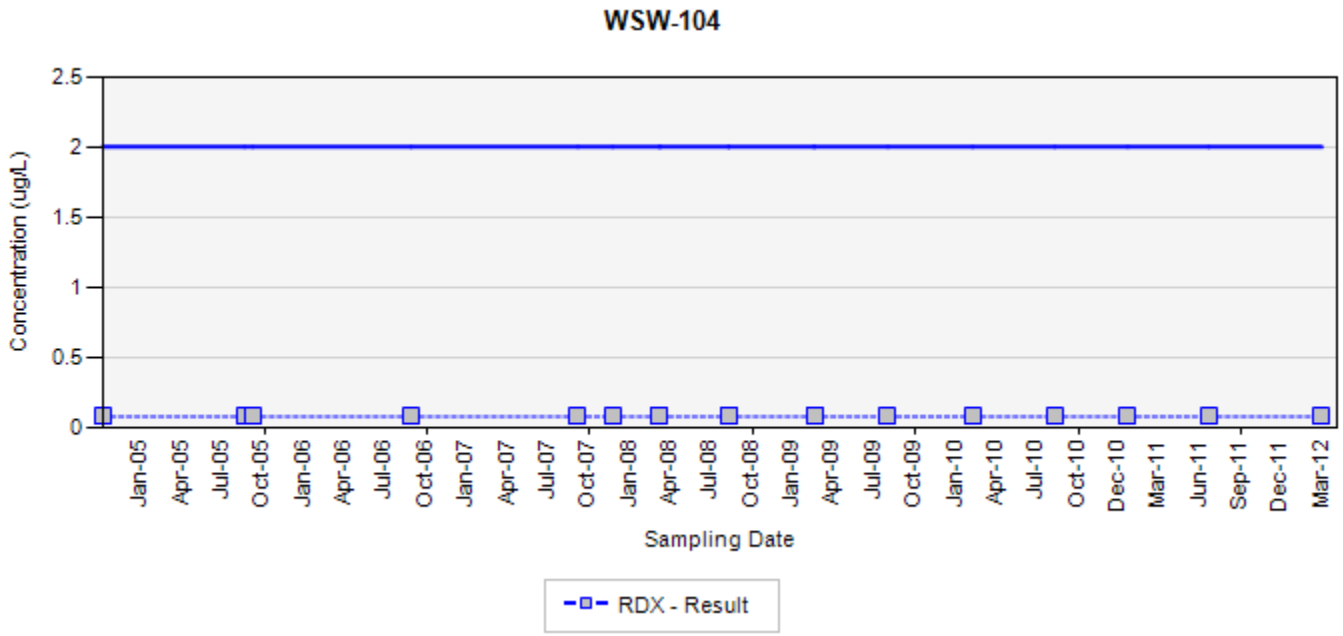

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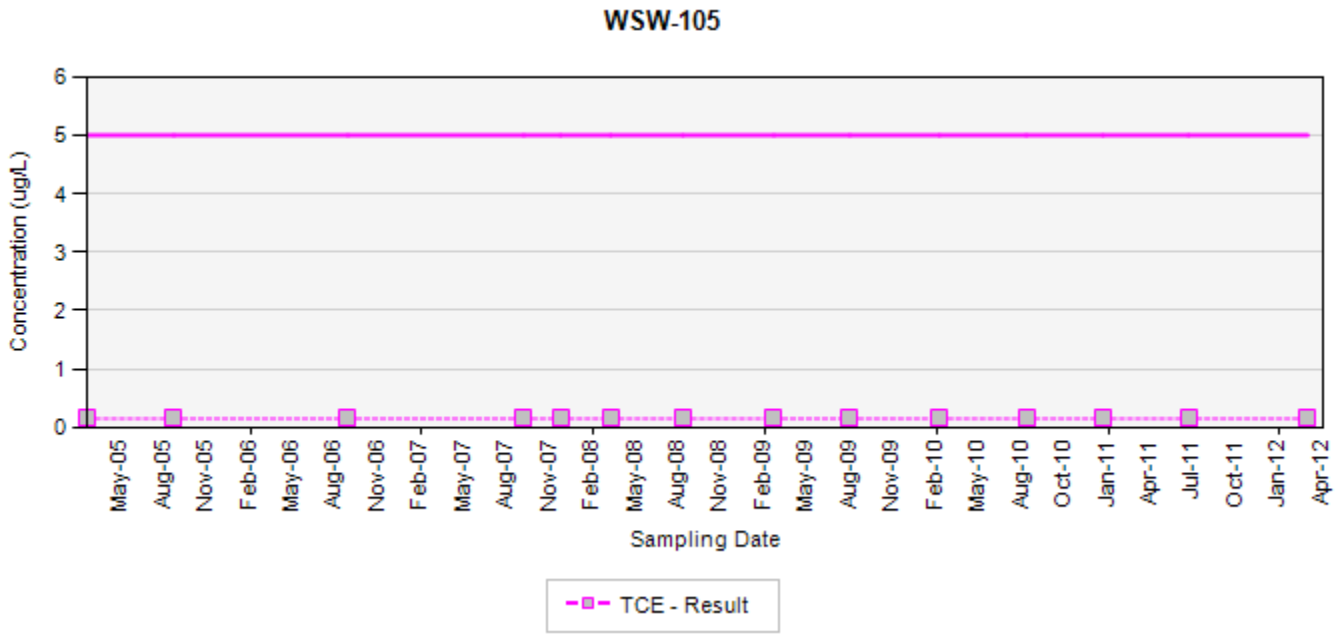

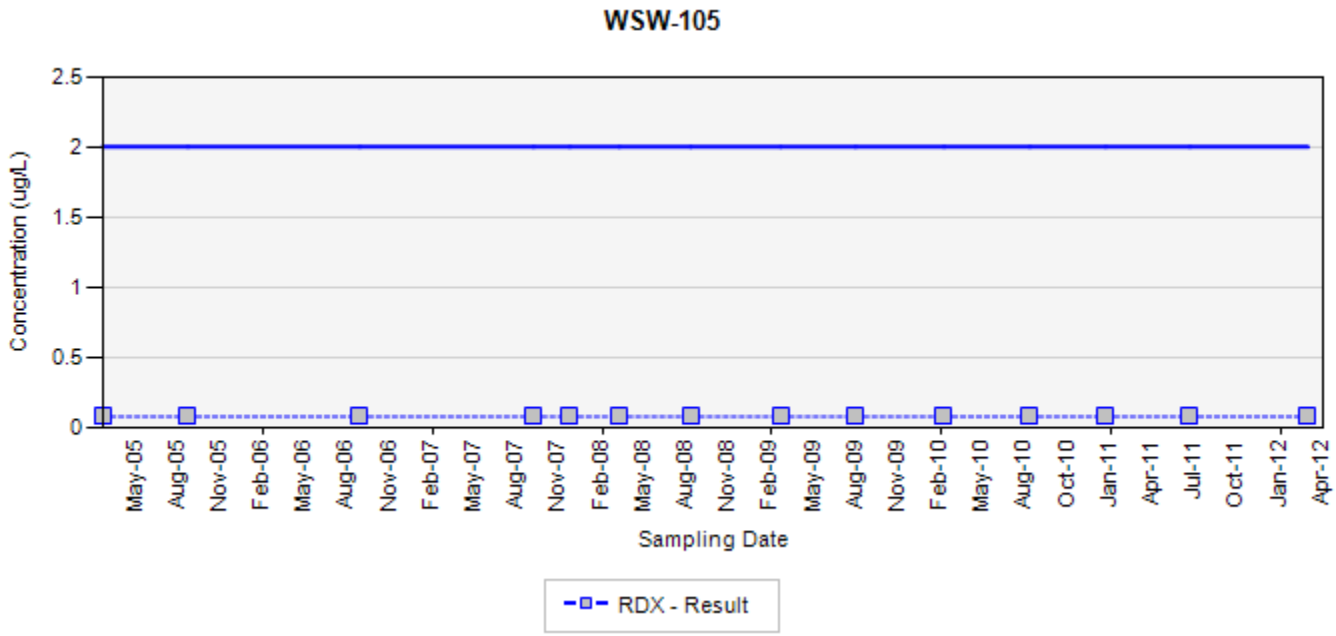

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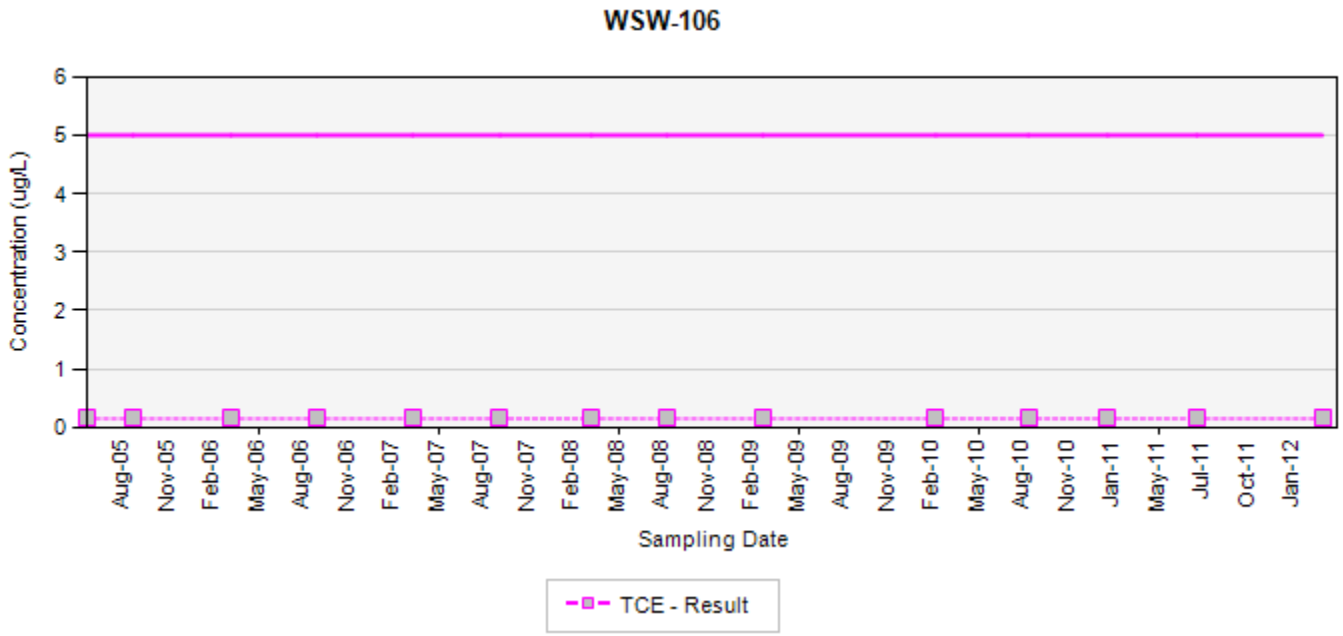

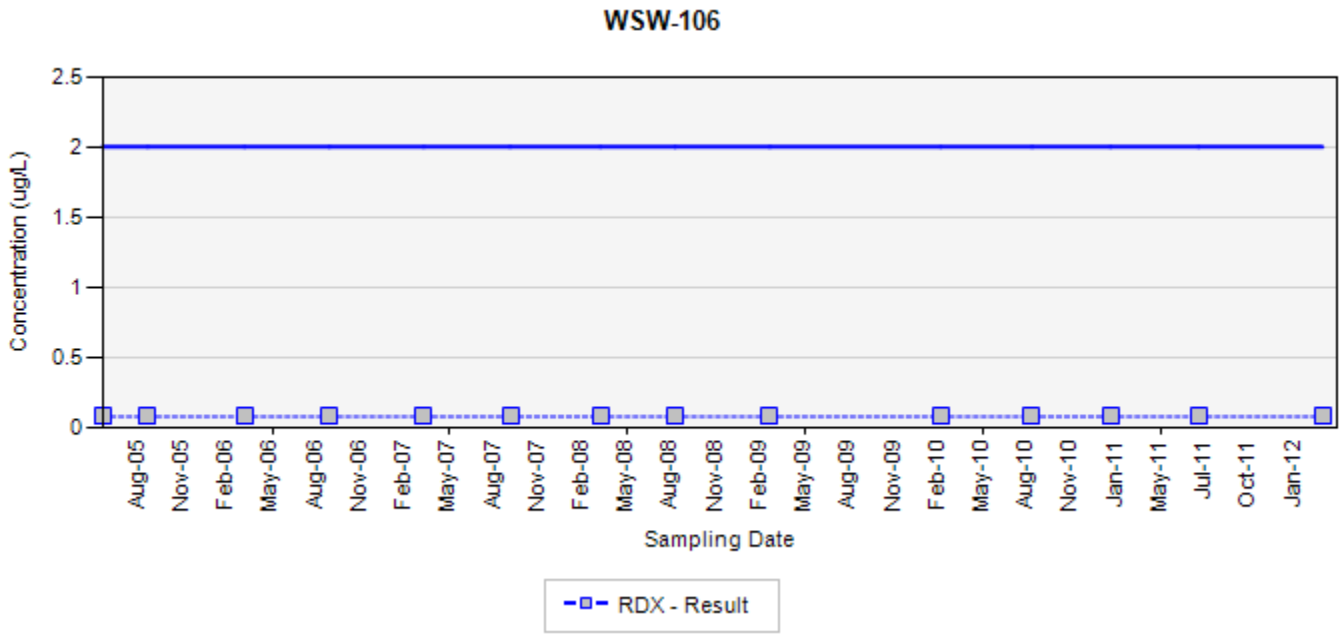

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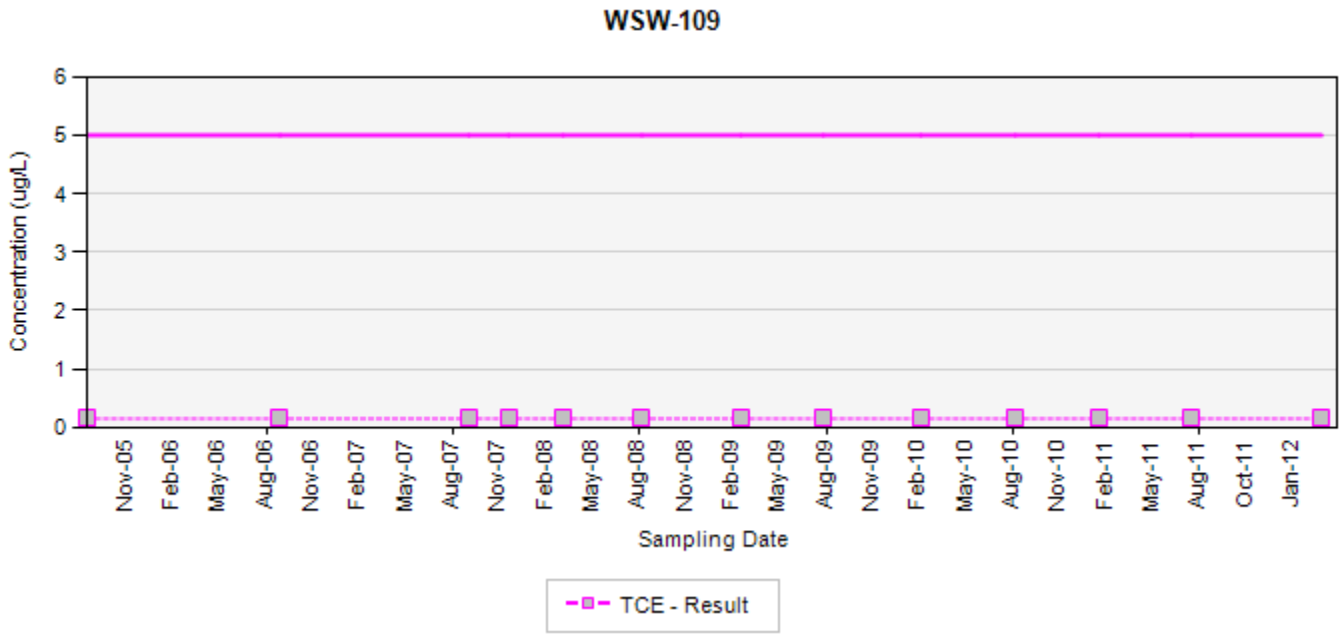

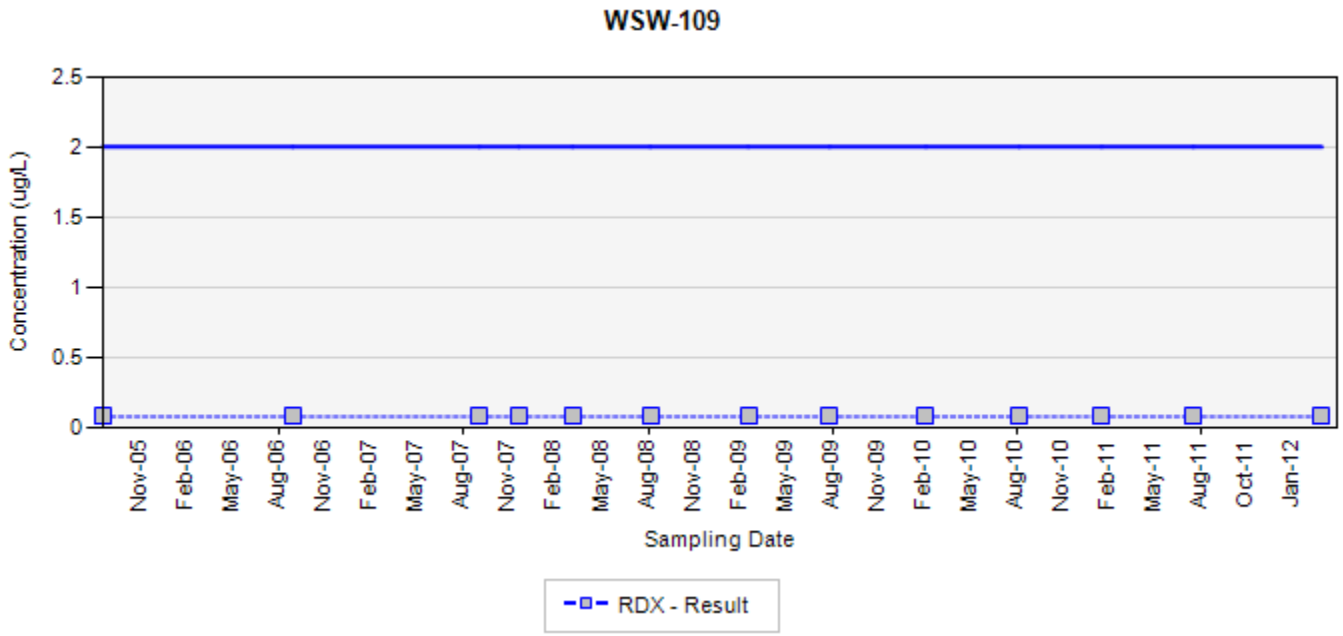

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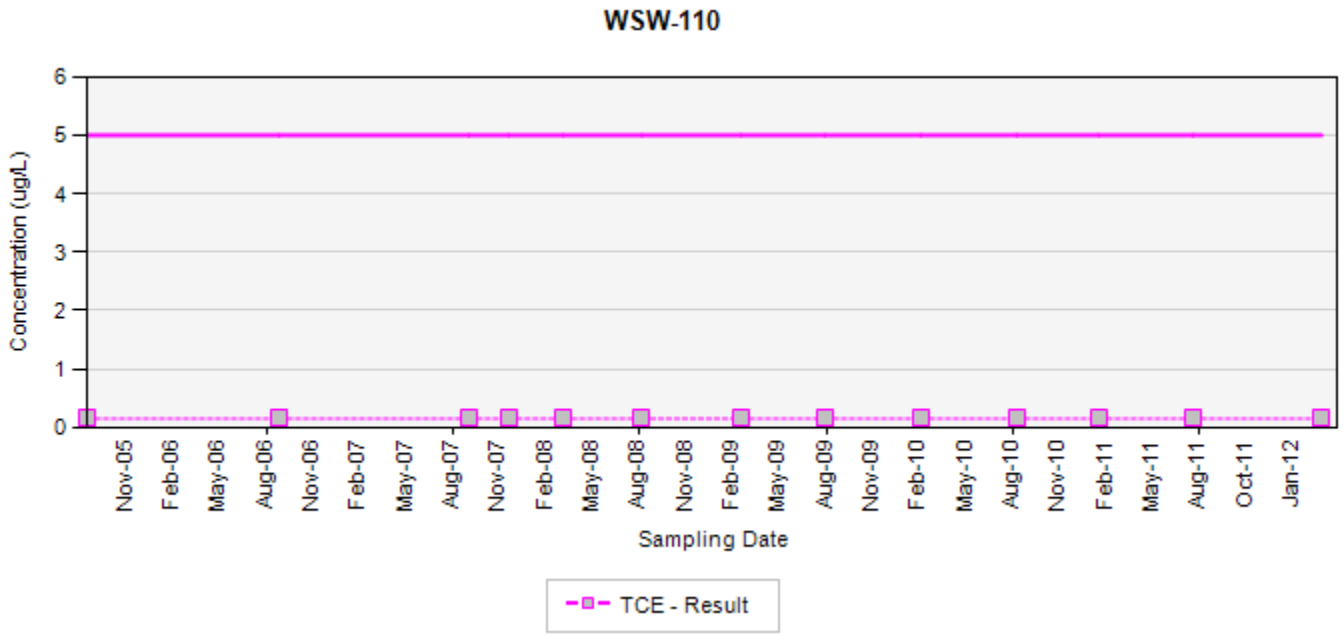

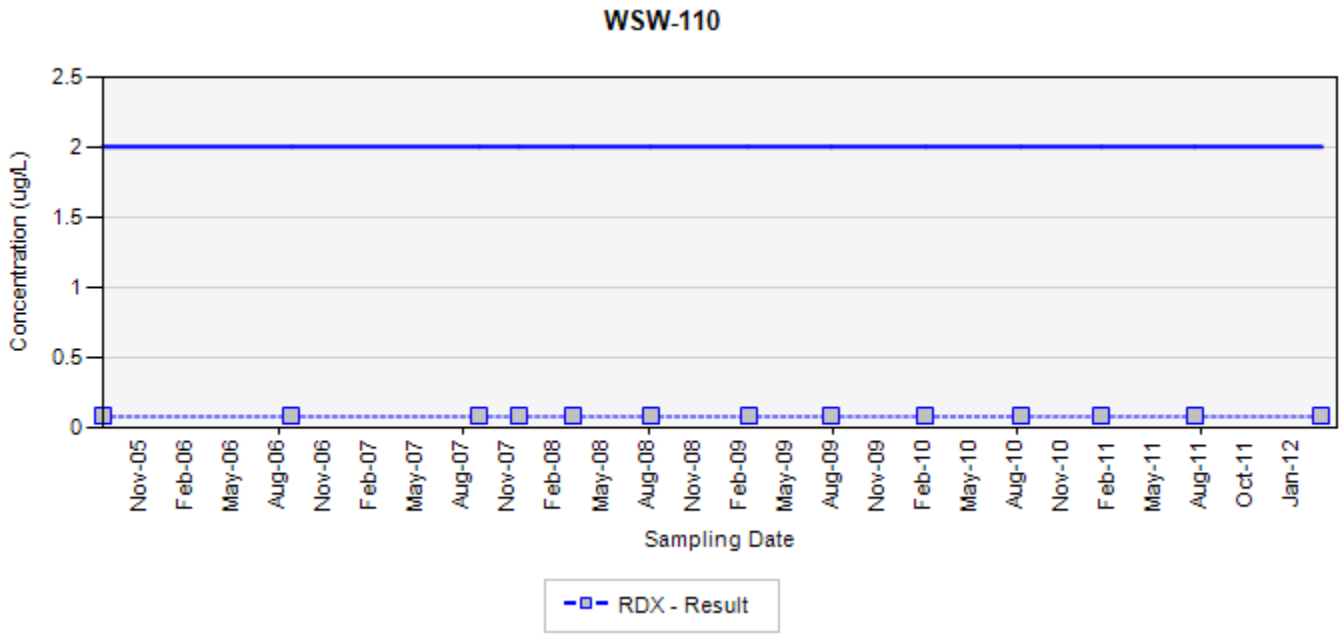

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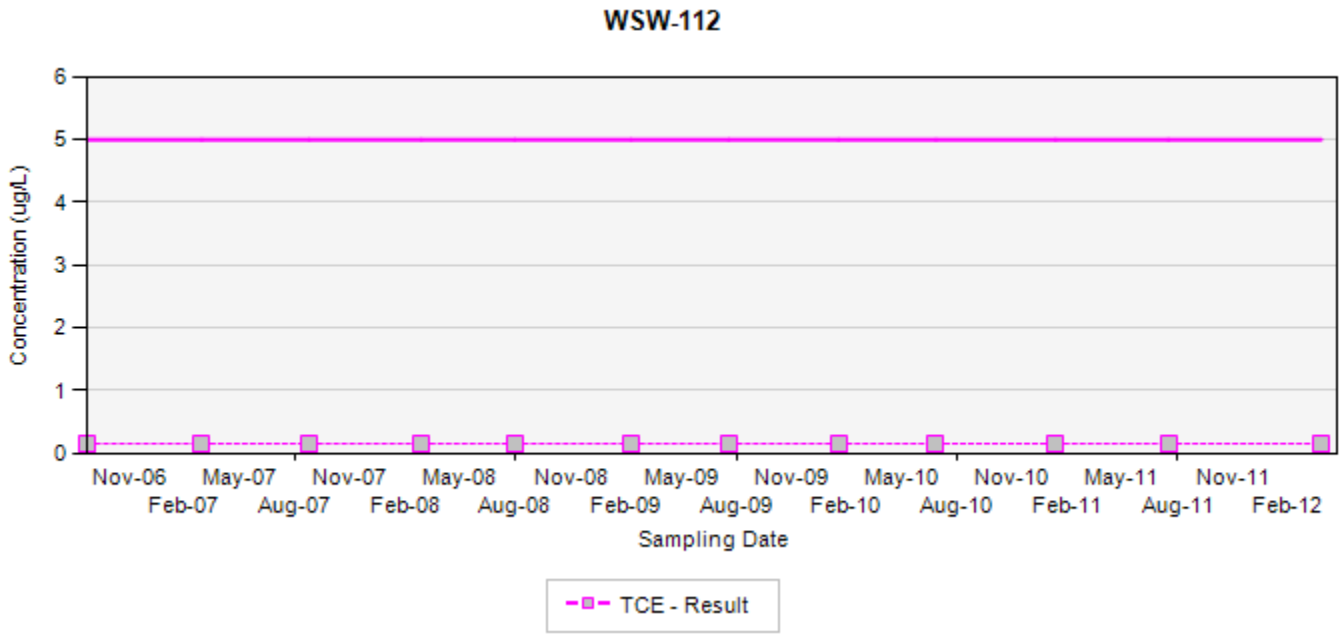

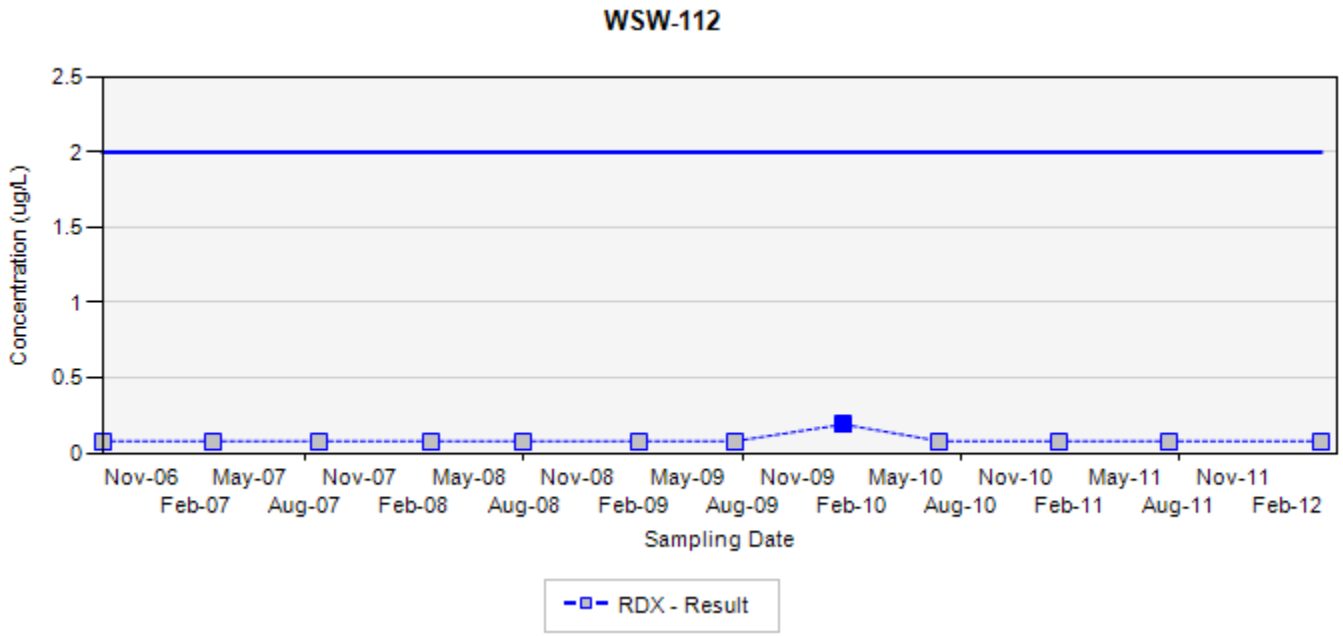

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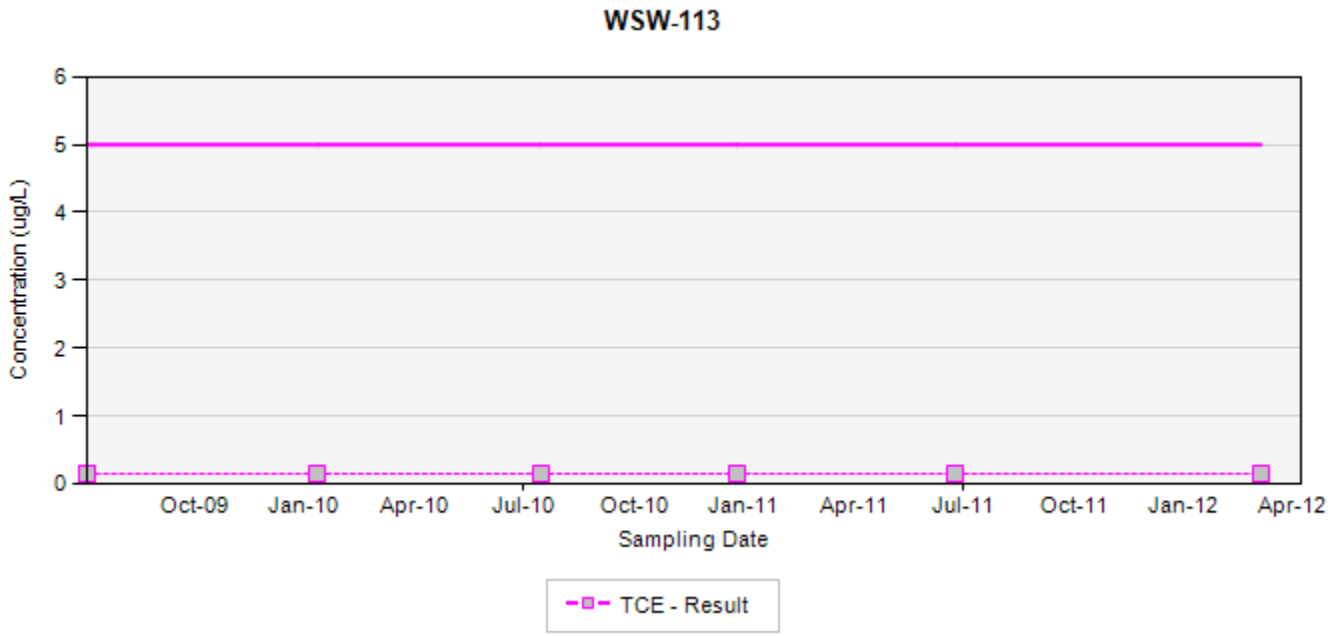

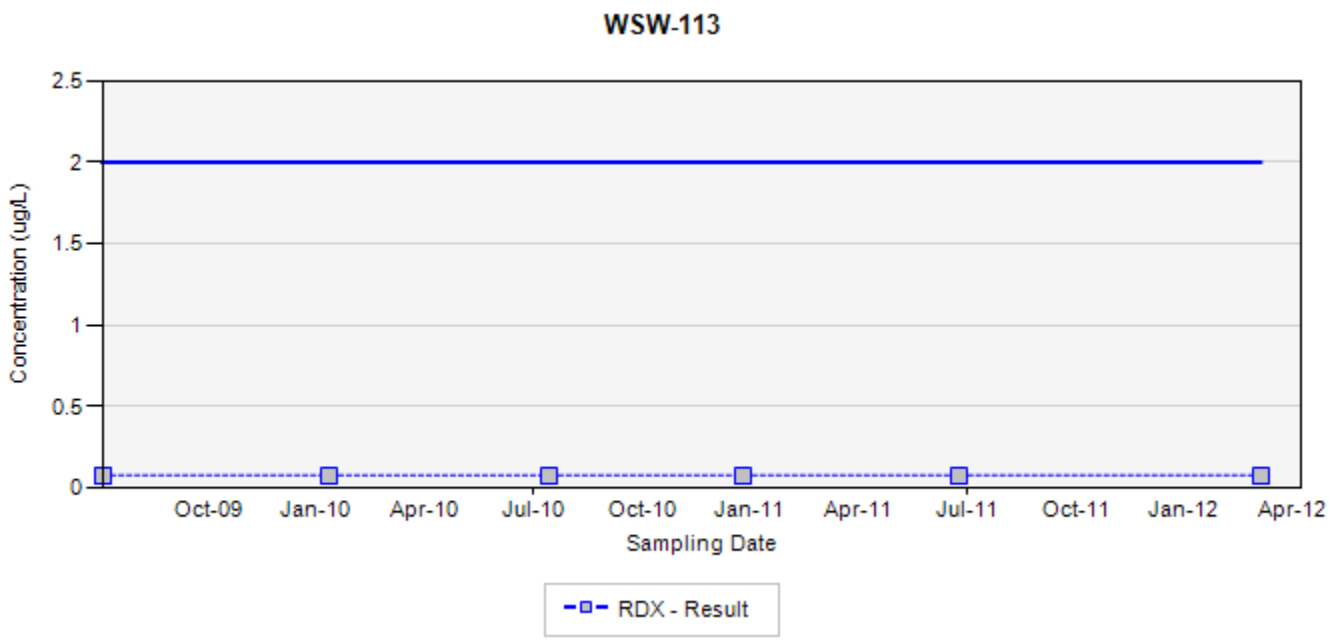

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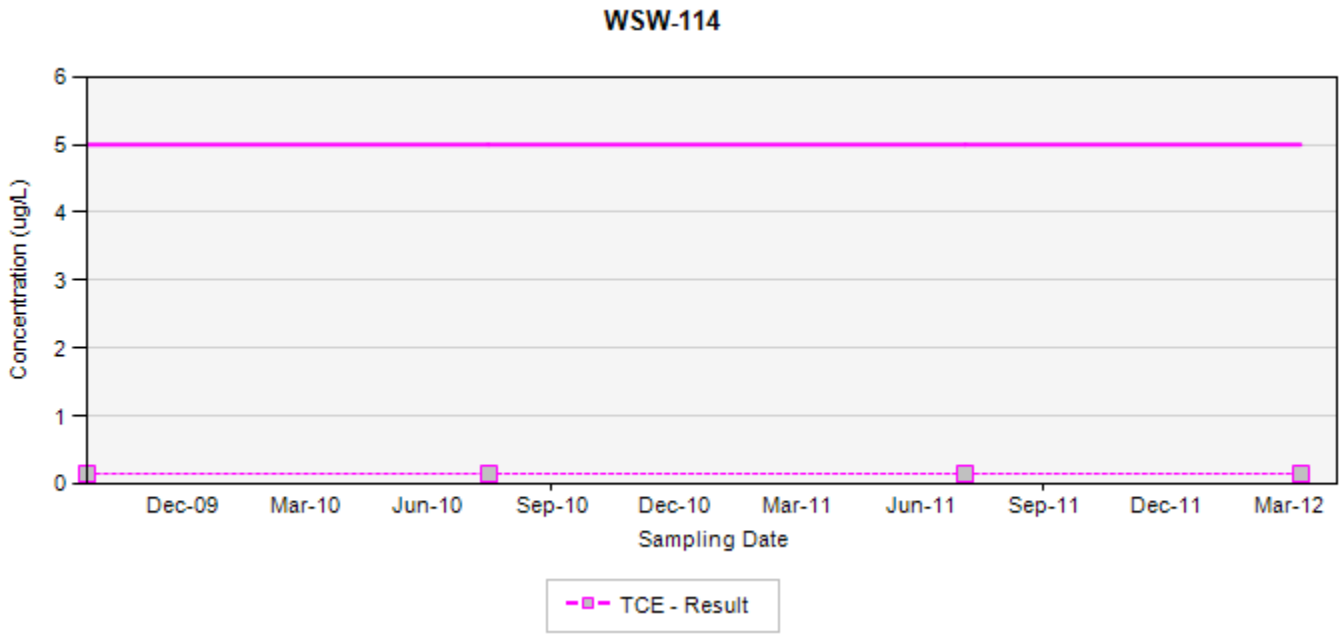

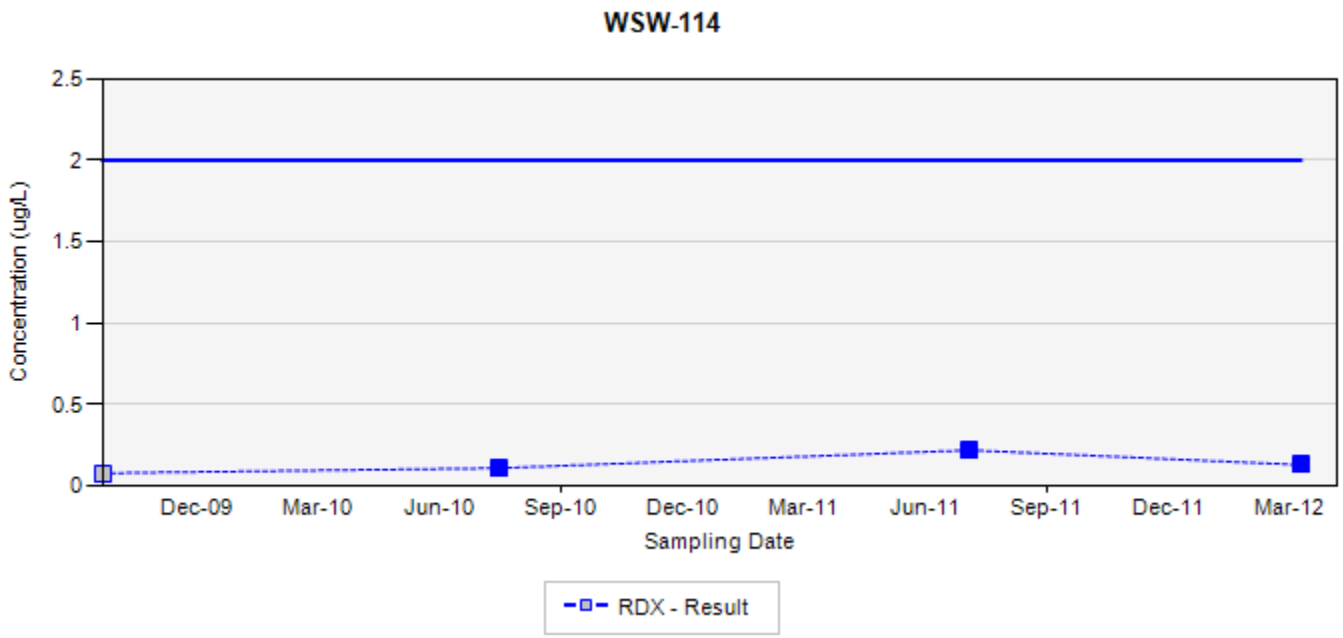

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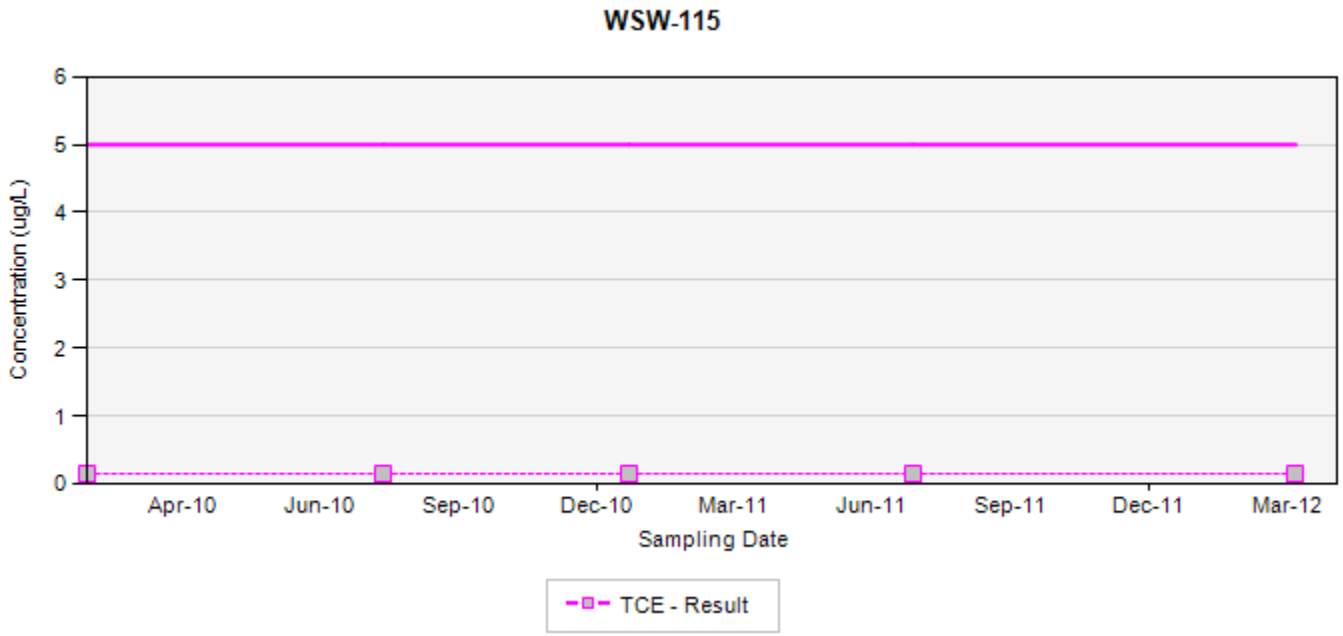

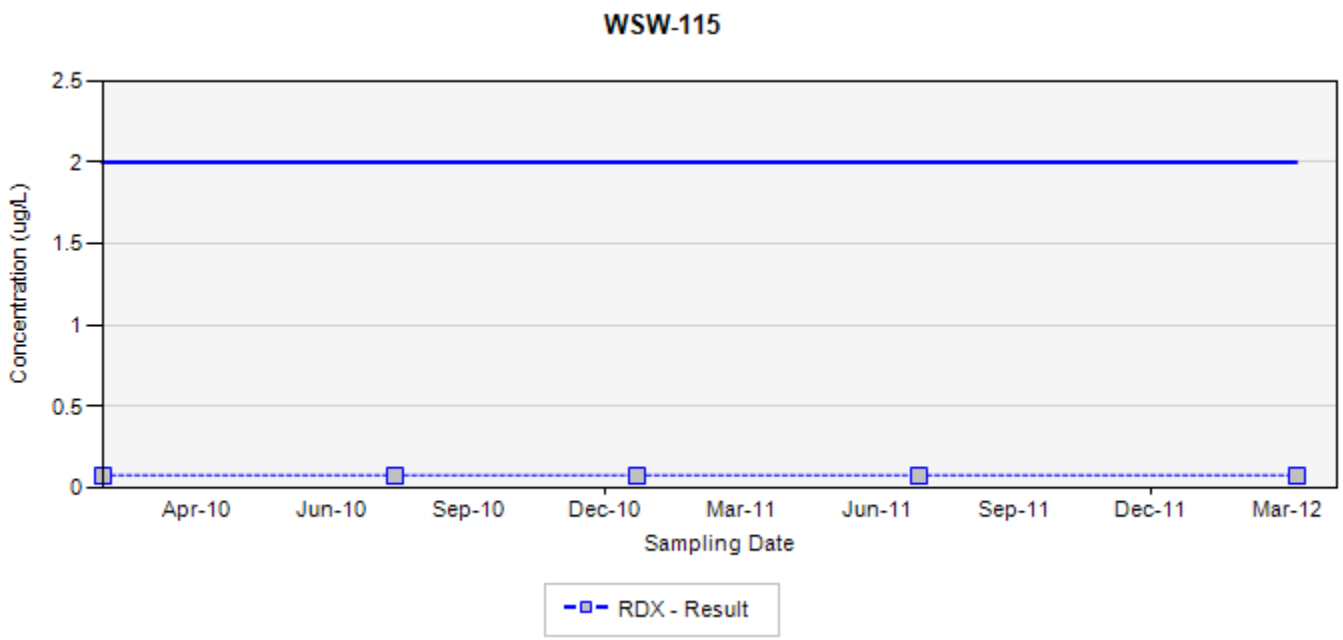

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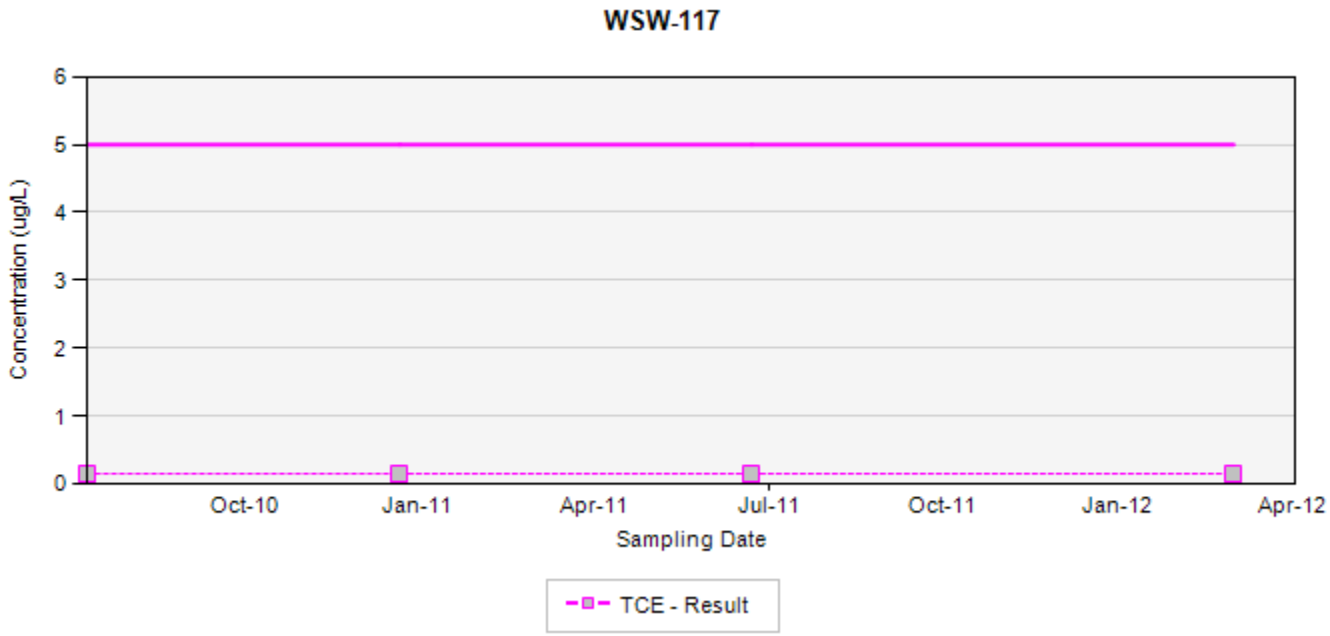

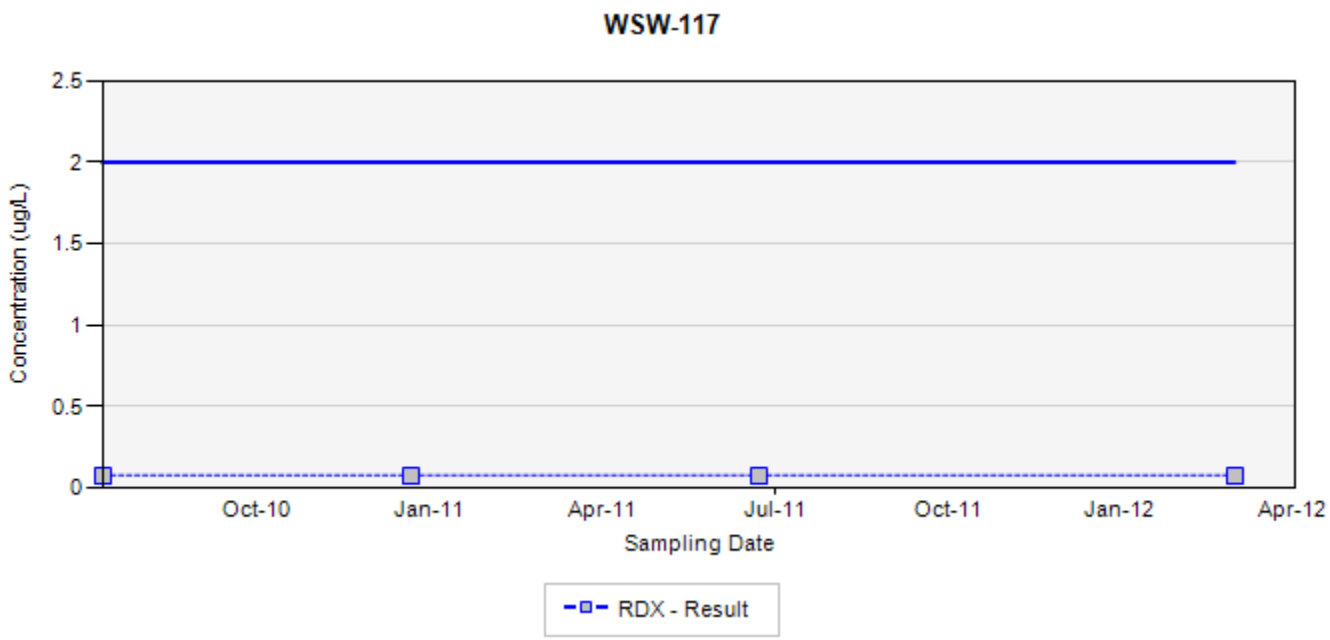

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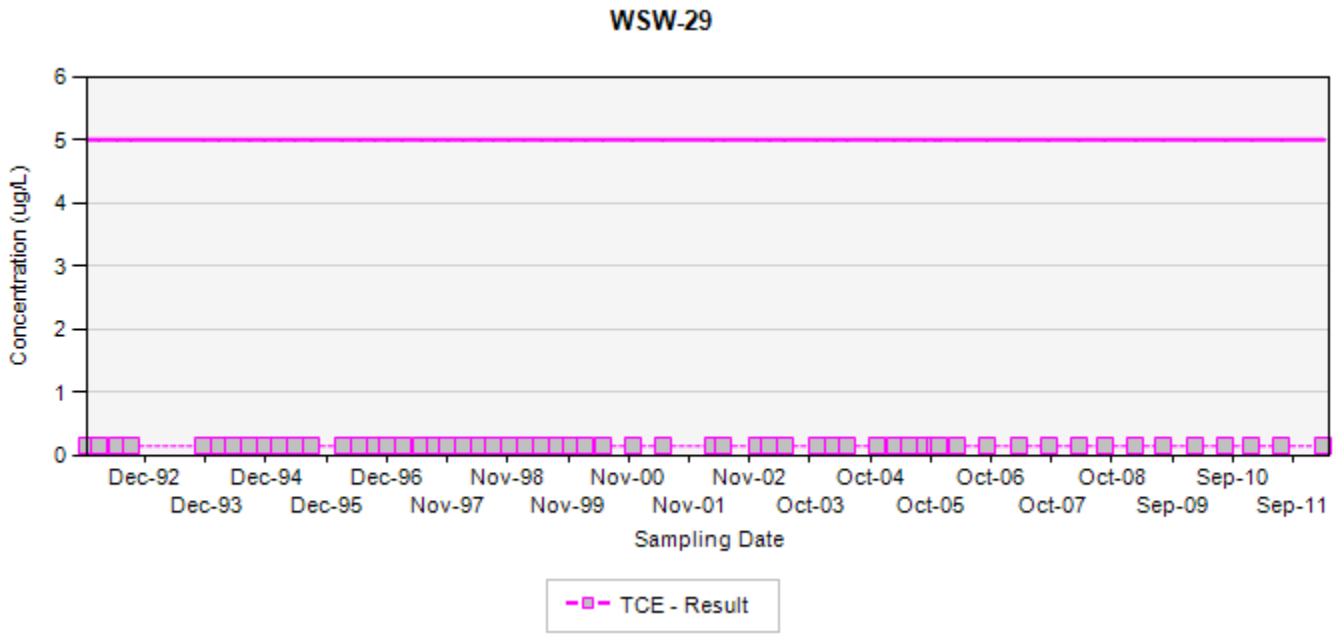

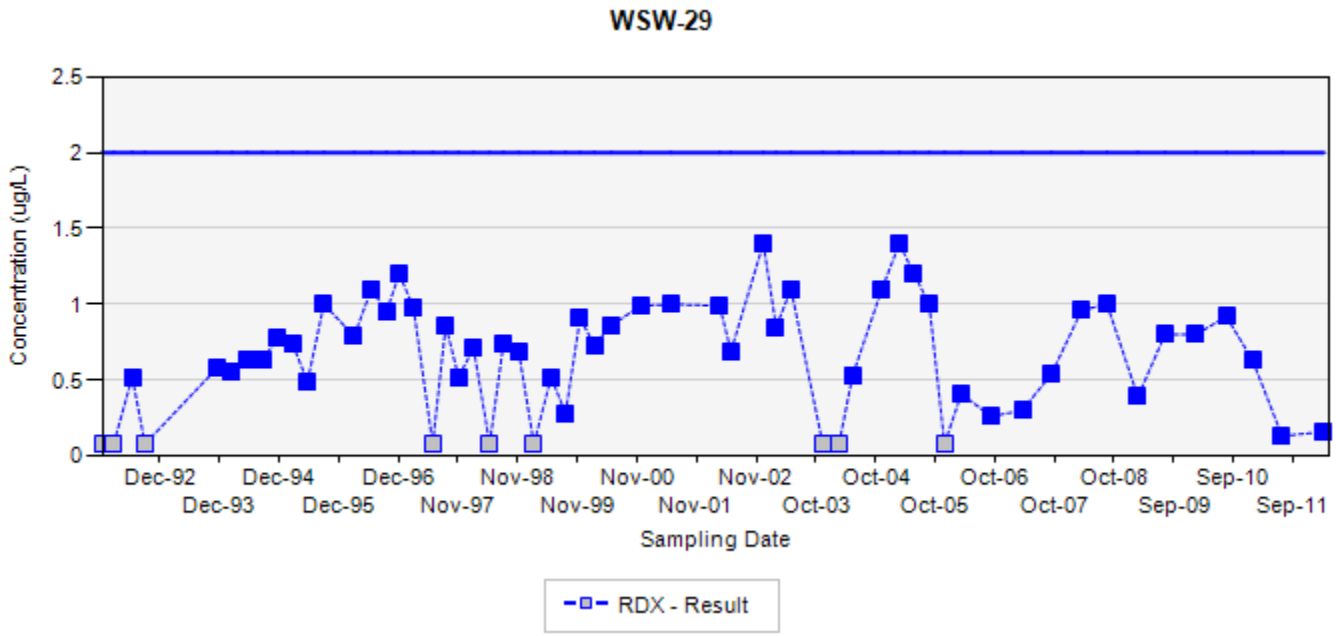

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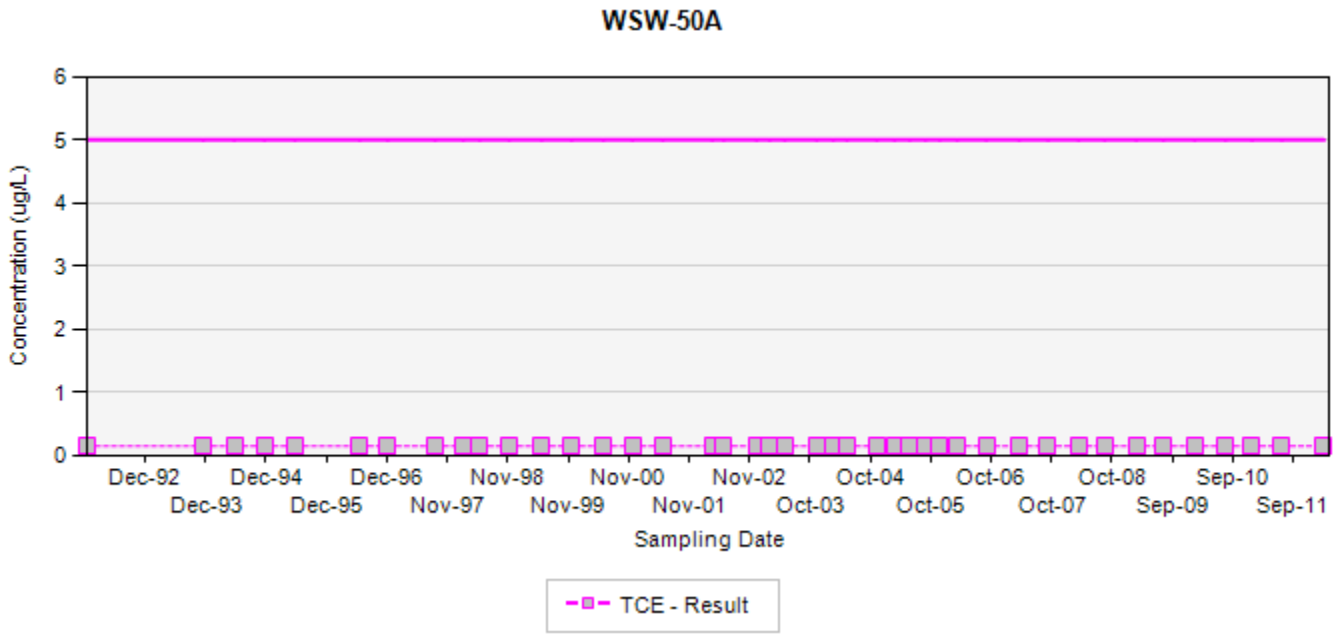

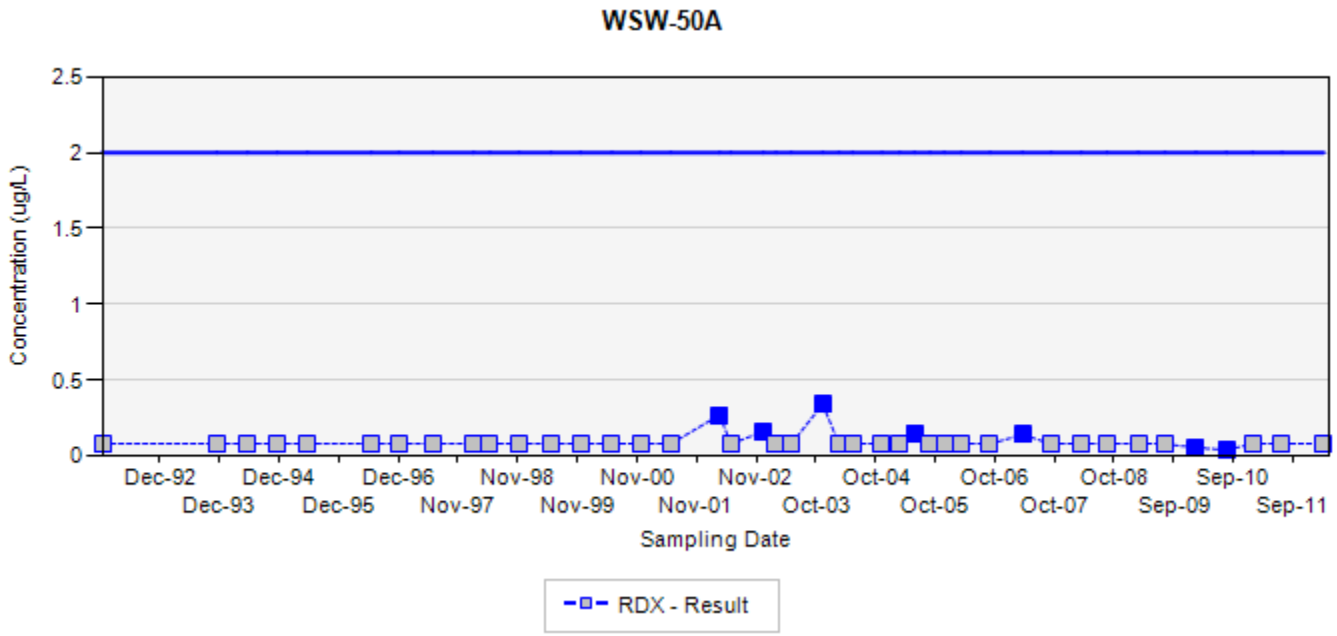

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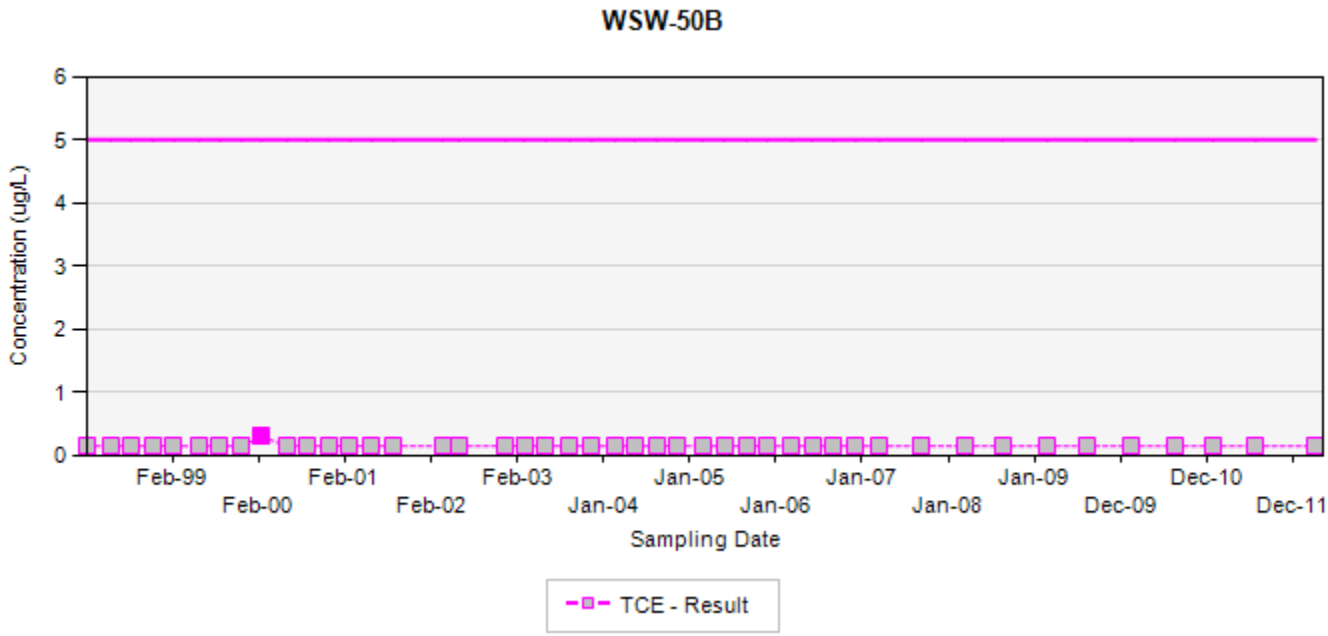

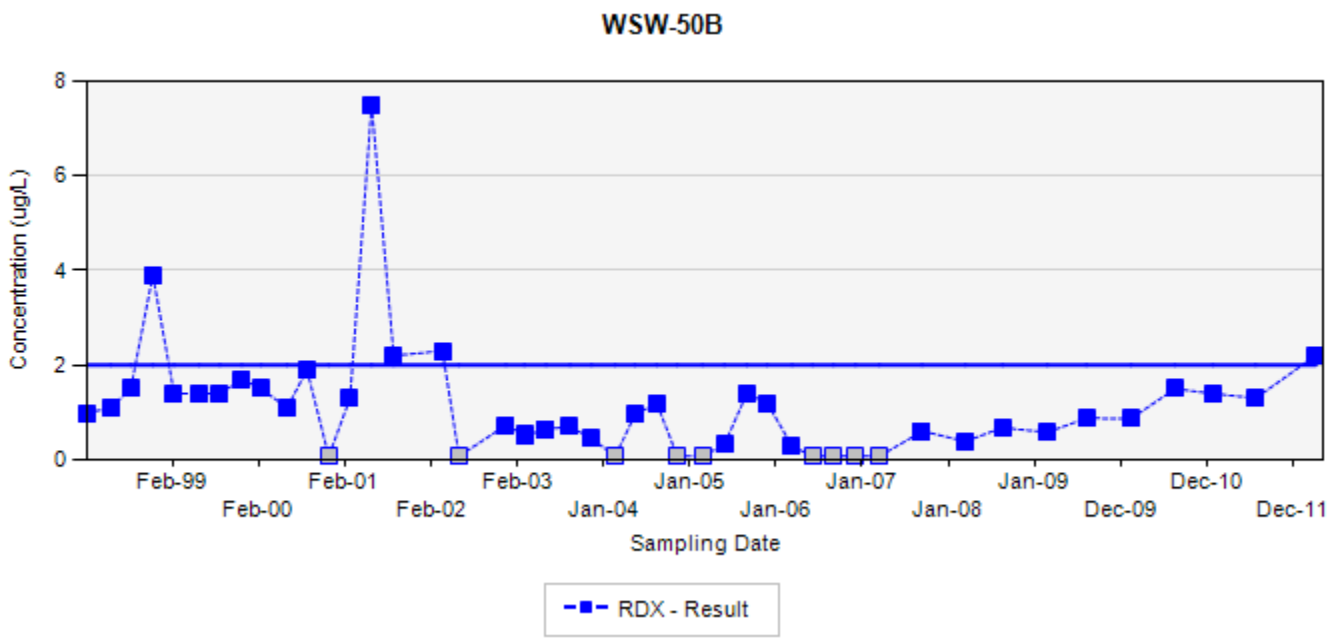

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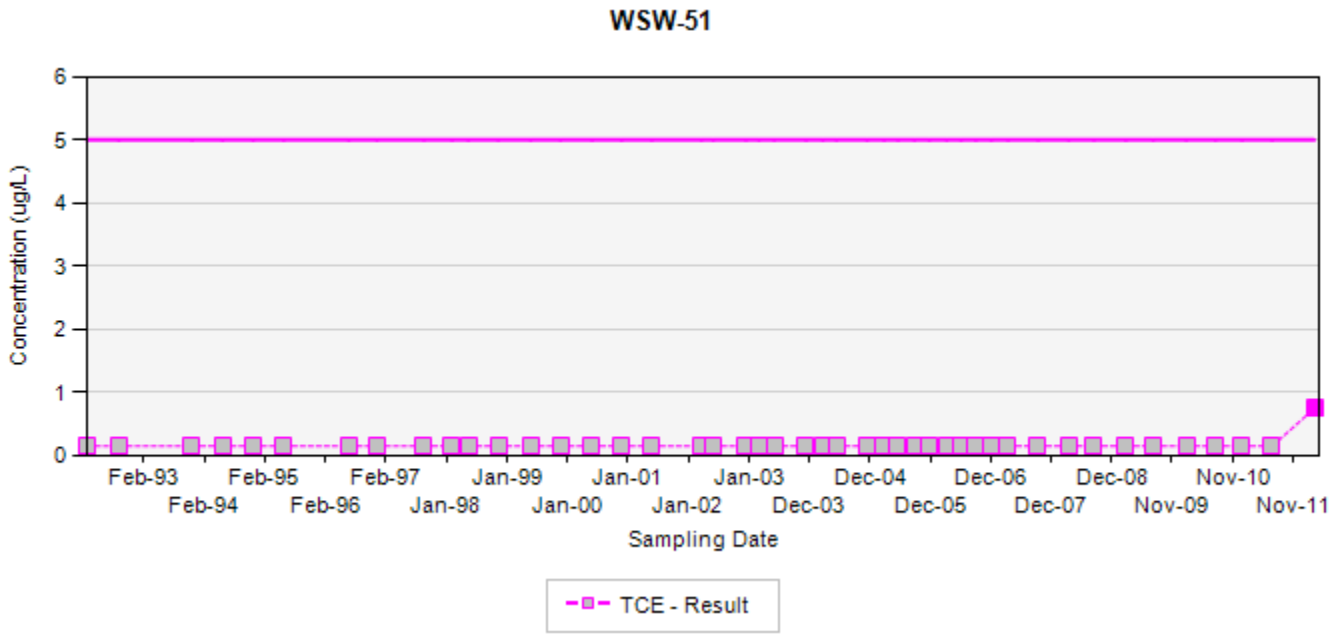

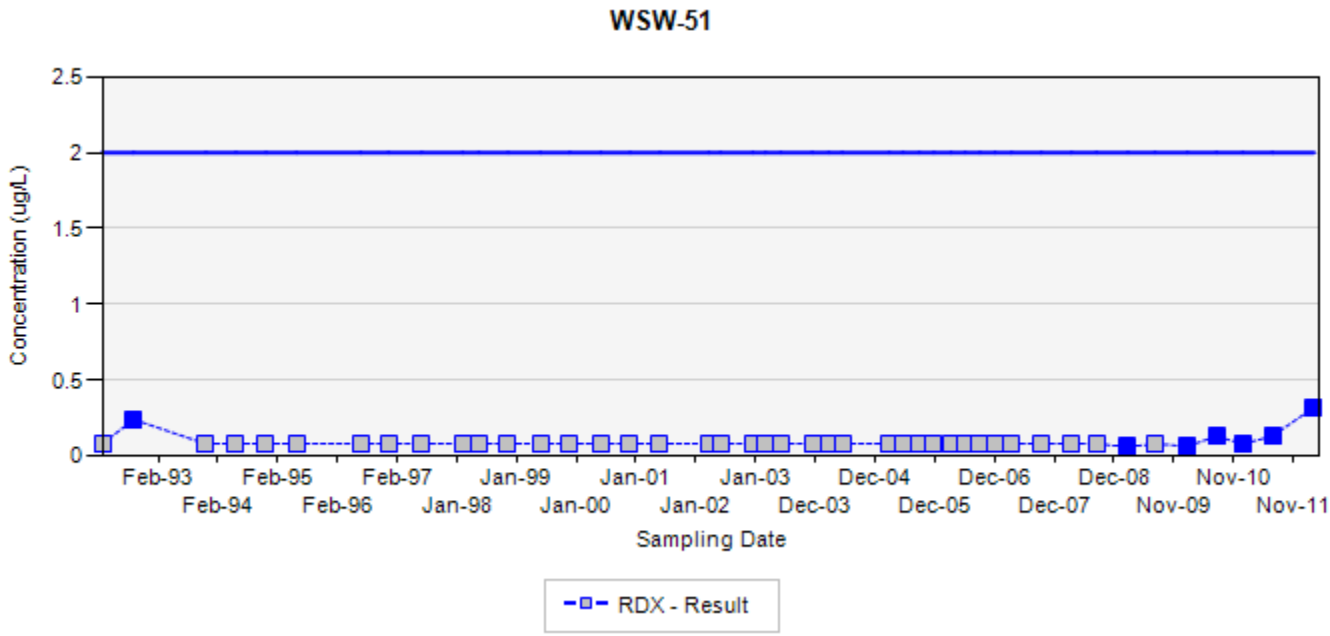

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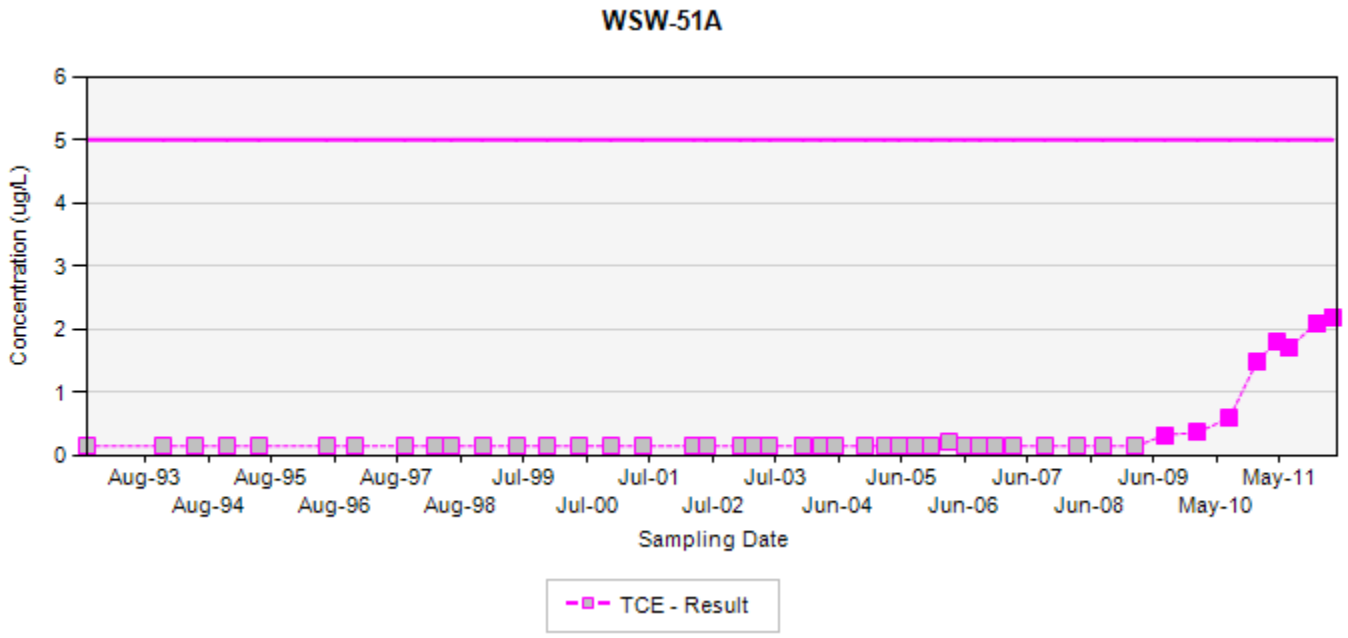

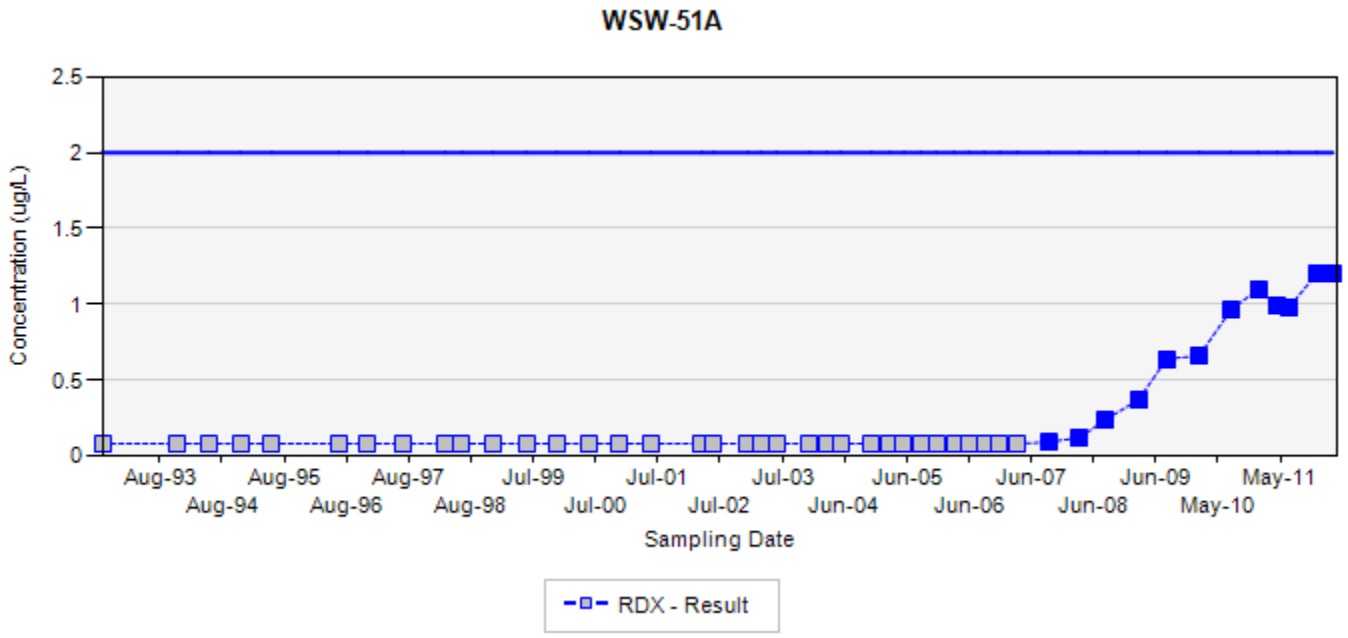

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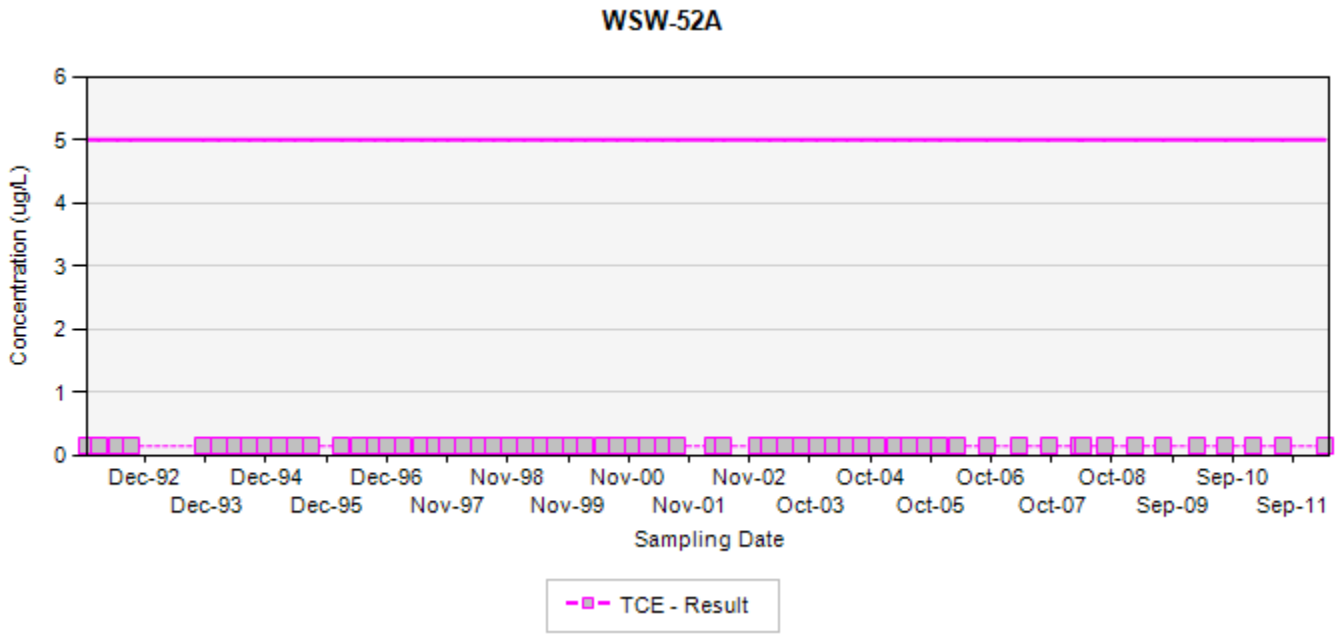

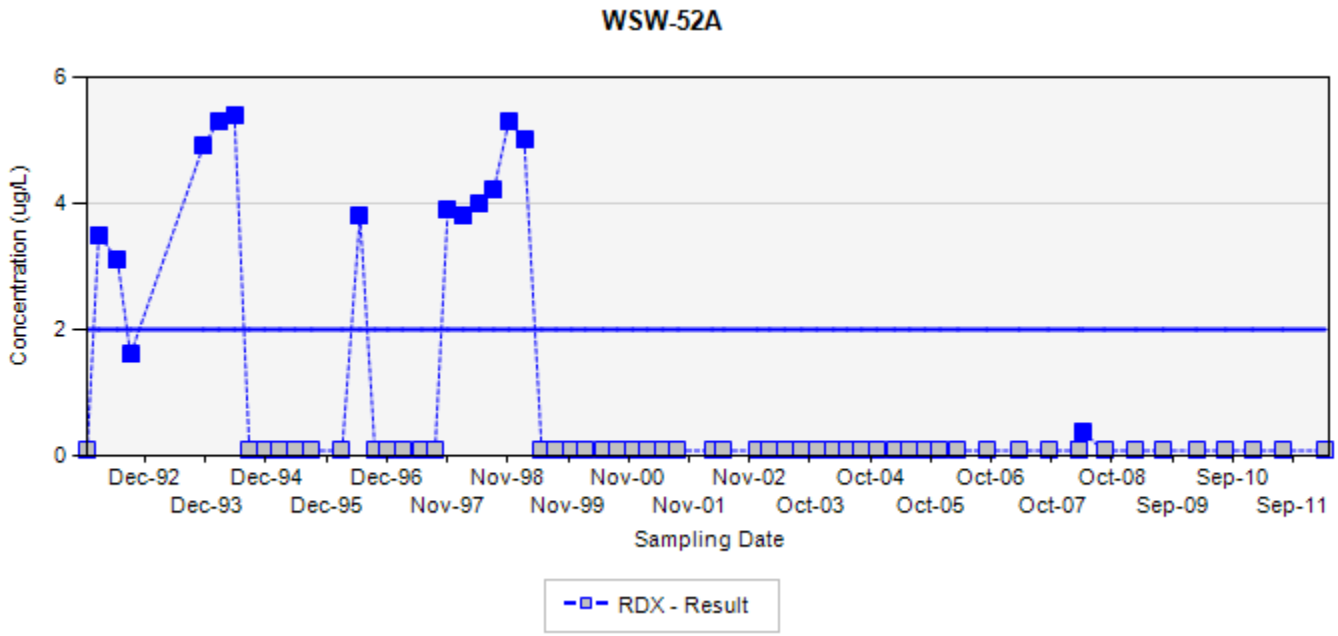

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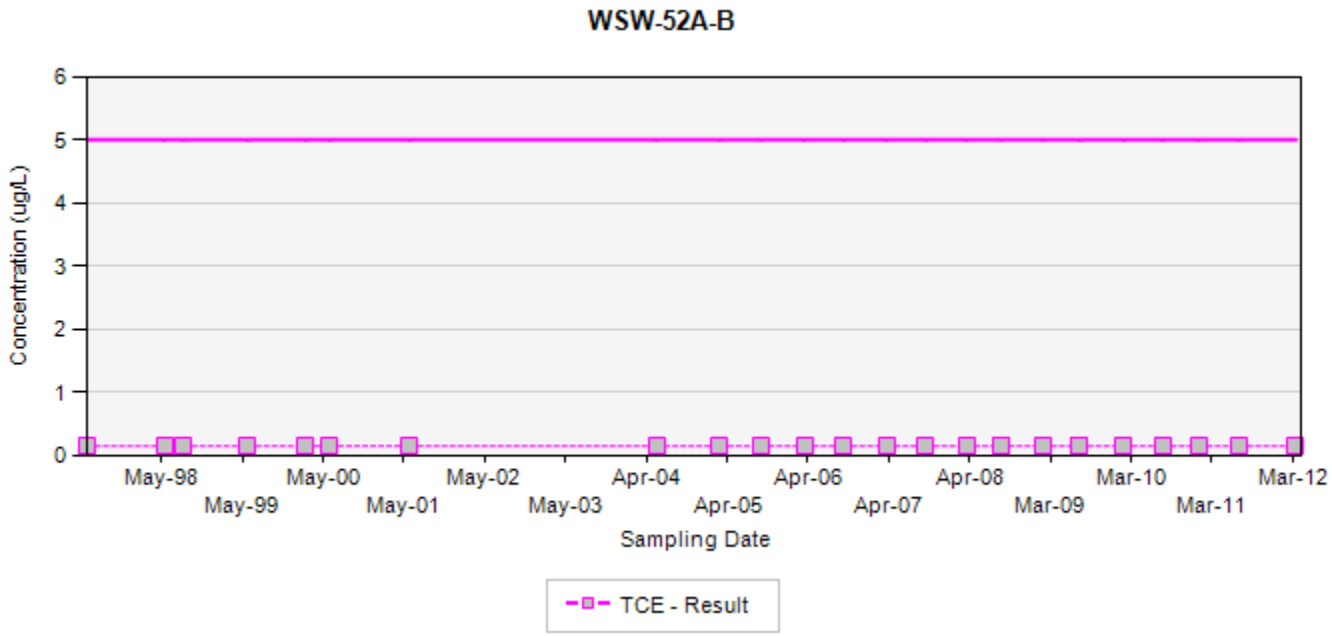

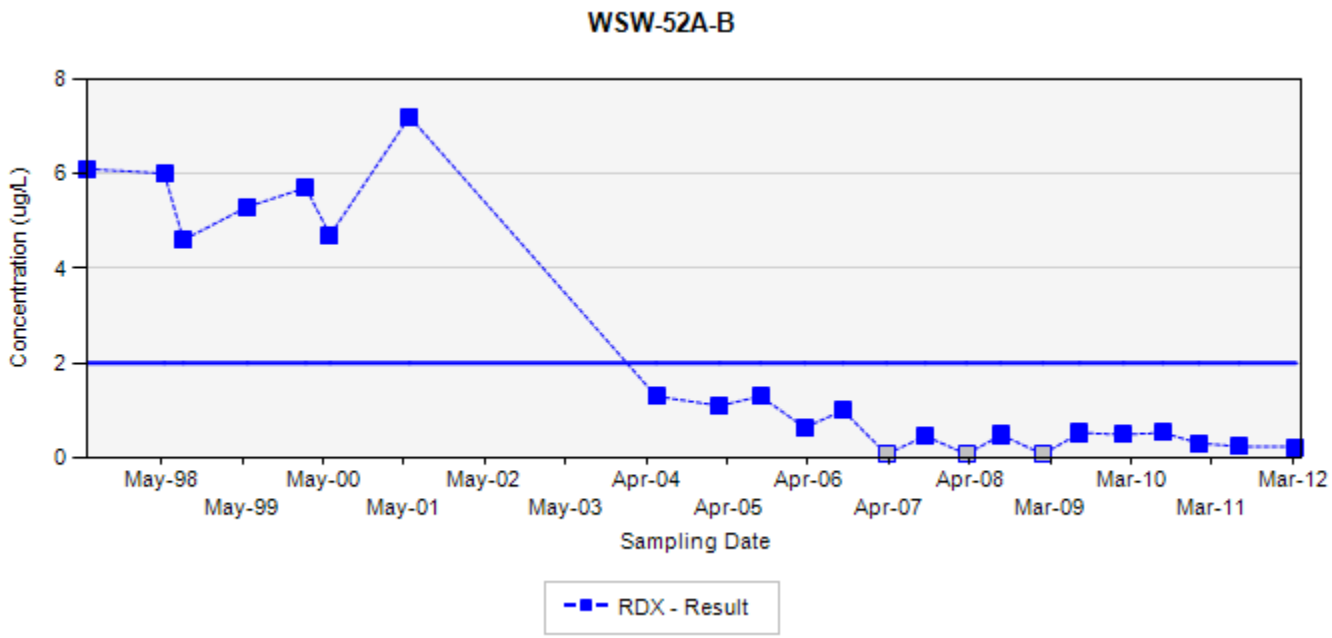

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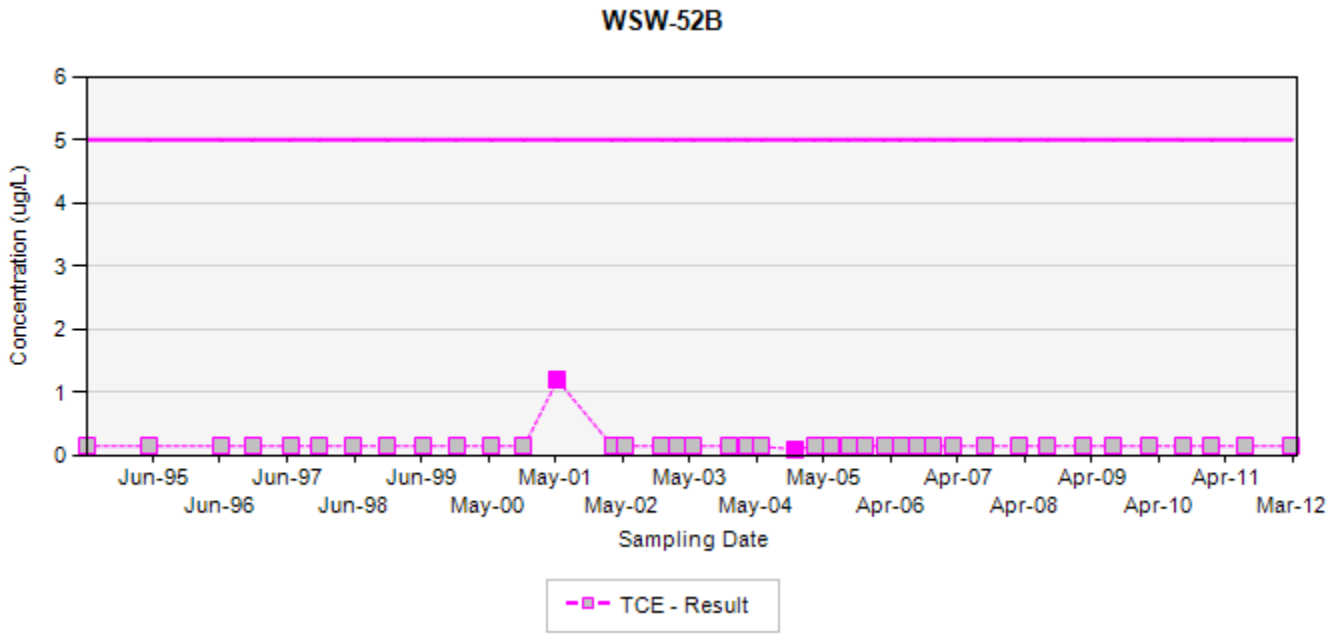

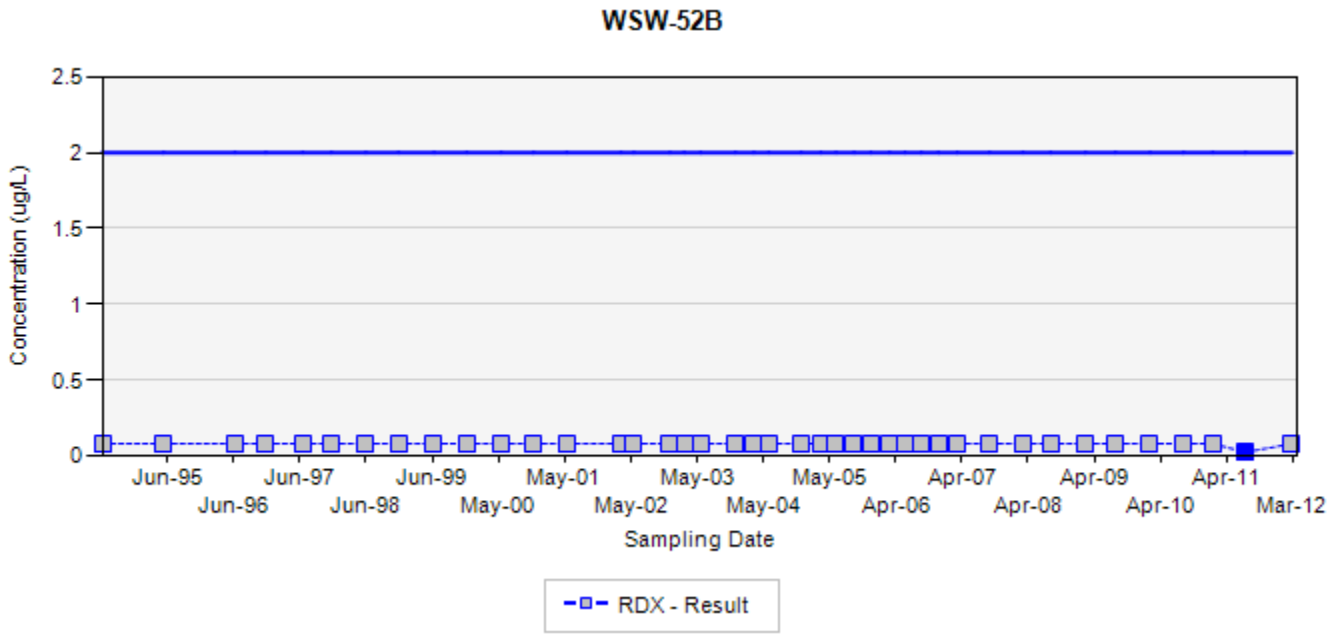

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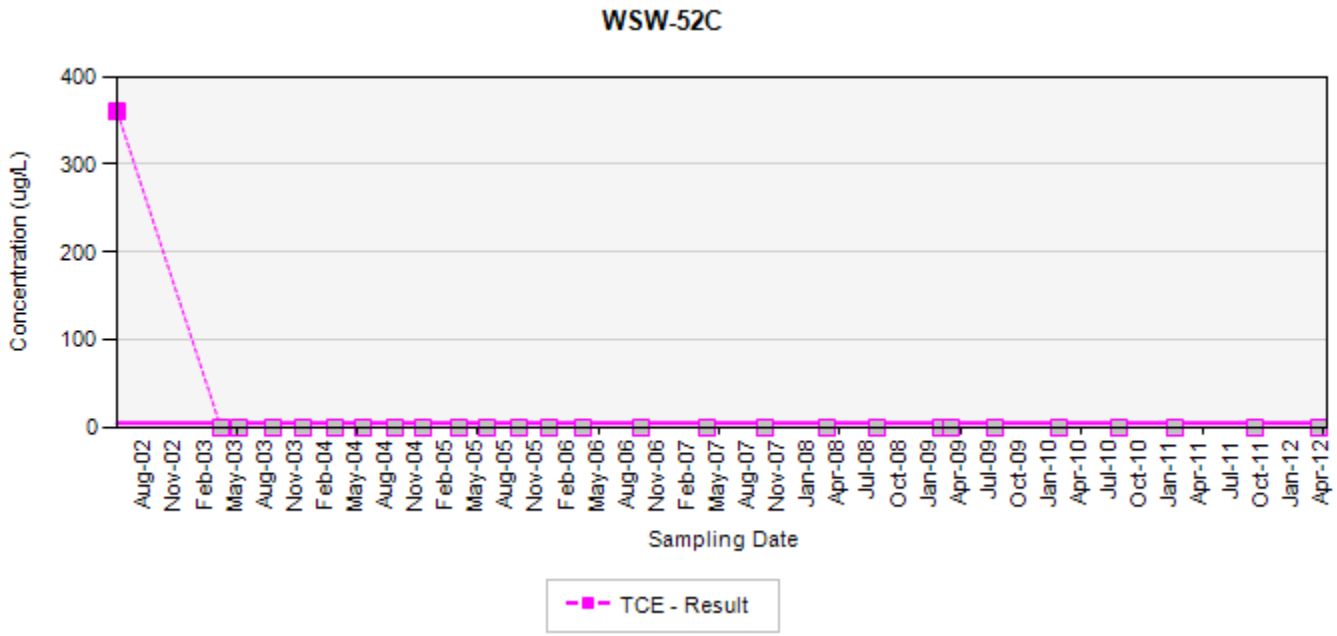

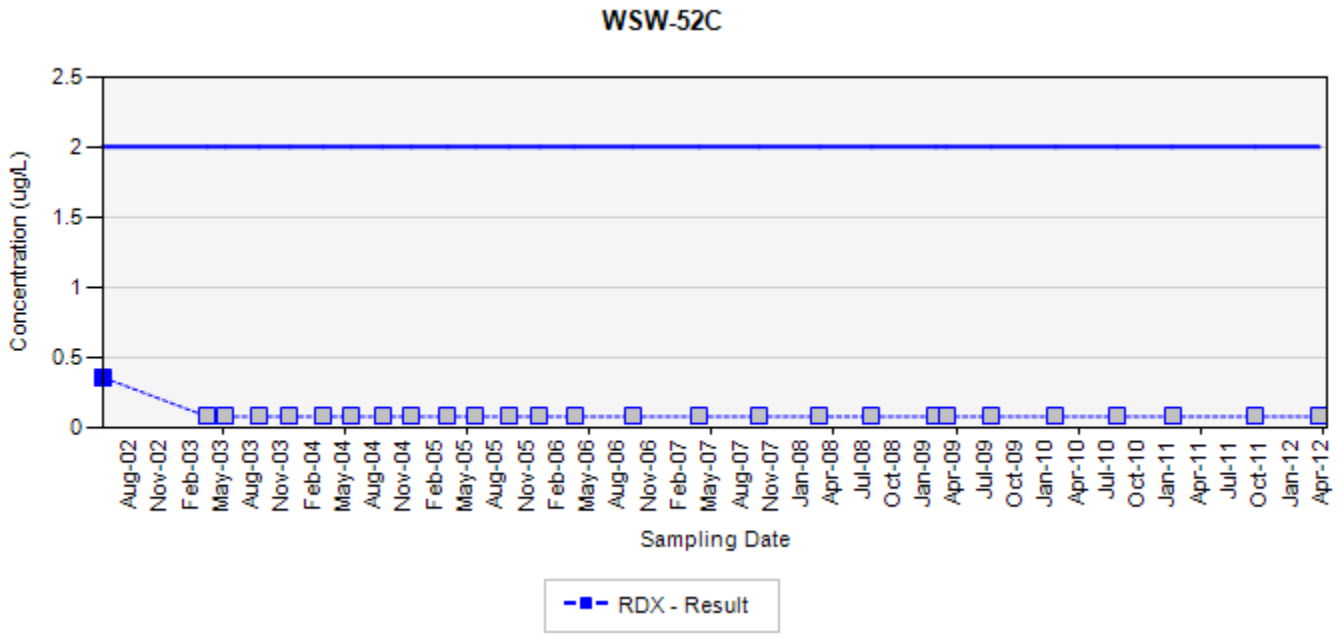

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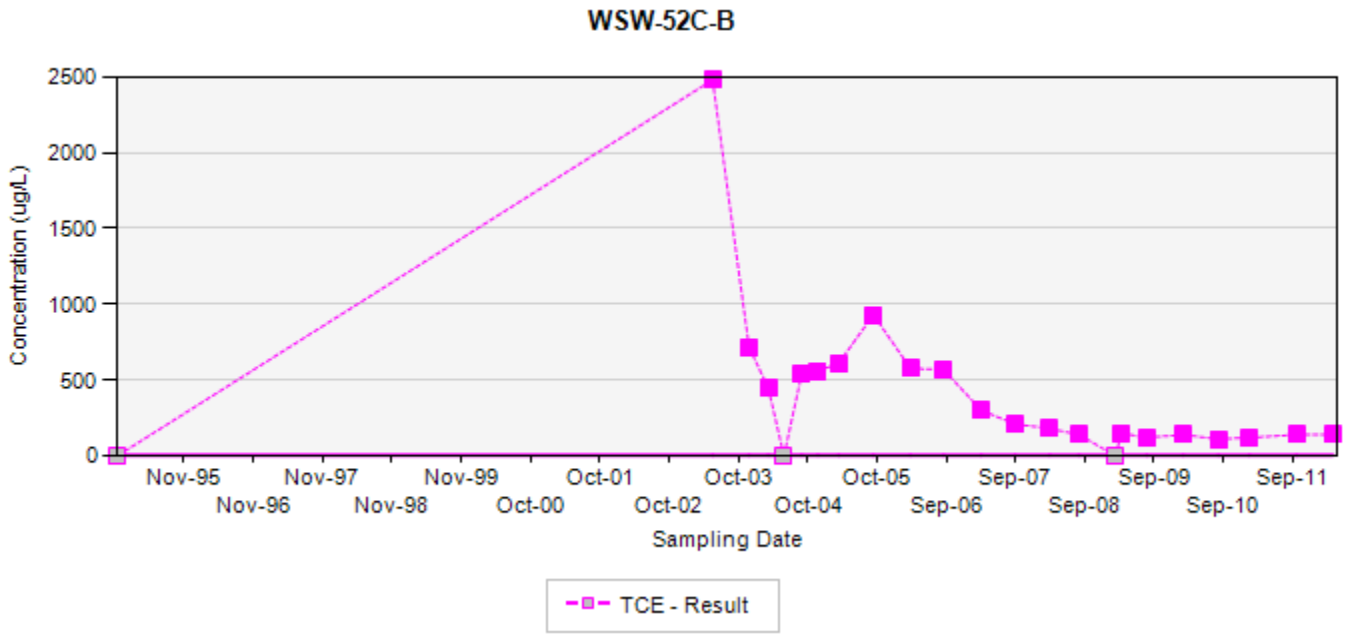

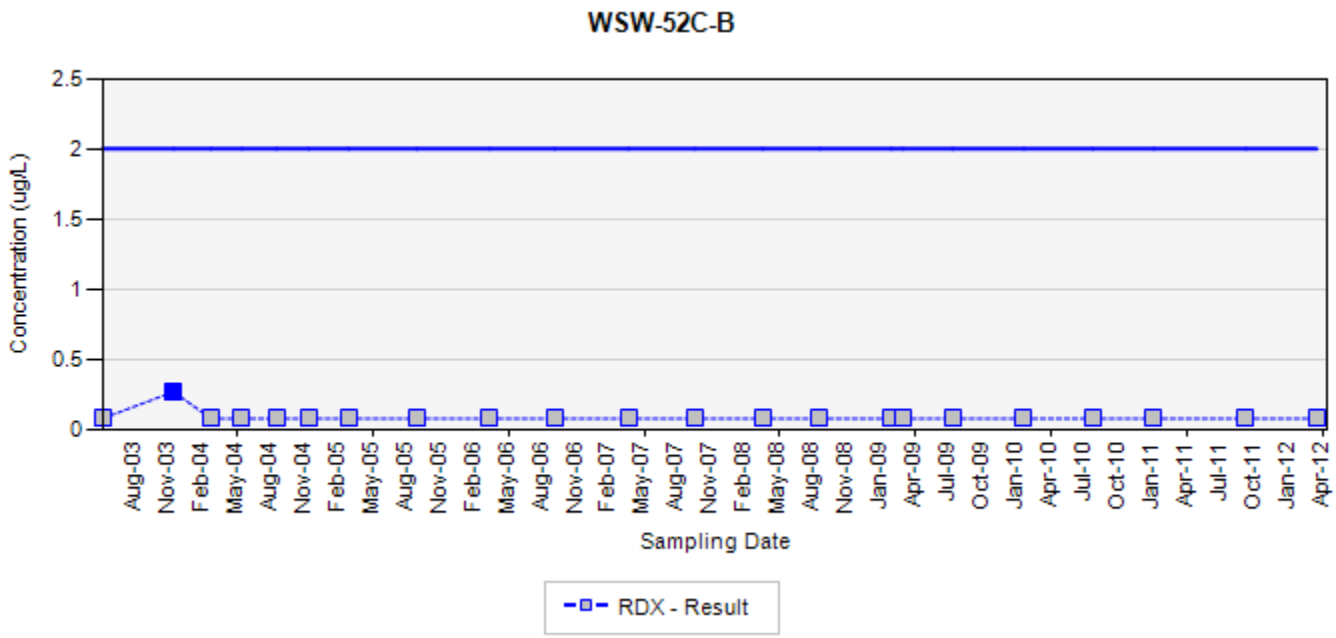

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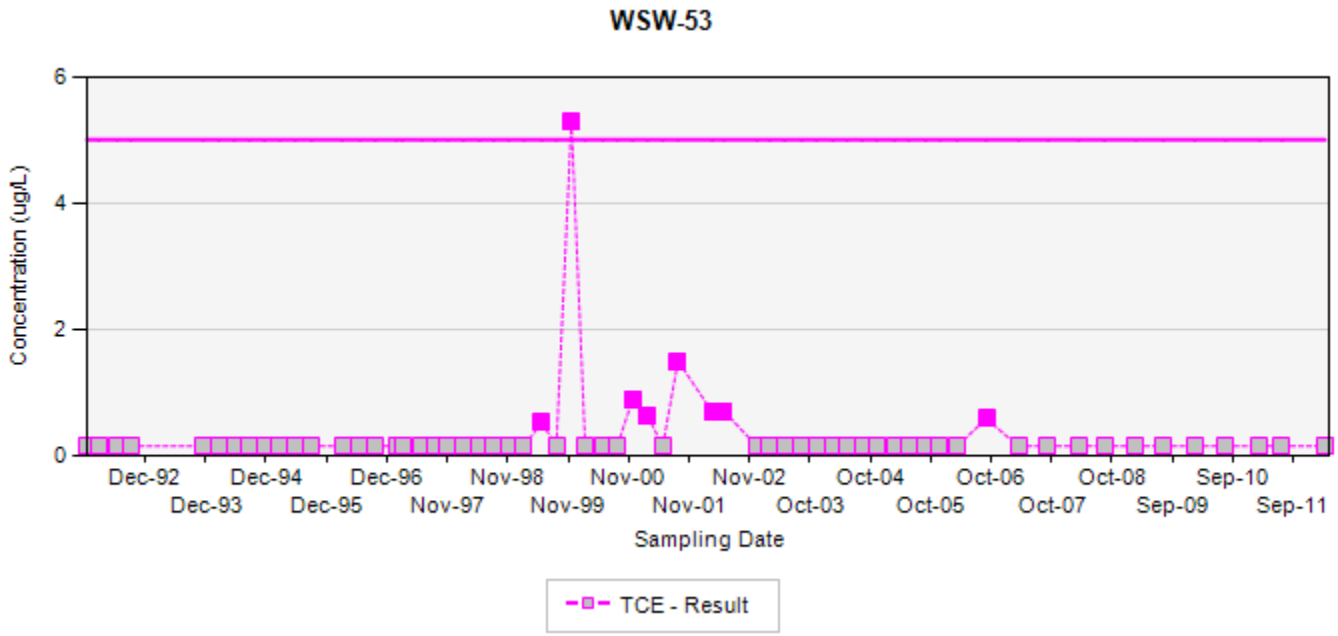

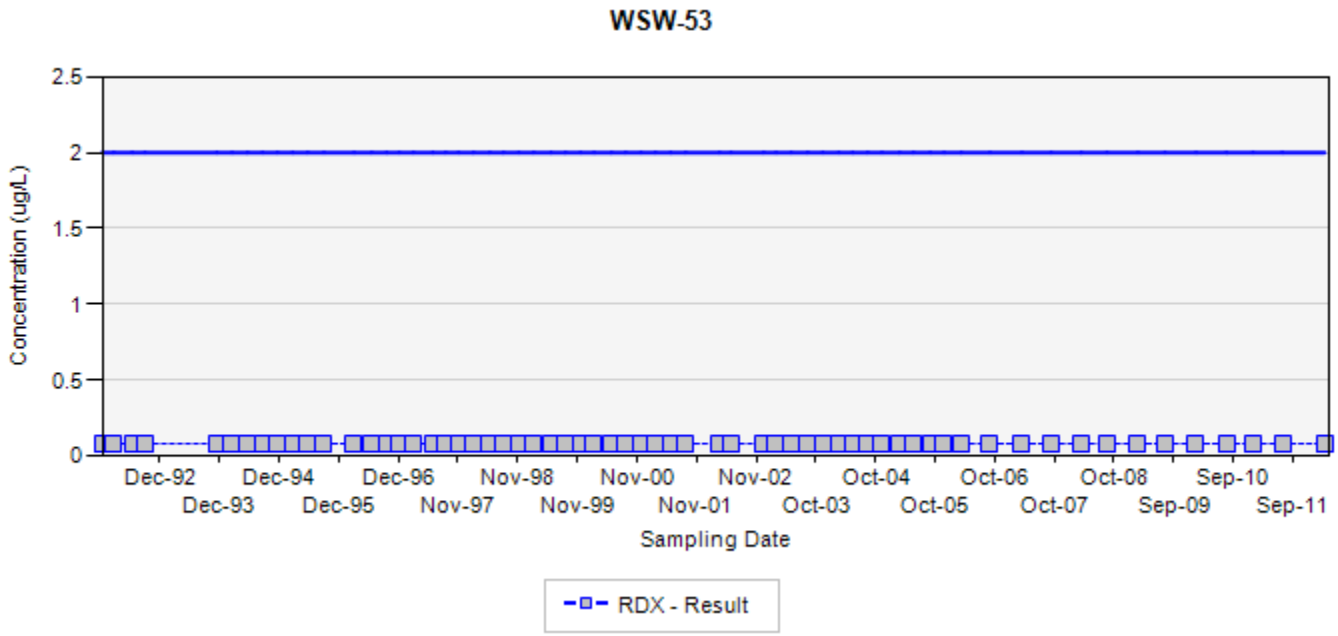

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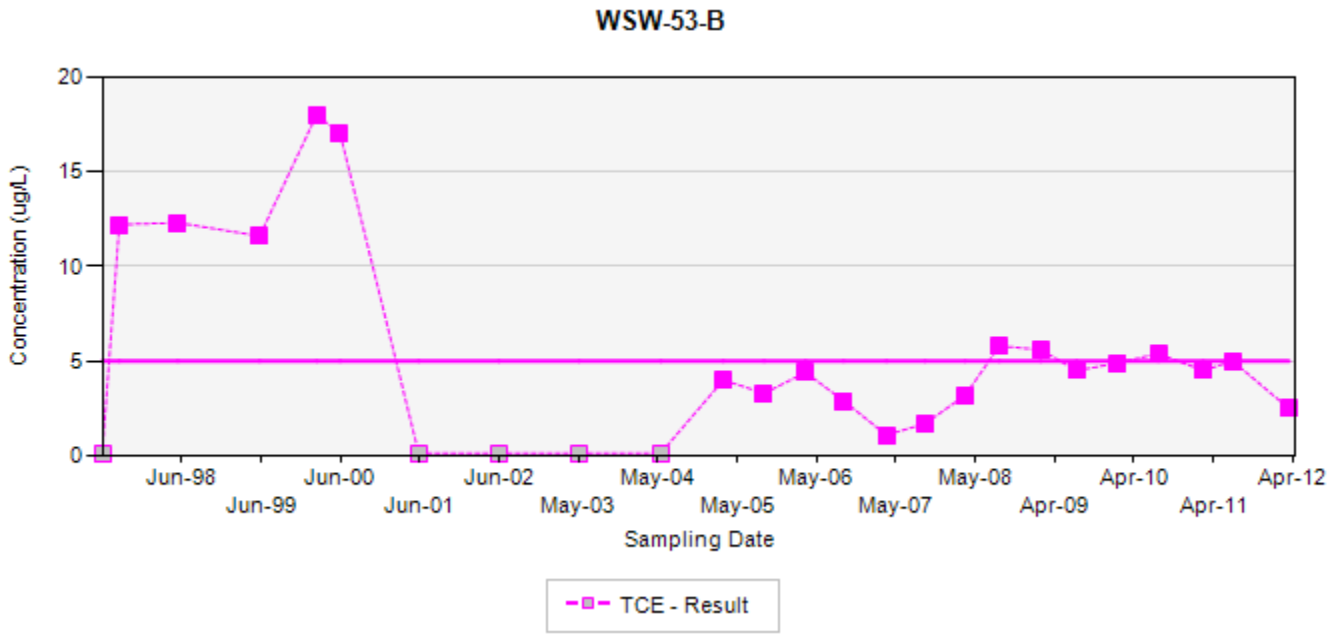

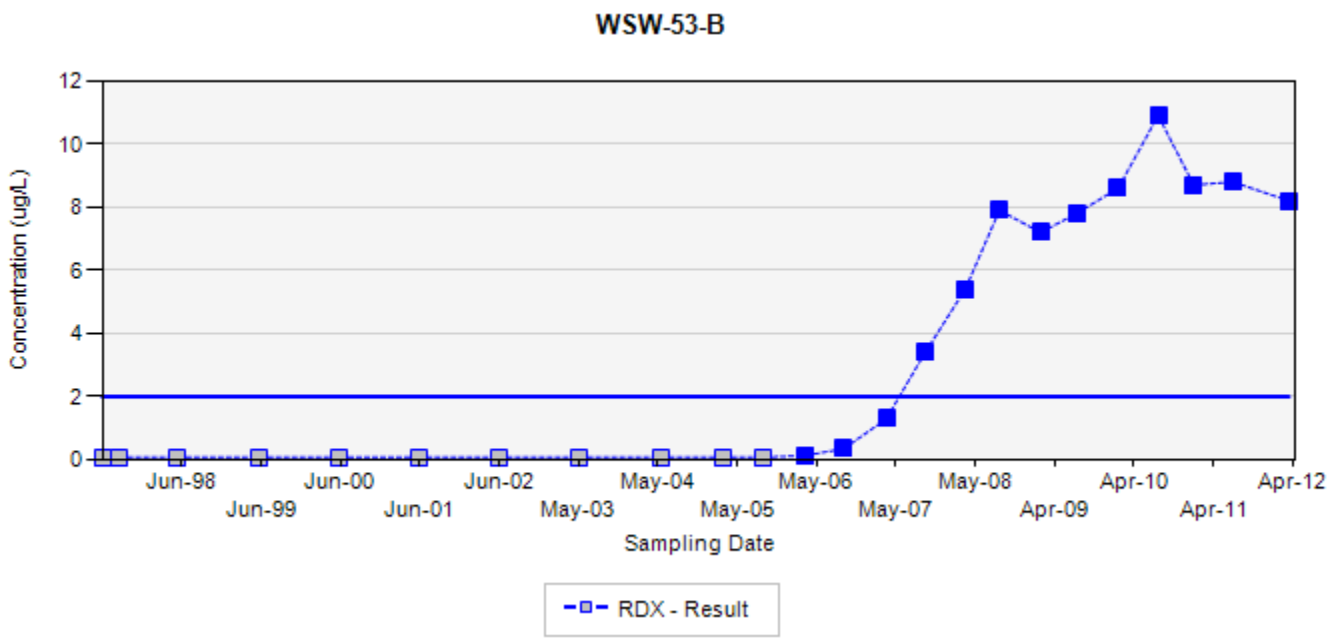

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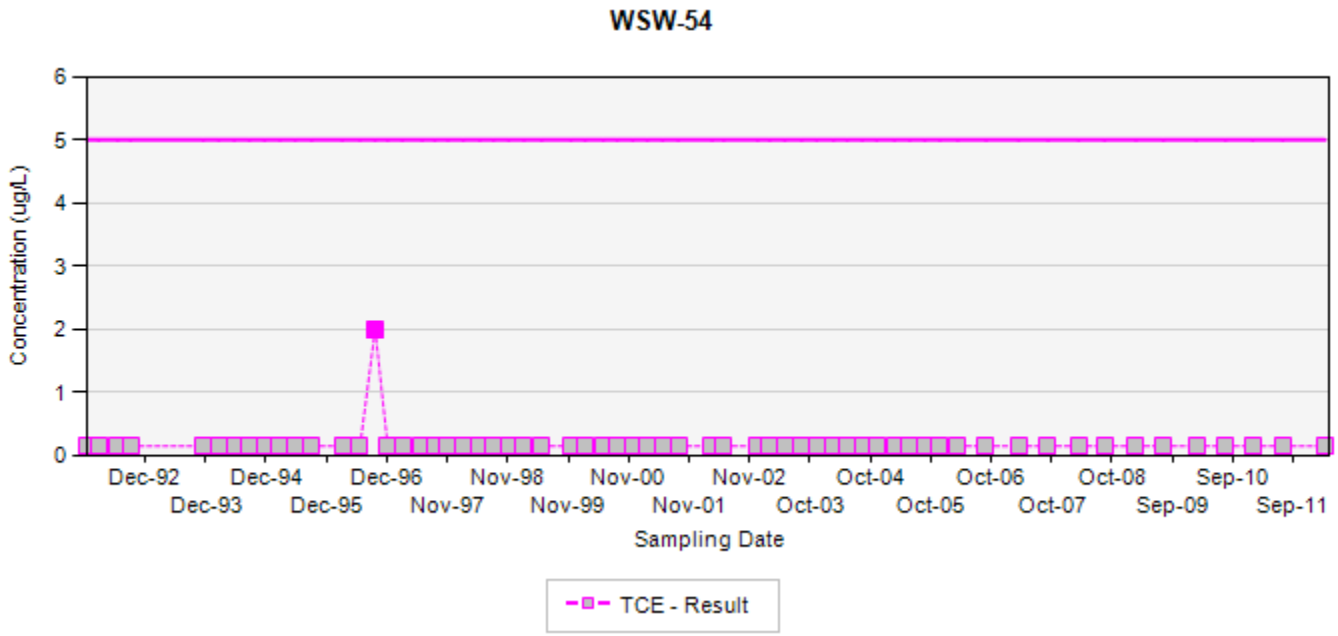

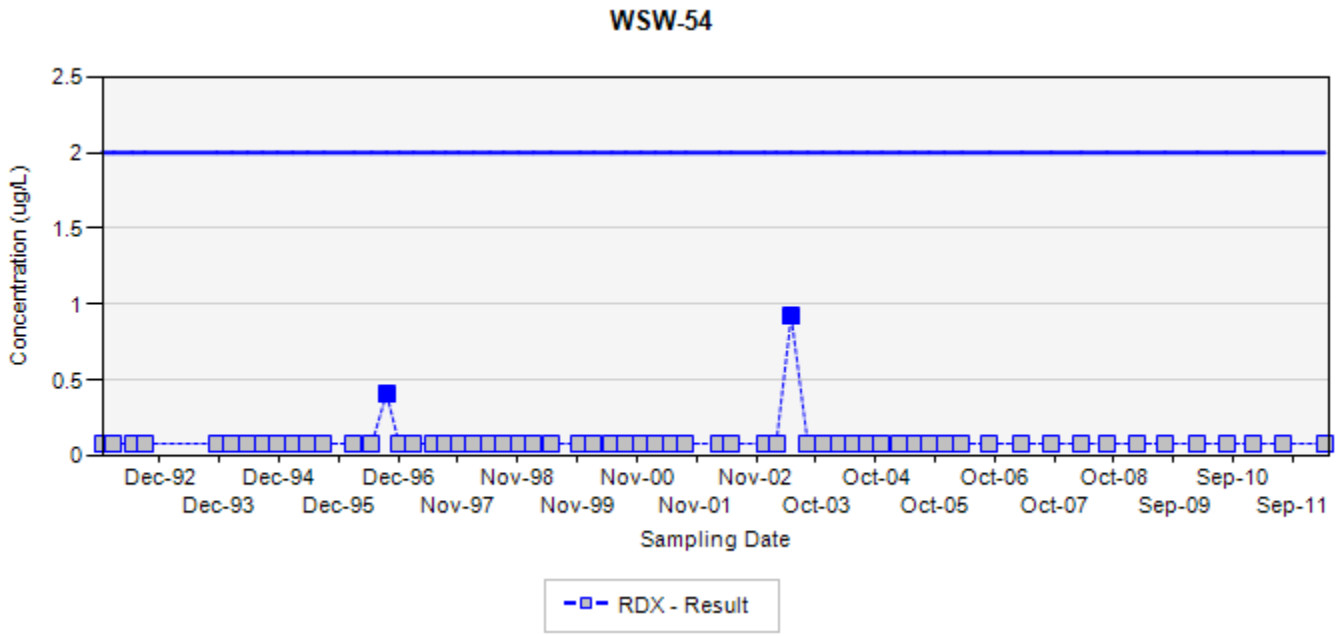

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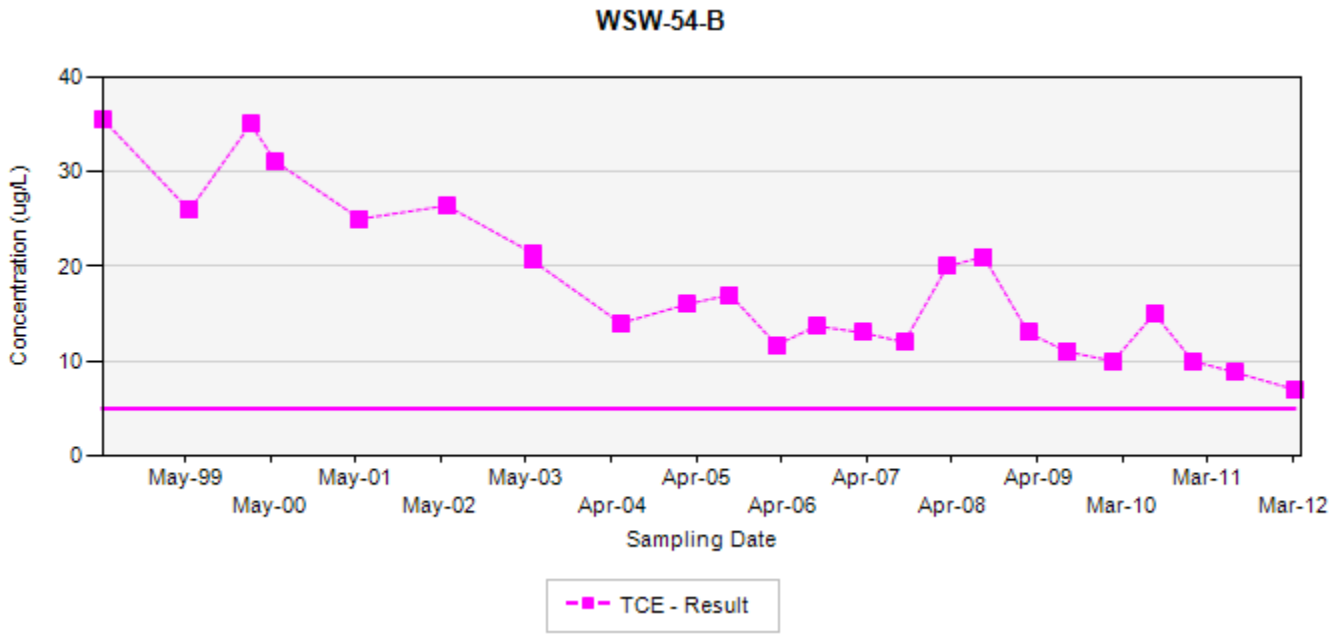

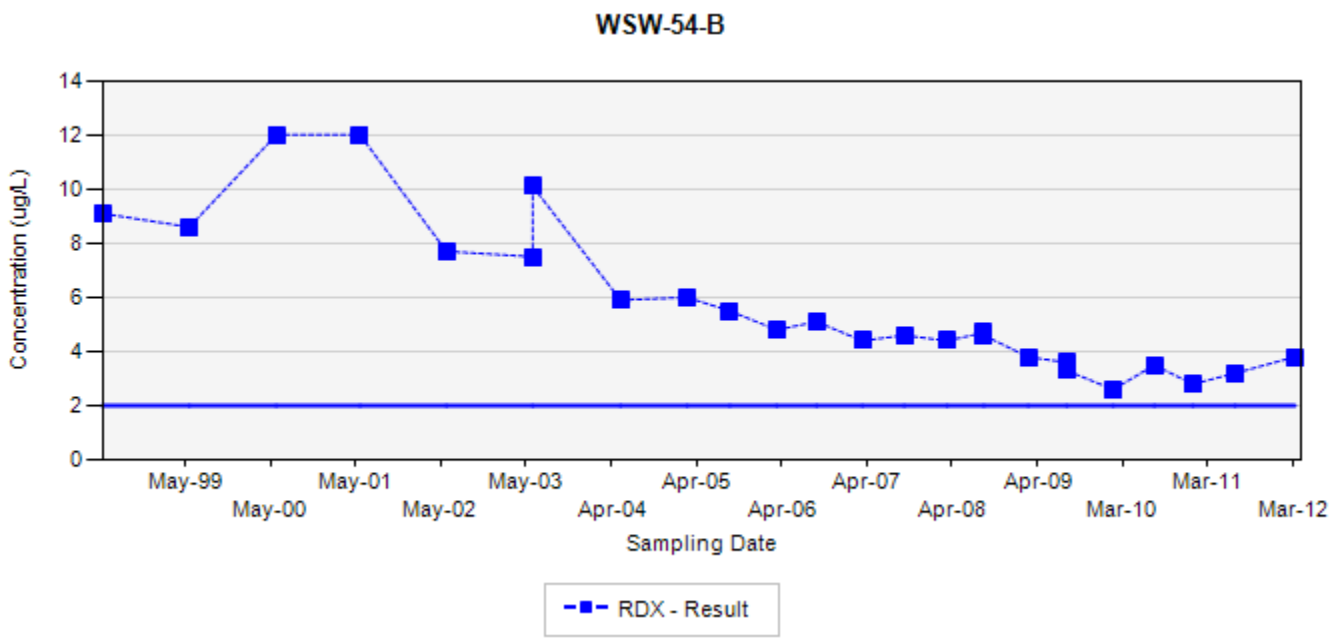

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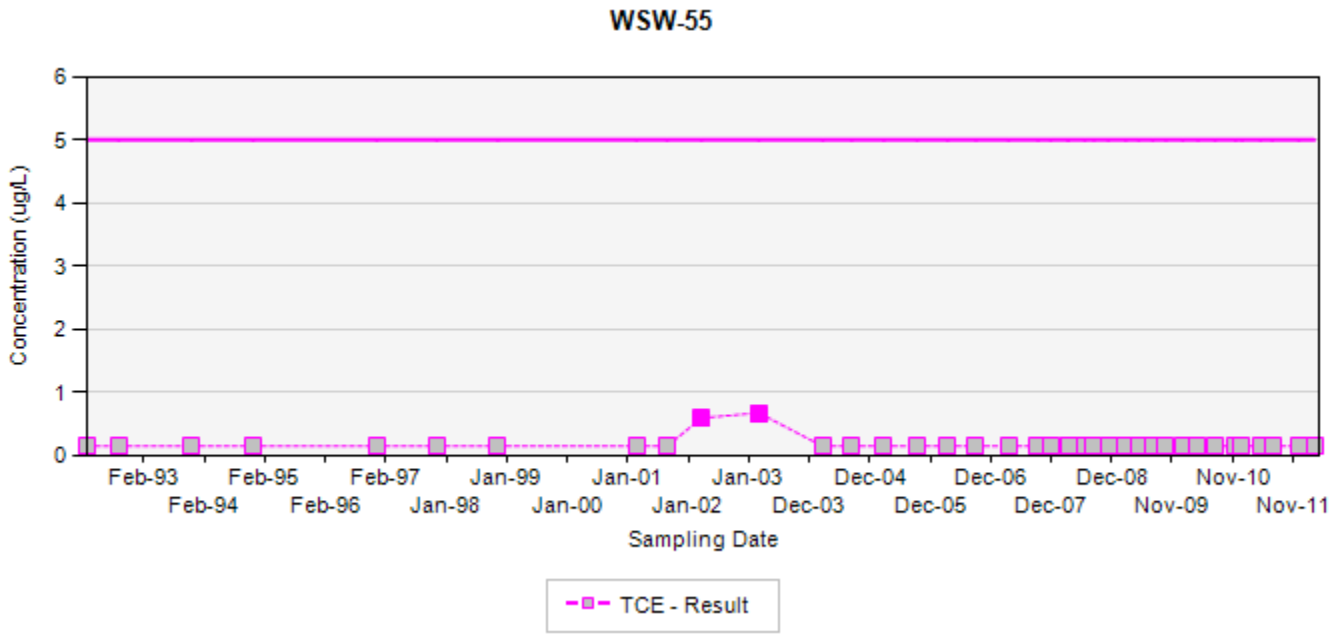

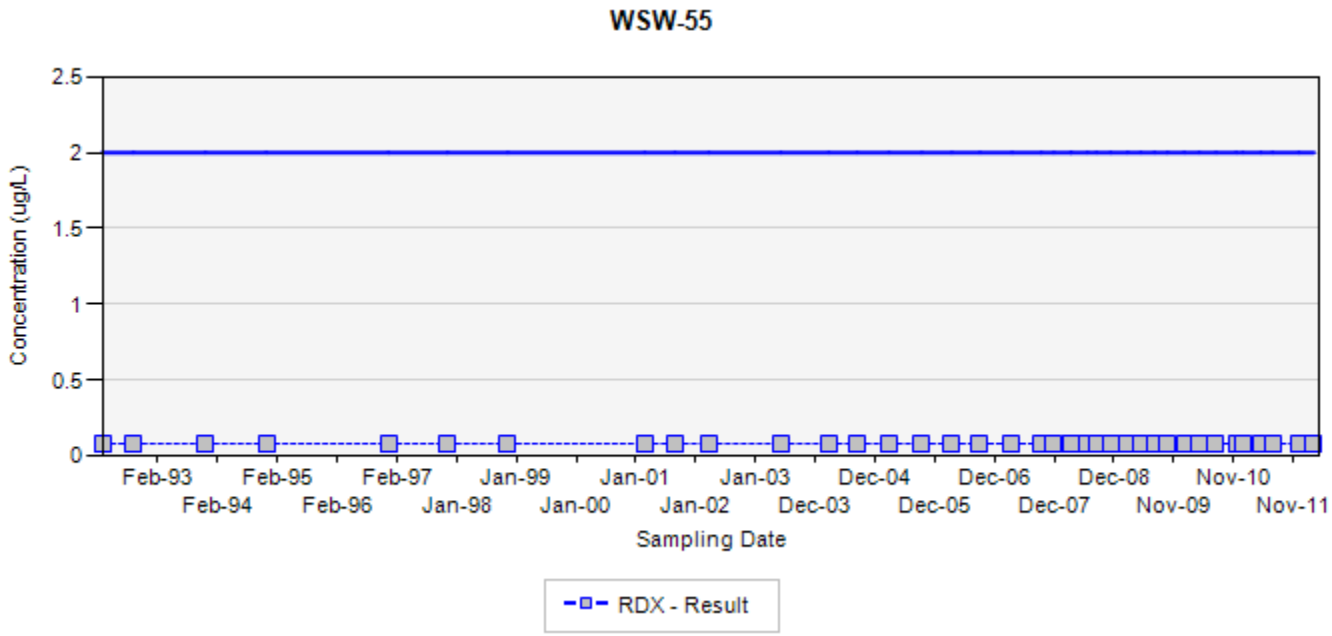

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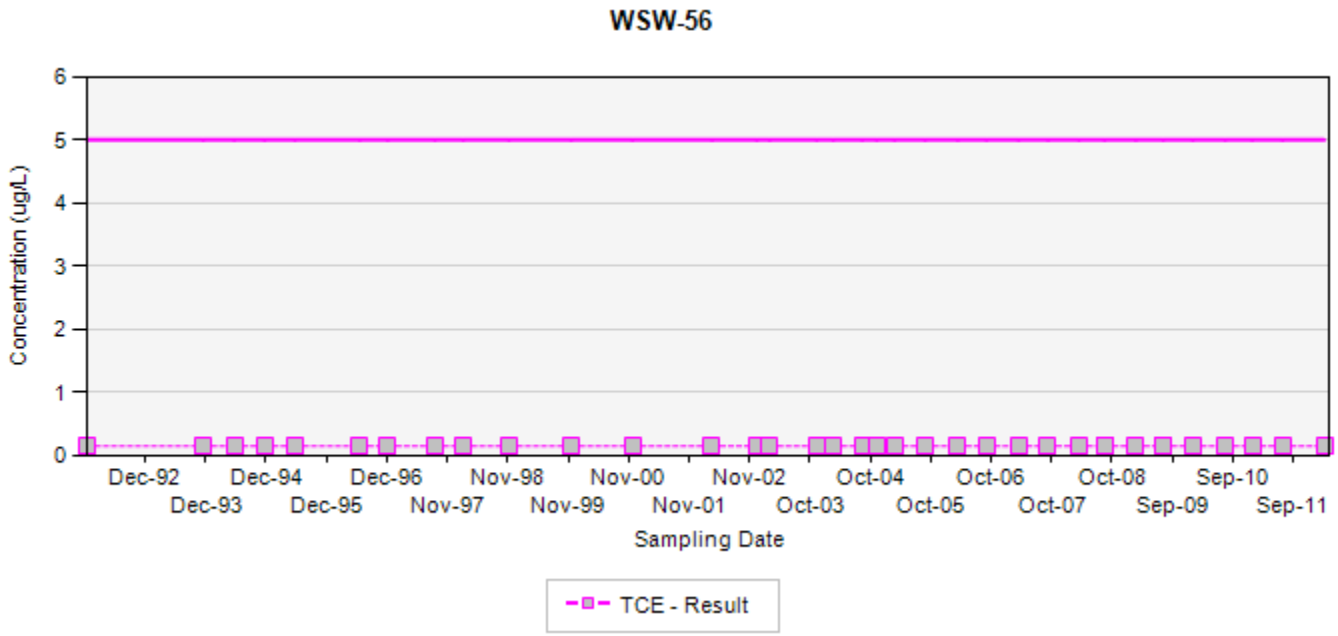

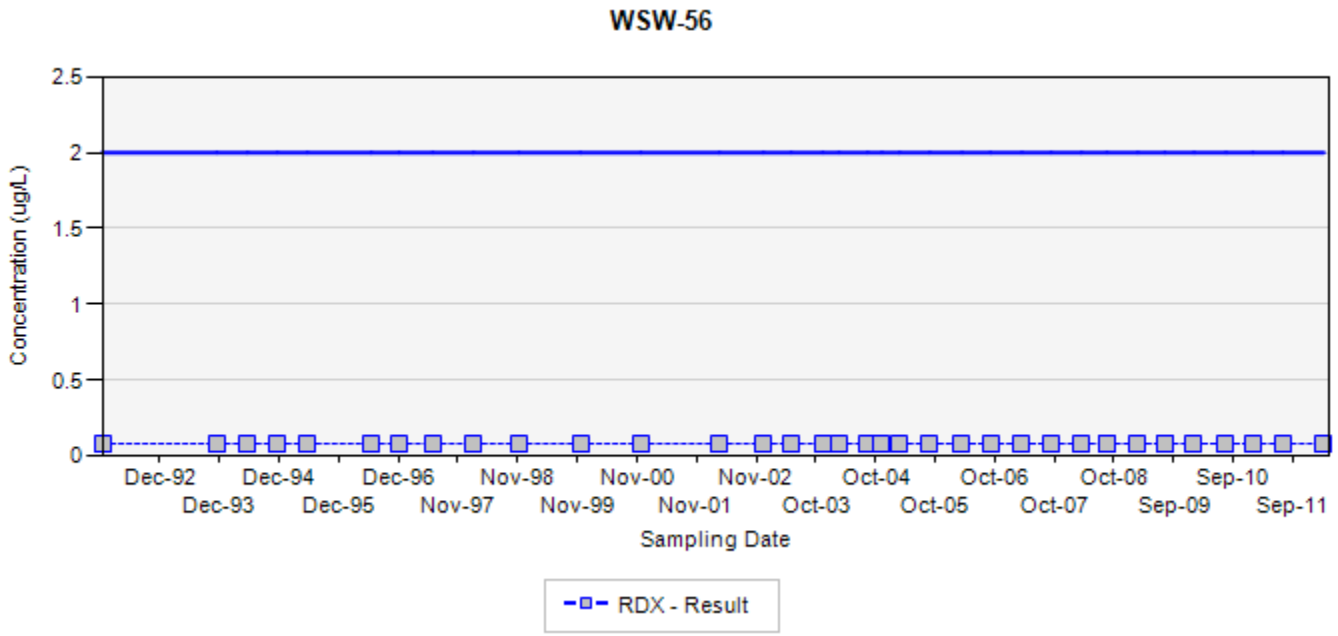

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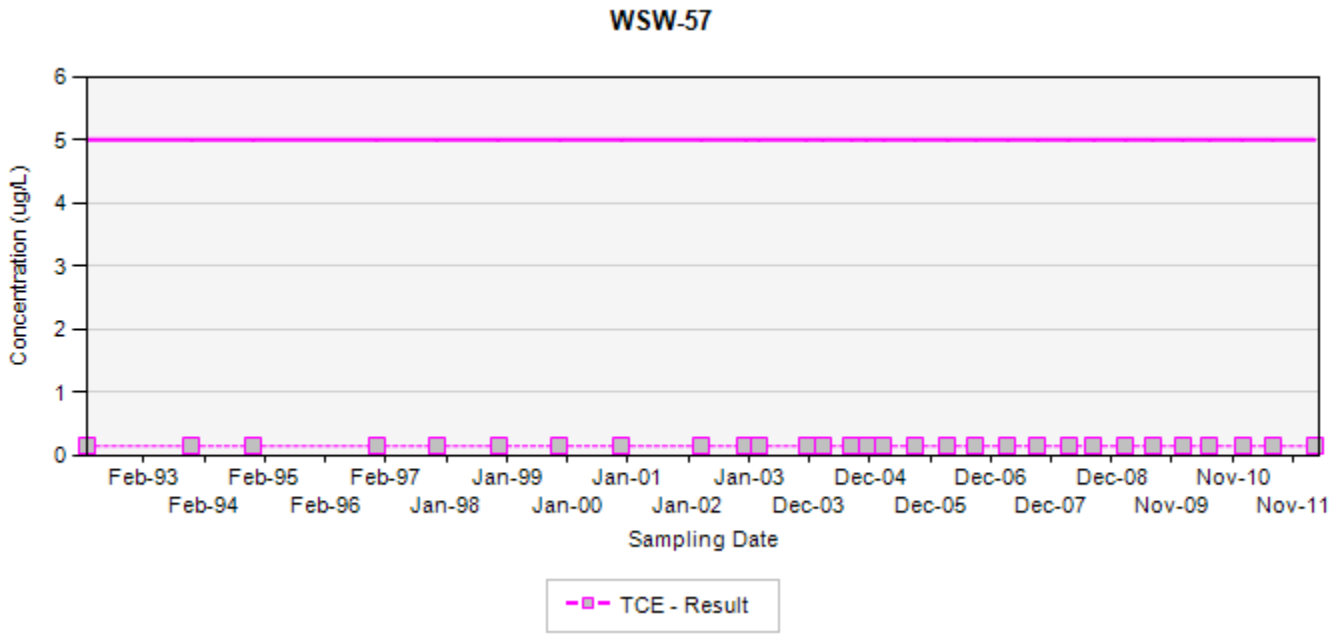

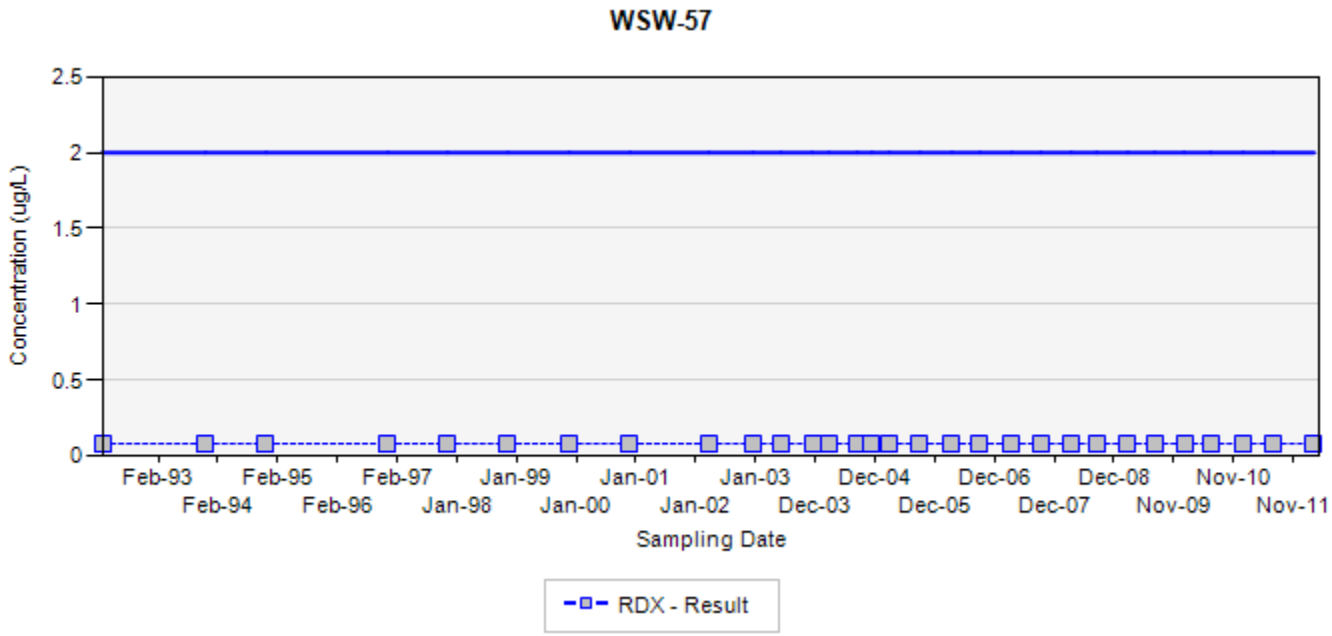

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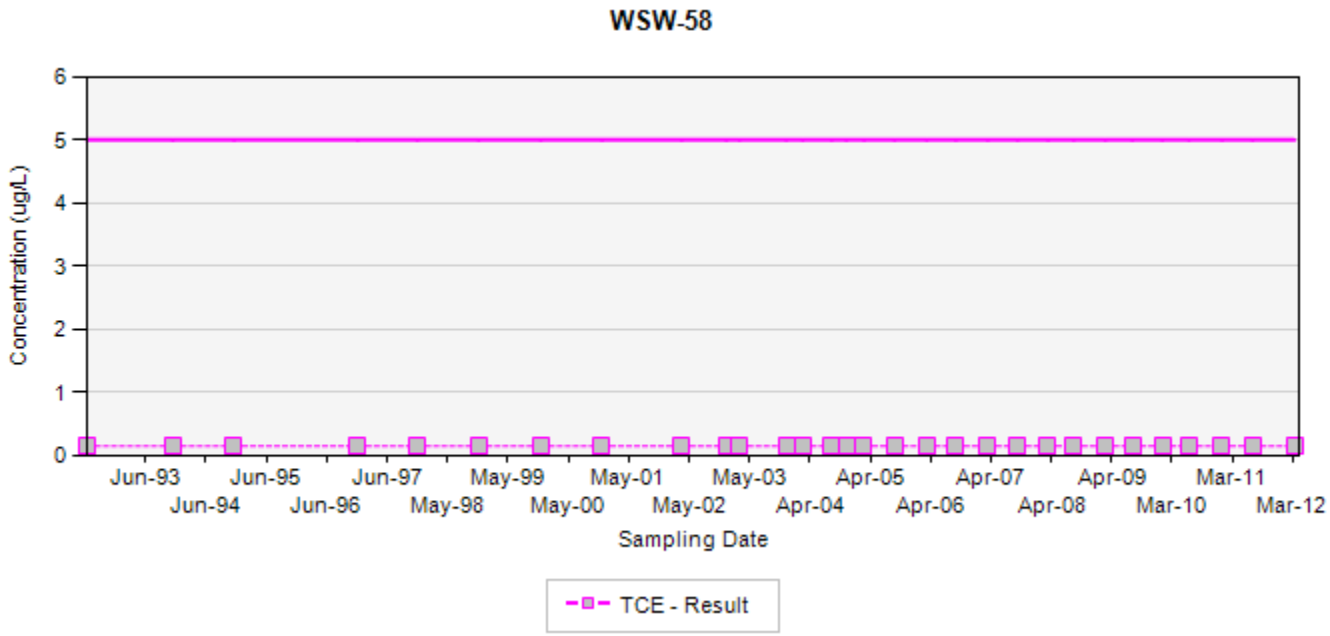

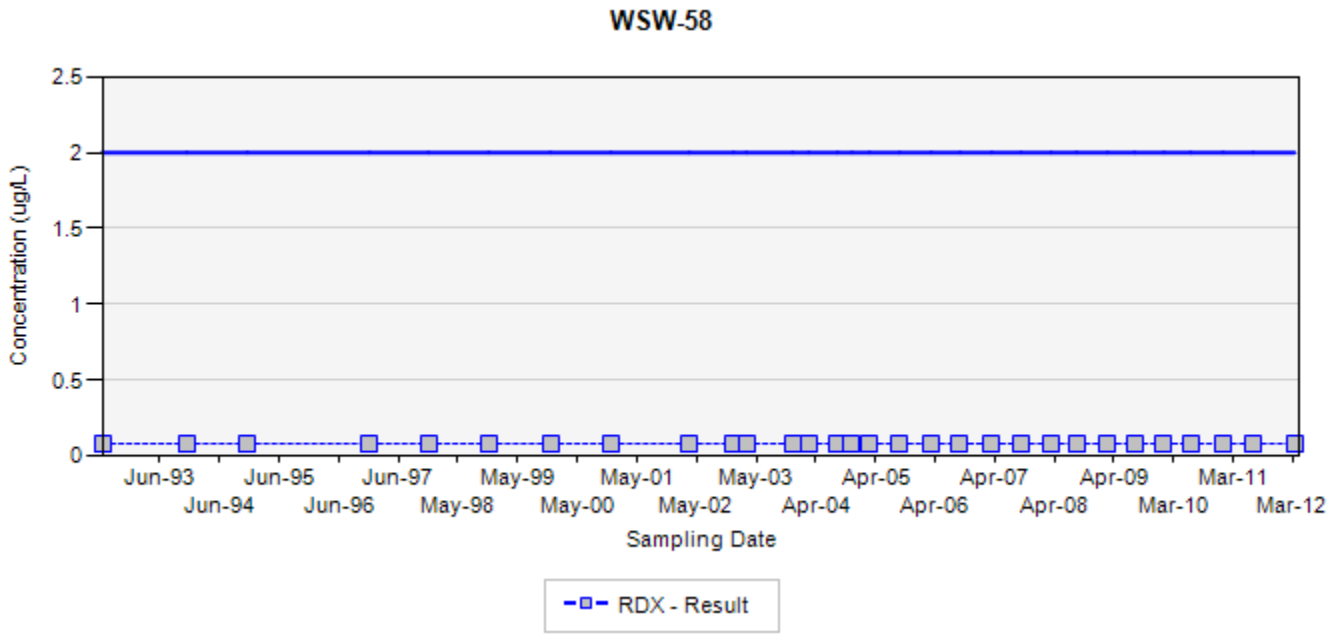

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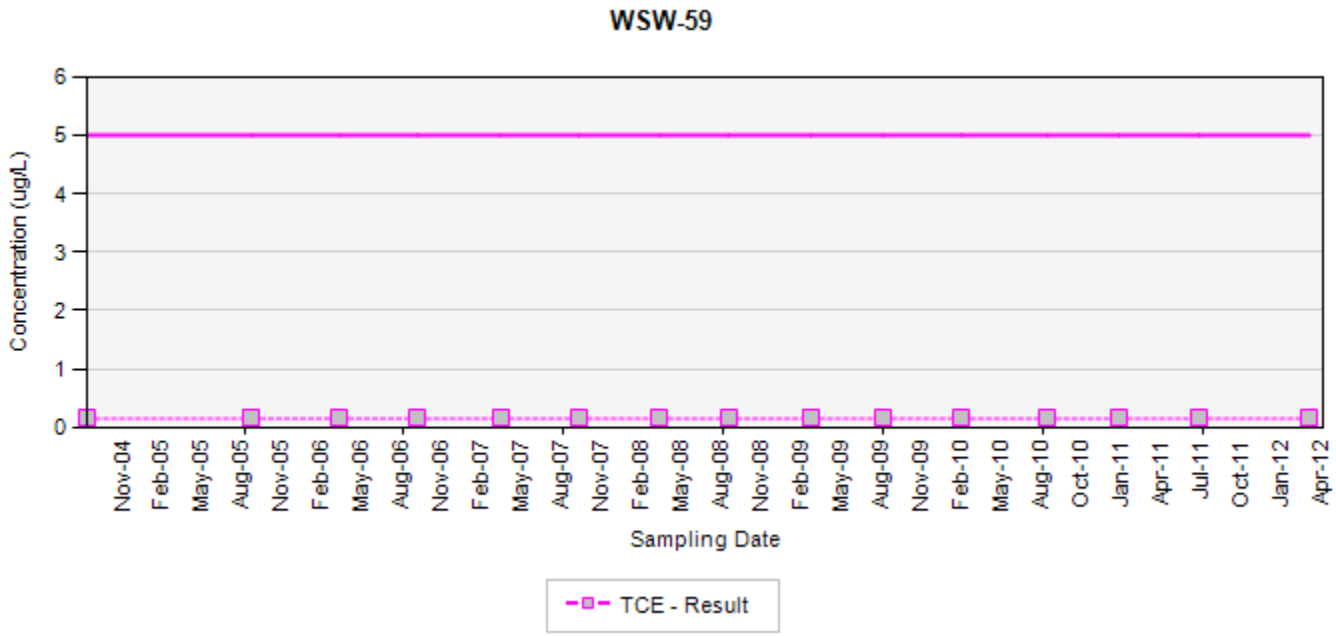

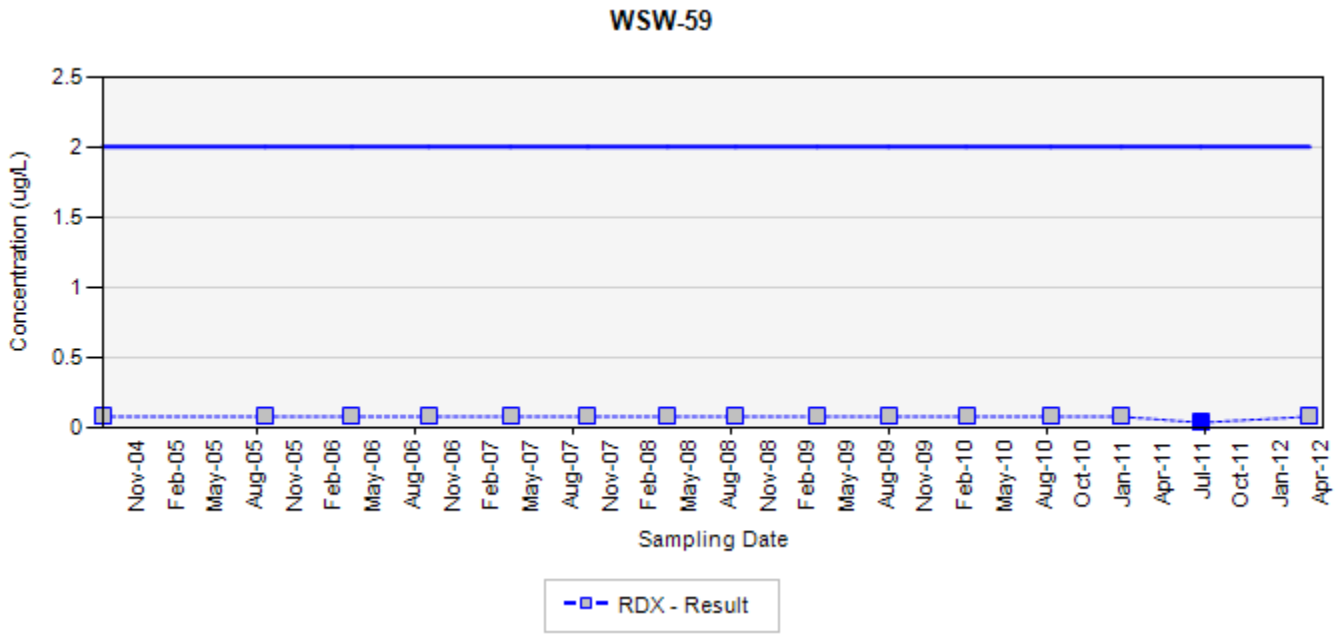

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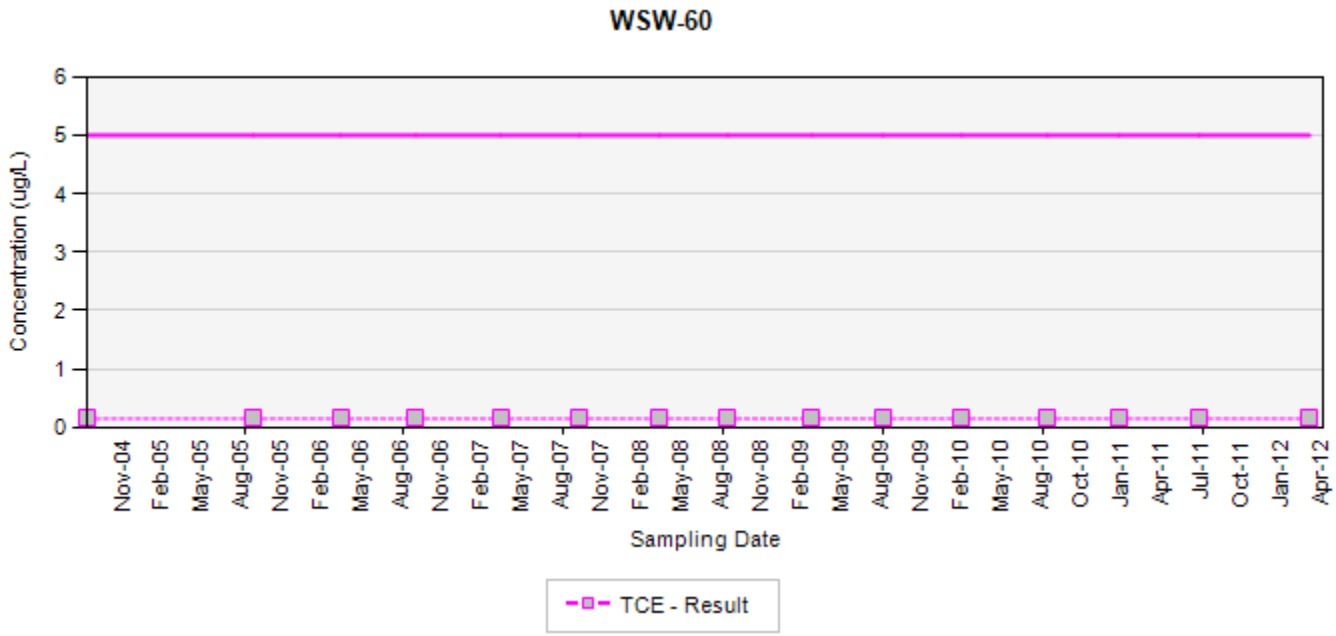

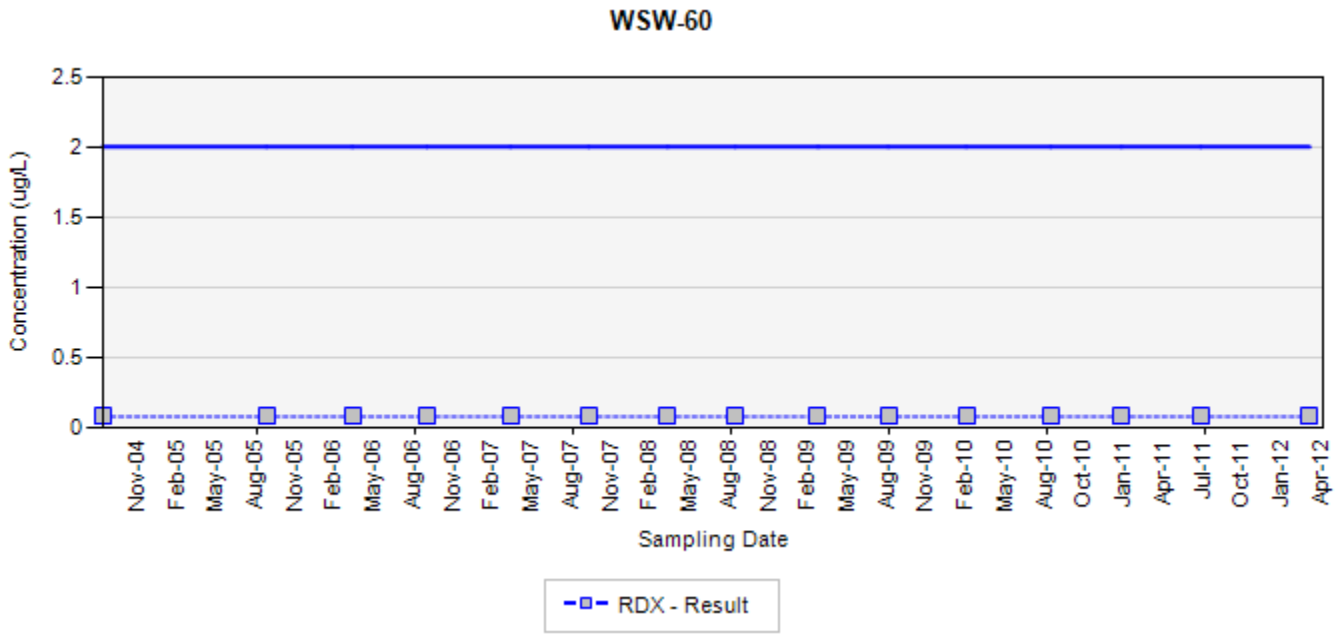

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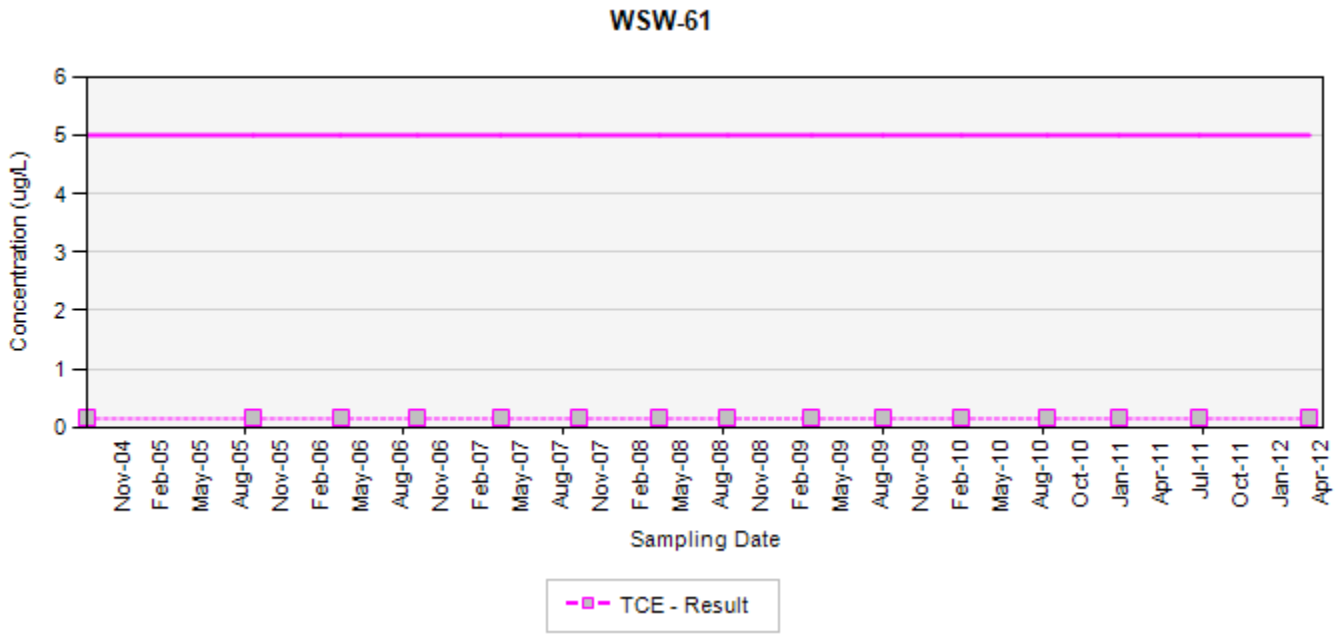

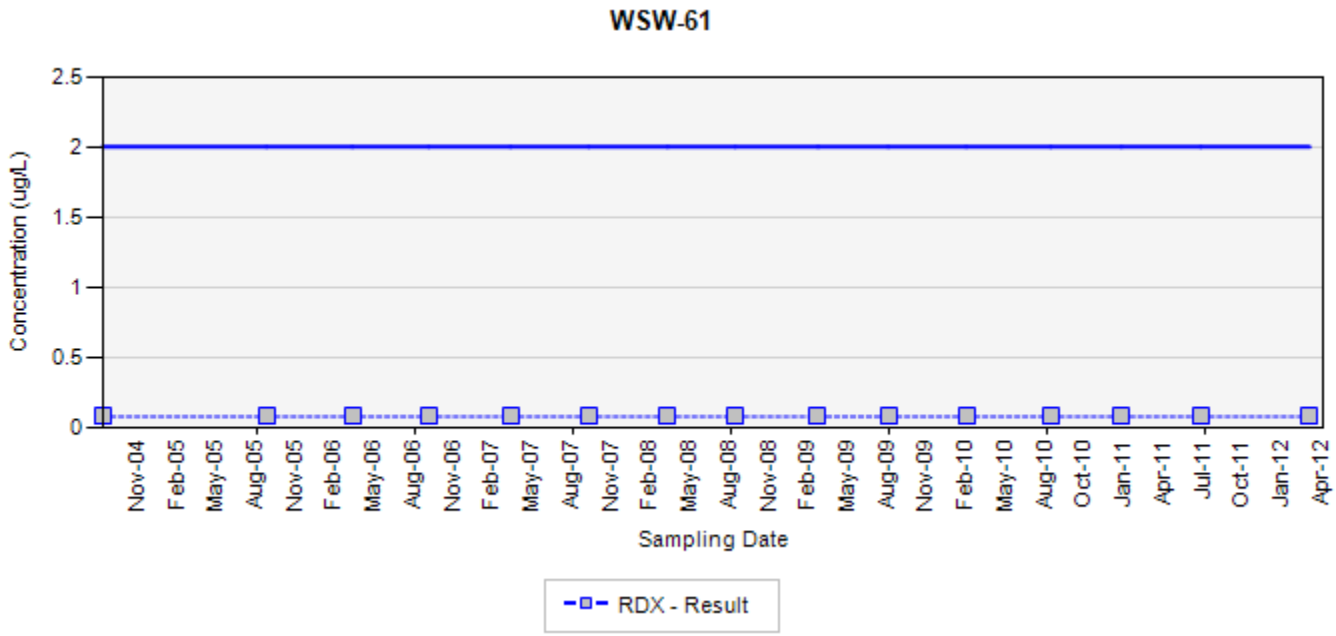

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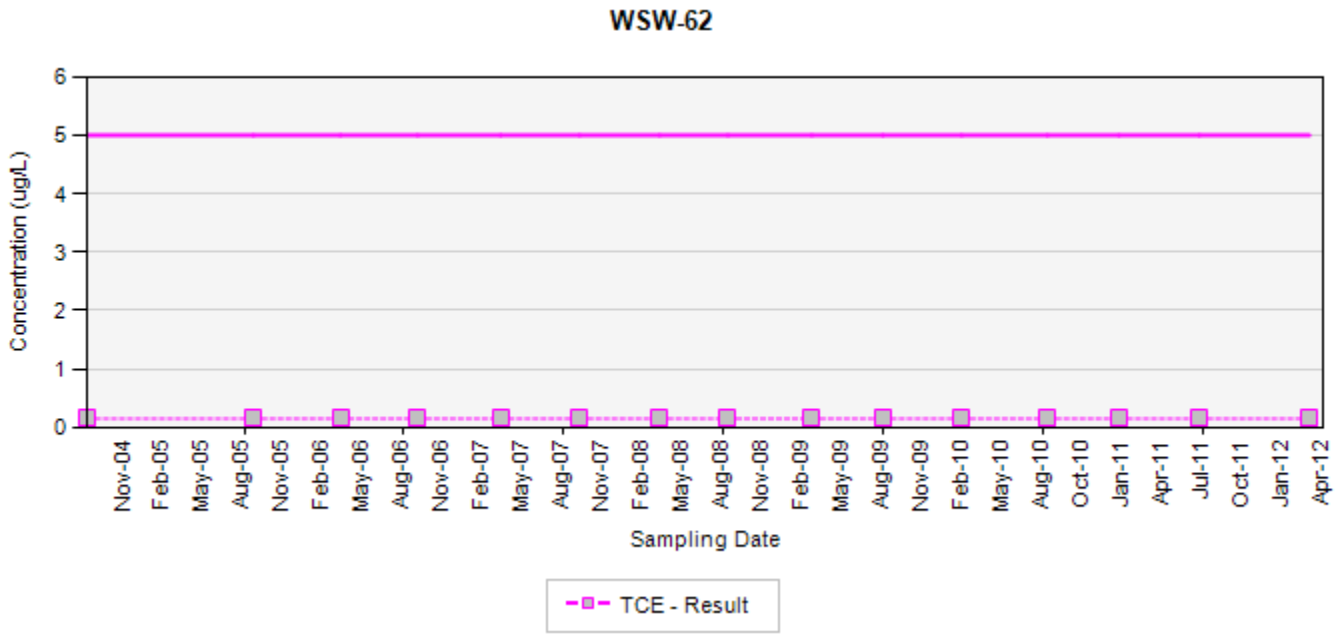

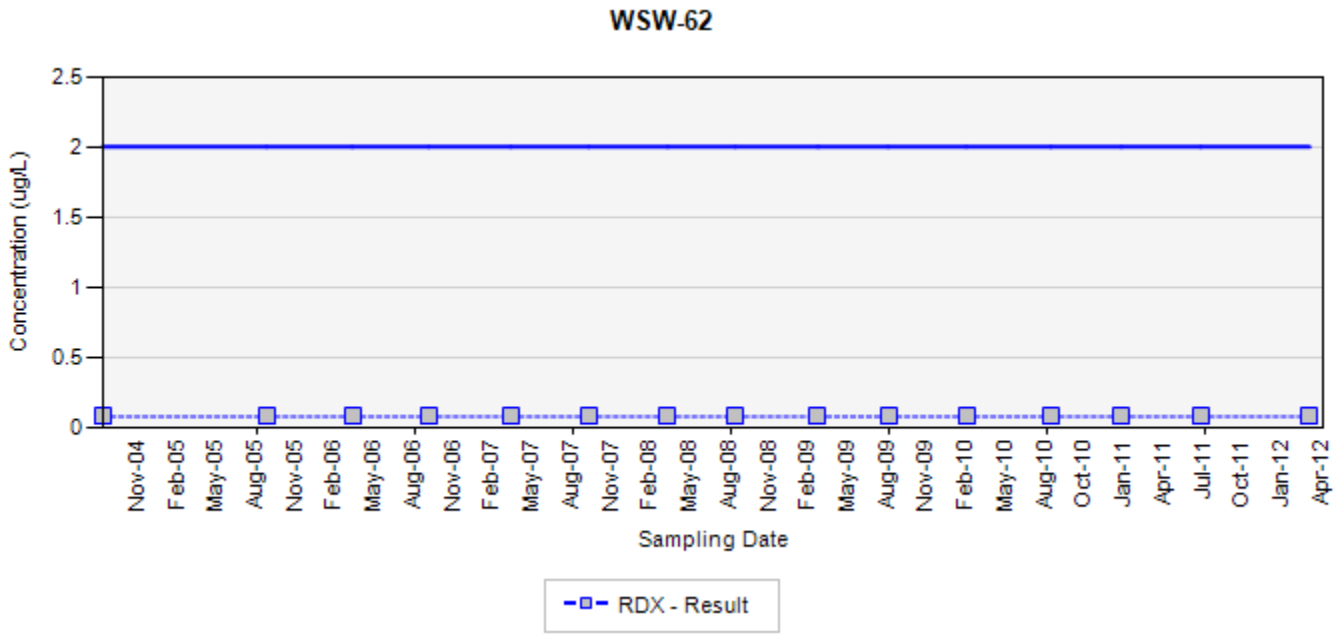

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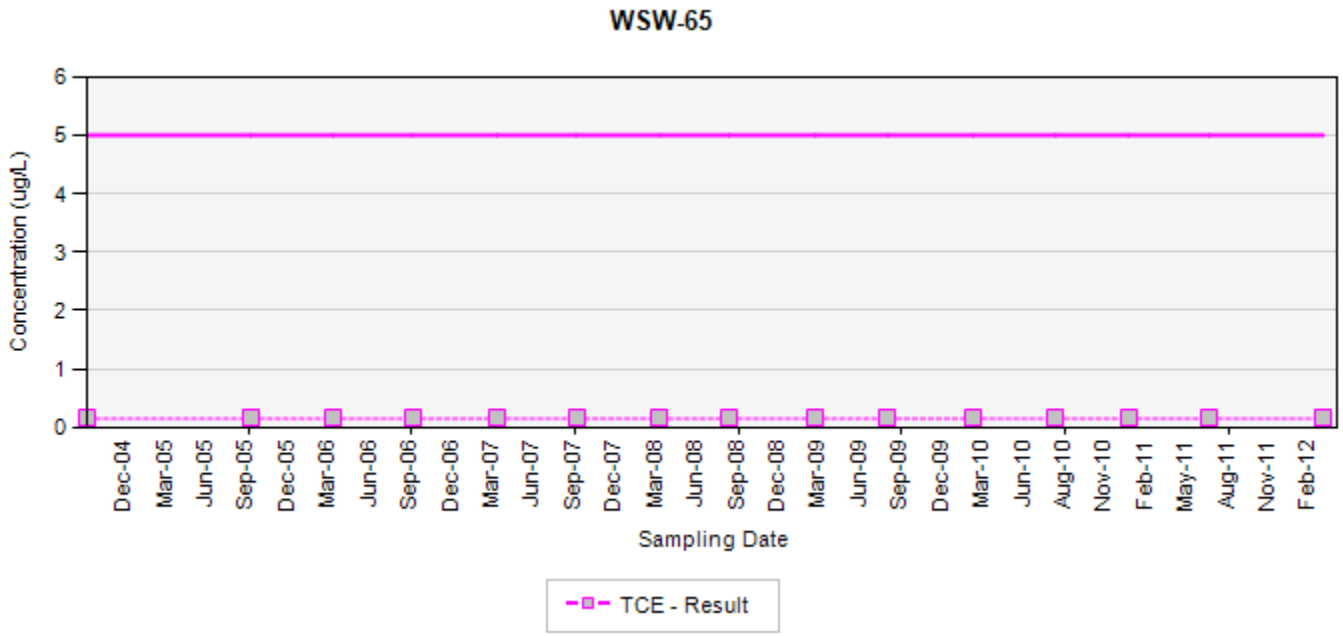

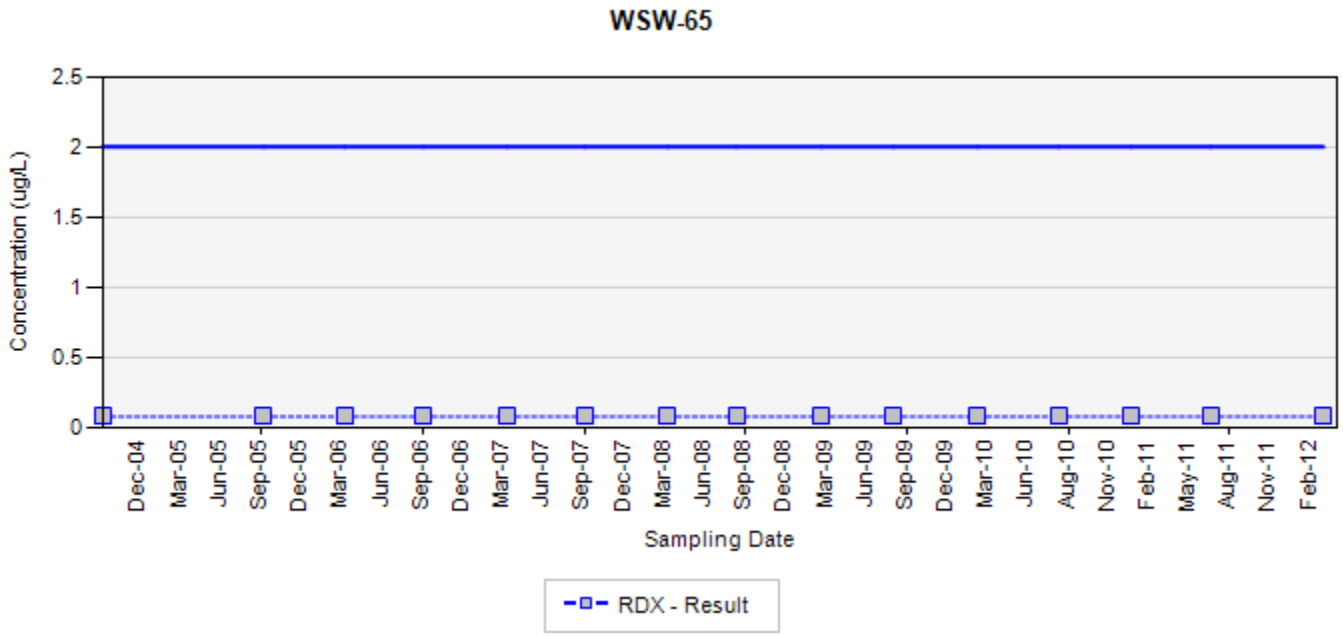

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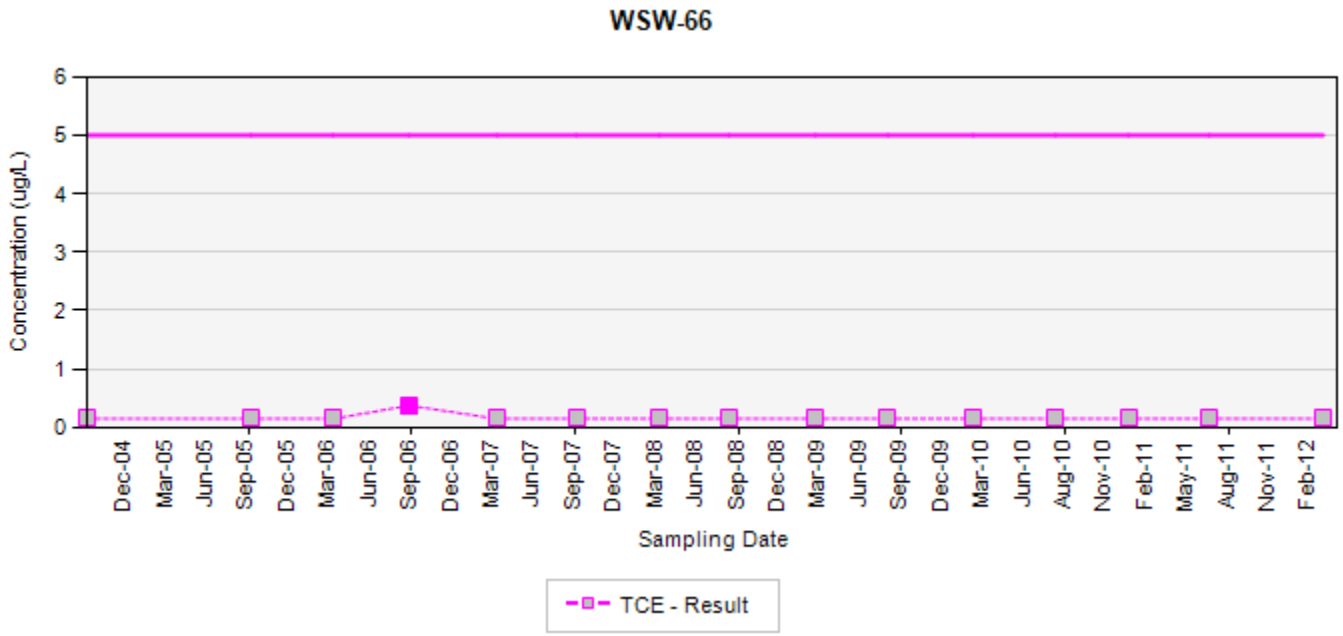

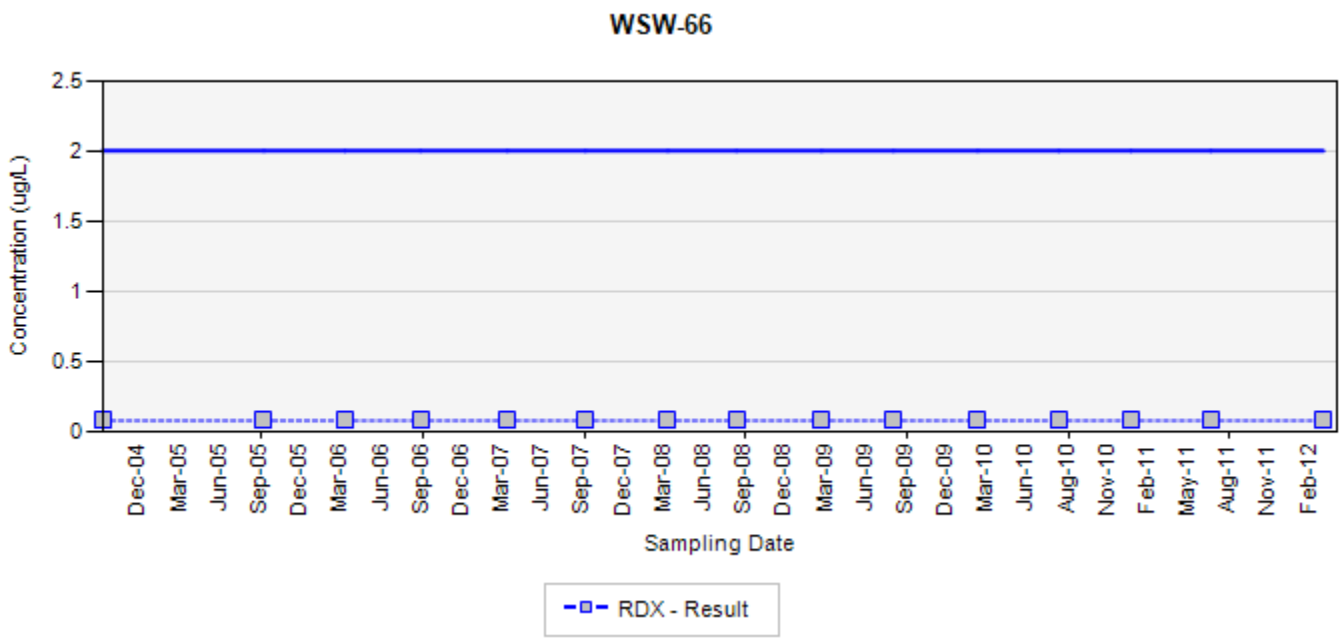

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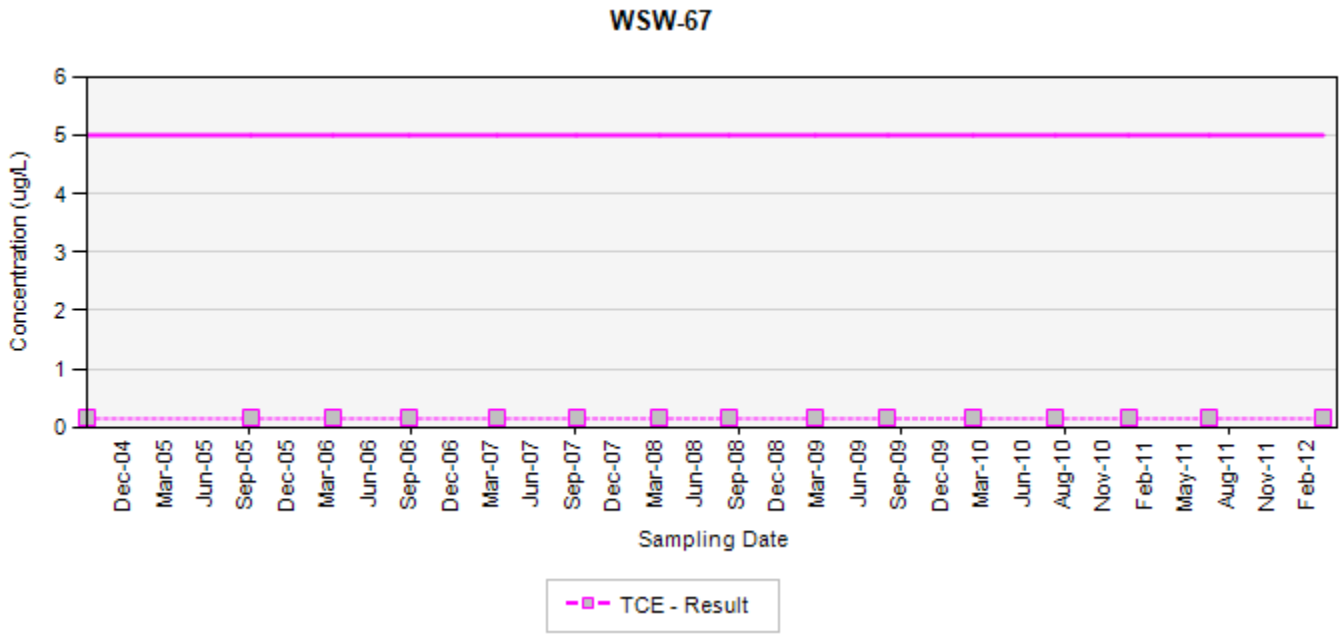

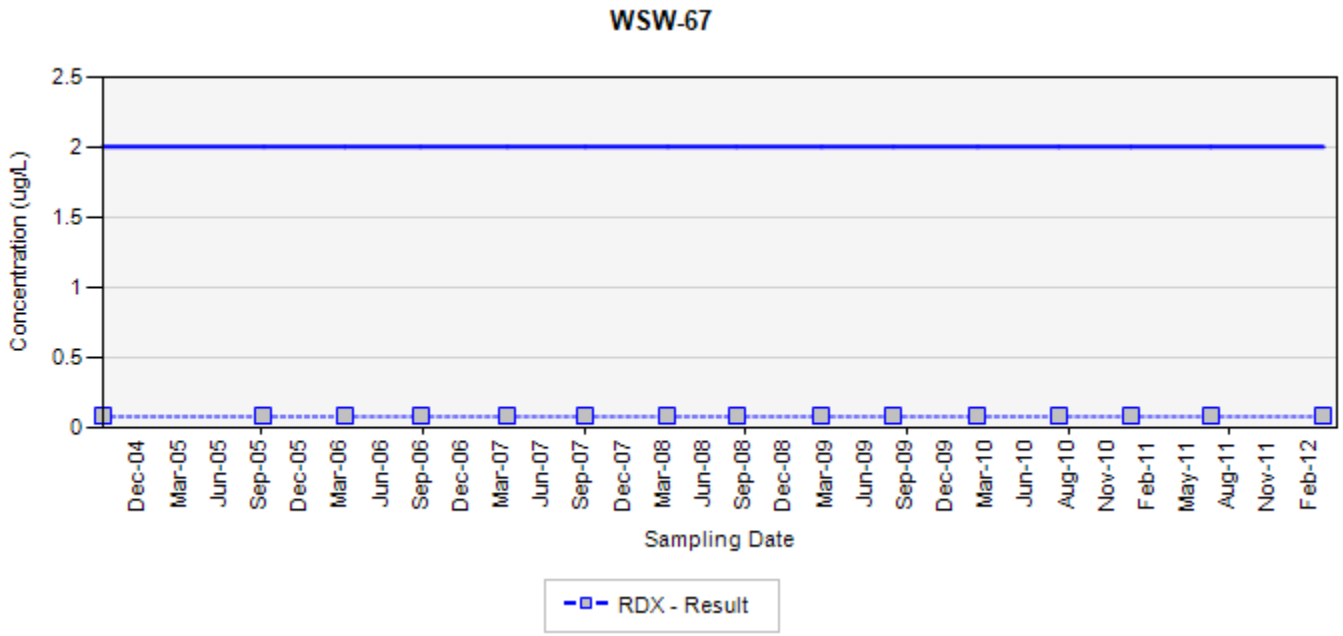

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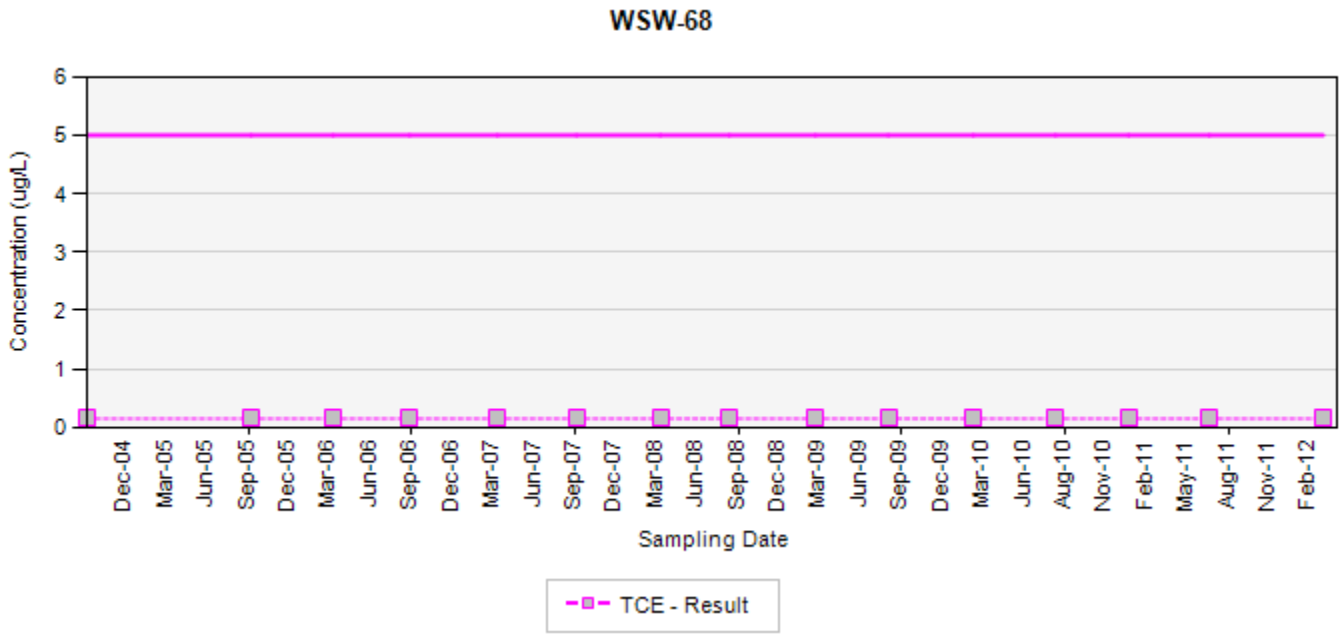

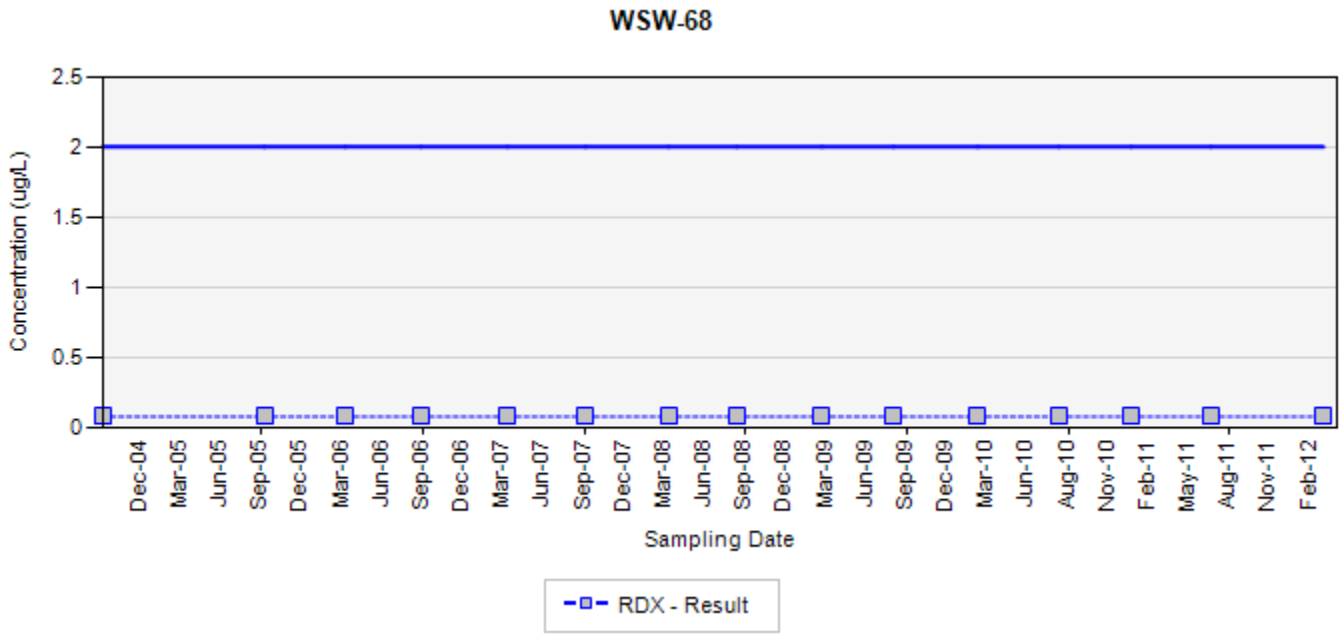

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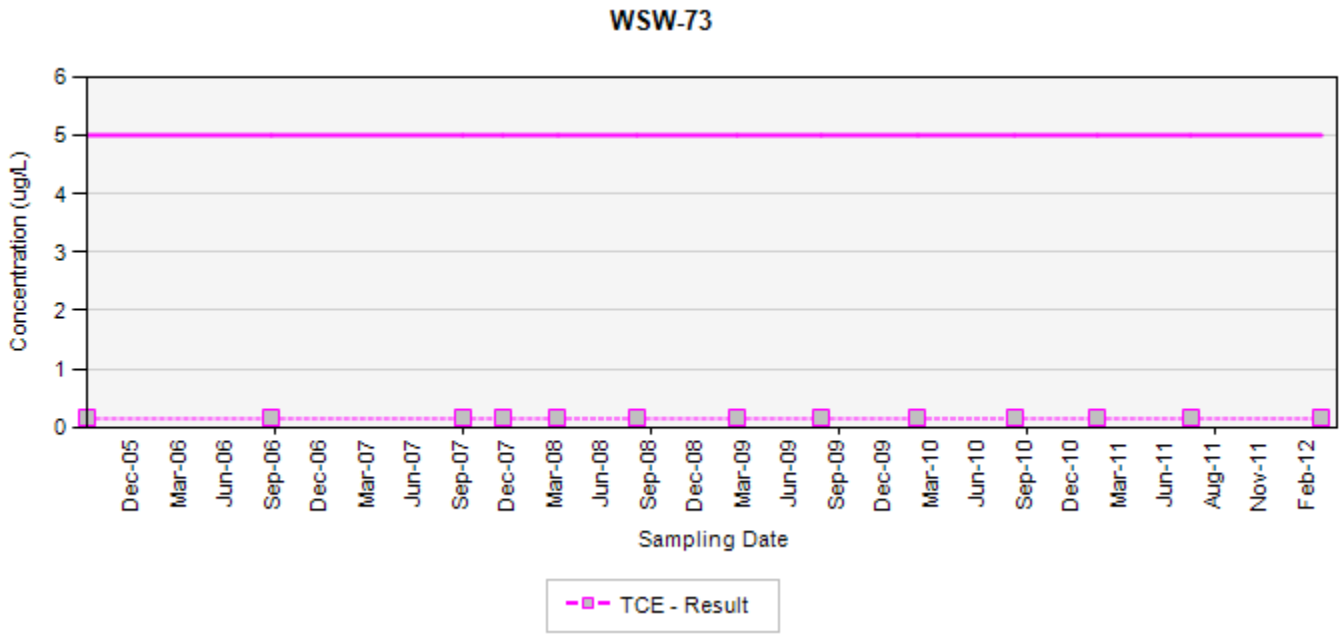

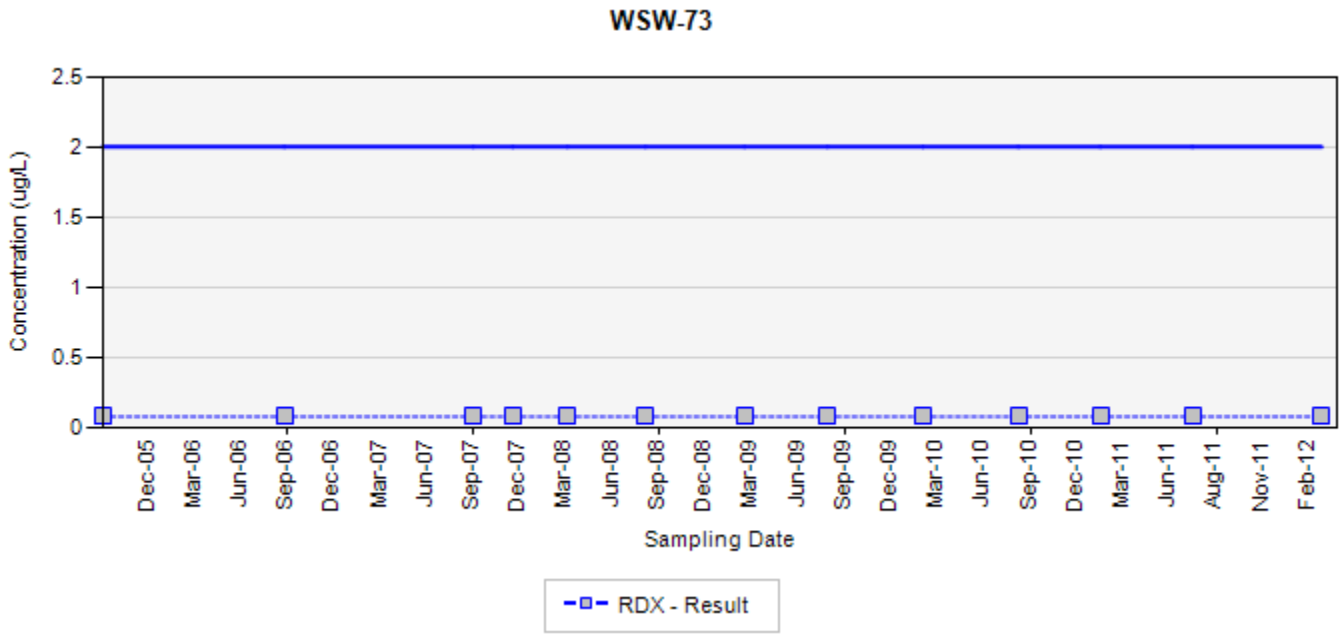

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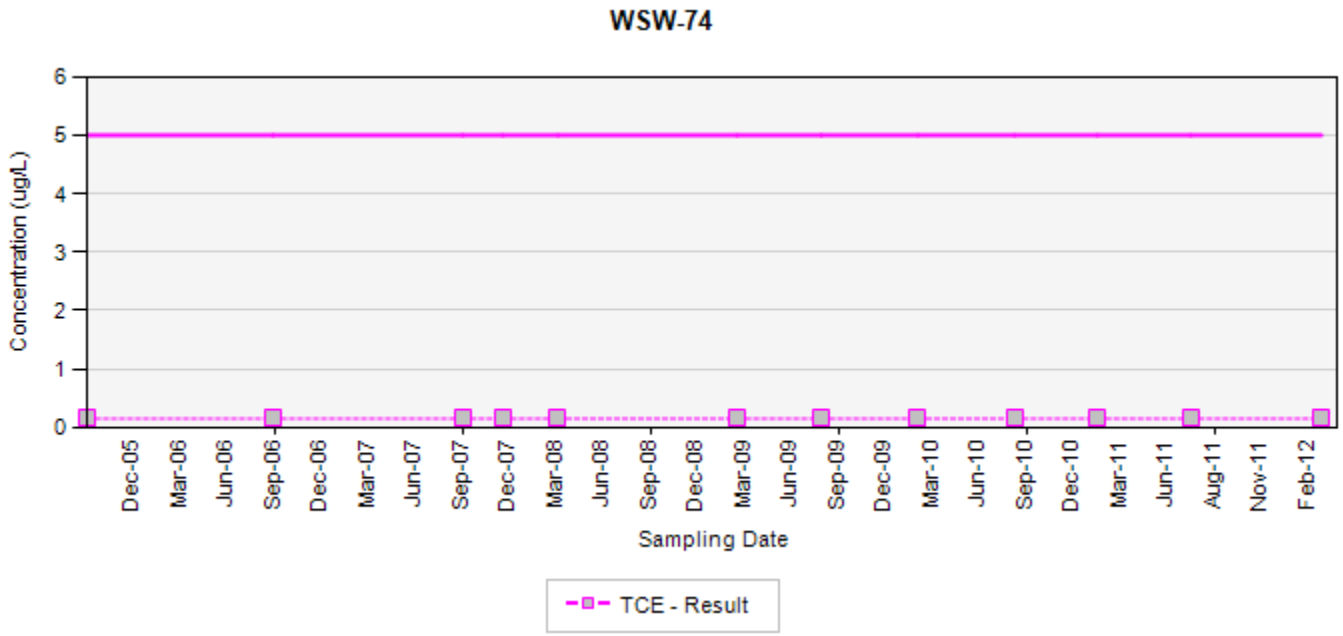

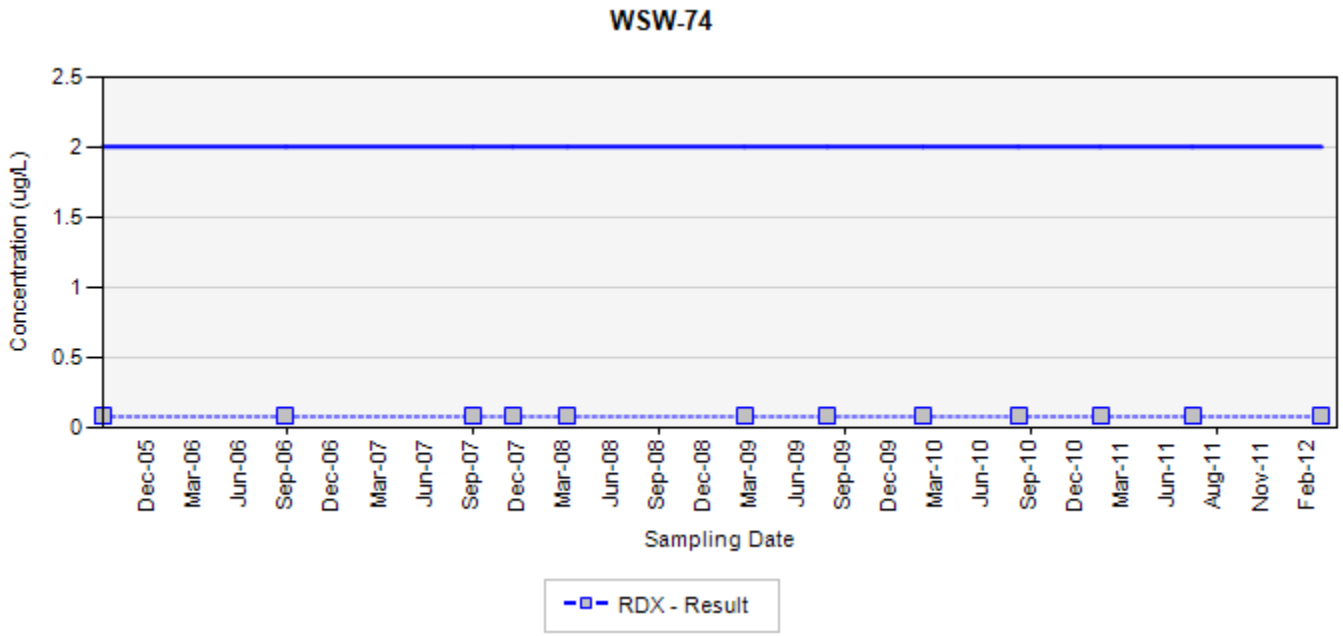

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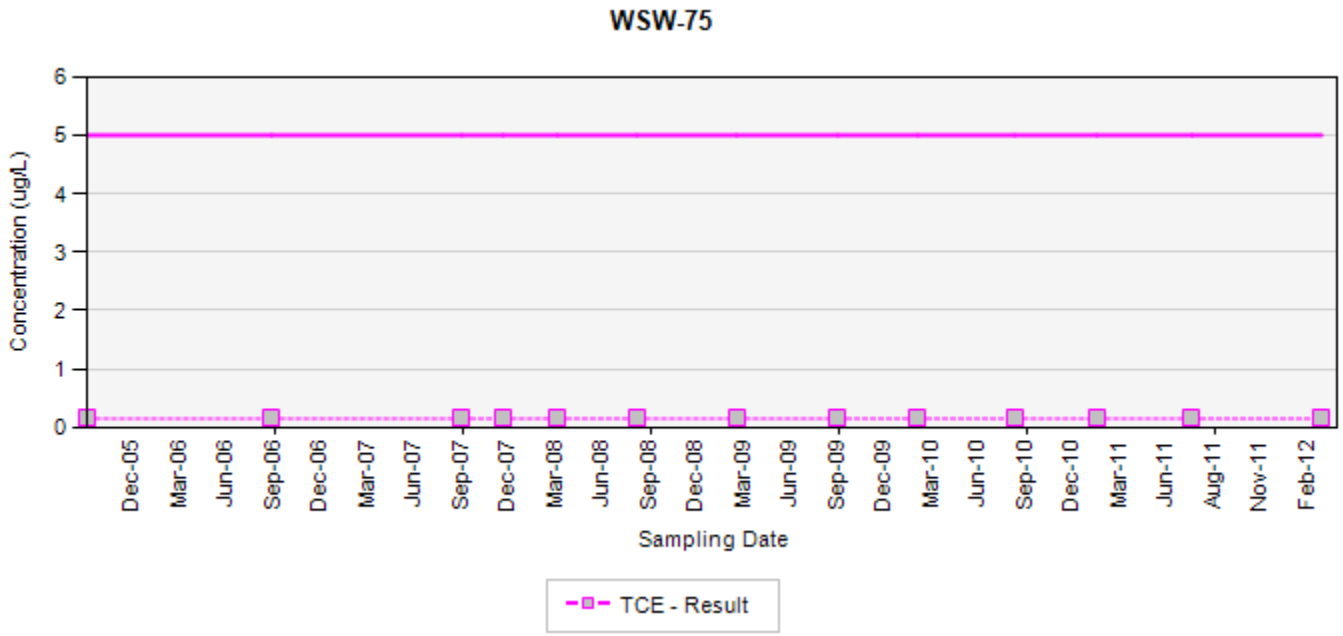

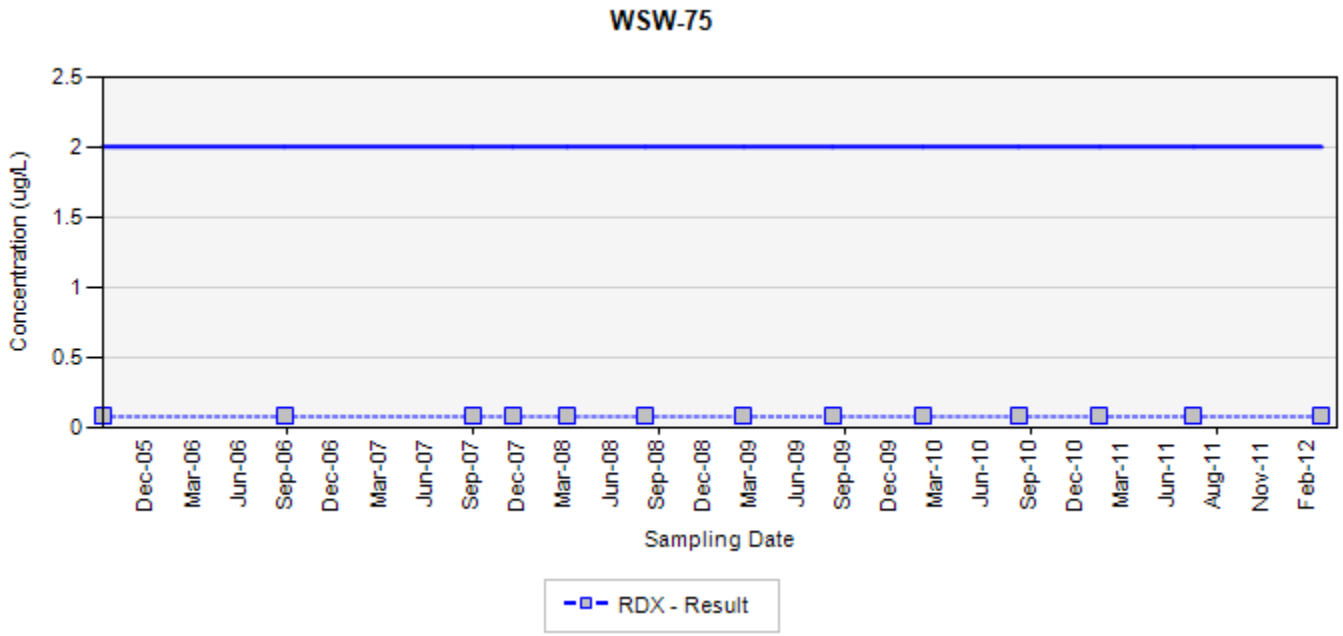

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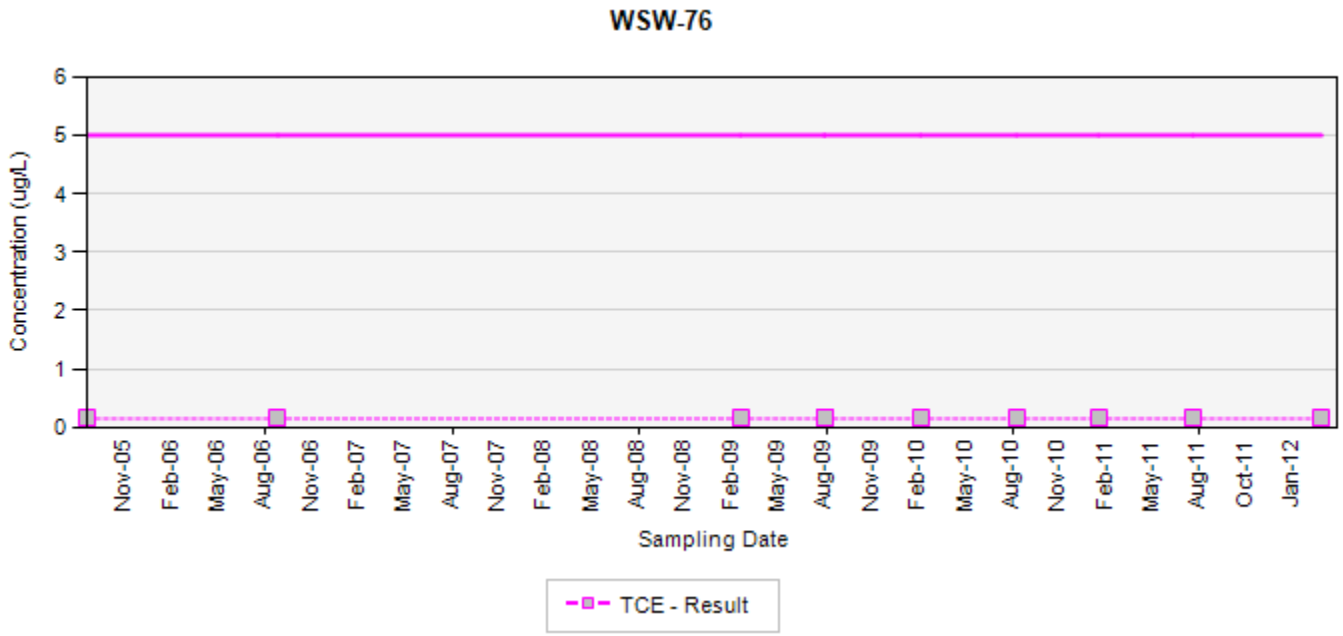

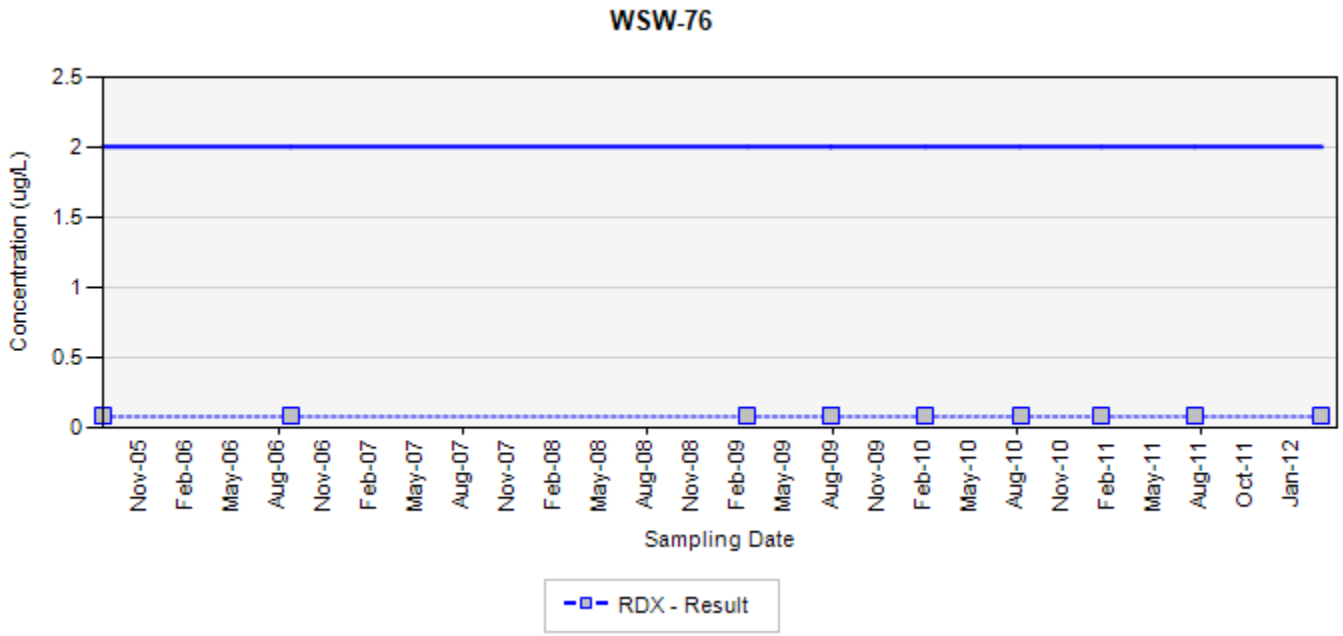

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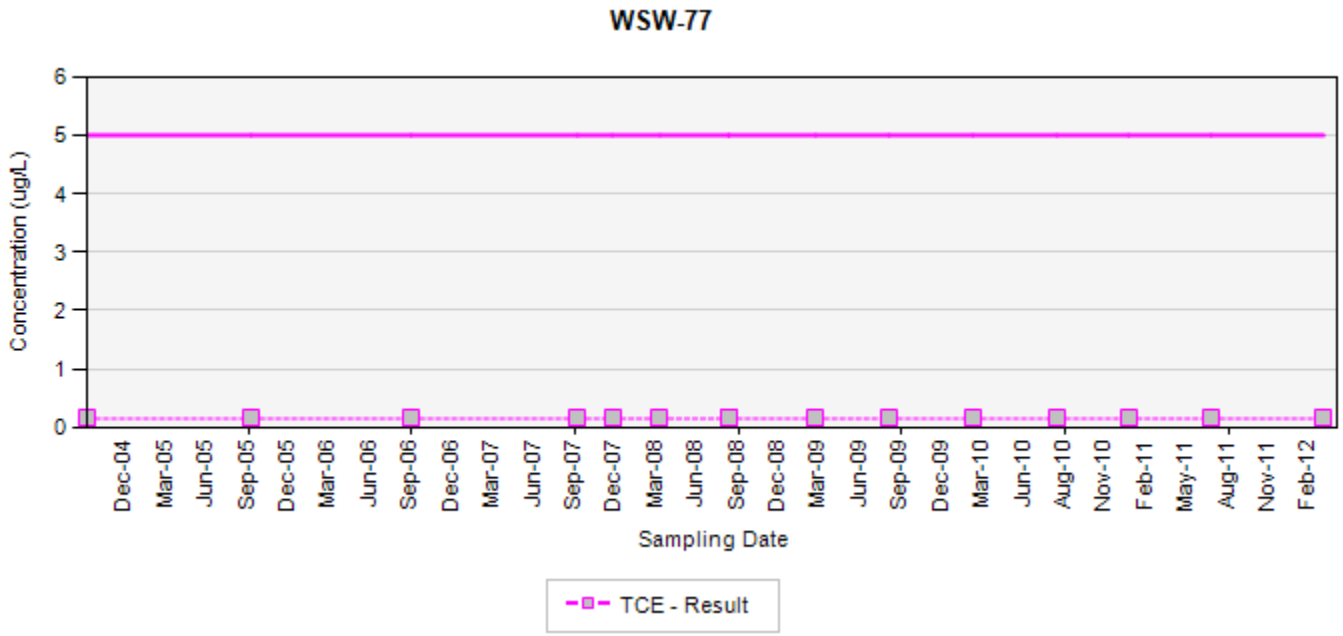

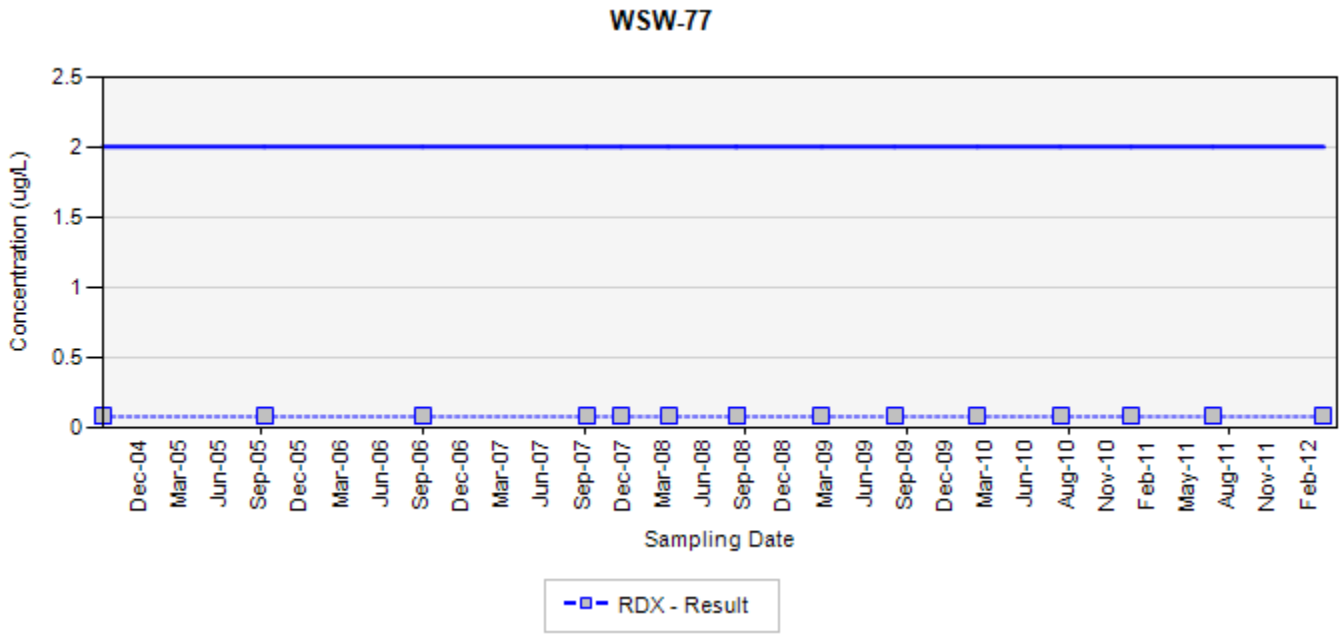

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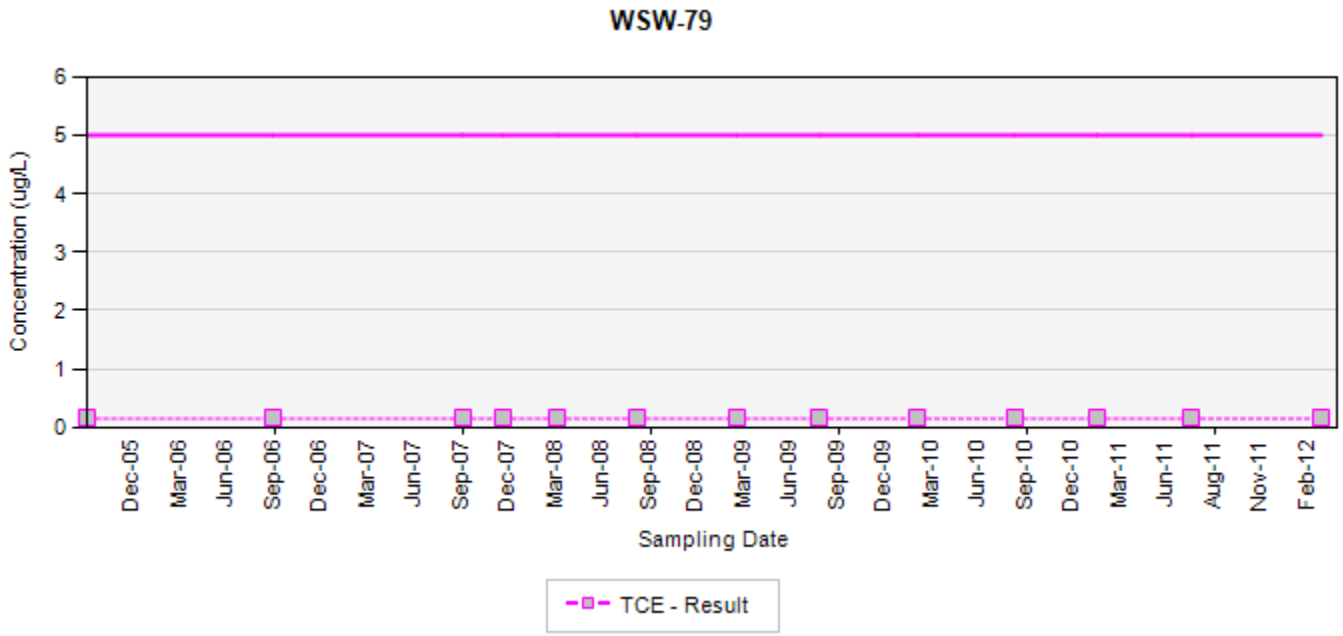

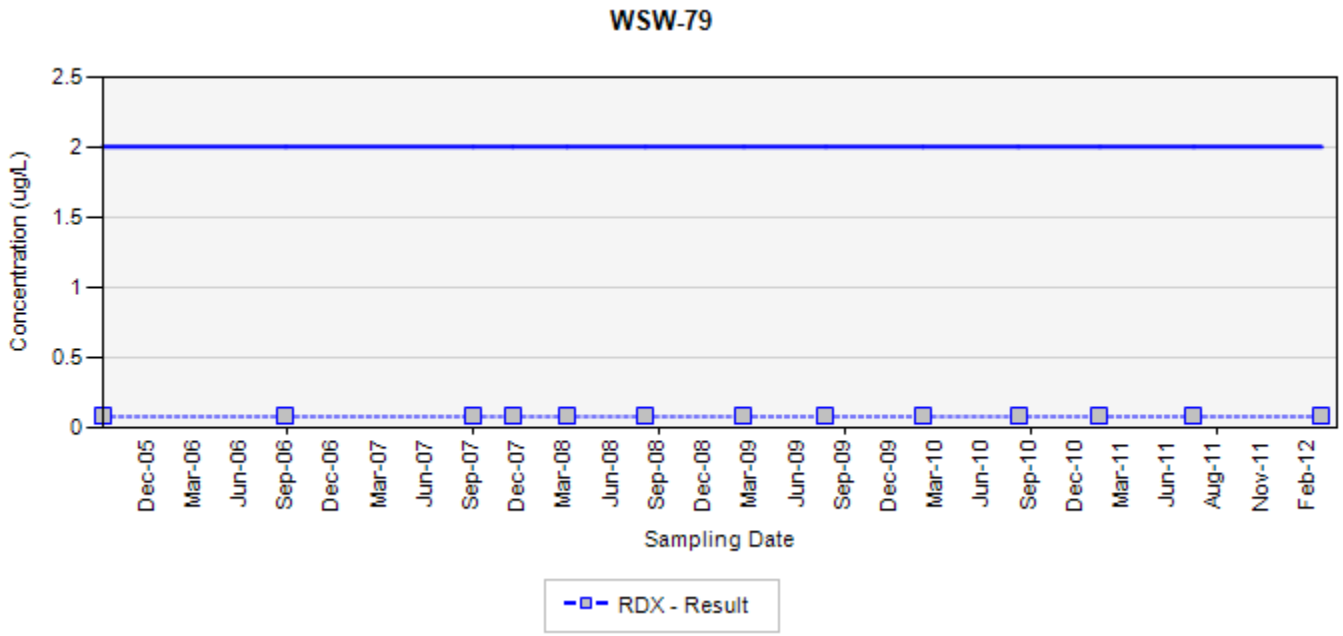

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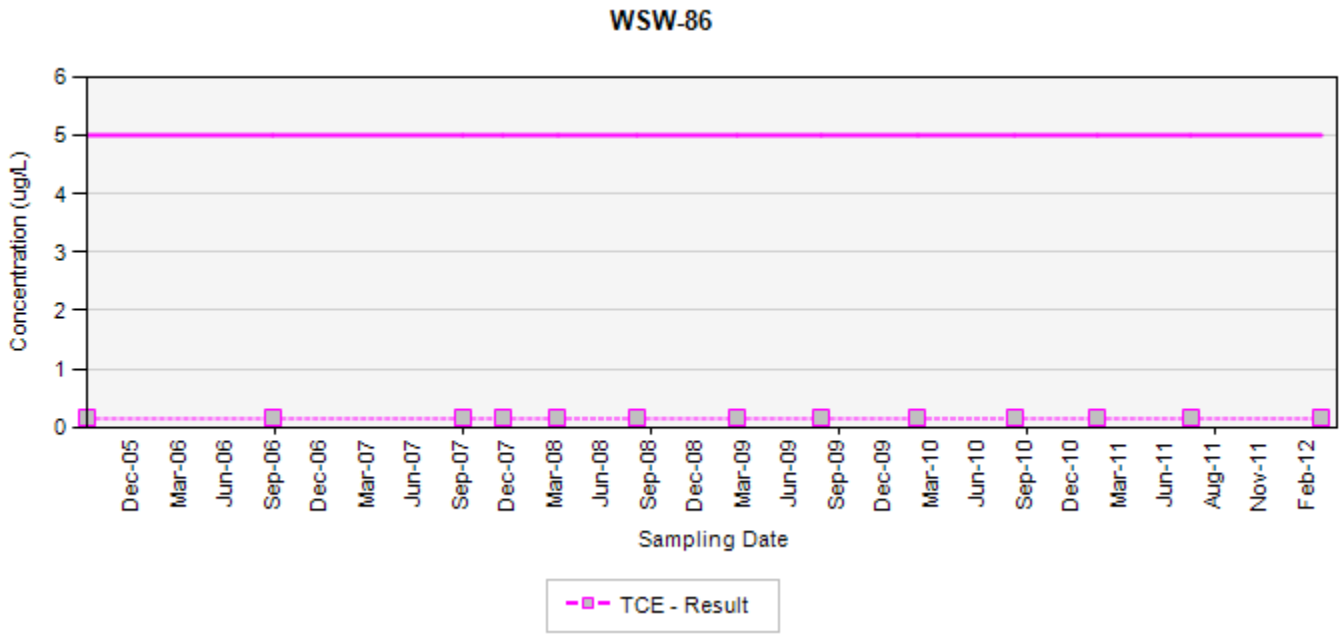

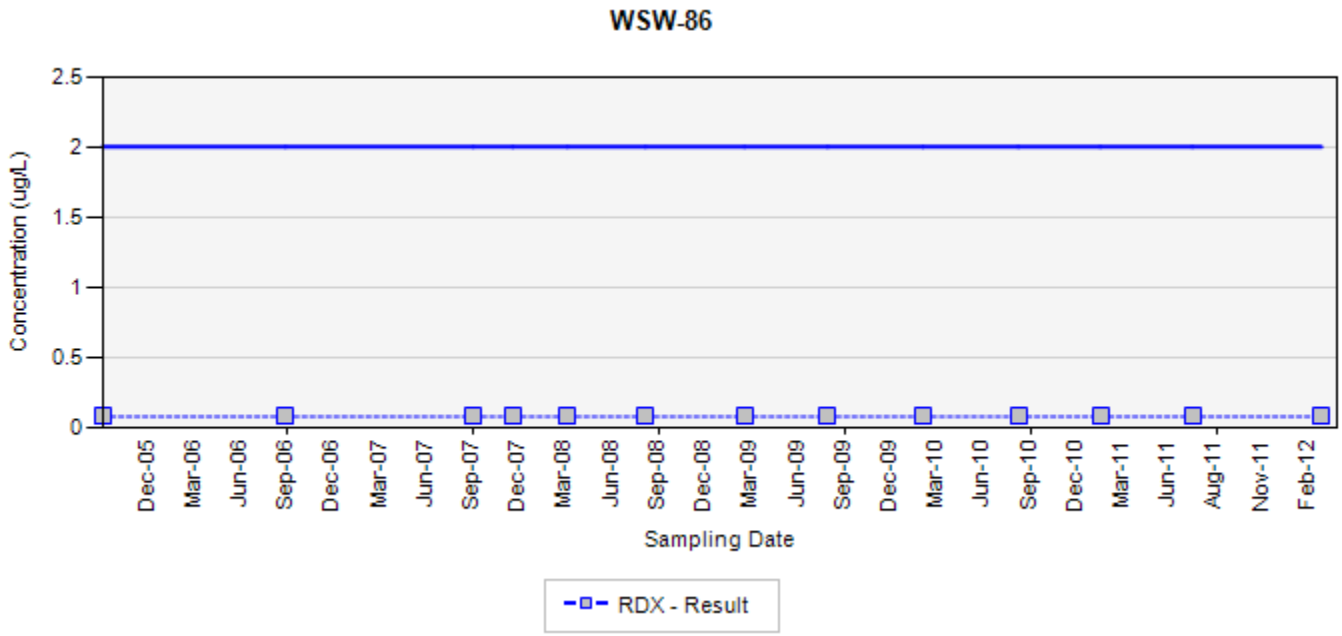

TCE - trichloroethene
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In the event that both a normal sample and a field duplicate were collected, the higher of the two results will be displayed on the chart

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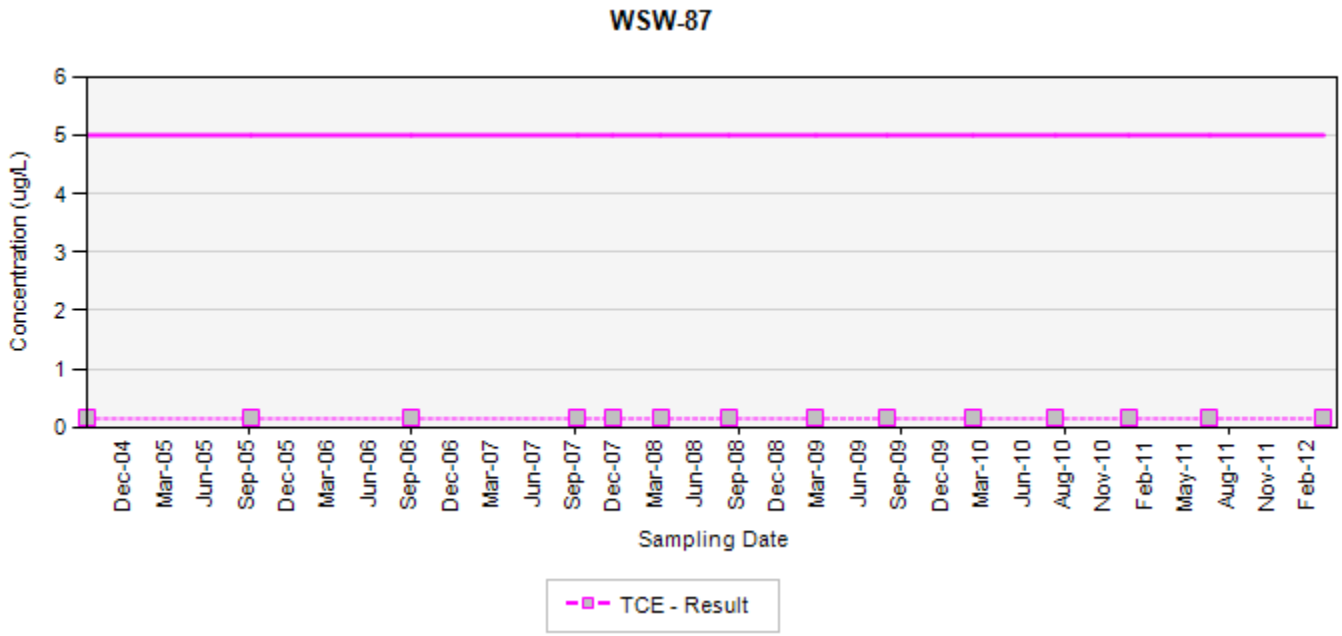

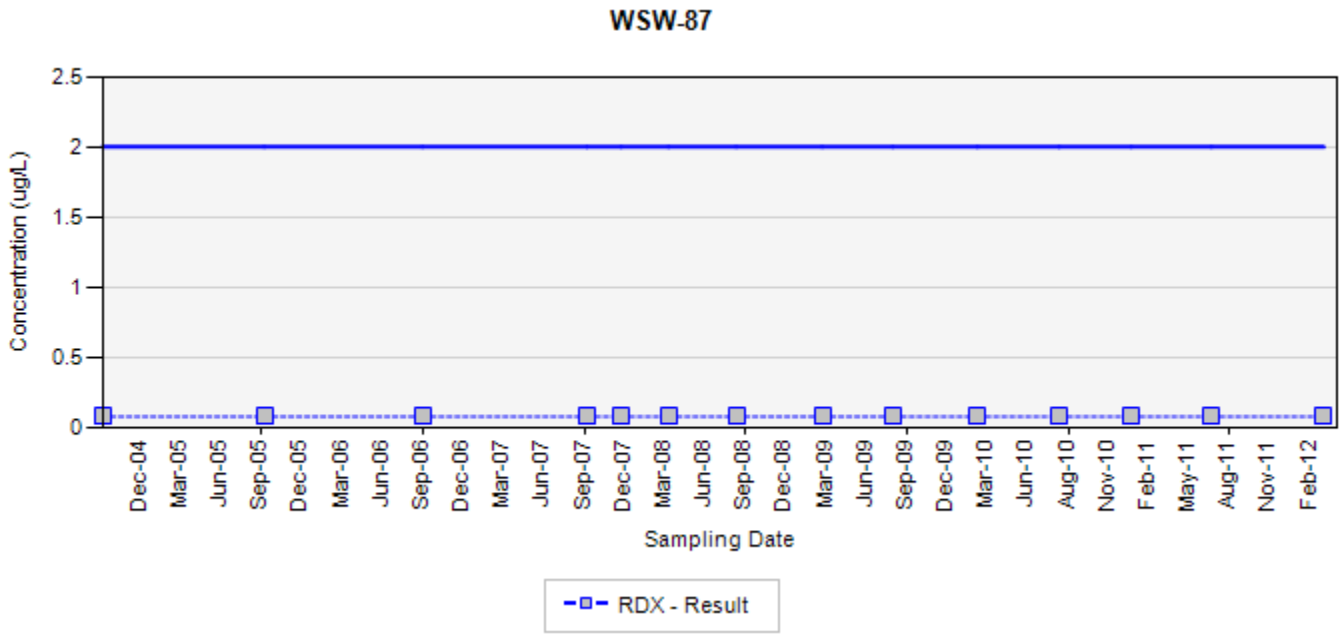

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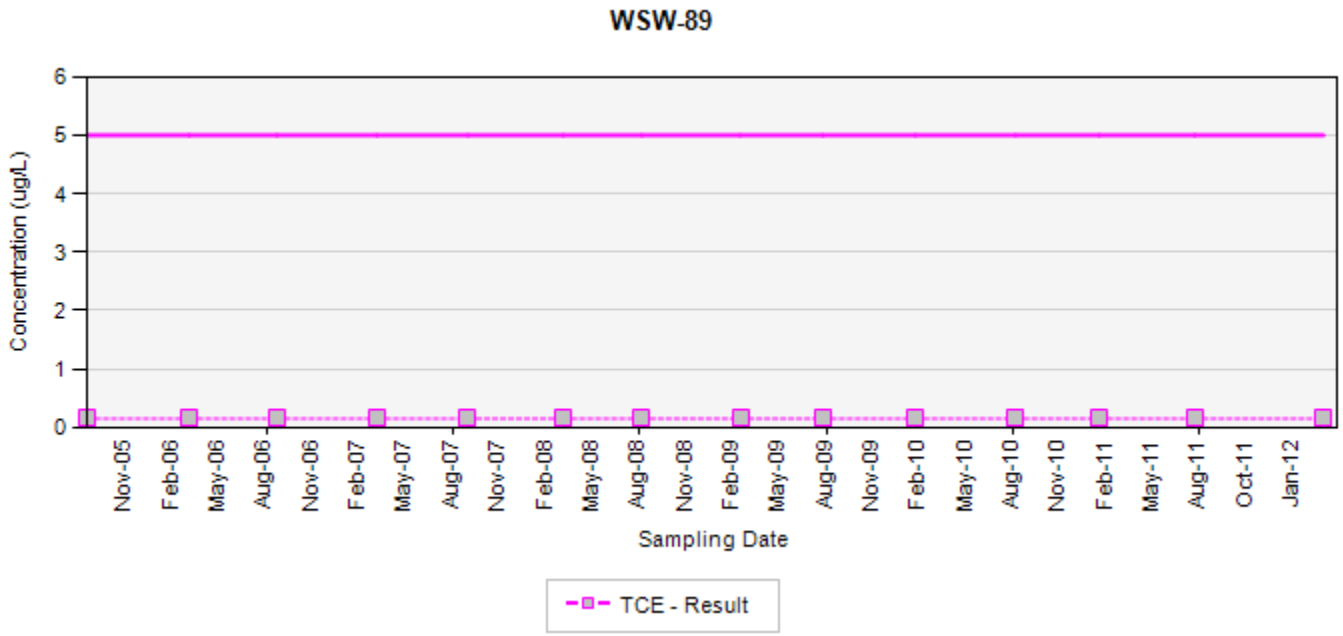

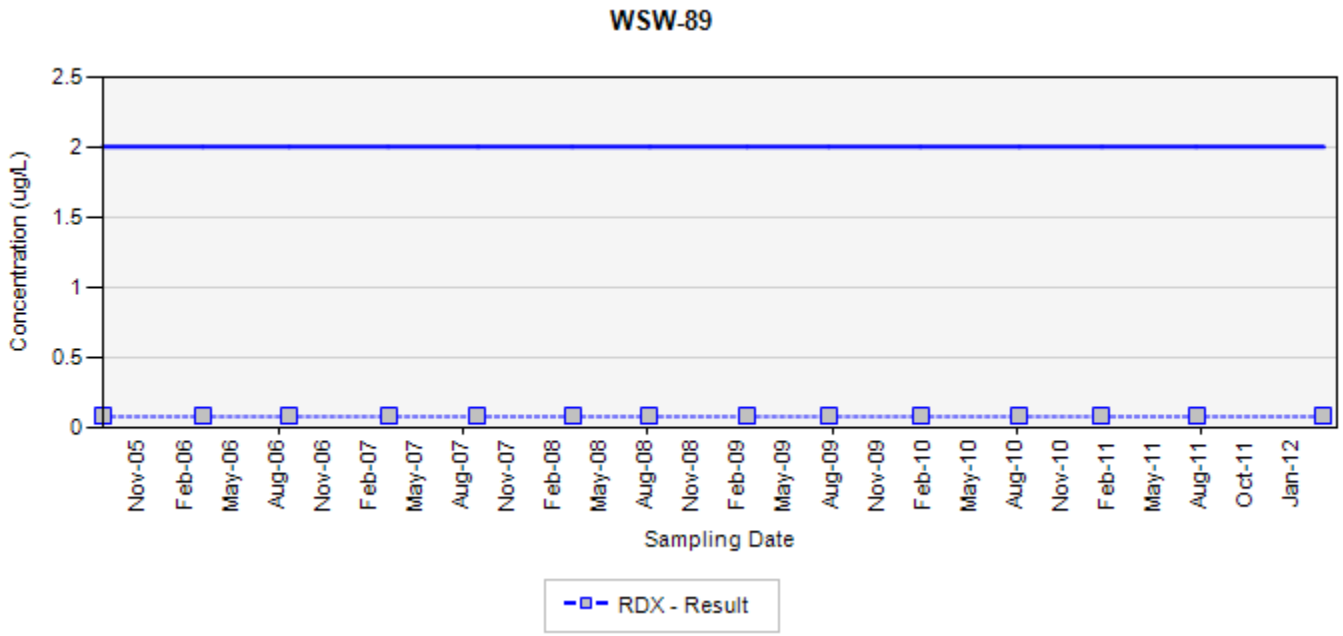

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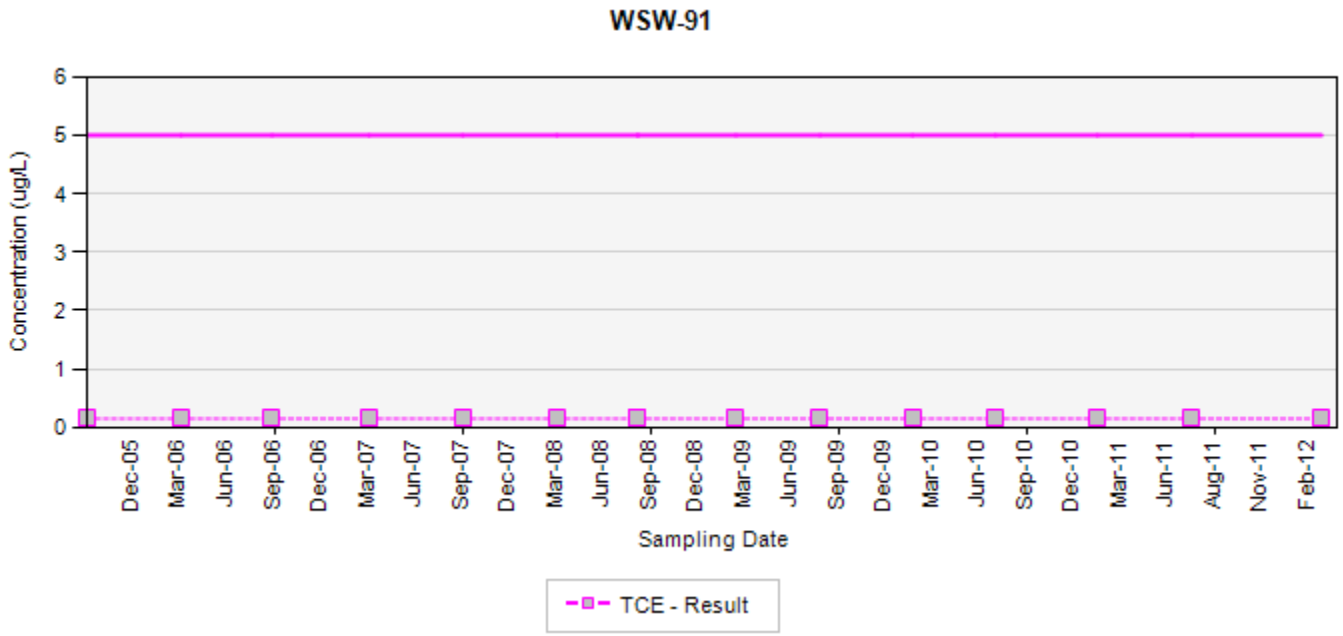

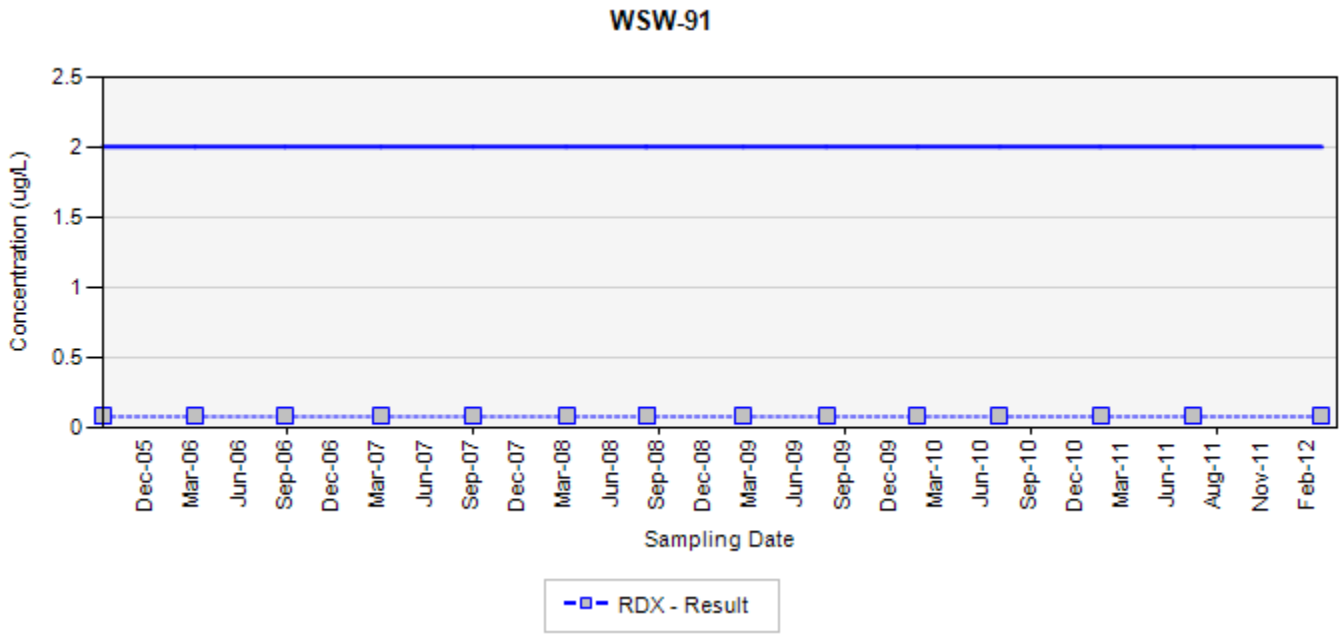

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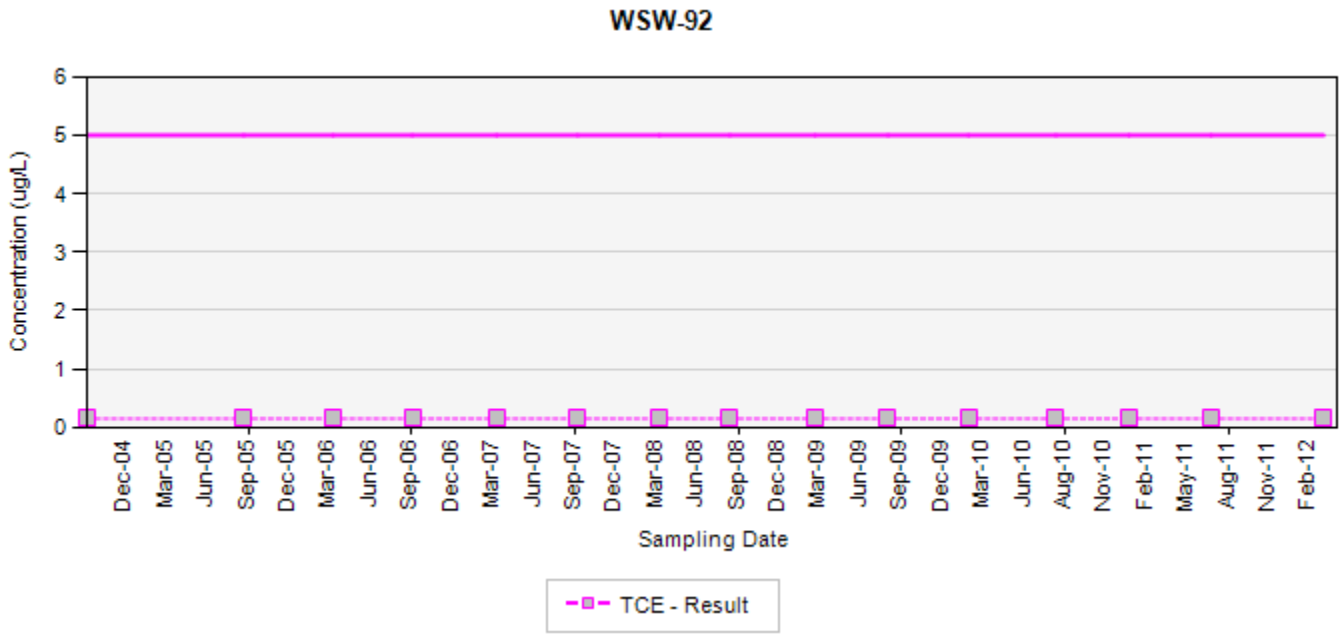

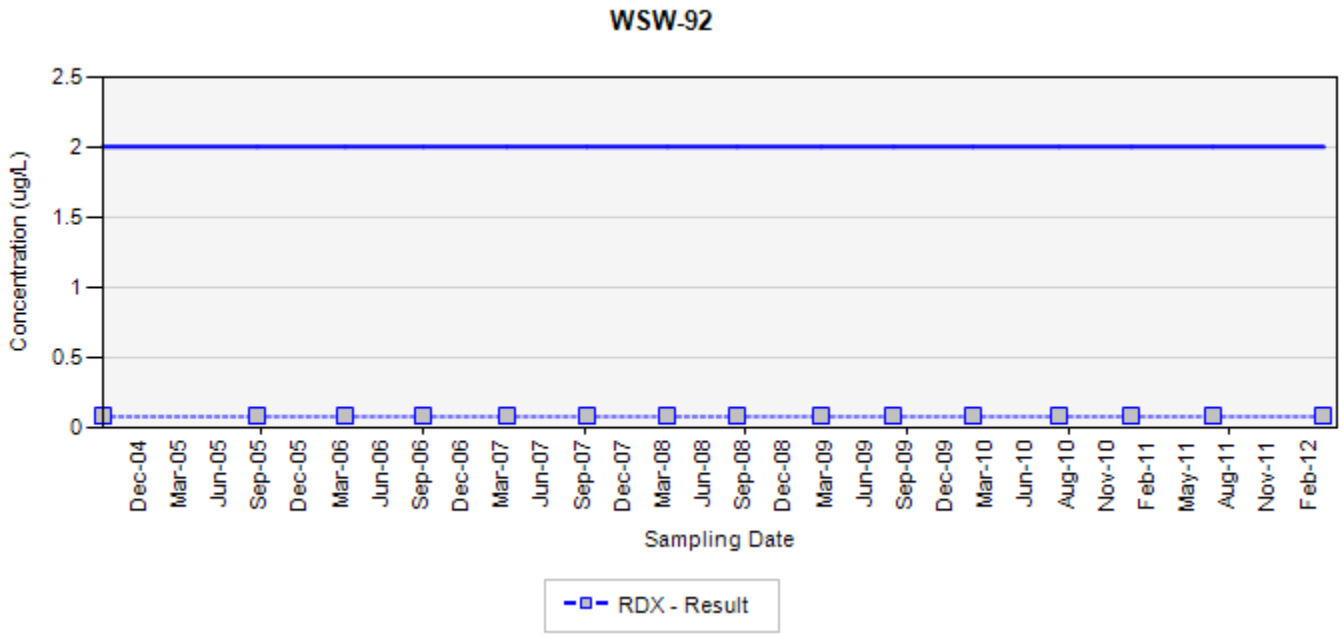

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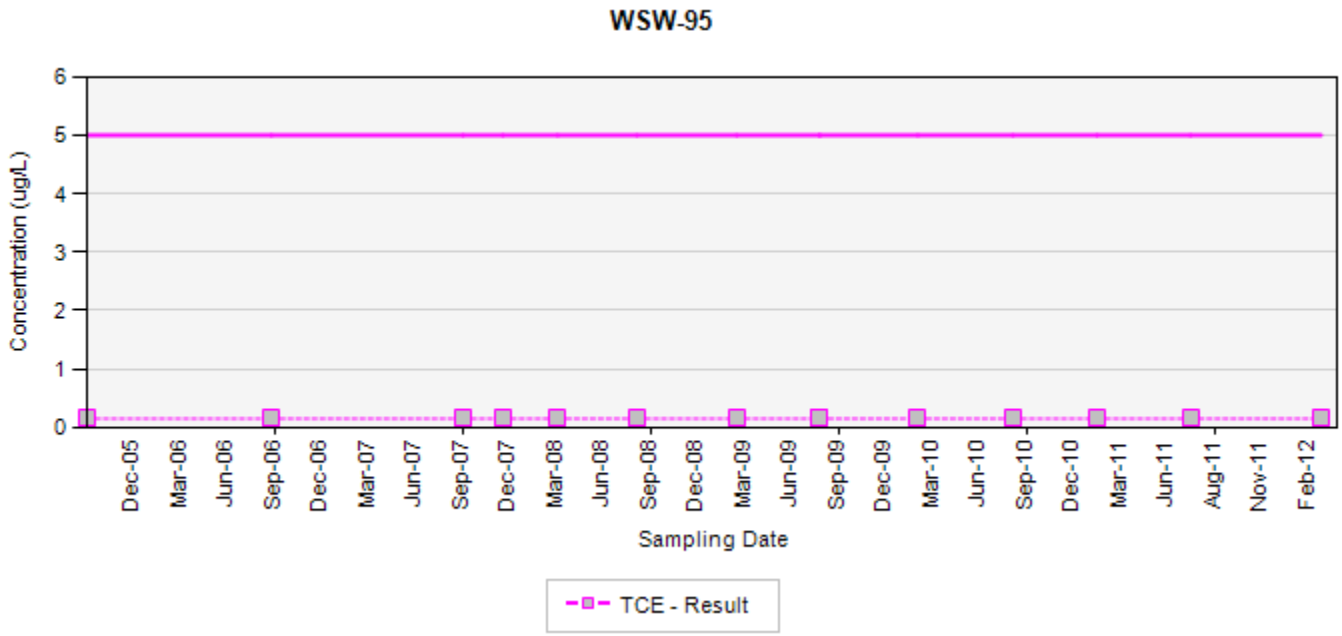

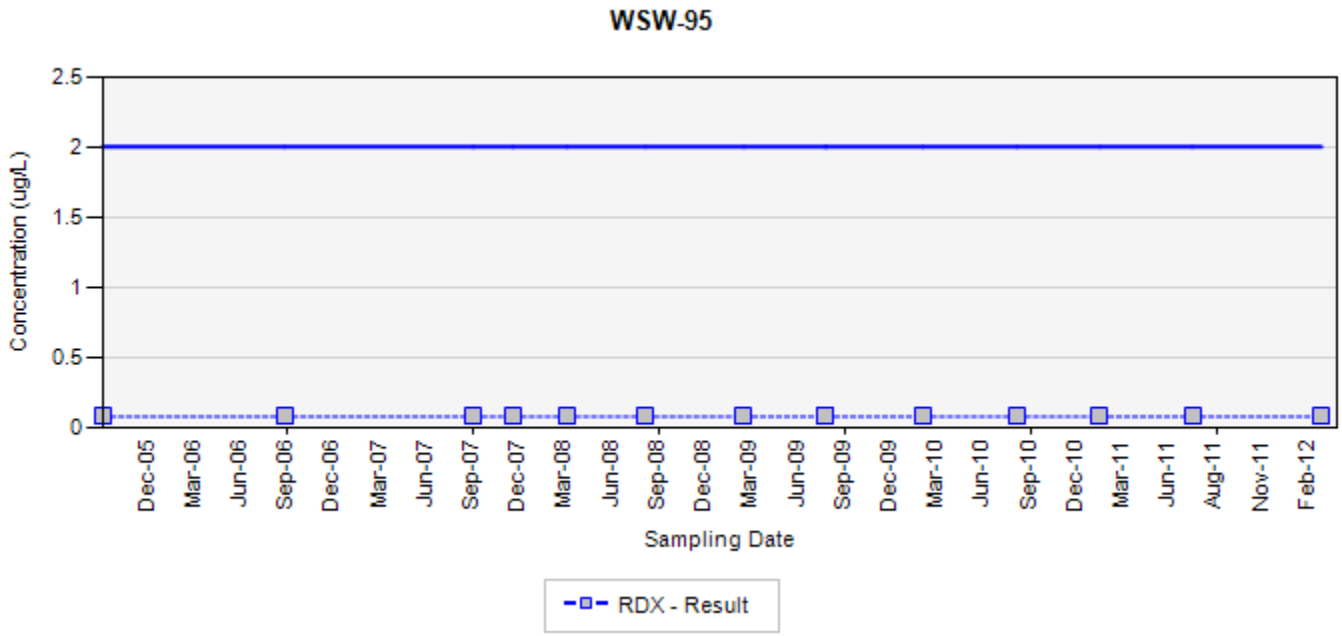

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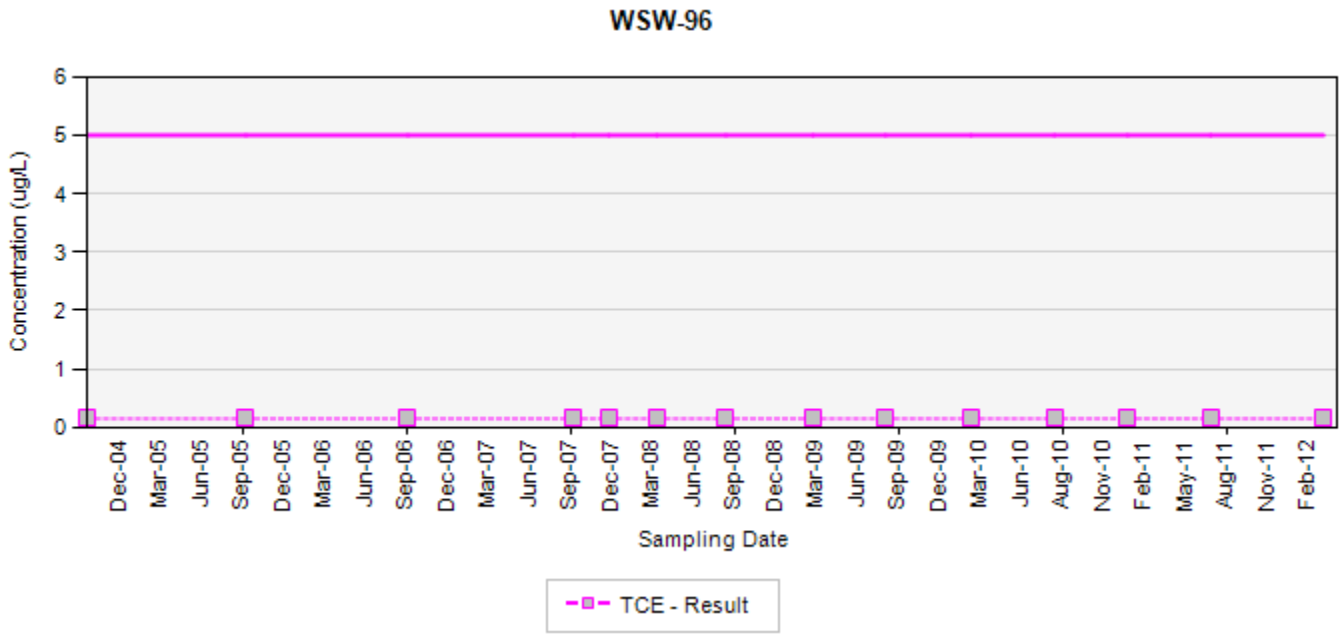

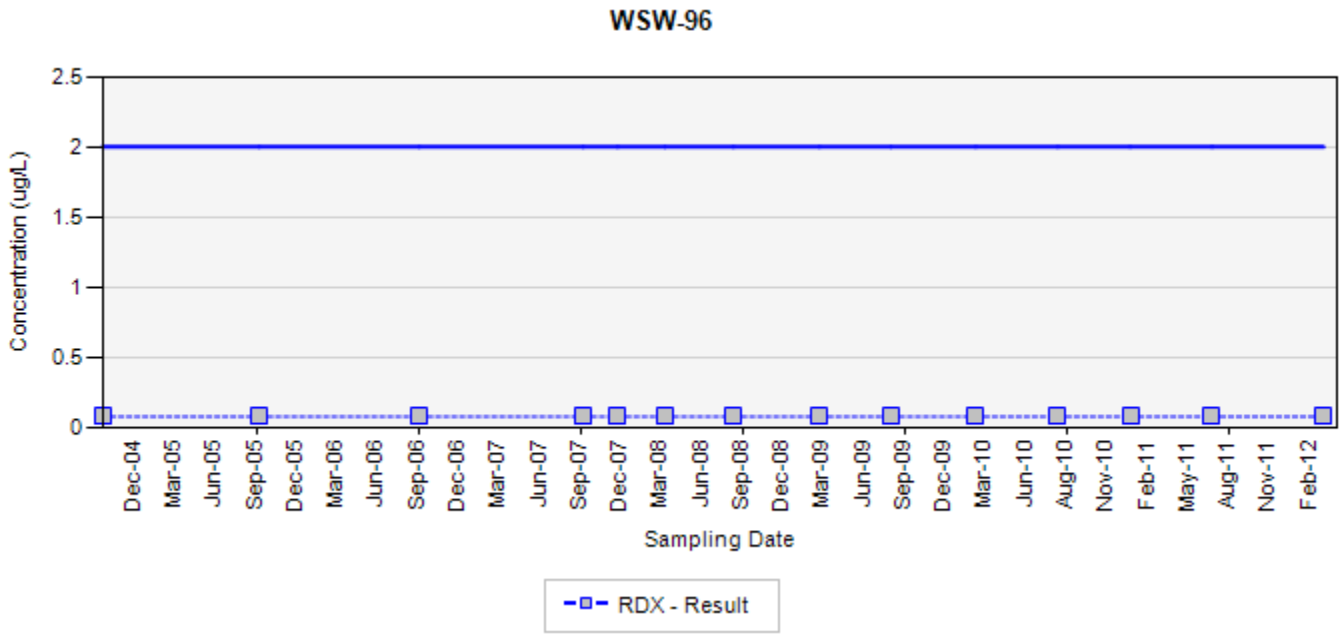

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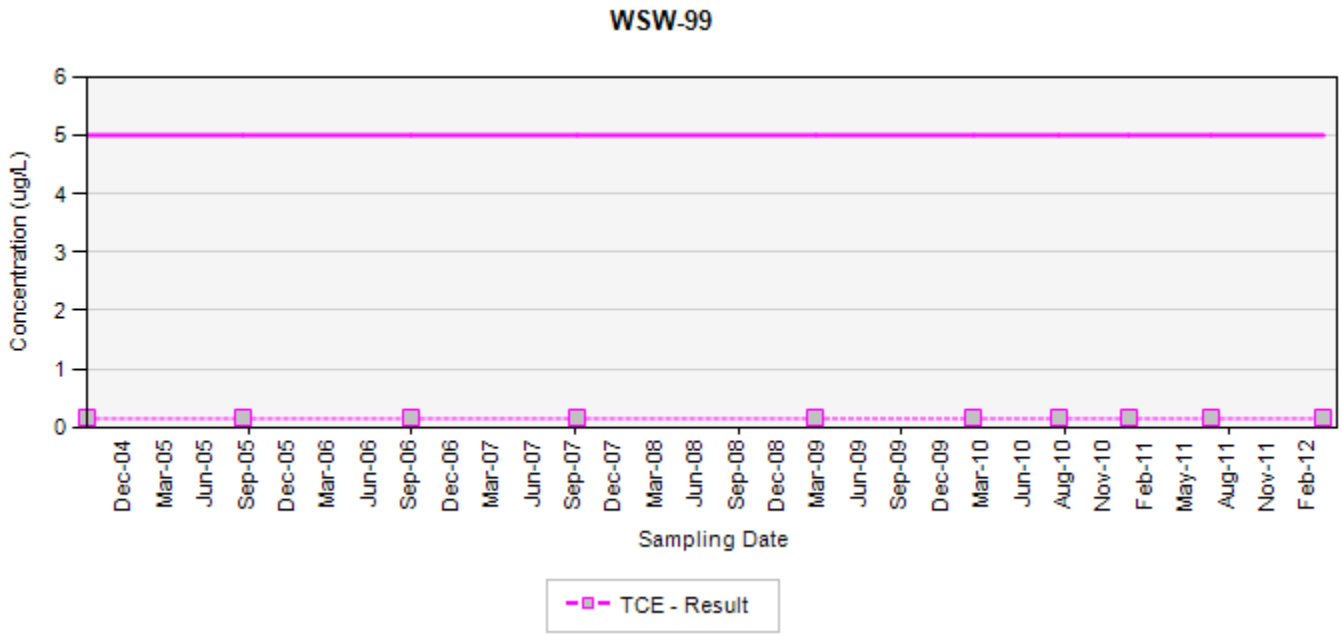

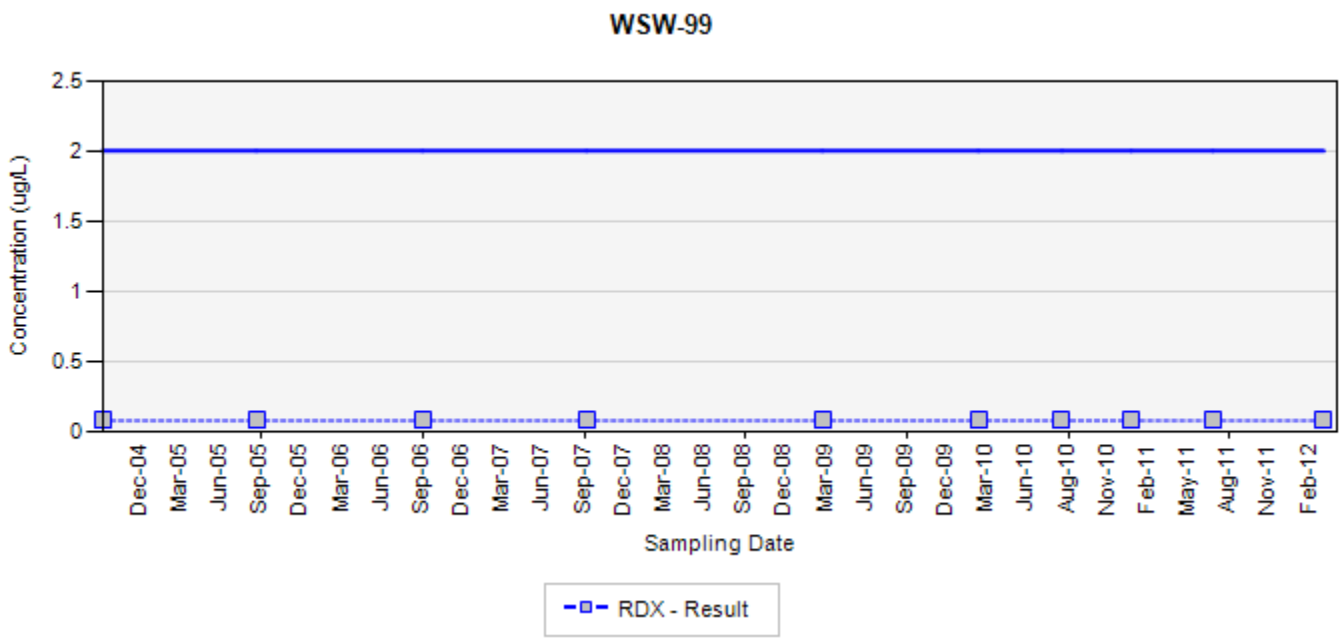

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Appendix C
Concentration Trend Charts for Select Surface Water Locations

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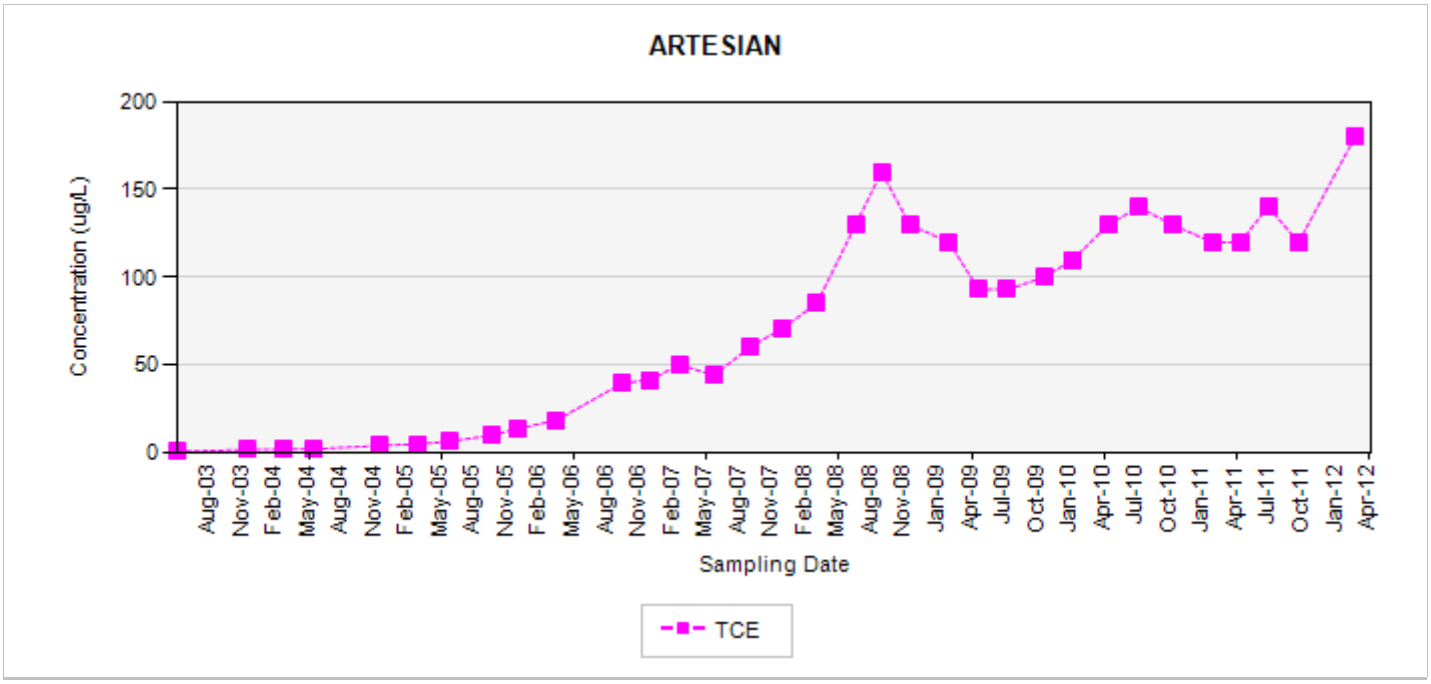

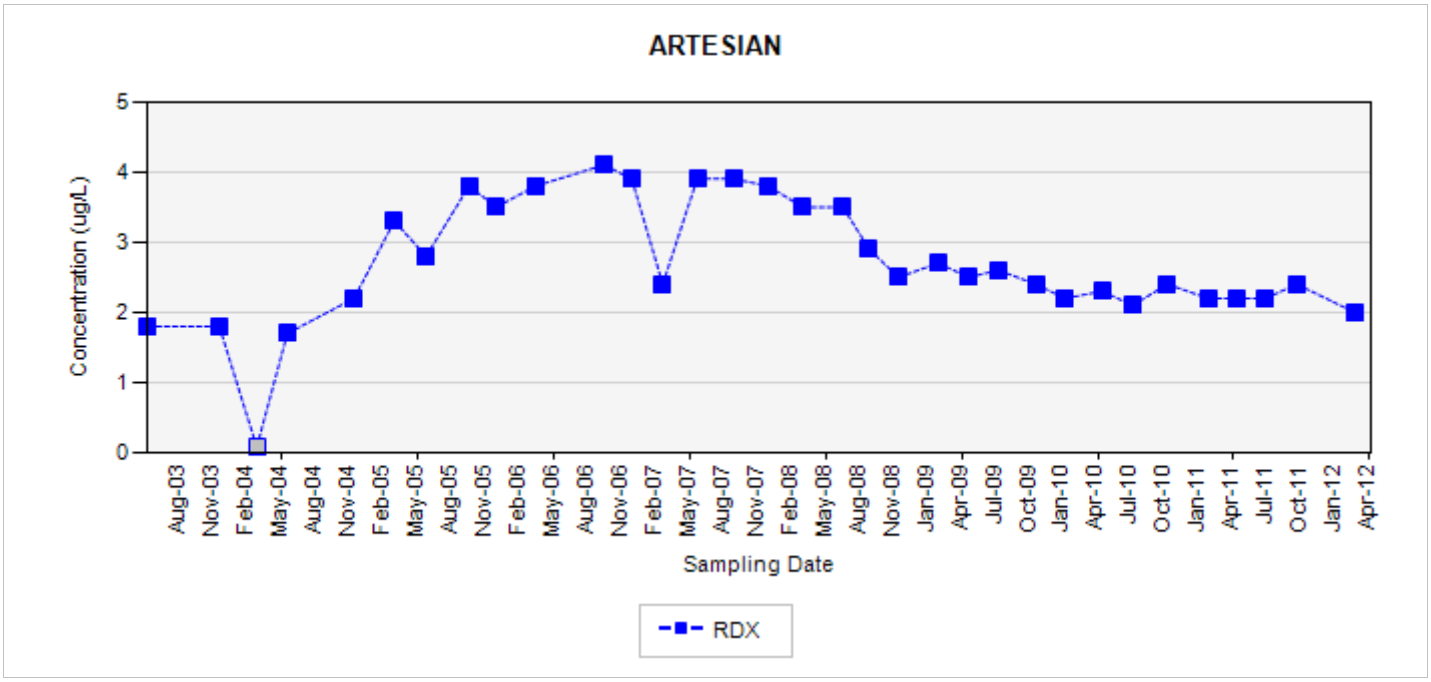

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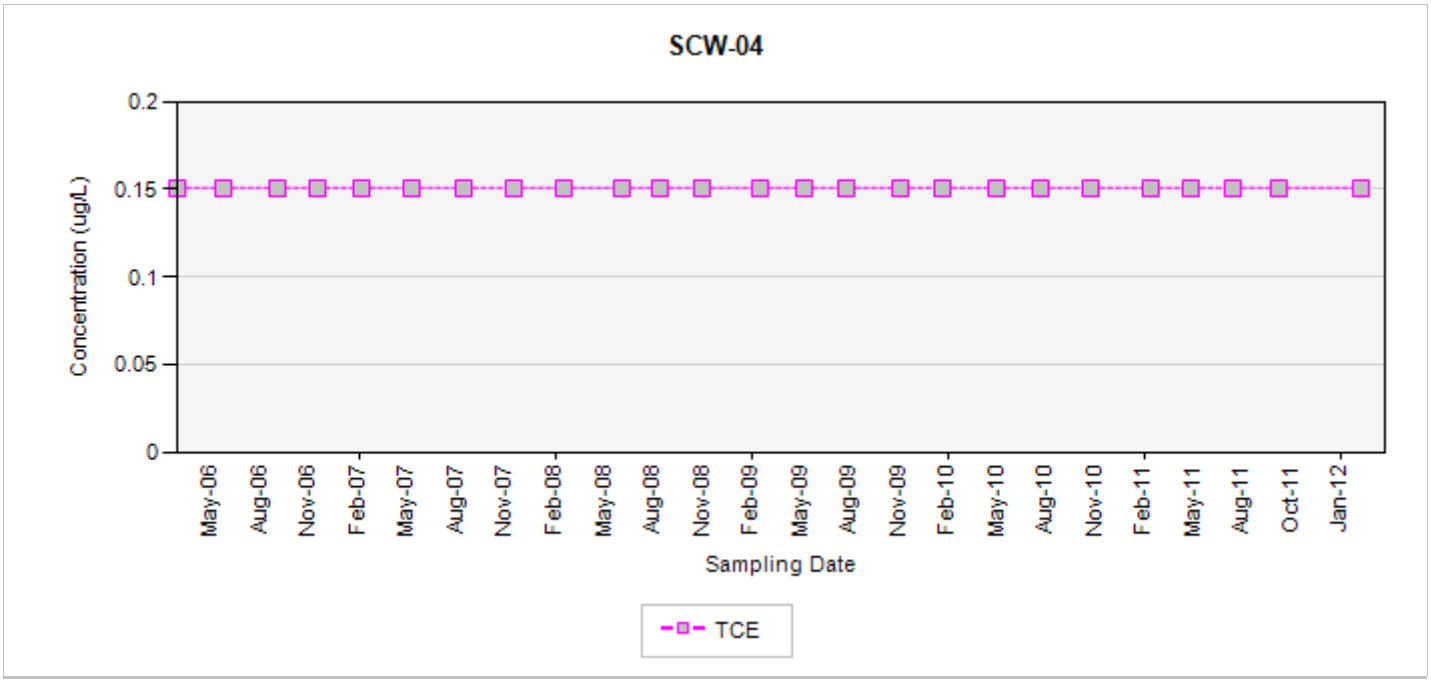

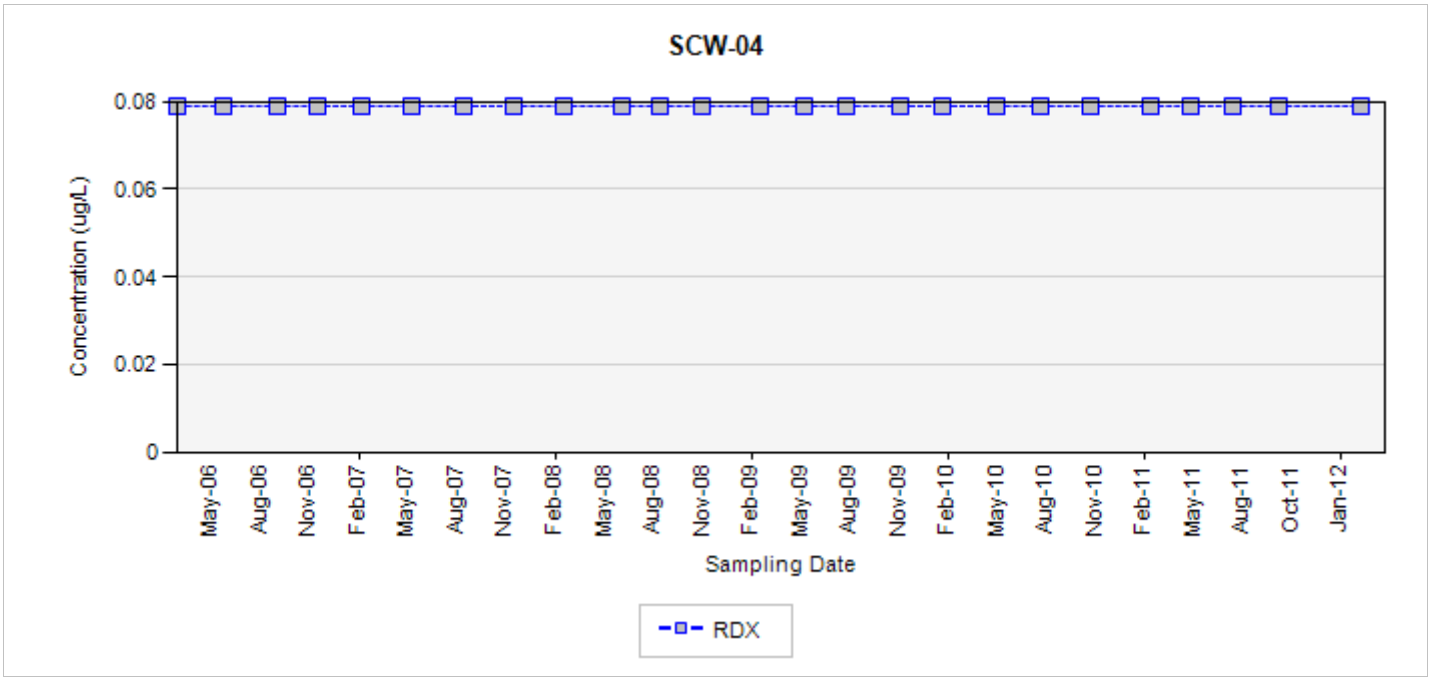

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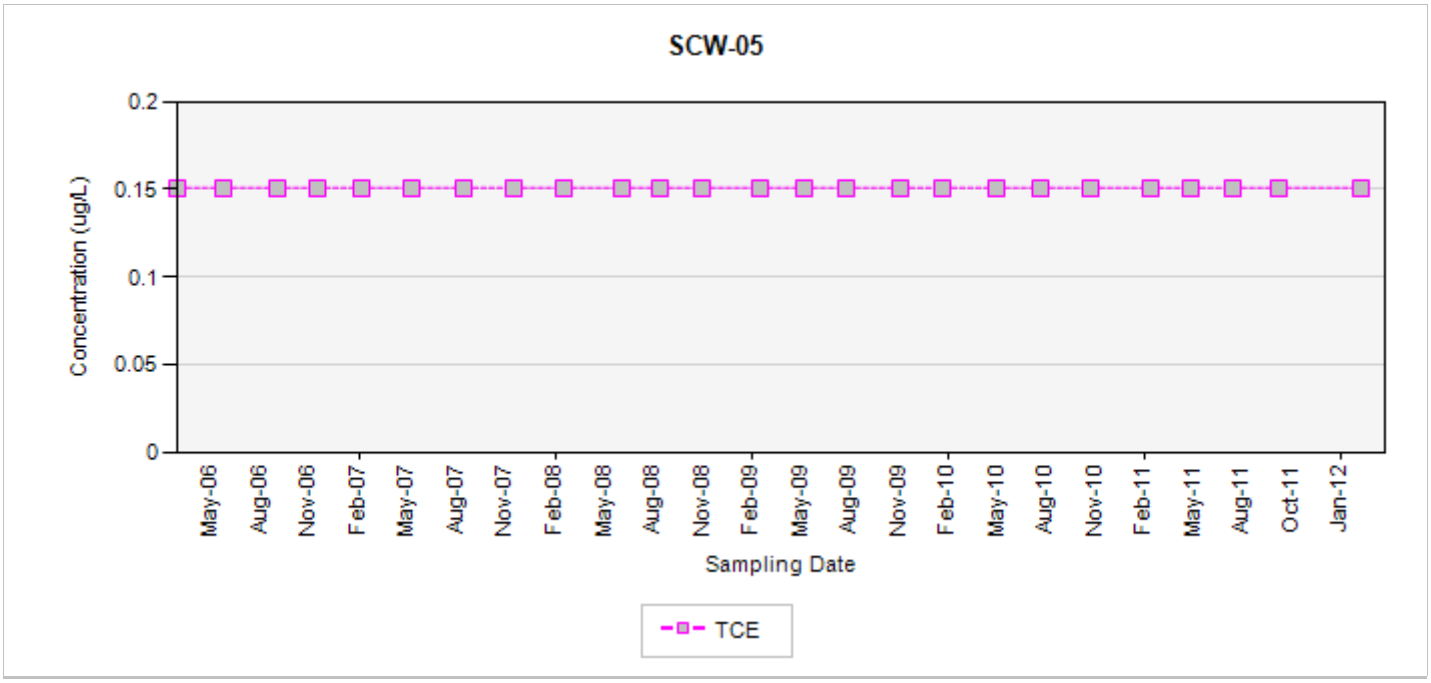

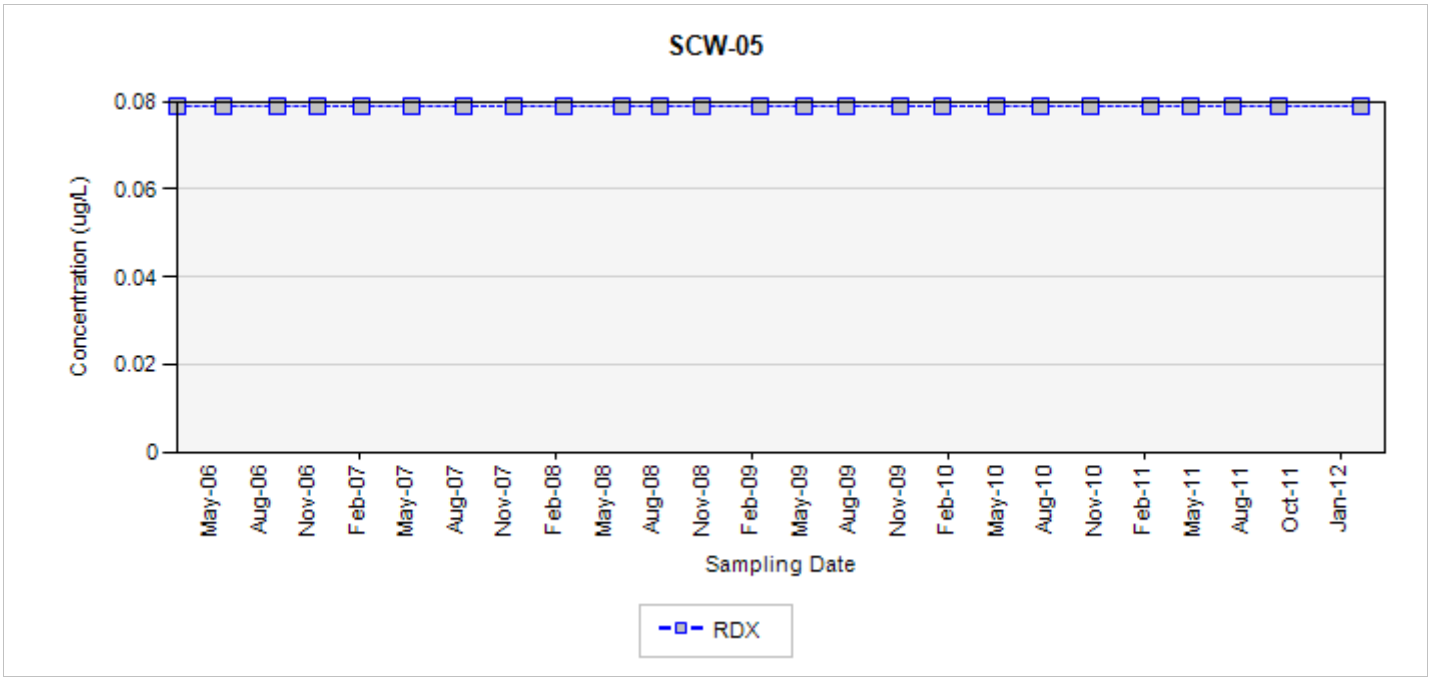

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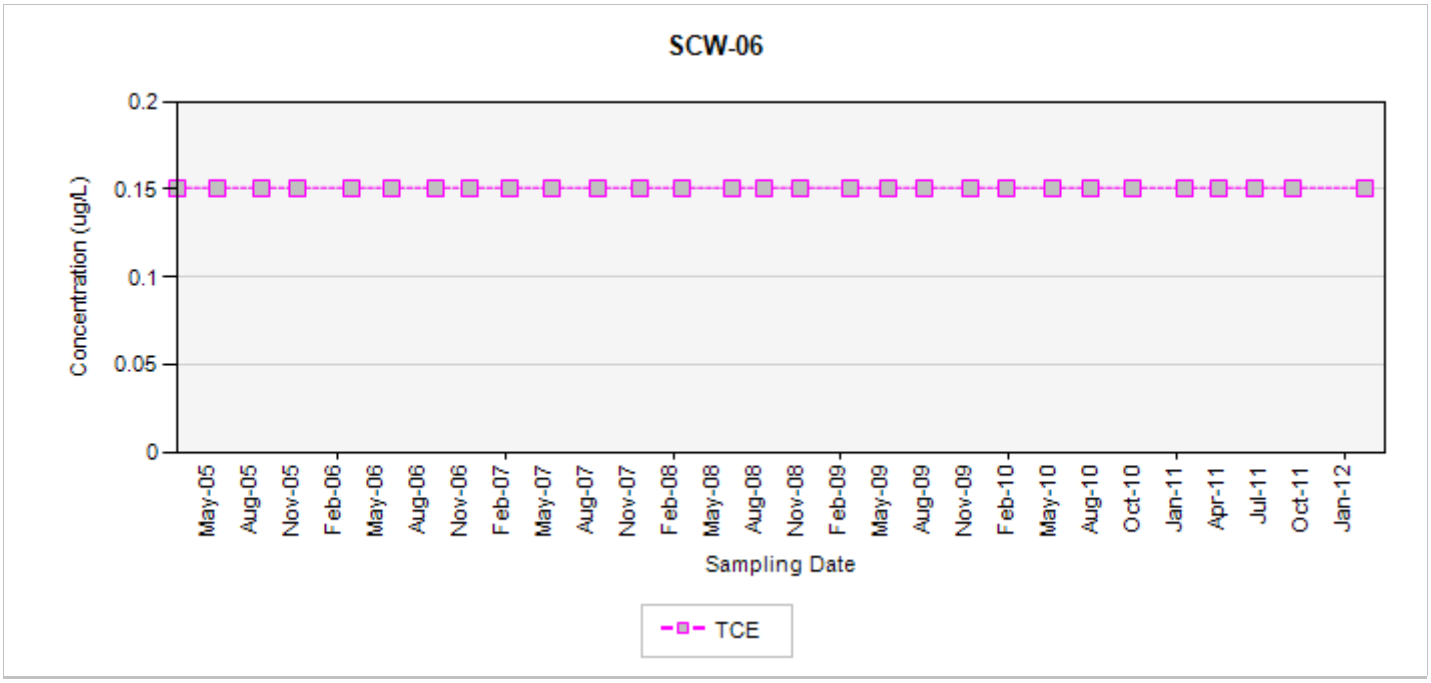

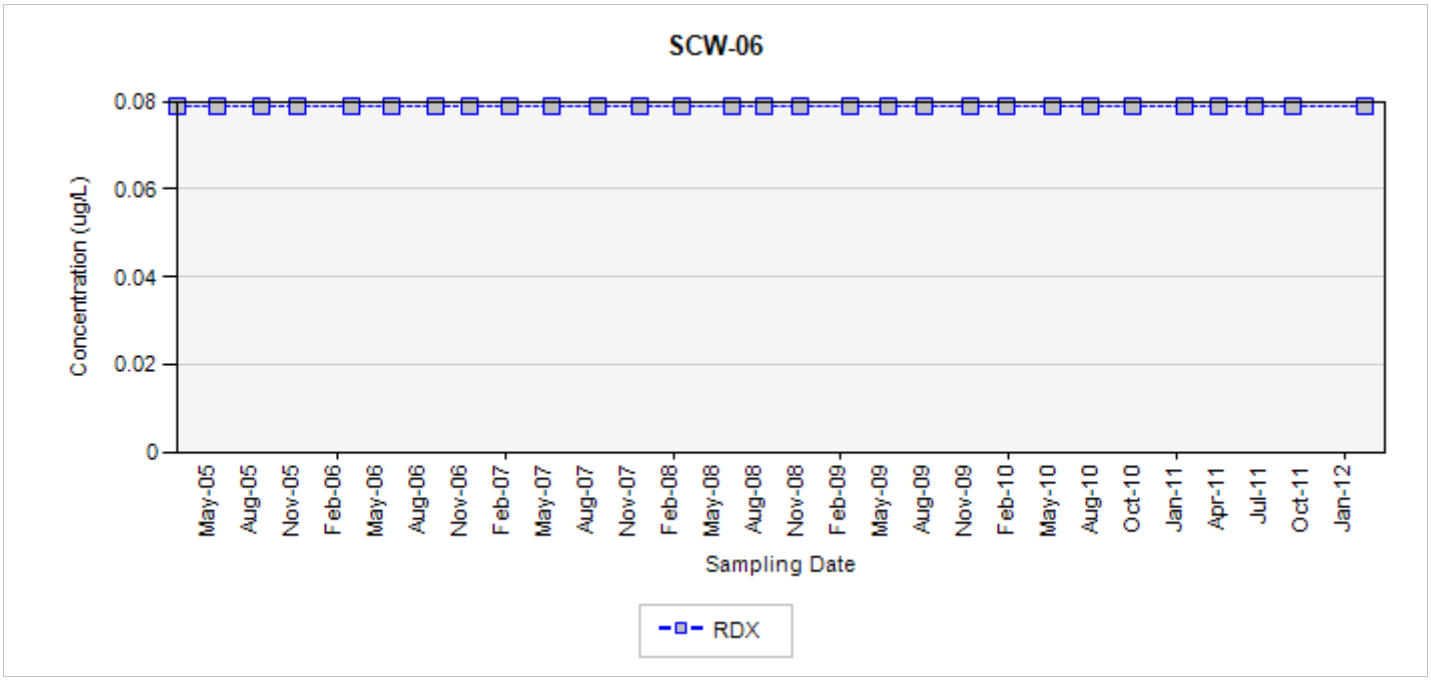

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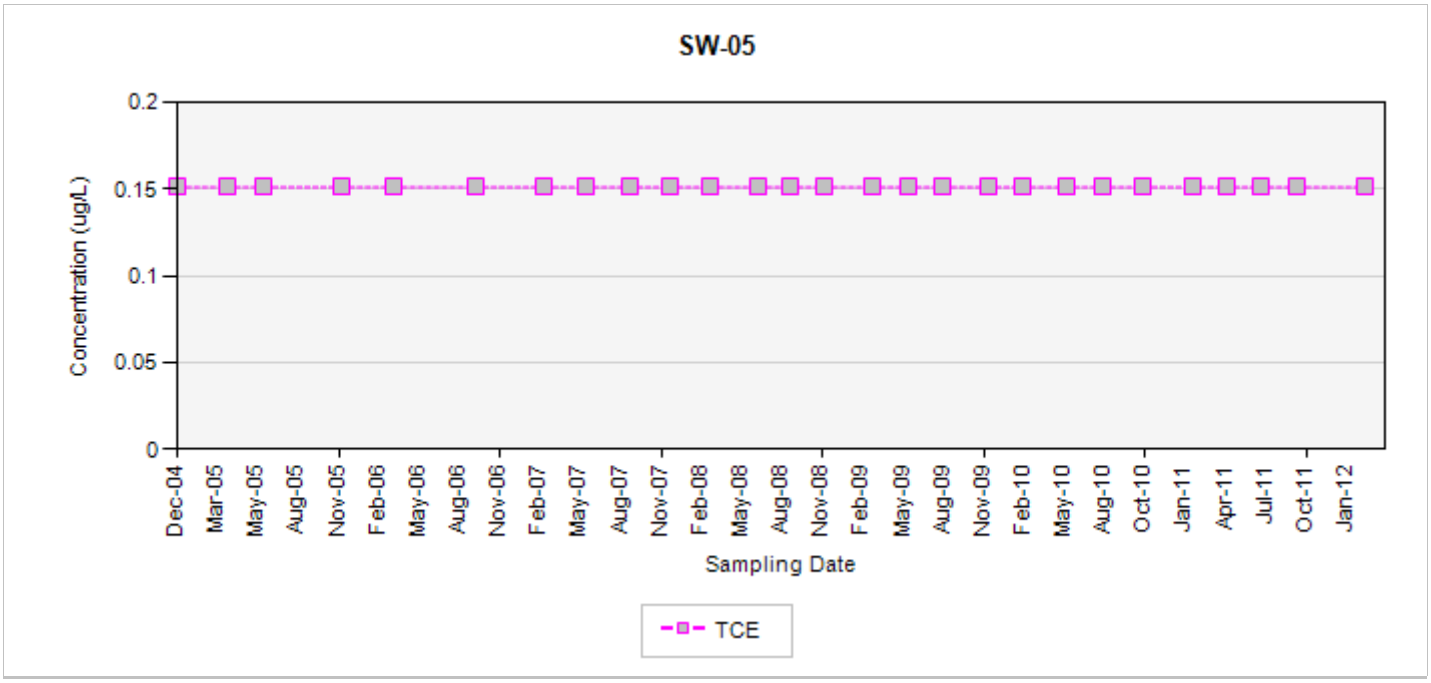

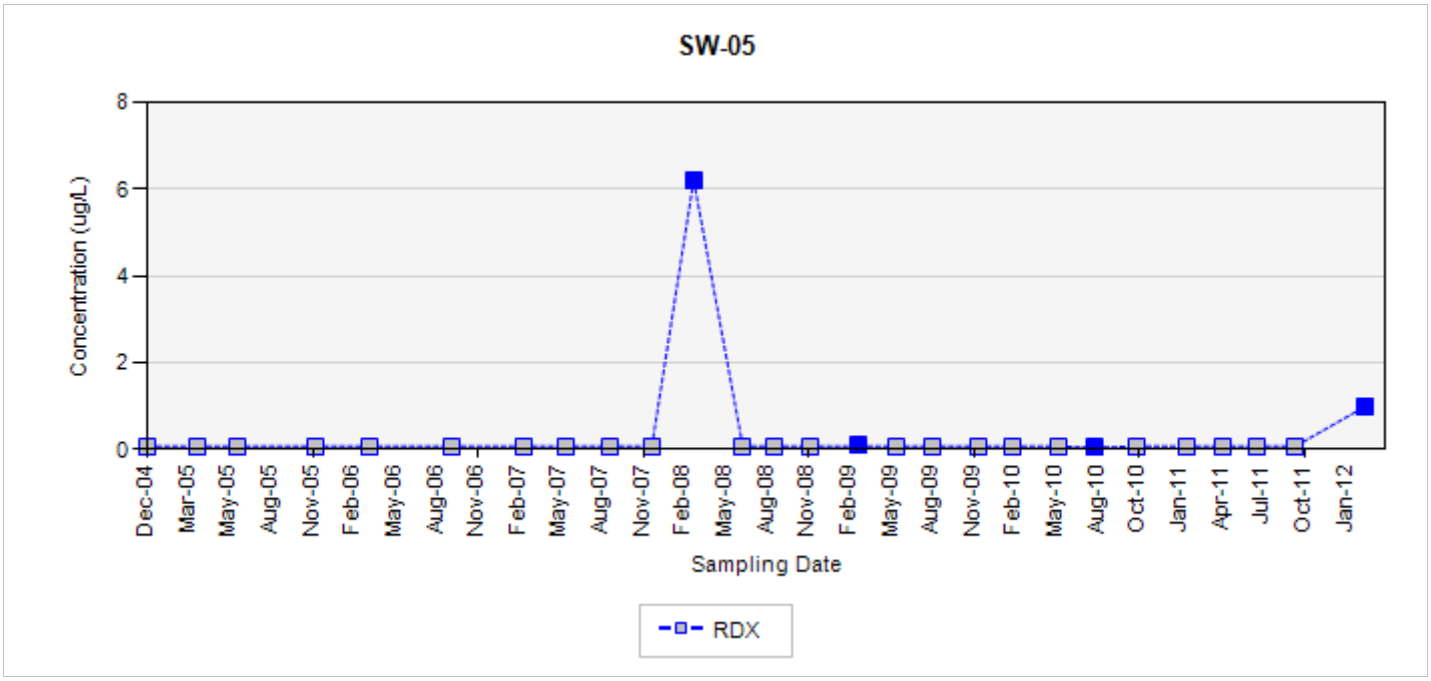

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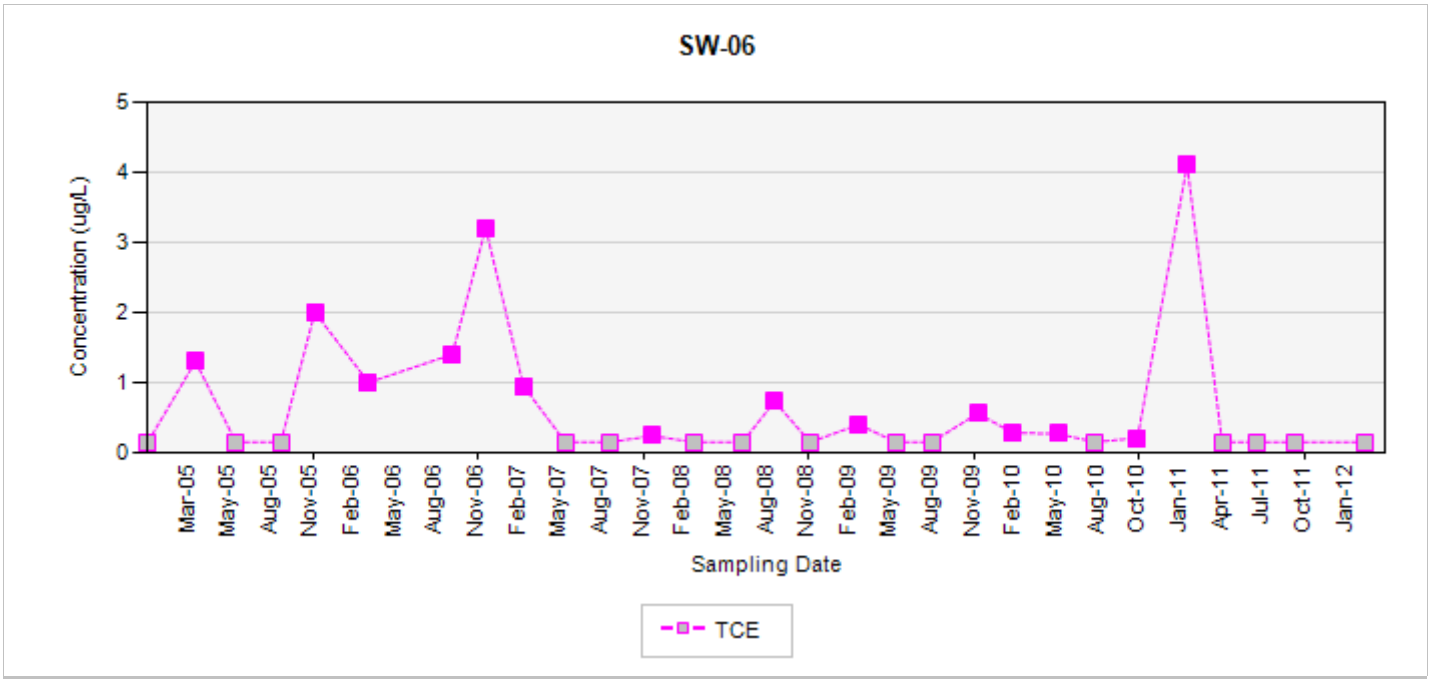

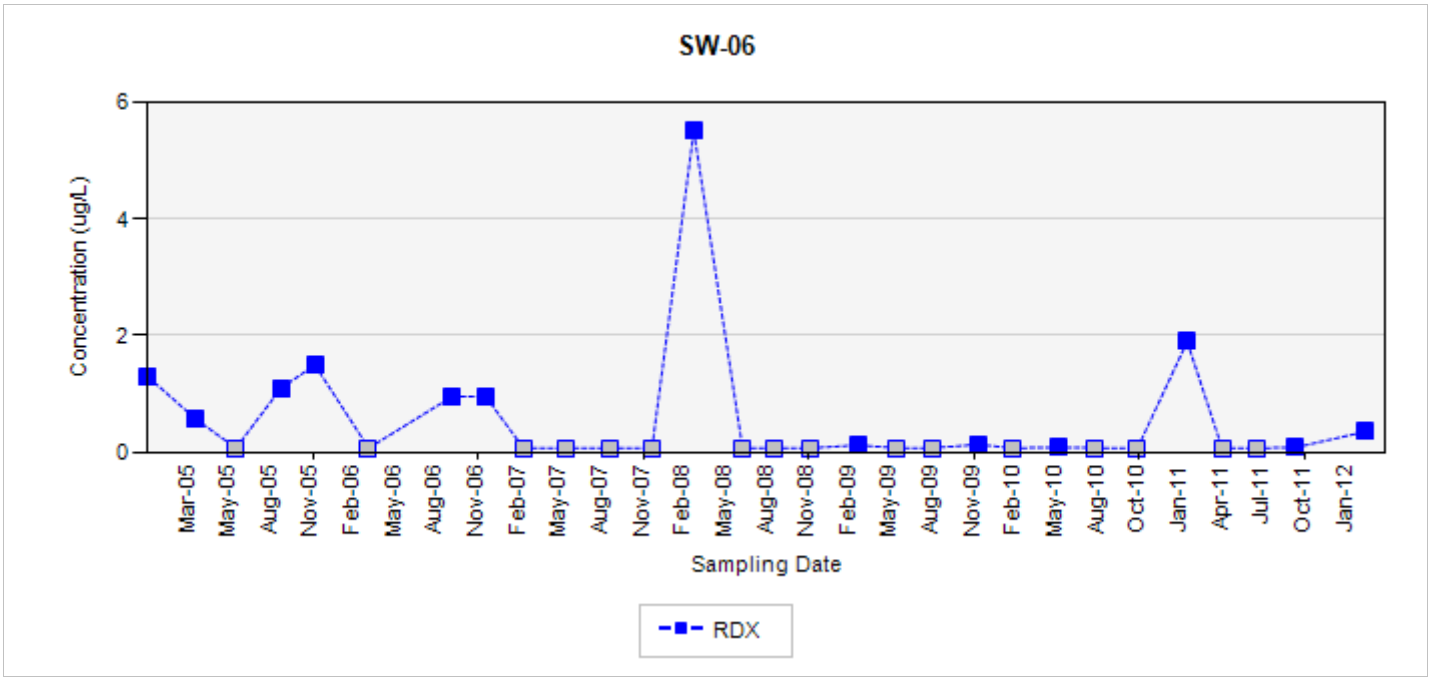

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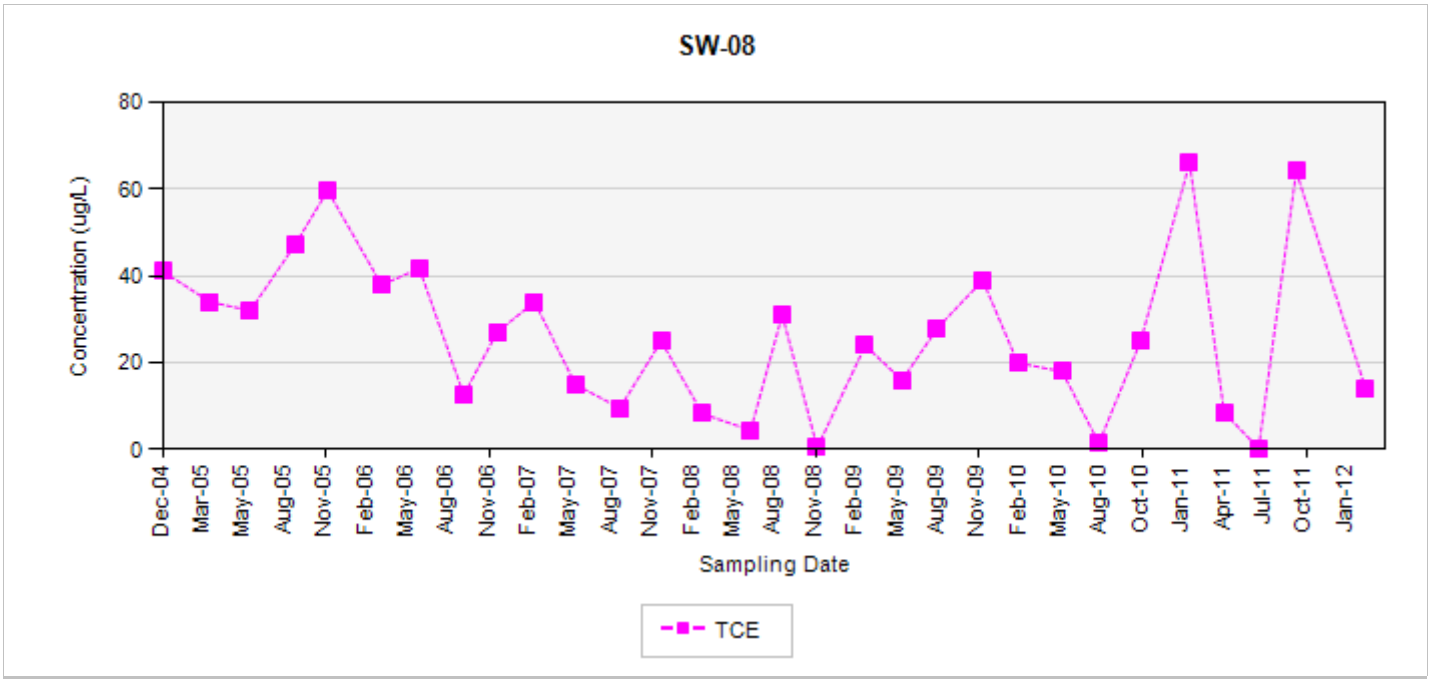

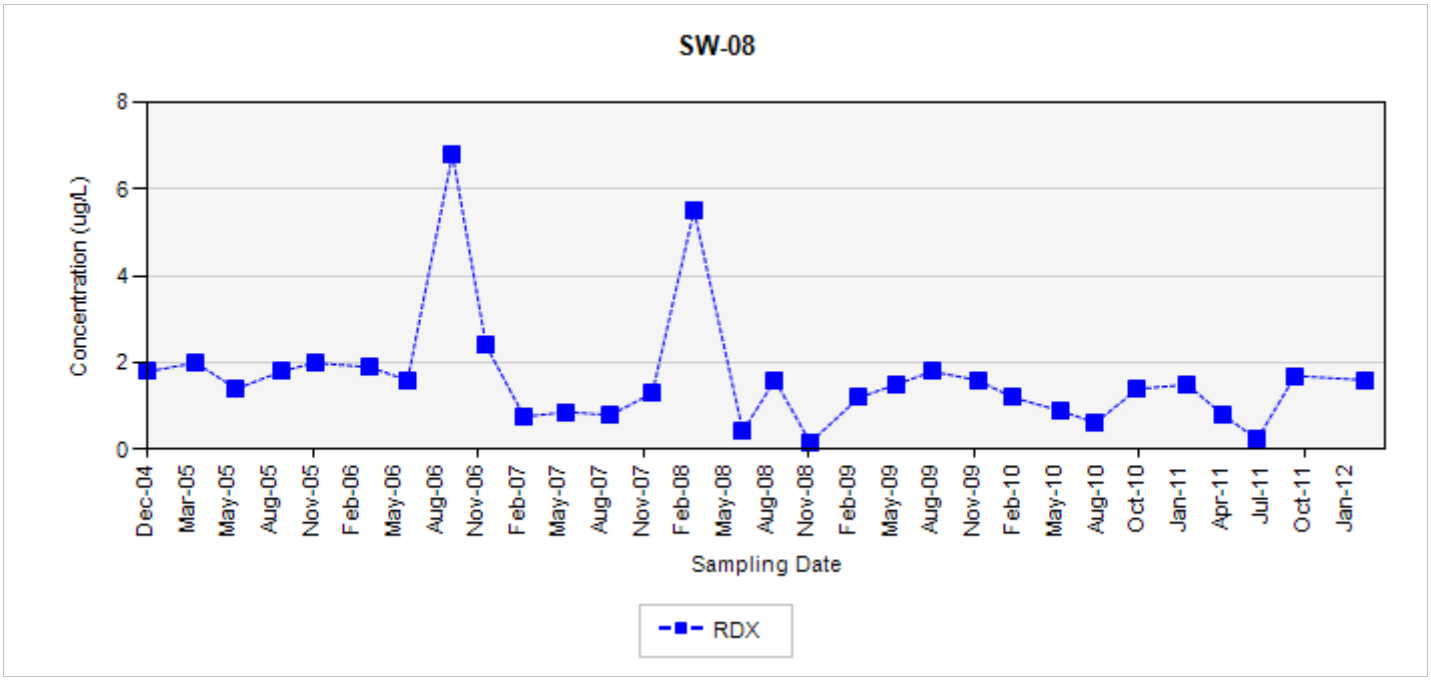

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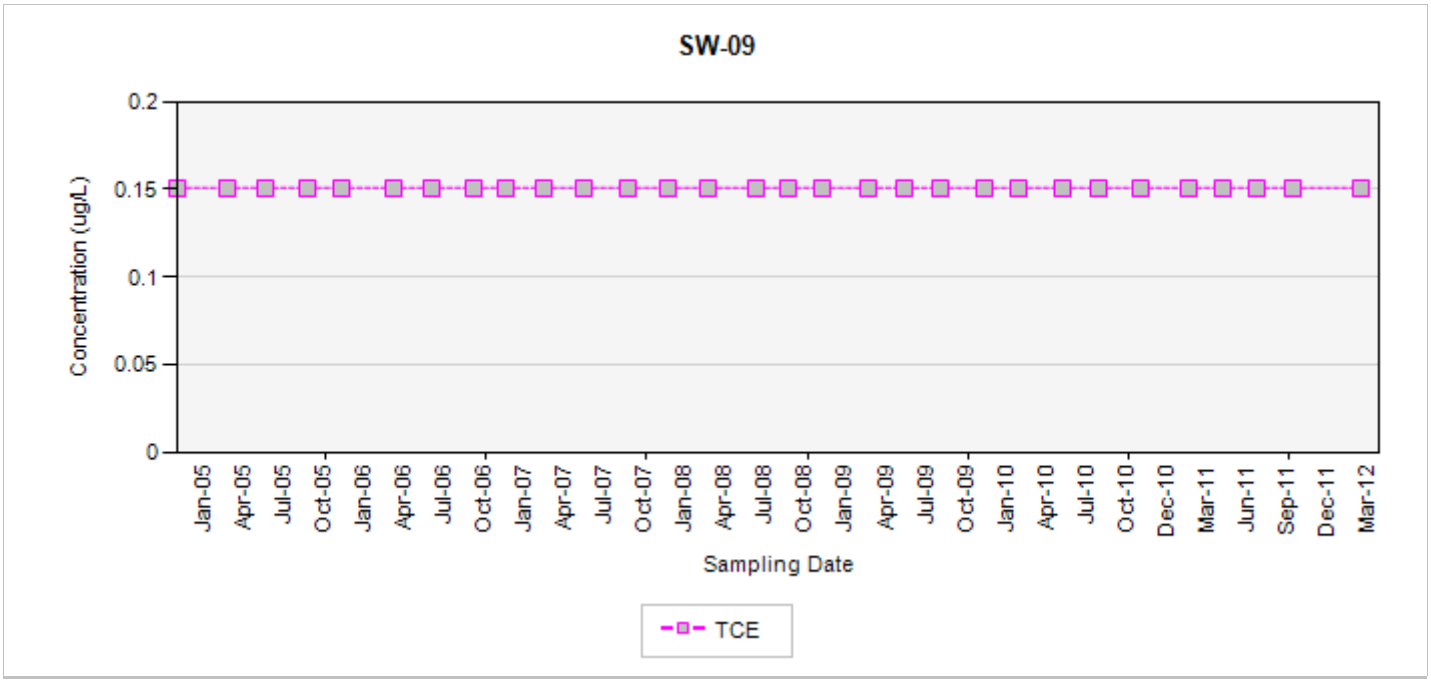

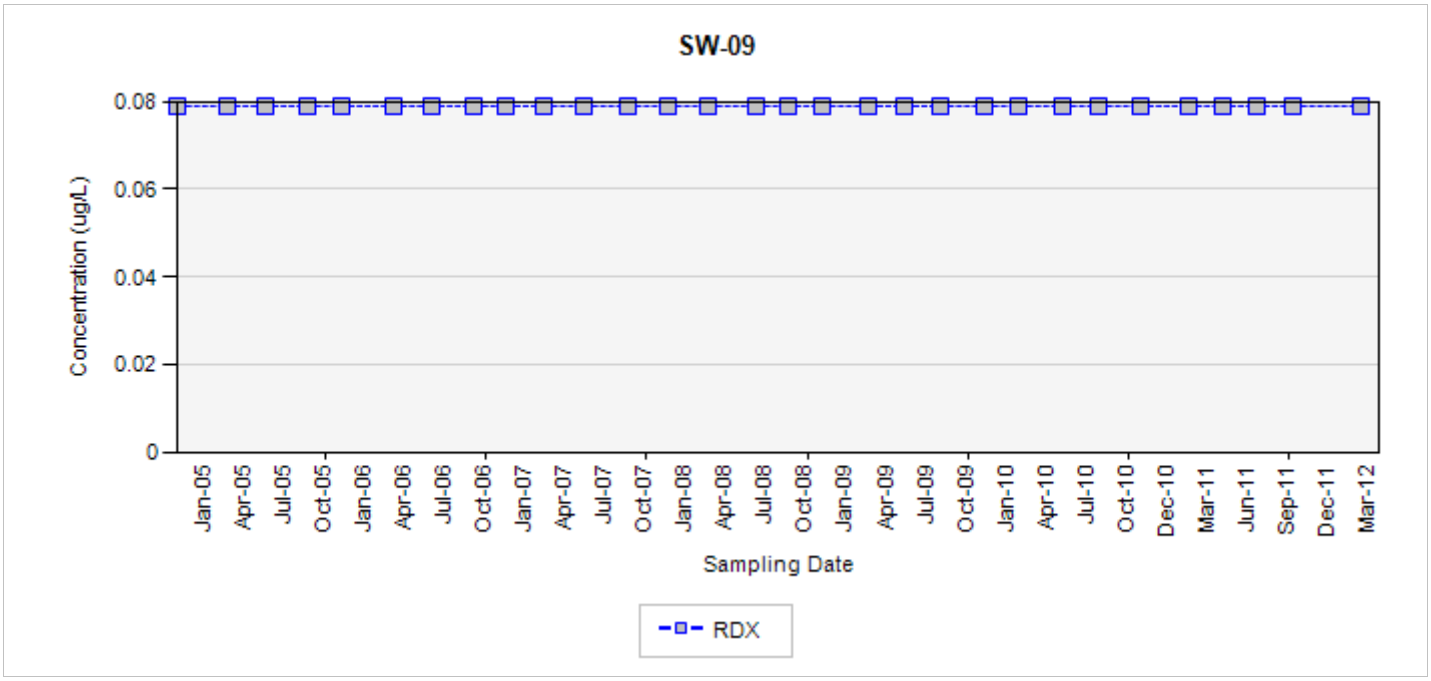

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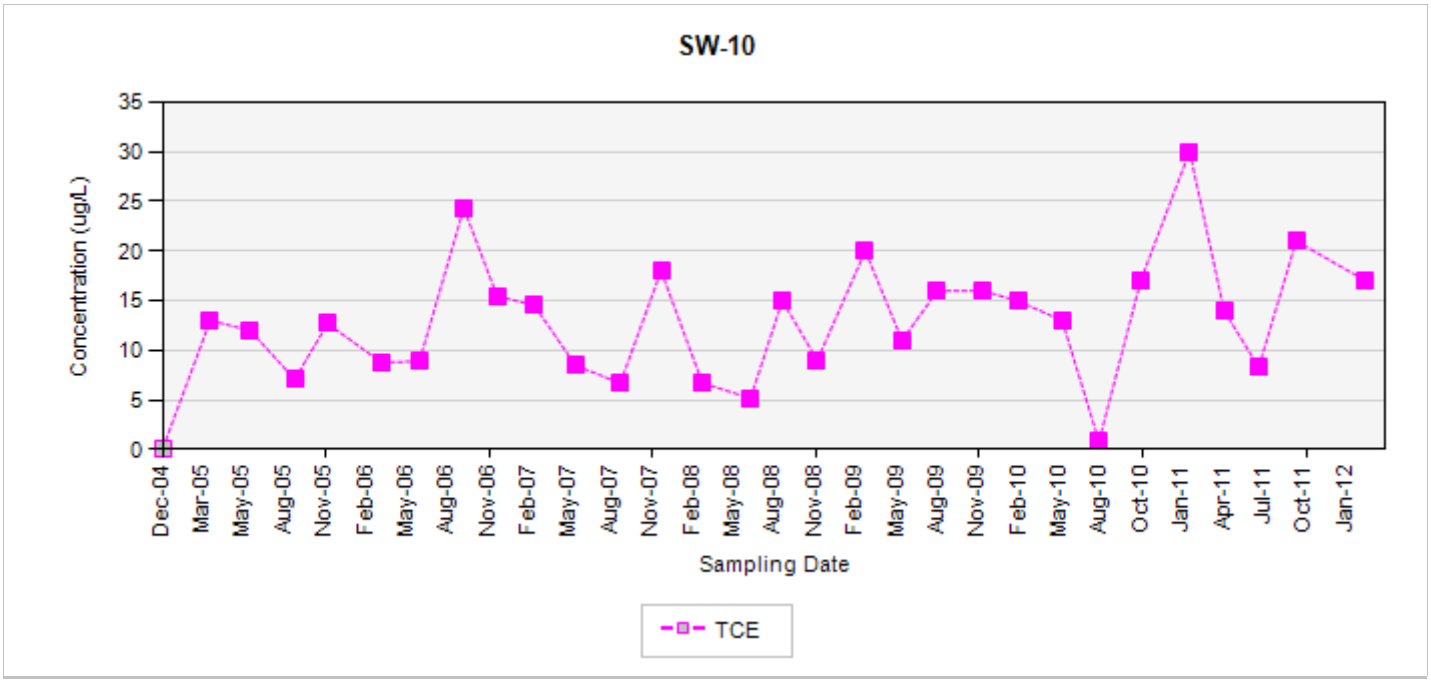

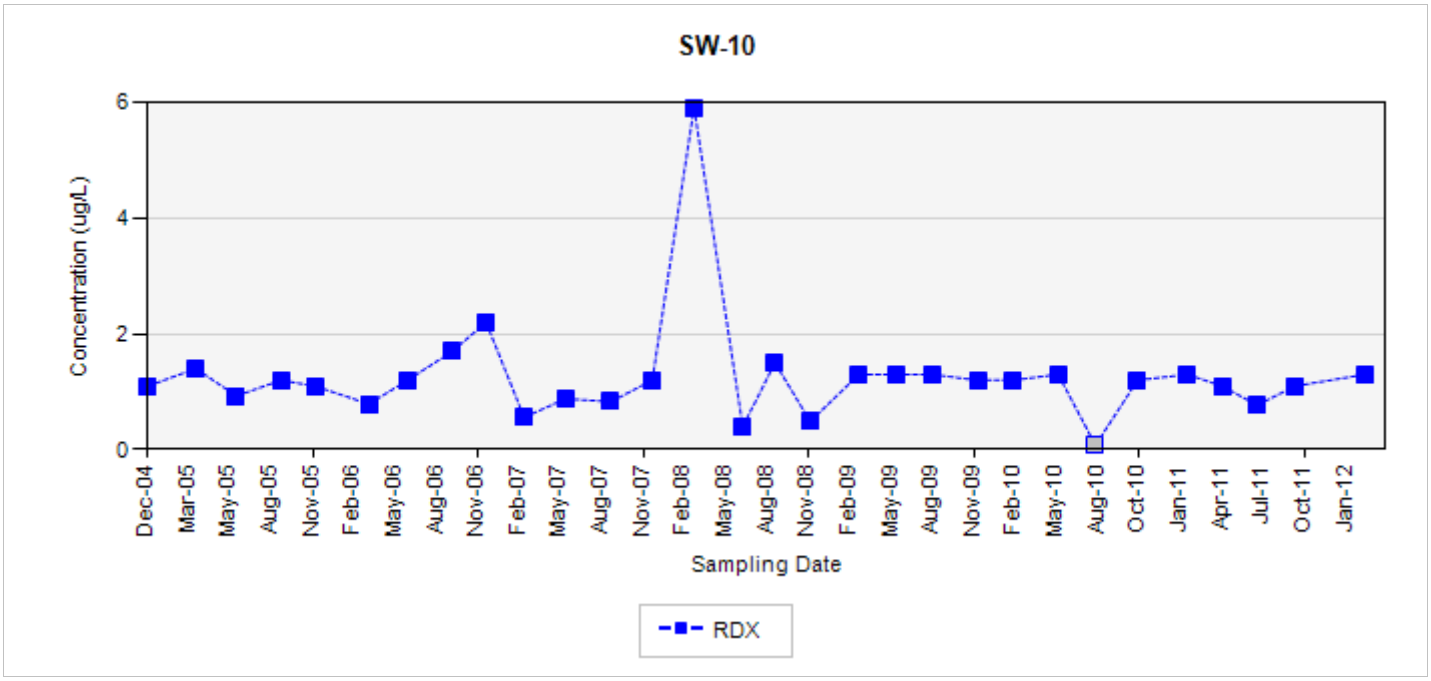

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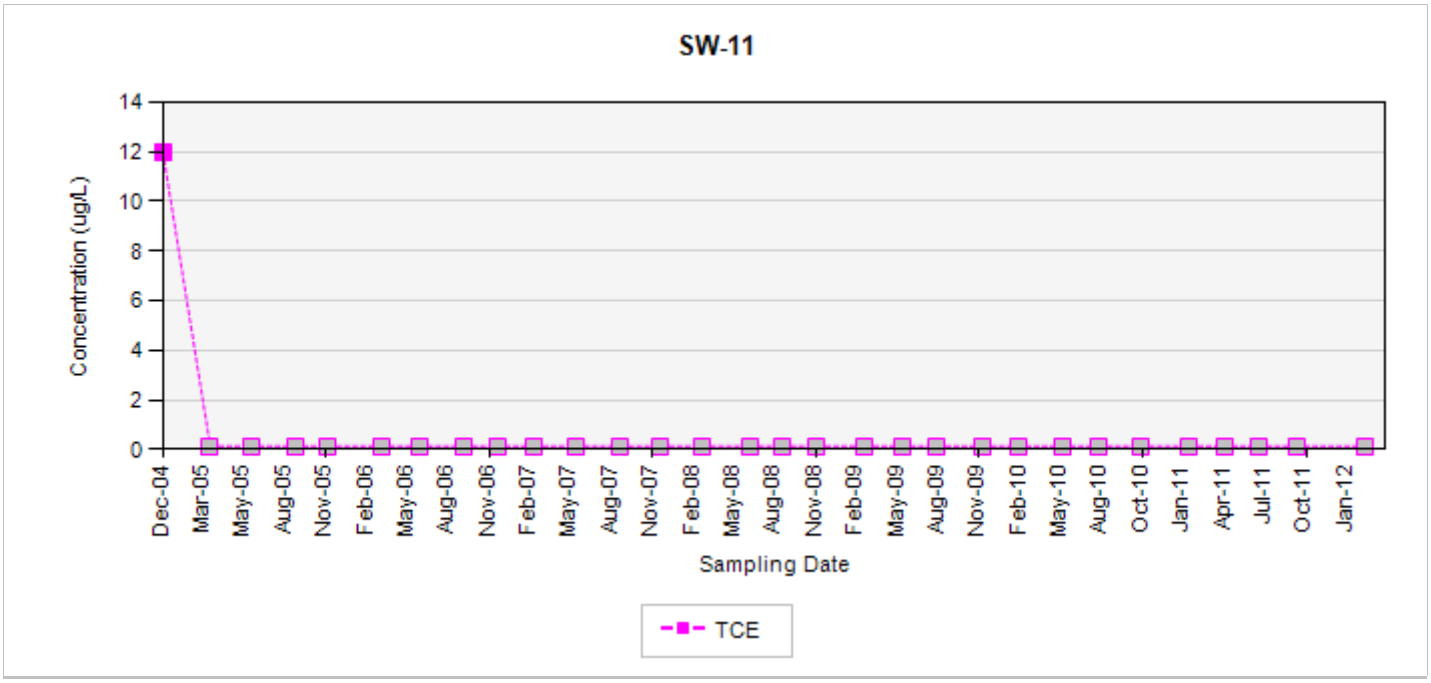

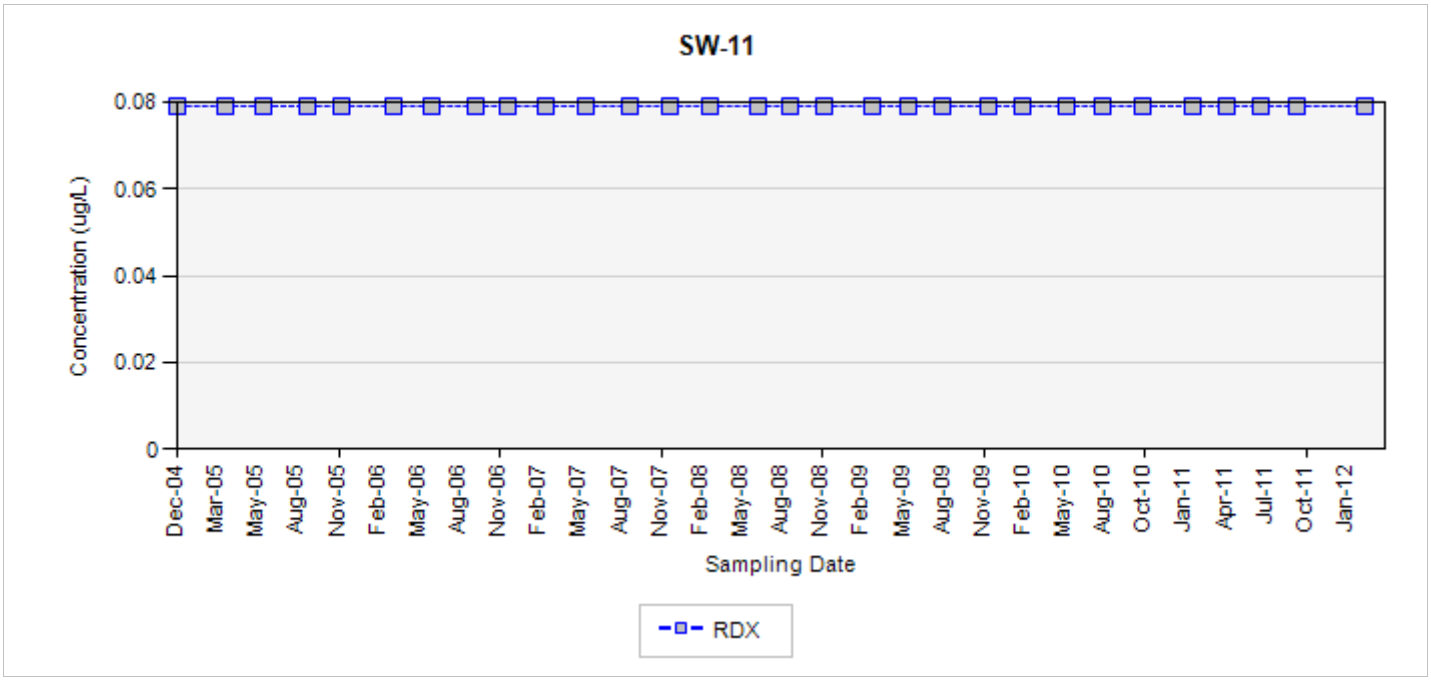

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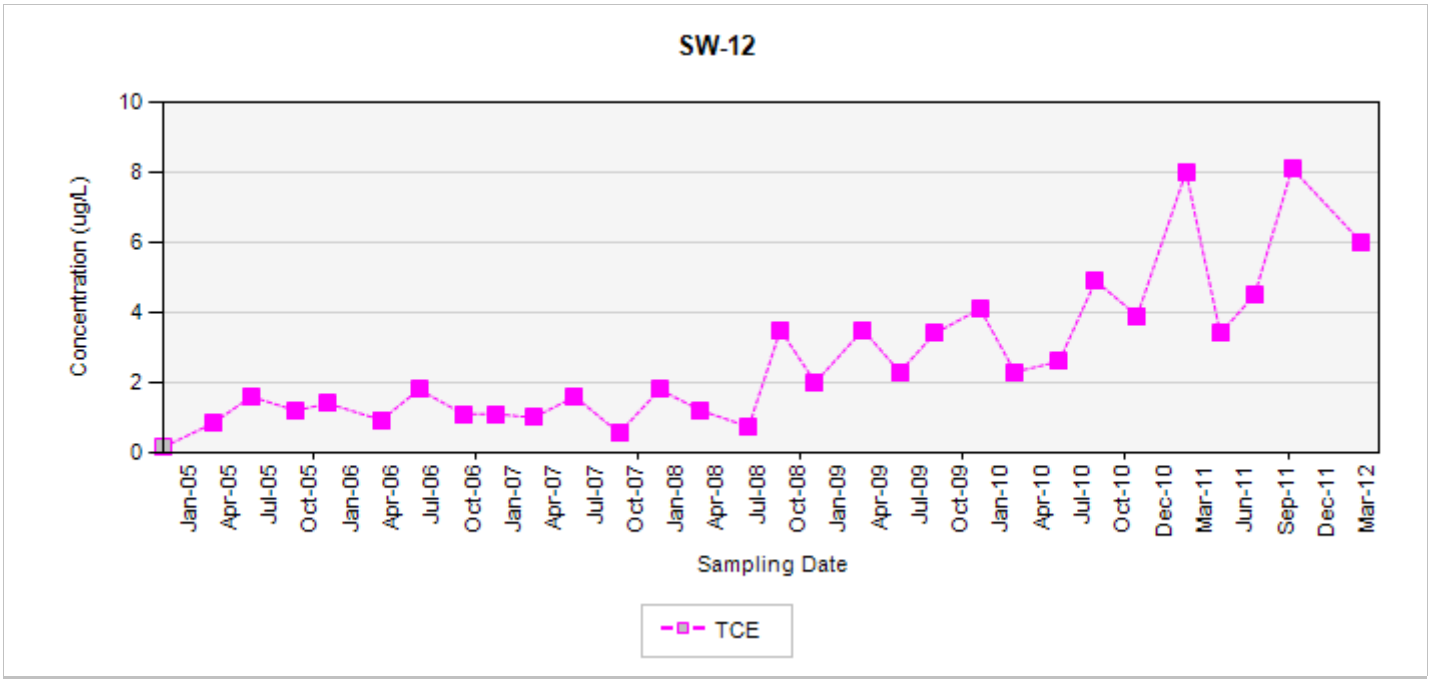

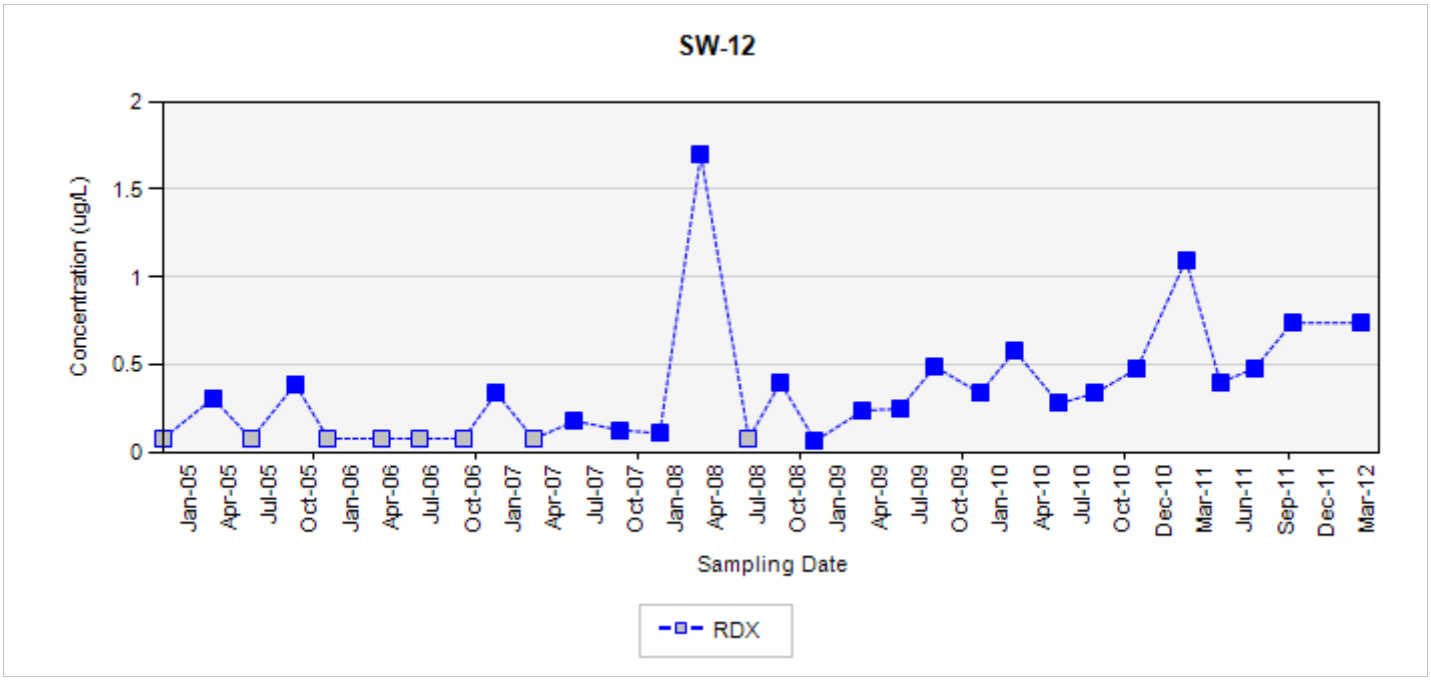

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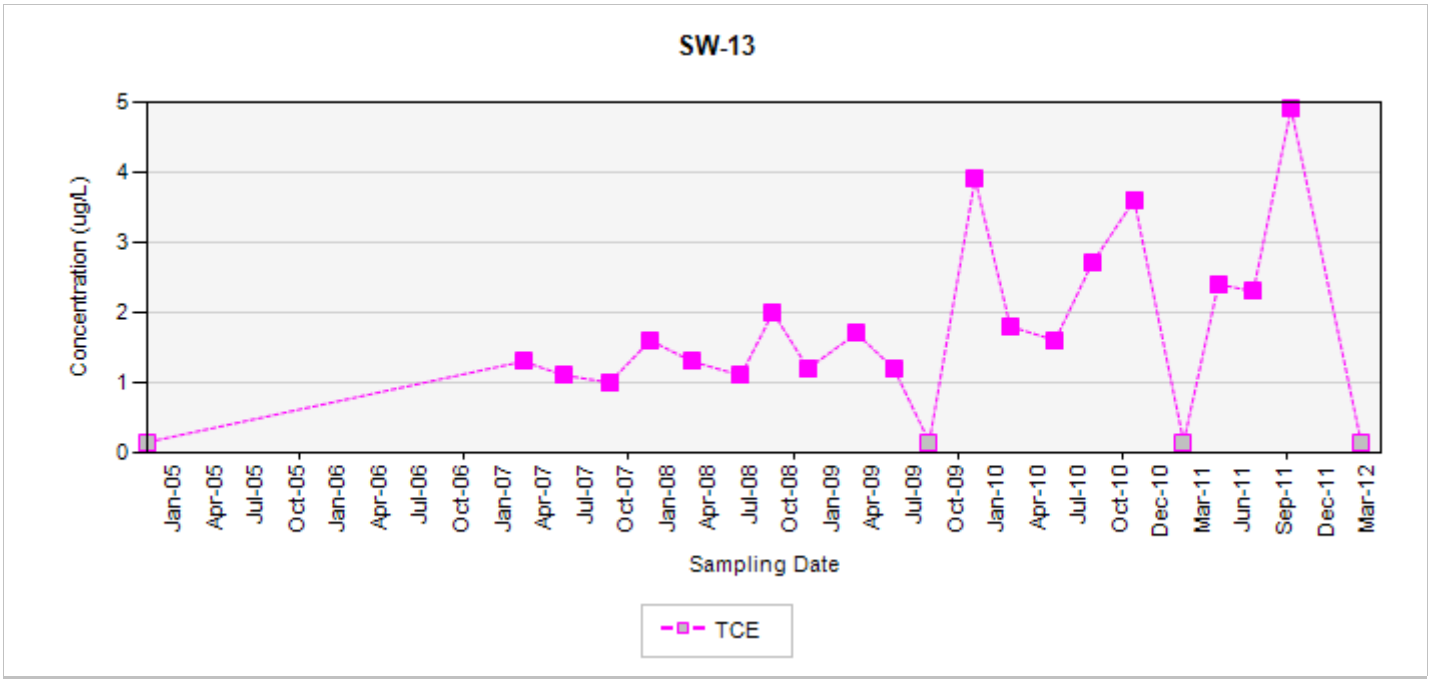

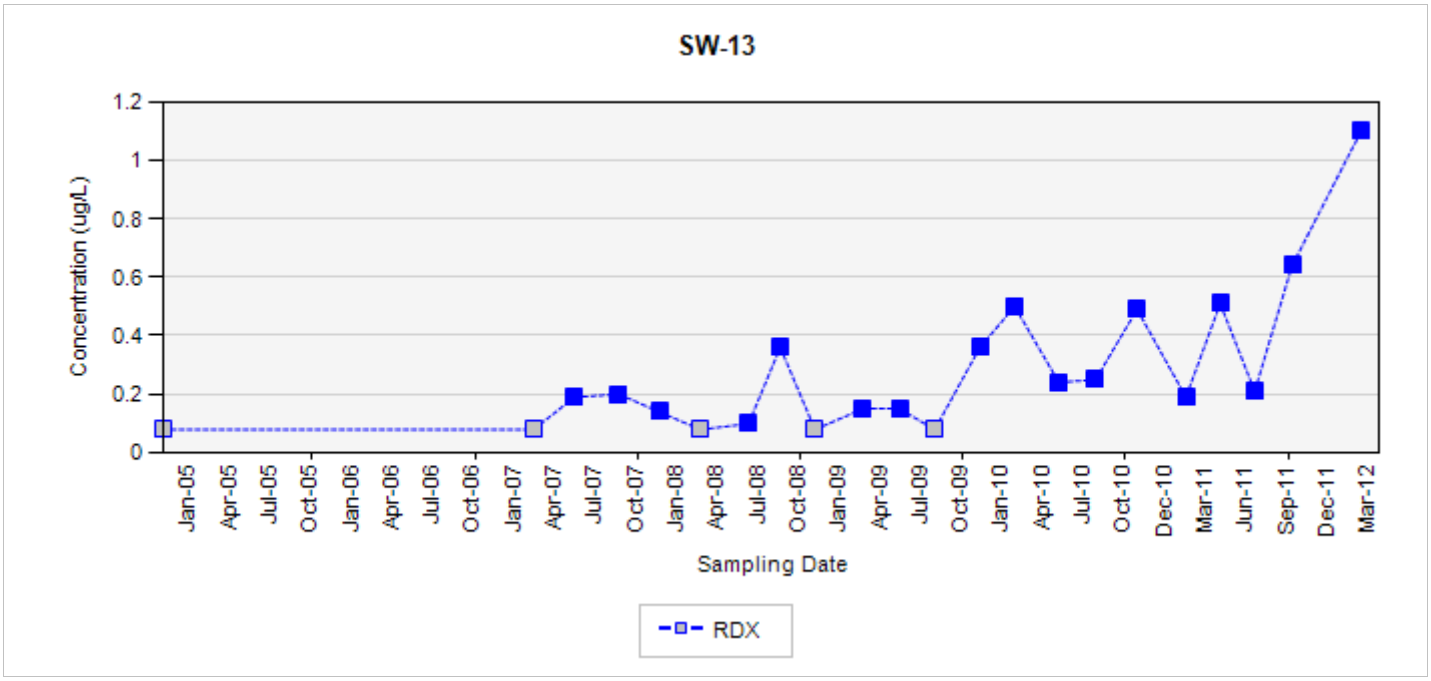

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Appendix D

Quality Control Summary Report First Quarter 2012 Groundwater Monitoring Program Sampling Events, Former Nebraska Ordnance Plant

(on CD)

FINAL
QUALITY CONTROL SUMMARY REPORT
FIRST QUARTER 2012

GROUNDWATER MONITORING PROGRAM
SAMPLING EVENTS

FORMER NEBRASKA ORDNANCE PLANT
MEAD, NEBRASKA

Prepared for

United States Army Corps of Engineers
Kansas City District

May 2012

Quality Control Summary Report
First Quarter 2012 Groundwater Monitoring Sampling Events
Former Nebraska Ordnance Plant, Mead, Nebraska

1.0 INTRODUCTION

Monitoring well and surface water sampling were conducted between March 1 and March 7, 2012 at the former Nebraska Ordnance Plant, near Mead, Nebraska. All sampling activities were performed in accordance with the *Site Wide Work Plan, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2009). This Quality Control Summary Report presents a summary of the chemical data quality review for the First Quarter 2012 monitoring well and surface water sampling event.

Samples were analyzed for one or both of the following constituents:

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

All analyses were performed by TestAmerica of South Burlington, Vermont.

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 First Quarter 2012 monitoring well sampling event. Table 1-2 presents the surface water locations planned for sample collection, the corresponding sample IDs, and the requested analyses for the First Quarter 2012 surface water 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

Samples from 114 monitoring wells were collected during the First Quarter 2012 monitoring well sampling event. VOCs were sampled in 114 of the wells and 94 wells were sampled for explosives. Thirteen field duplicate samples, eight matrix spike (MS)/matrix spike duplicate (MSD) pairs were also collected with the monitoring well samples. Additionally, four trip blanks were included with the VOC sample shipments.

During the First Quarter 2012 surface water sampling event, 12 surface water locations were sampled. In addition, two field duplicate samples and one MS/MSD sample pair were collected. One trip blank was included with the VOC sample shipment.

Table 2-1 and Table 2-2 provide the following sample collection information for monitoring well and surface water sampling events, respectively:

- Quality Control (QC) sample information (field duplicates);
- MS/MSD sample information;
- A cross-reference between laboratory sample IDs and field sample IDs;
- Sample delivery group (SDG) numbers;
- Dates of sample collection and sample receipt by the laboratory; 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 for the monitoring wells and in Table 3-2 for the surface water samples. The QC outliers for the explosives and VOC analyses are presented in Table 3-3 and Table 3-4, respectively, for the monitoring wells. The QC outliers for the explosives analyses are presented in Table 3-5 for the surface water samples. QC outliers were not assigned to the VOC analyses for the surface water samples.

3.1 Sample Receipt at the Laboratory

The samples were received in good condition and the sample coolers were received within the recommended temperature range of 4 ± 2° °C.

3.2 Holding Times

All samples were prepared and analyzed within the required holding times with one exception. One volatile sample was received without chemical preservation and was analyzed outside the seven-day holding time for unpreserved waters. All analytes in this sample were qualified as estimated non-detect (UJ). Refer to Table 3-1 for data quality evaluation results for the monitoring well sampling event and qualified samples. Table 3-4 presents the VOC QC outliers and associated samples for all assigned qualifiers for the monitoring well sampling event.

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 narratives 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.

Methylene chloride was detected in several method blanks; however, methylene chloride was not detected in any of the affected samples.

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.

TCE was detected in one trip blank. The TCE detected result in one sample was qualified as non-detect (U). Refer to Table 3-1 for data quality evaluation results for the monitoring well sampling event and qualified samples. Table 3-4 presents the VOC QC outliers and associated samples for all assigned qualifiers for the monitoring well sampling event.

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 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 (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.

Low surrogate % RECs resulted in the qualification as estimated non-detect (UJ) for all VOC results in one monitoring well sample. Refer to Table 3-1 for data quality evaluation results for the monitoring well sampling event and qualified samples. Table 3-4 presents the VOC QC outliers and associated samples for all assigned qualifiers for the monitoring well sampling event.

One additional VOC sample had an elevated surrogate % REC. However, no qualification was required because all associated results were non-detect.

The % REC for surrogate 1,2-dinitrobenzene on the confirmation column in the explosive analysis of numerous additional samples exceeded the laboratory QC limits. However, no qualification was required because all associated results were reported from the primary column, which met all 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, see Tables 2-1 and 2-2. 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.

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 First Quarter 2012 monitoring well sampling event:

- BMW-035-012012 / BMW-235-012012 (VOCs and Explosives)
- AMW-038-012012 / AMW-238-012012 (VOCs and Explosives)
- AMW-046-012012 / AMW-246-012012 (VOCs and Explosives)
- AMW-080-012012 / AMW-280-012012 (VOCs)
- BMW-086-012012 / BMW-286-012012 (VOCs and Explosives)
- AMW-098-012012 / AMW-298-012012 (VOCs and Explosives)
- BMW-0100-012012 / BMW-2100-012012 (VOCs and Explosives)
- BMW-0101-012012 / BMW-2101-012012 (VOCs and Explosives)
- BMW-0102-012012 / BMW-2102-012012 (VOCs)
- AMW-0106-012012 / AMW-2106-012012 (VOCs and Explosives)
- AMW-0107-012012 / AMW-2107-012012 (VOCs and Explosives)
- EMW-0142-012012 / EMW-2142-012012 (VOCs and Explosives)
- AMW-0158-012012 / AMW-2158-012012 (VOCs)

The following field duplicate pairs were collected during the First Quarter 2012 surface water sampling event:

- SCW-006-012012 / SCW-206-012012 (VOCs and Explosives)
- SW-005-012012 / SW-205-012012 (VOCs and Explosives)

The field duplicate precision criteria (RPD of < 50%) was met in the all duplicate pairs. 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.

Two sample results for TCE from the monitoring well sampling event were reported from secondary dilution analyses because the initial results exceeded the calibration range. 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. Therefore, the results from secondary dilutions should be used for these compounds and the initial least dilute or undiluted analysis should be used for all other results for these samples. [Note: Only the appropriately diluted results were reported by the laboratory from the secondary dilutions.]

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 intercolumn RPDs.

Detected results with the intercolumn RPDs exceeding 40% are qualified as estimated (J). Refer to Table 3-1 and Table 3-2 for data quality evaluation results and associated qualified samples for the monitoring well and surface water sampling events, respectively. Table 3-4 and Table 3-5 present the explosive QC outliers and associated samples for all assigned qualifiers applicable to the monitoring well and surface water sampling events, respectively. These qualifiers were not used to determine analytical completeness or project completeness.

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 First Quarter 2012 monitoring well and surface water sampling events.

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 100% for both VOCs and explosives. Field completeness for the surface water sampling events was 100% for both VOCs and explosives. The overall field completeness percentage was 100% for the monitoring well and 100% for the surface water First Quarter 2012 sampling events. 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 and Table 4-2 present field completeness values for the monitoring well and surface water sampling events, respectively.

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 percentages for VOCs (98.4%) and explosives (100%) met the acceptable data completeness goals for each analytical method of 90% for the monitoring well sampling event. Acceptable data completeness percentages for VOCs (100%) and explosives (100%) met the acceptable data completeness goals for each analytical method of 90% for the surface water sampling event. The overall acceptable data completeness at 99.1% for the monitoring well sampling event and 100% for the surface water sampling event. Both sampling events met the goal 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 First Quarter 2012 monitoring well and surface water sampling events based on analytical data evaluation. The quality data completeness percentage for VOCs and explosives, considered separately, is 100%. Overall quality data completeness is therefore 100%, which exceeds the quality data completeness goal of 80% for the monitoring well and surface water sampling events. Table 4-3 and Table 4-4 present analytical data completeness values for monitoring well and surface water sampling events, respectively.

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. Both analytical completeness and field completeness for the monitoring well

sampling event were 100%. Both analytical completeness and field completeness for the surface water sampling event were also 100%. The monitoring well project completeness and the surface water project completeness percentage of 100% exceeded the project completeness goal of 90%. Table 4-5 and Table 4-6 present project completeness values for the monitoring well and surface water sampling events, respectively.

5.0 CONCLUSIONS

Data are valid for use, as qualified. Overall field completeness is 100%, acceptable data completeness is 99.1%, quality data completeness is 100%, and the overall project completeness is 100% for the First Quarter 2012 monitoring well sampling event. Overall field completeness is 100%, acceptable data completeness is 100%, quality data completeness is 100%, and the overall project completeness is 100% for the First Quarter 2012 surface water sampling event.

All results for VOCs in one sample were qualified as estimated non-detect due to surrogate %REC outliers and all results for VOCs in one sample were qualified as estimated non-detect due to missed holding times. One TCE result was qualified as non-detect due to a trip blank detection. Results qualified for trip blank detections do not effect analytical or project completeness. Two sample results for TCE from the monitoring well sampling event 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, 2009, *Site Wide Work Plan, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska*. August.

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

Tables

List of Acronyms for Tables

Term	Definition
µg/L	micrograms per liter
BLK	blank
CAL	calibration
CCB	continuing calibration blank
C-RPD	column relative percent difference
CCV	continuing calibration verification
GC/MS	gas chromatography–mass spectrometry
HPLC	high-performance liquid chromatography
ICV	initial calibration verification
ID	identification/identifier
IS	internal standard
J	estimated
Lab	laboratory
LCS	laboratory control sample
LWL	lower warning limit
MDL	minimum detection limit
MS/MSD	matrix spike/matrix spike duplicate
MS	mass-spectrometry
MW	monitoring well
QC	quality control
%REC	percent recovery
RPD	relative percent difference
RRF	relative response factor
SCW	Silver Creek Water
SDG	sample delivery group
SW	surface water
SURR	surrogate
U	not detected at laboratory limit of detection
UCL	upper control limit
UJ	qualified as estimated and not detected at laboratory limit of detection
VOC	volatile organic compound

Table 1-1
Sample Locations, Sample IDs, and Analyses
First Quarter 2012 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
MW-100A	AMW-0100-012012	Explosives, Volatiles
MW-100B	BMW-0100-012012	Explosives, Volatiles
MW-100D	DMW-0100-012012	Explosives, Volatiles
MW-101A	AMW-0101-012012	Explosives, Volatiles
MW-101B	BMW-0101-012012	Explosives, Volatiles
MW-101D	DMW-0101-012012	Explosives, Volatiles
MW-102A	AMW-0102-012012	Volatiles
MW-102B	BMW-0102-012012	Volatiles
MW-102D	DMW-0102-012012	Volatiles
MW-103A	AMW-0103-012012	Volatiles
MW-103B	BMW-0103-012012	Volatiles
MW-103D	DMW-0103-012012	Volatiles
MW-106A	AMW-0106-012012	Explosives, Volatiles
MW-106B	BMW-0106-012012	Explosives, Volatiles
MW-106D	DMW-0106-012012	Explosives, Volatiles
MW-107A	AMW-0107-012012	Explosives, Volatiles
MW-107B	BMW-0107-012012	Explosives, Volatiles
MW-107D	DMW-0107-012012	Explosives, Volatiles
MW-108A	AMW-0108-012012	Explosives, Volatiles
MW-108B	BMW-0108-012012	Explosives, Volatiles
MW-108D	DMW-0108-012012	Explosives, Volatiles
MW-110A	AMW-0110-012012	Explosives, Volatiles
MW-110B	BMW-0110-012012	Explosives, Volatiles
MW-110D	DMW-0110-012012	Explosives, Volatiles
MW-112A	AMW-0112-012012	Explosives, Volatiles
MW-112B	BMW-0112-012012	Explosives, Volatiles
MW-113A	AMW-0113-012012	Explosives, Volatiles
MW-113B	BMW-0113-012012	Explosives, Volatiles
MW-113D	DMW-0113-012012	Explosives, Volatiles
MW-114A	AMW-0114-012012	Explosives, Volatiles
MW-114B	BMW-0114-012012	Explosives, Volatiles
MW-114D	DMW-0114-012012	Explosives, Volatiles
MW-115A	AMW-0115-012012	Explosives, Volatiles
MW-115B	BMW-0115-012012	Explosives, Volatiles
MW-115D	DMW-0115-012012	Explosives, Volatiles
MW-116A	AMW-0116-012012	Explosives, Volatiles
MW-116B	BMW-0116-012012	Explosives, Volatiles
MW-116D	DMW-0116-012012	Explosives, Volatiles
MW-117A	AMW-0117-012012	Explosives, Volatiles
MW-117B	BMW-0117-012012	Explosives, Volatiles
MW-117D	DMW-0117-012012	Explosives, Volatiles
MW-118A	AMW-0118-012012	Explosives, Volatiles
MW-118B	BMW-0118-012012	Explosives, Volatiles
MW-142A	AMW-0142-012012	Explosives, Volatiles
MW-142E	EMW-0142-012012	Explosives, Volatiles
MW-147A	AMW-0147-012012	Explosives, Volatiles
MW-147B	BMW-0147-012012	Explosives, Volatiles
MW-147D	DMW-0147-012012	Explosives, Volatiles
MW-158A	AMW-0158-012012	Explosives, Volatiles

Table 1-1
Sample Locations, Sample IDs, and Analyses
First Quarter 2012 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
MW-158B	BMW-0158-012012	Explosives, Volatiles
MW-158D	DMW-0158-012012	Explosives, Volatiles
MW-159A	AMW-0159-012012	Explosives, Volatiles
MW-159B	BMW-0159-012012	Explosives, Volatiles
MW-20A	AMW-020-012012	Explosives, Volatiles
MW-20B	BMW-020-012012	Explosives, Volatiles
MW-20C	CMW-020-012012	Explosives, Volatiles
MW-35A	AMW-035-012012	Explosives, Volatiles
MW-35B	BMW-035-012012	Explosives, Volatiles
MW-35D	DMW-035-012012	Explosives, Volatiles
MW-38A	AMW-038-012012	Explosives, Volatiles
MW-38D	DMW-038-012012	Explosives, Volatiles
MW-41A	AMW-041-012012	Volatiles
MW-41B	BMW-041-012012	Volatiles
MW-41D	DMW-041-012012	Volatiles
MW-46A	AMW-046-012012	Explosives, Volatiles
MW-46B	BMW-046-012012	Explosives, Volatiles
MW-46D	DMW-046-012012	Explosives, Volatiles
MW-61A	AMW-061-012012	Explosives, Volatiles
MW-61B	BMW-061-012012	Explosives, Volatiles
MW-61D	DMW-061-012012	Explosives, Volatiles
MW-80A	AMW-080-012012	Volatiles
MW-80B	BMW-080-012012	Volatiles
MW-80D	DMW-080-012012	Volatiles
MW-81A	AMW-081-012012	Volatiles
MW-81B	BMW-081-012012	Volatiles
MW-81D	DMW-081-012012	Volatiles
MW-82A	AMW-082-012012	Explosives, Volatiles
MW-82B	BMW-082-012012	Explosives, Volatiles
MW-82D	DMW-082-012012	Explosives, Volatiles
MW-83A	AMW-083-012012	Explosives, Volatiles
MW-83B	BMW-083-012012	Explosives, Volatiles
MW-83D	DMW-083-012012	Explosives, Volatiles
MW-84A	AMW-084-012012	Explosives, Volatiles
MW-84B	BMW-084-012012	Explosives, Volatiles
MW-84D	DMW-084-012012	Explosives, Volatiles
MW-85A	AMW-085-012012	Explosives, Volatiles
MW-85B	BMW-085-012012	Explosives, Volatiles
MW-85D	DMW-085-012012	Explosives, Volatiles
MW-86A	AMW-086-012012	Explosives, Volatiles
MW-86B	BMW-086-012012	Explosives, Volatiles
MW-86D	DMW-086-012012	Explosives, Volatiles
MW-88A	AMW-088-012012	Explosives, Volatiles
MW-88B	BMW-088-012012	Explosives, Volatiles
MW-88D	DMW-088-012012	Explosives, Volatiles
MW-90A	AMW-090-012012	Explosives, Volatiles
MW-90B	BMW-090-012012	Explosives, Volatiles
MW-90D	DMW-090-012012	Explosives, Volatiles
MW-91A	AMW-091-012012	Volatiles

Table 1-1
Sample Locations, Sample IDs, and Analyses
First Quarter 2012 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
MW-91B	BMW-091-012012	Volatiles
MW-91D	DMW-091-012012	Volatiles
MW-93A	AMW-093-012012	Volatiles
MW-93B	BMW-093-012012	Volatiles
MW-95A	AMW-095-012012	Explosives, Volatiles
MW-95B	BMW-095-012012	Explosives, Volatiles
MW-95D	DMW-095-012012	Explosives, Volatiles
MW-96A	AMW-096-012012	Explosives, Volatiles
MW-96B	BMW-096-012012	Explosives, Volatiles
MW-96D	DMW-096-012012	Explosives, Volatiles
MW-97A	AMW-097-012012	Explosives, Volatiles
MW-97B	BMW-097-012012	Explosives, Volatiles
MW-97D	DMW-097-012012	Explosives, Volatiles
MW-98A	AMW-098-012012	Explosives, Volatiles
MW-98B	BMW-098-012012	Explosives, Volatiles
MW-98D	DMW-098-012012	Explosives, Volatiles

Notes:

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

Table 1-2
Sample Locations, Sample IDs, and Analyses
First Quarter 2012 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
ARTESIAN	OART-012012	Explosives, Volatiles
SCW-04	SCW-004-012012	Explosives, Volatiles
SCW-05	SCW-005-012012	Explosives, Volatiles
SCW-06	SCW-006-012012	Explosives, Volatiles
SW-05	SW-005-012012	Explosives, Volatiles
SW-06	SW-006-012012	Explosives, Volatiles
SW-08	SW-008-012012	Explosives, Volatiles
SW-09	SW-009-012012	Explosives, Volatiles
SW-10	SW-010-012012	Explosives, Volatiles
SW-11	SW-011-012012	Explosives, Volatiles
SW-12	SW-012-012012	Explosives, Volatiles
SW-13	SW-013-012012	Explosives, Volatiles

Notes:

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

Table 2-1
Sample Collection Summary
First Quarter 2012 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
Field Samples								
AMW-0142-012012			3/1/2012	3/3/2012	200-9584-1	9584-1	•	•
EMW-0142-012012			3/1/2012	3/3/2012	200-9584-2	9584-1	•	•
		EMW-2142-012012	3/1/2012	3/3/2012	200-9584-3	9584-1	•	•
AMW-090-012012			3/1/2012	3/3/2012	200-9584-5	9584-1	•	•
BMW-090-012012			3/1/2012	3/3/2012	200-9584-6	9584-1	•	•
DMW-090-012012			3/1/2012	3/3/2012	200-9584-7	9584-1	•	•
AMW-091-012012			3/1/2012	3/3/2012	200-9584-8	9584-1		•
BMW-091-012012			3/1/2012	3/3/2012	200-9584-9	9584-1		•
DMW-091-012012			3/1/2012	3/3/2012	200-9584-10	9584-1		•
AMW-093-012012			3/1/2012	3/3/2012	200-9584-11	9584-1		•
BMW-093-012012			3/1/2012	3/3/2012	200-9584-12	9584-1		•
AMW-0100-012012			3/1/2012	3/3/2012	200-9584-13	9584-1	•	•
BMW-0100-012012			3/1/2012	3/3/2012	200-9584-14	9584-1	•	•
		BMW-2100-012012	3/1/2012	3/3/2012	200-9584-15	9584-1	•	•
DMW-0100-012012			3/1/2012	3/3/2012	200-9584-16	9584-1	•	•
AMW-085-012012			3/1/2012	3/3/2012	200-9584-17	9584-1	•	•
BMW-085-012012			3/1/2012	3/3/2012	200-9584-18	9584-1	•	•
AMW-098-012012			3/1/2012	3/3/2012	200-9584-20	9584-1	•	•
		AMW-298-012012	3/1/2012	3/3/2012	200-9584-21	9584-1	•	•
BMW-098-012012	BMW-098-012012		3/1/2012	3/3/2012	200-9584-22	9584-1	•	•
DMW-098-012012			3/1/2012	3/3/2012	200-9584-23	9584-2	•	•
DMW-085-012012			3/1/2012	3/3/2012	200-9584-19	9584-1	•	•
AMW-097-012012			3/1/2012	3/3/2012	200-9584-24	9584-2	•	•
BMW-097-012012			3/1/2012	3/3/2012	200-9584-25	9584-2	•	•
DMW-097-012012			3/1/2012	3/3/2012	200-9584-26	9584-2	•	•
AMW-084-012012			3/2/2012	3/3/2012	200-9584-28	9584-2	•	•
BMW-084-012012			3/2/2012	3/3/2012	200-9584-29	9584-2	•	•
DMW-084-012012			3/2/2012	3/3/2012	200-9584-30	9584-2	•	•
AMW-083-012012			3/2/2012	3/3/2012	200-9584-31	9584-2	•	•
BMW-083-012012			3/2/2012	3/3/2012	200-9584-32	9584-2	•	•

Table 2-1
Sample Collection Summary
First Quarter 2012 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
DMW-083-012012			3/2/2012	3/3/2012	200-9584-33	9584-2	•	•
AMW-096-012012			3/2/2012	3/3/2012	200-9584-34	9584-2	•	•
BMW-096-012012			3/2/2012	3/3/2012	200-9584-35	9584-2	•	•
DMW-096-012012			3/2/2012	3/3/2012	200-9584-36	9584-2	•	•
AMW-082-012012			3/2/2012	3/3/2012	200-9584-37	9584-2	•	•
BMW-082-012012			3/2/2012	3/3/2012	200-9584-38	9584-2	•	•
DMW-082-012012			3/2/2012	3/3/2012	200-9584-39	9584-2	•	•
AMW-020-012012			3/2/2012	3/3/2012	200-9584-40	9584-2	•	•
BMW-020-012012			3/2/2012	3/3/2012	200-9584-41	9584-2	•	•
CMW-020-012012			3/2/2012	3/3/2012	200-9584-42	9584-2	•	•
AMW-035-012012			3/5/2012	3/6/2012	200-9628-1	9628-1	•	•
BMW-035-012012			3/5/2012	3/6/2012	200-9628-2	9628-1	•	•
		BMW-235-012012	3/5/2012	3/6/2012	200-9628-3	9628-1	•	•
DMW-035-012012			3/5/2012	3/6/2012	200-9628-4	9628-1	•	•
AMW-0112-012012			3/5/2012	3/6/2012	200-9628-5	9628-1	•	•
BMW-0112-012012			3/5/2012	3/6/2012	200-9628-6	9628-1	•	•
AMW-0113-012012			3/5/2012	3/6/2012	200-9628-7	9628-1	•	•
BMW-0113-012012			3/5/2012	3/6/2012	200-9628-8	9628-1	•	•
DMW-0113-012012			3/5/2012	3/6/2012	200-9628-9	9628-1	•	•
AMW-046-012012			3/5/2012	3/6/2012	200-9628-10	9628-1	•	•
		AMW-246-012012	3/5/2012	3/6/2012	200-9628-11	9628-1	•	•
BMW-046-012012	BMW-046-012012		3/5/2012	3/6/2012	200-9628-12	9628-1	•	•
DMW-046-012012			3/5/2012	3/6/2012	200-9628-13	9628-1	•	•
AMW-0115-012012			3/5/2012	3/6/2012	200-9628-14	9628-2	•	•
BMW-0115-012012			3/5/2012	3/6/2012	200-9628-15	9628-2	•	•
DMW-0115-012012			3/5/2012	3/6/2012	200-9628-16	9628-2	•	•
AMW-038-012012			3/5/2012	3/6/2012	200-9628-17	9628-2	•	•
		AMW-238-012012	3/5/2012	3/6/2012	200-9628-18	9628-2	•	•
DMW-038-012012	DMW-038-012012		3/5/2012	3/6/2012	200-9628-19	9628-2	•	•
AMW-088-012012			3/5/2012	3/6/2012	200-9628-20	9628-2	•	•
BMW-088-012012			3/5/2012	3/6/2012	200-9628-21	9628-2	•	•

Table 2-1
Sample Collection Summary
First Quarter 2012 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
DMW-088-012012			3/5/2012	3/6/2012	200-9628-22	9628-2	•	•
AMW-086-012012			3/5/2012	3/6/2012	200-9628-23	9628-2	•	•
BMW-086-012012			3/5/2012	3/6/2012	200-9628-24	9628-2	•	•
		BMW-286-012012	3/5/2012	3/6/2012	200-9628-25	9628-2	•	•
DMW-086-012012			3/5/2012	3/6/2012	200-9628-26	9628-2	•	•
AMW-0114-012012			3/5/2012	3/6/2012	200-9628-27	9628-2	•	•
BMW-0114-012012			3/5/2012	3/6/2012	200-9628-28	9628-2	•	•
DMW-0114-012012			3/5/2012	3/6/2012	200-9628-29	9628-2	•	•
AMW-0116-012012			3/6/2012	3/8/2012	200-9678-2	9678-1	•	•
BMW-0116-012012			3/6/2012	3/8/2012	200-9678-3	9678-1	•	•
DMW-0116-012012			3/6/2012	3/8/2012	200-9678-4	9678-1	•	•
AMW-0158-012012			3/6/2012	3/8/2012	200-9678-5	9678-1	•	•
		AMW-2158-012012	3/6/2012	3/8/2012	200-9678-6	9678-1		•
BMW-0158-012012	BMW-0158-012012		3/6/2012	3/8/2012	200-9678-7	9678-1	•	•
DMW-0158-012012			3/6/2012	3/8/2012	200-9678-8	9678-1	•	•
AMW-0117-012012			3/6/2012	3/8/2012	200-9678-9	9678-1	•	•
BMW-0117-012012			3/6/2012	3/8/2012	200-9678-10	9678-1	•	•
DMW-0117-012012			3/6/2012	3/8/2012	200-9678-11	9678-1	•	•
AMW-0118-012012			3/6/2012	3/8/2012	200-9678-12	9678-1	•	•
BMW-0118-012012	BMW-0118-012012		3/6/2012	3/8/2012	200-9678-13	9678-1	•	•
AMW-0159-012012			3/6/2012	3/8/2012	200-9678-14	9678-1	•	•
BMW-0159-012012			3/6/2012	3/8/2012	200-9678-15	9678-1	•	•
AMW-0106-012012			3/6/2012	3/8/2012	200-9678-16	9678-1	•	•
		AMW-2106-012012	3/6/2012	3/8/2012	200-9678-17	9678-1	•	•
BMW-0106-012012	BMW-0106-012012		3/6/2012	3/8/2012	200-9678-18	9678-1	•	•
DMW-0106-012012			3/6/2012	3/8/2012	200-9678-19	9678-2	•	•
AMW-0107-012012			3/6/2012	3/8/2012	200-9678-20	9678-2	•	•
		AMW-2107-012012	3/6/2012	3/8/2012	200-9678-21	9678-2	•	•
BMW-0107-012012	BMW-0107-012012		3/6/2012	3/8/2012	200-9678-22	9678-2	•	•
DMW-0107-012012			3/6/2012	3/8/2012	200-9678-23	9678-2	•	•
AMW-0108-012012			3/6/2012	3/8/2012	200-9678-24	9678-2	•	•

Table 2-1
Sample Collection Summary
First Quarter 2012 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
BMW-0108-012012			3/6/2012	3/8/2012	200-9678-25	9678-2	•	•
DMW-0108-012012			3/6/2012	3/8/2012	200-9678-26	9678-2	•	•
AMW-0110-012012			3/6/2012	3/8/2012	200-9678-27	9678-2	•	•
BMW-0110-012012			3/6/2012	3/8/2012	200-9678-28	9678-2	•	•
DMW-0110-012012			3/6/2012	3/8/2012	200-9678-29	9678-2	•	•
AMW-0102-012012			3/6/2012	3/8/2012	200-9678-30	9678-2		•
BMW-0102-012012			3/6/2012	3/8/2012	200-9678-31	9678-2		•
		BMW-2102-012012	3/6/2012	3/8/2012	200-9678-32	9678-2		•
DMW-0102-012012			3/6/2012	3/8/2012	200-9678-33	9678-2		•
AMW-0103-012012			3/6/2012	3/8/2012	200-9678-34	9678-2		•
BMW-0103-012012			3/6/2012	3/8/2012	200-9678-35	9678-2		•
DMW-0103-012012			3/6/2012	3/8/2012	200-9678-36	9678-2		•
AMW-041-012012			3/6/2012	3/8/2012	200-9678-37	9678-2		•
BMW-041-012012			3/6/2012	3/8/2012	200-9678-38	9678-2		•
AMW-0147-012012			3/7/2012	3/8/2012	200-9678-40	9678-3	•	•
BMW-0147-012012			3/7/2012	3/8/2012	200-9678-41	9678-3	•	•
DMW-0147-012012			3/7/2012	3/8/2012	200-9678-42	9678-3	•	•
AMW-095-012012			3/7/2012	3/8/2012	200-9678-43	9678-3	•	•
BMW-095-012012			3/7/2012	3/8/2012	200-9678-44	9678-3	•	•
DMW-095-012012			3/7/2012	3/8/2012	200-9678-45	9678-3	•	•
AMW-0101-012012			3/7/2012	3/8/2012	200-9678-46	9678-3	•	•
BMW-0101-012012			3/7/2012	3/8/2012	200-9678-47	9678-3	•	•
		BMW-2101-012012	3/7/2012	3/8/2012	200-9678-48	9678-3	•	•
DMW-0101-012012			3/7/2012	3/8/2012	200-9678-49	9678-3	•	•
AMW-080-012012			3/7/2012	3/8/2012	200-9678-50	9678-3		•
		AMW-280-012012	3/7/2012	3/8/2012	200-9678-51	9678-3		•
BMW-080-012012			3/7/2012	3/8/2012	200-9678-52	9678-3		•
DMW-080-012012			3/7/2012	3/8/2012	200-9678-53	9678-3		•
AMW-081-012012			3/7/2012	3/8/2012	200-9678-54	9678-3		•
BMW-081-012012			3/7/2012	3/8/2012	200-9678-55	9678-3		•
DMW-081-012012			3/7/2012	3/8/2012	200-9678-56	9678-3		•

Table 2-1
Sample Collection Summary
First Quarter 2012 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
AMW-061-012012			3/7/2012	3/8/2012	200-9678-57	9678-3	•	•
BMW-061-012012			3/7/2012	3/8/2012	200-9678-58	9678-3	•	•
DMW-061-012012	DMW-061-012012		3/7/2012	3/8/2012	200-9678-59	9678-3	•	•
DMW-041-012012			3/7/2012	3/8/2012	200-9678-39	9678-2		•
Trip Blanks								
TRB-2142-012012			3/1/2012	3/3/2012	200-9584-4	9584-1		•
TRB-291-012012			3/1/2012	3/3/2012	200-9584-27	9584-2		•
TRB-235-012012			3/5/2012	3/6/2012	200-9628-30	9628-2		•
TRB-2116-012012			3/6/2012	3/8/2012	200-9678-1	9678-1		•

Notes:

Volatiles — Volatile Organic Compounds by Capillary GC/MS

Explosives — Nitroaromatics and Nitramines by HPLC

Table 2-2
Sample Collection Summary
First Quarter 2012 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
Field Sample								
SCW-004-012012			3/5/2012	3/6/2012	200-9623-2	9623	•	•
SCW-005-012012			3/5/2012	3/6/2012	200-9623-3	9623	•	•
SCW-006-012012			3/5/2012	3/6/2012	200-9623-4	9623	•	•
		SCW-206-012012	3/5/2012	3/6/2012	200-9623-5	9623	•	•
SW-012-012012			3/5/2012	3/6/2012	200-9623-6	9623	•	•
SW-013-012012			3/5/2012	3/6/2012	200-9623-7	9623	•	•
SW-011-012012			3/5/2012	3/6/2012	200-9623-8	9623	•	•
SW-009-012012			3/5/2012	3/6/2012	200-9623-9	9623	•	•
SW-006-012012			3/5/2012	3/6/2012	200-9623-10	9623	•	•
SW-008-012012			3/5/2012	3/6/2012	200-9623-11	9623	•	•
SW-010-012012			3/5/2012	3/6/2012	200-9623-12	9623	•	•
OART-012012			3/5/2012	3/6/2012	200-9623-13	9623	•	•
SW-005-012012	SW-005-012012		3/5/2012	3/6/2012	200-9623-14	9623	•	•
		SW-205-012012	3/5/2012	3/6/2012	200-9623-15	9623	•	•
Trip Blank								
TRB-204-012012			3/5/2012	3/6/2012	200-9623-1	9623		•

Notes:

Volatiles — Volatile Organic Compounds by Capillary GC/MS

Explosives — Nitroaromatics and Nitramines by HPLC

Table 3-1
Data Quality Evaluation Results
Monitoring Well First Quarter 2012 Sampling Event
Former Nebraska Ordnance Plant

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	BLK	C_RPD	IS_Surr	OTHER	Comments	Final Result
AMW-0100-012012	3/1/2012	9584-1	200-9584-13	Volatiles	trichloroethene	µg/L	0.22	U	X				Trip Blank	1.0 U
AMW-0108-012012	3/6/2012	9678-2	200-9678-24	Volatiles	1,2-dichloropropane	µg/L	0.0	UJ				X	Test Hold Time	1.0 UJ
AMW-0108-012012	3/6/2012	9678-2	200-9678-24	Volatiles	cis-1,2-dichloroethene	µg/L	0.0	UJ				X	Test Hold Time	1.0 UJ
AMW-0108-012012	3/6/2012	9678-2	200-9678-24	Volatiles	methylene chloride	µg/L	0.0	UJ				X	Test Hold Time	1.0 UJ
AMW-0108-012012	3/6/2012	9678-2	200-9678-24	Volatiles	trans-1,2-dichloroethene	µg/L	0.0	UJ				X	Test Hold Time	1.0 UJ
AMW-0108-012012	3/6/2012	9678-2	200-9678-24	Volatiles	trichloroethene	µg/L	0.0	UJ				X	Test Hold Time	1.0 UJ
AMW-0108-012012	3/6/2012	9678-2	200-9678-24	Volatiles	vinyl choride	µg/L	0.0	UJ				X	Test Hold Time	1.0 UJ
AMW-0110-012012	3/6/2012	9678-2	200-9678-27	Explosives	1,3,5-trinitrobenzene	µg/L	0.11	J		X			Column RPD	0.11 J
AMW-0110-012012	3/6/2012	9678-2	200-9678-27	Explosives	2,4,6-trinitrotoluene	µg/L	0.14	J		X			Column RPD	0.14 J
AMW-0110-012012	3/6/2012	9678-2	200-9678-27	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.071	J		X			Column RPD	0.071 J
AMW-0142-012012	3/1/2012	9584-1	200-9584-1	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.062	J		X			Column RPD	0.062 J
AMW-083-012012	3/2/2012	9584-2	200-9584-31	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.24	J		X			Column RPD	0.24 J
AMW-090-012012	3/1/2012	9584-1	200-9584-5	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.15	J		X			Column RPD	0.15 J
BMW-0100-012012	3/1/2012	9584-1	200-9584-14	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.14	J		X			Column RPD	0.14 J
BMW-0108-012012	3/6/2012	9678-2	200-9678-25	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.081	J		X			Column RPD	0.081 J
BMW-0110-012012	3/6/2012	9678-2	200-9678-28	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.071	J		X			Column RPD	0.071 J
BMW-0110-012012	3/6/2012	9678-2	200-9678-28	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.29	J		X			Column RPD	0.29 J
BMW-0118-012012	3/6/2012	9678-1	200-9678-13	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.18	J		X			Column RPD	0.18 J
BMW-084-012012	3/2/2012	9584-2	200-9584-29	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.070	J		X			Column RPD	0.070 J
BMW-084-012012	3/2/2012	9584-2	200-9584-29	Volatiles	1,2-dichloropropane	µg/L	0.0	UJ			X		Surrogate recovery outside project limits.	1.0 UJ
BMW-084-012012	3/2/2012	9584-2	200-9584-29	Volatiles	cis-1,2-dichloroethene	µg/L	0.0	UJ			X		Surrogate recovery outside project limits.	1.0 UJ
BMW-084-012012	3/2/2012	9584-2	200-9584-29	Volatiles	methylene chloride	µg/L	0.0	UJ			X		Surrogate recovery outside project limits.	1.0 UJ
BMW-084-012012	3/2/2012	9584-2	200-9584-29	Volatiles	trans-1,2-dichloroethene	µg/L	0.0	UJ			X		Surrogate recovery outside project limits.	1.0 UJ
BMW-084-012012	3/2/2012	9584-2	200-9584-29	Volatiles	trichloroethene	µg/L	0.0	UJ			X		Surrogate recovery outside project limits.	1.0 UJ
BMW-084-012012	3/2/2012	9584-2	200-9584-29	Volatiles	vinyl choride	µg/L	0.0	UJ			X		Surrogate recovery outside project limits.	1.0 UJ
BMW-085-012012	3/1/2012	9584-1	200-9584-18	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.17	J		X			Column RPD	0.17 J
BMW-2100-012012	3/1/2012	9584-1	200-9584-15	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.16	J		X			Column RPD	0.16 J
DMW-0110-012012	3/6/2012	9678-2	200-9678-29	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.074	J		X			Column RPD	0.074 J
DMW-090-012012	3/1/2012	9584-1	200-9584-7	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.91	J		X			Column RPD	0.91 J

Table 3-1
Data Quality Evaluation Results
Monitoring Well First Quarter 2012 Sampling Event
Former Nebraska Ordnance Plant

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	BLK	C_RPD	IS_Surr	OTHER	Comments	Final Result
DMW-090-012012	3/1/2012	9584-1	200-9584-7	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.40	J		X			Column RPD	0.40 J
EMW-0142-012012	3/1/2012	9584-1	200-9584-2	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.25	J		X			Column RPD	0.25 J
EMW-2142-012012	3/1/2012	9584-1	200-9584-3	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.24	J		X			Column RPD	0.24 J
EMW-2142-012012	3/1/2012	9584-1	200-9584-3	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	1.6	J		X			Column RPD	1.6 J

Reason for Qualification

BLK	Trip Blank, Laboratory Method Blank
CAL	CCV, CCV RRF, Initial Calibration RRF, Initial Calibration RSD, ICV
IS_Surr	Internal standard, Surrogate recovery outside project limits.
OTHER	Sample not preserved and analyzed out of hold time

Table 3-2
Data Quality Evaluation Results
Surface Water First Quarter 2012 Sampling Event
Former Nebraska Ordnance Plant

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	C_RPD	Comments	Final Result
OART-012012	3/5/2012	9623	200-9623-13	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.063	J	X	Column RPD	0.063 J
SCW-005-012012	3/5/2012	9623	200-9623-3	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.045	J	X	Column RPD	0.045 J
SW-005-012012	3/5/2012	9623	200-9623-14	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	1.0	J	X	Column RPD	1.0 J
SW-006-012012	3/5/2012	9623	200-9623-10	Explosives	2,4-dinitrotoluene	µg/L	0.033	J	X	Column RPD	0.033 J
SW-006-012012	3/5/2012	9623	200-9623-10	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.36	J	X	Column RPD	0.36 J
SW-010-012012	3/5/2012	9623	200-9623-12	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.065	J	X	Column RPD	0.065 J
SW-013-012012	3/5/2012	9623	200-9623-7	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.086	J	X	Column RPD	0.086 J
SW-205-012012	3/5/2012	9623	200-9623-15	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.90	J	X	Column RPD	0.90 J

	Reason for Qualification
C_RPD	Column RPD

Table 3-3
Explosives Quality Control Outliers
First Quarter 2012 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-0110-012012	9678-2	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	68.3 RPD
AMW-0110-012012	9678-2	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	155 RPD
AMW-0110-012012	9678-2	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	86.9 RPD
AMW-0142-012012	9584-1	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	184 RPD
AMW-083-012012	9584-2	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	52.6 RPD
AMW-090-012012	9584-1	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	92.9 RPD
BMW-0100-012012	9584-1	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	41.4 RPD
BMW-0108-012012	9678-2	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	110 RPD
BMW-0110-012012	9678-2	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	47.0 RPD
BMW-0110-012012	9678-2	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	113 RPD
BMW-0118-012012	9678-1	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	72.7 RPD
BMW-084-012012	9584-2	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	43.5 RPD
BMW-085-012012	9584-1	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	56.6 RPD
BMW-2100-012012	9584-1	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	59.1 RPD
DMW-0110-012012	9678-2	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	42.6 RPD
DMW-090-012012	9584-1	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	166 RPD

Table 3-3
Explosives Quality Control Outliers
First Quarter 2012 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					
DMW-090-012012	9584-1	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	131 RPD
EMW-0142-012012	9584-1	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	128 RPD
EMW-2142-012012	9584-1	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	133 RPD
EMW-2142-012012	9584-1	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	73.5 RPD

Table 3-4
VOC Quality Control Outliers
First Quarter 2012 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
Holding Times					
AMW-0108-012012	9678-2	1,2-Dichloropropane	Test Hold Time > 7 Days	7 Days	12 Days
AMW-0108-012012	9678-2	cis-1,2-Dichloroethene	Test Hold Time > 7 Days	7 Days	12 Days
AMW-0108-012012	9678-2	Methylene Chloride	Test Hold Time > 7 Days	7 Days	12 Days
AMW-0108-012012	9678-2	trans-1,2-Dichloroethene	Test Hold Time > 7 Days	7 Days	12 Days
AMW-0108-012012	9678-2	Trichloroethene	Test Hold Time > 7 Days	7 Days	12 Days
AMW-0108-012012	9678-2	Vinyl Chloride	Test Hold Time > 7 Days	7 Days	12 Days
Surrogate					
BMW-084-012012	9584-2	1,2-Dichloropropane	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	84.0 %
BMW-084-012012	9584-2	cis-1,2-Dichloroethene	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	84.0 %
BMW-084-012012	9584-2	Methylene Chloride	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	84.0 %
BMW-084-012012	9584-2	trans-1,2-Dichloroethene	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	84.0 %
BMW-084-012012	9584-2	Trichloroethene	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	84.0 %
BMW-084-012012	9584-2	Vinyl Chloride	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	84.0 %
Trip Blank					
AMW-0100-012012	9584-1	Trichloroethene	Field Blank > MDL	< 0.2 UG/L	0.26 µg/L

Table 3-5
Explosives Quality Control Outliers
First Quarter 2012 Surface Water 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					
OART-012012	9623	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	69.4 RPD
SCW-005-012012	9623	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	46.6 RPD
SW-005-012012	9623	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	184 RPD
SW-006-012012	9623	2,4-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	44.7 RPD
SW-006-012012	9623	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	156 RPD
SW-010-012012	9623	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	47.6 RPD
SW-013-012012	9623	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	110 RPD
SW-205-012012	9623	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	175 RPD

Table 4-1
Field Completeness
First Quarter 2012 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned	Number of Samples Collected	Field Completeness
Explosives	104	104	100%
Volatiles	127	127	100%
Totals =	231	231	100.0%
Goal =			95%

Notes:

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

Table 4-2
Field Completeness
First Quarter 2012 Surface Water Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned	Number of Samples Collected	Field Completeness
Explosives	14	14	100%
Volatiles	14	14	100%
Totals =	28	28	100.0%
Goal =			95%

Notes:

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

Table 4-3
Analytical Completeness
First Quarter 2012 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)	624	624	100%	90%	624	100%	80%
Volatiles (Analyte Count - 6)	762	750	98.4%	90%	762	100%	80%
Totals =	1386	1374	99.1%	90%	1386	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 4-4
Analytical Completeness
First Quarter 2012 Surface Water 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)	84	84	100%	90%	84	100%	80%
Volatiles (Analyte Count - 6)	84	84	100%	90%	84	100%	80%
Totals =	168	168	100%	90%	168	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 4-5
Project Completeness
First Quarter 2012 Monitoring 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.

Table 4-6
Project Completeness
First Quarter 2012 Surface Water 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

1st QTR MW SE 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-1-12	COC No: 030112
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	1 of 4 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 - TCE	8330 - RDX	Sample Specific Notes:
A mw-0142-012012	3-1-12	0830	G-B	w	5	X	X	
E mw-0142-012012	3-1-12	0840	G-B	w	5	X	X	
E mw 2142-012012	3-1-12	0840	G-B	w	5	X	X	
TRB-[illegible]-2142-012012	3-1-12	0830	G-B	w	2	X		
A mw-090-012012	3-1-12	0915	G-B	w	5	X	X	
B mw-090-012012	3-1-12	0925	G-B	w	5	X	X	
D mw-090-012012	3-1-12	0935	G-B	w	5	X	X	
A mw-091-012012	3-1-12	0945	G-B	w	3	X		
B mw-091-012012	3-1-12	0955	G-B	w	3	X		
D mw-091-012012	3-1-12	1005	G-B	w	3	X		
A mw-093-012012	3-1-12	1020	G-B	w	3	X		
B mw-093-012012	3-1-12	1030	G-B	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:

1530

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	3-2-12	FedEx 7981	2627 7981	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[illegible]	TAB	3/3/12 1000
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

1st QTR MW SE 2012

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-1-12	COC No: 030112
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	2 of 4 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 - TCE	8330 - RDX	Sample Specific Notes:
AMW-0100-012012	3-1-12	1055	GB	W	5	X	X	
BMW-0100-012012	3-1-12	1115	GB	W	5	X	X	
BMW-2100-012012	3-1-12	1115	GB	W	5	X	X	
DMW-0100-012012	3-1-12	1145	GB	W	5	X	X	
AMW-085-012012	3-1-12	1220	GB	W	5	X	X	
BMW-085-012012	3-1-12	1255	GB	W	5	X	X	
DMW-085-012012	3-1-12	1310	GB	W	5	X	X	
AMW-098-012012	3-1-12	1330	GB	W	5	X	X	
AMW-298-012012	3-1-12	1330	GB	W	5	X	X	
BMW-098-012012	3-1-12	1350	GB	W	5	X	X	
BMW-098-012012 MS	3-1-12	1350	GB	W	5	X	X	
BMW-098-012012 MSD	3-1-12	1350	GB	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:

1530

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	ECC	3-2-12	Fed-EX 7981	2627 7431	
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TABL	Date/Time: 3/3/12 1000
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

1st QTR MW SE 2012

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-1-12	COC No: 03 01 12
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	3 of 4 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 - TCE	8330 - RDX	Sample Specific Notes:
D mw-098-012012	3-1-12	1500	GB	w	5	X	X	
A mw-097-012012	3-1-12	1525	GB	w	5	X	X	
B mw-097-012012	3-1-12	1540	GB	w	5	X	X	
D mw-097-012012	3-1-12	1600	GB	w	5	X	X	
TRB-291-012012	3-1-12	0945	GB	w	2	X		
A mw-084-012012	3-2-12	0835	GB	w	5	X	X	
B mw-084-012012	3-2-12	0855	GB	w	5	X	X	
D mw-084-012012	3-2-12	0910	GB	w	5	X	X	
A mw-083-012012	3-2-12	0945	GB	w	5	X	X	
B mw-083-012012	3-2-12	0955	GB	w	5	X	X	
D mw-083-012012	3-2-12	1010	GB	w	5	X	X	
A mw-096-012012	3-2-12	1040	GB	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* [X] *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1530

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby R. Hinz	ECC	3-2-12	Fed-Ex 7981 2627 7431		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TABUR	3/3/12
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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1st QTR MW SE 2012

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-2-12	COC No: 030112
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	4 of 4 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 - TCE	8330 - RDX	Sample Specific Notes:
BMW-096-012012	3-2-12	1050	GB	W	5	x	x	
DMW-096-012012	3-2-12	1105	GB	W	5	x	x	
AMW-082-012012	3-2-12	1140	GB	W	5	x	x	
BMW-082-012012	3-2-12	1150	GB	W	5	x	x	
DMW-082-012012	3-2-12	1205	GB	W	5	x	x	
AMW-020-012012	3-2-12	1240	GB	W	5	x	x	
BMW-020-012012	3-2-12	1255	GB	W	5	x	x	
CMW-020-012012	3-2-12	1310	GB	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:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	3-2-12 1530	FedEx 7981	2627	7431
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[illegible]	ABR	3/3/12 1000
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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1st QTR SWS EVENT 2012

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-5-12	COC No: 030512
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	1 of 2 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 - VOC	8330 - EXP	Sample Specific Notes:
TRB-204-012012	3-5-12	0845	G-B	w	2	X		
SCW-004-012012	3-5-12	0845	G-B	w	5	X	X	
SCW-005-012012	3-5-12	0900	G-B	w	5	X	X	
SCW-006-012012	3-5-12	0915	G-B	w	5	X	X	
SCW-206-012012	3-5-12	0915	G-B	w	5	X	X	
SW-012-012012	3-5-12	0940	G-B	w	5	X	X	
SW-013-012012	3-5-12	0955	G-B	w	5	X	X	
SW-011-012012	3-5-12	1010	G-B	w	5	X	X	
SW-009-012012	3-5-12	1025	G-B	w	5	X	X	
SW-006-012012	3-5-12	1045	G-B	w	5	X	X	
SW-008-012012	3-5-12	1105	G-B	w	5	X	X	
SW-010-012012	3-5-12	1120	G-B	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:

1800

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	ECC	3-5-12	Fed-ex 7981	3159 7420	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[signature]	TABW	3/6/12 1030
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

1st QTR SWS EVENT 2012

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-5-12	COC No: 030512
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	2 of 2 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 - VOC	8330 - EXP	Sample Specific Notes:
OART - 012012	3-5-12	1135	GB	w	5	X	X	
SW - 005 - 012012	3-5-12	1150	GB	w	5	X	X	
SW - 205 - 012012	3-5-12	1150	GB	w	5	X	X	
SW - 005 - 012012 MS	3-5-12	1150	GB	w	5	X	X	
SW - 005 - 012012 MSD	3-5-12	1150	GB	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:

1800

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby H. K	3-5 FedEx	3-5-12	Fed-ex 7981	3159 7420	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TMSW	3/8/12 1030
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

1st QTR MW SE 2012

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 03-05-2012	COC No: 030512-1
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	2 of 5 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 - TCE	8330 - RDX	Sample Specific Notes:
AMW-035-012012	3-5-12	0800	GB	W	5	X	X	
BMW-035-012012	3-5-12	0825	GB	W	5	X	X	
BMW-235-012012	3-5-12	0825	GB	W	5	X	X	
DMW-035-012012	3-5-12	0840	GB	W	5	X	X	
AMW-0112-012012	3-5-12	0905	GB	W	5	X	X	
BMW-0112-012012	3-5-12	0920	GB	W	5	X	X	
AMW-0113-012012	3-5-12	0940	GB	W	5	X	X	
BMW-0113-012012	3-5-12	0950	GB	W	5	X	X	
DMW-0113-012012	3-5-12	1000	GB	W	5	X	X	
AMW-046-012012	3-5-12	1025	GB	W	5	X	X	
AMW-246-012012	3-5-12	1025	GB	W	5	X	X	
BMW-046-012012	3-5-12	1040	GB	W	4	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:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	ECC	1200 3-5-12	Fed-Ex 7881 3360 8		1353
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[signature]	TAFBW	3/6/12 1032
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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30 Community Drive
Suite 11
South Burlington, VT 5403
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1st QTR MW SE 2012

Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 03-05-2012	COC No: 030512-1
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	1 of 3 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			
PO#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8260 - TCE	8330 - RDX	Sample Specific Notes:
BMW-046-012012 MS	3-5-12	1040	GB	W	4	x	x	
BMW-046-012012 MSD	3-5-12	1040	GB	W	3	x	x	
DMW-046-012012	3-5-12	1105	GB	W	5	x	x	
AMW-0115-012012	3-5-12	1155	GB	W	5	x	x	
BMW-0115-012012	3-5-12	1205	GB	W	5	x	x	
DMW-0115-012012	3-5-12	1210	GB	W	5	x	x	
AMW-038-012012	3-5-12	1235	GB	W	5	x	x	
AMW-238-012012	3-5-12	1235	GB	W	5	x	x	
DMW-038-012012	3-5-12	1250	GB	W	5	x	x	
DMW-038-012012 MS	3-5-12	1250	GB	W	5	x	x	
DMW-038-012012 MSD	3-5-12	1250	GB	W	4	x	x	
AMW-088-012012	3-5-12	1325	GB	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:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	1800 3-5-12	T-cd- ex 7981	3360 835	3
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[illegible]	[illegible]	3/6/12 1030
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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1st QTR MW SE 2012

Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 03-05-2012	COC No: 030512-1
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	3 of 3 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			
PO#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8260 - TCE	8330 - RDX	Sample Specific Notes:
BMW-088-012012	3-5-12	1335	GB	W	5	X	X	
DMW-088-012012	3-5-12	1345	GB	W	5	X	X	
AMW-086-012012	3-5-12	1430	GB	W	5	X	X	
BMW-086-012012	3-5-12	1440	GB	W	5	X	X	
BMW-286-012012	3-5-12	1440	GB	W	5	X	X	
DMW-086-012012	3-5-12	1450	GB	W	5	X	X	
AMW-0114-012012	3-5-12	1520	GB	W	5	X	X	
BMW-0114-012012	3-5-12	1525	GB	W	5	X	X	
DMW-0114-012012	3-5-12	1535	GB	W	5	X	X	
TRB-235-012012	3-5-12	0755	GB	W	2	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:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby D Hinz	ECC	3-5-12	Fed-Ex 798	3360 83	553
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			FSC	TAVLR	3/6/12 1030
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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1st QTR MW SE 2012

Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 03-06-12	COC No: 030712
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			
PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8260 - TCE	8330 - RDX	Sample Specific Notes:
TRB-2116-012012	3-6-12	0725	GB	w	5	x		
AMW-0116-012012	3-6-12	0750	GB	w	5	x	x	
BMW-0116-012012	3-6-12	0800	GB	w	5	x	x	
DMW-0116-012012	3-6-12	0805	GB	w	5	x	x	
AMW-0158-012012	3-6-12	0830	GB	w	5	x	x	
AMW-2158-012012	3-6-12	0830	GB	w	3	x		
BMW-0158-012012	3-6-12	0850	GB	w	5	x	x	
BMW-0158-012012 MS	3-6-12	0850	GB	w	3	X	X	
BMW-0158-012012 MSD	3-6-12	0850	GB	w	3	x		
DMW-0158-012012	3-6-12	0905	GB	w	5	x	x	
AMW-0117-012012	3-6-12	0935	GB	w	5	x	x	
BMW-0117-012012	3-6-12	0945	GB	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:

Relinquished by:	Company:	Date/Time:	Received by	Company	Date/Time:
Toby Hinz	ECC	3-7-12 1800	Fed-ex 7981	4171 8300	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TABUR	3/8/12 1040
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Suite 11
South Burlington, VT 5403
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1st QTR MW SE 2012

Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 03-06-2012	COC No: 030712
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	2 of 2 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 - TCE	8330 - RDX	Sample Specific Notes:
DMW-0117-012012	3-6-12	0950	GB	W	5	X	X	
AMW-0118-012012	3-6-12	1015	GB	W	5	X	X	
BMW-0118-012012 MS	3-6-12	1025	GB	W	5	X	X	
BMW-0118-012012 MSD	3-6-12	1025	GB	W	5	X	X	
BMW-0118-012012	3-6-12	1025	GB	W	5	X	X	
AMW-0159-012012	3-6-12	1110	GB	W	5	X	X	
BMW-0159-012012	3-6-12	1125	GB	W	5	X	X	
AMW-0106-012012	3-6-12	1150	GB	W	5	X	X	
AMW-0106-012012	3-6-12	1150	GB	W	5	X	X	
BMW-0106-012012	3-6-12	1205	GB	W	5	X	X	
BMW-0106-012012 MS	3-6-12	1205	GB	W	5	X	X	
BMW-0106-012012 MSD	3-6-12	1205	GB	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:

1800

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby M.	ECC	3-7-12	Fed-Ex 7981	4171 8300	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[illegible]	TBUR	3/6/12 1040
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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1st QTR MW SE 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 03-06-2012	COC No: 030712
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 _____			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
PO#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8260 - TCE	8330 - RDX	Sample Specific Notes
DMW-0106-012012	3-6-12	1220	GB	W	5	X	X	
AMW-0107-012012	3-6-12	1250	GB	W	5	X	X	
AMW-2107-012012	3-6-12	1250	GB	W	5	X	X	
BMW-0107-012012	3-6-12	1300	GB	W	5	X	X	
BMW-0107-012012 MS	3-6-12	1300	GB	W	5	X	X	
BMW-0107-012012 MSD	3-6-12	1300	GB	W	5	X	X	
DMW-0107-012012	3-6-12	1315	GB	W	5	X	X	
AMW-0108-012012	3-6-12	1335	GB	W	5	X	X	
BMW-0108-012012	3-6-12	1345	GB	W	5	X	X	
DMW-0108-012012	3-6-12	1350	GB	W	5	X	X	
AMW-0110-012012	3-6-12	1405	GB	W	5	X	X	
BMW-0110-012012	3-6-12	1415	GB	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:

1800

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	3-7-12	Fed-Ex 7021	4171 8300	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			BK	TABUR	3/8/12 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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1st QTR MW SE 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 03-06-2012	COC No: 030717
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	7 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 - TCE	8330 - RDX	Sample Specific Notes:
DMW-0110-012012	3-6-12	1420	GB	W	5	X	X	
AMW-0102-012012	3-6-12	1505	GB	W	3	X	X	
BMW-0102-012012	3-6-12	1515	GB	W	3	X	X	
BMW-2102-012012	3-6-12	1515	GB	W	3	X	X	
DMW-0102-012012	3-6-12	1530	GB	W	3	X	X (A)	
AMW-0103-012012	3-6-12	1550	GB	W	3	X	X	
BMW-0103-012012	3-6-12	1600	GB	W (B)	3	X	X	
DMW-0103-012012	3-6-12	1605	GB	W	3	X	X	
AMW-0411-012012	3-6-12	1620	GB	W	3	X		
BMW-0411-012012	3-6-12	1625	GB	W	3	X		
DMW-0411-012012	3-6-12	1630	GB	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:
T Hinz	ECC	3-7-12	Fed-Ex 7901	4171 8300	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[illegible]	TASUR	3/8/12 1040
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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South Burlington, VT 5403
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1st QTR MW SE 2012

Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 03-07-2012	COC No: 030712
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			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8260 - TCE	8330 - RDX	Sample Specific Notes:
AMW-0147-012012	3-7-12	0730	GB	W	5	X	X	
BMW-0147-012012	3-7-12	0735	GB	W	5	X	X	
DMW-0147-012012	3-7-12	0745	GB	W	5	X	X	
AMW-095-012012	3-7-12	0805	GB	W	5	X	X	
BMW-095-012012	3-7-12	0810	GB	W	5	X	X	
DMW-095-012012	3-7-12	0820	GB	W	5	X	X	
AMW-0101-012012	3-7-12	0855	GB	W	5	X	X	
BMW-0101-012012	3-7-12	0900	GB	W	5	X	X	
BMW-2101-012012	3-7-12	0900	GB	W	5	X	X	
DMW-0101-012012	3-7-12	0910	GB	W	5	X	X	
AMW-080-012012	3-7-12	0935	GB	W	3	X		
AMW-280-012012	3-7-12	0935	GB	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:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	3-7-12 1800	Fed-ex 7481	4171	1800
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
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

1st QTR MW SE 2012

Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 03-07-2012	COC No: 030712
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			
PO#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8260 - TCE	8330 - RDX	Sample Specific Notes:
Bmw-080-012012	3-7-12	0940	GB	w	3	x		
Dmw-080-012012	3-7-12	0950	GB	w	3	x		
Amw-081-012012	3-7-12	1005	GB	w	3	x		
Bmw-081-012012	3-7-12	1015	GB	w	3	x		
Dmw-081-012012	3-7-12	1020	GB	w	3	x		
Amw-061-012012	3-7-12	1050	GB	w	5	x	x	
Bmw-061-012012	3-7-12	1100	GB	w	5	x	x	
Dmw-061-012012	3-7-12	1105	GB	w	5	x	x	
Dmw-061-012012 MS	3-7-12	1105	GB	w	1		X	
Dmw-061-012012 MSD	3-7-12	1105	GB	w	2		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:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	ECC	3-7-12 1600	Fed-ex 7981	4171 8200	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[signature]	TABUR	3/8/12 1040
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Appendix B
Field Forms

CONTENTS

PAGE	REFERENCE	DATE

Location Mead FNOP Date 02-23-12

Project / Client First Quarter monitoring well Sampling 2012 - Daryl ICR

0800 - main treatment plant - safety meeting - load sampling supplies
0945 - set sampling bags at MW-38A MW-38D 1023 - set sampling bags at MW-46A MW-46B MW-46C
1035 - set bags at MW-113A - MW-113B - MW-113D
1041 - set sampling bags at - MW-113A MW-113B MW-113D
1058 - set sampling bags at MW-112A MW-112B
1120 - pull pipe out of excavation pit at EW-1 - Go back to sampling
1200 - set sampling bags at - MW-115A MW-115B MW-115D
1230 - set sampling bags at MW-158A MW-158B MW-158D
1300 - set sampling bags at MW-88A MW-88B MW-88D
1325 - set sampling bags at MW-86A MW-86B MW-86D
1355 - Finish for the day

Daryl Bell

Location Mead NE FNOP Date 02-24-12

Project / Client First Quarter Monitoring Well Sampling 2012 - Daryl ICR

0745 - Safety meeting load Sampling supplies & prepare set sample bags
0810 - Set sampling bags at MW-100A MW-100B MW-100D
0830 - Set sampling bags at MW-85A MW-85B MW-85D
0850 Set samplings bags at MW-98A MW-98B MW-98D
0910 - Set Sampling bags at MW-84A MW-84B MW-84D
0930 - Set sampling bags at MW-83A MW-83B MW-83D
1000 - Set sampling bags at MW-97A MW-97B MW-97D
1025 - Go to main treatment plant to get sampling supplies
1050 - Set sampling bags at MW-96A MW-96B MW-96D
1145 - Set sampling bags at MW-20A MW-20B MW-20C
1140 - Go back to main treatment plant
1145 - Set sample bags at MW-114A MW-114B MW-114D MW-116A MW-116B MW-116D

Location Mead Ne. FNOP Date 02-24-12

Project / Client First Qtr Monitoring Well Sampling 2012 - Daryl ICR

1210 - Set sampling bags at MW-82A MW-82B MW-82D
1235 - Set sampling bags at MW-81A MW-81B MW-81D
1255 - Set sampling bags at MW-101A MW-101B MW-101D
1315 - Set Sampling bags at MW-61A MW-61B MW-61D
1345 - Set sampling bags at MW-95A MW-95B MW-95D
1420 - Return to main treatment plant unload sampling supplies
1500 - Finish for the day

Daryl R

Location Mead We. FNOP Date 02-27-12

Project / Client 1st Qtr monitoring well sampling 2012 Darrl ICR

0730 - Safety meeting load sampling supplies & prepare to set sample bags
0810 - set sampling bags at MW-80 A MW-80 B MW-80 D
0840 - set sampling bags at MW-35 A MW-35 B MW-35 D
0905 - set sampling bags at MW-117 A MW-117 B MW-117 D
0930 - set sampling bags at MW-110 A MW-110 B MW-110 D
0950 - set sampling bags at MW-59 A MW-59 B
1010 - set sampling bags at MW-106 A MW-106 B MW-106 D
1035 - set sampling bags at MW-107 A MW-107 B MW-107 D
1055 - set sampling bags at MW-108 A MW-108 B MW-108 D
1125 - set sampling bags at MW-118 A MW-118 B
1145 - set sampling bags at MW-147 A MW-147 B MW-147 D
1235 - set sampling bags at MW-41 A MW-41 B MW-41 D

Location Mead We FNOP Date 02-27-12

Project / Client 1st Qtr monitoring well sampling 2012 Darrl ICR

1255 - Set sampling bags at MW-102 A MW-102 B MW-102 D
1312 - Set sampling bags at MW-103 A MW-103 B MW-103 D
1400 - Set sampling bags at MW-112 A
1412 - Set sampling bags at MW-90 A MW-90 B MW-90 D
1420 - Set sampling bags at MW-91 A MW-91 B MW-91 D
1440 - Set sampling bags at MW-93 A MW-93 B
1500 - Finish for the day

Darrl B

Location Mead NE. FMOP Date 11-10-11

Project / Client USACE

4th QTR SE 2011

Toby D. Hu (ECC)

Sunny 45°F 10-15 wind.

1220 Ready to Sample

SNPR-001 wL = 46.83 FT

1240 Sampling SNPR-002 wL = 45.73

1250 Sampling INPR-002 wL = 45.69

1310 Sampling mw-31A wL = 47.73

1325 Sampling mw-31B wL = 47.89

31B has a QC Sample.

1400 Setting up and Sampling

mw-52A wL = 36.81

1410 Sampling mw-52B wL = 37.39

1420 Setting up at mw-53

cluster.

1430 Sampling mw-53A wL = 26.11

1440 Sampling mw-53B wL = 24.59

1550 At plant Packing Samples

Samples were taken from

Hydra sleeves out of 2" wells.

All went well, and were

shipped out using Fed-Ex.

Location Mead FMOP Date 3-1-2012

Project / Client 1st QTR SE (mw)

Toby D. K (ECC)

Sunny 22°F 5-10 wind.

0700 on site

0715 Printing forms.

0730 Safety meeting.

0745 Packing supplies.

0830 Sampling:

Emw-0142-012012 + QC wL-46.19

0840 Amw-0142-012012 wL-46.45

0815 Amw-090-012012 wL-45.05

0925 Bmw-090-012012 wL-45.20

0935 Dmw-090-012012 wL-45.55

These are all 2" wells

Sampled with Hydrasleeves

3 vol's / 8260 2 RDX / 8330

0945 Amw-091-012012 wL-46.09

0955 Bmw-091-012012 wL-46.05

1005 Dmw-091-012012 wL-46.44

All 2" wells / Sampled with

Hydrasleeves. 3 vol's / 8260 per well

1020 Amw-093-012012 wL-19.67

1030 Bmw-093-012012 wL-19.36

Both 2" wells / Sampled w/ Hydrasleeve

3 vol's / 8260B per well

Location Mead Field Date 3-1-12

Project / Client USACE

1st QTR SW (MW) Davis Ice

1055 AMW-0100-012012 WL-54.94
1105 BMW-0100-012012+QC WL-54.88
1145 DMW-0100-012012 WL-54.98
all wells our 2" Dia.
Sampled with hydrasleeve
3-VOC/8260 2-RDX/8330

1220 AMW-085-012012 — WL-44.21
1255 BMW-085-012012 — WL-43.95
1310 DMW-085-012012 — WL-44.19
all wells our 2" dia
3-VOC/8260 2-RDX/8330

1330 AMW-098-012012 +QC - WL-49.58
1350 BMW-098-012012 — WL-49.57
1500 DMW-098-012012 — WL-49.68
all wells our 2" dia.
3-VOC/8260 2-RDX/8330

1525 AMW-097-012012 - WL- 48.24
1540 BMW-097-012012 - WL- 48.32
1600 DMW-097-012012 - WL 48.39
all wells our 2" dia
3-VOC/8260 2-RDX/8330

1615 Finish for the day

Dan B

Location Date

Project / Client

Location Mead Fnol Date 3-1-12

Project / Client USACE

1st QTR SW (MW) Daryl Ice

1055 AMW-0100-012012 WL-54.94
1105 BMW-0100-012012+QC WL-54.88
1145 DMW-0100-012012 WL-54.98
all wells our 2" Dia.
Sampled with hydrasleeve
3-VOC/8260 2-RDX/8330

1220 AMW-088-012012 WL-44.21
1255 BMW-085-012012 WL-43.95
1310 DMW-085-012012 WL-44.19
all wells our 2" dia.
3-VOC/8260 2-RDX/8330

1330 AMW-098-012012 +QC WL-49.58
1350 BMW-098-012012 WL-49.57
1500 DMW-098-012012 WL-49.68
all wells our 2" dia.
3-VOC/8260 2-RDX/8330

1525 AMW-097-012012 WL-48.24
1540 BMW-097-012012 WL-48.32
1600 DMW-097-012012 WL 48.39
all wells our 2" dia
3-VOC/8260 2-RDX/8330

1615 Finish for the day

Daryl B

Location Mead Ne. FNOP Date 3-2-12

Project / Client USACE

1st Qtr. MW sampling 2012 (Daryl)

0815 - Safety meeting load sampling supplies
0835 AMW-084-012012 WL-50.13
0855 BMW-084012012 WL-49.96
0910 DMW-084012012 WL-50.33
all wells our 2" dia
3-VOC/8260 2-RDX/8330

0945 AMW-083-012012 WL-55.26
0955 BMW-083-012012 WL-55.11
1010 DMW-083-012012 WL-55.23
all wells our 2" dia
3-VOC/8260 2RDX/8330

1040 AMW-096-012012 WL-51.16
1050 BMW-096-012012 WL 51.14
1105 DMW-096-012012 WL 51.15
all wells our 2" dia
3-VOC/8260 2-RDX/8330

1140 AMW-082-012012 WL-49.01
1150 BMW-082-012012 WL-48.94
1205 DMW-082-012012 WL-49.59
all wells our 2" dia
3-VOC/8260 2-RDX/8330

1240 AMW-020-012012 WL-58.78
1255 BMW-020012012 WL 58.65

Location Mead NE FNOP Date 3-2-12

Project / Client USACE

1st Qtr. MW Sampling 2012 (Daryl)

1310 CMW-020-012012 - WL 56.94

Well AMW-020 2" dia.

Wells BMW-020 CMW-020

our 3" dia. well

3-VOC/8260 2 RDX 8330

1335 Finish for the day

Daryl B

The manufacturers of "Rite in the Rain" all-weather writing products are grateful to the numerous environmental experts who have contributed to the development of this book. Should you have any additions, improvements or corrections for future publications of this field book or have suggestions for other environmental field book formats, we welcome your input.

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www.RiteintheRain.com / sales@riteintherain.com

Common Field Data Error Codes

Error codes are used to explain common mistakes and are written above or close to the mistake. Commonly used error codes include:

RE	Recording Error
CE	Calculation Error
TE	Transcription Error
SE	Spelling Error
CL	Changed for Clarity
DC	Original Sample Description Changed After Further Evaluation
WO	Write Over
NI	Not Initialed and Dated at Time of Entry
OB	Not Recorded at the Time of Initial Observation

Note: Error code should be circled, dated, and initialed when recorded.

Hazard Classifications

Class 1 Explosives
Class 2 Gas
Class 3 Flammable Liquid
Class 4 Flammable Solids (Potential spontaneous combustion, or emission of flammable gases when in contact with water)
Class 5 Oxidizing Substances and Organic Peroxides
Class 6 Toxic (poisonous) and infectious substances
Class 7 Radioactive material
Class 8 Corrosives
Class 9 Miscellaneous dangerous goods

Container type abbreviations (for sampling guidelines)

BR - Boston Round • ABR - Amber Boston Round • AJ - Amber Jug • AWM - Amber Wide Mouth • Poly - Polyethylene Bottles • BOD - Bottle • CWM - Clear Wide Mouth

Location Mead. Ne FNOP Date 03-05-12

Project / Client USACE

1st Qtr MW Sampling Darryl

0700 Safety meeting load Sampling Supplies - Hydrasleeve Sampling

0800 AMW-035-012012 Ex VOC WL-54.18

0825 BMW-035-012012 Ex VOC WL-53.98

0825 BMW-235-012012 QC

0840 DMW-035-012012 Ex VOC WL-53.99

all wells our 2" dia

0905 AMW-0112-012012 Ex VOC WL-0.61

0920 BMW-0112-012012 Ex VOC WL-0.50

all wells our 2" dia

0940 AMW-0113-012012 Ex VOC WL-0.51

0950 BMW-0113-012012 Ex VOC WL-0.49

1000 DMW-0113-012012 Ex VOC WL-0.60

all wells our 2" dia.

1025 AMW-046-012012 Ex VOC WL-4.23

1025 AMW-246-012012 Ex VOC QC

1040 BMW-046-012012 Ex VOC WL-4.32

1040 BMW-046-012012 MS Ex VOC

1040 BMW-046-012012 MSD Ex VOC

1105 DMW-046-012012 Ex VOC WL-4.15

all wells our 2" dia.

1155 AMW-0115-012012 Ex VOC WL-6.18

1205 BMW-0115-012012 Ex VOC WL-6.29

1210 DMW-0115-012012 Ex VOC WL-6.17

Location Mead Ne. FNOP Date 03-05-12

Project / Client USACE

1st Qtr MW Sampling

1235 AMW-038-012012 Ex VOC WL-6.42

1235 AMW-238-012012 Ex VOC QC

1250 DMW-038-012012 Ex VOC WL-5.96

1250 DMW-038-012012 Ex VOC MS

1250 DMW-038-012012 Ex VOC MSD

all wells our 2" dia.

1325 AMW-088-012012 Ex VOC WL-6.15

1335 BMW-088-012012 Ex VOC WL-6.24

1345 DMW-088-012012 Ex VOC WL-6.33

all wells our 2" dia.

1430 AMW-086-0121012 Ex VOC WL-32.13

1440 BMW-086-0121012 Ex VOC WL-32.51

1440 BMW-286-0121012 Ex VOC QC

1450 DMW-086-012012 Ex VOC WL-31.85

all wells our 2" dia.

1520 AMW-0114-012012 Ex VOC WL-3.65

1525 BMW-0114-012012 Ex VOC WL-3.78

1535 DMW-0114-012012 Ex VOC WL-3.49

all wells our 2" dia.

1605 Finish for the day

Darryl

Location Mead Ne. Date 3-6-12

Project / Client USACE

1st Qtr MW sampling (Darrel)

0715 Safety meeting load supplies
0720 TRB-2116-012012 2-VOC
0750 AMW-0116-012012 - EX-2 VOC-3 - WL 4.75
0800 BMW-0116-012012 EX-2 VOC-3 - WL 4.72
0805 DMW-0116-012012 EX-2 VOC-3 - WL 4.73
all wells get 2" dia (Hydrasleeve)
0830 AMW-0158-012012 - WL-1.53
2-EX-3-VOC 2" dia. well
0850 BMW--0158-012012 - WL-1.22
2-EX / 3-VOC 2" dia well
0850 BMW-0158-012012 MS 3-VOC
0850 BMW-0158-012012 MSD 3-VOC
0905 DMW-0158-012012 - WL-1.51
2-EX / 3-VOC 2" dia well
0830 AMW-2158-012012 - 3-VOC (Hydrasleeve)
0935 AMW-0117-012012 - WL- [redacted] 38.38
2-EX / 3-VOC 2" dia well
0945 BMW-0117-012012 - WL-38.21
2-EX / 3-VOC 2" dia well
0950 DMW-0117-012012 - WL-38.56
2-EX / 3-VOC 2" dia well
all hydrasleeve sampling
1015 AMW-0118-012012 WL-50.69
2-EX 3-VOC 2" dia well

Location Mead Ne. Date 3-6-12

Project / Client USACE

1st Qtr MW sampling 2012 (Darrel)

1025 BMW-0118-012012 - WL-50.72
[redacted]
2-EX 3-VOC 2" dia
1025 BMW-0118-012012 MS
2-EX 3-VOC
1025 BMW-0118-012012 MSD
2-EX 3-VOC
all hydrasleeve sampling
1110 AMW-0159-012012 - WL-47.82
EX VOC - 2" well
1125 BMW-0159-012012 - WL-47.99
EX VOC - 2" well
all hydrasleeve sampling
1150 AMW-0106-012012 WL-17.30
EX VOC 2" dia well
1150 AMW-2106-012012
EX VOC
1205 BMW-0106-012012 - WL-17.14
EX VOC 2" dia well
1205 BMW-0106-012012 MS
EX VOC
1205 BMW-0106-012012 MSD
EX VOC
Hydrasleeve sampling

Location Mead We FNOP Date 3-6-12

Project / Client USACE

1st Qtr MW Sampling 2012 (Darrl)

[redacted]

1220 DMW-0106-012012-WL-17.67
Ex VOC

Hydrasleeve Sampling

1250 AMW-0107-012012-WL-38.83
[redacted] Ex VOC

1250 AMW-2107-012012
Ex VOC 2" dia well

1300 BMW-0107-012012-WL 39.79
Ex VOC 2" dia well

1300 BMW-0107-012012 MS
Ex VOC

1300 BMW-0107-012012 MSD
Ex VOC

1315 DMW-0107-012012-WL-39.40
Ex VOC 2" dia well

all hydrasleeve Sampling

1335 AMW-0108-012012-WL-30.87
2-Ex 3-VOC 2" dia well

1345 BMW-0108-012012-WL-30.90
2-Ex 3-VOC 2" dia well

1350 DMW-0108-012012 WL-31.01
2-Ex 3-VOC 2" dia well

all hydrasleeve Sampling

Location Mead We. FNOP Date

Project / Client USACE

1st Qtr Sampling 2012 (Darrl)

1405 AMW-0110-012012-WL-5.71
2-Ex 3-VOC 2" dia well

1415 BMW-0110-012012-WL-6.04
2-Ex 3-VOC 2" dia well

1420 DMW-0110-012012-WL-5.93
2-Ex 3-VOC 2" dia well

all hydrasleeve Sampling

1505 AMW-0102-012012-WL-33.84
2-Ex 3-VOC 2" dia well

1515 BMW-0102-012012 WL-34.80
2-Ex 3-VOC 2" dia well

1515 BMW-2102-012012
2-Ex 3-VOC

1530 DMW-0102-012012 WL-33.82
2-Ex 3-VOC 2" dia well

all hydrasleeve Sampling

1550 AMW-0103-012012 WL-40.75
2-Ex 3-VOC 2" dia well

1600 BMW-0103-012012 WL-40.50
2-Ex 3-VOC 2" dia well

1605 DMW-0103-012012 WL-40.41
2-Ex 3-VOC 2" dia well

all hydrasleeve Sampling

Location Mead Ne NFOP Date 3-6-12

Project / Client USACE

1st Qtr. mw sampling 2012 (Darrl)

1620 Amw-041-012012 WL-38.13
3-VOC 2" dia well

1625 Bmw-041-012012 WL-38.17
3-VOC 2" dia well

1630 Dmw-041-012012 WL-38.12
3-VOC 2" dia well

all hydrasleeve sampling

Location Mead Ne ENOP Date 3-7-12

Project / Client USACE

1st Qtr mw sampling 2012 (Darrl)

0700 - Safety meeting load up sampling supplies

0730 Amw-0147-012012 WL-49.64
2-Ex 3-VOC 2" dia well

0735 Bmw-0147-012012 WL-49.49
2-Ex 3-VOC 2" dia well

0745 Dmw-0147-012012 WL-49.23
2-Ex 3-VOC 2" dia well

all hydrasleeve sampling

0805 Amw-095-012012 WL-53.50 2-Ex 3-VOC

0810 Bmw-095-012012 WL-53.16 2-Ex 3-VOC

0820 Dmw-095-012012 WL-54.66 2-Ex 3-VOC

all hydrasleeve sampling 2" dia wells

0855 Amw-0101-012012 WL-7.78
2-Ex 3-VOC 2" dia well

0900 Bmw-0101-012012 WL-7.89
2-Ex 3-VOC 2" dia well

0900 Bmw-2101-012012
2-Ex 3-VOC

0910 Dmw-0101-012012 WL-7.77
2-Ex 3-VOC 2" dia well

all hydrasleeve sampling

0935 Amw-080-012012 WL-7.47
3-VOC 2" dia well

Location Moab FNOP Date 3-7-12

Project / Client USACE

1st Qtr mw Sampling 2012

0935 Amw-080-012012

3- VOC 2" dia well

0940 Bmw-080-012012 WL-7.75

VOC 2" dia well

0950 Dmw-080-012012 WL-7.39

VOC 2" dia well

all hydrasleeve sampling

1005 Amw-081-012012 WL-8.19

3- VOC 2" dia well

1015 Bmw-081-012012 WL-8.31

3- VOC 2" dia well

1020 Dmw-081-012012 WL-8.11

3- VOC 2" dia well

all hydrasleeve sampling

1050 Amw-061-012012 WL-6.29

2-Ex 3- VOC 2" dia well

1100 Bmw-061-012012 WL-6.36

2-Ex 3- VOC 2" dia well

1105 Dmw-061-012012 WL-6.30

2-Ex 3- VOC 2" dia well

• T MS, MSD

DB

Location Date

Project / Client

1/

Location Mead Fact Date 3-5-12

Project / Client USACE / 2012 1st QTR SWS

Tony V. Hinz (ECC)
Vince Stallsmeier (ECC)

0700 On site
0715 Safety meeting with ICR.
0745 ICR off to sample MW's
0810 Preparing for SWS.

0845 SCW-004
SCW-004-012012
3 VOC's / 8260B 2 EXT/8330

0900 SCW-05
SCW-005-012012
3 VOC's / 8260B 2 EXT/8330

0945 SCW-06
SCW-006-012012 + QC
6 VOC's / 8260B 4 RDX / 8330

0940 SW-012
SW-012-012012
3 VOC's / 8260 2 RDX / 8330

Location Date 3-5-12

Project / Client 1st QTR SWS
Continued

0955 SW-13
SW-013-012012
2 RDX / 8330 3 VOC's / 8260

1010 SW-11
SW-011-012012
2 RDX / 8330 3 VOC's / 8260B

1025 SW-09
SW-009-012012
2 RDX / 8330 3 VOC's / 8260B

1045 SW-06
SW-006-012012
2 RDX / 8330 3 VOC's / 8260B

1105 SW-08
SW-008-012012
2 RDX / 8330 3 VOC's / 8260B

1120 SW-10
SW-010-012012
2 RDX / 8330 3 VOC's / 8260B

Location _____ Date 3-5-12

Project / Client 1st QTR SWS

Continued

1135 ART

OART - 012012

3 vol / 8260B 2 RDX / 8330

1150 SW - 05

SW - 005 - 012012

+ QC 2 RDX / 8330 3 vol 8260

+ MS 2 RDX / 8330 3 vol 8260

+ MSD 2 RDX / 8330 3 vol 8260

1230 Back at Plant

1300 Packing SWS.

1335 Done packing SWS.

1400 Copying Paper work.

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 E

Quality Control Summary Report First Quarter 2012 Water Supply Well Sampling Event, Former Nebraska Ordnance Plant (on CD)

FINAL
QUALITY CONTROL SUMMARY REPORT
FIRST QUARTER 2012

WATER SUPPLY WELL PROGRAM SAMPLING EVENT

FORMER NEBRASKA ORDNANCE PLANT
MEAD, NEBRASKA

Prepared for

United States Army Corps of Engineers
Kansas City District

Contract W912DQ-08-D-0001
Task Order 0002

May 2012

1.0 INTRODUCTION

Water supply well sampling was conducted between March 21 and March 28, 2012 at the former Nebraska Ordnance Plant, Mead, Nebraska. All sampling activities were performed in accordance with the *Site-Wide Work Plan, Support Services, Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2009). This report presents a summary of the chemical data quality review for the First Quarter 2012 Water Supply Well sampling event.

Samples were analyzed for one or all of the following constituents:

- Selected volatile organic compounds (VOCs) by U.S. Environmental Protection Agency Drinking Water Method 524.2
- Selected explosives by U.S. Environmental Protection Agency Method 8330
- Total suspended solids (TSS) by Method SM2540D.

The explosives and TSS analyses were performed by TestAmerica of South Burlington, Vermont and the VOC analyses were performed by TestAmerica of Savannah, Georgia. A complete list of the water supply wells planned for sample collection, the corresponding sample identification (ID) numbers, and the requested analyses for each sampled well are presented in Table 1-1. Associated Chain of Custody Records are included as Appendix A. Appendix B presents an explanation of data validation qualifiers and drinking water standards and Appendix C contains a compact disk with all analytical data, including summary forms and raw data, for the First Quarter 2012 Water Supply Well sampling event.

2.0 SAMPLING ACTIVITIES

Fifty-seven locations were sampled for chemical analyses during the First Quarter 2012 Water Supply Well sampling event. Six field duplicate samples, three matrix spike (MS) / matrix spike duplicate (MSD) sample pairs, and three trip blanks were also collected.

The sampling locations water supply well (WSW)-29A, WSW-97, and WSW-116 were listed on the sampling schedule but were not collected as planned. The water was turned off at the WSW-29A and WSW-97 sampling locations and WSW-116 sampling location was not accessible to the field crew.

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:

- A cross-reference between laboratory sample IDs and field sample IDs;
- Quality control (QC) split sample information;
- MS/MSD sample information;
- Dates of sample collection and sample receipt by the laboratory;
- Sample delivery group (SDG) 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 USACE 2007. Both project specified limits and laboratory control limits were used to assess data quality. Data quality evaluation results and results qualifications are presented in Table 3-1 according to field sample ID. QC outliers and associated limits are presented in Table 3-2.

3.1 Sample Receipt at the Laboratory

All sample transfer requirements were met for samples received at the laboratory. No data required qualification based on sample condition. The samples coolers were received within the recommended temperature range of 4 ± 2 °C. Sample preservation was not indicated on the Chain of Custody. The VOC pH logs indicated that the samples were properly preserved to a pH less than 2.

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, 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, 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 SDG 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, 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. The field duplicate pairs collected this quarter are listed below:

- 056-012012 / 256-012012 (VOCs and Explosives);
- 087-012012 / 287-012012 (VOCs and Explosives);
- 096-012012 / 296-012012 (VOCs and Explosives);
- 0104-012012 / 2104-012012 (VOCs and Explosives);
- 0106-012012 / 2106-012012 (VOCs and Explosives); and
- 0113-012012 / 2113-012012 (VOCs and Explosives).

All field duplicate pairs met the precision criteria.

The field duplicate data were acceptable. Field duplicate results are also considered acceptable when one result is not detected and the other result is detected below the limit of quantitation.

3.10 Dilutions and Reanalyses

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.

One water sample required a secondary dilution analysis due to concentrations of trichloroethene (TCE) above the calibration range. 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. Therefore, the secondary diluted concentration should be used for TCE and the initial analysis should be used for all other sample results.

3.11 Other QC 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 explosives detections and column RPDs.

Five detected result with intercolumn RPD exceeding 40% were qualified as estimated (J). Refer to Table 3-1 for data quality evaluation results and qualified samples. Table 3-2 presents the explosive QC outlier and associated sample for all assigned qualifiers. This qualifier was not used to determine analytical completeness or project completeness (Section 4.0).

3.12 Laboratory Qualifiers

Analytes detected below the limit of quantitation, but above the detection limit 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 First Quarter 2012 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. Three sample locations scheduled for VOC and explosive analysis sampling this quarter could not be sampled (WSW-29A, WSW-97, and WSW-116). As a result, the field completeness for the VOCs and explosives was determined to be 95.5%. TSS was not affected and the field completeness for TSS was 100%. The overall field completeness percentage is 95.6%, 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 appropriate corrective actions were taken by the laboratory. The acceptable data completeness percentages for VOCs, explosives, and TSS were 100%. These all 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 the VOCs, explosives, and TSS 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. Five data points were J-coded due to high column RPD. Qualified data points are presented in Table 3-1. Overall quality data completeness is 100%. Overall acceptable data completeness is 100% and over all field completeness is 95.6%, both of which meet project goals. The overall project completeness at 95.6% meets the project goal of 90%.

6.0 REFERENCES

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

ECC, 2009. *Site-Wide Work Plan, Support Services, Former Nebraska Ordnance Plant, Mead, Nebraska*. August.

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
J	estimated
Lab	laboratory
MS/MSD	matrix spike/matrix spike duplicate
QC	Quality Control
RPD	relative percent difference
SDG	sample delivery group
TSS	total suspended solids
UCL	upper control limit
UNFL	University of Nebraska - Lincoln Field Laboratory
VOC	volatile organic compound
WSW	water supply well

Table 1-1
Sample Locations, Sample IDs, and Analyses
First Quarter 2012 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
UNFL-09A	UNFL-09A-012012	Explosives, Volatiles
UNFL-10A	UNFL-10A-012012	Explosives, Volatiles
UNFL-12	UNFL-12-012012	Explosives, Volatiles
UNFL-23	UNFL-023-012012	Explosives, Volatiles
UNFL-27	UNFL-27-012012	Explosives, Volatiles
WSW-100	0100-012012	Explosives, Volatiles
WSW-103	0103-012012	Explosives, Volatiles
WSW-104	0104-012012	Explosives, Volatiles
WSW-105	0105-012012	Explosives, Volatiles
WSW-106	0106-012012	Explosives, Volatiles
WSW-109	0109-012012	Explosives, Volatiles
WSW-110	0110-012012	Explosives, Volatiles
WSW-112	0112-012012	Explosives, Volatiles
WSW-113	0113-012012	Explosives, Volatiles
WSW-114	0114-012012	Explosives, Volatiles
WSW-115	0115-012012	Explosives, Volatiles
WSW-116[1]	0116-012012	Explosives, Volatiles
WSW-117	0117-012012	Explosives, Volatiles
WSW-29	029-012012	Explosives, Volatiles
WSW-29A[1]	029A-012012	Explosives, Volatiles
WSW-50A	050A-012012	Explosives, Volatiles
WSW-50B	050B-012012	Explosives, Volatiles
WSW-51	051-012012	Explosives, Volatiles
WSW-51A	051A-012012	Explosives, Volatiles
WSW-52A	052A-012012	Explosives, Volatiles
WSW-52A-B	052A-B-012012	Explosives, TSS, Volatiles
WSW-52B	052B-012012	Explosives, Volatiles
WSW-52C	052C-012012	Explosives, Volatiles
WSW-52C-B	052C-B-012012	Explosives, TSS, Volatiles
WSW-53	053-012012	Explosives, Volatiles
WSW-53-B	053-B-012012	Explosives, TSS, Volatiles
WSW-54	054-012012	Explosives, Volatiles
WSW-54-B	054-B-012012	Explosives, TSS, Volatiles
WSW-55	055-012012	Explosives, Volatiles
WSW-56	056-012012	Explosives, Volatiles
WSW-57	057-012012	Explosives, Volatiles
WSW-58	058-012012	Explosives, Volatiles
WSW-59	059-012012	Explosives, Volatiles
WSW-60	060-012012	Explosives, Volatiles
WSW-61	061-012012	Explosives, Volatiles
WSW-62	062-012012	Explosives, Volatiles
WSW-65	065-012012	Explosives, Volatiles
WSW-66	066-012012	Explosives, Volatiles
WSW-67	067-012012	Explosives, Volatiles
WSW-68	068-012012	Explosives, Volatiles
WSW-73	073-012012	Explosives, Volatiles
WSW-74	074-012012	Explosives, Volatiles
WSW-75	075-012012	Explosives, Volatiles
WSW-76	076-012012	Explosives, Volatiles

Table 1-1
Sample Locations, Sample IDs, and Analyses
First Quarter 2012 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
WSW-77	077-012012	Explosives, Volatiles
WSW-79	079-012012	Explosives, Volatiles
WSW-86	086-012012	Explosives, Volatiles
WSW-87	087-012012	Explosives, Volatiles
WSW-89	089-012012	Explosives, Volatiles
WSW-91	091-012012	Explosives, Volatiles
WSW-92	092-012012	Explosives, Volatiles
WSW-95	095-012012	Explosives, Volatiles
WSW-96	096-012012	Explosives, Volatiles
WSW-97[1]	097-012012	Explosives, Volatiles
WSW-99	099-012012	Explosives, Volatiles

Notes:

TSS	A2540D	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 'C
Volatiles	E524.2	Volatile Organic Compounds by Purge & Trap Capillary Column GC/MS
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC

Table 2-1
Sample Collection Summary
First Quarter 2012 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field ID	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	TSS	Volatiles
Field Samples									
065-012012			3/21/2012	3/23/2012	200-9989-1	9989-1	•		•
0100-012012			3/21/2012	3/23/2012	200-9989-2	9989-1	•		•
066-012012			3/21/2012	3/23/2012	200-9989-3	9989-1	•		•
067-012012			3/21/2012	3/23/2012	200-9989-4	9989-1	•		•
068-012012			3/21/2012	3/23/2012	200-9989-5	9989-1	•		•
029-012012			3/21/2012	3/23/2012	200-9989-6	9989-1	•		•
050A-012012			3/21/2012	3/23/2012	200-9989-7	9989-1	•		•
050B-012012			3/21/2012	3/23/2012	200-9989-8	9989-1	•		•
052B-012012			3/21/2012	3/23/2012	200-9989-9	9989-1	•		•
051-012012			3/21/2012	3/23/2012	200-9989-10	9989-1	•		•
051A-012012			3/21/2012	3/23/2012	200-9989-11	9989-1	•		•
055-012012			3/21/2012	3/23/2012	200-9989-12	9989-1	•		•
0113-012012	0113-012012		3/21/2012	3/23/2012	200-9989-13	9989-1	•		•
		2113-012012	3/21/2012	3/23/2012	200-9989-14	9989-1	•		•
095-012012			3/21/2012	3/23/2012	200-9989-15	9989-1	•		•
0104-012012			3/21/2012	3/23/2012	200-9989-16	9989-1	•		•
		2104-012012	3/21/2012	3/23/2012	200-9989-17	9989-1	•		•
0103-012012			3/21/2012	3/23/2012	200-9989-18	9989-1	•		•
086-012012			3/22/2012	3/23/2012	200-9989-25	9989-2	•		•
096-012012	096-012012		3/22/2012	3/23/2012	200-9989-21	9989-2	•		•
		296-012012	3/22/2012	3/23/2012	200-9989-22	9989-3	•		•
074-012012			3/22/2012	3/23/2012	200-9989-23	9989-2	•		•
073-012012			3/22/2012	3/23/2012	200-9989-24	9989-2	•		•
0106-012012			3/22/2012	3/23/2012	200-9989-26	9989-2	•		•
		2106-012012	3/22/2012	3/23/2012	200-9989-27	9989-2	•		•
0105-012012			3/22/2012	3/23/2012	200-9989-28	9989-2	•		•

Table 2-1
Sample Collection Summary
First Quarter 2012 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field ID	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	TSS	Volatiles
079-012012			3/22/2012	3/23/2012	200-9989-29	9989-2	•		•
0109-012012			3/22/2012	3/23/2012	200-9989-30	9989-2	•		•
099-012012			3/22/2012	3/23/2012	200-9989-31	9989-2	•		•
0110-012012			3/22/2012	3/23/2012	200-9989-32	9989-2	•		•
077-012012			3/22/2012	3/23/2012	200-9989-33	9989-2	•		•
076-012012			3/22/2012	3/23/2012	200-9989-34	9989-2	•		•
075-012012			3/22/2012	3/23/2012	200-9989-35	9989-2	•		•
057-012012			3/22/2012	3/23/2012	200-9989-36	9989-2	•		•
059-012012			3/22/2012	3/23/2012	200-9989-37	9989-2	•		•
056-012012			3/22/2012	3/23/2012	200-9989-38	9989-2	•		•
		256-012012	3/22/2012	3/23/2012	200-9989-39	9989-2	•		•
092-012012			3/22/2012	3/23/2012	200-9989-40	9989-2	•		•
0117-012012			3/22/2012	3/23/2012	200-9989-41	9989-3	•		•
091-012012			3/22/2012	3/23/2012	200-9989-42	9989-3	•		•
062-012012			3/22/2012	3/23/2012	200-9989-43	9989-3	•		•
061-012012			3/22/2012	3/23/2012	200-9989-44	9989-3	•		•
060-012012			3/22/2012	3/23/2012	200-9989-45	9989-3	•		•
087-012012	087-012012		3/22/2012	3/23/2012	200-9989-19	9989-2	•		•
		287-012012	3/22/2012	3/23/2012	200-9989-20	9989-2	•		•
UNFL-023-012012			3/26/2012	3/28/2012	200-10060-1	10060	•		•
UNFL-10A-012012			3/26/2012	3/28/2012	200-10060-2	10060	•		•
UNFL-27-012012			3/26/2012	3/28/2012	200-10060-3	10060	•		•
UNFL-09A-012012			3/26/2012	3/28/2012	200-10060-4	10060	•		•
UNFL-12-012012			3/26/2012	3/28/2012	200-10060-5	10060	•		•

Table 2-1
Sample Collection Summary
First Quarter 2012 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field ID	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	TSS	Volatiles
0112-012012			3/26/2012	3/28/2012	200-10060-6	10060	•		•
0114-012012			3/26/2012	3/28/2012	200-10060-7	10060	•		•
058-012012			3/26/2012	3/28/2012	200-10060-8	10060	•		•
089-012012			3/26/2012	3/28/2012	200-10060-9	10060	•		•
0115-012012			3/26/2012	3/28/2012	200-10060-10	10060	•		•
053-012012			3/26/2012	3/28/2012	200-10060-11	10060	•		•
053-B-012012			3/26/2012	3/28/2012	200-10060-12	10060	•	•	•
052A-012012			3/26/2012	3/28/2012	200-10060-13	10060	•		•
052A-B-012012			3/26/2012	3/28/2012	200-10060-14	10060	•	•	•
054-012012			3/26/2012	3/28/2012	200-10060-15	10060	•		•
054-B-012012			3/26/2012	3/28/2012	200-10060-16	10060	•	•	•
052C-012012			3/28/2012	3/29/2012	200-10083-2	10083	•		•
052C-B-012012			3/28/2012	3/29/2012	200-10083-3	10083	•	•	•
Trip Blank									
TRB-265-012012			3/21/2012	3/23/2012	200-9989-46	9989-1			•
TRB-UNFL-223-012012			3/26/2012	3/28/2012	200-10060-17	10060			•
TRB-252C-012012			3/28/2012	3/29/2012	200-10083-1	10083			•

Notes:

TSS	A2540D	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 'C
Volatiles	E524.2	Volatile Organic Compounds by Purge & Trap Capillary Column GC/MS
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC

Table 3-1
Data Quality Evaluation Results
First Quarter 2012 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	C_RPD	Comments	Final Result
0100-012012	3/21/2012	9989-1	200-9989-2	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.044	J	X	Column RPD	0.044 J
0114-012012	3/26/2012	10060	200-10060-7	Explosives	1,3,5-trinitrobenzene	µg/L	0.018	J	X	Column RPD	0.018 J
0115-012012	3/26/2012	10060	200-10060-10	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.023	J	X	Column RPD	0.023 J
050B-012012	3/21/2012	9989-1	200-9989-8	Explosives	1,3,5-trinitrobenzene	µg/L	0.037	J	X	Column RPD	0.037 J
052C-B-012012	3/28/2012	10083	200-10083-3	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.027	J	X	Column RPD	0.027 J

Reason for Qualification

C_RPD	Column RPD

Table 3-2
Explosives Quality Control Outliers
First Quarter 2012 Water Supply 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					
0100-012012	9989-1	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	44.2 RPD
0114-012012	10060	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	131 RPD
0115-012012	10060	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	68.6 RPD
050B-012012	9989-1	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	42.6 RPD
052C-B-012012	10083	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	192 RPD

Table 4-1
Field Completeness
First Quarter 2012 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned	Number of Samples Collected	Field Completeness
Explosives	66	63	95.5%
Volatiles	66	63	95.5%
Total Suspended Solids	4	4	100%
Totals =	136	130	95.6%
Goal =			95%

Notes:

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

Table 4-2
Analytical Completeness
First Quarter 2012 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)	378	378	100%	90%	378	100%	80%
Volatiles (Analyte Count - 6)	378	378	100%	90%	378	100%	80%
TSS (Analyte Count - 1)	4	4	100%	90%	378	100%	80%
Totals =	760	760	100%	95%	756	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 4-5
Project Completeness
First Quarter 2012 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field	Analytical	Project Completeness
96%	100%	95.6%
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

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hintz	Date: 3-21-12	COC No 0012
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	1 of 2 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No.
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.	8330 - Explosives	Sample Specific Notes:
065 - 012012	3-21-12	1045	G	W	2	X	
0100 - 012012	3-21-12	1115	G	W	2	X	
066 - 012012	3-21-12	1130	G	W	2	X	
067 - 012012	3-21-12	1145	G	W	2	X	
068 - 012012	3-21-12	1200	G	W	2	X	
029 - 012012	3-21-12	1320	G	W	2	X	
~~T29A - 012012~~	~~3-21-12~~	~~1325~~	~~G~~	~~W~~	~~2~~	~~X~~	
050A - 012012	3-21-12	1300	G	W	2	X	
050B - 012012	3-21-12	1315	G	W	2	X	
052B - 012012	3-21-12	1330	G	W	2	X	
051 - 012012	3-21-12	1345	G	W	2	X	
051A - 012012	3-21-12	1400	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= HZSO4; 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 D. Hintz	ECC	3-22-12 1730	Fed-Ex 7972	UPS	3-23-12 1245
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
			[illegible]	TASUR	3/23/12 1035
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

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date:	COC No: 032112
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	2 of 2 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No.
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.	8330 - Explosives	Sample Specific Notes
095-012012	3-21-12	1410	G	W	2	X	
0113-012012	3-21-12	1425	G	W	2	X	
2113-012012	3-21-12	1425	G	W	2	X	
0113-012012 MS	3-21-12	1425	G	W	2	X	
0113-012012 MSD	3-21-12	1425	G	W	2	X	
095-012012	3-21-12	1445	G	W	2	X	
0164-012012	3-21-12	1500	G	W	2	X	
2164-012012	3-21-12	1500	G	W	2	X	
0163-012012	3-21-12	1510	G	W	2	X	
087-012012	3-21-12	1540	G	W	2	X	
287-012012	3-21-12	1540	G	W	2	X	
087-012012 MS	3-21-12	1540	G	W	2	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:

1830

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby B	ECC	3-22-12	Ed-Ay 7982	CHI 9415	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[illegible]	TAEUR	3/23/12 1035
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

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-22-12	COC No: 032112
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	3 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No.
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.	8330 - Explosives	Sample Specific Notes:
2	087-012012 MS	3-22-12	1540	G	W	2	X	
	086-012012	3-22-12	0910	G	W	2	X	
	086-012012	3-22-12	0910	G	W	2	X	
3	086-012012 MS	3-22-12	0910	G	W	2	X	
	086-012012 MSD	3-22-12	0910	G	W	2	X	
	074-012012	3-22-12	0850	G	W	2	X	
	073-012012	3-22-12	1000	G	W	2	X	
	~~082-012012~~	~~3-22-12~~	~~1012~~	~~G~~	~~W~~	~~2~~	~~X~~	
	086-012012	3-22-12	1012	G	W	2	X	
	0105-012012	3-22-12	1055	G	W	2	X	
	2106-012012	3-22-12	1055	G	W	2	X	
	0105-012012	3-22-12	1050	G	W	2	X	

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

Possible Hazard Identification
[X] *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* [X] *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Toby Hinz	ECC	3-22-12	[illegible] 7972	OHM SVLS	
Relinquished by:	Company	Date/Time:	Received by:	Company:	Date/Time:
			[illegible]	TABUR	3/23/12 1055
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

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-22-12	COC No: 022112
ECC	Tel/Fax: (720) 232 6425	Lab Contact: Jim Madison	Carrier: FedEx	4 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No.
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.	8330 - Explosives	Sample Specific Notes:
079-012012	3-22-12	1110	G	W	2	X	
014-012012	3-22-12	1125	G	W	2	X	
099-012012	3-22-12	1135	G	W	2	X	
010-012012	3-22-12	1152	G	W	2	X	
077-012012	3-22-12	1200	G	W	2	X	
076-012012	3-22-12	1210	G	W	2	X	
075-012012	3-22-12	1225	G	W	2	X	
057-012012	3-22-12	1315	G	W	2	X	
058-012012	3-22-12	1330	G	W	2	X	
056-012012	3-22-12	1345	G	W	2	X	
255-012012	3-22-12	1345	G	W	2	X	
092-012012	3-22-12	1400	G	W	2	X	

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

Possible Hazard Identification
[x] *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* [X] *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time
Toby Hinz	ECC	3-22-12 1230	Fed-Ex 7982	OHI 9915	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[illegible]	TAB VT	3/23/12 1035
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

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-22-12	COC No: 02112
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	5 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No.
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.	8330 - Explosives	Sample Specific Notes:
017 - 012012	3-22-12	1445	G	W	2	X	
091 - 012012	3-22-12	1425	G	W	2	X	
062 - 012012	3-22-12	1440	G	W	2	X	
061 - 012012	3-22-12	1450	G	W	2	X	
060 - 012012	3-22-12	1500	G	W	2	X	

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

Possible Hazard Identification
[X] *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* [X] *Disposal By Lab* [ ] *Archive For* ___ *Months*

Special Instructions/QC Requirements & Comments:

1830

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
[signature]	ECC	3-22-12	[signature] 1932	ECC 1945	
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
			[signature]	TABUR	3/23/12 1075
Relinquished by	Company	Date/Time	Received by	Company	Date/Time

TestAmerica Savannah
5102 LaRoche Ave.
Savannah, GA 31404
Phone (912) 354 7858

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-21-12	COC No: 032112
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Abbie Yant	Carrier: FedEx	2 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No.
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.	524.2 - VOCs	Sample Specific Notes:
065 - 012012	3-21-12	1055	G	W	3	X	
TKB - 065 - 012012	3-21-12	1055	G	W	2	X	
066 - 012012	3-21-12	1115	G	W	3	X	
066 - 012012	3-21-12	1130	G	W	3	X	
067 - 012012	3-21-12	1145	G	W	3	X	
068 - 012012	3-21-12	1200	G	W	3	X	
029 - 012012	3-21-12	1230	G	W	3	X	
~~049A - 012012~~	~~3-21-12~~	~~1245~~	~~G~~	~~W~~	~~3~~	~~X~~	
050A - 012012	3-21-12	1300	G	W	3	X	
050B - 012012	3-21-12	1315	G	W	3	X	
052B - 012012	3-21-12	1330	G	W	3	X	
051 - 012012	3-21-12	1345	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:

4.0°C 680-77980

1330

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	3-22-12	FedEx 7862	0115 6201	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TASAV	03/23/12 0927

TestAmerica Savannah
5102 LaRoche Ave.
Savannah, GA 31404

Phone (912) 354 7858

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-21-12	COC No: 052172
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Abbie Yant	Carrier: FedEx	2 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No.
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.	524.2 - VOCs	Sample Specific Notes:
051R-012012	3-21-12	1400	G	w	3	X	
055-012012	3-21-12	1410	G	w	3	X	
0113-012012	3-21-12	1425	G	w	3	X	
2113-012012	3-21-12	1425	G	w	3	X	
0113-012012 MS	3-21-12	1425	G	w	3	X	
0113-012012 MSD	3-21-12	1425	G	w	3	X	
095-012012	3-21-12	1445	G	w	3	X	
0104-012012	3-21-12	1500	G	w	3	X	
2104-012012	3-21-12	1500	G	w	3	X	
0103-012012	3-21-12	1510	G	w	3	X	
087-012012	3-21-12	1540	G	w	3	X	
287-012012	3-21-12	1540	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:

4.0°C 682-77980

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[illegible]	ECC	3-22-12 1030	[illegible] 7922	OLS 62	01
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time: 0927
Relinquished by:	Company:	Date/Time:	Received by: [illegible]	Company: TASAV	Date/Time: 03/23/12 ~~0927~~ 03/23/12

TestAmerica Savannah
5102 LaRoche Ave.
Savannah, GA 31404
Phone (912) 354 7858

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-22-12	COC No: 052112
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Abbie Yant	Carrier: FedEx	4 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No.
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.	524.2 - VOCs	Sample Specific Notes
0105 - 012012	3-22-12	1050	G	W	3	X	
079 - 012012	3-22-12	1110	G	W	3	X	
0109 - 012012	3-22-12	1125	G	W	3	X	
099 - 012012	3-22-12	1135	G	W	3	X	
0110 - 012012	3-22-12	1150	G	W	3	X	
077 - 012012	3-22-12	1200	G	W	3	X	
076 - 012012	3-22-12	1210	G	W	3	X	
075 - 012012	3-22-12	1225	G	W	3	X	
057 - 012012	3-22-12	1315	G	W	3	X	
059 - 012012	3-22-12	1330	G	W	3	X	
056 - 012012	3-22-12	1345	G	W	3	X	
256 - 012012	3-22-12	1345	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:

4.0°C 680 - 77980

Relinquished by:	Company:	Date/Time:	Received by	Company:	Date/Time:
[signature]	ECC	3-22-12 1830	[signature] 7982	0115 6201	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TASN	Date/Time: 03/23/12 0927

TestAmerica Savannah
5102 LaRoche Ave.
Savannah, GA 31404

Phone (912) 354 7858

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-21-12	COC No: 052112
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Abbie Yant	Carrier: FedEx	2 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No
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.	5242 - VOCs	Sample Specific Notes:
051R- 012012	3-21-12	1400	G	W	3	X	
055 - 012012	3-21-12	1410	G	W	3	X	
0113- 012012	3-21-12	1425	G	W	3	X	
2113- 012012	3-21-12	1425	G	W	3	X	
0113- 012012 MS	3-21-12	1425	G	W	3	X	
0113- 012012 MSD	3-21-12	1425	G	W	3	X	
095- 012012	3-21-12	1445	G	W	3	X	
0104- 012012	3-21-12	1500	G	W	3	X	
2104- 012012	3-21-12	1500	G	W	3	X	
0103- 012012	3-21-12	1510	G	W	3	X	
027- 012012	3-21-12	1540	G	W	3	X	
227- 012012	3-21-12	1540	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:

4.0°C 682-77980

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	3-22-12 1030	Fedex 7982	OLS 62	01
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TASAV	03/23/12 0927 ~~0922~~ 03/23/12

TestAmerica Savannah
5102 LaRoche Ave.
Savannah, GA 31404
Phone (912) 354 7858

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-21-12	COC No: 052112
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Abbie Yant	Carrier: FedEx	3 of 4 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No.
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.	524.2 - VOCs	Sample Specific Notes:
087-012012 MS	3-21-12	1540	G	W	3	X	
087-012012 MSD	3-21-12	1540	G	W	3	X	
096-012012	3-22-12	0930	G	W	3	X	
096-012012	3-22-12	0930	G	W	3	X	
096-012012 MS	3-22-12	0930	G	W	3	X	
096-012012 MSD	3-22-12	0930	G	W	3	X	
074-012012	3-22-12	0950	G	W	3	X	
073-012012	3-22-12	1000	G	W	3	X	
~~047-012012~~	~~3-22-12~~	~~1000~~	~~G~~	~~W~~	~~3~~	~~X~~	
086-012012	3-22-12	1020	G	W	3	X	
0106-012012	3-22-12	1015	G	W	3	X	
2106-012012	3-22-12	1035	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:

4.0°C 680-77980

1830

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	3-22-12	Fed-Ex 7982	OLS 6201	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company: TASA	Date/Time: 03/23/12 0927

TestAmerica Savannah
5102 LaRoche Ave.
Savannah, GA 31404
Phone (912) 354 7858

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-22-12	COC No: 032112
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Abbie Yant	Carrier: FedEx	5 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No.
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.	8142 - VOCs	Sample Specific Notes:
092-012012	3-22-12	1400	G	W	3	X	
0117-012012	3-22-12	1415	G	W	3	X	
091-012012	3-22-12	1425	G	W	3	X	
062-012012	3-22-12	1440	G	W	3	X	
061-012012	3-22-12	1450	G	W	3	X	
060-012012	3-22-12	1500	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:

4.0°C 680-77980

1870

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Toby Hinz	ECC	3-22-12	FedEx 7982	OHS 6201	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time: 03/23/12 0927
				TASAV	

TestAmerica Savannah
5102 LaRoche Ave.
Savannah, GA 31404
Phone (912) 354 7858

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-21-12	COC No: 052112
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Abbie Yant	Carrier: FedEx	3 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No.
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.	5242 - VOCs	Sample Specific Notes:
082-012012 MS	3-21-12	1540	G	W	3	X	
082-012012 MSD	3-21-12	1540	G	W	3	X	
096-012012	3-22-12	0930	G	W	3	X	
296-012012	3-22-12	0930	G	W	3	X	
096-012012 MS	3-22-12	0930	G	W	3	X	
096-012012 MSD	3-22-12	0930	G	W	3	X	
074-012012	3-22-12	0950	G	W	3	X	
073-012012	3-22-12	1000	G	W	3	X	
~~047-012012~~	~~3-22-12~~	~~1000~~	~~G~~	~~W~~	~~3~~	~~X~~	
086-012012	3-22-12	1020	G	W	3	X	
0186-012012	3-22-12	1015	G	W	3	X	
2106-012012	3-22-12	1035	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:

4.0°C 680-77980

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	ECC	3-22-12 1830	FedEx 7982	OLS 6201	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TASA	Date/Time: 03/23/12 0927

TestAmerica Savannah
5102 LaRoche Ave.
Savannah, GA 31404

Phone (912) 354 7858

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-22-12	COC No: 032712
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Abbie Yant	Carrier: FedEx	5 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No
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.	524.2 - VOCs	Sample Specific Notes:
092-012012	3-22-12	1400	G	W	3	X	
0117-012012	3-22-12	1415	G	W	3	X	
091-012012	3-22-12	1425	G	W	3	X	
062-012012	3-22-12	1440	G	W	3	X	
061-012012	3-22-12	1450	G	W	3	X	
060-012012	3-22-12	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:

4.0°C 680-77980

1070

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
[signature]	ECC	3-22-12	[signature] FedEx 7992	OHS 6201	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TASAV	Date/Time: 03/23/12 0927

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

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-26-12	COC No: 032612
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	1 of 2 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.	8330 - Explosives	TSS/Sm 2540 D	Sample Specific Notes:
44FL-023-012012	3-26-12	0950	G	W	2	X		
44FL-104-012012	3-26-12	1010	G	W	2	X		
44FL-27-012012	3-26-12	1030	G	W	2	X		
44FL-9A-012012	3-26-12	1050	G	W	2	X		
44FL-12-012012	3-26-12	1120	G	W	2	X		
012-012012	3-26-12	1245	G	W	2	X		
0114-012012	3-26-12	1300	G	W	2	X		
058-012012	3-26-12	1315	G	W	2	X		
089-012012	3-26-12	1330	G	W	2	X		
0115-012012	3-26-12	1340	G	W	2	X		
053-012012	3-26-12	1400	G	W	2	X		
053-B-012012	3-26-12	1400	G	W	3	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* [X] *Disposal By Lab* ☐ *Archive For* ____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby D K	ECC	3-27-12	Fed-Ex 7933	8392 7182	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TA BUR	3/28/12 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

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-26-12	COC No: 032612
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	2 of 2 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			SDG No.
(303) 298-7607 Phone	TAT if different from Below			
(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	TCL/SM 2540D
052A-012012	3-26-12	1545	G	W	2	X	
052A-B-012012	3-26-12	1545	G	W	3	X	X
054-012012	3-26-12	1615	G	W	2	X	
054-B-012012	3-26-12	1615	G	W	3	X	X

Sample Specific Notes:

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:
[signature]	ECC	3-27-12	FedEx 7933 8392 7182		
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TA BUR	Date/Time: 3/28/12 1015
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Savannah
5102 LaRoche Ave.
Savannah, GA 31404
Phone (912) 354 7858

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-26-12	COC No: 032612
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Abbie Yant	Carrier: FedEx	1 of 2 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.	5342 - VOCs	Sample Specific Notes:
TRB-44FL-223-012012	3-26-12	0950	G	W	2	X	
44FL-023-012012	3-26-12	0950	G	W	3	X	
44FL-104-012012	3-26-12	1010	G	W	3	X	
44FL-27-012012	3-26-12	1030	G	W	3	X	
44FL-9A-012012	3-26-12	1050	G	W	3	X	
44FL-12-012012	3-26-12	1120	G	W	3	X	
0112-012012	3-26-12	1245	G	W	3	X	
0114-012012	3-26-12	1300	G	W	3	X	
058-012012	3-26-12	1315	G	W	3	X	
084-012012	3-26-12	1330	G	W	3	X	
0115-012012	3-26-12	1340	G	W	3	X	
053-012012	3-26-12	1400	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:

2.8°C

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	ECC	3-27-12	Fedex 7933	8391 5855	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TASAV	Date/Time: 3/28/12 0925

TestAmerica Savannah
5102 LaRoche Ave.
Savannah, GA 31404
Phone (912) 354 7858

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-26-12	COC No: 012612
FCC	Tel/Fax: (720) 232-6425	Lab Contact: Abbie Yant	Carrier: FedEx	2 of 2 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.	524.2 VOCs	Sample Specific Notes:
053-B-012012	3-26-12	1400	G	W	3	X	
052A-012012	3-26-12	1545	G	W	3	X	
052A-B-012012	3-26-12	1545	G	W	3	X	
054-012012	3-26-12	1615	G	W	3	X	
054-B-012012	3-26-12	1615	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:

2.8°C

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby O. H	FCC	3-27-12	FCC		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TASV	3/28/12 0925

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

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-28-12	COC No: 052812
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) _____			SDG No.
(303) 298-7607 Phone	TAT if different from Below _____			
(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	TSS/SM 2540 D	Sample Specific Notes:
052C-012012	3-28-12	1300	G	W	2	X		
052C-B-012012	3-28-12	1300	G	W	3	XX		

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:

1600

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby A. Hinz	ECC	3-28-12	Fed-Ex 7933 9071 5701		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TA-Bur	3/29/12 1030
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Savannah
5102 LaRoche Ave.
Savannah, GA 31404
Phone (912) 354 7858

1st QTR WSW Sampling Event 2012

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 3-28-12	COC No: 032812
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			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	524.2 - VOCs	Sample Specific Notes:
TRB-2526-012012	3-28-12	1300	G	W	2	X	
0526-012012	3-28-12	1300	G	W	3	X	
0526-B-012012	3-28-12	1300	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:

6.0 °C

1600

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
T Hy N. [illegible]	ECC	3-28-12	Fed-ex 7933	9070 1351	
Relinquished by:	Company:	Date/Time:	Received by: [illegible]	Company: TTSTN 0919	Date/Time: 03/29/12
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 F

Quality Control Summary Report First Quarter 2012 Operations and Maintenance Sampling Events, Former Nebraska Ordnance Plant (on CD)

FINAL
QUALITY CONTROL SUMMARY REPORT
FIRST QUARTER 2012

OPERATIONS AND MAINTENANCE PROGRAM
SAMPLING EVENTS

FORMER NEBRASKA ORDNANCE PLANT
MEAD, NEBRASKA

Prepared for

United States Army Corps of Engineers
Kansas City District

May 2012

Quality Control Summary Report
First Quarter 2012 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, 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, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2009). This Quality Control Summary Report is a summary of the chemical data quality review for the First Quarter 2012 monthly sampling events.

Samples were analyzed for one or more of the following constituents:

- Volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) SW-846 Method 8260B;
- Trichloroethene (TCE) by EPA Compendium Method TO-15;
- Explosives by EPA SW-846 Method 8330; and
- Nitrate by SW-846 Method 9056.

The analyses were performed by TestAmerica of South Burlington, Vermont, with the exception of the nitrate samples which were analyzed by TestAmerica of Denver, Colorado.

Table 1-1 presents a complete list of the locations planned for sample collection, the corresponding sample identifications (IDs), and the requested analyses for the First Quarter 2012 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

During the First Quarter 2012 O&M sampling events the following field samples were collected:

- Water samples were collected from extraction wells and focused extraction wells during the First Quarter 2012 O&M sampling event: extraction well (EW)-1, EW-3, EW-4, EW-6, EW-7, EW-9, focused extraction well (FEW)-11, FEW-14, and EW-16.
- Water samples were collected from EW-1R (replacement extraction well to EW-1) during March 2011, at pumping rates of 300 and 471 gallons per minute.

- One water sample was collected from each of the following granular activated carbon (GAC) units: 310, 330, and 350 during each month of this quarter.
- One influent water sample and one effluent water sample were collected from the Main GTP during each month of this quarter.
- One influent water sample and one effluent water sample were collected from the LL1 GTP during each month of this quarter as well as two field duplicate samples (one influent sample and one effluent sample) during February 2012.
- One effluent air sample and a field duplicate sample were collected at the LL1GTP.
- One influent water sample and one effluent water sample were collected from the LL4 GTP during each month of this quarter.
- One effluent air sample was collected at the LL4 GTP during January 2012.
- One influent water sample and one effluent water sample were collected from the AOP GTP during each month of this quarter with the exception of the February sampling event. Only the effluent water sample was collected in February because the associated 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 one per quarter. At least one QC field duplicate sample and one MS/MSD for each parameter were 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 frequency was met for overall First Quarter 2012 O&M sampling events.

Table 2-1 provides the sample collection information for the O&M sampling events listed by date sampled and laboratory sample ID for comparison to laboratory data packages and field notes:

- QC split sample information;
- MS/MSD sample information;
- A cross-reference between laboratory sample IDs and field sample IDs;
- Laboratory sample delivery group numbers;
- Dates of sample collection and sample receipt by the laboratory; 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 *Mead Validation Guidelines* (ECC, 2007, approved by United States Army Corps of Engineers [USACE] 2007). Qualifiers were only assigned based on project QC limits and laboratory QC criteria. The data quality evaluation results are presented in Table 3-1.

3.1 Sample Receipt at the Laboratory

The samples were properly preserved and in good condition, and the sample coolers were received within the recommended temperature range of 4 ± 2° C.

3.2 Holding Times

All samples were prepared and analyzed within the required 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 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 a VOC method blank. However, no qualifiers were added to the results because this compound was not detected in the associated samples.

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.

TCE was detected in two of the trip blanks. As a result, TCE detection in one sample was qualified as non-detect (U). TCE detections in other samples associated with these trip blanks were at concentrations greater than 5 times the trip blank concentrations. Therefore, no other qualifications were required.

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 %RECs for all four surrogate compounds in two samples for VOC analysis were below the laboratory QC limits. These samples were re-analyzed with one or more %RECs still below the QC limits. All VOC compounds were qualified as estimated (U or UJ) in these samples. Refer to Table 3-1 for data quality evaluation results and qualified samples. Table 3-3 presents the QC outliers and associated samples for all assigned qualifiers.

The % REC for the surrogate compound 1,2-dinitrobenzene on the confirmation column in the explosive analysis of various samples and QC samples exceeded the laboratory QC limits. However, no action was required because all associated results were reported from the primary column which met all % 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 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%.

LCS and LCSD % RECs were within laboratory QC limits with one exception. Methylene chloride %REC was above the QC limit in one LCS; however, no qualifications were required since methylene chloride was not detected in any of the associated samples. All RPDs, if applicable, were less than 30%.

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 VOCs, explosives, nitrate, and metals.

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.

All % RECs and RPDs were within QC limits.

For wet chemistry 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. Five field duplicate pairs were collected during the First Quarter 2012 monthly O&M sampling events. The field duplicate pairs are listed below:

- 5447-0212-EFF-132 / 5447-0212-2EFF-132 (Nitrate);
- 5447-0212-INF-132 / 5447-0212-2INF-132 (VOC, Explosives);
- 5447-0212-LL1-EFF-076 / 5447-0212-LL1-2EFF-076 (Nitrate);
- 5447-0212-LL1-INF-076 / 5447-0212-LL1-2INF-076 (VOC, Explosives); and
- 5447-0212-LL1-AIR-EFF-076 / 5447-0212-LL1-2AIR-EFF-076 (VOC)

All field duplicate pairs met the precision criteria

Note: Field duplicate results are considered acceptable when one result is not detected and the other result is detected below the limit of quantitation.

3.10 Laboratory Duplicate Results

Laboratory duplicate results provide information on the ability of the laboratory to reproduce field sample results and account for error introduced by the laboratory during the preparation and analysis of field samples. Laboratory duplicates were analyzed for the inorganic analyses. Matrix spike duplicates and/or laboratory control sample duplicates were also analyzed for all method 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 non-detects due to elevated duplicate RPDs.

All laboratory duplicate RPDs were acceptable.

3.11 Dilutions and Reanalyses

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.

Six water samples were analyzed at a dilution of which three samples required a secondary dilution analysis due to concentrations of TCE above the calibration range. 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. Therefore, the secondary diluted concentrations should be used for TCE and the initial analysis should be used for all other sample results.

All three air samples were analyzed at a dilution due to high level of TCE. The laboratory only reported the results from the dilution analysis. No qualifiers were assigned as a result of exceeded calibration ranges because acceptable results from diluted sample analyses were provided.

3.12 Other QC 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 intercolumn RPDs.

Detected results with the intercolumn RPDs exceeding 40% are qualified as estimated (J). Refer to Table 3-1 for 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 (Section 4.0).

3.13 Laboratory Qualifiers

Analytes detected below the limit of quantitation, but above the limit of detection 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 or project completeness. See Section 4.0.

4.0 OVERALL ASSESSMENT

The following subsections discuss the field completeness, analytical completeness, and project completeness determinations for the First Quarter 2012 O&M sampling events. An evaluation of field, analytical, and project completeness is presented in Table 4-1 through 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 Tables 4-1 for the O&M sampling events.

Field completeness for the O&M sampling events were 100% for each method because all scheduled samples were collected. The overall field completeness percentage is therefore 100% for the O&M First Quarter 2012 sampling events. 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.

4.2 Analytical Completeness

Analytical completeness was calculated as both acceptable data completeness and quality data completeness. Analytical completeness is presented in Tables 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 are as follows:

- VOCs: 94.9%
- VOCs-Air 100%
- Explosives: 100%
- Nitrate: 100%

All analyses exceed the 90% criteria for the individual methods, and all the overall acceptable data completeness is 97.4% which exceeds the 95% criteria for the sampling events.

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 First Quarter 2012 O&M sampling events. The quality data completeness percentage for VOCs, explosives, and wet chemistry, considered separately, is 100% and overall quality data completeness is 100% for the 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 exceeds the project completeness goal of 90%. Tables 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%.

Three results for TCE were reported from a secondary dilution due to calibration range exceedance and thirteen explosive results were qualified as estimated for intercolumn RPDs exceedances. These qualifiers were not used to determine analytical completeness or project completeness.

6.0 REFERENCES

ECC, 2009, *Site Wide Work Plan, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2009).

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

Tables

List of Acronyms for Tables

Term	Definition
µg/L	micrograms per liter
AOP	Advanced Oxidation Process
BLK	blank
CCB	continuing calibration blank
C-RPD	column relative percent difference
EFF	effluent
EW	extraction well
FEW	focused extraction well
GC/MS	gas chromatography–mass spectrometry
GTP	groundwater treatment plant
HPLC	high-performance liquid chromatography
ID	identification/identifier
INF	influent
IS	internal standard
J	estimated
Lab	laboratory
LL	Load Line
LWL	lower warning limit
MDL	method detection limit
MS/MSD	matrix spike/matrix spike duplicate
QC	Quality Control
RPD	relative percent difference
SDG	sample delivery group
Surr	surrogate
U	not detected at laboratory limit of detection
UCL	upper control limit
VOC	volatile organic compound

Table 1-1
Sample Locations, Sample IDs, and Analyses
First Quarter 2012 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
AOP-EFF	5447-0112-AOP-EFF2-055	Explosives, Volatiles
AOP-EFF	5447-0212-AOP-EFF2-056	Explosives, Volatiles
AOP-EFF	5447-0312-AOP-EFF2-057	Explosives, Volatiles
AOP-INF	5447-0112-AOP-INF-055	Explosives, Volatiles
AOP-INF	5447-0312-AOP-INF-057	Explosives, Volatiles
EW-1	5447-0112-EW01-131	Volatiles
EW-1	5447-0212-EW01-132	Volatiles
EW-16	5447-0212-EW16-132	Explosives
EW-1R	5447-0312-EW1R-300	Volatiles
EW-1R	5447-0312-EW1R-471	Volatiles
EW-3	5447-0212-EW03-132	Explosives
EW-4	5447-0212-EW04-132	Explosives
EW-6	5447-0212-EW06-132	Explosives
EW-7	5447-0212-EW07-132	Explosives
EW-9	5447-0212-EW09-132	Explosives
EW-9	5447-0312-EW09-133-A	Explosives
FEW-11	5447-0212-EW11-132	Explosives, Volatiles
FEW-14	5447-0212-EW14-132	Explosives
GTP-310	5447-0112-310-131	Explosives, Volatiles
GTP-310	5447-0212-310-132	Explosives, Volatiles
GTP-310	5447-0312-310-133	Explosives, Volatiles
GTP-330	5447-0112-330-131	Explosives, Volatiles
GTP-330	5447-0212-330-132	Explosives, Volatiles
GTP-330	5447-0312-330-133	Explosives, Volatiles
GTP-350	5447-0112-350-131	Explosives, Volatiles
GTP-350	5447-0212-350-132	Explosives, Volatiles
GTP-350	5447-0312-350-133	Explosives, Volatiles
GTP-EFF	5447-0112-EFF-131	Anions, Explosives, Volatiles
GTP-EFF	5447-0212-EFF-132	Anions, Explosives,Volatiles
GTP-EFF	5447-0312-EFF-133	Anions, Explosives, Volatiles
GTP-INF	5447-0112-INF-131	Explosives, Volatiles
GTP-INF	5447-0212-INF-132	Explosives, Volatiles
GTP-INF	5447-0312-INF-133	Explosives, Volatiles
LL1_AIR_EF	5447-0212-LL1-AIR-EFF-076	Volatiles-Air
LL1-EFF	5447-0112-LL1-EFF-075	Anions, Volatiles
LL1-EFF	5447-0212-LL1-EFF-076	Anions, Explosives, Volatiles
LL1-EFF	5447-0312-LL1-EFF-077	Anions, Volatiles
LL1-INF	5447-0112-LL1-INF-075	Volatiles
LL1-INF	5447-0212-LL1-INF-076	Explosives, Volatiles
LL1-INF	5447-0312-LL1-INF-077	Volatiles
LL4_AIR_EF	5447-0112-LL4-AIR-EFF	Volatiles-Air
LL4-EFF	5447-0112-LL4-EFF	Anions, Volatiles
LL4-EFF	5447-0212-LL4-EFF	Anions, Explosives, Volatiles

Table 1-1

Sample Locations, Sample IDs, and Analyses

First Quarter 2012 Operations and Maintenance Sampling Event

Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
LL4-EFF	5447-0312-LL4-EFF	Anions, Volatiles
LL4-INF	5447-0112-LL4-INF	Volatiles
LL4-INF	5447-0212-LL4-INF	Explosives, Volatiles
LL4-INF	5447-0312-LL4-INF	Volatiles

Notes:

Volatiles	SW8260B	Volatile Organic Compounds by Capillary GC/MS
Anions	SW9056	Anion Chromatography
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC
Volatiles-Air	TO15	The Determination for Volatile Organic Compounds in Air Collected in Specially-Prepared Canisters and Analyzed by GC/MS

Table 2-1
Sample Collection Summary
First Quarter 2012 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field ID	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Anions	Explosives	Volatiles	Volatiles-Air
Field Samples										
5447-0112-LL1-EFF-075			1/3/2012	1/4/2012	200-8770-11	8770-2	•		•	
		5447-0212-LL1-2EFF-076	2/1/2012	2/2/2012	200-9190-5	9190	•			
5447-0212-LL1-EFF-076	5447-0212-LL1-EFF-076		2/1/2012	2/2/2012	200-9190-3	9190	•	•	•	
5447-0312-LL1-EFF-077			3/1/2012	3/2/2012	200-9569-2	9569	•		•	
5447-0112-LL1-INF-075			1/3/2012	1/4/2012	200-8770-10	8770-2			•	
		5447-0212-LL1-2INF-076	2/1/2012	2/2/2012	200-9190-2	9190		•	•	
5447-0212-LL1-INF-076	5447-0212-LL1-INF-076		2/1/2012	2/2/2012	200-9190-1	9190		•	•	
5447-0312-LL1-INF-077			3/1/2012	3/2/2012	200-9569-1	9569			•	
5447-0112-LL4-EFF			1/3/2012	1/4/2012	200-8770-14	8770-3	•		•	
5447-0212-LL4-EFF			2/1/2012	2/2/2012	200-9189-2	9189	•	•	•	
5447-0312-LL4-EFF			3/1/2012	3/2/2012	200-9567-2	9567	•		•	
5447-0112-LL4-INF			1/3/2012	1/4/2012	200-8770-13	8770-3			•	
5447-0212-LL4-INF			2/1/2012	2/2/2012	200-9189-1	9189		•	•	
5447-0312-LL4-INF			3/1/2012	3/2/2012	200-9567-1	9567			•	
5447-0112-AOP-EFF2-055			1/3/2012	1/4/2012	200-8770-7	8770-1		•	•	
5447-0212-AOP-EFF2-056			2/1/2012	2/2/2012	200-9195-7	9195		•	•	
5447-0312-AOP-EFF2-057			3/1/2012	3/2/2012	200-9563-7	9563		•	•	
5447-0112-AOP-INF-055			1/3/2012	1/4/2012	200-8770-6	8770-1		•	•	
5447-0312-AOP-INF-057			3/1/2012	3/2/2012	200-9563-6	9563		•	•	
5447-0112-EW01-131			1/3/2012	1/4/2012	200-8770-9	8770-1			•	
5447-0212-EW01-132			2/1/2012	2/2/2012	200-9195-9	9195			•	
5447-0112-310-131			1/3/2012	1/4/2012	200-8770-2	8770-1		•	•	
5447-0212-310-132			2/1/2012	2/2/2012	200-9195-3	9195		•	•	
5447-0312-310-133			3/1/2012	3/2/2012	200-9563-2	9563		•	•	
5447-0112-330-131			1/3/2012	1/4/2012	200-8770-3	8770-1		•	•	
5447-0212-330-132			2/1/2012	2/2/2012	200-9195-4	9195		•	•	
5447-0312-330-133			3/1/2012	3/2/2012	200-9563-3	9563		•	•	
5447-0112-EFF-131	5447-0112-EFF-131		1/3/2012	1/4/2012	200-8770-5	8770-1	•	•	•	
		5447-0212-2EFF-132	2/1/2012	2/2/2012	200-9195-18	9195	•			
5447-0212-EFF-132	5447-0212-EFF-132		2/1/2012	2/2/2012	200-9195-6	9195	•	•	•	
5447-0312-EFF-133			3/1/2012	3/2/2012	200-9563-5	9563	•	•	•	
5447-0112-INF-131			1/3/2012	1/4/2012	200-8770-1	8770-1		•	•	
		5447-0212-2INF-132	2/1/2012	2/2/2012	200-9195-2	9195		•	•	

Table 2-1
Sample Collection Summary
First Quarter 2012 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field ID	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Anions	Explosives	Volatiles	Volatiles-Air
5447-0212-INF-132	5447-0212-INF-132		2/1/2012	2/2/2012	200-9195-1	9195		•	•	
5447-0312-INF-133			3/1/2012	3/2/2012	200-9563-1	9563		•	•	
5447-0112-350-131			1/3/2012	1/4/2012	200-8770-4	8770-1		•	•	
5447-0212-350-132			2/1/2012	2/2/2012	200-9195-5	9195		•	•	
5447-0312-350-133			3/1/2012	3/2/2012	200-9563-4	9563		•	•	
5447-0112-LL4-AIR-EFF			1/3/2012	1/4/2012	200-8769-1	8769				•
5447-0212-EW16-132			2/1/2012	2/2/2012	200-9195-17	9195		•		
5447-0212-LL1-AIR-EFF-076			2/1/2012	2/2/2012	200-9202-1	9202				•
		076	2/1/2012	2/2/2012	200-9202-2	9202				•
5447-0212-EW14-132			2/1/2012	2/2/2012	200-9195-16	9195		•		
5447-0212-EW03-132			2/1/2012	2/2/2012	200-9195-10	9195		•		
5447-0212-EW04-132			2/1/2012	2/2/2012	200-9195-11	9195		•		
5447-0212-EW11-132			2/1/2012	2/2/2012	200-9195-15	9195		•	•	
5447-0212-EW06-132			2/1/2012	2/2/2012	200-9195-12	9195		•		
5447-0212-EW09-132			2/1/2012	2/2/2012	200-9195-14	9195		•		
5447-0312-EW09-133-A			3/1/2012	3/2/2012	200-9563-8	9563		•		
5447-0212-EW07-132			2/1/2012	2/2/2012	200-9195-13	9195		•		
5447-0312-EW1R-300			3/8/2012	3/8/2012	200-9703-1	9703			•	
5447-0312-EW1R-471			3/19/2012	3/20/2012	200-9922-1	9922			•	
Trip Blanks										
TRB-2INF-012012			1/3/2012	1/4/2012	200-8770-8	8770-1			•	
TRB-LL1-2INF-012012			1/3/2012	1/4/2012	200-8770-12	8770-2			•	
TRB-LL4-2INF-012012			1/3/2012	1/4/2012	200-8770-15	8770-3			•	
TRB-2INF-022012			2/1/2012	2/2/2012	200-9195-8	9195			•	
TRB-LL1-2INF-022012			2/1/2012	2/2/2012	200-9190-4	9190			•	
TRB-LL4-2INF-022012			2/1/2012	2/2/2012	200-9189-3	9189			•	
TRB-2INF-032012			3/1/2012	3/2/2012	200-9563-9	9563			•	
TRB-LL1-2INF-032012			3/1/2012	3/2/2012	200-9569-3	9569			•	
TRB-LL4-2INF-032012			3/1/2012	3/2/2012	200-9567-3	9567			•	
TRB-2EW1R-032012			3/8/2012	3/8/2012	200-9703-2	9703			•	
TRB-2EW1R-032012b			3/19/2012	3/20/2012	200-9922-2	9922			•	

Notes:

Volatiles	SW8260B	Volatile Organic Compounds by Capillary GC/MS
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC
Anions	SW9056	Anion Chromatography
Volatiles-Air	TO15	The Determination fo Volatile Organic Compounds in Air Collected in Specially-Prepared Canisters and Analyzed by GC/MS

Table 3-1
Data Quality Evaluation Results
First Quarter 2012 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	BLK	C_RPD	IS_Surr	Comments	Final Result
5447-0112-AOP-EFF2-055	1/3/2012	8770-1	200-8770-7	Explosives	2,4,6-trinitrotoluene	µg/L	0.099	J		X		Column RPD	0.099 J
5447-0112-AOP-INF-055	1/3/2012	8770-1	200-8770-6	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.041	J		X		Column RPD	0.041 J
5447-0112-AOP-INF-055	1/3/2012	8770-1	200-8770-6	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.94	J		X		Column RPD	0.94 J
5447-0212-2INF-132	2/1/2012	9195	200-9195-2	Explosives	2,4,6-trinitrotoluene	µg/L	0.049	J		X		Column RPD	0.049 J
5447-0212-EW04-132	2/1/2012	9195	200-9195-11	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.033	J		X		Column RPD	0.033 J
5447-0212-EW07-132	2/1/2012	9195	200-9195-13	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.067	J		X		Column RPD	0.067 J
5447-0212-EW11-132	2/1/2012	9195	200-9195-15	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.058	J		X		Column RPD	0.058 J
5447-0212-EW11-132	2/1/2012	9195	200-9195-15	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.95	J		X		Column RPD	0.95 J
5447-0212-INF-132	2/1/2012	9195	200-9195-1	Explosives	2,4,6-trinitrotoluene	µg/L	0.052	J		X		Column RPD	0.052 J
5447-0212-LL1-INF-076	2/1/2012	9190	200-9190-1	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.039	J		X		Column RPD	0.039 J
5447-0312-310-133	3/1/2012	9563	200-9563-2	Volatiles	1,2-dichloropropane	µg/L	0.0	UJ			X	Surrogate recovery outside project limits.	1.0 UJ
5447-0312-310-133	3/1/2012	9563	200-9563-2	Volatiles	cis-1,2-dichloroethene	µg/L	0.0	UJ			X	Surrogate recovery outside project limits.	1.0 UJ
5447-0312-310-133	3/1/2012	9563	200-9563-2	Volatiles	methylene chloride	µg/L	0.0	UJ			X	Surrogate recovery outside project limits.	1.0 UJ
5447-0312-310-133	3/1/2012	9563	200-9563-2	Volatiles	trans-1,2-dichloroethene	µg/L	0.0	UJ			X	Surrogate recovery outside project limits.	1.0 UJ
5447-0312-310-133	3/1/2012	9563	200-9563-2	Volatiles	trichloroethene	µg/L	0.65	J			X	Surrogate recovery outside project limits.	0.65 J
5447-0312-310-133	3/1/2012	9563	200-9563-2	Volatiles	vinyl choride	µg/L	0.0	UJ			X	Surrogate recovery outside project limits.	1.0 UJ
5447-0312-330-133	3/1/2012	9563	200-9563-3	Volatiles	1,2-dichloropropane	µg/L	0.0	UJ			X	Surrogate recovery outside project limits.	1.0 UJ
5447-0312-330-133	3/1/2012	9563	200-9563-3	Volatiles	cis-1,2-dichloroethene	µg/L	0.0	UJ			X	Surrogate recovery outside project limits.	1.0 UJ
5447-0312-330-133	3/1/2012	9563	200-9563-3	Volatiles	methylene chloride	µg/L	0.0	UJ			X	Surrogate recovery outside project limits.	1.0 UJ
5447-0312-330-133	3/1/2012	9563	200-9563-3	Volatiles	trans-1,2-dichloroethene	µg/L	0.0	UJ			X	Surrogate recovery outside project limits.	1.0 UJ
5447-0312-330-133	3/1/2012	9563	200-9563-3	Volatiles	trichloroethene	µg/L	0.52	J			X	Surrogate recovery outside project limits.	0.52 J

Table 3-1
Data Quality Evaluation Results
First Quarter 2012 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	BLK	C_RPD	IS_Surr	Comments	Final Result
5447-0312-330-133	3/1/2012	9563	200-9563-3	Volatiles	vinyl choride	µg/L	0.0	UJ			X	Surrogate recovery outside project limits.	1.0 UJ
5447-0312-AOP-EFF2-057	3/1/2012	9563	200-9563-7	Explosives	2,4,6-trinitrotoluene	µg/L	0.099	J		X		Column RPD	0.099 J
5447-0312-AOP-INF-057	3/1/2012	9563	200-9563-6	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.057	J		X		Column RPD	0.057 J
5447-0312-AOP-INF-057	3/1/2012	9563	200-9563-6	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.95	J		X		Column RPD	0.95 J
5447-0312-LL4-EFF	3/1/2012	9567	200-9567-2	Volatiles	trichloroethene	µg/L	0.79	U	X			Trip Blank	1.0 U

Reason for Qualification

BLK	Ambient Blank, Lab Blank, CCB, CCB - Neg, Trip Blank, Equipment Blank, Field Blank, Material Blank, Lab Blank - Neg
C_RPD	Column RPD
IS_Surr	Internal standard, Surrogate recovery outside project limits.

Table 3-2
Explosives Quality Control Outliers
First Quarter 2012 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					
5447-0112-AOP-EFF2-055	8770-1	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	100 RPD
5447-0112-AOP-INF-055	8770-1	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	158 RPD
5447-0112-AOP-INF-055	8770-1	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	62.8 RPD
5447-0212-2INF-132	9195	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	72.2 RPD
5447-0212-EW04-132	9195	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	87.2 RPD
5447-0212-EW07-132	9195	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	43.6 RPD
5447-0212-EW11-132	9195	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	129 RPD
5447-0212-EW11-132	9195	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	66.7 RPD
5447-0212-INF-132	9195	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	63.3 RPD
5447-0212-LL1-INF-076	9190	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	59.5 RPD
5447-0312-AOP-EFF2-057	9563	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	44.4 RPD
5447-0312-AOP-INF-057	9563	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	158 RPD
5447-0312-AOP-INF-057	9563	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	61.8 RPD

Table 3-3
VOC Quality Control Outliers
First Quarter 2012 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
Surrogate					
5447-0312-310-133	9563	All Compounds	Surrogate < minimum LWL	1,2-Dichloroethane-d4 80 - 115 %	79.0%
5447-0312-310-133	9563	All Compounds	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	76.0%
5447-0312-310-133	9563	All Compounds	Surrogate < minimum LWL	1,2-Dichlorobenzene-d4 80 - 115 %	75.0%
5447-0312-330-133	9563	All Compounds	Surrogate < minimum LWL	1,2-Dichloroethane-d4 80 - 115 %	58.0%
5447-0312-330-133	9563	All Compounds	Surrogate < minimum LWL	Toluene-d8 85 - 120 %	57.0%
5447-0312-330-133	9563	All Compounds	Surrogate < minimum LWL	1,2-Dichlorobenzene-d4 80 - 115 %	58.0%
5447-0312-330-133	9563	All Compounds	Surrogate < minimum LWL	4-Bromofluorobenzene 80 - 115 %	59.0%
Trip Blank					
5447-0312-LL4-EFF	9567	Trichloroethlene	Field Blank > MDL	< 0.2 µg/L	0.24 µg/L

Table 4-1
Field Completeness
First Quarter 2012 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned	Number of Samples Collected	Field Completeness
Anions	11	11	100%
Explosives	35	35	100%
Volatiles	39	39	100%
Volatiles-Air	3	3	100%
Totals =	88	88	100.0%
Goal =			95%

Notes:

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

Table 4-2
Analytical Completeness
First Quarter 2012 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)	11	11	100%	90%	11	100%	80%
Explosives (Analyte Count - 6)	210	210	100%	90%	210	100%	80%
Volatiles (Analyte Count - 6)	234	222	94.9%	90%	234	100%	80%
Volatiles-Air (Analyte Count - 1)	3	3	100%	90%	3	100%	80%
Totals =	458	446	97.4%	95%	458	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
First Quarter 2012 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 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: 303-288-7600	Site Contact: Tim Thomas	
FAX: 303-298-7830	TA Contact:	
Project Name: FNDP Mod	Analysis Turnaround Time	
Site: 5449-002	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)
5449-0112-LL4-A12-EFF	1-3-12	0912		-27	0		4484	X											

Temperature (Fahrenheit)	Interior	Ambient	
Start			
Stop			

Pressure (Inches of Hg)	Interior	Ambient	
Start			
Stop			

Special Instructions/QC Requirements & Comments:

Samples Shipped by:	Date/Time: 1-3-12 1500	Samples Received by: FedEx 8625-7615 0200
Samples Relinquished by:	Date/Time:	Received by: 1/4/12 1015
Relinquished by:	Date/Time:	Received by:

Lab Use Only: Shipper Name: Opened by: Condition:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 7946 Ohio Blvd Bldg 21 Suite 350 Lakewood Co 80401	Address:
Contact: John Ryder	Contact:
Phone: 303-298-7601	Phone:
Fax: 303-298-7837	Fax:
Contract/ Quote:	

ANALYSIS REQUESTED: VOCs, SVOCs, Explosives, 8330

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: Tim Thers
Sampler's Signature: [signature]

Proj. No.: 5440 002
Project Name: FMOP Mead

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt	250 ml	P/O	VOCs	SVOCs	Lab/Sample ID (Lab Use Only)
W	1-3	0900		X	5440-0112-INF-131	3	2			X	X	
W	1-3	0904		X	5440-0112-310-131	3	2			X	X	
W	1-3	0900		X	5440-0112-330-131	3	2			X	X	
W	1-3	0910		X	5440-0112-350-131	3	2			X	X	
W	1-3	0910		X	5440-0112-EFF-131	3	2			X	X	
W	1-3	0855		X	5440-0112-AOP-INF-055	3	2			X	X	
W	1-3	0845		X	5440-0112-AOP-EFF2-055	3	2			X	X	
W	1-3	0900		X	TRB-2-INF-012012	2				X		
W	1-3	0810		X	5440-0112-EW01-131	3				X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	1-3-12	1500	Fed Ex 8475 2415 0195	1-3-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			[signature]	1/4/12	1045
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: Main Plant O&M January 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Pg 1 of 1

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 1746 Cole Blvd Building 21, Suite 300, Lakewood Co 80401	Address:
Contact: John Ryder	Contact:
Phone: 303-298-7607	Phone:
Fax: 303-298-7837	Fax:
Contract/ Quote:	

ANALYSIS REQUESTED: VOCs 8260B

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: Jim Thomas
Sampler's Signature: [signature]

Proj. No.: 5442.02
Project Name: FNUP Mead
No/Type of Containers²

Matrix¹	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O		Lab/Sample ID (Lab Use Only)
W	1-3	0801		X	5442-0112-LL1-INF-025	3				X	
W	1-3	0805		X	5442-0112-LL1-EFF-025	3				X	
W	1-3	0801		X	TRB-LL1-2INF-012012	2				X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	1-3-12	1500	Fed Ex 8675-3615-0195	1-3-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			[signature]	1/4/12	1045
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL1 OAM January 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

¹Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
²Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

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THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Pg 1 of 1

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 12484 Colorado Blvd Bld 2 Suite 2, Lakewood Co 80401	Address:
Contact: John Ryder	Contact:
Phone: 303-298-7609	Phone:
Fax: 303-298-7837	Fax:
Contract/ Quote:	

ANALYSIS REQUESTED: VOCs 8260B

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: Jim Thary
Sampler's Signature: [signature]

Proj. No.: 5447008
Project Name: FNOP Mead
No./Type of Containers[2]

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt	250 ml	P/O	VOCs 8260B	Lab/Sample ID (Lab Use Only)
W	1-3	0900		X	5447-0112-LL4-INF	3				X	
W	1-3	0908		X	5447-0112-LL4-EFF	3				X	
W	1-3	0900		X	TRB-LL4-2INF-012012	2				X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	1-3-12	1500	FedEx 8405 9615 0195	1-3-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			[signature]	1/4/12	1045
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL4 Sampling January 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater, W - Water, S - Soil, L - Liquid, A - Air bag, C - Charcoal Tube, SL - Sludge, O - Oil
[2]Container: VOA - 40 ml vial, A/G - Amber / Or Glass 1 Liter, 250 ml - Glass wide mouth, P/O - Plastic or other _____

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TAL-8234(1007)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Pg 1 of 1

CHAIN OF CUSTODY RECORD

Report to:
Company: ECC
Address: 7246 Cole Blvd Bldg 1 Suite 350
Lakewood Co 80401
Contact: John Ryder
Phone: 303-298-7601
Fax: 303-298-7837
Contract/ Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: Tim Thers
Sampler's Signature:

Proj. No.: 5440 002
Project Name: FMOP Mead

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt	250 ml	P/O	VOCs	Explosives $330	Lab/Sample ID (Lab Use Only)
W	1-3	0900		X	5440-0112-INF-131	3	2			X	X	
W	1-3	0904		X	5440-0112-310-131	3	2			X	X	
W	1-3	0900		X	5440-0112-330-131	3	2			X	X	
W	1-3	0910		X	5440-0112-350-131	3	2			X	X	
W	1-3	0910		X	5440-0112-EFF-131	3	2			X	X	
W	1-3	0855		X	5440-0112-AOP-INF-055	3	2			X	X	
W	1-3	0845		X	5440-0112-AOP EFF2-055	3	2			X	X	
W	1-3	0900		X	TRB-2 INF-012012	2				X		
W	1-3	0810		X	5440-0112-EW01-131	3				X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	1-3-12	1500	Fed Ex 8475 2415 0195	1-3-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	1/4/12	1045
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: Main Plant O&M January 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

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THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Pg 1 of 1

CHAIN OF CUSTODY RECORD

Report to:
Company: ECC
Address: 1746 Cole Blvd Building 21, Suite 300
Lakewood Co 80401
Contact: John Ryder
Phone: 303-298-7603
Fax: 303-298-7837
Contract/ Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

ANALYSIS REQUESTED: VOCs 8260B

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Sampler's Name: Jim Thomas
Sampler's Signature: [signature]

Proj. No.: 5442.02
Project Name: FNUP Mead
No/Type of Containers[2]

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O		Lab/Sample ID (Lab Use Only)
W	1-3	0801		X	5442-0112-LL1-INF-025	3				X	
W	1-3	0805		X	5442-0112-LL1-EFF-025	3				X	
W	1-3	0801		X	TRB-LL1-2INF-012012	2				X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	1-3-12	1500	Fedex 8675-3615-0195	1-3-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			[signature]	1/4/12	1045
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL1 O&M January 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

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THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Pg 1 of 1

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 12484 Colorado Blvd Bld 2 Suite 2, Lakewood Co 80401	Address:
Contact: John Ryder	Contact:
Phone: 303-298-7609	Phone:
Fax: 303-298-7837	Fax:
Contract/ Quote:	

ANALYSIS REQUESTED: VOCs 8260B

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: Jim Thary
Sampler's Signature:

Proj. No.: 5447008
Project Name: FNOP Mead
No./Type of Containers[2]

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt	250 ml	P/O	VOCs 8260B	Lab/Sample ID (Lab Use Only)
W	1-3	0900		X	5447-0112-LL4-INF	3				X	
W	1-3	0908		X	5447-0112-LL4-EFF	3				X	
W	1-3	0900		X	TRB-LL4-2INF-012012	2				X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	1-3-12	1500	FedEx 8405 3615 0195	1-3-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date 1/4/12	Time 1045
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL4 Sampling January 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

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THE LEADER IN ENVIRONMENTAL TESTING

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South Burlington, VT 05403 Tel: 802 660 1990

page 1 of 1

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 7246 Cole Blvd Building 3 Suite 300 Lakewood Co 80401	Address:
Contact: John Ryder	Contact:
Phone: 303-298-7607	Phone:
Fax: 303-298-7837	Fax:
Contract/ Quote:	

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: Tim Thorne
Sampler's Signature:

Proj. No.: 5447.002
Project Name: FN UP Mead

ANALYSIS REQUESTED: VOC's 8260B, Ethylene 8330

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	VOC's 8260B	Ethylene 8330	Lab/Sample ID (Lab Use Only)
W	2-1	0838		X	5447-0212-224-INF	3	2			X	X	
W	2-1	0840		X	5447-0212-224-EFF	3	2			X	X	
W	2-1	0838		X	TRB-224-2INF-020212	2				X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2-1-12	1500	Fedex 8675 3415 0232	2-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			[signature] TA BUR	2/2/12	1015
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL4 Sample Event February 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

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THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Page 1 of 1

CHAIN OF CUSTODY RECORD

Report to:
Company: ECC
Address: 1244 Cole Blvd Building 3, Suite 300
Lakewood Co 80401
Contact: John Ryder B
Phone: 303-298-7607
Fax: 303-298-2837
Contract/ Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

Analysis Requested: Nitrate 9056

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Sampler's Name: Jim Theres
Sampler's Signature:

Proj. No.: 5447 002
Project Name: FNDP Mead

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No/Type of Containers[2] VOA	A/G 1 Lt.	250 ml	P/O	Nitrate 9056	Lab/Sample ID (Lab Use Only)
WW	2-1-	0840		X	5447-0012-LL4-EFF		1	1		X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2-1-12	1500	Fedex 8625-3615-0010	2-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL4 sampling February 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container: VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

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THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Page 1 of 1

CHAIN OF CUSTODY RECORD

Report to:
Company: ECC
Address: 12464 Bldg Blvd Suite 350
Lakewood Co 80401
Contact: John Ryder
Phone: 303-298-7607
Fax: 303-298-7837
Contract/ Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Sampler's Name: Tim Thares
Sampler's Signature:

Proj. No.: 5447022
Project Name: FNBP Mead

ANALYSIS REQUESTED: Mass Spectrometry 8260B

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No./Type of Containers[2] VOA	A/G 1 Lt.	250 ml	P/O			Lab/Sample ID (Lab Use Only)
W	2-1	0941		X	5447-0212-LL1-INF-076	3	2			X	X	
W	2-1	0941		X	5447-0212-LL1-2INF-076	3	2			X	X	
W	2-1	0941		X	5447-0212-LL1-INF-MS	3	2			X	X	
W	2-1	0941		X	5447-0212-LL1-INF-MSD	3	2			X	X	
W	2-1	0950		X	5447-0212-LL1-EGF-076	3	2			X	X	
W	2-1	0941		X	TRB-LL1-2INF-022012	2				X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2-1-12	1530	FedEx 8675-3615-0270	2-1-12	1530
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			[signature] TA-BUR	2/2/12	1015
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL1 O&M February 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater, W - Water, S - Soil, L - Liquid, A - Air bag, C - Charcoal Tube, SL - Sludge, O - Oil
[2]Container: VOA - 40 ml vial, A/G - Amber / Or Glass 1 Liter, 250 ml - Glass wide mouth, P/O - Plastic or other

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Page 1 of 1

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 7246 Cole Blvd Bldg 1 Suite 350 Lakewood CO 80401	Address:
Contact: John Ryder	Contact:
Phone: 303-298-7607	Phone:
Fax: 303-298-7830	Fax:
Contract/ Quote:	

ANALYSIS REQUESTED: Nitrate 9250

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal: N / Y
Intact: N / Y

Screened For Radioactivity ☐

Sampler's Name: Jim Thares
Sampler's Signature: [signature]

Proj. No.: 5447.002
Project Name: FWDP Weed

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	Nitrate 9250	Lab/Sample ID (Lab Use Only)
W	2-1	0750		X	5447-0212-LL1-EFF-076		1	1		X	
W	2-1	0750		X	5447-0212-LL1-2EFF-076		1	1		X	
W	2-1	0750		X	5447-0212-LL1-EFF-MS		1	1		X	
W	2-1	0750		X	5447-0212-LL1-EFF-MSD		1	1		X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2-1-12	1500	Fed Ex 867503615-0210	2-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL1 O&M February 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container: VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

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TAL-9234(1007)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Page 1 of 1

CHAIN OF CUSTODY RECORD

Report to:
Company: ECC
Address: 7246 Cole Blvd Bldg 1 Suite 350
Lakewood CO 80401
Contact: John Ryder
Phone: 303-298-7607
Fax: 303-298-7837
Contract/ Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

Sampler's Name: Tim Thares
Sampler's Signature:

Proj. No.: 5447.002
Project Name: FWDP Mead

Analysis Requested: Nitrate 9056

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal: N / Y
Intact: N / Y
Screened For Radioactivity ☐

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	Nitrate 9056	Lab/Sample ID (Lab Use Only)
W	2-1	0750		X	5447-0212-LL1-EFF-076		1	1		X	
W	2-1	0750		X	5447-0212-LL1-2EFF-076		1	1		X	
W	2-1	0750		X	5447-0212-LL1-EFF-MS		1	1		X	
W	2-1	0750		X	5447-0212-LL1-EFF-MSD		1	1		X	

(TT)

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2-1-12	1500	Fed Ex 867503615-0010	2-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL1 O+M February 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container: VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Page 1 of 1

CHAIN OF CUSTODY RECORD

Report to:
Company: ECC
Address: 1746 Cole Blvd Bld 21 Suite 250
Lakewood Co 80401
Contact: John Ryder
Phone: 303-298-7607
Fax: 303-298-7837
Contract/ Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: Jim Thares
Sampler's Signature:

Proj. No.: 5447002
Project Name: FNUP Mead

ANALYSIS REQUESTED: VOCs 8260B, Explosives 8330

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No/Type of Containers[2] VOA	A/G 1 Lt.	250 ml	P/O			Lab/Sample ID (Lab Use Only)
W	2-1	0741		X	5447-0212-LL1-INF-076	3	2			X	X	
W	2-1	0741		X	5447-0212-LL1-2INF-076	3	2			X	X	
W	2-1	0741		X	5447-0212-LL1-INF-MS	3	2			X	X	
W	2-1	0741		X	5447-0212-LL1-INF-MSD	3	2			X	X	
W	2-1	0750		X	5447-0212-LL1-EFF-076	3	2			X	X	
W	2-1	0741		X	TRB-LL1-2INF-022012	2				X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2-1-12	1500	FedEx 5625-3615-0272	2-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature) TA Blue	2/2/12	1015
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL1 O&M February 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater, W - Water, S - Soil, L - Liquid, A - Air bag, C - Charcoal Tube, SL - Sludge, O - Oil
[2]Container: VOA - 40 ml vial, A/G - Amber / Or Glass 1 Liter, 250 ml - Glass wide mouth, P/O - Plastic or other

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

page 1 of 2

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 1746 Cole Blvd B/12/Suite 350 Lakewood Co 80401	Address:
Contact: John Ryder	Contact:
Phone: 303-298-7607	Phone:
Fax: 303-298-7837	Fax:
Contract/ Quote:	

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: Tim Thomas

Sampler's Signature: [signature]

Proj. No.:

Project Name:

ANALYSIS REQUESTED: VOC's 8260B, Explosives 8330

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No./Type of Containers[2] VOA	A/G 1 Lt.	250 ml	P/O			Lab/Sample ID (Lab Use Only)
W	2-1	0900		X	5440-0212-INF-132	3	2			X	X	
W	2-1	0900		X	5440-0212-2INF-132	3	2			X	X	
W	2-1	0900		X	5440-0212-INF-MS	3	2			X	X	
W	2-1	0900		X	5440-0212-INF-MSD	3	2			X	X	
W	2-1	0905		X	5440-0212-310-132	3	2			X	X	
W	2-1	0907		X	5440-0212-330-132	3	2			X	X	
W	2-1	0910		X	5440-0212-350-132	3	2			X	X	
W	2-1	0915		X	5440-0212-EFF-132	3	2			X	X	
W	2-1	0833		X	5440-0212-AOP-EFF2-056	3	2			X	X	
W	2-1	0900		X	TRB-2INF-022012	2				X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2-1-12	1500	Fed Ex 8605 3615 0232	2-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			TA BUR	2/2/12	1015
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: Main Plant O&M February 2012

Client's delivery of samples constitutes acceptance of TestAmerica's terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater, W - Water, S - Soil, L - Liquid, A - Air bag, C - Charcoal Tube, SL - Sludge, O - Oil

[2]Container: VOA - 40 ml vial, A/G - Amber / Or Glass 1 Liter, 250 ml - Glass wide mouth, P/O - Plastic or other

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TAL-8234(1007)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

page 2 of 2

CHAIN OF CUSTODY RECORD

Report to:
Company: ECC
Address: 1246 Cole Blvd Bldg 1, Suite 250
Lakewood Co 80401
Contact: John Ryder
Phone: 303-298-7602
Fax: 303-298-7837
Contract/ Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

Sampler's Name: Tim Thomas
Sampler's Signature:

Proj. No.: 5447.002
Project Name: FNOP Mead

ANALYSIS REQUESTED: VOC's 8260B, Explosives 8330

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	VOC's 8260B	Explosives 8330	Lab/Sample ID (Lab Use Only)
W	2-1	0905		X	5447-0212-EW01-132	3				X		
W	2-1	0934		X	5447-0212-EW03-132		2				X	
W	2-1	0943		X	5447-0212-EW04-132		2				X	
W	2-1	1022		X	5447-0212-EW06-132		2				X	
W	2-1	1014		X	5447-0212-EW07-132		2				X	
W	2-1	1008		X	5447-0212-EW09-132		2				X	
W				X	5447-0212-EW09-132-A		2				X	
W	2-1	0955		X	5447-0212-EW11-132	3	2			X	X	
W	2-1	0916		X	5447-0212-EW14-132		2				X	
W	2-1	0926		X	5447-0212-EW-16-132		2				X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2-1-12	1500	FedEx 8675-3615-0232	2-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			TA Blue	2/2/12	1015
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: Main Plant O&M February 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

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South Burlington, VT 05403 Tel: 802 660 1990

E, 4, #2, 5#, 2/2/12 page 1 of 1

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 1944 Cole Blvd Bldg 2 Suite 350 Lakewood, CO 80401	Address:
Contact: 303-298-9600	Contact:
Phone: 303-298-9630	Phone:
Fax:	Fax:
Contract/ Quote:	

ANALYSIS REQUESTED: Water 9056

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: Tim Thares
Sampler's Signature: [signature]

Proj. No.: 5442002
Project Name: FNOP Mead

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	Water 9056	Lab/Sample ID (Lab Use Only)
W	2-1	0915		X	5442-0212-EFF-132		1	1		X	
W	2-1	0915		X	5442-0212-2EFF-132		1	1		X	
W	2-1	0915		X	5442-0212-EFF-MS		1	1		X	
W	2-1	0915		X	5442-0212-EFF-MSD		1	1		X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2-1-12	1530	Fed Ex 8605 3625 0210	2-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: Main Plant O&M February 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container: VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

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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	1 of 1 COCs
Company: ECC	Phone:		
Address: 1946 Col. Blvd Bldg 1 Suite 370	Email:		
City/State/Zip Lakewood CO 80401			
Phone: 303-298-7607	Site Contact: Tim Thomas		
FAX: 303-298-7837	TA Contact:		
Project Name: FNDP Mech	Analysis Turnaround Time		
Site: 5449-002	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)
5449-0212-LL1-AIR-Eff-0206	2-1-12	0757		29	0		3845	X											
5449-0212-LL13Air-Eff-0206	2-1-12	0757		29	0		4855	X											

Temperature (Fahrenheit)	Interior	Ambient	
Start			
Stop			

Pressure (inches of Hg)	Interior	Ambient	
Start			
Stop			

Special Instructions/QC Requirements & Comments:

LL1 otm Feb 2011

Samples Shipped by:	Date/Time: 2-1-12 1500	Samples Received by: FedEx 5673 3615 0221
Samples Relinquished by:	Date/Time:	Received by: TA BUR 2/2/12 1015
Relinquished by:	Date/Time:	Received by:

Lab Use Only: Shipper Name:

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Pg 1 of 1

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 1746 Cole Blvd B100/Suite 350 Lakewood Co 80401	Address:
Contact: John Byde	Contact:
Phone: 303-298-7647	Phone:
Fax: 303-298-7837	Fax:
Contract/ Quote:	

ANALYSIS REQUESTED: VOCs 8260B, Explosives 8330

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: Tim Thers
Sampler's Signature: [signature]

Proj. No.: 5447002
Project Name: Enap Mead

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No/Type of Containers[2] VOA	A/G 1 Lt.	250 ml	P/O	VOCs 8260B	Explosives 8330	Lab/Sample ID (Lab Use Only)
W	3-1	0645		X	5447-0312-INF-133	3	2			X	X	
W	3-1	0648		X	5447-0312-310-133	3	2			X	X	
W	3-1	0651		X	5447-0312-330-133	3	2			X	X	
W	3-1	0654		X	5447-0312-350-133	3	2			X	X	
W	3-1	0658		X	5447-0312-EFF-133	3	2			X	X	
W	3-1	0750		X	5447-0312-AOP-INF-057	3	2			X	X	
W	3-1	0743		X	5447-0312-AOP-EFF2-057	3	2			X	X	
W	3-1	0830		X	5447-0312-EW09-133-A		2				X	
W	3-1	0840		X	TRB-2INF-032012	2				X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	3-1-12	1700	Fed Ex 8675-3615-0265	3-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			[signature] FEDEX	3/2/12	1000
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: Main Plant O&M March 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

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South Burlington, VT 05403 Tel: 802 660 1990

page 1 of 1

CHAIN OF CUSTODY RECORD

Report to:
Company: ECC
Address: 1746 Col. Blvd Bld 2 Suite 200
Lakewood Co 80401
Contact: John Ryder
Phone: 303-298-7600
Fax: 303-298-7837
Contract/ Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

ANALYSIS REQUESTED: VOC's 8260B

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Sampler's Name: Jim Thares
Sampler's Signature: [signature]

Proj. No.: 5449002
Project Name: FNOP Mead

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	VOC's 8260B	Lab/Sample ID (Lab Use Only)
W	3-1	0753		X	5449-0312-LL4-INF	3				X	
W	3-1	0756		X	5449-0312-LL4-EFF	3				X	
W	3-1	0753		X	TRB-LL4-2INF-032012	2				X	

(TT)

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	3-1-12	1500	FedEx 8603-3605-0265	3-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]			[signature] TAISLR	3/2/12	1000
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL4 Sample Event March 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

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page 1 of 1

CHAIN OF CUSTODY RECORD

Report to:
Company: ECC
Address: 1746 Cole Blvd Bldg 1 Suite 350
Lakewood Co 80401
Contact: John Ryder
Phone: 303-298-7607
Fax: 303-298-7830
Contract/ Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

ANALYSIS REQUESTED: 8260B

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: Tim Thers
Sampler's Signature: [signature]

Proj. No.: 5447002
Project Name: FNOP March

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	8260B	Lab/Sample ID (Lab Use Only)
WS-1	0956			x	5447-0312-LL4-EFF		1	1		X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	3-1-12	1500	Fed Ex 8675-3615-0243	3-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			[signature]	3/2/12	0900
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL4 March 2012 Sampling Event

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater, W - Water, S - Soil, L - Liquid, A - Air bag, C - Charcoal Tube, SL - Sludge, O - Oil
[2]Container: VOA - 40 ml vial, A/G - Amber / Or Glass 1 Liter, 250 ml - Glass wide mouth, P/O - Plastic or other

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Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

page 1 of 1

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 1746 Cole Blvd Bldg 2 Suite 300, Lakewood Co 80401	Address:
Contact: John Ryder	Contact:
Phone: 303-298-7600	Phone:
Fax: 303-298-7820	Fax:
Contract/ Quote:	

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: Tim Thores
Sampler's Signature:

Proj. No.: 5447.0312
Project Name: FNOP - Mead

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No/Type of Containers[2] VOA	A/G 1 Lt	250 ml	P/O	VOC's 8260B	Lab/Sample ID (Lab Use Only)
W	3-1	0728		X	5447.0312.221-INF-077	3				X	
W	3-1	0731		X	5447.0312-221-EFF-077	3				X	
W	3-1	0720		X	TRB-221-INF-032012	2				X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	3-1-12	1500	Fed Ex 8675-3615-0265	3-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			[signature] Timbun	3/2/12	1020
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LLI O&M
March 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater, W - Water, S - Soil, L - Liquid, A - Air bag, C - Charcoal Tube, SL - Sludge, O - Oil
[2]Container: VOA - 40 ml vial, A/G - Amber / Or Glass 1 Liter, 250 ml - Glass wide mouth, P/O - Plastic or other

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THE LEADER IN ENVIRONMENTAL TESTING

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30 Community Drive, Suite 11
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page 1 of 1

CHAIN OF CUSTODY RECORD

Report to:
Company: ECC
Address: 1746 Col. Blvd Bld 21 Suite 330
Lakewood Co 80401
Contact: John Ryder
Phone: 303-298-7607
Fax: 303-298-7837
Contract/ Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

ANALYSIS REQUESTED: Airbags 9272

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Sampler's Name: Tim Thero
Sampler's Signature: [signature]

Proj. No.: 5447002
Project Name: FNOP Mead

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	Airbags 9272	Lab/Sample ID (Lab Use Only)
WW-1	0731			X	5447-0312-LL1-EFF-UM7		1	1		X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	3-1-12	1500	Felex 8605-3615-0243	3-1-12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			[signature]	3/2/12	0900
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: LL1 ODM
March 2012

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

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Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

Page 1 of 1

CHAIN OF CUSTODY RECORD

Report to:	Invoice to:
Company: ECC	Company:
Address: 1946 Cole Blvd Bld 2 Suite 2 Lakewood Co 80401	Address:
Contact: Jean Ryder	Contact:
Phone: 303-298-9602	Phone:
Fax: 303-298-7837	Fax:
Contract/ Quote:	

ANALYSIS REQUESTED: VOCs 8260B

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal Intact: N / Y

Screened For Radioactivity ☐

Sampler's Name: Vincent Stallbaumer

Sampler's Signature:

Proj. No.: 5447.002

Project Name: FNOD Mod

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No/Type of Containers[2] VOA	A/G 1 Lt.	250 ml	P/O	VOCs 8260B	Lab/Sample ID (Lab Use Only)
W	3/8/12	0748		X	5447.0312-EW1R-300	3				X	
W	3/8/12	0748		X	TBR-2EW1R-030212	2				X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	3/8/2012	1500	Fedex 8625 3615 0224	3/8/12	1500
Relinquished by: (Signature)	Date	Time	Received by: (Signature) TASUR	Date 3/9/12	Time 1030
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: New Well at 300 gpm.

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater, W - Water, S - Soil, L - Liquid, A - Air bag, C - Charcoal Tube, SL - Sludge, O - Oil

[2]Container: VOA - 40 ml vial, A/G - Amber / Or Glass 1 Liter, 250 ml - Glass wide mouth, P/O - Plastic or other

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TAL-8234(1007)

Appendix B
Field Notes

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. 131

Leader:
Date: January 3, 2012
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled main plant

Weather Information:
Sky: Clear
Precipitation: None
Humidity: 50%

Temp. Max/Min: 22 degrees
Wind Speed/Direction: SSE. @ 13 mph

Contractor/Subcontractor and Area of Responsibility:

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

Time	Activity		pH	Temp	Scond
0702	Sampled Influent	5447-0112-INF-131	7.1	13.8	590
	Influent samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0704	Sampled GAC Vessel 310 Lead	5447-0112-310-131	7.2	11.7	586
0707	Sampled GAC Vessel 330 Lead	5447-0112-330-131	7.2	11.0	586
0710	Sampled GAC Vessel 350 Lead	5447-0112-350-131	7.2	10.6	584
	All GAC Vessel samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0713	Sampled Effluent	5447-0112-EFF-131	7.2	10.2	582
	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				

0855	Sampled AOP Influent 5447-0112-AOP-INF-055	7.5	8.3	647
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			
0845	Sampled AOP Effluent 5447-0112-AOP-EFF2-055	7.6	8.9	627
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			
0816	Sampled EW-1 5447-0112-EW01-131	7.6	10.4	781

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

Calibration: 0650– 0655 Calibrate pH and S cond meters
pH 7.0 = 6.9/7.0 S cond. 1409 = 1475/1409

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.

1-3-12 Sampling Event #131

Time Calibrate pH and send meters

0650 pH 7.0 = 6.9/7.0 Send 1407 = 1475/1407

0702 Sample plant Influent 5447-0112-INF-131

0704 Sample GAC-310 5447-0112-310-131

0707 Sample GAC-330 5447-0112-330-131

0710 Sample GAC-350 5447-0112-350-131

0713 Sample plant Effluent 5447-0112-EFF-131

0855 Sample AOP Influent 5447-0112-AOP-INF-055

0845 Sample AOP Effluent 5447-0112-AOP-EFFL-055

0816 Sample EW-01 5447-0112-EW01-131

22° Clear

SSE @ 13 mph

50% Humidity

1-3-10 Sampling Event #131

Sampling Summary Bottles Filled

ID	Time	pH	Sond	Temp	Odor	Explosive	Nitrate
INF	0702	7.1	590	13.8	3	2	–
310	0704	7.2	586	11.7	3	2	–
330	0707	7.2	586	11.0	3	2	–
350	0710	7.2	584	10.6	3	2	–
EFF	0713	7.2	582	10.2	3	2	2
AUP-INF	0855	7.5	647	8.3	3	2	–
OAP-EFF	0845	7.6	427	8.9	3	2	–
E well	0816	7.6	781	10.4	3	–	–

Samples shipped overnight to Test America Burlington via FedEx Air Bill # 8675-3615-0195

Nitrate samples shipped overnight to Test America Denver via FedEx Air Bill # 8675-3615-0184

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. 132

Leader:
Date: February 1, 2012
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled main plant

Weather Information:
Sky: Clear
Precipitation: None
Humidity: 91%

Temp. Max/Min: 26 degrees
Wind Speed/Direction: Calm

Contractor/Subcontractor and Area of Responsibility:

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

Time	Activity		pH	Temp	Scond
0700	Sampled Influent	5447-0212-INF-132	7.2	12.8	597
0700	Sampled Influent	5447-0212-2INF-132	7.2	12.8	597
0700	Sampled Influent	5447-0212-INF-MS	7.2	12.8	597
0700	Sampled Influent	5447-0212-INF-MSD	7.2	12.8	597
	Influent samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0705	Sampled GAC Vessel 310 Lead	5447-0212-310-132	7.2	11.8	587
0707	Sampled GAC Vessel 330 Lead	5447-0212-330-132	7.2	11.2	587
0710	Sampled GAC Vessel 350 Lead	5447-0212-350-132	7.3	12.3	587
	All GAC Vessel samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0715	Sampled Effluent	5447-0212-EFF-132	7.3	10.7	588
0715	Sampled Effluent	5447-0212-2EFF-132	7.3	10.7	588
0715	Sampled Effluent	5447-0212-EFF-MS	7.3	10.7	588
0715	Sampled Effluent	5447-0212-EFF-MSD	7.3	10.7	588
	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				
	QC/MS/MSD nitrates only.				

0833	Sampled AOP Effluent 5447-0212-AOP-EFF2-056	7.6	10.7	654
	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: 0640– 0645 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1409

Remarks: Samples shipped to Test America Burlington
Nitrate samples shipped to Test America Denver

Total Hours Worked: 10

Prepared by: (Signature) (Print) Tim Thares

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: Tim Thares/Vince Stallbaumer
Report:
Client:
Report No. 132

Leader:
Date: February 1, 2012
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled Extraction Wells

Weather Information:
Sky: Clear
Precipitation: None
Humidity: 91%

Temp. Max/Min: 26 degrees
Wind Speed/Direction: Calm

Contractor/Subcontractor and Area of Responsibility:

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

Time	Activity		pH	Temp	Scond
0905	Sampled EW-1	5447-0212-EW01-132	7.7	10.9	786
0934	Sampled EW-3	5447-0212-EW03-132	7.4	10.8	634
0943	Sampled EW-4	5447-0212-EW04-132	7.4	10.7	464
1022	Sampled EW-6	5447-0212-EW06-132	7.3	11.2	510
1014	Sampled EW-7	5447-0212-EW07-132	7.5	12.2	513
1008	Sampled EW-9	5447-0212-EW09-132	7.5	12.6	427
0955	Sampled EW-11	5403-0212-EW11-132	7.5	12.2	663
0916	Sampled EW-14	5447-0212-EW14-132	7.6	10.8	474
0926	Sampled EW-16	5447-0212-EW16-132	7.4	10.8	516
	EW-1 well samples	3 – 40ml bottles –HCL – VOC'S			
	All other well samples	2 – 1Lt amber glass bottle – no preservative – Explosives			
	EW-11 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: 0640 – 0645 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1409

Remarks: Samples shipped to Test America Burlington

Total Hours Worked: 6

Prepared by: (Signature) [signature] (Print) Tim Thares

Chain of Custody's on file at the plant.

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 02-01-12 ECC Project # 5447-002 Weather 26 & Clear
Client/Site Mead NOP Purpose of sampling Test for TCE
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW - 1	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
0905	7.7	10.9	786
Instrument ID			
Calibration Date	02/01/12	02/01/12	02/01/12

*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 -3 Total 3 glass
Analytes/parameters requested: -- Voc's
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 02/01/12
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: [signature] Reviewed by

Date 02/01/12 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 02-01-12 ECC Project # 5447-002 Weather 26 & Clear
Client/Site Mead NOP Purpose of sampling Test for Explosives
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW - 3 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
0934	7.4	10.8	634
Instrument ID			
Calibration Date	02/01/12	02/01/12	02/01/12

*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 -2 Total 2 glass
Analytes/parameters requested: -- Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 02/01/12
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: [signature] Reviewed by _____

Date 02/01/12 Date _____

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 02-01-12 ECC Project # 5447-002 Weather 26 & Clear
Client/Site Mead NOP Purpose of sampling Test for Explosives
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
0943	7.4	10.7	464
Instrument ID			
Calibration Date	02 01 12	02 01 12	02 01 12

*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 -2 Total 2 glass
Analytes/parameters requested: -- Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex, Over night
Holding Time in Field 15 minutes Date Shipped 02/01/12
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 02/01/12 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 02-01-12 ECC Project # 5447-002 Weather 26 & Clear
Client/Site Mead NOP Purpose of sampling Test for Explosives
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW - 6	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
1022	7.3	11.3	510
Instrument ID			
Calibration Date	02/01/12	02/01/12	02/01/12

*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 -2 Total 2 glass
Analytes/parameters requested: -- Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 02/01/12
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: [signature] Reviewed by ____

Date 02/01/12 Date ____

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 02-01-12 ECC Project # 5447-002 Weather 26 & Clear
Client/Site Mead NOP Purpose of sampling Test for Explosives
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

format			conductivity Mmhos/cm
1014	7.5	12.2	513
Instrument ID			
Calibration Date	02/01/12	02/01/12	02/01/12

*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 -2 Total 2 glass
Analytes/parameters requested: -- Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 02/01/12
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 02/01/12 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 02-01-12 ECC Project # 5447-002 Weather 26 & Clear
Client/Site Mead NOP Purpose of sampling Test for Explosives
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
1008	7.5	12.6	427
Instrument ID			
Calibration Date	02/01/12	02/01/12	02/01/12

*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 -2 Total 2 glass
Analytes/parameters requested: -- Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 02/01/12
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 02/01/12 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 02-01-12 ECC Project # 5447-002 Weather 26 & Clear
Client/Site Mead NOP Purpose of sampling Test for Explosives
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
0955	7.5	12.2	663
Instrument ID			
Calibration Date	02/01/12	02/01/12	02/01/12

*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 02/01/12
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 02/01/12 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 02-01-12 ECC Project # 5447-002 Weather 26 & Clear
Client/Site Mead NOP Purpose of sampling Test for Explosives
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
0916	7.6	10.8	474
Instrument ID			
Calibration Date	02/01/12	02/01/12	02/01/12

*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 -2 Total 2 glass
Analytes/parameters requested: -- Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 02/01/12
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 02/01/12 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 02-01-12 ECC Project # 5447-002 Weather 26 & Clear
Client/Site Mead NOP Purpose of sampling Test for Explosives
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW - 16	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
0926	7.4	10.8	516
Instrument ID			
Calibration Date	02/01/12	02/01/12	02/01/12

*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 -2 Total 2 glass
Analytes/parameters requested: -- Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 02/01/12
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 02/01/12 Date

2-1-12 Sample Event # 132

Time	Calibrate pH & Sond meter
0640	pH 7.0 = 7.0 Sond 1409 = 1409
0700	Sample plant Influent 5447-0212-INF-132
0700	Sample plant Influent 5447-0212-DINF-132
0700	Sample plant Influent 5447-0212-INF-MS
0700	Sample plant Influent 5447-0212-INF-MSD
0705	Sample GAC 310 5447-0212-310-132
0707	Sample GAC 330 5447-0212-330-132
0710	Sample GAC 350 5447-0212-350-132
0715	Sample plant Effluent 5447-0212-EFF-132
0715	Sample plant Effluent 5447-0212-DEFF-132
0715	Sample plant Effluent 5447-0212-EFF-MS
0715	Sample plant Effluent 5447-0212-EFF-MSD
0833	Sample AOP Effluent 5447-0212-AOP-EFF2-056

26° Clear
Calm
91% Humidity

2-1-12 Sample Event #132

Sampling Summary Bottles Filled

ID	Time	pH	Cond	Temp	VOCs	Explosives	Nitrates
INF	0700	7.2	597	12.8	3	2	-
2INF	0700	7.2	597	12.8	3	2	-
INF-MS	0700	7.2	597	12.8	3	2	-
INF-MSD	0700	7.2	597	12.8	3	2	-
310	0705	7.2	587	11.8	3	2	-
330	0707	7.2	587	12.2	3	2	-
350	0710	7.3	587	12.3	3	2	-
EFF	0715	7.3	588	10.7	3	2	2
2EFF	0715	7.3	588	10.7	-	-	2
EFF MS	0715	7.3	588	10.7	-	-	2
EFF MSD	0715	7.3	588	10.7	-	-	2
AUP-EFF2	0833	7.6	654	10.7	3	2	-

Samples shipped overnight to Test America Burlington via Fed Ex Air bill # 8675 3615 - 0232

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-0210

2-1-12 Sample Event #132 cont.

Time	Calibrate pH & Sond Meter
0640	pH 2.0 = 7.0 Sond ~~1409~~ = 1409
0905	Sample EW-1 5447-0212-EW01-132
0934	Sample EW-3 5447-0212-EW03-132
0943	Sample EW-4 5447-0212-EW04-132
1022	Sample EW-6 5447-0212-EW06-132
1014	Sample EW-7 5447-0212-EW07-132
1008	Sample EW-9 5447-0212-EW09-132
	~~Sample EW-9~~ ~~5447-0212-EW09-132-A~~ N.S.
0955	Sample EW-11 5447-0212-EW11-132
0916	Sample EW-14 5447-0212-EW14-132
0924	Sample EW-16 5447-0212-EW16-132

26° Clear
Calm
91% Humidity

2-1-12 Sample Event # 132 cont.

Sampling Summary 130 Hbs Filled

ID	Time	pH	Scan	Temp	Odor	Ex & Positives
EW-1	0905	7.7	786	10.9	3	–
EW-3	0934	7.4	634	10.8	–	2
EW-4	0943	7.4	464	10.7	–	2
EW-6	1022	7.3	510	11.2	–	2
EW-7	1014	7.5	513	12.2	–	2
EW-9	1008	7.5	427	12.6	–	2
~~EW-9A~~						~~2~~ N.S.
EW-11	0955	7.5	663	12.2	3	2
EW-14	0914	7.6	474	10.8	–	2
EW-16	0926	7.4	516	10.8	–	2

Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615 0232

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. 133

Leader:
Date: March 1, 2012
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled Main Plant

Weather Information:
Sky: Clear
Precipitation: None
Humidity: 91%

Temp. Max/Min: 25 degrees
Wind Speed/Direction: Calm

Contractor/Subcontractor and Area of Responsibility:

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

Time	Activity		pH	Temp	Scond
0646	Sampled Influent	5447-0312-INF-133	7.2	13.8	583
	Influent samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0648	Sampled GAC Vessel 310 Lead	5447-0312-310-133	7.2	12.1	587
0651	Sampled GAC Vessel 330 Lead	5447-0312-330-133	7.2	11.5	587
0654	Sampled GAC Vessel 350 Lead	5447-0312-350-133	7.2	11.2	587
	All GAC Vessel samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0658	Sampled Effluent	5447-0312-EFF-133	7.2	11.0	578
	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				

0750	Sampled AOP Influent 5447-0312-AOP-INF-057	7.3	8.8	665
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			
0743	Sampled AOP Effluent 5447-0312-AOP-EFF2-057	7.5	9.3	655
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			
0825	Sampled EW-9 UV System 5447-0312-EW09-133-A	7.8	9.3	438
	2 – 1Lt amber glass bottle – no preservative - Explosives			

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

Calibration: 0640– 0645 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1370/1409

Remarks: Samples shipped to Test America Burlington
Nitrate samples shipped to Test America Denver

Total Hours Worked: 4

Prepared by: (Signature) [signature] (Print) Tim Thares

Chain of Custody's on file at the plant.

3-1-12 Sample Event # 133

Time	Calibrate pH & Sound Meters
0640	pH 7.0 = 10.0 Sound 1409 = 1370/1405
0646	Sample plant Influent 5447-0312-INF-133
0648	Sample GAC 310 5447-0312-310-133
0651	Sample GAC 330 5447-0312-330-133
0654	Sample GAC 350 5447-0312-330-133
0658	Sample plant Effluent 5447-0312-EFF-133
0750	Sample AOP Influent 5447-0312-AOP-INF-057
0743	Sample AOP Effluent 5447-0312-AOP-EFF2-057
0825	Sample EW9-UV 5447-0312-EW09-133-A

25 clear

Calm

91% Humidity

3-1-12 Sample Event # 133

Sampling summary, Bottle, Filled

ID	Time	pH	Cond	Temp	Jar	Explosives	Nitrates
INF	0646	7.2	583	13.8	3	2	—
310	0648	7.2	581	12.1	3	2	—
330	0651	7.2	580	11.5	3	2	—
350	0654	7.2	579	11.2	3	2	—
EFF	0658	7.2	578	11.0	3	2	2
AOP INF	0750	7.3	645	8.8	3	2	—
AOP-EFF 2	0743	7.5	655	9.3	3	2	—
EW-9	0825	7.8	438	9.3	—	2	—

Sample, shipped overnight to Test America Butlington via Fed Ex Air Bill 8675-3615-0265

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air, Bill # 8675-3615-0234

1-3-12 Sampling Event #75

Time Calibrate pH + Cond Meters

0650 pH 7.0 = 6.9/7.0 Cond 1409 = 1475/1409

0801 Sample plant Influent 5447-0112-LL1-INF-075

0805 Sample plant Effluent 5447-0112-LL1-EFF-075

Sampling Summary Bottles Filled

ID	Time	pH	Cond	Temp	VOC	Nitrates
INF	0801	7.4	567	12.3	3	-
EFF	0805	8.2	559	10.7	3	2

VOC samples shipped overnight to Test America Burlington via Fed Ex A.B.11 # 8675-3615-0195

Nitrate samples shipped overnight to Test America Denver via Fed Ex A.B.11 # 8675-3615-0184

22° Clear
SSE @ 13 MPH
50% 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. 075

Leader:
Date: January 3, 2012
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL1 Plant

Weather Information:
Sky: Clear
Precipitation: None
Humidity: 50%

Temp. Max/Min: 22 degrees
Wind Speed/Direction: SSE @ 13 mph

Contractor/Subcontractor and Area of Responsibility:

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

Time	Activity	pH	Temp	Scond
0801	Sampled Influent 5447-0112-LL1-INF-075	7.4	12.3	567
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
0805	Sampled Effluent 5447-0112-LL1-EFF-075	8.2	10.7	559
	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: 0650– 0655 Calibrate pH and S cond meters
pH 7.0 =6.9/7.0 S cond. 1409 = 1475/1409

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.

4-1-12 Sample Event # 76

Time	Calibrate pH & Scond Meters
0640	pH 7.0 = 7.0 Scond 1409 = 1409

0741 Sample plant Influent 5447-0212-LL1-INF-076
0741 Sample plant Influent 5447-0212-LL1-DINF-076
0741 Sample plant Influent 5447-0212-LL1-INF-MS
0741 Sample plant Influent 5447-0212-LL1-INF-MSD
0750 Sample plant Effluent 5447-0212-LL1-EFF-076
0750 Sample plant Effluent 5447-0212-LL1-DEFF-076
0750 Sample plant Effluent 5447-0212-LL1-EFF-MS
0750 Sample plant Effluent 5447-0212-LL1-EFF-MSD
0757 Sample Carbon Air 5447-0212-LL1-AIR-EFF-071
0757 Sample Carbon Air 5447-0212-LL1-DAIR-EFF-076

26° Clear
Calm
91% Humidity

2-1-12

Sample Event #76

Sampling Summary Bottles filled

ID	Time	pH	Cond	Temp	Jars	Explosives	Nitrates	Air
INF	0741	7.0	570	10.2	3	2	–	–
2INF	0741	7.0	570	10.2	3	2	–	–
INF-MS	0741	7.0	570	10.2	3	2	–	–
INF-MSD	0741	7.0	570	10.2	3	2	–	–
EFF	0750	8.2	564	12.6	3	2	2	–
2EFF	0750	8.2	564	12.6	–	–	2	–
EFF-MS	0750	8.2	564	12.6	–	–	2	–
EFF-MSD	0750	8.2	564	12.6	–	–	2	–
AIR	0757	–	–	–	–	–	–	1
2AIR	0757	–	–	–	–	–	–	1

Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-0232

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-0210

Air samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-0221

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. 076

Leader:
Date: February 1, 2012
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL1 Plant

Weather Information:
Sky: Clear
Precipitation: None
Humidity: 91%

Temp. Max/Min: 26 degrees
Wind Speed/Direction: Calm

Contractor/Subcontractor and Area of Responsibility:

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

Time	Activity		pH	Temp	Scond
0741	Sampled Influent	5447-0212-LL1-INF-076	7.0	10.2	570
0741	Sampled Influent	5447-0212-LL1-2INF-076	7.0	10.2	570
0741	Sampled Influent	5447-0212-LL1-INF-MS	7.0	10.2	570
0741	Sampled Influent	5447-0212-LL1-INF-MSD	7.0	10.2	570
	Influent samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0750	Sampled Effluent	5447-0212-LL1-Eff-076	8.2	12.6	564
0750	Sampled Effluent	5447-0212-LL1-2Eff-076	8.2	12.6	564
0750	Sampled Effluent	5447-0212-LL1-Eff-MS	8.2	12.6	564
0750	Sampled Effluent	5447-0212-LL1-Eff-MSD	8.2	12.6	564
	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				
0757	Sampled Carbon Air Effluent	5447-0212-AIR-EFF-076			
0757	Sampled Carbon Air Effluent	5447-0212-2AIR-EFF-076			
	Air sample – 1 – 1 Lt Canister no preservative Air sample				

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

Calibration: 0640– 0645 Calibrate pH and S cond meters
pH 7.0 =7.0 S cond. 1409 = 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.

3-1-12 Sample Event # 77

Time Calibrate pH + Scond Meters

0640 pH 7.0 = 7.0 Scond 1408 = 1370/1409

0728 Sampled plant Influent 5447-0312-LLC-INF-077

0731 Sampled plant Effluent 5447-0312-LLC-EFF-077

Sampling Summary Bottles Filled

ID	Time	pH	Scond	Temp	SOC	Nitrates
INF	0728	2.3	587	19.2	3	-
EFF	0731	8.2	577	18.6	3	2

VOC samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-0265

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-0243

25° Clear
Calm
91% 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. 077

Leader:
Date: March 1, 2012
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL1 Plant

Weather Information:
Sky: Clear
Precipitation: None
Humidity: 91%

Temp. Max/Min: 25 degrees
Wind Speed/Direction: Calm

Contractor/Subcontractor and Area of Responsibility:

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

Time	Activity	pH	Temp	Scond
0728	Sampled Influent 5447-0312-LL1-INF-077	7.3	12.2	587
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
0731	Sampled Effluent 5447-0312-LL1-Eff-077	8.2	11.6	577
	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: 0640– 0645 Calibrate pH and S cond meters
pH 7.0 =7.0 S cond. 1409 = 1370/1409

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.

1-3-12 Sample LL4 plant

Time Calibrate pH & Cond meters

0650 pH 7.0 = 6.9/7.0 Cond 1409 = 1420/1409

0900 Sample plant In Fluent 5449-0112-LL4-INF

0908 Sample plant EFFluent 5449-0112-LL4-EFF

0912 Sample Carbon Air TRB-LL4-2INF-012012

Sampling Summary Bottles Filled

~~Site~~ ID	~~pH time~~	pH	~~Cond~~	~~Temp~~	VOC's	Nitrates	TCC
INF	0900	7.4	572	8.2	3	–	–
EFF	0908	8.1	549	2.1	3	2	–
AIR	0912	–	–	–	–	–	1

Voc samples shipped overnight to Test America Burlington via FedEx Air Bill # 8675-3615-0185

Nitrate samples shipped overnight to Test America Denver via FedEx Air Bill # 8675-3615-0184

Air Samples shipped overnight to Test America Burlington via FedEx Air Bill # 8675-3615-0200

22° Clear
SSE @ 13 mph
50% 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: January 3, 2012
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL4 Plant

Weather Information:
Sky: Clear
Precipitation: None
Humidity: 50%

Temp. Max/Min: 22 degrees
Wind Speed/Direction: SSE @ 13 mph

Contractor/Subcontractor and Area of Responsibility:

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

Time	Activity	pH	Temp	Scond
0900	Sampled Influent 5447-0112-LL4-INF	7.4	8.2	572
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
0908	Sampled Effluent 5447-0112-LL4-EFF	8.1	9.1	569
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	1 – 1Lt poly bottle – no preservative – Nitrates			
	1 – 250ml poly bottle – H2SO4 – Nitrates			
0912	Sampled Air Influent 5447-0112-LL4-AIR- INF			
	Influent sample – 1 – 1 Lt Canister – No Preservative – Air Sample			

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

Calibration: 0650– 0655 Calibrate pH and S cond meters
pH 7.0 =6.9/7.0 S cond. 1409 = 1475/1409

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.

2-1-12 Sample LL4 Plant

Time Calibrate pH & scond. meters

0640 pH 7.0 = 7.0 Scond 1409 = 1409

0838 Sample plant Influent 5447-0212-LL4-Inf

0842 Sample plant Effluent 5447-0212-LL4-Eff

Sampling Summary Bottle Filled

ID	Time	pH	Scond	Temp	VOCs	Explosives	Nitrates
Inf	0838	7.3	575	8.3	3	2	–
Eff	0842	8.3	571	10.1	3	2	2

Samples shipped overnight to Test America Burlington via FedEx Air Bill # 8675-3615-0232

Nitrate samples shipped overnight to Test America Denver via FedEx Air Bill # 8675-3615-0210

26° Clear
Calm
91% 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: February 1, 2012
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL4 Plant

Weather Information:
Sky: Clear
Precipitation: None
Humidity: 91%

Temp. Max/Min: 26 degrees
Wind Speed/Direction: Calm

Contractor/Subcontractor and Area of Responsibility:

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

Time	Activity	pH	Temp	Scond
0838	Sampled Influent 5447-0212-LL4-INF	7.3	9.3	575
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt Amber bottles – no preservative – Explosives			
0842	Sampled Effluent 5447-0212-LL4-EFF	8.3	10.1	571
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt Amber bottles – 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: 0640– 0645 Calibrate pH and S cond meters
pH 7.0 =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.

3-1-12 Sample LL4

Time Calibrate pH & Scond meters

0640 pH 7.0 = 7.0 Scond 1409 = 1370/1409

0753 Sample plant Influent 5447-0312-LL4-INF

0756 Sample plant Effluent 5447-0312-LL4-EFF

Sampling Summary Bottles Filled

ID	Time	pH	Scond	Temp	VOCs	Nitrates
INF	0753	7.4	591	9.2	3	-
EFF	0756	8.6	591	9.3	2	-

VOC samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8607536 5-0265

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8607-3615-0243

25° Clear

Calm

91% 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: March 1, 2012
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL4 Plant

Weather Information:
Sky: Clear
Precipitation: None
Humidity: 91%

Temp. Max/Min: 25 degrees
Wind Speed/Direction: Calm

Contractor/Subcontractor and Area of Responsibility:

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

Time	Activity	pH	Temp	Scond
0753	Sampled Influent 5447-0312-LL4-INF	7.4	9.2	591
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
0756	Sampled Effluent 5447-0312-LL4-EFF	8.6	9.3	591
	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: 0640– 0645 Calibrate pH and S cond meters
pH 7.0 =7.0 S cond. 1409 = 1370/1409

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.

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 G

Historical Detections spreadsheet of TCE and RDX for Monitoring Wells, Water Supply Wells and Surface Water Locations (on CD)