FINAL
2010 CONTAINMENT EVALUATION

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

Prepared for

United States Army Corps of Engineers
Kansas City District

August 2011

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I hereby certify that the enclosed *2010 Containment Evaluation*, 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.

Approved by:

ECC Project Manager **Date**

Accepted by:

USACE Contracting Officer **Date**

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LIST OF ACRONYMS AND ABBREVIATIONS

AMA	Atlas Missile Area
AOP	advanced oxidation process
AWSS	Alternate Water Supply Support
BMcD	Burns & McDonnell
CE	Containment Evaluation
CENWK	Corps of Engineers, Northwestern Division, Kansas City District
CEWP	Containment Evaluation Work Plan
COC	contaminant of concern
EPA	Environmental Protection Agency
ET	evapotranspiration
EW	extraction well
FEW	focused extraction well
ft	feet
GAC	granular activated carbon
GMP	Groundwater Monitoring Program
gpm	gallons per minute
GTP	groundwater treatment plant
GWM06	2006 Groundwater Model
GWM08	2008 Groundwater Model
GWM10	2010 Groundwater Model
LL	Load Line
LPNNRD	Lower Platte North Natural Resources District
LWS	Lincoln Water System
MCL	Maximum Contaminant Level
MGD	millions of gallons per day
µg/L	micrograms per liter
MW	monitoring well
M.U.D	Metropolitan Utilities District
NOP	Nebraska Ordnance Plant
OU	Operable Unit
RAO	remedial action objective
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
ROD	Record of Decision
SP	stress period
TCE	trichloroethene
USGS	United States Geological Survey
VOC	volatile organic compound
WSW	water supply well

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1.0 INTRODUCTION

This document provides an evaluation of the hydraulic containment component of the Remedial Action for Operable Unit (OU) No. 2 at the former Nebraska Ordnance Plant (NOP) (Site) near Mead, Nebraska (Figure 1-1). The analysis presented here is based on the *Containment Evaluation Work Plan* (CEWP) (URS, 2009a). The primary tool used for evaluation of containment at the site is the compliance groundwater monitoring well network, augmented by the predictive capacity of groundwater model contaminant transport simulations. This document is divided into the following sections:

- Section 1.0 presents a brief description of site background; a history of the remedy; a summary of the Site groundwater fate and transport model development; the extent of groundwater contamination and the objectives and scope of the evaluation.
- Section 2.0 presents a discussion of the extent of contamination; a summary of the 2010 groundwater data from the compliance and the perimeter groundwater monitoring wells (MW); and water supply wells (WSW).
- Section 3.0 presents the site data review and groundwater conceptual model revision; the extent of contamination; groundwater elevation data; aquifer parameters; an evaluation of contaminant capture using transport simulations; a discussion of the uncertainty of model transport simulations; contaminant concentration trends; and recommended modifications to extraction well (EW) and focused extraction well (FEW) pumping rates.
- Section 4.0 presents the conclusions of the Containment Evaluation (CE).
- Section 5.0 presents the references cited in this document.

1.1 Background

The following sections describe the site history, description of remedial actions, contaminants of concern (COC), the extent of groundwater contamination, and the current remedy.

1.1.1 Site History

The Site is located approximately one-half mile south of Mead and 30 miles west of Omaha in Saunders County, Nebraska (Figure 1-1). The Site occupies approximately 17,250 acres. The Nebraska Defense Corporation operated the Site for the Army from 1942 until 1945. During World War II, bombs, shells, and rockets were assembled at the Site in four locations known as Load Lines (LL). Ordnance production was terminated in 1945 and the facility was placed on inactive status. Between 1945 and 1949, the buildings on the Site were decontaminated and used primarily for storage and disposal of bulk explosives and munitions.

In addition, ammonium nitrate was produced for use as fertilizer. In 1950, the plant was temporarily reactivated and produced an assortment of weapons for use in the Korean Conflict. The Site was placed on standby status in 1956. In 1959, the approximately 17,250-acre site was determined to be surplus and was transferred to the General Services Administration for disposition.

From 1959 to 1960, the Atlas Missile Area (AMA) was built north of LL4. Trichloroethene (TCE) was used during construction to degrease and clean pipelines used to carry liquid oxygen fuel for missiles.

The northern end of LL1 was formerly used as the Air Force Ballistic Missile Division Tech Area. TCE was allegedly disposed in ditches, possibly between 1959 and 1964.

Since the 1960's, private individuals, government agencies, and corporations including the University of Nebraska, the Nebraska Army National Guard, the United States Air Force, the United States Army Reserves, and the United States Department of Commerce have conducted operations at the Site. Contaminants were released to the environment as a part of past operations at the Site.

More detailed information on the physical setting at the Site is available in the *Remedial Investigation Report Operable Unit 2 (OU2) (Groundwater) for Former Nebraska Ordnance Plant, Mead, Nebraska* (Woodward-Clyde, 1993).

1.1.2 Description of Remedial Action

The remedial action objectives (RAOs) outlined in the OU2 Record of Decision (ROD) (Woodward-Clyde, 1996a) address the contaminated groundwater and explosives-contaminated soil which could act as a source of explosives contamination to groundwater. The RAOs also consider the long-term goals of protecting human health and the environment and meeting federal and state Applicable or Relevant and Appropriate Requirements.

The RAOs as defined in the OU2 ROD are:

- Minimize the potential for ingestion of contaminated groundwater, or reduce concentrations to acceptable health-based levels;
- Minimize the potential for dermal exposure to contaminated groundwater, or reduce concentrations to acceptable health-based levels; and
- Minimize the potential for inhalation of chemicals released during the use of contaminated groundwater, or reduce concentrations to acceptable health-based levels.

The major components of the selected remedy include:

- Hydraulically contain contaminated groundwater exceeding the Final Target Groundwater Cleanup Goals;
- Focused extraction of groundwater in areas with relatively high concentrations of TCE and explosives;
- Treat all extracted groundwater using granular activated carbon (GAC) adsorption, an advanced oxidation process (AOP), and air stripping. GAC adsorption and AOP may be applied individually or in combination, while air stripping must be applied in combination with one of the other technologies to effectively treat explosives;

- Dispose of the treated groundwater by beneficially reusing it or through surface discharge;
- Provide a potable water supply to local groundwater users whose water supply contains hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) exceeding the health advisory (2 micrograms/liter [µg/L]) and/or TCE exceeding the Maximum Contaminant Level (MCL) (5 µg/L);
- Monitor groundwater elevations and water quality; and
- Excavate and treat explosives-contaminated soil which could act as a source of explosives contamination of groundwater and which do not meet the OU1 excavation criteria.

The remediation of explosives-contaminated soils, which could act as a source of explosives contamination to groundwater, as defined by the OU2 ROD, was completed during the OU1 remedial action in the fall of 1997.

1.1.3 Contaminants of Concern

The COCs and associated cleanup goals defined in the OU2 ROD are summarized in Table 1-1.

1.1.4 Extent of Groundwater Contamination

The OU2 ROD identified the following four groundwater contaminant plumes:

- TCE plume with the suspected source at the AMA;
- TCE plume with the suspected source at the Air Force Ballistic Missile Division Tech Area;
- Explosives plume with the suspected source at LL1; and
- Explosives plumes with suspected sources at LL2, LL3, LL4, and the North Burning Grounds area.

TCE plumes have also been identified with the suspected sources at LL2, LL3, and former Landfill area (approximately one mile east of LL4). TCE concentrations exceed the TCE Final Target Groundwater Cleanup Goal of 5 µg/L in the AMA, LL1, LL2, LL3, and Landfill area contaminant plumes. TCE is the most commonly detected volatile organic compound (VOC) at the site, and is used as an indicator for other VOCs at the site. At locations where the other ROD volatile COCs (i.e., methylene chloride and 1,2-dichloropropane) are detected, TCE is also detected above the cleanup goal. Conversely, where TCE is not detected, the other volatile COCs are typically absent. RDX is the most commonly detected explosive compound in groundwater at the Site, and is detected at concentrations exceeding the Final Target Groundwater Cleanup Goal of 2 µg/L. RDX is used as an indicator for explosive compounds in groundwater at the site. Where other explosive compounds are detected, RDX is also typically detected above the cleanup goal, and, conversely, when RDX is not detected other explosives are typically absent. TCE, RDX, 1,3,5-trinitrobenzene, and 2,4,6-trinitrotoluene were the only COCs detected above the Final Target Groundwater Cleanup Goals in monitoring wells at the Site in 2010.

The goal of the hydraulic containment system is to contain groundwater contamination that exceeds the Site Final Target Groundwater Cleanup Goals. The current extent of contamination, developed from an analysis of direct-push, monitoring well, focused extraction and extraction wells sampling performed through 2010, is depicted on Figure 1-2. The plume interpretations are the same as those presented in the *2010 Groundwater Model Update* (GWM10) (ECC and Burns & McDonnell [BMcD], 2011a).

Plume interpretations were based on multiple investigations, the largest and most recent of which were:

- *Spring 2006 Omaha Metropolitan Utilities District (M.U.D) Baseline Groundwater Investigation* (URS, 2006);
- *Spring 2007 and Fall 2007 Groundwater Investigations* (URS, 2008);
- *FEW-14 Investigation* (ECC, 2008a);
- *2008 Groundwater Investigation* (URS, 2009b);
- *Pre-Pilot Study Investigation* (ECC and BMcD, 2011b);
- *2009 and 2010 Groundwater Monitoring Program* (GMP) Annual Reports (ECC, 2010 and 2011a); and
- *2010 Aquifer Characterization* (ECC, 2011b).

The shallow zone of the aquifer is the top half of the saturated thickness of the alluvial aquifer, and the intermediate zone is the bottom half of the saturated thickness of the alluvial aquifer. Deep wells are screened in the Omadi Sandstone.

The groundwater flow direction in the Todd Valley is generally to the south and southeast, with an average hydraulic gradient of 12 feet per mile. The groundwater flow direction in the Platte River alluvial aquifer is approximately south, with an average hydraulic gradient between 2 feet per mile to 4 feet per mile.

1.1.5 Remedy Description

This document evaluates the performance of the selected OU2 remedy, as it relates to the hydraulic containment system. The remedy was designed and constructed to contain site groundwater contaminated above the Final Target Groundwater Cleanup Goals defined in the ROD. Containment is accomplished through the operation of groundwater extraction wells.

For the 2010 CE period (January 2010 through December 2010), the remedy currently includes the following components:

- As of the end of the 2010 CE period, eight extraction wells were in operation including EW-1, EW-3, EW-4, EW-6, EW-7, EW-9, EW-12, and EW-16 to contain contaminated groundwater, and three extraction wells (FEW-11, FEW-14, and FEW-15) were in operation for focused extraction.
    - EW-1 contains the contaminated groundwater associated with the AMA/LL4 plume.

  - EW-3, EW-4, and EW-16 contain the contaminated groundwater associated with the LL3 RDX plume. EW-3, EW-4, and EW-16 will also contain the LL3 TCE plume upon arrival at the extraction wells.
  - EW-6, EW-7, and EW-9 contain the contaminated groundwater associated with the LL2 RDX plume. EW-6, EW-7, and EW-9 will also contain the LL2 TCE plume upon arrival at the extraction wells.
  - EW-12 contains the contaminated groundwater associated with the LL1 TCE plume . EW-12 will also contain the LL1RDX plume upon arrival at the extraction well.

  Figure 1-2 shows the location of these extraction wells.

- FEW-11, located in the LL1 TCE plume, began operating in March 2008 as a focused extraction well to remediate groundwater containing high concentrations of TCE in the LL1 TCE plume. Contaminated groundwater from FEW-11 has primary treatment at the AOP Groundwater Treatment Plant (GTP). The effluent from the AOP GTP is then treated at the Main GTP for RDX prior to discharge.
- FEW-14 began operating in June 2009 as a focused extraction well to remediate groundwater containing high concentrations of RDX associated with the LL3 RDX plume. Contaminated groundwater from FEW-14 is treated at the Main GTP.
- FEW-15 began operating in May 2010 as a focused extraction well to remediate groundwater containing high concentrations of TCE in the AMA plume. Contaminated groundwater from FEW-15 is treated at the LL4 GTP.
- Groundwater from extraction wells EW-1, EW-3, EW-4, EW-6, EW-7, EW-9, and EW-16 is also treated at the Main GTP.
- EW-2 and EW-5, located at the LL3 RDX plume, were turned off in March 2009 based upon recommendations in the *Restoration Time-Frame Modeling Technical Memorandum* (URS, 2009c).
- EW-10, located at the LL2 RDX plume was shut down on February 23, 2010 in accordance with the January 20, 2010 letter to the U.S. Environmental Protection Agency (EPA) because it no longer benefited the containment of that plume (Corps of Engineers, Northwestern Division, Kansas City District [CENWK], 2010).
- EW-12 contains the TCE plume associated with LL1. EW-13 may be used in the future, if necessary, to complement the EW-12 pumping. Groundwater from EW-12 is treated at the LL1 GTP. EW-8, located at the LL1 TCE plume, was turned off in September 2007 because it was no longer contributing to plume containment as documented in the *Annual Operations, Maintenance, and Monitoring Summary Report* (ECC, 2008b).

Operation of FEW-11, FEW-14, and FEW-15 is in compliance with the requirements of the OU2 ROD to implement focused extraction in areas with relatively high concentrations of TCE and/or RDX.

1.2 Development of Site Groundwater Model

The design of the OU2 containment system was accomplished through the development of a series of site-specific groundwater models. The current model is the culmination of groundwater modeling efforts that started with the *Removal Action Groundwater Modeling* (Woodward-Clyde, 1994), subsequently followed by:

- *Conceptual Groundwater Model Technical Memorandum* (Woodward-Clyde, 1996b and 1996c);
- *Remedial Design Groundwater Model* (Woodward-Clyde, 1998);
- *Remedial Design Groundwater Model II* (Woodward-Clyde, 1999);
- *Remedial Design Groundwater Model III* (URS, 2002);
- *Remedial Design Groundwater Model IV* (URS, 2004);
- Updates to Remedial Design Groundwater Model IV described in the *LL1 Containment System Remedial Design* (URS, 2005);
- *2006 Groundwater Modeling Report* (URS, 2007);
- *2008 Groundwater Modeling Update* (GWM08) (URS, 2009d); and
- *2010 Groundwater Model Update* (GWM10) (ECC and BMcD, 2011a).

GWM10 is the most recent Site modeling effort, and details the updates to the GWM08 groundwater model.

1.3 Project Objectives

The goal of the CE is to determine whether the hydraulic containment system is containing ROD defined COCs above the Final Target Groundwater Cleanup Goals. The primary CE tool at the site is the compliance groundwater monitoring well network. The secondary CE tool at the site is the system effectiveness review which includes evaluating regional groundwater levels and evaluation of capture using the current groundwater transport model.

1.4 Project Scope

Containment was evaluated based on chemical data from the downgradient compliance groundwater monitoring wells collected in 2010. The general performance or effectiveness of the hydraulic containment system was evaluated using the current version of the groundwater model (GWM10) to perform contaminant transport modeling.

2.0 COMPLIANCE MONITORING REVIEW

The foundation of the COC monitoring portion of the 2010 CE is the data collected from the comprehensive annual site-wide GMP. This section discusses the evaluation of groundwater chemical data used during the CE as the primary line of evidence to determine if the hydraulic containment system functioned as designed. Figure 2-1 shows the location of the compliance and perimeter groundwater monitoring wells evaluated for the 2010 CE. Table 2-1 lists the location of the compliance and perimeter groundwater monitoring wells and rational for sampling.

Hydraulic containment was demonstrated using the chemical data from the 2010 calendar year. ROD compliance was demonstrated when COCs were not detected above the Final Target Groundwater Cleanup Goals (Table 1-1) in the compliance groundwater monitoring wells. If detections of COCs above the Final Target Groundwater Cleanup Goals occurred in one or more perimeter groundwater monitoring well or water supply well, the response actions, as outlined in Section 3.1.1 of the CEWP (URS, 2009a), would have been performed. If detections of COCs above the Final Target Groundwater Cleanup Goals occurred in one or more of the compliance groundwater monitoring wells, the response actions, as outlined in Section 3.1.2 of the CEWP, would have been performed.

Possible response actions for compliance and perimeter groundwater monitoring wells as well as water supply wells are presented in a tiered approach in Section 3.1 of the CEWP. If detections of COCs above Final Target Groundwater Cleanup Goals in perimeter or compliance groundwater monitoring wells were verified by re-sampling, possible response actions may have included, but were not necessarily limited to, direct-push investigations and/or monitoring well installation, testing, and abatement actions to mitigate plume movement. Regardless of any findings related to the tiered response action approaches presented in the CEWP, an alternate water supply would have been provided to any residence whose water supply well at any point contained TCE and/or RDX above Final Target Groundwater Cleanup Goals.

2.1 Compliance Groundwater Monitoring Wells

The CEWP identifies the compliance groundwater monitoring wells that were evaluated for the 2010 CE. These wells are shown in Figure 2-1 and listed on Table 2-1. The chemical data for the groundwater samples collected and analyzed from these wells is summarized in Table 2-2. A detailed presentation of the data is provided in the 2010 GMP Annual Report (ECC, 2011a). TCE and RDX concentration trend charts of compliance groundwater monitoring well clusters are presented in Appendix A of this report.

The MW-158 monitoring well cluster was installed in 2010 as compliance monitoring wells to replace the MW-62 monitoring well cluster. The MW-62 monitoring well cluster was sampled and reported for the First, Third and Fourth Quarter 2010 GMP sampling events, and properly abandoned in the Fourth Quarter of 2010. MW-158 was installed in the Third Quarter 2010, and sampled and reported during the baseline and Fourth Quarter 2010 GMP sampling events.

2.1.1 COCs Detected Above Final Target Groundwater Cleanup Goals

The data in Table 2-2 (also presented in Table 3-4 of the 2010 GMP Annual Report [ECC, 2011a]) indicates that there were no COCs detected above the Final Target Groundwater Cleanup Goals in the compliance groundwater monitoring wells during 2010.

2.1.2 Response Actions

No COCs were detected above the Final Target Groundwater Cleanup Goals in the compliance groundwater monitoring wells sampled and analyzed in 2010; therefore, no response actions were warranted.

2.2 **Perimeter Groundwater Monitoring Wells**

Figure 2-1 identifies the perimeter groundwater monitoring wells clusters evaluated for the 2010 CE. The groundwater chemical data are summarized in Table 2-3. TCE and RDX concentration trend charts of perimeter groundwater monitoring well clusters are presented in Appendix B of this report.

New perimeter monitoring well clusters MW-147 and MW-159 were installed in 2010, and first sampled and reported during the Fourth Quarter sampling event. Further details regarding the installation of MW-147 and MW-159 are included in the 2010 Aquifer Characterization (ECC, 2011b).

2.2.1 COCs Detected Above Final Target Groundwater Cleanup Goals

The data in Table 2-3 (also presented in Table 3-3 of the 2010 GMP Annual Report [ECC, 2011a]) indicates that there were no ROD COCs above the Final Target Groundwater Cleanup Goals in the perimeter groundwater monitoring wells in 2010.

2.2.2 Response Actions

No COCs were detected above the Final Target Groundwater Cleanup Goals in the perimeter groundwater monitoring wells sampled and analyzed in 2010, therefore, no response actions were warranted.

2.3 **Water Supply Wells**

The 78 water supply wells sampled in 2010 are listed in Table 2-4 and shown on Figure 1-2. A more detailed presentation of the Water Supply Well and Alternate Water Supply Support (AWSS) program can be found in the 2010 GMP Annual Report (ECC, 2011a). The AWSS program addresses the water supply wells for local groundwater users whose water supply at any point contained RDX and/or TCE above the Final Target Groundwater Cleanup Goals.

WSW-116 was added to the program during the First Quarter 2010, and WSW-117 was added during the Third Quarter 2010 as a result of GMP surveys of the Nebraska Well Registry Database, reviews of the Saunders County Building Department Building Permit Applications, and a reconnaissance of the area.

Five non-program water supply wells (WSW-118 through WSW-122) were sampled during the Third Quarter 2010 sampling event. These water supply wells are not a part of the water supply well program; however, they were sampled for COCs in 2010 as a precautionary measure due to TCE detections in select M.U.D monitoring wells in November 2009.

2.3.1 ROD COCs Detected Above Final Target Groundwater Cleanup Goals

TCE and RDX concentration trend charts of water supply wells that have had detections are presented in Appendix C of this report. TCE and RDX detections above Final Target Groundwater Cleanup Goals in water supply wells sampled in 2010 are presented in the Table 2-5. The remaining residential water supply wells sampled in 2010 had no other detections of the COCs above the Final Target Groundwater Cleanup Goals.

No COCs were detected in the five non-program water supply wells (WSW-118 through WSW-122) sampled during 2010.

No additional water supply wells were added to the AWSS program based on the 2010 detections.

2.3.2 Response Actions

No COCs were detected above the Final Target Groundwater Cleanup Goals in the water supply wells sampled and analyzed in 2010; therefore, no response actions were warranted.

3.0 CONTAINMENT SYSTEM EFFECTIVENESS REVIEW

This section describes the secondary line of evidence used to evaluate the effectiveness of the hydraulic containment system. Semi-annual regional water-level measurements collected from site-wide monitoring and observation wells and piezometers were used to provide a supporting line of evidence for the 2010 CE. The regional water-level measurements are used to evaluate the groundwater flow direction to determine if the containment system is effective. The water-level data were also used to assess the presence and magnitude of vertical and horizontal flow gradients that would affect the ability of the extraction well system to capture contaminated groundwater in both vertical and horizontal directions.

3.1 Step 1: Site Data Review

This section describes updates to the conceptual site model and updates associated with GWM10. Chemical data and groundwater elevation data are described in Sections 3.2 and 3.3. The latest groundwater model update occurred in 2010 (GWM10) during which the site conceptual groundwater model was refined and new data collected since the previous groundwater model update (GWM08) (URS, 2009) was incorporated. Additional data and refinements are discussed in detail in GWM10 (ECC and BMcD, 2011a) and include:

- Updated aquifer characterization of the LL1 RDX, LL1 TCE, LL3 RDX, LL3 TCE, LL4/AMA RDX, and LL4/AMA TCE plumes, based on direct-push data collected as part of the Aquifer Characterization completed in 2010 (ECC, 2011b). Additional refinement of the LL2 TCE and LL2 RDX plumes were based on data collected as part of the Pre-Pilot Study Investigation completed in 2010 (ECC and BMcD, 2011b), as well as data collected as part of the 2010 site-wide GMP (ECC, 2010 and 2011a).

- Refined hydraulic conductivity distribution based on data collected from pumping tests at FEW-11, FEW-15, the shutdown of EW-10; and slug tests in new and existing wells and direct-push locations conducted as part of the 2010 Aquifer Characterization (ECC, 2011b).

- Refined bedrock surface elevation based on stratigraphic data from the monitoring wells installed in 2010.

- Operation of the M.U.D Platte West Well Field since February 2009.

- Operational changes of the Site extraction system.

- Refined recharge values based on varied precipitation and higher observed water levels in Site wells in 2009 and 2010.

- Refined model grid near the extraction and focused extraction wells to better simulate the capture zones.

- Updated water levels measurements from March 2009, August 2009, October 2009, March 2010, and August 2010 that were coordinated by the Lower Platte North Natural Resources District (LPNNRD) with cooperation from the Lincoln Water System (LWS), MUD, USACE, and the United States Geological Survey (USGS).

The only change made since the GWM10 model update before performing the 2010 CE predictive modeling was increasing the pumping rate at EW-1 for future time periods as presented in Appendix D, due to present day operational changes.

3.2 Step 2: Review of the Extent of Contamination above the Final Target Groundwater Cleanup Goals

The current extent of contamination, developed from an interpretation of direct-push, monitoring well, and extraction well data collected through 2010 is depicted on Figure 1-2. Detailed discussion of the current extent of contamination is included in GWM10 (ECC and BMcD, 2011a).

3.3 Step 3: Interpretation of Water Levels

Semi-annual regional water-levels were measured in March 2010 and October 2010. In addition, regional water levels were measured in August 2010 to provide information on water levels during the irrigation season. The water-level data are used to assess the presence and magnitude of vertical and horizontal flow gradients that would affect the ability of the extraction well system to capture contaminated groundwater in both vertical and horizontal directions.

Table 3-1 summarizes the water level measurements. The water levels used in creating the potentiometric surface are from the deepest well in the unconsolidated aquifer in each cluster, which is typically the "A" well. These interpretations, based on water levels from the following sources, were contoured using a kriging algorithm and the program Surfer® developed by Golden Software:

- USACE monitoring wells, observation wells, and piezometers;
- LPNNRD piezometers and irrigation wells (LPNNRD, 2010);
- M.U.D piezometers (LPNNRD, 2010);
- LWS piezometers (LPNNRD, 2010);
- USGS piezometers and irrigation wells (USGS, 2011a); and
- USGS surface water-gauging stations (USGS, 2011b).

Figures 3-1 through 3-3 present the following potentiometric surfaces:

- March 21 to 31, 2010;
- August 26, 2010; and
- October 29, 2010.

The potentiometric surfaces for March, August, and October 2010 presented in these three figures are similar to historical potentiometric surfaces. Site-wide monitoring well groundwater

elevations recorded during 2010 were higher compared to those measured during 2009 monitoring events. Site-wide monitoring well groundwater elevations recorded during March, August, and October 2010 were an average of 0.06 feet (ft), 0.73 ft, and 1.04 ft higher than those measured during their respective 2009 monitoring events.

The interpretations suggest that the groundwater level elevations in August and October 2010 within the Site groundwater plumes are similar. The potentiometric surface distribution across the Site is nearly unchanged between August and October 2010. Groundwater levels were slightly higher during the March event. The data indicates there has been no fundamental change in the potentiometric surface and flow direction in the area of the Site plumes in 2010.

Vertical gradients are presented in Table 3-2. The median vertical gradient between the intermediate zone wells and the shallow zone wells was 0.025 (downward) in March, August, and October 2010. During the March 2010 measurement event, the MW-44 well cluster, near the groundwater discharge area near Johnson Creek, indicated the most significant downward gradient (0.24) between the shallow zone and the intermediate zone. This downward gradient may be partially due to a heavy rainfall event that occurred on March 27, 2010. Conversely, the largest upward gradient (-0.07) between the shallow zone and the intermediate zone was indicated at the MW-44 well cluster during the October 2010 measurement event. During the August 2010 measurement event, the MW-106 well cluster, located approximately 0.8 miles southeast of the LPNNRD Reservoir, indicated the most significant downward gradient (0.15) between the intermediate zone and the deep zone. The largest upward gradient (-0.07) between the intermediate zone and the deep zone was indicated during the March 2010 measurement event at the MW-107 well cluster, located approximately 1 mile southeast of the LPNNRD Reservoir. Based on the vertical gradient data presented, the extraction wells will not be adversely impacted by vertical gradients.

3.4 Step 4: Evaluation of Capture Using Contaminant Transport Simulations

Measured, estimated, and predicted pumping rates from the containment system, public water supplies, and irrigation wells were incorporated in the model, and used to predict capture of the plumes using the contaminant transport modeling software MT3DMS (Zheng and Wang, 1998). The model flow and transport assumptions and the measured, estimated, and predicted pumping rates are presented in Appendix D of this report.

3.4.1 Groundwater Flow Model for Containment Evaluation

The groundwater flow and transport model used for predicting future TCE and RDX distributions is the GWM10 model. The boundary conditions for the predictive model are the same as presented in the GWM10 Update. The predictive model hydrologic and groundwater extraction conditions beginning in August 2010 are specified in Appendix D, Table D-1, and as follows:

- Two stress periods (SP) were used for each year; a non-irrigation season of 273 days and an irrigation season of 92 days; 61 stress periods total.
- Evapotranspiration (ET) rates (Appendix D, Table D-2) and groundwater recharge (Appendix D, Table D-3) are assumed to be the estimated long-term average.
- The simulated heads from the end of August 2010 from the three-year calibration model described in GWM10 were used as the initial heads. The calibration model was calibrated under steady-state and transient conditions starting on March 29, 2007 and ending on August 27, 2010.
- Site pumping rates for SP 1 (August 2010 – December 2010), SP 2 (January 2011 – May 2011), SP 3 (June 2011 – August 2011), SP 4 (September 2011 – May 2012), and SP 5 (June 2012 – August 2012) are based on the average measured pumping rates from September 2010 – December 2010 as presented in Table 3-3. Pumping rates beginning with SP 6 (September 2012 – June 2013) are assumed to be the proposed optimized pumping rates (ECC and BMcD, 2011a), with the exception of EW-1. Pumping rates at EW-1 were increased based on current operating conditions. Site pumping rates are presented in Appendix D, Table D-4.
- M.U.D pumping rate for SP 1 (August 2010 – December 2010) and SP 2 (January 2010 – May 2010) is the average measured pumping rates from September 2010 – December 2010 (M.U.D, 2011). Pumping rates beginning with SP 3 (June – August 2011) are assumed to be pumping at the maximum permitted annual average rate of 52 million of gallons per day (MGD) (69 MGD in summer and 46 MGD the rest of the year) (Appendix D, Table D-5).
- Municipal pumping rates for the villages of Ithaca and Memphis are estimated with per capita usage and population statistics. The Mead and Ashland municipal pumping rates for SP 1 (August 2010 – December 2010) and SP 2 (January 2011 – May 2011) are the average rates for September – December 2010 (City of Ashland, 2011 and Village of Mead, 2011). Pumping rates for the summer (irrigation) stress periods beginning with SP 3 (June 2011 – August 2011) are the average of the summer rates measured from 2010. Pumping rates for the non-irrigation stress periods beginning with SP 3 (September 2011 - May 2012) are the average of the September through May rates measured from 2010 (Appendix D, Table D-6).
- LWS pumping rates for SP 1 (August 2010 – December 2010) and SP 2 (January 2011 – May 2011) are an average from September 2010 - December 2010 (LWS, 2011). Stress Periods 3-61 are estimated to increase approximately 2 percent per year following growth in demand projected by LWS (Black & Veatch, 2003) (Appendix D, Table D-7).

- The irrigation pumping rates are assumed to be the long-term average for all irrigation stress periods, equal to the 2002-2005 transient seasonal average (Appendix D, Table D-8). The estimation of long-term irrigation pumping rate averages was described in Section 2 of the GWM10 Update.
- River stages for the Platte River, Elkhorn River, and Wahoo Creek are the same as the calibration and predictive models described in the GWM10 Update.

3.4.2 Fate and Transport Model for Containment Evaluation

The initial plume conditions and the fate and transport parameters are the same as those described in GWM10.

Initial Plume Conditions

The initial concentrations were based on investigations through 2010 for the shallow layer (upper Todd Valley Aquifer) and intermediate layer (lower Todd Valley Aquifer). In the GWM10 model, the saturated thickness of the sand and gravel aquifer is divided approximately equally into the shallow layer (Layer 2), which contains the shallow zone monitoring wells, and the intermediate layer (Layer 3), which contains the intermediate zone monitoring wells. These initial concentrations, based on plume interpretation are the same interpretations used in the GWM10 long-term prediction model (Section 7.0, GWM10 Update). The sources for the data used in the plume interpretations are presented in Tables 3-1 and 3-2 of GWM10.

Fate and Transport Parameters

The fate and transport parameters and assumptions are consistent with GWM10.

As discussed in detail in GWM10, local variations in the soil-water distribution coefficient in the model simulate sorption, possible remaining historic high concentration area residuals, and heterogeneous geologic conditions. In addition, GWM10 conservatively assumed that there are still some high concentration areas existing on the southwest side of LL1 in 2010. Specified concentration cells in the area of highest concentration at LL1 were used to represent contaminant mass loading decreasing over the next 20 years.

3.4.3 Simulated Extraction Well Pumping Rates

Simulated extraction well pumping rates are presented in Appendix D, Table D-4. EW-10 was shut down on February 23, 2010 in accordance with January 20, 2010 EPA letter (CENWK, 2010).

The pumping rate at EW-1 was increased from approximately 148 gpm to 191 gpm in the Second Quarter 2011.

3.4.4 Predicted Fate and Transport of Plume Migration

The predicted fate and transport of the plumes for the model simulation are presented in five year increments in Appendix E of this report (TCE) and Appendix F of this report (RDX) in the shallow layer (Layer 2) and intermediate layer (Layer 3). The simulation results were similar to

previous optimization results. The figures provided in Appendices E and F display the areas of contaminated groundwater above ROD criteria (Final Target Groundwater Cleanup Goals) over time. The simulations indicate the plumes will remain within the hydraulic containment system for the next 20 years using the pumping rates presented in Appendix D, Table D-4.

3.4.5 Uncertainty of Transport Modeling Simulations

As part of the CE process, the available data is assembled and analyzed to evaluate the performance of the hydraulic containment system. The analysis is based on a well-calibrated groundwater model (GWM10), which allows for a quantitative evaluation of system performance.

While evaluating the hydraulic capture of a one-well pumping system is relatively straight forward, evaluating the combined capture zone created by an 11-well pumping system is complicated. Therefore, the numerical model predictions have been relied on to evaluate the capture zones of the containment system. Groundwater modeling is a predictive method used to evaluate the theoretical aquifer response to a series of prescribed future stresses. A degree of uncertainty is inherent in groundwater modeling and is related to temporal and spatial variations of model parameters and matrix heterogeneity used to represent site conditions.

3.5 **Step 5: Concentration Trend Evaluation**

Concentration trends were evaluated for compliance groundwater monitoring wells, perimeter groundwater monitoring wells, and water supply wells.

3.5.1 Compliance Groundwater Monitoring Wells Concentration Trends

The TCE and RDX chemical groundwater data trends observed in the compliance groundwater monitoring wells, evaluated during the 2010 CE, are presented in Appendix A. The samples evaluated for this report from all of the compliance groundwater monitoring wells were below Final Target Groundwater Cleanup Goals for both TCE and RDX.

3.5.2 Perimeter Groundwater Monitoring Wells Concentration Trends

The TCE and RDX chemical groundwater data trends observed in the perimeter groundwater monitoring wells, evaluated during the 2010 CE, are presented in Appendix B. The samples evaluated for this report from all of the perimeter groundwater monitoring wells were below Final Target Groundwater Cleanup Goals for both TCE and RDX.

3.5.3 Water Supply Well Concentration Trends

The TCE and RDX chemical groundwater data trends observed in water supply wells with historic detections are presented in Appendix C. The concentration of RDX in WSW-51A has increased over the last seven sampling events as is shown in Appendix C. The RDX concentrations in WSW-52A-B were above the Final Target Groundwater Cleanup Goals in samples collected before 2002, but since 2004 the concentrations were below the Final Target Groundwater Cleanup Goals. The concentration of RDX in WSW-53-B has increased over the last four sampling events.

3.6 Step 6: Evaluate the Model Capture and Compare to Groundwater Above the Final Target Groundwater Cleanup Goals

The contamination transport simulation figures over time illustrate the extent of the model capture zone as compared to the area of contaminated groundwater above Final Target Groundwater Cleanup Goals in the horizontal and vertical directions. The results of this simulation have been evaluated and the current system meets the objectives. The simulation results in Appendices E and F of this report illustrate that the known extent of contamination above the Final Target Groundwater Cleanup Goals is predicted to be contained for the next 20 years in both the horizontal and vertical directions.

Based on data evaluated for the 2010 CE period, no other modifications to the extraction well pumping rates are proposed at this time to continue to maintain containment.

4.0 CONCLUSIONS

The Site CE is an annual process updated with new chemical and hydraulic data, collected as part of yearly site activities. In accordance with the CEWP, the compliance groundwater monitoring well network was used as the primary containment evaluation tool and the predictive capacity of groundwater model transport simulations was used as the secondary containment evaluation tool. The 2010 CE is based on data collected during calendar year 2010. The tools used to complete the CE for 2010 indicate that the hydraulic containment system is containing TCE and RDX contamination above the Final Target Groundwater Cleanup Goals of 5 µg/L and 2 µg/L, respectively.

4.1 Compliance Review

The primary CE tool at the site is the compliance groundwater monitoring well network. Groundwater chemical data collected in 2010 from compliance groundwater monitoring wells demonstrates that the remedy is operating properly and successfully. No COCs were detected in the compliance groundwater monitoring wells above the Final Target Groundwater Cleanup Goals as discussed in Section 2.1. Further primary evidence to determine if the hydraulic containment system is functioning as designed is the evaluation of groundwater chemical data from the perimeter groundwater monitoring wells. The 2010 groundwater chemical data from the perimeter groundwater monitoring wells indicates there were no COCs detected above the Final Target Groundwater Cleanup Goals as discussed in Section 2.2. No water supply wells, other than those already included in the AWSS program, had COCs detected above the Final Target Groundwater Cleanup Goals during the 2010 sampling events.

4.2 System Effectiveness Review

The second line of evidence for CE is the system effectiveness review. The contamination transport simulation indicates that the known extent of contamination in both the horizontal and vertical directions is predicted to be contained for the next 20 years. No other modifications to the extraction well pumping rates are proposed at this time to continue to maintain containment of the TCE and RDX contaminant plumes present at the Site. The system effectiveness review consisted of six steps:

- Step 1 of the system effectiveness review is evaluating the site data to determine if there have been any modifications to the Site conceptual model. As discussed in Section 3.1, the Site conceptual model was refined in GWM10 based on additional data collected since the previous model update (GWM08). These updates to the Site conceptual model were incorporated into the contaminant transport simulations.
- Step 2 includes reviewing the extent of contamination above the Final Target Groundwater Cleanup Goals. The current extent of contamination above the Final Target Groundwater Cleanup Goals was updated using recent direct-push and monitoring well data. The current extent of contamination indicated that plume containment was maintained.
- Step 3 includes a review of the water level data each year. The water levels, horizontal gradients, and vertical gradients at the site in 2010 are similar to the 2009 values and did not adversely impact containment.

- Step 4 requires an evaluation of capture using contaminant transport simulations. The simulation results indicate that the plumes will remain within the hydraulic containment system for the next 20 years.
- Step 5 evaluates concentration trends and these trends in compliance groundwater monitoring wells, perimeter groundwater monitoring wells, and water supply wells are presented in Appendices A through C. No trends were observed that affect the site conceptual model or the contaminant transport model.
- Step 6 compares the interpretation of actual capture based on modeling to groundwater above the Final Target Groundwater Cleanup Goals. Based on data evaluated for the 2010 CE period, no other modifications to the extraction well pumping rates are proposed at this time to continue to maintain containment.

5.0 REFERENCES

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Tables

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Table 1-1
Final Target Groundwater Cleanup Goals
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Final Target Groundwater Cleanup Goals	
Chemical of Concern	**Concentration (µg/L)**
Methylene Chloride	5
1,2-Dichloropropane	5
TCE	5
1,3,5-Trinitrobenzene (TNB)	0.778
2,4,6-Trinitrotoluene (TNT)	2
2,4-Dinitrotoluene (2,4-DNT)	1.24
RDX	2

Source : *Record of Decision, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant Site, Mead, Nebraska, Final,* (Woodward Clyde, 1996a)
µg/L = micrograms per liter
TCE = trichloroethene
RDX = hexahydro-1,3,5-trinitro-1,3,5-triazine
Bold = Indicator compounds used to define groundwater contamination at the site

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Table 2-1
Monitoring Well Clusters Evaluated
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Well Cluster	Location of Well(s)	Rationale for Sampling/Location
Compliance Monitoring Wells		
MW-20	Outside LL2 RDX Plume, Cross-gradient of EW-10	Provide Cross-gradient Data: Long-term Containment Confirmation
MW-61	Outside LL1 TCE Plume, Cross-gradient of EW-12	Provide Cross-gradient Data: Long-term Containment Confirmation
MW-62	Outside LL4/AMA TCE Plume, Downgradient of EW-1	Monitor Immediately Downgradient of EW-1: Long-term Containment Confirmation
MW-82	Outside LL2 RDX Plume, Downgradient of EW-10	Provide Downgradient Data: Long-term Containment Confirmation
MW-86	Outside LL3 RDX Plume, Downgradient of EW-2	Provide Downgradient Data: Long-term Containment Confirmation
MW-88	Outside LL4/AMA TCE Plume, Downgradient of EW-1	Provide Downgradient Data: Long-term Containment Confirmation
MW-96	Outside LL2 RDX Plume, Downgradient of EW-9 and EW-10	Provide Downgradient Data: Long-term Containment Confirmation
MW-97	Outside LL2 RDX Plume, Downgradient of EW-7 and EW-9	Provide Downgradient Data: Long-term Containment Confirmation
MW-98	Outside LL3 RDX Plume, Downgradient of EW-4 and EW-5	Provide Downgradient Data: Long-term Containment Confirmation
MW-100	Outside LL3 RDX Plume, Downgradient of EW-3 and EW-4	Provide Downgradient Data: Long-term Containment Confirmation
MW-101	Outside LL1 TCE Plume, Downgradient of EW-12	Provide Downgradient Data: Long-term Containment Confirmation
MW-158	Outside LL4/AMA TCE Plume, Downgradient of EW-1 (replaced MW-62)	Monitor Immediately Downgradient of EW-1: Long-term Containment Confirmation
Perimeter Monitoring Wells		
MW-35	Outside LL3 RDX Plume, Downgradient of EW-3	Provide Downgradient Data: Long-term Containment Confirmation
MW-38	Outside LL4/AMA TCE Plume, Cross-gradient of EW-1	Provide Cross-Gradient Data: Long-term Containment Confirmation
MW-41	Outside AMA TCE Plume, Eastern Boundary Monitoring	Monitor Eastern Boundary: Long-term Containment Evaluation
MW-46	Outside LL4/AMA TCE Plume, Cross-gradient of EW-1	Provide Cross-Gradient Data: Long-term Containment Confirmation
MW-81	Outside LL1 TCE Plume, Downgradient of EW-12	Provide Downgradient Data: Long-term Containment Confirmation
MW-83	Outside LL2 RDX Plume, Downgradient of EW-7 and EW-9	Provide Downgradient Data: Long-term Containment Confirmation
MW-84	Outside LL3 RDX Plume, Downgradient of EW-6 and EW-7	Provide Downgradient Data: Long-term Containment Confirmation
MW-85	Outside LL3 RDX Plume, Downgradient of EW-5 and EW-6	Provide Downgradient Data: Long-term Containment Confirmation
MW-95	Outside LL2 RDX Plume, Cross-gradient of EW-10	Provide Cross-Gradient Data: Long-term Containment Evaluation

Table 2-1
Monitoring Well Clusters Evaluated
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Well Cluster	Location of Well(s)	Rationale for Sampling/Location
Perimeter Monitoring Wells		
MW-103	Outside AMA TCE Plume, Eastern Boundary Monitoring	Monitor Eastern Boundary: Long-term Containment Evaluation
MW-106	Outside LL4/AMA TCE Plume, Eastern Boundary Monitoring	Provide Cross-Gradient Data: Long-term Containment Evaluation
MW-107	Outside LL4/AMA TCE Plume, Eastern Boundary Monitoring	Provide Cross-gradient Data: Long-term Containment Evaluation
MW-108	Outside LL4/AMA TCE Plume, Eastern Boundary Monitoring	Provide Cross-gradient Data: Long-term Containment Evaluation
MW-110	Outside LL4/AMA TCE Plume, Eastern Boundary Monitoring	Provide Cross-gradient Data: Long-term Containment Evaluation
MW-112	Outside LL4/AMA TCE Plume, Eastern Boundary Monitoring	Provide Cross-gradient Data: Long-term Containment Evaluation
MW-113	Outside LL4/AMA TCE Plume, Cross-gradient of EW-1	Provide Cross-gradient Data: Long-term Containment Evaluation
MW-114	Outside LL4/AMA TCE Plume, Cross-gradient of EW-1	Provide Cross-gradient Data: Long-term Containment Evaluation
MW-115	Outside LL4/AMA TCE Plume, Cross-gradient of EW-1	Provide Cross-gradient Data: Long-term Containment Evaluation
MW-116	Outside LL4/AMA TCE Plume, Cross-gradient of EW-1	Provide Cross-gradient Data: Long-term Containment Evaluation
MW-117	Outside LL4/AMA TCE Plume, Downgradient of EW-3 and EW-4	Provide Downgradient Data: Long-term Containment Evaluation
MW-118	Outside LL3 RDX Plume, Downgradient of EW-6	Provide Downgradient Data: Long-term Containment Evaluation
MW-147	Outside LL2 RDX Plume, Downgradient of EW-9	Provide Downgradient Data: Long-term Containment Confirmation
MW-159	Outside AMA TCE Plume, Eastern Boundary Monitoring	Monitor Eastern Boundary: Long-term Containment Evaluation

Notes:
MW - monitoring well
EW - extraction well
LL - Load Line
TCE - trichloroethene
RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
AMA - Atlas Missile Area

Table 2-2
TCE and RDX in Compliance Monitoring Wells
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Location	Aquifer Designation	TCE Result	RDX Result	Date VOCs Collected	Date Explosives Collected
MW-20A	Deep	1.0 U	0.20 U	1/14/2010	1/14/2010
MW-20A	Deep	1.0 U	NA	7/12/2010	NA
MW-20A	Deep	1.0 U	NA	10/20/2010	NA
MW-20B	Intermediate	1.0 U	0.20 U	1/14/2010	1/14/2010
MW-20B	Intermediate	1.0 U	NA	7/12/2010	NA
MW-20B	Intermediate	1.0 U	0.20 U	10/21/2010	10/20/2010
MW-20C	Shallow	1.0 U	0.20 U	1/14/2010	1/14/2010
MW-20C	Shallow	1.8	0.20 U	7/12/2010	7/12/2010
MW-20C	Shallow	0.71 J	NA	10/21/2010	NA
MW-61A	Intermediate	1.0 U	0.20 U	2/19/2010	2/19/2010
MW-61A	Intermediate	1.0 U	0.46	8/4/2010	8/4/2010
MW-61A	Intermediate	1.0 U	0.20 U	10/21/2010	10/21/2010
MW-61B	Shallow	1.0 U	0.20 U	2/19/2010	2/19/2010
MW-61B	Shallow	1.0 U	0.20 U	8/4/2010	8/4/2010
MW-61B	Shallow	1.0 U	0.20 U	10/21/2010	10/21/2010
MW-61D	Deep	1.0 U	0.20 U	2/19/2010	2/19/2010
MW-61D	Deep	1.0 U	0.20 U	8/4/2010	8/4/2010
MW-61D	Deep	1.0 U	0.20 U	10/21/2010	10/21/2010
MW-62A	Intermediate	1.0 U	0.20 U	1/11/2010	1/11/2010
MW-62A	Intermediate	2.7	0.20 U	7/6/2010	7/6/2010
MW-62A	Intermediate	1.0 U	0.20 U	10/20/2010	10/20/2010
MW-62B	Shallow	1.0 U	0.20 U	1/11/2010	1/11/2010
MW-62B	Shallow	0.99 J	0.20 U	7/6/2010	7/6/2010
MW-62B	Shallow	1.0 U	0.20 U	10/20/2010	10/20/2010
MW-62B	Shallow	1.0 U	0.20 U	10/20/2010	10/20/2010
MW-62D	Deep	1.4	0.20 U	1/11/2010	1/11/2010
MW-62D	Deep	1.0 U	0.20 U	7/6/2010	7/6/2010
MW-62D	Deep	1.0 U	0.20 U	10/20/2010	10/20/2010
MW-158A*	Intermediate	1.0 U	0.20 U	9/23/2010	9/23/2010
MW-158A*	Intermediate	1.0 U	0.20 U	10/22/2010	10/22/2010
MW-158B*	Shallow	1.0 U	0.20 U	9/23/2010	9/23/2010
MW-158B*	Shallow	1.0 U	0.20 U	10/22/2010	10/22/2010
MW-158D*	Deep	1.0 U	0.20 U	9/23/2010	9/23/2010
MW-158D*	Deep	1.0 U	0.20 U	10/22/2010	10/22/2010
MW-82A	Intermediate	1.0 U	0.20 U	2/17/2010	2/17/2010
MW-82A	Intermediate	1.0 U	0.20 U	7/8/2010	7/8/2010
MW-82B	Shallow	1.0 U	0.20 U	2/17/2010	2/17/2010
MW-82B	Shallow	1.0 U	0.20 U	7/8/2010	7/8/2010
MW-82D	Deep	1.0 U	0.20 U	2/17/2010	2/17/2010
MW-82D	Deep	1.0 U	0.20 U	7/8/2010	7/8/2010
MW-86A	Intermediate	1.0 U	0.46	2/15/2010	2/15/2010
MW-86A	Intermediate	1.0 U	0.41	7/28/2010	7/28/2010
MW-86B	Shallow	1.0 U	0.2 U	2/15/2010	2/15/2010
MW-86B	Shallow	1.0 U	0.2 U	7/28/2010	7/28/2010
MW-86D	Deep	1.0 U	1.3	2/15/2010	2/15/2010
MW-86D	Deep	1.0 U	1.3	7/28/2010	7/28/2010
MW-88A	Intermediate	1.0 U	0.2 U	1/11/2010	1/11/2010
MW-88A	Intermediate	1.0 U	0.2 U	7/21/2010	7/21/2010

Table 2-2
TCE and RDX in Compliance Monitoring Wells
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Location	Aquifer Designation	TCE Result	RDX Result	Date VOCs Collected	Date Explosives Collected
MW-88B	Shallow	1.0 U	0.2 U	1/11/2010	1/11/2010
MW-88B	Shallow	1.0 U	0.2 U	7/21/2010	7/21/2010
MW-88D	Deep	1.0 U	0.2 U	1/11/2010	1/11/2010
MW-88D	Deep	1.0 U	0.2 U	7/21/2010	7/21/2010
MW-96A	Intermediate	1.0 U	0.2 U	1/14/2010	1/14/2010
MW-96A	Intermediate	1.0 U	0.2 U	7/8/2010	7/8/2010
MW-96B	Shallow	1.0 U	0.2 U	1/14/2010	1/14/2010
MW-96B	Shallow	1.0 U	0.2 U	7/8/2010	7/8/2010
MW-96D	Deep	1.0 U	0.2 U	1/14/2010	1/14/2010
MW-96D	Deep	1.0 U	0.2 U	7/8/2010	7/8/2010
MW-97A	Intermediate	1.0 U	0.2 U	1/10/2010	1/10/2010
MW-97A	Intermediate	1.0 U	0.2 U	7/8/2010	7/8/2010
MW-97B	Shallow	1.0 U	0.039 J	1/10/2010	1/10/2010
MW-97B	Shallow	1.0 U	0.2 U	7/8/2010	7/8/2010
MW-97D	Deep	1.0 U	0.2 U	1/10/2010	1/10/2010
MW-97D	Deep	1.0 U	0.2 U	7/8/2010	7/8/2010
MW-98A	Intermediate	1.0 U	0.2 U	1/11/2010	1/11/2010
MW-98A	Intermediate	1.0 U	0.2 U	7/8/2010	7/8/2010
MW-98B	Shallow	1.0 U	0.2 U	1/12/2010	1/12/2010
MW-98B	Shallow	1.0 U	0.2 U	7/8/2010	7/8/2010
MW-98D	Deep	1.0 U	0.2 U	1/11/2010	1/11/2010
MW-98D	Deep	1.0 U	0.2 U	7/8/2010	7/8/2010
MW-100A	Intermediate	1.0 U	0.17 J	1/10/2010	1/10/2010
MW-100A	Intermediate	1.0 U	0.059 J	7/7/2010	7/7/2010
MW-100B	Shallow	1.0 U	0.11 J	1/10/2010	1/10/2010
MW-100B	Shallow	1.0 U	0.087 J	7/7/2010	7/7/2010
MW-100D	Deep	1.0 U	0.093 J	1/10/2010	1/10/2010
MW-100D	Deep	1.0 U	0.069 J	7/7/2010	7/7/2010
MW-101A	Intermediate	1.0 U	0.2 U	2/16/2010	2/16/2010
MW-101A	Intermediate	1.0 U	0.2 U	7/19/2010	7/19/2010
MW-101B	Shallow	1.0 U	0.2 U	2/16/2010	2/16/2010
MW-101B	Shallow	1.0 U	0.2 U	7/19/2010	7/26/2010
MW-101D	Deep	1.0 U	0.2 U	2/16/2010	2/16/2010
MW-101D	Deep	1.0 U	0.2 U	7/19/2010	7/19/2010

Notes:

NA = Not Analyzed or Applicable, U = Sample result below detection limit, J = Estimated

* MW-158 Cluster replaced MW-62 Cluster 4th quarter 2010.

TCE and RDX were the only COCs detected above Final Target Groundwater Cleanup Goals in 2010.

Results for remaining COCs are provided in Table 3-4 of the 2010 Groundwater Monitoring Program Annual Report (ECC, 2011a).

All results in µg/L (micrograms per liter)

COC = contaminant of concern

VOC = volatile organic compound

TCE = trichloroethene

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

Table 2-3
TCE and RDX in Perimeter Monitoring Wells
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Location	Aquifer Designation	TCE Result	RDX Result	Date VOCs Collected	Date Explosives Collected
MW-35A	Intermediate	1.0 U	0.21 J	2/12/2010	2/12/2010
MW-35A	Intermediate	1.0 U	0.22 J	4/20/2010	4/20/2010
MW-35A	Intermediate	1.0 U	0.2 J	7/14/2010	7/14/2010
MW-35A	Intermediate	1.0 U	0.2	10/22/2010	10/22/2010
MW-35B	Shallow	1.0 U	0.2 J	2/12/2010	2/12/2010
MW-35B	Shallow	1.0 U	0.16 J	4/20/2010	4/20/2010
MW-35B	Shallow	1.0 U	0.096 J	7/14/2010	7/14/2010
MW-35B	Shallow	1.0 U	0.14	10/22/2010	10/22/2010
MW-35D	Deep	1.0 U	0.2 U	2/12/2010	2/12/2010
MW-35D	Deep	1.0 U	0.2 U	4/20/2010	4/20/2010
MW-35D	Deep	1.0 U	0.2 U	7/14/2010	7/14/2010
MW-35D	Deep	1.0 U	0.2 U	10/22/2010	10/22/2010
MW-38A	Intermediate	1.0 U	0.2 U	2/4/2010	2/4/2010
MW-38A	Intermediate	1.0 U	0.2 U	4/27/2010	4/27/2010
MW-38A	Intermediate	1.0 U	0.2 U	7/21/2010	7/21/2010
MW-38A	Intermediate	1.0 U	0.2 U	10/25/2010	10/25/2010
MW-38D	Deep	1.0 U	0.2 U	2/4/2010	2/4/2010
MW-38D	Deep	1.0 U	0.2 U	4/27/2010	4/27/2010
MW-38D	Deep	1.0 U	0.2 U	7/21/2010	7/21/2010
MW-38D	Deep	1.0 U	0.2 U	10/25/2010	10/25/2010
MW-41A	Intermediate	1.0 U	0.2 U	2/17/2010	2/17/2010
MW-41A	Intermediate	1.0 U	0.2 U	4/28/2010	4/28/2010
MW-41A	Intermediate	1.0 U	0.2 U	7/20/2010	7/20/2010
MW-41A	Intermediate	1.0 U	0.2 U	10/28/2010	10/28/2010
MW-41B	Shallow	1.0 U	0.2 U	2/17/2010	2/17/2010
MW-41B	Shallow	1.0 U	0.2 U	4/28/2010	4/28/2010
MW-41B	Shallow	1.0 U	0.2 U	7/20/2010	7/20/2010
MW-41B	Shallow	1.0 U	0.2 U	10/28/2010	10/28/2010
MW-41D	Deep	1.0 U	0.2 U	2/17/2010	2/17/2010
MW-41D	Deep	1.0 U	0.2 U	4/28/2010	4/28/2010
MW-41D	Deep	1.0 U	0.2 U	7/20/2010	7/20/2010
MW-41D	Deep	1.0 U	0.2 U	10/28/2010	10/28/2010
MW-46A	Intermediate	1.0 U	0.2 U	1/26/2010	1/26/2010
MW-46A	Intermediate	1.0 U	0.2 U	5/5/2010	5/5/2010
MW-46A	Intermediate	1.0 U	0.2 U	7/12/2010	7/12/2010
MW-46A	Intermediate	1.0 U	0.2 U	10/27/2010	10/27/2010
MW-46B	Shallow	1.0 U	0.2 U	1/26/2010	1/26/2010
MW-46B	Shallow	1.0 U	0.2 U	5/5/2010	5/5/2010
MW-46B	Shallow	NS	0.2 U	NS	7/12/2010
MW-46B	Shallow	1.0 U	0.2 U	10/27/2010	10/27/2010
MW-46D	Deep	1.0 U	0.2 U	1/26/2010	1/26/2010
MW-46D	Deep	1.0 U	0.2 U	5/5/2010	5/5/2010
MW-46D	Deep	1.0 U	0.2 U	7/12/2010	7/12/2010
MW-46D	Deep	1.0 U	0.2 U	10/27/2010	10/27/2010
MW-81A	Intermediate	1.0 U	0.2 U	2/16/2010	2/16/2010
MW-81A	Intermediate	1.0 U	0.2 U	5/5/2010	5/5/2010
MW-81A	Intermediate	1.0 U	0.2 U	7/19/2010	7/19/2010
MW-81A	Intermediate	1.0 U	0.2 U	10/26/2010	10/26/2010

Table 2-3
TCE and RDX in Perimeter Monitoring Wells
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Location	Aquifer Designation	TCE Result	RDX Result	Date VOCs Collected	Date Explosives Collected
MW-81B	Shallow	1.0 U	0.2 U	2/16/2010	2/16/2010
MW-81B	Shallow	1.0 U	0.2 U	5/5/2010	5/5/2010
MW-81B	Shallow	1.0 U	0.2 U	7/19/2010	7/19/2010
MW-81B	Shallow	1.0 U	0.2 U	10/26/2010	10/26/2010
MW-81D	Deep	1.0 U	0.2 U	2/16/2010	2/16/2010
MW-81D	Deep	1.0 U	0.2 U	5/5/2010	5/5/2010
MW-81D	Deep	1.0 U	0.2 U	7/19/2010	7/19/2010
MW-81D	Deep	1.0 U	0.2 U	10/26/2010	10/26/2010
MW-83A	Intermediate	1.0 U	0.3	2/12/2010	2/12/2010
MW-83A	Intermediate	1.0 U	0.24	4/21/2010	4/21/2010
MW-83A	Intermediate	1.0 U	0.16 J	7/7/2010	7/7/2010
MW-83A	Intermediate	1.0 U	0.092 J	10/26/2010	10/26/2010
MW-83B	Shallow	1.0 U	0.051 J	2/12/2010	2/12/2010
MW-83B	Shallow	1.0 U	0.2 U	4/21/2010	4/21/2010
MW-83B	Shallow	1.0 U	0.2 U	7/7/2010	7/7/2010
MW-83B	Shallow	1.0 U	0.2 U	10/26/2010	10/26/2010
MW-83D	Deep	1.0 U	0.2 U	2/12/2010	2/12/2010
MW-83D	Deep	1.0 U	0.2 U	4/21/2010	4/21/2010
MW-83D	Deep	1.0 U	0.2 U	7/7/2010	7/7/2010
MW-83D	Deep	1.0 U	0.2 U	10/26/2010	10/26/2010
MW-84A	Intermediate	1.0 U	0.29	1/25/2010	1/25/2010
MW-84A	Intermediate	1.0 U	0.25	4/21/2010	4/21/2010
MW-84A	Intermediate	1.0 U	0.18 J	7/7/2010	7/7/2010
MW-84A	Intermediate	1.0 U	0.22	10/26/2010	10/26/2010
MW-84B	Shallow	1.0 U	0.2 U	1/25/2010	1/25/2010
MW-84B	Shallow	1.0 U	0.2 U	4/21/2010	4/21/2010
MW-84B	Shallow	1.0 U	0.2 U	7/7/2010	7/7/2010
MW-84B	Shallow	1.0 U	0.2 U	10/26/2010	10/26/2010
MW-84D	Deep	1.0 U	0.2 U	1/25/2010	1/25/2010
MW-84D	Deep	1.0 U	0.2 U	4/21/2010	4/21/2010
MW-84D	Deep	1.0 U	0.2 U	7/7/2010	7/7/2010
MW-84D	Deep	1.0 U	0.2 U	10/26/2010	10/26/2010
MW-85A	Intermediate	1.0 U	0.94	2/12/2010	2/12/2010
MW-85A	Intermediate	1.0 U	0.83	4/21/2010	4/21/2010
MW-85A	Intermediate	1.0 U	0.88	7/7/2010	7/7/2010
MW-85A	Intermediate	1.0 U	0.68	10/22/2010	10/22/2010
MW-85B	Shallow	1.0 U	1.3	2/12/2010	2/12/2010
MW-85B	Shallow	1.0 U	1.2	4/21/2010	4/21/2010
MW-85B	Shallow	1.0 U	1.4	7/7/2010	7/7/2010
MW-85B	Shallow	1.0 U	1.4	10/22/2010	10/22/2010
MW-85D	Deep	1.0 U	0.2 U	2/12/2010	2/12/2010
MW-85D	Deep	1.0 U	0.2 U	4/21/2010	4/21/2010
MW-85D	Deep	1.0 U	0.2 U	7/7/2010	7/7/2010
MW-85D	Deep	1.0 U	0.2 U	10/22/2010	10/22/2010
MW-95A	Intermediate	1.0 U	0.2 U	2/15/2010	2/15/2010
MW-95A	Intermediate	1.0 U	0.2 U	4/22/2010	4/22/2010
MW-95A	Intermediate	1.0 U	0.2 U	7/29/2010	7/29/2010
MW-95A	Intermediate	1.0 U	0.2 U	11/3/2010	11/3/2010

Table 2-3
TCE and RDX in Perimeter Monitoring Wells
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Former Nebraska Ordnance Plant, Mead, Nebraska

Location	Aquifer Designation	TCE Result	RDX Result	Date VOCs Collected	Date Explosives Collected
MW-95B	Shallow	1.0 U	0.2 U	2/15/2010	2/15/2010
MW-95B	Shallow	1.0 U	0.2 U	4/22/2010	4/22/2010
MW-95B	Shallow	1.0 U	0.2 U	7/29/2010	7/29/2010
MW-95B	Shallow	1.0 U	0.2 U	11/3/2010	11/3/2010
MW-95D	Deep	1.0 U	0.2 U	2/15/2010	2/15/2010
MW-95D	Deep	1.0 U	0.2 U	4/22/2010	4/22/2010
MW-95D	Deep	1.0 U	0.2 U	7/29/2010	7/29/2010
MW-95D	Deep	1.0 U	0.2 U	11/3/2010	11/3/2010
MW-102A	Intermediate	1.0 U	0.2 U	2/4/2010	2/4/2010
MW-102A	Intermediate	1.0 U	0.2 U	4/28/2010	4/28/2010
MW-102A	Intermediate	1.0 U	0.2 U	7/20/2010	7/20/2010
MW-102A	Intermediate	1.0 U	0.2 U	11/3/2010	11/3/2010
MW-102B	Shallow	1.0 U	0.2 U	2/4/2010	2/4/2010
MW-102B	Shallow	1.0 U	0.2 U	4/28/2010	4/28/2010
MW-102B	Shallow	1.0 U	0.2 U	7/20/2010	7/20/2010
MW-102B	Shallow	1.0 U	0.2 U	11/3/2010	11/3/2010
MW-102D	Deep	1.0 U	0.2 U	2/4/2010	2/4/2010
MW-102D	Deep	1.0 U	0.2 U	4/28/2010	4/28/2010
MW-102D	Deep	1.0 U	NS	7/20/2010	NS
MW-102D	Deep	1.0 U	0.2 U	11/3/2010	11/3/2010
MW-103A	Intermediate	1.0 U	0.2 U	2/4/2010	2/4/2010
MW-103A	Intermediate	1.0 U	0.2 U	4/28/2010	4/28/2010
MW-103A	Intermediate	1.0 U	0.2 U	7/20/2010	7/20/2010
MW-103A	Intermediate	1.0 U	0.2 U	10/21/2010	10/21/2010
MW-103B	Shallow	1.0 U	0.2 U	2/4/2010	2/4/2010
MW-103B	Shallow	1.0 U	0.2 U	4/28/2010	4/28/2010
MW-103B	Shallow	0.41 J	0.2 U	7/20/2010	7/20/2010
MW-103B	Shallow	1.0 U	0.2 U	10/21/2010	10/21/2010
MW-103D	Deep	1.0 U	0.2 U	2/4/2010	2/4/2010
MW-103D	Deep	1.0 U	0.2 U	4/28/2010	4/28/2010
MW-103D	Deep	1.0 U	NS	7/20/2010	NS
MW-103D	Deep	1.0 U	0.2 U	10/21/2010	10/21/2010
MW-106A	Intermediate	1.0 U	0.2 U	1/27/2010	1/27/2010
MW-106A	Intermediate	1.0 U	0.2 U	4/29/2010	4/29/2010
MW-106A	Intermediate	1.0 U	0.2 U	7/13/2010	7/13/2010
MW-106A	Intermediate	1.0 U	0.2 U	11/2/2010	11/2/2010
MW-106B	Shallow	1.0 U	0.2 U	1/27/2010	1/27/2010
MW-106B	Shallow	1.0 U	0.2 U	4/29/2010	4/29/2010
MW-106B	Shallow	1.0 U	0.2 U	7/13/2010	7/13/2010
MW-106B	Shallow	1.0 U	0.2 U	11/2/2010	11/2/2010
MW-106D	Deep	1.0 U	0.2 U	1/27/2010	1/27/2010
MW-106D	Deep	1.0 U	0.2 U	4/29/2010	4/29/2010
MW-106D	Deep	1.0 U	0.2 U	7/13/2010	7/13/2010
MW-106D	Deep	1.0 U	0.2 U	11/2/2010	11/2/2010
MW-107A	Intermediate	1.0 U	0.12 J	1/27/2010	1/27/2010
MW-107A	Intermediate	1.0 U	0.055 J	4/29/2010	4/29/2010
MW-107A	Intermediate	1.0 U	0.088 J	7/13/2010	7/13/2010
MW-107A	Intermediate	1.0 U	0.2 U	11/2/2010	11/2/2010

Table 2-3
TCE and RDX in Perimeter Monitoring Wells
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Former Nebraska Ordnance Plant, Mead, Nebraska

Location	Aquifer Designation	TCE Result	RDX Result	Date VOCs Collected	Date Explosives Collected
MW-107B	Shallow	1.0 U	0.2 U	1/27/2010	1/27/2010
MW-107B	Shallow	1.0 U	0.2 U	4/29/2010	4/29/2010
MW-107B	Shallow	1.0 U	0.2 U	7/13/2010	7/13/2010
MW-107B	Shallow	1.0 U	0.2 U	11/2/2010	11/2/2010
MW-107D	Deep	1.0 U	0.2 U	1/27/2010	1/27/2010
MW-107D	Deep	1.0 U	0.2 U	4/29/2010	4/29/2010
MW-107D	Deep	1.0 U	0.2 U	7/13/2010	7/13/2010
MW-107D	Deep	1.0 U	0.2 U	11/2/2010	11/2/2010
MW-108A	Intermediate	1.0 U	0.2 U	1/27/2010	1/27/2010
MW-108A	Intermediate	1.0 U	0.2 U	4/29/2010	4/29/2010
MW-108A	Intermediate	1.0 U	0.2 U	7/13/2010	7/13/2010
MW-108A	Intermediate	1.0 U	0.2 U	11/2/2010	11/2/2010
MW-108B	Shallow	1.0 U	0.2 U	1/27/2010	1/27/2010
MW-108B	Shallow	1.0 U	0.2 U	4/29/2010	4/29/2010
MW-108B	Shallow	1.0 U	0.2 U	7/13/2010	7/13/2010
MW-108B	Shallow	1.0 U	0.2 U	11/2/2010	11/2/2010
MW-108D	Deep	1.0 U	0.2 U	1/27/2010	1/27/2010
MW-108D	Deep	1.0 U	0.2 U	4/29/2010	4/29/2010
MW-108D	Deep	1.0 U	0.2 U	7/13/2010	7/13/2010
MW-108D	Deep	1.0 U	0.2 U	11/2/2010	11/2/2010
MW-110A	Intermediate	1.0 U	0.2 U	1/13/2010	1/13/2010
MW-110A	Intermediate	1.0 U	0.2 U	5/5/2010	5/5/2010
MW-110A	Intermediate	1.0 U	0.2 U	7/27/2010	7/27/2010
MW-110A	Intermediate	1.0 U	0.2 U	10/27/2010	10/27/2010
MW-110B	Shallow	1.0 U	0.2 U	1/13/2010	1/13/2010
MW-110B	Shallow	1.0 U	0.2 U	5/5/2010	5/5/2010
MW-110B	Shallow	1.0 U	0.2 U	7/27/2010	7/27/2010
MW-110B	Shallow	1.0 U	0.2 U	10/27/2010	10/27/2010
MW-110D	Deep	1.0 U	0.2 U	1/13/2010	1/13/2010
MW-110D	Deep	1.0 U	0.2 U	5/5/2010	5/5/2010
MW-110D	Deep	1.0 U	0.2 U	7/27/2010	7/27/2010
MW-110D	Deep	1.0 U	0.2 U	10/27/2010	10/27/2010
MW-112A	Intermediate	1.0 U	0.2 U	5/4/2010	5/4/2010
MW-112A	Intermediate	1.0 U	0.2 U	7/12/2010	7/12/2010
MW-112A	Intermediate	1.0 U	0.2 U	10/22/2010	10/22/2010
MW-112B	Shallow	1.0 U	0.2 U	5/4/2010	5/4/2010
MW-112B	Shallow	1.0 U	0.2 U	7/12/2010	7/12/2010
MW-112B	Shallow	1.0 U	0.2 U	10/22/2010	10/22/2010
MW-113A	Intermediate	1.0 U	0.2 U	5/4/2010	5/4/2010
MW-113A	Intermediate	1.0 U	0.2 U	7/12/2010	7/12/2010
MW-113A	Intermediate	1.0 U	0.2 U	10/21/2010	10/21/2010
MW-113B	Shallow	1.0 U	0.2 U	5/4/2010	5/4/2010
MW-113B	Shallow	1.0 U	0.2 U	7/12/2010	7/12/2010
MW-113B	Shallow	1.0 U	0.2 U	10/21/2010	10/21/2010
MW-113D	Deep	1.0 U	0.2 U	5/4/2010	5/4/2010
MW-113D	Deep	1.0 U	0.2 U	7/12/2010	7/12/2010
MW-113D	Deep	1.0 U	0.2 U	10/21/2010	10/21/2010
MW-114A	Intermediate	1.0 U	0.2 U	1/12/2010	1/12/2010

Table 2-3
TCE and RDX in Perimeter Monitoring Wells
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Former Nebraska Ordnance Plant, Mead, Nebraska

Location	Aquifer Designation	TCE Result	RDX Result	Date VOCs Collected	Date Explosives Collected
MW-114A	Intermediate	1.0 U	0.2 U	4/27/2010	4/27/2010
MW-114A	Intermediate	1.0 U	0.2 U	7/22/2010	7/22/2010
MW-114A	Intermediate	1.0 U	0.2 U	10/25/2010	10/25/2010
MW-114B	Shallow	1.0 U	0.2 U	1/12/2010	1/12/2010
MW-114B	Shallow	1.0 U	0.2 U	4/27/2010	4/27/2010
MW-114B	Shallow	1.0 U	0.2 U	7/22/2010	7/22/2010
MW-114B	Shallow	1.0 U	0.2 U	10/25/2010	10/25/2010
MW-114D	Deep	1.0 U	0.2 U	1/13/2010	1/13/2010
MW-114D	Deep	1.0 U	0.2 U	4/27/2010	4/27/2010
MW-114D	Deep	1.0 U	0.2 U	7/22/2010	7/22/2010
MW-114D	Deep	1.0 U	0.2 U	10/25/2010	10/25/2010
MW-115A	Intermediate	1.0 U	0.2 U	1/27/2010	1/27/2010
MW-115A	Intermediate	1.0 U	0.2 U	4/23/2010	4/23/2010
MW-115A	Intermediate	1.0 U	0.2 U	7/21/2010	7/21/2010
MW-115A	Intermediate	1.0 U	0.2 U	10/25/2010	10/25/2010
MW-115B	Shallow	1.0 U	0.2 U	1/27/2010	1/27/2010
MW-115B	Shallow	1.0 U	0.2 U	4/23/2010	4/23/2010
MW-115B	Shallow	1.0 U	0.2 U	7/21/2010	7/21/2010
MW-115B	Shallow	1.0 U	0.2 U	10/25/2010	10/25/2010
MW-115D	Deep	1.0 U	0.2 U	1/27/2010	1/27/2010
MW-115D	Deep	1.0 U	0.2 U	4/23/2010	4/23/2010
MW-115D	Deep	1.0 U	0.2 U	7/21/2010	7/21/2010
MW-115D	Deep	1.0 U	0.2 U	10/25/2010	10/25/2010
MW-116A	Intermediate	1.0 U	0.2 U	1/12/2010	1/12/2010
MW-116A	Intermediate	1.0 U	0.2 U	4/27/2010	4/27/2010
MW-116A	Intermediate	1.0 U	0.2 U	7/22/2010	7/22/2010
MW-116A	Intermediate	1.2	0.2 U	10/25/2010	10/25/2010
MW-116B	Shallow	1.0 U	0.2 U	1/12/2010	1/12/2010
MW-116B	Shallow	1.0 U	0.2 U	4/27/2010	4/27/2010
MW-116B	Shallow	1.0 U	0.2 U	7/22/2010	7/22/2010
MW-116B	Shallow	1.0 U	0.2 U	10/25/2010	10/25/2010
MW-116D	Deep	1.0 U	0.2 U	1/12/2010	1/12/2010
MW-116D	Deep	1.0 U	0.2 U	4/27/2010	4/27/2010
MW-116D	Deep	1.0 U	0.2 U	7/22/2010	7/22/2010
MW-116D	Deep	1.0 U	0.2 U	10/25/2010	10/25/2010
MW-117A	Intermediate	1.0 U	0.2 U	2/22/2010	2/22/2010
MW-117A	Intermediate	1.0 U	0.2 U	4/22/2010	4/22/2010
MW-117A	Intermediate	1.0 U	0.2 U	7/22/2010	7/22/2010
MW-117A	Intermediate	1.0 U	0.2 U	10/27/2010	10/27/2010
MW-117B	Shallow	1.0 U	0.2 U	2/22/2010	2/22/2010
MW-117B	Shallow	1.0 U	0.2 U	4/22/2010	4/22/2010
MW-117B	Shallow	1.0 U	0.2 U	7/22/2010	7/22/2010
MW-117B	Shallow	1.0 U	0.2 U	10/27/2010	10/27/2010
MW-117D	Deep	1.0 U	0.2 U	2/22/2010	2/22/2010
MW-117D	Deep	1.0 U	0.2 U	4/22/2010	4/22/2010
MW-117D	Deep	1.0 U	0.2 U	7/22/2010	7/22/2010
MW-117D	Deep	1.0 U	0.2 U	10/27/2010	10/27/2010

Table 2-3
TCE and RDX in Perimeter Monitoring Wells
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Location	Aquifer Designation	TCE Result	RDX Result	Date VOCs Collected	Date Explosives Collected
MW-118A	Intermediate	1.0 U	0.23 J	2/17/2010	2/17/2010
MW-118A	Intermediate	1.0 U	0.27 J	4/20/2010	4/20/2010
MW-118A	Intermediate	1.0 U	0.37	7/29/2010	7/29/2010
MW-118A	Intermediate	1.0 U	0.29 J	10/26/2010	10/26/2010
MW-118B	Shallow	1.0 U	0.82	2/17/2010	2/17/2010
MW-118B	Shallow	1.0 U	0.84	4/20/2010	4/20/2010
MW-118B	Shallow	1.0 U	0.89	7/29/2010	7/29/2010
MW-118B	Shallow	1.0 U	0.86	10/26/2010	10/26/2010
MW-147A*	Intermediate	1.0 U	0.41 U	9/24/2010	9/24/2010
MW-147A*	Intermediate	1.0 U	0.4 U	11/11/2010	11/11/2010
MW-147B*	Shallow	1.0 U	0.42 U	9/24/2010	9/24/2010
MW-147B*	Shallow	1.0 U	0.41 U	11/11/2010	11/11/2010
MW-147D*	Deep	1.0 U	0.42 U	9/24/2010	9/24/2010
MW-147D*	Deep	0.42	0.41 U	11/11/2010	11/11/2010
MW-159A*	Intermediate	1.0 U	0.4 U	9/23/2010	9/23/2010
MW-159A*	Intermediate	1.0 U	0.4 U	11/10/2010	11/10/2010
MW-159B*	Shallow	1.0 U	0.4 U	9/23/2010	9/23/2010
MW-159B*	Shallow	1.0 U	0.4 U	11/10/2010	11/10/2010

Notes:

NA = Not Analyzed or Applicable, U = Analyte not detected over reporting limit, J = Estimated Sample

*MW-147 and MW-159 are new Perimeter monitoring wells installed in 2010.

TCE and RDX were the only COCs detected above Final Target Groundwater Cleanup Goals in 2010.

Results for remaining COCs are provided in Table 3-3 of the 2010 Groundwater Monitoring Program Annual Report (ECC, 2011).

All results in µg/L (micrograms per liter)

COC = contaminant of concern

VOC = volatile organic compound

TCE = trichloroethene

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

Table 2-4
Water Supply Wells Sampled in 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Water Supply Well	Required Analyses	GPS Location Northing (NAD 83 SP feet)	GPS Location Easting (NAD 83 SP feet)
27	E, V	491314	2633452
29	E, V	493553	2632818
29A	E, V	494120	2632506
32	E, V	493237	2629736
34	E, V	493445	2627371
36	E, V	492605	2622751
50A	E, V	495657	2632261
50B	E, V	496332	2632399
51	E, V	497399	2632494
51A	E, V	498189	2632594
52A [1]	TSS, E, V	497518	2629718
52A	E, V	497518	2629718
52B	E, V	496817	2632452
52C [1]	TSS, E, V	500793	2632544
52C	E, V	500793	2632544
53 [1]	TSS, E, V	501678	2632682
53	E, V	501678	2632682
54 [1]	TSS, E, V	502782	2632795
54	E, V	502782	2632795
55	E, V	502159	2636409
56	E, V	504584	2633233
57	E, V	506221	2631593
58	E, V	508317	2629362
59	E, V	505914	2632317
60	E, V	506720	2632396
61	E, V	505448	2633182
62	E, V	506004	2633401
63	E, V	508978	2633939
64	E, V	508313	2634110
65	E, V	491734	2614640
66	E, V	492959	2616348
67	E, V	492635	2617043
68	E, V	493041	2618954
73	E, V	495422	2640114
74	E, V	495424	2640477
75	E, V	494855	2638732
76	E, V	494924	2639193
77	E, V	494926	2639589
79	E, V	494931	2640348
80	E, V	517293	2623788
81	E, V	515756	2628719

Table 2-4
Water Supply Wells Sampled in 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Water Supply Well	Required Analyses	GPS Location Northing (NAD 83 SP feet)	GPS Location Easting (NAD 83 SP feet)
82	E, V	516109	2624422
86	E, V	495576	2638562
87	E, V	497785	2639967
89	E, V	509317	2629604
90	E, V	508507	2634670
91	E, V	505420	2634717
92	E, V	504970	2634886
93	E, V	504166	2638589
94	E, V	504539	2638753
95	E, V	497660	2640417
96	E, V	495637	2640886
97	E, V	496114	2637891
99	E, V	494364	2638966
100	E, V	495185	2615279
101	E, V	488282	2613804
102	E, V	506314	2634797
103	E, V	498075	2639207
104	E, V	498343	2639997
105	E, V	494537	2640496
106	E, V	496389	2638316
107	E, V	499376	2640196
108	E, V	512118	2630546
109	E, V	493992	2640254
110	E, V	494087	2639143
111	E, V	506408	2634660
112	E, V	506936	2630157
113	E, V	498325	2638308
114	E,V	507998	2630015
115	E,V	511088	2628624
116	E,V	494236	2639949
117	E,V	505450	2634665
UNFL-9A	E,V	510413	2613507
UNFL-10A	E, V	503105	2605889
UNFL-12	E, V	506617	2602709
UNFL-23	E, V	497127	2608843
UNFL-27	E, V	510015	2618683
118 [2]	E,V	504909	2641259
119 [2]	E,V	511161	2634392

Table 2-4
Water Supply Wells Sampled in 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Water Supply Well	Required Analyses	GPS Location Northing (NAD 83 SP feet)	GPS Location Easting (NAD 83 SP feet)
120 [2]	E,V	514203	2634271
121 [2]	E,V	512551	2634340
122 [2]	E,V	512088	2634361

Notes:

[1]= sample taken before GAC system

[2] = WSW-118 through WSW-122 are not part of the water supply well program; they were sampled in 2010 as a precautionary measure due to detections in M..U.D monitoring wells in November 2009.

GAC = Granular Activated Carbon
GPS = Global Positioning System
GPS locations are general not for other use
NAD 83 = North American Datum 1983
UNFL - University of Nebraska - Lincoln
WSW = Water Supply Well
WSW-116 and WSW-117 added to WSW network in 2010.

Analyses Required:

E = explosive compounds (contaminants of concern: TNT, TNB, 2,4-DNT, and RDX); analysis by EPA SW-846 Method 8330

V = volatile organic compound (contaminants of concern: TCE, DCP, and methylene chloride); analysis by EPA SW-846 Method 524.2

TSS = Total Suspended Solids

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Table 2-5
Water Supply Wells with Detections over Final Target Groundwater Cleanup Goals
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Location	Quarter (2010)	TCE Result (µg/L)	RDX Result (µg/L)
WSW-52C-B	1st	140	0.20 U*
WSW-52C-B	3rd	110	0.20 U*
WSW-53-B	1st	4.9*	8.6
WSW-53-B	3rd	5.4	10.9
WSW-54-B	1st	10.0	2.6
WSW-54-B	3rd	15	3.5

Notes:
U - The analyte was not detected above the reported sample quantitation limit.
µg/L - micrograms per liter
TCE - trichloroethene
RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
* Does not exceed Final Target Groundwater Cleanup Goals

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Table 3-1
Groundwater Elevations March 2010, August 2010, and October 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
EW-1	1079.43	3/29/10	9.13	1068.20	8/26/10	10.73	1068.70	10/29/10	11.63	1067.80
EW-2	1104.28	3/29/10	24.08	1080.20	NM	NM	NM	NM	NM	NM
EW-3	1150.01	3/29/10	72.91	1078.00	8/26/10	72.31	1077.70	10/29/10	71.91	1078.10
EW-4	1148.68	3/29/10	83.88	1064.80	8/26/10	83.88	1064.80	10/29/10	83.88	1064.80
EW-5	1153.98	3/29/10	58.28	1095.70	NM	NM	NM	NM	NM	NM
EW-6	1147.98	3/29/10	56.58	1090.20	8/26/10	56.58	1091.40	10/29/10	56.58	1091.40
EW-7	1148.38	3/29/10	72.58	1075.80	8/26/10	72.58	1075.80	10/29/10	71.08	1077.30
EW-8	1160.39	NM	NM	NM	NM	NM	NM	NM	NM	NM
EW-9	1154.67	3/29/10	76.87	1077.80	8/26/10	75.87	1078.80	10/29/10	75.27	1079.40
EW-10	1150.64	3/29/10	53.94	1075.00	8/26/10	51.64	1099.00	10/29/10	51.24	1099.40
FEW-11	1162.77	3/29/10	66.37	1098.70	8/26/10	65.17	1097.60	10/29/10	65.77	1097.00
EW-12	1113.72	3/29/10	66.39	1069.54	8/26/10	74.78	1038.94	10/29/10	76.08	1037.64
EW-13	NA	NM	NM	NM	NM	NM	NM	NM	NM	NM
FEW-14	1155.99	3/29/10	82.29	1073.40	8/26/10	82.29	1073.70	10/29/10	81.79	1074.20
FEW-15	1169.64	3/29/10	44.44	1125.20	8/26/10	55.14	1114.50	10/29/10	58.14	1111.50
EW-16	1146.97	3/29/10	68.07	1079.40	8/26/10	68.67	1078.30	10/29/10	67.97	1079.00
MW-01A	1176.88	3/29/10	42.90	1133.98	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-01B	1176.73	3/29/10	42.91	1133.82	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-02A	1174.77	3/29/10	41.40	1133.37	8/26/10	40.83	1133.94	10/29/10	40.11	1134.66
MW-02B	1175.18	3/29/10	41.80	1133.38	8/26/10	41.26	1133.92	10/29/10	40.51	1134.67
MW-03A	1177.06	3/29/10	44.55	1132.51	8/26/10	44.10	1132.96	10/29/10	43.37	1133.69
MW-03B	1177.23	3/29/10	44.65	1132.58	8/26/10	44.24	1132.99	10/29/10	43.51	1133.72
MW-04A	1168.73	3/29/10	37.81	1130.92	8/26/10	36.72	1132.01	10/29/10	36.25	1132.48
MW-04B	1168.85	3/29/10	37.96	1130.89	8/26/10	36.85	1132.00	10/29/10	36.36	1132.49
MW-05A	1168.12	3/29/10	35.97	1132.15	8/26/10	34.90	1133.22	10/29/10	34.56	1133.56
MW-05B	1168.18	3/29/10	36.18	1132.00	8/26/10	35.01	1133.17	10/29/10	34.68	1133.50
MW-06A	1165.46	3/29/10	40.01	1125.45	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-06B	1165.61	3/29/10	40.19	1125.42	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-07A	1164.85	3/29/10	39.03	1125.82	8/26/10	38.61	1126.24	10/29/10	38.07	1126.78
MW-07B	1164.64	3/29/10	38.79	1125.85	8/26/10	38.38	1126.26	10/29/10	37.83	1126.81
MW-08A	1165.92	3/29/10	47.07	1118.85	8/26/10	46.47	1119.45	10/29/10	46.47	1119.45
MW-08B	1165.92	3/29/10	47.09	1118.83	8/26/10	46.43	1119.49	10/29/10	46.49	1119.43
MW-09A	1171.46	3/29/10	52.20	1119.26	8/26/10	51.62	1119.84	10/29/10	51.58	1119.88
MW-09B	1171.60	3/29/10	52.14	1119.46	8/26/10	51.57	1120.03	10/29/10	51.54	1120.06
MW-09D	1171.28	3/29/10	51.93	1119.35	8/26/10	51.38	1119.90	10/29/10	51.37	1119.91
MW-10A	1150.35	3/29/10	40.05	1110.30	8/26/10	40.04	1110.31	10/29/10	39.83	1110.52
MW-10B	1150.31	3/29/10	40.00	1110.31	8/26/10	39.97	1110.34	10/29/10	39.76	1110.55
MW-11	1153.22	3/29/10	27.68	1125.54	8/26/10	27.30	1125.92	10/29/10	27.98	1125.24
MW-12	1178.55	NM	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-13	1175.20	NM	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-14	1178.94	NM	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-15	1170.06	NM	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned

Table 3-1
Groundwater Elevations March 2010, August 2010, and October 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
MW-16B	1188.68	3/29/10	35.45	1153.23	8/26/10	34.20	1154.48	10/29/10	35.54	1153.14
MW-16C	1189.40	3/29/10	36.22	1153.18	8/26/10	34.97	1154.43	10/29/10	34.30	1155.10
MW-17A	1128.60	3/29/10	8.17	1120.43	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-17B	1128.50	3/29/10	8.15	1120.35	8/26/10	8.02	1120.48	10/29/10	7.88	1120.62
MW-17C	1128.40	3/29/10	6.70	1121.70	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-18A	1145.43	3/29/10	42.69	1102.74	8/26/10	41.71	1103.72	10/29/10	41.08	1104.35
MW-18B	1145.57	3/29/10	43.20	1102.37	8/26/10	42.19	1103.38	10/29/10	41.53	1104.04
MW-18C	1146.05	3/29/10	40.60	1105.45	8/26/10	39.10	1106.95	10/29/10	38.75	1107.30
MW-19A	1158.65	3/29/10	11.72	1146.93	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-19B	1158.59	3/29/10	11.91	1146.68	8/26/10	10.98	1147.61	10/29/10	10.60	1147.99
MW-19C	1159.26	NM	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-20A	1160.42	3/29/10	61.41	1099.01	8/26/10	60.26	1100.16	10/29/10	59.72	1100.70
MW-20B	1160.29	3/29/10	61.03	1099.26	8/26/10	60.11	1100.18	10/29/10	59.57	1100.72
MW-20C	1160.29	3/29/10	59.76	1100.53	8/26/10	58.45	1101.84	10/29/10	57.89	1102.40
MW-21A	1165.63	3/29/10	37.75	1127.88	8/26/10	36.94	1128.69	10/29/10	36.44	1129.19
MW-21B	1165.59	3/29/10	37.75	1127.84	8/26/10	36.94	1128.65	10/29/10	36.49	1129.10
MW-21D	1165.57	3/29/10	37.74	1127.83	8/26/10	36.96	1128.61	10/29/10	36.48	1129.09
MW-22A	1176.78	3/29/10	32.67	1144.11	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-22B	1176.67	3/29/10	32.69	1143.98	8/26/10	31.61	1145.06	10/29/10	31.10	1145.57
MW-23A	1173.56	3/29/10	32.22	1141.34	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-23B	1173.93	3/29/10	32.59	1141.34	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-24A	1163.41	3/29/10	42.51	1120.90	8/26/10	41.53	1121.88	10/29/10	41.25	1122.16
MW-24B	1163.46	3/29/10	42.32	1121.14	8/26/10	41.31	1122.15	10/29/10	40.99	1122.47
MW-25A	1175.25	3/29/10	46.05	1129.20	8/26/10	45.70	1129.55	10/29/10	44.72	1130.53
MW-25B	1174.71	3/29/10	45.45	1129.26	NM	45.11	1129.60	10/29/10	44.16	1130.55
MW-25D	1175.46	3/29/10	46.30	1129.16	8/26/10	46.04	1129.42	10/29/10	45.04	1130.42
MW-26A	1174.15	3/29/10	34.82	1139.33	8/26/10	33.92	1140.23	10/29/10	33.31	1140.84
MW-26B	1174.16	3/29/10	34.86	1139.30	8/26/10	34.02	1140.14	10/29/10	33.36	1140.80
MW-27A	1176.05	3/29/10	39.89	1136.16	NM	38.70	1137.35	10/29/10	38.34	1137.71
MW-27B	1176.06	3/29/10	39.63	1136.43	NM	38.71	1137.35	10/29/10	38.29	1137.77
MW-28A	1172.22	3/29/10	52.34	1119.88	8/26/10	51.70	1120.52	10/29/10	51.22	1121.00
MW-28B	1172.52	3/29/10	52.91	1119.61	8/26/10	52.31	1120.21	10/29/10	51.81	1120.71
MW-28D	1171.99	3/29/10	52.12	1119.87	8/26/10	51.53	1120.46	10/29/10	50.98	1121.01
MW-29A	1160.06	3/29/10	52.15	1107.91	8/26/10	50.44	1109.62	10/29/10	49.98	1110.08
MW-29B	1161.03	3/29/10	51.24	1109.79	8/26/10	51.35	1109.68	10/29/10	50.91	1110.12
MW-30A	1168.55	3/29/10	40.64	1127.91	NM	NM	NM	10/29/10	39.61	1128.94
MW-30B	1168.38	3/29/10	40.46	1127.92	NM	NM	NM	10/29/10	39.42	1128.96
MW-31A	1167.38	3/29/10	49.98	1117.40	8/26/10	48.95	1118.43	10/29/10	48.57	1118.81
MW-31B	1166.95	3/29/10	50.14	1116.81	8/26/10	49.12	1117.83	10/29/10	48.72	1118.23
MW-32A	1154.17	3/29/10	50.86	1103.31	8/26/10	49.92	1104.25	10/29/10	49.41	1104.76
MW-32B	1154.10	3/29/10	50.78	1103.32	8/26/10	49.88	1104.22	10/29/10	49.36	1104.74
MW-32D	1154.02	3/29/10	50.71	1103.31	8/26/10	49.81	1104.21	10/29/10	49.30	1104.72

Table 3-1
Groundwater Elevations March 2010, August 2010, and October 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
MW-33A	1160.32	3/29/10	52.91	1107.41	8/26/10	52.45	1107.87	10/29/10	52.13	1108.19
MW-33B	1160.37	3/29/10	52.96	1107.41	8/26/10	52.47	1107.90	10/29/10	52.07	1108.30
MW-33D	1160.24	NM	NM	NM	8/26/10	52.21	1108.03	10/29/10	51.82	1108.42
MW-34A	1156.79	3/29/10	61.40	1095.39	8/26/10	60.82	1095.97	10/29/10	60.30	1096.49
MW-34B	1157.00	3/29/10	61.61	1095.39	8/26/10	60.87	1096.13	10/29/10	60.50	1096.50
MW-34D	1156.73	3/29/10	61.40	1095.33	8/26/10	60.82	1095.91	10/29/10	60.25	1096.48
MW-35A	1139.81	3/29/10	55.41	1084.40	8/26/10	54.57	1085.24	10/29/10	54.10	1085.71
MW-35B	1139.57	3/29/10	55.30	1084.27	8/26/10	54.37	1085.20	10/29/10	53.90	1085.67
MW-35D	1139.67	3/29/10	55.22	1084.45	8/26/10	54.42	1085.25	10/29/10	53.93	1085.74
MW-36A	1076.62	NM	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-36B	1076.65	NM	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-36D	1076.79	NM	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-37A	1085.20	NM	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-37B	1085.19	NM	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-37D	1085.06	NM	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-38A	1082.32	3/29/10	4.75	1077.57	8/26/10	6.24	1076.08	10/29/10	6.42	1075.90
MW-38D	1081.92	3/29/10	4.30	1077.62	8/26/10	5.80	1076.12	10/29/10	5.97	1075.95
MW-39A	1082.82	3/29/10	2.31	1080.51	8/26/10	4.21	1078.61	10/29/10	4.43	1078.39
MW-39D	1082.95	3/29/10	2.44	1080.51	8/26/10	4.31	1078.64	10/29/10	4.52	1078.43
MW-40A	1172.09	3/29/10	41.19	1130.90	8/26/10	40.69	1131.40	10/29/10	40.57	1131.52
MW-40B	1172.34	3/29/10	41.51	1130.83	8/26/10	41.00	1131.34	10/29/10	40.76	1131.58
MW-41A	1168.63	3/29/10	38.30	1130.33	NM	NM	NM	10/29/10	37.58	1131.05
MW-41B	1168.68	3/29/10	38.34	1130.34	NM	NM	NM	10/29/10	37.62	1131.06
MW-41D	1168.61	3/29/10	38.35	1130.26	NM	NM	NM	10/29/10	37.59	1131.02
MW-42A	1146.53	3/29/10	52.75	1093.78	8/26/10	51.20	1095.33	10/29/10	50.84	1095.69
MW-42B	1146.64	3/29/10	52.86	1093.78	8/26/10	51.35	1095.29	10/29/10	50.94	1095.70
MW-42D	1146.20	3/29/10	52.68	1093.52	8/26/10	51.00	1095.20	10/29/10	50.65	1095.55
MW-43A	1142.90	3/29/10	45.34	1097.56	8/26/10	43.94	1098.96	10/29/10	43.39	1099.51
MW-43B	1142.74	3/29/10	45.23	1097.51	8/26/10	43.65	1099.09	10/29/10	43.17	1099.57
MW-43D	1142.95	3/29/10	45.40	1097.55	8/26/10	44.00	1098.95	10/29/10	43.43	1099.52
MW-44A	1093.66	3/29/10	9.43	1084.23	8/26/10	9.02	1084.64	10/29/10	8.72	1084.94
MW-44B	1094.14	3/29/10	7.02	1087.12	8/26/10	9.52	1084.62	10/29/10	10.08	1084.06
MW-44D	1092.43	3/29/10	8.20	1084.23	8/26/10	7.80	1084.63	10/29/10	7.51	1084.92
MW-45A	1081.53	3/29/10	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-45B	1081.54	3/29/10	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-45D	1081.44	3/29/10	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-46A	1082.70	3/29/10	3.12	1079.58	8/26/10	4.38	1078.32	10/29/10	4.22	1078.48
MW-46B	1082.81	3/29/10	2.24	1080.57	8/26/10	4.48	1078.33	10/29/10	4.32	1078.49
MW-46D	1082.65	3/29/10	3.07	1079.58	8/26/10	4.31	1078.34	10/29/10	4.16	1078.49
MW-47A	1201.73	3/29/10	26.99	1174.74	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-47B	1201.67	3/29/10	26.87	1174.80	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-52A	1155.22	3/29/10	36.43	1118.79	8/26/10	35.45	1119.77	10/29/10	35.79	1119.43

Table 3-1
Groundwater Elevations March 2010, August 2010, and October 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
MW-52B	1155.65	3/29/10	37.11	1118.54	8/26/10	36.07	1119.58	10/29/10	36.36	1119.29
MW-53A	1136.36	3/29/10	26.90	1109.46	8/26/10	26.00	1110.36	10/29/10	25.48	1110.88
MW-53B	1136.91	3/29/10	25.66	1111.25	8/26/10	24.30	1112.61	10/29/10	24.04	1112.87
MW-54A	1121.58	3/29/10	10.06	1111.52	8/26/10	9.22	1112.36	10/29/10	8.81	1112.77
MW-54B	1121.59	3/29/10	7.29	1114.30	8/26/10	6.62	1114.97	10/29/10	6.43	1115.16
MW-55A	1126.49	3/29/10	16.87	1109.62	8/26/10	16.05	1110.44	10/29/10	15.51	1110.98
MW-55B	1127.27	3/29/10	17.40	1109.87	8/26/10	16.65	1110.62	10/29/10	16.05	1111.22
MW-56A	1125.96	3/21/10	17.05	1108.91	8/26/10	16.15	1109.81	10/29/10	15.62	1110.34
MW-56B	1126.24	3/21/10	15.47	1110.77	8/26/10	14.28	1111.96	10/29/10	14.10	1112.14
MW-57B	1196.27	3/21/10	39.83	1156.44	8/26/10	40.54	1155.73	10/29/10	37.95	1158.32
MW-60A	1145.83	3/29/10	55.71	1090.12	8/26/10	54.40	1091.43	10/29/10	53.35	1092.48
MW-60B	1146.15	3/29/10	56.01	1090.14	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-61A	1108.96	3/29/10	5.71	1103.25	8/26/10	6.23	1102.73	10/29/10	6.21	1102.75
MW-61B	1108.96	3/29/10	5.77	1103.19	8/26/10	6.30	1102.66	10/29/10	6.27	1102.69
MW-61D	1108.96	3/29/10	5.53	1103.43	8/26/10	6.00	1102.96	10/29/10	5.99	1102.97
MW-62A	1078.66	NM	NM	NM	8/26/10	4.18	1074.48	10/29/10	4.22	1074.44
MW-62B	1078.57	NM	NM	NM	8/26/10	4.10	1074.47	10/29/10	4.12	1074.45
MW-62D	1078.89	NM	NM	NM	8/26/10	4.42	1074.47	10/29/10	4.45	1074.44
MW-63B	1177.45	3/29/10	19.88	1157.57	8/26/10	25.40	1152.05	10/29/10	25.27	1152.18
MW-64B	1144.20	NM	NM	NM	NM	Abandoned	Abandoned	NM	Abandoned	Abandoned
MW-65A	1165.02	3/29/10	35.22	1129.80	8/26/10	33.98	1131.04	10/29/10	33.63	1131.39
MW-65B	1165.01	3/29/10	35.24	1129.77	8/26/10	34.01	1131.00	10/29/10	33.69	1131.32
MW-66B	1163.08	3/29/10	34.43	1128.65	8/26/10	33.18	1129.90	10/29/10	32.87	1130.21
MW-71B	1166.34	3/29/10	36.75	1129.59	8/26/10	35.51	1130.83	10/29/10	35.18	1131.16
MW-72A	1170.37	3/29/10	29.95	1140.42	8/26/10	39.45	1130.92	10/29/10	39.28	1131.09
MW-72B	1169.92	3/29/10	29.50	1140.42	8/26/10	38.99	1130.93	10/29/10	38.81	1131.11
MW-73A	1166.95	3/29/10	39.90	1127.05	8/26/10	36.41	1130.54	10/29/10	36.30	1130.65
MW-73B	1166.90	3/29/10	36.88	1130.02	8/26/10	36.45	1130.45	10/29/10	36.19	1130.71
MW-74A	1166.94	3/29/10	37.00	1129.94	8/26/10	36.41	1130.53	10/29/10	36.30	1130.64
MW-74B	1167.04	3/29/10	36.91	1130.13	8/26/10	36.51	1130.53	10/29/10	36.34	1130.70
MW-75A	1167.13	3/29/10	37.05	1130.08	8/26/10	36.59	1130.54	10/29/10	36.39	1130.74
MW-75B	1167.30	3/29/10	37.22	1130.08	8/26/10	36.73	1130.57	10/29/10	36.56	1130.74
MW-76A	1166.24	3/29/10	36.18	1130.06	8/26/10	35.68	1130.56	10/29/10	35.52	1130.72
MW-76B	1166.48	3/29/10	36.35	1130.13	8/26/10	35.77	1130.71	10/29/10	35.70	1130.78
MW-77A	1165.73	3/29/10	35.65	1130.08	8/26/10	35.11	1130.62	10/29/10	34.98	1130.75
MW-77B	1165.79	3/29/10	35.66	1130.13	8/26/10	35.15	1130.64	10/29/10	35.01	1130.78
MW-78A	1165.27	3/29/10	35.11	1130.16	8/26/10	34.60	1130.67	10/29/10	34.43	1130.84
MW-78B	1165.35	3/29/10	35.21	1130.14	8/26/10	34.71	1130.64	10/29/10	34.54	1130.81
MW-79A	1109.34	3/29/10	8.72	1100.62	8/26/10	8.97	1100.37	10/29/10	8.95	1100.39
MW-79B	1109.39	3/29/10	8.79	1100.60	8/26/10	9.01	1100.38	10/29/10	9.03	1100.36
MW-80A	1107.43	3/29/10	7.04	1100.39	8/26/10	7.30	1100.13	10/29/10	7.65	1099.78
MW-80B	1107.65	3/29/10	7.31	1100.34	8/26/10	7.57	1100.08	10/29/10	7.57	1100.08

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Groundwater Elevations March 2010, August 2010, and October 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
MW-80D	1107.40	3/29/10	6.97	1100.43	8/26/10	7.24	1100.16	10/29/10	7.25	1100.15
MW-81A	1108.48	3/29/10	7.90	1100.58	8/26/10	8.18	1100.30	10/29/10	8.06	1100.42
MW-81B	1108.47	3/29/10	9.95	1098.52	8/26/10	8.08	1100.39	10/29/10	8.14	1100.33
MW-81D	1108.53	3/29/10	7.89	1100.64	8/26/10	8.04	1100.49	10/29/10	8.02	1100.51
MW-82A	1149.14	3/29/10	52.97	1096.17	8/26/10	50.93	1098.21	10/29/10	50.30	1098.84
MW-82B	1149.12	3/29/10	52.92	1096.20	8/26/10	50.86	1098.26	10/29/10	50.30	1098.82
MW-82D	1149.22	3/29/10	52.91	1096.31	8/26/10	51.40	1097.82	10/29/10	50.80	1098.42
MW-83A	1152.41	3/29/10	58.03	1094.38	8/26/10	57.67	1094.74	10/29/10	56.95	1095.46
MW-83B	1152.28	3/29/10	59.00	1093.28	8/26/10	57.62	1094.66	10/29/10	56.91	1095.37
MW-83D	1152.32	3/29/10	58.99	1093.33	8/26/10	57.62	1094.70	10/29/10	56.90	1095.42
MW-84A	1145.34	3/30/10	53.00	1092.34	8/26/10	51.44	1093.90	10/29/10	51.20	1094.14
MW-84B	1145.62	3/30/10	52.84	1092.78	8/26/10	51.25	1094.37	10/29/10	51.03	1094.59
MW-84D	1145.37	3/30/10	53.20	1092.17	8/26/10	51.65	1093.72	10/29/10	51.40	1093.97
MW-85A	1132.58	3/30/10	46.07	1086.51	8/26/10	45.01	1087.57	10/29/10	44.45	1088.13
MW-85B	1132.39	3/30/10	45.82	1086.57	8/26/10	44.77	1087.62	10/29/10	44.22	1088.17
MW-85D	1132.59	3/30/10	46.02	1086.57	8/26/10	45.01	1087.58	10/29/10	44.46	1088.13
MW-86A	1114.15	3/30/10	32.92	1081.23	8/26/10	32.35	1081.80	10/29/10	32.02	1082.13
MW-86B	1114.58	3/30/10	33.35	1081.23	8/26/10	32.78	1081.80	10/29/10	32.41	1082.17
MW-86D	1113.90	3/30/10	32.70	1081.20	8/26/10	32.10	1081.80	10/29/10	31.75	1082.15
MW-87A	1078.38	3/30/10	3.85	1074.53	8/26/10	4.24	1074.14	10/29/10	4.24	1074.14
MW-87B	1078.38	3/30/10	3.88	1074.50	8/26/10	4.25	1074.13	10/29/10	4.26	1074.12
MW-87D	1078.39	3/30/10	3.89	1074.50	8/26/10	4.28	1074.11	10/29/10	4.27	1074.12
MW-88A	1081.22	3/30/10	4.50	1076.72	8/26/10	6.00	1075.22	10/29/10	6.27	1074.95
MW-88B	1081.27	3/30/10	4.50	1076.77	8/26/10	6.05	1075.22	10/29/10	6.32	1074.95
MW-88D	1081.30	3/30/10	4.64	1076.66	8/26/10	6.18	1075.12	10/29/10	6.44	1074.86
MW-89A	1160.99	3/30/10	56.45	1104.54	8/26/10	56.07	1104.92	10/29/10	55.81	1105.18
MW-89B	1161.37	3/30/10	56.87	1104.50	8/26/10	56.60	1104.77	10/29/10	56.34	1105.03
MW-89D	1160.65	3/30/10	56.08	1104.57	8/26/10	55.71	1104.94	10/29/10	55.44	1105.21
MW-89E	1157.24	NM	NM	NM	NM	NM	NM	10/29/10	52.39	1104.85
MW-90A	1151.11	3/30/10	46.16	1104.95	8/26/10	45.71	1105.40	10/29/10	45.25	1105.86
MW-90B	1150.77	3/30/10	46.20	1104.57	8/26/10	45.71	1105.06	10/29/10	45.36	1105.41
MW-90D	1151.44	3/30/10	46.60	1104.84	8/26/10	46.08	1105.36	10/29/10	45.75	1105.69
MW-91A	1152.04	3/30/10	47.47	1104.57	8/26/10	46.77	1105.27	10/29/10	46.38	1105.66
MW-91B	1151.87	3/30/10	47.50	1104.37	8/26/10	46.75	1105.12	10/29/10	46.43	1105.44
MW-91D	1151.95	3/30/10	47.31	1104.64	8/26/10	46.77	1105.18	10/29/10	46.31	1105.64
MW-92A	1108.78	3/30/10	7.41	1101.37	8/26/10	7.90	1100.88	10/29/10	7.88	1100.90
MW-92B	1108.65	3/30/10	7.65	1101.00	8/26/10	7.62	1101.03	10/29/10	7.61	1101.04
MW-93A	1124.26	3/30/10	20.78	1103.48	8/26/10	20.12	1104.14	10/29/10	19.97	1104.29
MW-93B	1123.90	3/30/10	20.46	1103.44	8/26/10	19.80	1104.10	10/29/10	19.66	1104.24
MW-94A	1153.06	3/31/10	51.10	1101.96	NM	NM	NM	10/29/10	49.05	1104.01
MW-94B	1153.09	3/31/10	51.09	1102.00	NM	NM	NM	10/29/10	49.00	1104.09
MW-94D	1153.25	3/31/10	51.51	1101.74	NM	NM	NM	10/29/10	49.63	1103.62

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Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
MW-95A	1156.81	3/29/10	57.16	1099.65	8/26/10	55.54	1101.27	10/29/10	55.02	1101.79
MW-95B	1156.46	3/29/10	56.83	1099.63	8/26/10	55.13	1101.33	10/29/10	54.65	1101.81
MW-95D	1156.82	3/29/10	58.35	1098.47	8/26/10	56.45	1100.37	10/29/10	55.91	1100.91
MW-96A	1148.56	3/31/10	54.94	1093.62	8/26/10	53.19	1095.37	10/29/10	52.41	1096.15
MW-96B	1148.56	3/31/10	54.92	1093.64	8/26/10	53.13	1095.43	10/29/10	52.41	1096.15
MW-96D	1148.58	3/31/10	54.94	1093.64	8/26/10	53.16	1095.42	10/29/10	52.41	1096.17
MW-97A	1143.08	3/29/10	50.77	1092.31	8/26/10	49.56	1093.52	10/29/10	49.10	1093.98
MW-97B	1143.18	3/29/10	51.29	1091.89	8/26/10	49.58	1093.60	10/29/10	49.20	1093.98
MW-97D	1143.18	3/29/10	51.34	1091.84	8/26/10	49.68	1093.50	10/29/10	49.22	1093.96
MW-98A	1141.52	3/29/10	51.99	1089.53	8/26/10	50.55	1090.97	10/29/10	50.02	1091.50
MW-98B	1141.58	3/29/10	52.01	1089.57	8/26/10	50.53	1091.05	10/29/10	50.02	1091.56
MW-98D	1141.58	3/29/10	52.11	1089.47	8/26/10	50.63	1090.95	10/29/10	50.11	1091.47
MW-99A	1163.04	3/29/10	71.62	1091.42	8/26/10	70.63	1092.41	10/29/10	70.16	1092.88
MW-99B	1163.19	3/29/10	71.82	1091.37	8/26/10	70.78	1092.41	10/29/10	70.32	1092.87
MW-99D	1162.76	3/29/10	71.42	1091.34	8/26/10	71.43	1091.33	10/29/10	70.00	1092.76
MW-100A	1141.18	3/29/10	56.43	1084.75	8/26/10	55.10	1086.08	10/29/10	54.78	1086.40
MW-100B	1141.12	3/29/10	56.37	1084.75	8/26/10	55.08	1086.04	10/29/10	54.68	1086.44
MW-100D	1141.22	3/29/10	56.51	1084.71	8/26/10	55.15	1086.07	10/29/10	54.78	1086.44
MW-101A	1107.43	3/29/10	7.26	1100.17	8/26/10	7.60	1099.83	10/29/10	7.68	1099.75
MW-101B	1107.44	3/29/10	7.27	1100.17	8/26/10	7.60	1099.84	10/29/10	7.67	1099.77
MW-101D	1107.45	3/29/10	7.30	1100.15	8/26/10	7.62	1099.83	10/29/10	7.69	1099.76
MW-102A	1170.90	3/29/10	35.63	1135.27	8/26/10	35.00	1135.90	10/29/10	34.62	1136.28
MW-102B	1171.13	3/29/10	36.48	1134.65	NM	35.75	1135.38	10/29/10	35.49	1135.64
MW-102D	1171.08	3/29/10	35.66	1135.42	8/26/10	35.00	1136.08	10/29/10	34.62	1136.46
MW-103A	1173.58	3/29/10	41.60	1131.98	8/26/10	41.00	1132.58	10/29/10	40.76	1132.82
MW-103B	1173.80	3/29/10	41.46	1132.34	8/26/10	40.85	1132.95	10/29/10	40.60	1133.20
MW-103D	1173.22	3/29/10	41.23	1131.99	8/26/10	40.65	1132.57	10/29/10	40.42	1132.80
MW-104A	1081.26	3/29/10	2.48	1078.78	8/26/10	2.85	1078.41	10/29/10	2.66	1078.60
MW-104B	1081.27	3/29/10	2.50	1078.77	8/26/10	2.89	1078.38	10/29/10	2.67	1078.60
MW-104D	1081.87	3/29/10	3.02	1078.85	8/26/10	3.44	1078.43	10/29/10	3.23	1078.64
MW-104O	1081.69	3/29/10	4.22	1077.47	8/26/10	4.56	1077.13	10/29/10	4.48	1077.21
MW-105A	1079.60	3/29/10	3.22	1076.38	8/26/10	3.95	1075.65	10/29/10	3.83	1075.77
MW-105B	1079.77	3/29/10	3.39	1076.38	8/26/10	4.10	1075.67	10/29/10	4.01	1075.76
MW-105O	1080.04	3/29/10	6.44	1073.60	8/26/10	7.60	1072.44	10/29/10	7.83	1072.21
MW-106A	1118.06	3/29/10	17.94	1100.12	8/26/10	17.29	1100.77	10/29/10	16.50	1101.56
MW-106B	1117.98	3/29/10	17.52	1100.46	8/26/10	16.65	1101.33	10/29/10	16.07	1101.91
MW-106D	1118.18	3/29/10	18.19	1099.99	8/26/10	19.60	1098.58	10/29/10	16.76	1101.42
MW-107A	1135.79	3/29/10	39.33	1096.46	8/26/10	39.00	1096.79	10/29/10	38.04	1097.75
MW-107B	1136.72	3/29/10	40.79	1095.93	8/26/10	39.11	1097.61	10/29/10	38.61	1098.11
MW-107D	1136.35	3/29/10	38.90	1097.45	8/26/10	39.54	1096.81	10/29/10	38.59	1097.76
MW-108A	1126.74	3/29/10	31.30	1095.44	8/26/10	31.09	1095.65	10/29/10	NM	NM
MW-108B	1126.98	3/29/10	31.72	1095.26	8/26/10	30.28	1096.70	10/29/10	29.89	1097.09

Table 3-1
Groundwater Elevations March 2010, August 2010, and October 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
MW-108D	1126.87	3/29/10	31.45	1095.42	8/26/10	31.32	1095.55	10/29/10	30.28	1096.59
MW-109A	1086.25	3/29/10	2.00	1084.25	8/26/10	2.55	1083.70	10/29/10	2.19	1084.06
MW-109B	1085.98	3/29/10	1.71	1084.27	8/26/10	2.14	1083.84	10/29/10	1.93	1084.05
MW-109O	1085.88	3/29/10	5.32	1080.56	8/26/10	6.86	1079.02	10/29/10	6.36	1079.52
MW-110A	1094.10	3/29/10	5.49	1088.61	8/26/10	6.05	1088.05	10/29/10	5.47	1088.63
MW-110B	1094.49	3/29/10	5.84	1088.65	8/26/10	6.22	1088.27	10/29/10	5.79	1088.70
MW-110D	1094.36	3/29/10	5.70	1088.66	8/26/10	6.21	1088.15	10/29/10	5.68	1088.68
MW-111A	1082.82	3/29/10	2.51	1080.31	8/26/10	4.21	1078.61	10/29/10	4.28	1078.54
MW-111B	1082.61	3/29/10	2.27	1080.34	8/26/10	4.48	1078.13	10/29/10	4.03	1078.58
MW-111O	1082.48	3/29/10	4.95	1077.53	8/26/10	6.70	1075.78	10/29/10	6.26	1076.22
MW-112A	1082.03	NM	NM	NM	8/26/10	0.78	1081.25	10/29/10	0.61	1081.42
MW-112B	1082.02	3/29/10	-0.48	1082.50	8/26/10	0.72	1081.30	10/29/10	0.55	1081.47
MW-113A	1080.47	3/29/10	-0.49	1080.96	8/26/10	0.72	1079.75	10/29/10	0.55	1079.92
MW-113B	1080.42	3/29/10	-0.53	1080.95	8/26/10	0.65	1079.77	10/29/10	0.53	1079.89
MW-113D	1080.49	3/29/10	-0.36	1080.85	8/26/10	0.72	1079.77	10/29/10	0.61	1079.88
MW-114A	1080.32	3/29/10	2.61	1077.71	8/26/10	3.72	1076.60	10/29/10	3.76	1076.56
MW-114B	1080.43	3/29/10	2.75	1077.68	8/26/10	3.88	1076.55	10/29/10	3.91	1076.52
MW-114D	1080.23	3/29/10	2.47	1077.76	8/26/10	3.59	1076.64	10/29/10	3.62	1076.61
MW-115A	1081.67	3/29/10	4.45	1077.22	8/26/10	5.91	1075.76	10/29/10	6.12	1075.55
MW-115B	1081.77	3/29/10	4.55	1077.22	8/26/10	6.01	1075.76	10/29/10	6.23	1075.54
MW-115D	1081.66	3/29/10	4.45	1077.21	8/26/10	5.87	1075.79	10/29/10	6.10	1075.56
MW-116A	1080.53	3/29/10	4.22	1076.31	8/26/10	5.65	1074.88	10/29/10	5.26	1075.27
MW-116B	1080.49	NM	NM	NM	8/26/10	5.48	1075.01	10/29/10	5.24	1075.25
MW-116D	1080.46	3/29/10	4.11	1076.35	8/26/10	5.35	1075.11	10/29/10	5.27	1075.19
MW-117A	1122.26	3/29/10	39.38	1082.88	8/26/10	38.53	1083.73	10/29/10	38.25	1084.01
MW-117B	1122.06	3/29/10	39.22	1082.84	8/26/10	38.30	1083.76	10/29/10	38.02	1084.04
MW-117D	1122.41	3/29/10	39.58	1082.83	8/26/10	38.71	1083.70	10/29/10	38.41	1084.00
MW-118A	1143.87	3/29/10	53.00	1090.87	8/26/10	51.90	1091.97	10/29/10	51.65	1092.22
MW-118B	1143.91	3/29/10	53.01	1090.90	8/26/10	51.90	1092.01	10/29/10	51.67	1092.24
MW-119A	1159.14	3/29/10	44.98	1114.16	8/26/10	43.75	1115.39	10/29/10	43.61	1115.53
MW-119B	1159.28	3/29/10	45.05	1114.23	8/26/10	43.84	1115.44	10/29/10	43.72	1115.56
MW-120A	1166.32	3/29/10	53.69	1112.63	8/26/10	52.64	1113.68	10/29/10	52.47	1113.85
MW-120B	1166.33	3/29/10	53.74	1112.59	8/26/10	52.60	1113.73	10/29/10	52.51	1113.82
MW-120D	1166.62	3/29/10	54.10	1112.52	8/26/10	53.07	1113.55	10/29/10	52.90	1113.72
MW-120E	1166.43	3/29/10	53.88	1112.55	8/26/10	52.73	1113.70	10/29/10	52.65	1113.78
MW-121A	1170.04	3/29/10	56.36	1113.68	8/26/10	55.24	1114.80	10/29/10	55.21	1114.83
MW-121B	1170.13	3/29/10	56.44	1113.69	8/26/10	55.31	1114.82	10/29/10	55.26	1114.87
MW-121E	1170.07	3/29/10	56.12	1113.95	8/26/10	55.03	1115.04	10/29/10	55.01	1115.06
MW-122A	1165.76	3/29/10	54.72	1111.04	8/26/10	54.00	1111.76	10/29/10	53.68	1112.08
MW-122B	1166.52	3/29/10	55.51	1111.01	8/26/10	54.80	1111.72	10/29/10	54.45	1112.07
MW-123A	1168.99	3/29/10	56.02	1112.97	8/26/10	54.61	1114.38	10/29/10	54.73	1114.26
MW-123B	1168.97	3/29/10	55.94	1113.03	8/26/10	54.50	1114.47	10/29/10	54.65	1114.32

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Groundwater Elevations March 2010, August 2010, and October 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
MW-124A	1161.89	3/29/10	43.68	1118.21	8/26/10	42.87	1119.02	10/29/10	42.56	1119.33
MW-124B	1161.59	3/29/10	43.40	1118.19	8/26/10	42.54	1119.05	10/29/10	42.29	1119.30
MW-124D	1161.82	3/29/10	43.96	1117.86	8/26/10	43.15	1118.67	10/29/10	42.88	1118.94
MW-125A	1162.05	3/29/10	47.05	1115.00	8/26/10	45.86	1116.19	10/29/10	45.87	1116.18
MW-125B	1162.14	3/29/10	47.21	1114.93	8/26/10	46.00	1116.14	10/29/10	46.02	1116.12
MW-125D	1161.52	3/29/10	46.80	1114.72	8/26/10	45.59	1115.93	10/29/10	45.29	1116.23
MW-126A	1170.87	3/29/10	41.70	1129.17	8/26/10	41.20	1129.67	10/29/10	40.46	1130.41
MW-126B	1171.29	3/29/10	42.03	1129.26	8/26/10	41.53	1129.76	10/29/10	40.86	1130.43
MW-126D	1170.26	3/29/10	41.00	1129.26	8/26/10	40.41	1129.85	10/29/10	39.41	1130.85
MW-127A	1168.95	3/29/10	34.16	1134.79	8/26/10	33.47	1135.48	10/29/10	32.63	1136.32
MW-127B	1169.37	3/29/10	34.32	1135.05	8/26/10	33.84	1135.53	10/29/10	32.97	1136.40
MW-127E	1169.40	3/29/10	34.51	1134.89	8/26/10	34.00	1135.40	10/29/10	33.18	1136.22
MW-128A	1156.97	3/29/10	62.94	1094.03	8/26/10	62.07	1094.90	10/29/10	61.75	1095.22
MW-128B	1156.94	3/29/10	62.95	1093.99	8/26/10	62.07	1094.87	10/29/10	61.71	1095.23
MW-128D	1156.84	3/29/10	62.75	1094.09	8/26/10	61.87	1094.97	10/29/10	61.55	1095.29
MW-129A	1149.77	3/29/10	62.35	1087.42	8/26/10	61.66	1088.11	10/29/10	61.12	1088.65
MW-129B	1149.72	3/29/10	62.35	1087.37	8/26/10	61.66	1088.06	10/29/10	61.08	1088.64
MW-129D	1149.46	3/29/10	61.95	1087.51	8/26/10	61.22	1088.24	10/29/10	60.60	1088.86
MW-130A	1145.47	3/29/10	60.24	1085.23	8/26/10	59.59	1085.88	10/29/10	59.10	1086.37
MW-130B	1145.92	3/29/10	60.72	1085.20	8/26/10	59.94	1085.98	10/29/10	59.45	1086.47
MW-130D	1145.15	3/29/10	59.96	1085.19	8/26/10	59.14	1086.01	10/29/10	58.70	1086.45
MW-131A	1148.09	3/29/10	57.81	1090.28	8/26/10	57.00	1091.09	10/29/10	56.55	1091.54
MW-131B	1147.94	3/29/10	57.66	1090.28	8/26/10	56.67	1091.27	10/29/10	56.35	1091.59
MW-131D	1148.10	3/29/10	57.80	1090.30	8/26/10	56.73	1091.37	10/29/10	56.47	1091.63
MW-132A	1160.09	3/29/10	67.86	1092.23	8/26/10	66.74	1093.35	10/29/10	66.42	1093.67
MW-132B	1159.81	3/29/10	67.49	1092.32	8/26/10	66.46	1093.35	10/29/10	66.11	1093.70
MW-132D	1160.44	3/29/10	68.28	1092.16	8/26/10	67.10	1093.34	10/29/10	66.76	1093.68
MW-133A	1167.41	3/29/10	41.93	1125.48	8/26/10	43.35	1124.06	10/29/10	43.01	1124.40
MW-133B	1167.55	3/29/10	41.91	1125.64	8/26/10	43.30	1124.25	10/29/10	42.98	1124.57
MW-133D	1167.19	3/29/10	41.97	1125.22	8/26/10	43.36	1123.83	10/29/10	43.04	1124.15
MW-134A	1168.44	3/29/10	45.31	1123.13	8/26/10	45.95	1122.49	10/29/10	45.43	1123.01
MW-134B	1168.55	3/29/10	45.37	1123.18	8/26/10	45.95	1122.60	10/29/10	45.45	1123.10
MW-134D	1168.68	3/29/10	45.35	1123.33	8/26/10	45.80	1122.88	10/29/10	45.32	1123.36
MW-135A	1165.77	3/29/10	40.75	1125.02	8/26/10	42.50	1123.27	10/29/10	42.23	1123.54
MW-135B	1165.71	3/29/10	40.72	1124.99	8/26/10	42.36	1123.35	10/29/10	42.18	1123.53
MW-135D	1165.51	3/29/10	40.51	1125.00	8/26/10	41.70	1123.81	10/29/10	41.40	1124.11
MW-136A	1167.96	3/31/10	41.22	1126.74	8/26/10	42.17	1125.79	10/29/10	41.89	1126.07
MW-136B	1168.14	3/31/10	41.20	1126.94	8/26/10	42.10	1126.04	10/29/10	41.74	1126.40
MW-136D	1167.61	3/31/10	40.82	1126.79	8/26/10	41.76	1125.85	10/29/10	41.40	1126.21
MW-136E	1168.29	3/31/10	41.35	1126.94	8/26/10	42.20	1126.09	10/29/10	41.88	1126.41
MW-137A	1166.31	3/31/10	35.70	1130.61	8/26/10	35.38	1130.93	10/29/10	35.06	1131.25
MW-137B	1166.04	3/31/10	35.62	1130.42	8/26/10	35.33	1130.71	10/29/10	34.99	1131.05

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Groundwater Elevations March 2010, August 2010, and October 2010
2010 Containment Evaluation
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Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
MW-137D	1165.98	3/31/10	35.46	1130.52	8/26/10	35.16	1130.82	10/29/10	NM	NM
MW-137E	1166.17	3/31/10	35.74	1130.43	8/26/10	35.43	1130.74	10/29/10	35.10	1131.07
MW-138A	1175.83	3/31/10	42.80	1133.03	8/26/10	42.20	1133.63	10/29/10	41.92	1133.91
MW-138B	1176.22	3/31/10	43.20	1133.02	8/26/10	42.55	1133.67	10/29/10	42.26	1133.96
MW-139A	1180.32	3/31/10	44.58	1135.74	8/26/10	43.88	1136.44	10/29/10	43.56	1136.76
MW-139B	1180.61	3/31/10	44.91	1135.70	8/26/10	44.21	1136.40	10/29/10	43.88	1136.73
MW-140A	1092.50	3/31/10	5.70	1086.80	8/26/10	6.10	1086.40	10/29/10	5.74	1086.76
MW-140B	1092.42	3/31/10	5.50	1086.92	8/26/10	5.92	1086.50	10/29/10	5.54	1086.88
MW-140D	1092.30	3/31/10	5.46	1086.84	8/26/10	5.88	1086.42	10/29/10	5.51	1086.79
MW-140O	1092.60	3/31/10	8.29	1084.31	8/26/10	9.60	1083.00	10/29/10	9.48	1083.12
MW-141A	1162.07	NM	NM	NM	8/26/10	38.22	1123.85	10/29/10	37.61	1124.46
MW-141B	1162.10	NM	NM	NM	8/26/10	38.20	1123.90	10/29/10	37.58	1124.52
MW-141E	1162.07	NM	NM	NM	8/26/10	38.22	1123.85	10/29/10	37.57	1124.50
MW-142A	1154.43	NM	NM	NM	8/26/10	47.22	1107.21	10/29/10	46.65	1107.78
MW-142E	1154.15	NM	NM	NM	8/26/10	46.94	1107.21	10/29/10	46.38	1107.77
MW-143B	1155.87	NM	NM	NM	8/26/10	46.44	1109.43	10/29/10	46.04	1109.83
MW-144A	1164.17	NM	NM	NM	8/26/10	41.14	1123.03	10/29/10	40.34	1123.83
MW-144E	1164.47	NM	NM	NM	8/26/10	40.74	1123.73	10/29/10	40.62	1123.85
MW-145A	1160.75	NM	NM	NM	8/26/10	49.40	1111.35	10/29/10	48.61	1112.14
MW-145E	1160.89	NM	NM	NM	8/26/10	49.25	1111.64	10/29/10	48.75	1112.14
MW-146A	1148.18	NM	NM	NM	8/26/10	49.40	1098.78	10/29/10	48.74	1099.44
MW-146B	1148.01	NM	NM	NM	8/26/10	49.20	1098.81	10/29/10	48.55	1099.46
MW-147A	1148.92	NM	NM	NM	8/26/10	51.95	1096.97	10/29/10	51.29	1097.63
MW-147B	1148.74	NM	NM	NM	8/26/10	51.80	1096.94	10/29/10	51.14	1097.60
MW-147D	1148.52	NM	NM	NM	8/26/10	51.54	1096.98	10/29/10	50.87	1097.65
MW-148B	1160.53	NM	NM	NM	8/26/10	43.82	1116.71	10/29/10	43.23	1117.30
MW-149A	1152.23	NM	NM	NM	8/26/10	46.20	1106.03	10/29/10	49.73	1102.50
MW-150A	1147.59	NM	NM	NM	8/26/10	49.00	1098.59	10/29/10	48.58	1099.01
MW-150B	1147.51	NM	NM	NM	8/26/10	48.96	1098.55	10/29/10	48.44	1099.07
MW-151A	1158.65	NM	NM	NM	8/26/10	43.40	1115.25	10/29/10	42.65	1116.00
MW-151B	1158.72	NM	NM	NM	8/26/10	43.46	1115.26	10/29/10	42.71	1116.01
MW-152B	1148.37	NM	NM	NM	8/26/10	39.75	1108.62	10/29/10	39.23	1109.14
MW-153A	1146.17	NM	NM	NM	8/26/10	44.10	1102.07	10/29/10	43.59	1102.58
MW-153B	1146.28	NM	NM	NM	8/26/10	44.25	1102.03	10/29/10	43.68	1102.60
MW-154A	1141.11	NM	NM	NM	8/26/10	46.60	1094.51	10/29/10	45.75	1095.36
MW-154B	1141.16	NM	NM	NM	8/26/10	46.10	1095.06	10/29/10	45.03	1096.13
MW-155A	1141.95	NM	NM	NM	8/26/10	46.00	1095.95	10/29/10	45.52	1096.43
MW-155E	1141.78	NM	NM	NM	8/26/10	45.85	1095.93	10/29/10	45.37	1096.41
MW-156A	1093.89	NM	NM	NM	8/26/10	5.50	1088.39	10/29/10	4.94	1088.95
MW-156B	1093.96	NM	NM	NM	8/26/10	4.90	1089.06	10/29/10	5.04	1088.92
MW-157A	1102.64	NM	NM	NM	8/26/10	19.00	1083.64	10/29/10	18.63	1084.01
MW-157B	1101.91	NM	NM	NM	8/26/10	18.30	1083.61	10/29/10	17.88	1084.03

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Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
MW-158A	1076.69	NM	NM	NM	8/26/10	2.35	1074.34	10/29/10	2.27	1074.42
MW-158B	1076.36	NM	NM	NM	8/26/10	2.10	1074.26	10/29/10	1.96	1074.40
MW-158D	1076.63	NM	NM	NM	8/26/10	2.35	1074.28	10/29/10	2.25	1074.38
MW-159A	1163.51	NM	NM	NM	8/26/10	47.50	1116.01	10/29/10	47.02	1116.49
MW-159B	1163.57	NM	NM	NM	8/26/10	47.65	1115.92	10/29/10	47.16	1116.41
OW-01	1161.41	3/31/10	47.15	1114.26	NM	NM	NM	10/29/10	45.81	1115.60
OW-02	1161.57	3/31/10	47.20	1114.37	8/26/10	46.01	1115.56	10/29/10	45.87	1115.70
OW-03	1161.69	3/31/10	47.25	1114.44	8/26/10	46.03	1115.66	10/29/10	45.94	1115.75
OW-04	1161.75	3/31/10	47.45	1114.30	8/26/10	45.97	1115.78	10/29/10	46.14	1115.61
OW-05	1080.35	3/23/10	8.09	1072.26	8/26/10	9.47	1070.88	10/29/10	9.19	1071.16
OW-06	1079.22	3/23/10	5.49	1073.73	8/26/10	6.70	1072.52	10/29/10	6.42	1072.80
OW-07	1079.06	3/23/10	4.89	1074.17	8/26/10	6.00	1073.06	10/29/10	5.78	1073.28
OW-08	1078.43	3/23/10	3.86	1074.57	8/26/10	4.92	1073.51	10/29/10	4.71	1073.72
OW-09	1080.96	3/23/10	7.11	1073.85	8/26/10	8.30	1072.66	10/29/10	8.07	1072.89
OW-10	1079.79	3/31/10	5.23	1074.56	8/26/10	6.22	1073.57	10/29/10	6.09	1073.70
OW-11	1078.66	3/31/10	3.58	1075.08	8/26/10	4.51	1074.15	10/29/10	4.45	1074.21
OW-12	1080.19	3/29/10	3.76	1076.43	8/26/10	5.01	1075.18	10/29/10	5.09	1075.10
OW-13	1081.25	3/29/10	7.30	1073.95	8/26/10	8.51	1072.74	10/29/10	8.27	1072.98
OW-14	1080.52	3/29/10	5.71	1074.81	8/26/10	6.80	1073.72	10/29/10	6.63	1073.89
OW-15	1080.66	3/29/10	5.60	1075.06	8/26/10	6.61	1074.05	10/29/10	6.49	1074.17
OW-16	1078.22	3/29/10	1.47	1076.75	8/26/10	1.65	1076.57	10/29/10	1.52	1076.70
OW-17	1161.58	3/29/10	46.92	1114.66	8/26/10	45.64	1115.94	10/29/10	45.52	1116.06
OW-18	1162.21	3/29/10	47.82	1114.39	8/26/10	46.49	1115.72	10/29/10	46.47	1115.74
OW-19	1172.28	3/29/10	59.25	1113.03	8/26/10	57.82	1114.46	10/29/10	57.96	1114.32
OW-20	1162.79	3/29/10	48.45	1114.34	8/26/10	47.22	1115.57	10/29/10	47.11	1115.68
OW-21	1159.81	3/29/10	45.89	1113.92	8/26/10	44.70	1115.11	10/29/10	44.57	1115.24
OW-22	1161.24	3/29/10	47.12	1114.12	8/26/10	46.04	1115.20	10/29/10	45.86	1115.38
OW-23	1162.08	3/29/10	46.89	1115.19	NM	NM	NM	10/29/10	45.52	1116.56
OW-24	1153.07	3/29/10	69.46	1083.61	8/26/10	68.71	1084.36	10/29/10	68.17	1084.90
OW-25	1155.71	3/29/10	71.57	1084.14	8/26/10	70.85	1084.86	10/29/10	70.28	1085.43
OW-26	1148.64	3/29/10	63.29	1085.35	8/26/10	62.50	1086.14	10/29/10	62.00	1086.64
OW-27	1153.30	3/29/10	69.54	1083.76	8/26/10	68.71	1084.59	10/29/10	68.17	1085.13
OW-28	1153.81	3/29/10	69.90	1083.91	8/26/10	69.36	1084.45	10/29/10	68.55	1085.26
OW-30	1131.58	3/29/10	46.82	1084.76	8/26/10	46.41	1085.17	10/29/10	45.49	1086.09
OW-31	1155.78	3/29/10	60.97	1094.81	8/26/10	59.89	1095.89	10/29/10	59.55	1096.23
OW-32	1153.87	3/29/10	59.12	1094.75	8/26/10	57.93	1095.94	10/29/10	57.60	1096.27
OW-33	1154.67	3/29/10	59.99	1094.68	8/26/10	58.75	1095.92	10/29/10	58.50	1096.17
OW-34	1154.70	3/29/10	60.33	1094.37	8/26/10	59.29	1095.41	10/29/10	58.45	1096.25
OW-35	1154.10	3/29/10	59.69	1094.41	8/26/10	58.66	1095.44	10/29/10	58.30	1095.80
OW-36	1157.23	3/29/10	63.37	1093.86	8/26/10	62.15	1095.08	10/29/10	61.90	1095.33
OW-37	1157.36	3/29/10	63.35	1094.01	8/26/10	62.50	1094.86	10/29/10	62.10	1095.26
OW-38	1151.19	3/29/10	61.36	1089.83	8/26/10	60.09	1091.10	10/29/10	59.00	1092.19

Table 3-1
Groundwater Elevations March 2010, August 2010, and October 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
OW-39	1151.39	3/29/10	61.45	1089.94	8/26/10	57.89	1093.50	10/29/10	56.90	1094.49
OW-40	1157.66	3/29/10	63.99	1093.67	8/26/10	62.60	1095.06	10/29/10	61.81	1095.85
OW-41	1150.22	3/29/10	61.28	1088.94	8/26/10	60.00	1090.22	10/29/10	58.85	1091.37
OW-42	1151.21	3/29/10	59.99	1091.22	8/26/10	58.63	1092.58	10/29/10	57.60	1093.61
OW-43	1156.74	3/29/10	63.71	1093.03	8/26/10	62.39	1094.35	10/29/10	61.70	1095.04
OW-44	1147.84	3/29/10	53.79	1094.05	8/26/10	52.36	1095.48	10/29/10	52.03	1095.81
OW-45	1152.47	3/29/10	55.68	1096.79	8/26/10	53.63	1098.84	10/29/10	53.13	1099.34
OW-46	1151.55	3/29/10	54.49	1097.06	8/26/10	52.43	1099.12	10/29/10	51.91	1099.64
OW-47	1153.44	3/29/10	55.84	1097.60	8/26/10	53.74	1099.70	10/29/10	53.28	1100.16
OW-48	1153.38	3/29/10	56.65	1096.73	8/26/10	54.55	1098.83	10/29/10	54.05	1099.33
OW-49	1154.09	3/29/10	57.61	1096.48	8/26/10	55.51	1098.58	10/29/10	55.00	1099.09
OW-50	1151.16	3/29/10	55.10	1096.06	8/26/10	52.70	1098.46	10/29/10	52.25	1098.91
OW-51	1149.86	3/29/10	53.96	1095.90	8/26/10	51.95	1097.91	10/29/10	51.40	1098.46
OW-52	1107.14	3/29/10	13.61	1093.53	8/26/10	12.50	1094.64	10/29/10	11.99	1095.15
OW-53	1107.13	3/29/10	11.73	1095.40	8/26/10	10.80	1096.33	10/29/10	10.38	1096.75
OW-54	1115.39	3/29/10	12.45	1102.94	8/26/10	12.00	1103.39	10/29/10	11.88	1103.51
OW-55	1107.05	3/29/10	14.81	1092.24	8/26/10	13.48	1093.57	10/29/10	12.93	1094.12
OW-56	1112.15	3/29/10	9.43	1102.72	8/26/10	9.11	1103.04	10/29/10	8.99	1103.16
OW-57	1114.84	3/29/10	11.91	1102.93	8/26/10	11.50	1103.34	10/29/10	11.39	1103.45
OW-58	1109.00	3/29/10	8.02	1100.98	8/26/10	7.90	1101.10	10/29/10	7.79	1101.21
OW-59	1110.50	3/29/10	8.57	1101.93	8/26/10	8.38	1102.12	10/29/10	8.31	1102.19
OW-60	1149.15	3/29/10	60.19	1088.96	8/26/10	59.80	1089.35	10/29/10	59.40	1089.75
OW-61	1148.81	3/29/10	59.80	1089.01	8/26/10	58.90	1089.91	10/29/10	58.41	1090.40
OW-62	1151.40	3/29/10	61.61	1089.79	8/26/10	60.66	1090.74	10/29/10	60.15	1091.25
OW-63	1152.90	3/29/10	63.50	1089.40	8/26/10	62.61	1090.29	10/29/10	62.11	1090.79
OW-64	1148.12	3/29/10	59.71	1088.41	8/26/10	59.01	1089.11	10/29/10	58.37	1089.75
OW-65	1147.36	3/29/10	59.45	1087.91	8/26/10	58.71	1088.65	10/29/10	58.20	1089.16
OW-66	1147.09	3/29/10	53.05	1094.04	8/26/10	51.68	1095.41	10/29/10	51.43	1095.66
OW-67	1149.64	3/29/10	55.59	1094.05	8/26/10	54.15	1095.49	10/29/10	53.92	1095.72
OW-68	1146.89	3/29/10	53.38	1093.51	8/26/10	51.95	1094.94	10/29/10	51.62	1095.27
OW-69	1147.02	3/29/10	53.02	1094.00	8/26/10	51.68	1095.34	10/29/10	51.43	1095.59
OW-70	1146.14	3/29/10	52.34	1093.80	8/26/10	50.88	1095.26	10/29/10	50.70	1095.44
OW-71	1158.23	3/29/10	64.15	1094.08	8/26/10	62.85	1095.38	10/29/10	62.62	1095.61
OW-72	1156.05	3/29/10	62.64	1093.41	8/26/10	60.90	1095.15	10/29/10	60.29	1095.76
OW-73	1157.61	3/29/10	62.43	1095.18	8/26/10	61.62	1095.99	10/29/10	61.00	1096.61
OW-74	1148.38	3/29/10	53.00	1095.38	8/26/10	51.02	1097.36	10/29/10	50.44	1097.94
OW-75	1154.51	3/29/10	60.46	1094.05	8/26/10	58.71	1095.80	10/29/10	58.10	1096.41
OW-76	1148.68	3/29/10	54.30	1094.38	8/26/10	52.56	1096.12	10/29/10	51.91	1096.77
OW-77	1157.82	3/29/10	64.59	1093.23	8/26/10	63.17	1094.65	10/29/10	62.40	1095.42
OW-78	1163.94	3/29/10	54.57	1109.37	8/26/10	53.21	1110.73	10/29/10	53.38	1110.56
OW-79	1167.29	3/29/10	55.90	1111.39	NM	NM	NM	10/29/10	54.70	1112.59
OW-80	1169.30	3/29/10	56.32	1112.98	8/26/10	54.92	1114.38	10/29/10	55.03	1114.27

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2010 Containment Evaluation
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Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
OW-81	1164.13	3/29/10	51.90	1112.23	8/26/10	50.54	1113.59	10/29/10	50.68	1113.45
OW-82	1169.05	3/29/10	56.35	1112.70	8/26/10	55.23	1113.82	10/29/10	55.13	1113.92
OW-83	1173.20	3/29/10	59.30	1113.90	8/26/10	58.19	1115.01	10/29/10	58.17	1115.03
OW-89	1092.56	3/29/10	12.61	1079.95	8/26/10	12.65	1079.91	10/29/10	12.36	1080.20
OW-90	1153.30	3/29/10	61.41	1091.89	8/26/10	60.70	1092.60	10/29/10	60.37	1092.93
OW-92	1154.30	3/29/10	60.70	1093.60	8/26/10	59.91	1094.39	10/29/10	59.60	1094.70
OW-93	1156.87	3/29/10	65.20	1091.67	8/26/10	64.64	1092.23	10/29/10	64.29	1092.58
OW-94	1153.21	3/29/10	59.78	1093.43	8/26/10	59.01	1094.20	10/29/10	58.70	1094.51
OW-95	1150.04	3/29/10	56.91	1093.13	8/26/10	56.15	1093.89	10/29/10	55.80	1094.24
OW-96	1146.64	3/29/10	59.95	1086.69	8/26/10	59.36	1087.28	10/29/10	58.80	1087.84
OW-97	1146.21	3/29/10	59.92	1086.29	8/26/10	59.22	1086.99	10/29/10	58.70	1087.51
OW-98	1150.67	3/29/10	63.98	1086.69	8/26/10	63.20	1087.47	10/29/10	62.63	1088.04
OW-99	1146.97	3/29/10	61.03	1085.94	8/26/10	60.34	1086.63	10/29/10	59.80	1087.17
OW-100	1147.39	3/31/10	61.95	1085.44	8/26/10	61.17	1086.22	10/29/10	66.65	1080.74
OW-101	1168.26	3/31/10	42.52	1125.74	8/26/10	46.00	1122.26	10/29/10	54.98	1113.28
OW-102	1166.49	3/31/10	40.63	1125.86	8/26/10	42.70	1123.79	10/29/10	42.59	1123.90
OW-103	1169.13	3/31/10	42.51	1126.62	8/26/10	43.09	1126.04	10/29/10	42.91	1126.22
OW-104	1167.73	3/31/10	42.67	1125.06	8/26/10	44.65	1123.08	10/29/10	44.55	1123.18
OW-105	1165.40	3/31/10	41.11	1124.29	8/26/10	42.11	1123.29	10/29/10	41.89	1123.51
PZ-01	1116.38	3/29/10	32.55	1083.83	8/26/10	32.47	1083.91	10/29/10	31.89	1084.49
PZ-02	1130.80	3/29/10	44.55	1086.25	8/26/10	43.49	1087.31	10/29/10	43.43	1087.37
PZ-03	1087.47	3/29/10	0.85	1086.62	8/26/10	0.65	1086.82	10/29/10	0.36	1087.11
PZ-04	1086.65	3/29/10	3.61	1083.04	8/26/10	4.58	1082.07	10/29/10	4.32	1082.33
PZ-05	1085.66	3/29/10	2.79	1082.87	8/26/10	4.51	1081.15	10/29/10	4.70	1080.96
PZ-06	1088.42	3/29/10	2.36	1086.06	8/26/10	3.43	1084.99	10/29/10	3.16	1085.26
PZ-11	1094.18	NM	NM	NM	8/26/10	5.65	1088.53	10/29/10	5.12	1089.06
PZ-12	1101.36	NM	NM	NM	8/26/10	17.90	1083.46	10/29/10	17.43	1083.93
PZ-13	1081.23	NM	NM	NM	8/26/10	1.70	1079.53	10/29/10	1.40	1079.83
PZ-14	1080.52	NM	NM	NM	8/26/10	1.00	1079.52	10/29/10	0.79	1079.73
TH-EW-12	1107.37	3/29/10	27.28	1080.09	8/26/10	24.50	1082.87	10/29/10	23.40	1083.97
TH-EW-13	1111.04	3/29/10	9.26	1101.78	8/26/10	9.07	1101.97	10/29/10	8.98	1102.06
TH-EW-14R1	1156.72	3/29/10	64.92	1091.80	8/26/10	64.13	1092.59	10/29/10	64.00	1092.72
TH-EW-14R2	1151.08	3/29/10	58.32	1092.76	8/26/10	57.44	1093.64	10/29/10	57.05	1094.03
TH-EW-15	1172.51	3/29/10	43.27	1129.24	8/26/10	48.65	1123.86	10/29/10	48.66	1123.85
TH-EW-16	1147.71	3/29/10	61.99	1085.72	8/26/10	61.50	1086.21	10/29/10	60.85	1086.86
Brabec	1150.00	3/29/10	52.61	1097.39	8/26/10	50.68	1099.32	10/29/10	50.23	1099.77
D.Starns	1064.50	3/29/10	8.69	1055.81	8/26/10	13.02	1051.48	10/29/10	17.79	1046.71
Frahm	1146.00	3/29/10	56.60	1089.40	8/26/10	54.96	1091.04	10/29/10	54.48	1091.52
Hanson	1144.40	3/29/10	51.76	1092.64	8/26/10	50.13	1094.27	10/29/10	49.64	1094.76
LPN 06-01	1066.68	3/29/10	0.73	1065.95	8/26/10	2.09	1064.59	10/29/10	2.23	1064.45
LPN 06-18	1088.45	3/29/10	1.36	1087.09	8/26/10	2.19	1086.26	10/29/10	1.81	1086.64
LPN 06-19	1140.81	3/29/10	35.80	1105.01	8/26/10	36.95	1103.86	10/29/10	35.69	1105.12

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Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
LPN 06-20	1208.77	3/29/10	62.61	1146.16	8/26/10	61.36	1147.41	10/29/10	60.72	1148.05
LPN 06-21	1204.53	3/29/10	52.33	1152.20	8/26/10	52.23	1152.30	10/29/10	50.79	1153.74
M90-01	1074.38	3/29/10	0.69	1073.69	8/26/10	2.56	1071.82	10/29/10	3.15	1071.23
M90-02	1075.70	3/29/10	3.65	1072.05	8/26/10	4.41	1071.29	10/29/10	4.53	1071.17
M90-04	1071.08	3/29/10	1.70	1069.38	8/26/10	3.30	1067.78	10/29/10	3.70	1067.38
M90-05R	1076.50	3/29/10	9.51	1066.99	8/26/10	10.55	1065.95	10/29/10	10.89	1065.61
M90-09	1067.97	3/29/10	2.47	1065.50	8/26/10	3.84	1064.13	10/29/10	3.96	1064.01
M90-12R	1070.00	3/29/10	5.29	1064.71	8/26/10	7.40	1062.60	10/29/10	7.37	1062.63
M90-15	1065.39	3/29/10	2.59	1062.80	8/26/10	5.31	1060.08	10/29/10	5.61	1059.78
M90-16R	1063.57	3/29/10	1.72	1061.85	8/26/10	2.80	1060.77	10/29/10	4.47	1059.10
M90-17R	1067.54	3/29/10	7.47	1060.07	8/26/10	8.40	1059.14	10/29/10	9.94	1057.60
M90-20R	1066.45	3/29/10	8.24	1058.21	8/26/10	8.69	1057.76	10/29/10	8.80	1057.65
M90-21	1064.09	3/29/10	3.60	1060.49	8/26/10	5.69	1058.40	10/29/10	6.32	1057.77
M90-22R	1063.17	3/29/10	4.72	1058.45	8/26/10	7.59	1055.58	10/29/10	11.44	1051.73
M90-23R	1056.70	3/29/10	6.49	1050.21	8/26/10	13.79	1042.91	10/29/10	17.38	1039.32
M90-24R	1059.05	3/29/10	11.39	1047.66	8/26/10	13.63	1045.42	10/29/10	16.44	1042.61
M90-26R	1057.07	3/29/10	4.21	1052.86	8/26/10	6.67	1050.40	10/29/10	8.14	1048.93
M90-36R	1059.30	3/29/10	5.82	1053.48	8/26/10	6.63	1052.67	10/29/10	8.12	1051.18
M90-37	1054.19	3/29/10	1.63	1052.56	8/26/10	3.04	1051.15	10/29/10	3.96	1050.23
MUD 4-17		3/29/10	NM	NM	8/26/10	NM	1097.13	10/29/10	NM	NM
MUD 5-22		3/29/10	NM	1086.62	8/26/10	NM	1083.89	10/29/10	NM	NM
MUD 5-23		3/29/10	NM	1086.17	8/26/10	NM	1082.52	10/29/10	NM	NM
MUD 5-24		3/29/10	NM	1098.16	8/26/10	NM	1097.53	10/29/10	NM	NM
MUD 5-25		3/29/10	NM	1104.39	8/26/10	NM	1101.94	10/29/10	NM	NM
MUD 5-26		3/29/10	NM	1109.19	8/26/10	NM	1107.78	10/29/10	NM	NM
MUD 6-18	1089.79	3/29/10	2.64	1087.15	8/26/10	3.61	1086.18	10/29/10	NM	NM
MUD 6-19	1142.20	3/29/10	36.82	1105.38	8/26/10	38.31	1103.89	10/29/10	NM	NM
MUD 6-20	1210.13	3/29/10	63.99	1146.14	8/26/10	62.67	1147.46	10/29/10	NM	NM
MUD 6-21	1205.86	3/29/10	NM	NM	8/26/10	53.45	1152.41	10/29/10	NM	NM
MUD 6-27		3/29/10	NM	1086.95	8/26/10	NM	1085.66	10/29/10	NM	NM
MUD 6-28		3/29/10	NM	1088.72	8/26/10	NM	1087.17	10/29/10	NM	NM
MUD 6-29		3/29/10	NM	1096.38	8/26/10	NM	1095.19	10/29/10	NM	NM
MUD 6-30A		3/29/10	70.04	1129.27	8/26/10	NM	NM	10/29/10	NM	NM
MUD 6-31A		3/29/10	50.50	1099.48	8/26/10	NM	NM	10/29/10	NM	NM
MUD 90-4		3/29/10	NM	1118.63	8/26/10	NM	1118.86	10/29/10	NM	NM
MUD 90-5		3/29/10	NM	1101.51	8/26/10	NM	1097.45	10/29/10	NM	NM
MUD 90-6		3/29/10	NM	1104.61	8/26/10	NM	1103.20	10/29/10	NM	NM
MUD 90-7		3/29/10	NM	1106.45	8/26/10	NM	1104.50	10/29/10	NM	NM
MUD 90-10	1099.56	3/29/10	5.44	1094.12	8/26/10	9.35	1090.21	10/29/10	9.18	1090.38
MUD 90-12		3/29/10	NM	1099.10	8/26/10	NM	1097.48	10/29/10	NM	NM
MUD 90-13		3/29/10	NM	1092.21	8/26/10	NM	1090.28	10/29/10	NM	NM
MUD 94-1		3/29/10	NM	1106.52	8/26/10	NM	1104.25	10/29/10	NM	NM

Table 3-1
Groundwater Elevations March 2010, August 2010, and October 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID	Top of Casing (TOC) Elevation (feet AMSL)	Date	Depth to Water from TOC (feet) March 2010	Groundwater Elevation (ft AMSL) March 2010	Date	Depth to Water from TOC (feet) August 2010	Groundwater Elevation (ft AMSL) August 2010	Date	Depth to Water from TOC (feet) October 2010	Groundwater Elevation (ft AMSL) October 2010
MUD 94-2		3/29/10	NM	1103.67	8/26/10	NM	1101.47	10/29/10	NM	NM
MUD 94-3	1085.52	3/29/10	3.41	1082.11	8/26/10	5.66	1079.86	10/29/10	6.28	1079.24
MUD 94-4	1094.81	3/29/10	5.40	1089.41	8/26/10	10.63	1084.18	10/29/10	12.32	1082.49
MUD 94-5	1097.79	3/29/10	3.32	1094.47	8/26/10	4.78	1093.01	10/29/10	4.53	1093.26
MUD 94-6	1085.55	3/29/10	0.92	1084.63	8/26/10	2.69	1082.86	10/29/10	2.93	1082.62
MUD 94-7	1083.07	3/29/10	4.87	1078.20	8/26/10	6.87	1076.20	10/29/10	7.33	1075.74
N.Keiser	1104.20	3/29/10	23.38	1080.82	8/26/10	22.91	1081.29	10/29/10	22.75	1081.45
N.Wann	1107.30	3/29/10	2.97	1104.33	8/26/10	3.38	1103.92	10/29/10	3.27	1104.03
PV-37	1100.90	3/29/10	6.79	1094.11	8/26/10	10.64	1090.26	10/29/10	10.78	1090.12
PV-38	1100.00	3/29/10	4.06	1095.94	8/26/10	5.69	1094.31	10/29/10	5.45	1094.55
PV-39	1084.00	3/29/10	0.64	1083.36	8/26/10	1.36	1082.64	10/29/10	1.09	1082.91
PV-40	1088.90	3/29/10	4.35	1084.55	8/26/10	7.25	1081.65	10/29/10	7.96	1080.94
PV-41	1096.20	3/29/10	3.17	1093.03	8/26/10	5.60	1090.60	10/29/10	5.82	1090.38
S.Keiser	1114.20	3/29/10	34.27	1079.93	8/26/10	33.79	1080.41	10/29/10	33.58	1080.62
S.Wann	1078.00	NM	NM	NM	NM	NM	NM	NM	NM	NM
TV-16	1140.30	3/29/10	48.60	1091.70	8/26/10	46.97	1093.33	10/29/10	46.36	1093.94
TV-17A	1137.75	3/29/10	52.21	1085.54	8/26/10	51.57	1086.18	10/29/10	50.24	1087.51

Notes:

NM = Not Measured
ft = feet
AMSL = Above Mean Sea Level
EW = Extraction Well
FEW = Focused Extraction Well
ID = Identification
LPN = Lower Platte North
MW = Monitoring well
MUD = Metropolitan Utilities District
OW = Observation Well
PZ = Piezometer
TH = Test Hole
TOC = Top of Casing
USGS = United States Geological Survey

* Groundwater elevation needs to be evaluated prior to use because elevation may not reflect actual conditions; instead, may be water collected in bottom of casing.

Table 3-2
Vertical Gradient Directions and Values, March 2010, August 2010, and October 2010
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Monitoring Event	Vertical Flow Direction*	Flow Between Shallow Zone and Intermediate Zone		Flow Between Intermediate Zone and Deep Zone	
		Well Cluster	Gradient**	Well Cluster	Gradient**
March 2010	Downward Flow	MW-44	0.2364	MW-83	0.0847
		MW-53	0.0375	MW-84	0.0283
		MW-54	0.0587	MW-95	0.0409
		MW-56	0.0445	MW-97	0.0319
		MW-107	0.0242	MW-133	0.0208
		MW-108	0.0289		
		MW-154	0.0262		
		MW-156	0.0388		
		MW-84	0.0232		
		MW-154	0.0262		
	Upward Flow	MW-52	-0.0322	MW-107	-0.0687
		MW-111	-0.0298		
August 2010	Downward Flow	MW-29	0.0322	MW-84	0.0300
		MW-46	0.0808	MW-95	0.0312
		MW-53	0.0298	MW-99	0.0755
		MW-54	0.0625	MW-106	0.1510
		MW-56	0.0385		
		MW-73	0.0692		
		MW-84	0.0217		
	Upward Flow	MW-52	-0.0424	MW-116	-0.0214
		MW-81	-0.0394	MW-131	-0.0251
		MW-83	-0.0383	MW-134	-0.0233
		MW-97	-0.0240	MW-135	-0.0366
October 2010	Downward Flow	MW-53	0.0332	MW-84	0.0283
		MW-54	0.0537	MW-95	0.0305
		MW-56	0.0373	MW-124	0.0207
		MW-84	0.0222	MW-133	0.0200
		MW-154	0.0366		
	Upward Flow	MW-44	-0.0723	MW-80	-0.0230
		MW-52	-0.0237	MW-134	-0.0209
				MW-135	-0.0386

* A vertical gradient of less than 0.02 (+ or -) foot of head per foot of vertical distance is assumed to indicate no flow between zones.

** Positive gradient indicates downward flow between the two zones. Negative gradient indicates upward flow between the two zones.

MW = monitoring well

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Table 3-3
Extraction Well Pumping Rates
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Month	EW-01	EW-02	EW-03	EW-04	EW-05	EW-06	EW-07	EW-08	EW-09	EW-10	FEW-11	EW-12	EW-13	FEW-14	FEW-15	EW-16	Total
Feb-02	185	175	236	132	252	306	331	316	268	428	0	0	0	0	0	0	2,629
Mar-02	181	175	227	132	251	305	329	322	263	420	0	0	0	0	0	0	2,605
Apr-02	180	175	228	124	250	307	328	324	261	419	0	0	0	0	0	0	2,596
May-02	179	175	220	119	251	310	328	319	250	418	0	0	0	0	0	0	2,569
Jun-02	177	174	220	120	249	309	328	320	250	414	0	0	0	0	0	0	2,561
Jul-02	175	176	220	123	250	311	330	321	231	410	0	0	0	0	0	0	2,547
Aug-02	174	175	221	120	250	309	330	322	231	409	0	0	0	0	0	0	2,541
Nov-02	171	175	220	115	250	314	320	323	226	376	0	0	0	0	0	0	2,490
Feb-03	168	175	220	110	249	294	315	319	221	379	0	0	0	0	0	0	2,450
May-03	164	174	219	109	250	290	314	312	216	380	0	0	0	0	0	0	2,428
Aug-03	160	173	218	105	251	292	299	310	215	392	0	0	0	0	0	0	2,415
Nov-03	154	169	221	107	249	280	300	312	215	396	0	0	0	0	0	0	2,403
Mar-04	148	168	220	117	245	264	299	310	210	375	0	0	0	0	0	0	2,356
Apr-04	148	168	219	116	244	253	280	310	185	374	0	0	0	0	0	0	2,297
Aug-04	198	150	220	122	250	276	298	335	194	401	0	0	0	0	0	0	2,444
Oct-04	200	150	220	119	248	260	302	336	185	400	0	0	0	0	0	0	2,420
Jan-05	197	151	220	115	249	240	274	338	180	406	0	0	0	0	0	0	2,370
May-05	200	151	219	110	252	233	264	333	180	409	0	0	0	0	0	0	2,351
Aug-05	197	150	219	105	251	276	305	305	178	401	0	0	0	0	0	0	2,387
Oct-05	187	150	220	104	249	276	304	304	171	396	0	0	0	0	0	0	2,361
Jan-06	177	149	219	105	229	252	308	305	158	345	0	0	0	0	0	0	2,247
Feb-06	163	143	209	95	210	231	294	291	143	228	0	0	0	0	0	0	2,006
Mar-06	171	153	223	89	225	255	316	314	152	270	0	350	0	0	0	0	2,517
Apr-06	156	142	207	98	221	243	294	292	141	276	0	275	0	0	0	0	2,343
May-06	157	148	216	103	229	250	312	306	145	308	0	303	0	0	0	0	2,477
Jun-06	85	111	208	90	210	215	284	277	138	289	0	268	0	0	0	0	2,174
Jul-06	134	99	215	83	211	275	302	295	144	351	0	323	0	0	0	0	2,434
Aug-06	74	54	215	102	201	245	308	296	125	289	0	321	0	0	0	0	2,230
Sep-06	220	119	205	109	191	252	300	281	129	284	0	306	0	0	0	0	2,395
Oct-06	234	149	217	115	201	268	303	299	137	303	0	318	0	0	0	0	2,543
Nov-06	204	148	122	96	128	168	194	298	86	181	0	316	0	0	0	0	1,943
Dec-06	183	138	130	81	76	268	281	269	148	260	0	263	0	0	0	0	2,096
Jan-07	211	151	168	84	155	260	294	297	137	273	0	307	0	0	0	0	2,336
Feb-07	198	147	243	81	194	250	290	290	129	255	0	300	0	0	0	0	2,377
Mar-07	187	140	186	79	149	253	288	279	121	248	0	280	0	0	0	0	2,210
Apr-07	188	148	253	81	181	261	308	287	96	195	0	313	0	0	0	0	2,310
May-07	140	139	139	72	181	253	269	281	109	274	0	249	0	0	0	0	2,106
Jun-07	202	153	261	80	218	270	321	278	157	398	0	182	0	0	0	0	2,519
Jul-07	202	149	247	65	214	264	310	290	154	402	0	329	0	0	0	0	2,624
Aug-07	184	137	231	73	191	231	274	255	127	214	0	238	0	0	0	0	2,156
Sep-07	190	145	247	79	199	251	292	0	146	381	0	315	0	0	0	0	2,245
Oct-07	190	152	255	81	131	232	296	0	148	405	0	320	0	0	0	0	2,211
Nov-07	116	154	261	77	207	259	301	0	151	402	0	325	0	0	0	0	2,252
Dec-07	193	154	262	70	204	255	299	0	150	401	0	324	0	0	0	0	2,312
Jan-08	168	138	238	59	185	231	286	36	138	387	0	313	0	0	0	0	2,178
Feb-08	177	148	258	64	193	244	293	63	147	395	0	324	0	0	0	0	2,306
Mar-08	181	152	263	65	183	145	177	0	87	391	236	305	0	0	0	0	2,185
Apr-08	181	156	266	68	169	256	314	0	156	418	441	325	0	0	0	0	2,752
May-08	167	147	249	64	148	239	292	0	143	380	459	323	0	0	0	0	2,612
Jun-08	160	148	246	69	186	238	277	0	144	351	328	320	0	0	0	0	2,465

Table 3-3
Extraction Well Pumping Rates
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Month	EW-01	EW-02	EW-03	EW-04	EW-05	EW-06	EW-07	EW-08	EW-09	EW-10	FEW-11	EW-12	EW-13	FEW-14	FEW-15	EW-16	Total
Jul-08	166	159	279	78	210	270	304	0	160	414	277	321	0	0	0	0	2,639
Aug-08	160	156	266	77	210	267	309	0	161	418	542	324	0	0	0	0	2,889
Sep-08	156	154	270	73	206	263	245	0	160	414	545	323	0	0	0	0	2,808
Oct-08	96	154	272	66	202	258	261	0	159	388	495	320	0	0	0	0	2,672
Nov-08	48	160	282	44	205	264	319	0	164	417	562	324	0	0	0	0	2,789
Dec-08	81	156	280	61	203	254	313	0	158	267	548	314	0	0	0	0	2,635
Jan-09	185	151	279	93	200	265	322	0	166	419	542	308	0	0	0	0	2,932
Feb-09	185	85	260	86	118	245	314	0	159	442	585	313	0	0	0	0	2,794
Mar-09	169	0	201	93	0	184	231	0	112	268	467	321	0	0	0	0	2,044
Apr-09	189	0	233	92	0	212	237	0	134	304	476	307	0	0	0	0	2,183
May-09	178	0	217	93	0	203	227	0	125	305	379	301	0	0	0	0	2,028
Jun-09	186	0	276	91	0	259	298	0	165	399	480	317	0	165	0	140	2,776
Jul-09	172	0	290	88	0	65	302	0	139	406	520	212	0	184	0	94	2,470
Aug-09	168	0	274	73	0	63	216	0	137	569	441	175	0	186	0	90	2,391
Sep-09	169	0	263	77	0	74	278	0	131	203	491	196	0	176	0	88	2,145
Oct-09	177	0	275	78	0	68	293	0	142	385	530	269	0	188	0	90	2,495
Nov-09	173	0	257	81	0	70	288	0	126	386	526	321	0	188	0	90	2,505
Dec-09	147	0	263	68	0	63	254	0	122	345	426	260	0	164	0	81	2,192
Jan-10	160	0	286	76	0	76	277	0	133	377	477	273	0	179	9	88	2,411
Feb-10	155	0	294	79	0	78	287	0	135	315	533	303	0	187	0	87	2,454
Mar-10	151	0	290	77	0	62	282	0	140	0	506	320	0	185	0	84	2,098
Apr-10	148	0	299	78	0	56	288	0	144	0	523	322	0	191	110	85	2,244
May-10	143	0	302	77	0	57	292	0	147	0	533	320	0	194	329	87	2,482
Jun-10	140	0	302	76	0	48	261	0	131	0	173	306	0	195	340	92	2,066
Jul-10	131	0	297	75	0	53	294	0	140	0	347	294	0	194	345	105	2,275
Aug-10	109	0	303	76	0	53	300	0	146	0	391	277	0	204	372	105	2,335
Sep-10	138	0	294	75	0	54	292	0	144	0	285	291	0	202	246	117	2,137
Oct-10	166	0	273	71	0	59	274	0	126	0	536	237	0	205	221	111	2,279
Nov-10	121	0	177	39	0	45	292	0	146	0	547	120	0	205	495	105	2,292
Dec-10	168	0	229	78	0	50	288	0	142	0	534	255	0	171	480	90	2,485

Notes:

EW - Extraction Well

FEW - Focused Extraction Well

Values reported from 2006 -2010 are the cumulative monthly average, calculated by the total gallons pumped in a time period divided by the total number of minutes in that time period.

Values are in gallons per minute

Figures

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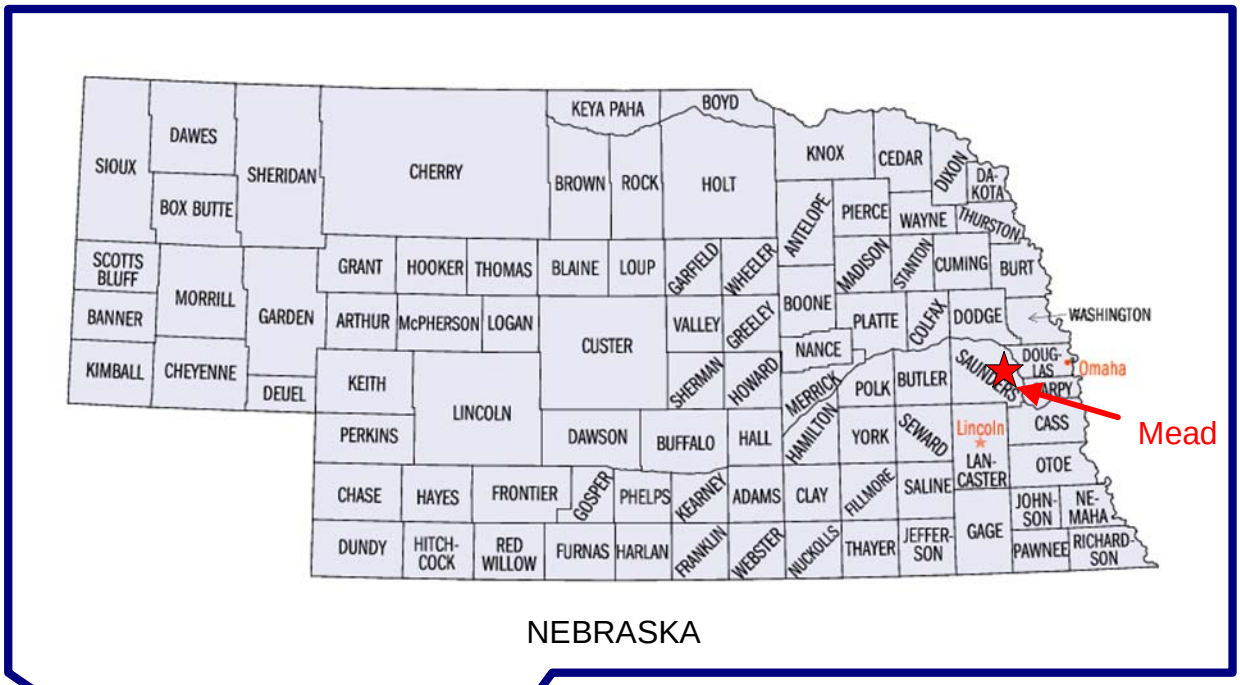
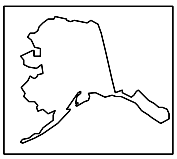


NEBRASKA



Designed by: DM	FORMER NEBRASKA ORDNANCE PLANT MEAD, NEBRASKA
Drawn by: ROW	
Checked by: BB	Site Location Map
Submitted by: MJ	Drawing No: Figure 1-1
	Date: 1/8/2010

ECC

US Army Corps of Engineers
Kansas City District

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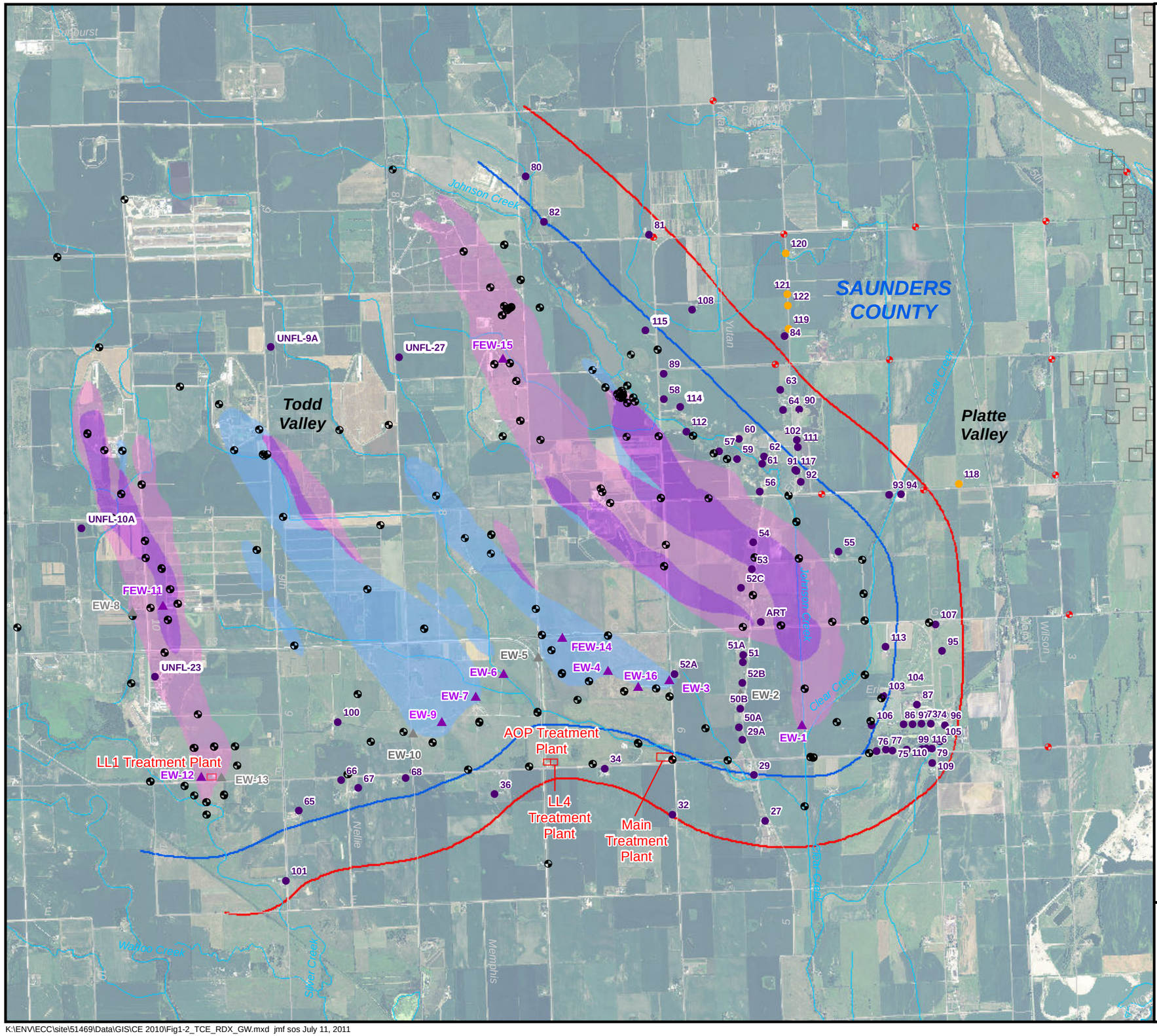

Legend

- USACE Extraction Well - Active
- USACE Extraction Well - Inactive
- USACE Monitoring Well
- Water Supply Well
- Non Program Water Supply Wells
- Metropolitan Utility District Monitoring Well
- Approximate Area of TCE at a Concentration of 5 ug/L or Greater (2010)
- 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 (2010)
- Approximate Area of RDX at a Concentration of 2 ug/L or Greater (2010)
- Treatment Plant
- Metropolitan Utility District Extraction Well
- One Mile Buffer Zone
- Half-Mile Buffer Zone

Notes:

1. TCE and RDX plume delineations for 2010 (ECC & B&McD, 2011) 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.
2. EW-10, shown as inactive, was turned of February 2010.

TCE - trichloroethene

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

ug/L - micrograms per liter

NOP - Nebraska Ordnance Plant

2009 Aerial Photography
Saunders County
USDA-APFO NAIP

0 4,000
SCALE IN FEET

N

Figure 1-2
TCE and RDX in Groundwater

2010 Containment Evaluation
Former NOP

K:\ENV\ECC\site\51469\Data\GIS\CE 2010\Fig1-2_TCE_RDX_GW.mxd jmf sos July 11, 2011

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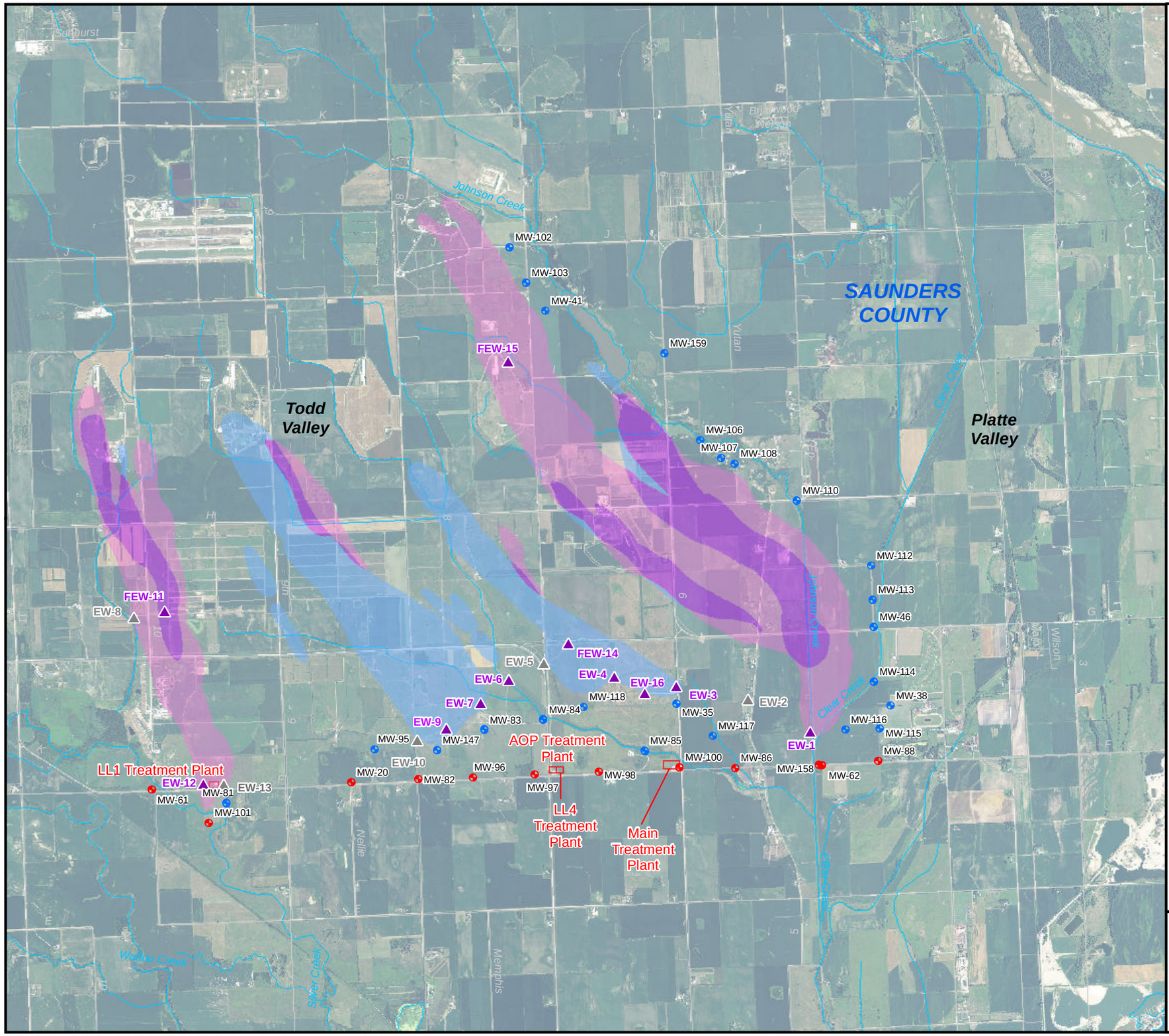

Legend

- USACE Extraction Well - Active
- USACE Extraction Well - Inactive
- Compliance Monitoring Well
- Perimeter Monitoring Well
- Approximate Area of TCE at a Concentration of 5 ug/L or Greater (2010)
- 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 (2010)
- Approximate Area of RDX at a Concentration of 2 ug/L or Greater (2010)
- Treatment Plant

Notes:

1. TCE and RDX plume delineations for 2010 (ECC & B&McD, 2011) 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.
2. EW-10, shown as inactive, was turned of February 2010.

TCE - trichloroethene

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

ug/L - micrograms per liter

NOP - Nebraska Ordnance Plant

2009 Aerial Photography
Saunders County
USDA-APFO NAIP

0 4,000
SCALE IN FEET

N

Figure 2-1

Groundwater Monitoring Well Clusters Evaluated

2010 Containment Evaluation
Former NOP

K:\ENV\ECC\site\51469\Data\GIS\CE 2010\Fig2-1_GW_Monitoring_Well_Clusters.mxd jmf sos July 11, 2011

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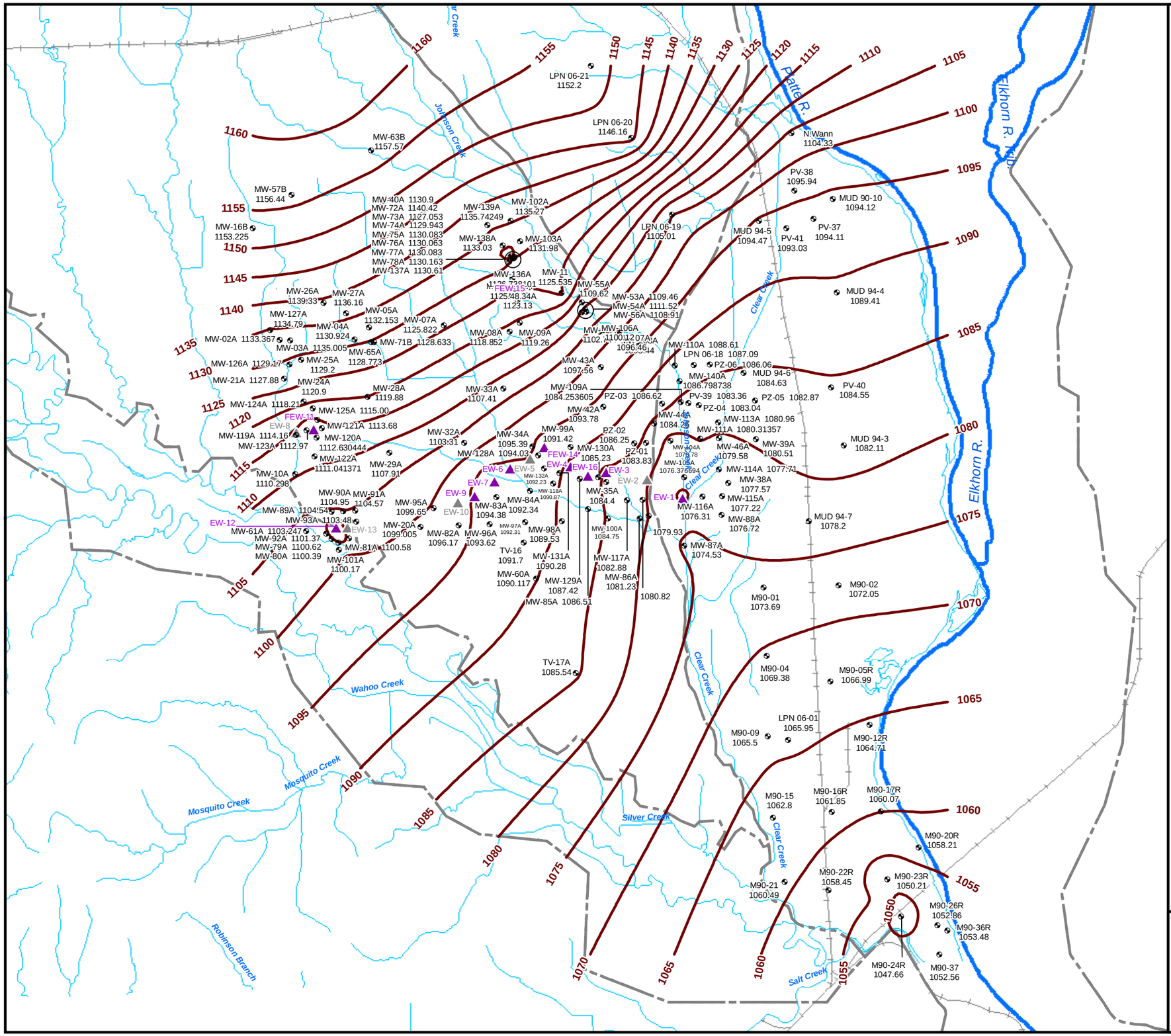

Legend

- Monitoring Well with March 2010 Water Level (Feet Above Mean Sea Level)
- USACE Extraction Well - Active
- USACE Extraction Well - Inactive
- March 2010 Groundwater Contour in Feet Above Mean Sea Level (Contour Interval 5 Feet)
- Basin Boundaries

Notes:

1. Observation well data were not plotted on this map; however, they were used in its construction.
2. March 2010 data collected on 3/29/10.
3. EW-10, shown as inactive, was turned of February 2010.

NOP - Nebraska Ordnance Plant

USACE - United States Army Corps of Engineers

US Army Corps of Engineers
Kansas City District

Figure 3-1

Interpreted Potentiometric Surface Intermediate Zone - March 2010
2010 Containment Evaluation
Former NOP

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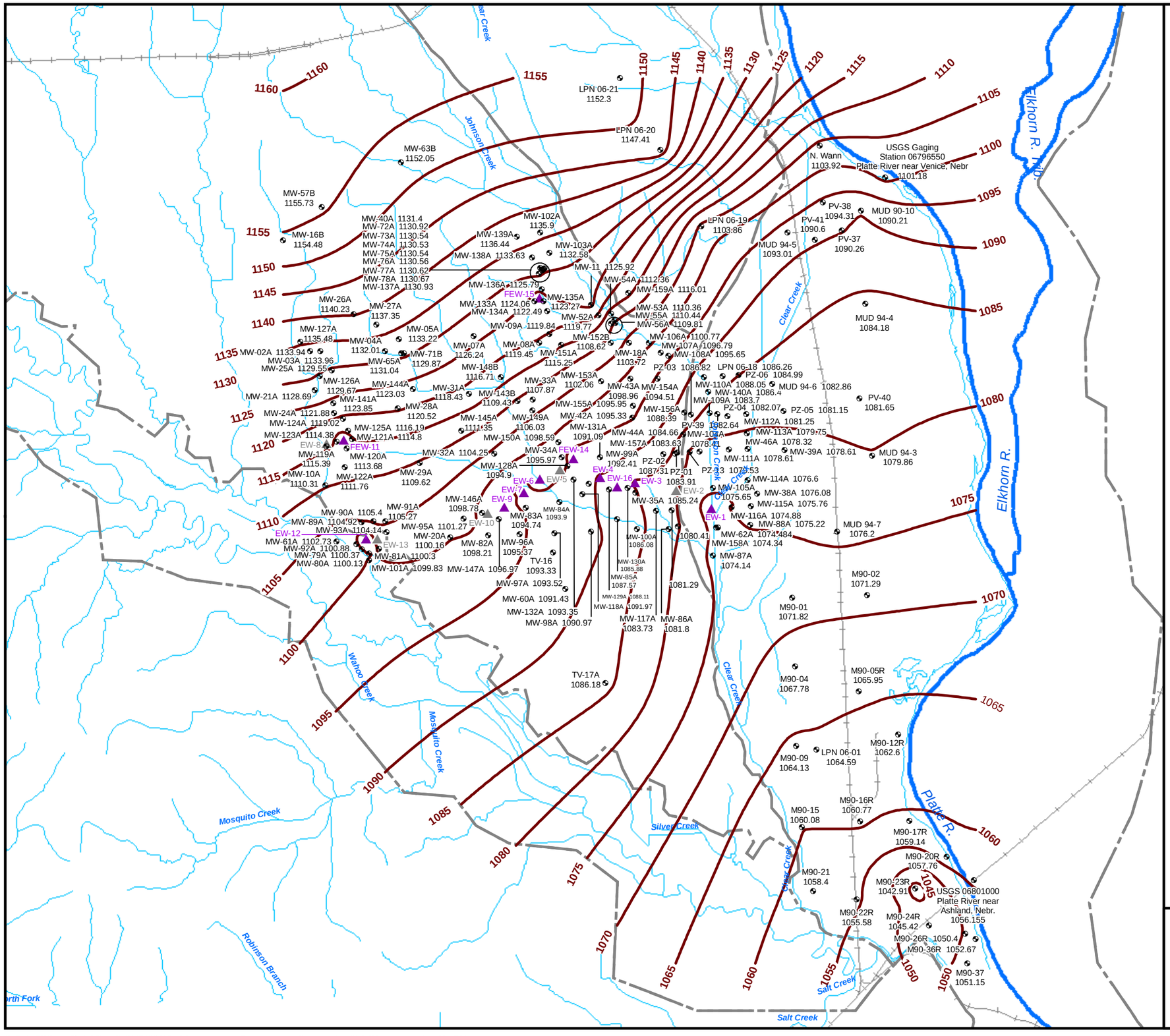

Legend

- Monitoring Well with August 2010 Water Level (Feet Above Mean Sea Level)
- USACE Extraction Well - Active
- USACE Extraction Well - Inactive
- August 2010 Groundwater Contour in Feet Above Mean Sea Level (Contour Interval 5 Feet)
- Basin Boundaries

Notes:

1. Observation well data were not plotted on this map; however, they were used in its construction.
2. August 2010 data collected on 8/26/10
3. EW-10, shown as inactive, was turned of February 2010.

NOP - Nebraska Ordnance Plant

USACE - United States Army Corps of Engineers

N

0 7,000 14,000

SCALE IN FEET

US Army Corps of Engineers
Kansas City District

ECC | Burns & McDonnell SINCE 1898

Figure 3-2

Interpreted Potentiometric Surface
Intermediate Zone - August 2010
2010 Containment Evaluation
Former NOP

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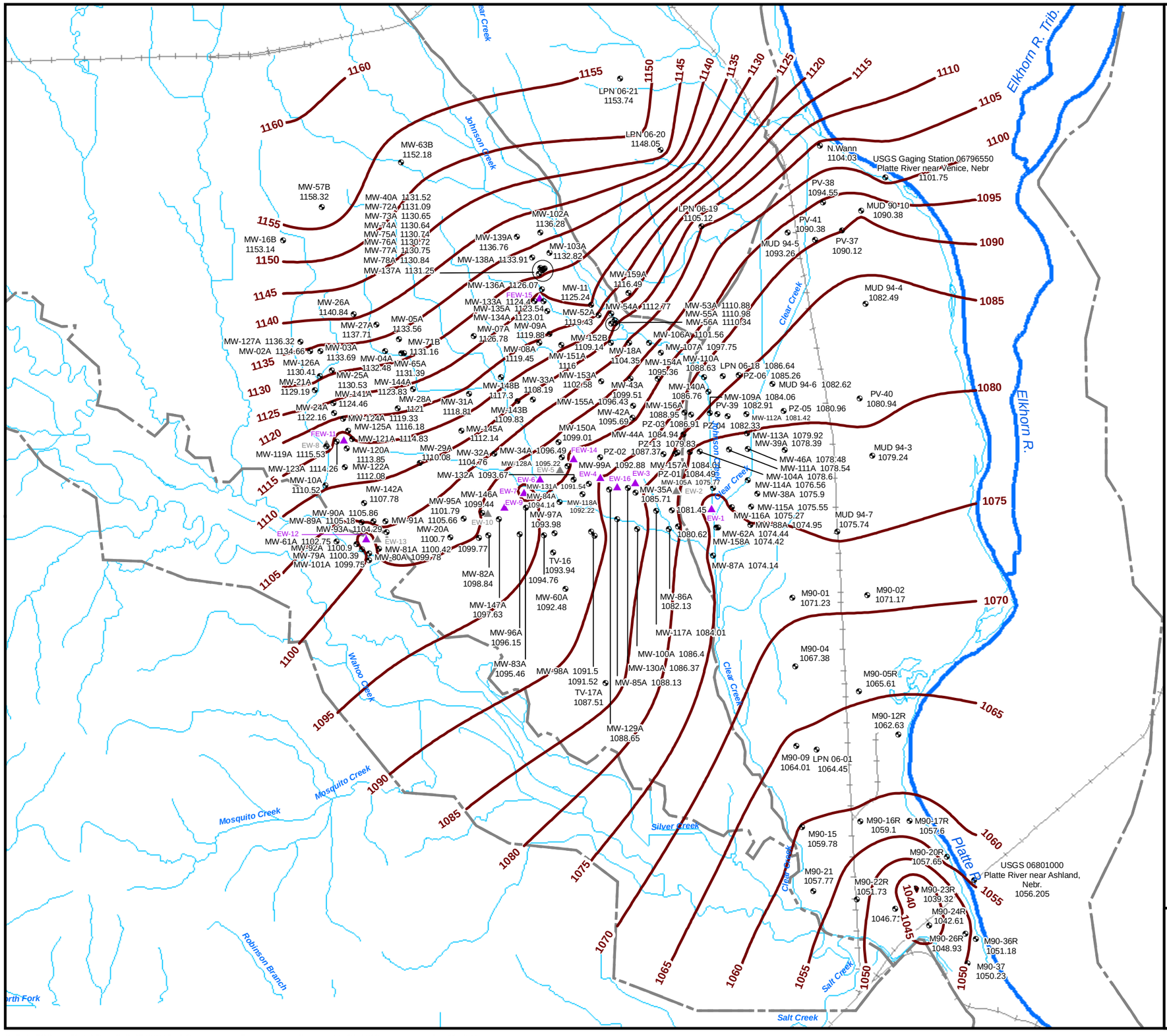

Legend

- Monitoring Well with October 2010 Water Level (Feet Above Mean Sea Level)
- USACE Extraction Well - Active
- USACE Extraction Well - Inactive
- October 2010 Groundwater Contour in Feet Above Mean Sea Level (Contour Interval 5 Feet)
- Basin Boundaries

Notes:

1. Observation well data were not plotted on this map; however, they were used in its construction.
2. October 2010 data collected on 10/29/10
3. EW-10, shown as inactive, was turned of February 2010.

NOP - Nebraska Ordnance Plant

USACE - United States Army Corps of Engineers

US Army Corps of Engineers
Kansas City District

N

0 7,000 14,000

SCALE IN FEET

ECC

Burns & McDonnell SINCE 1898

Figure 3-3

Interpreted Potentiometric Surface Intermediate Zone - October 2010 2010 Containment Evaluation Former NOP

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Appendix A
Concentration Trend Charts for Compliance Monitoring Wells

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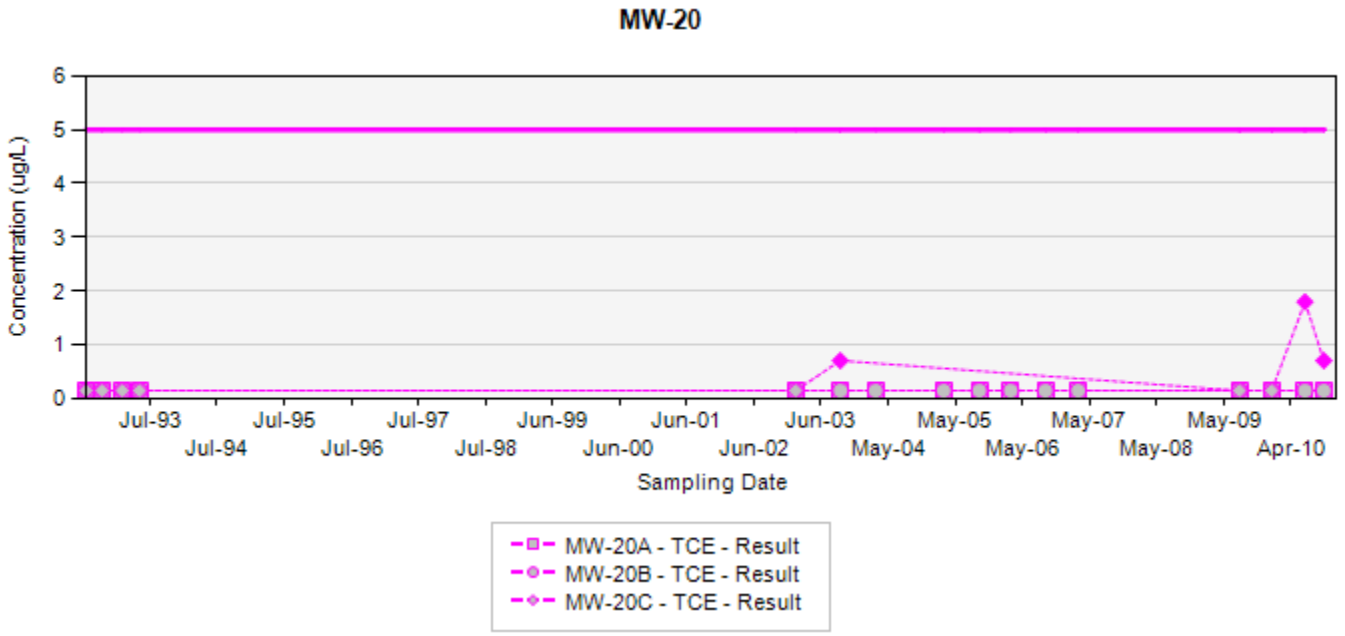
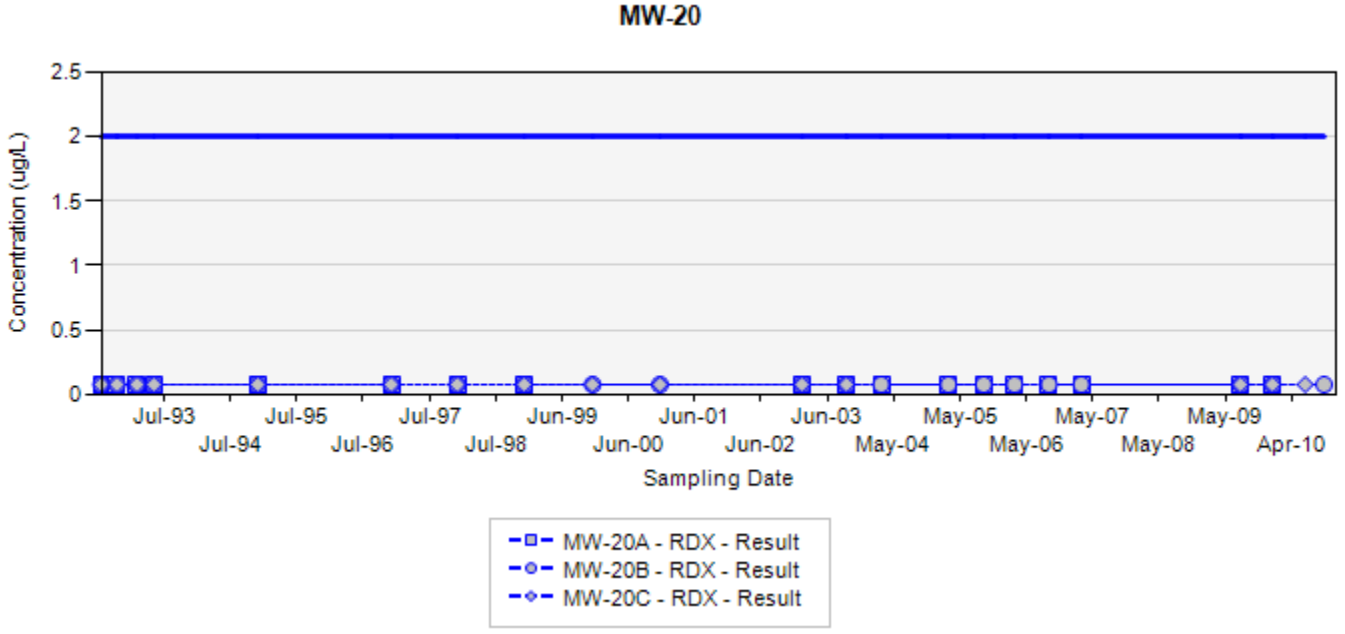
Concentration Trend Charts for Compliance Monitoring Wells





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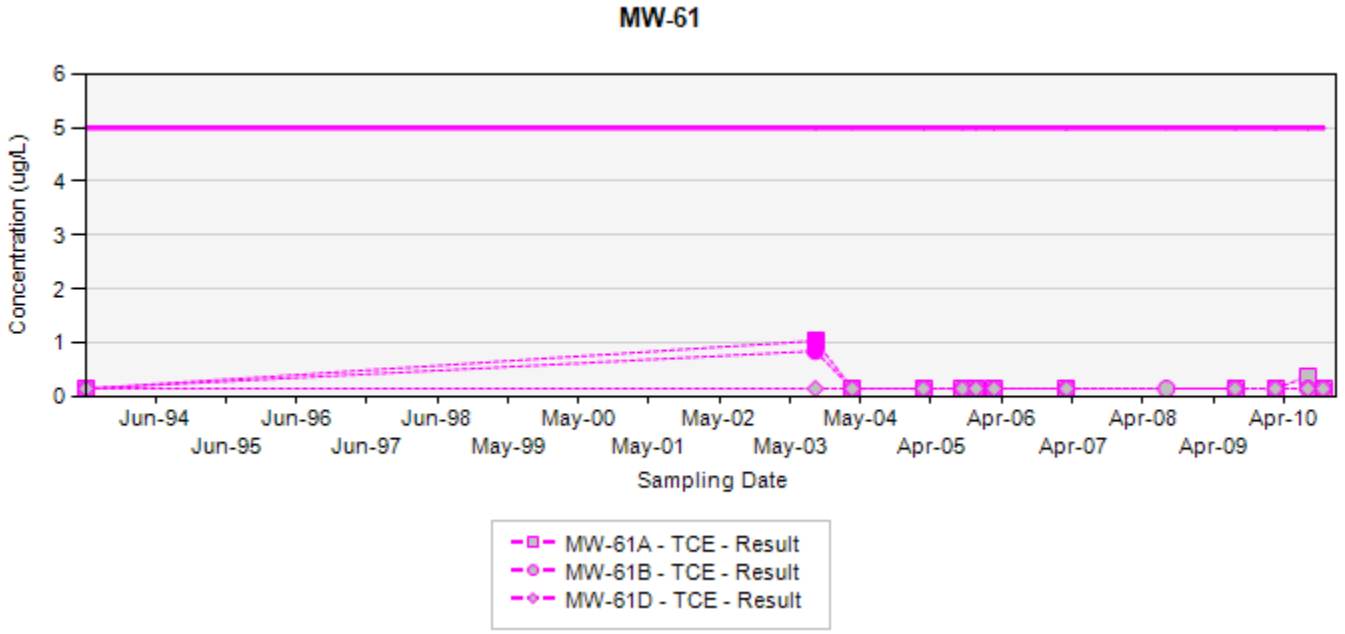
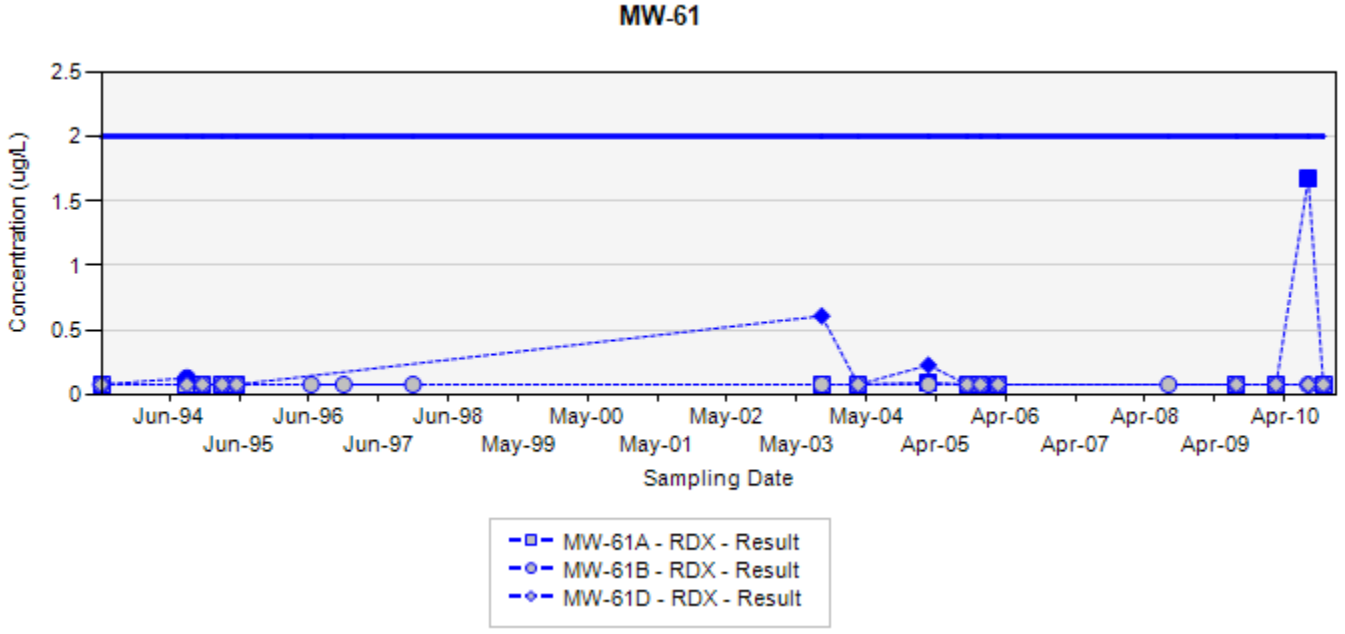
Final Target Groundwater Cleanup Goals for TCE is 5 UG/L
Final Target Groundwater Cleanup Goals for RDX is 2 UG/L

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 Compliance Monitoring Wells





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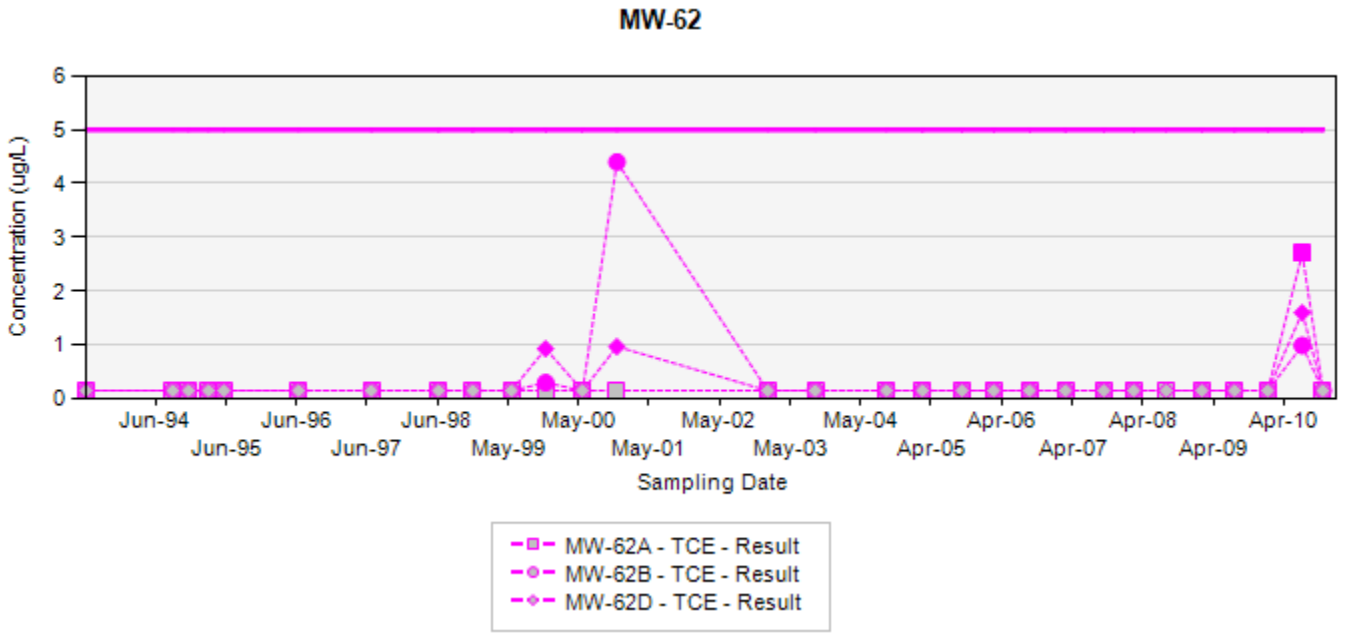

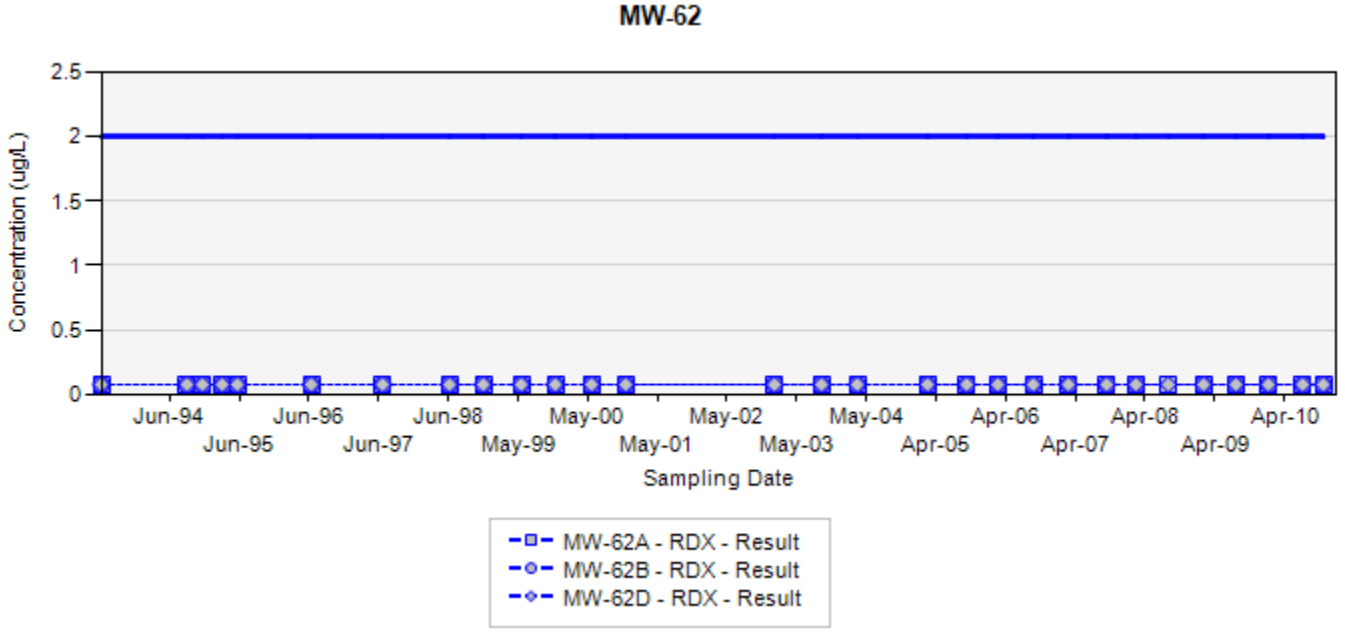

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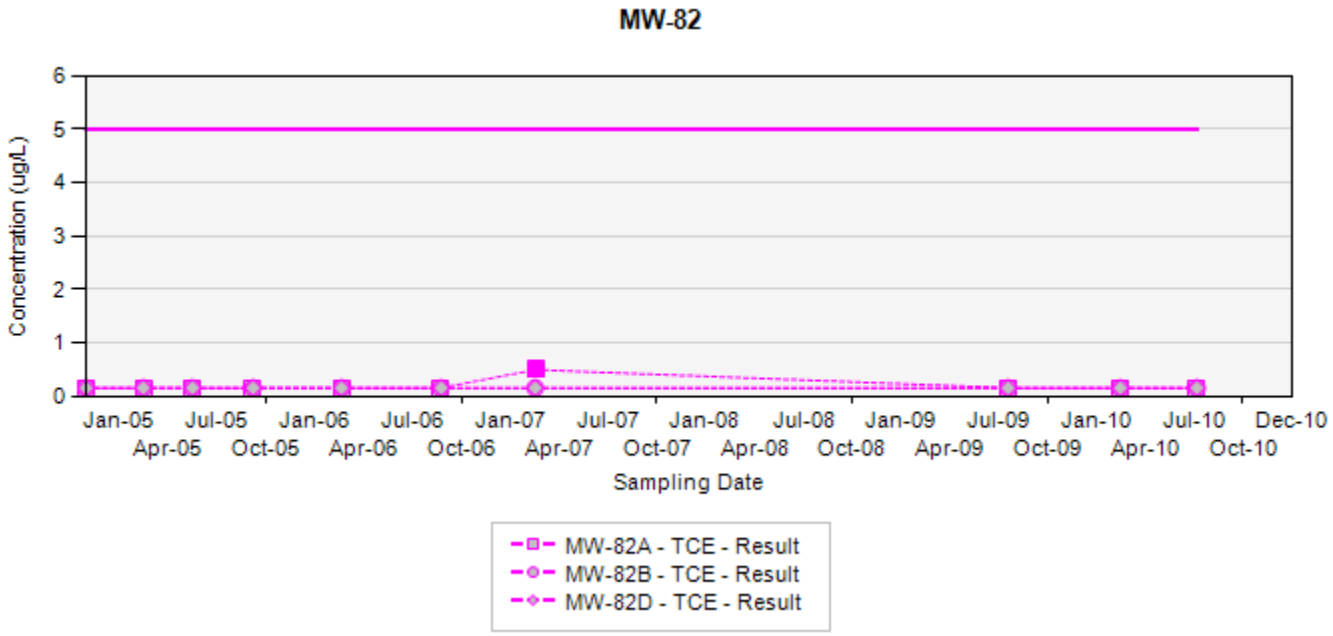

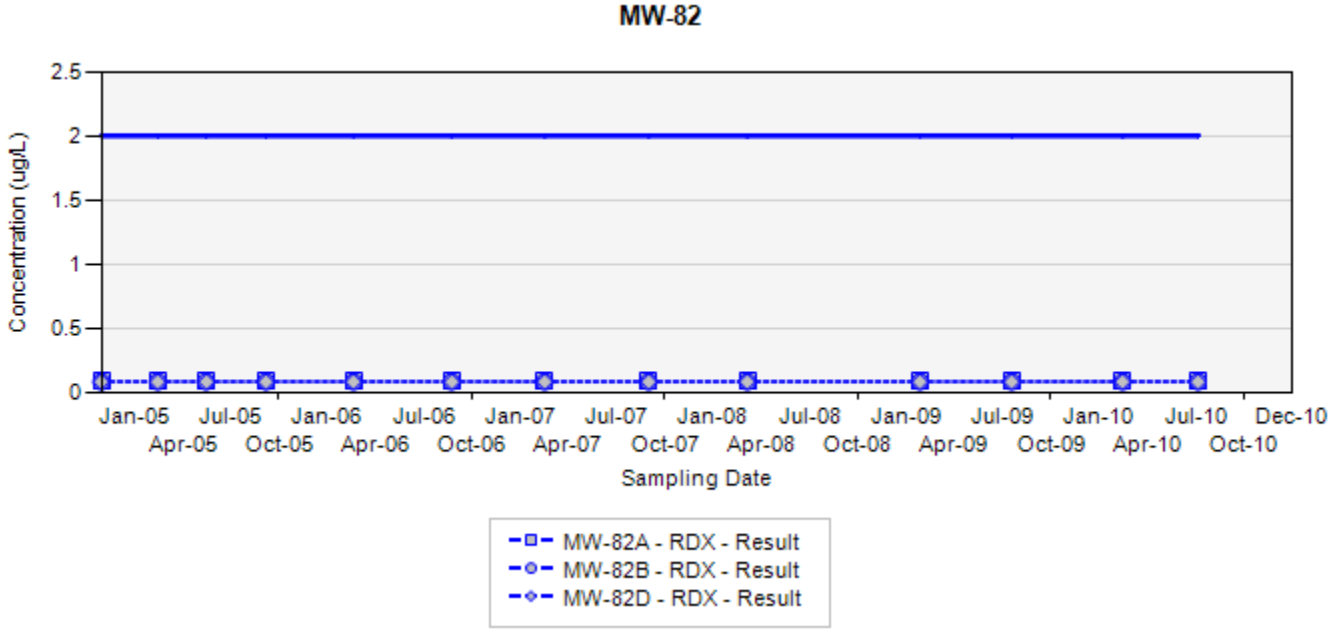

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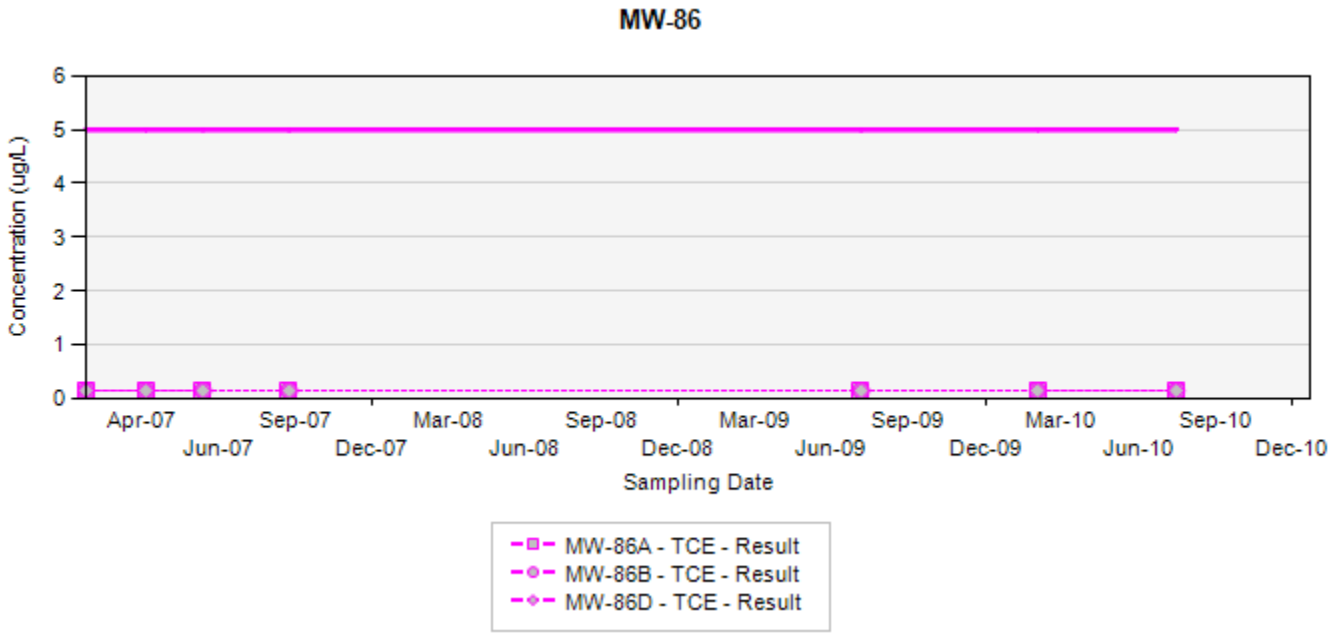

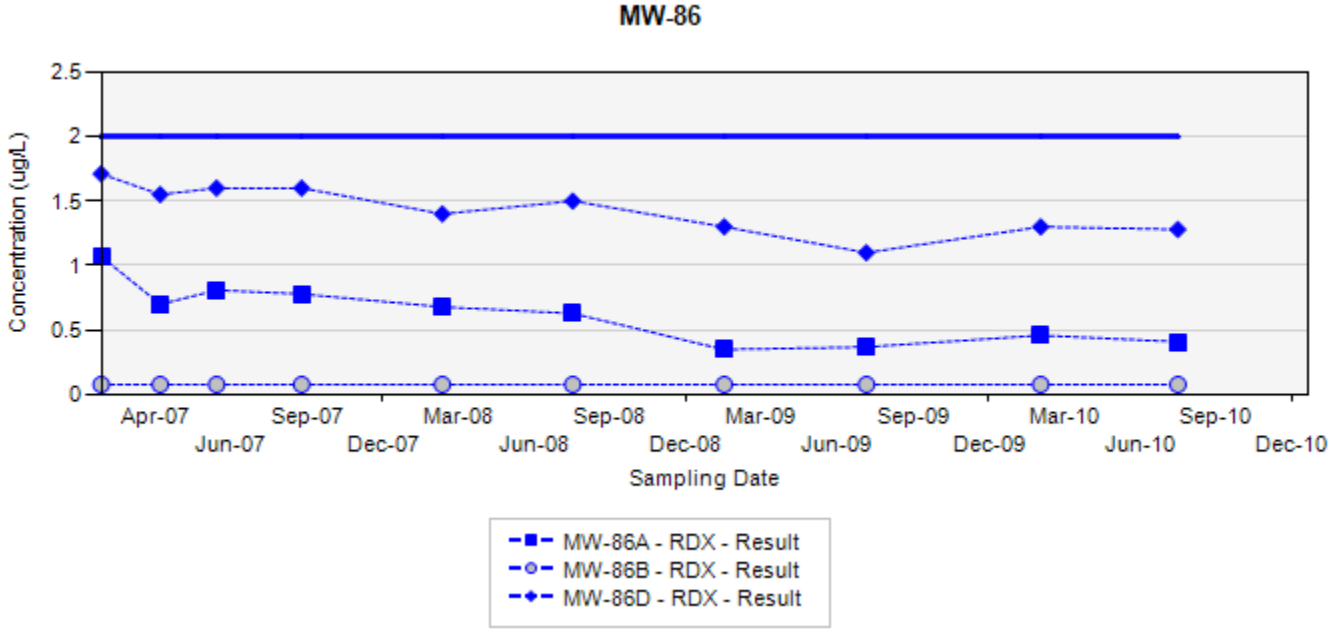

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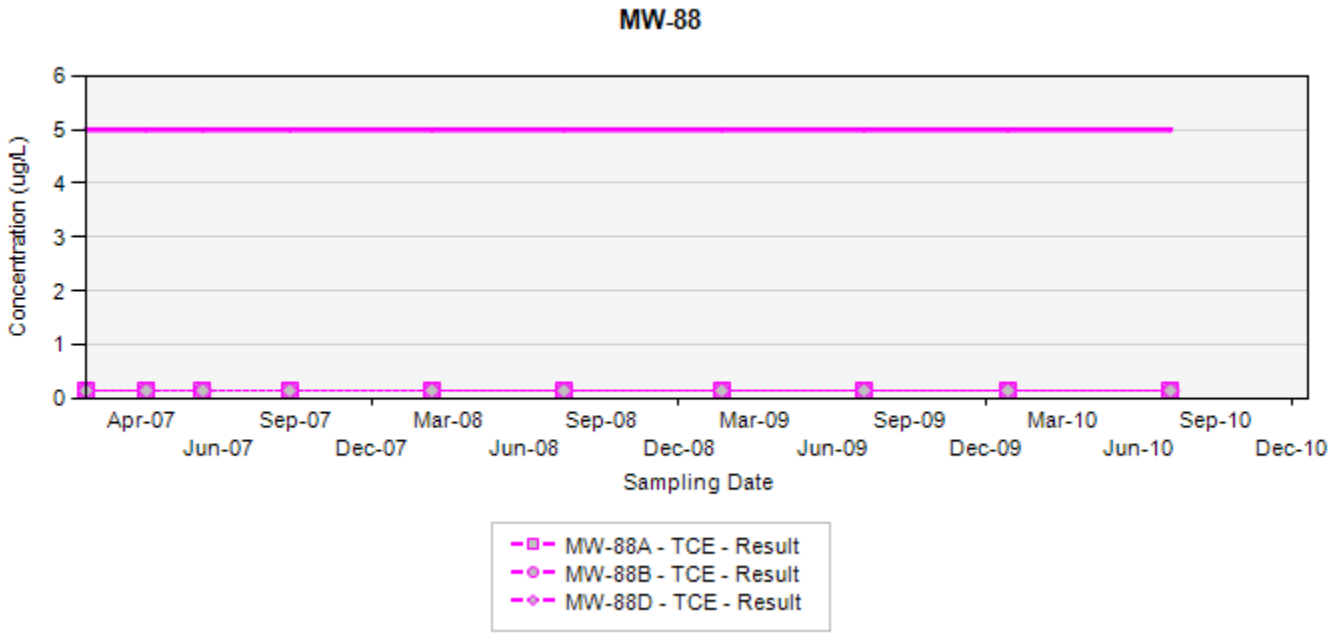

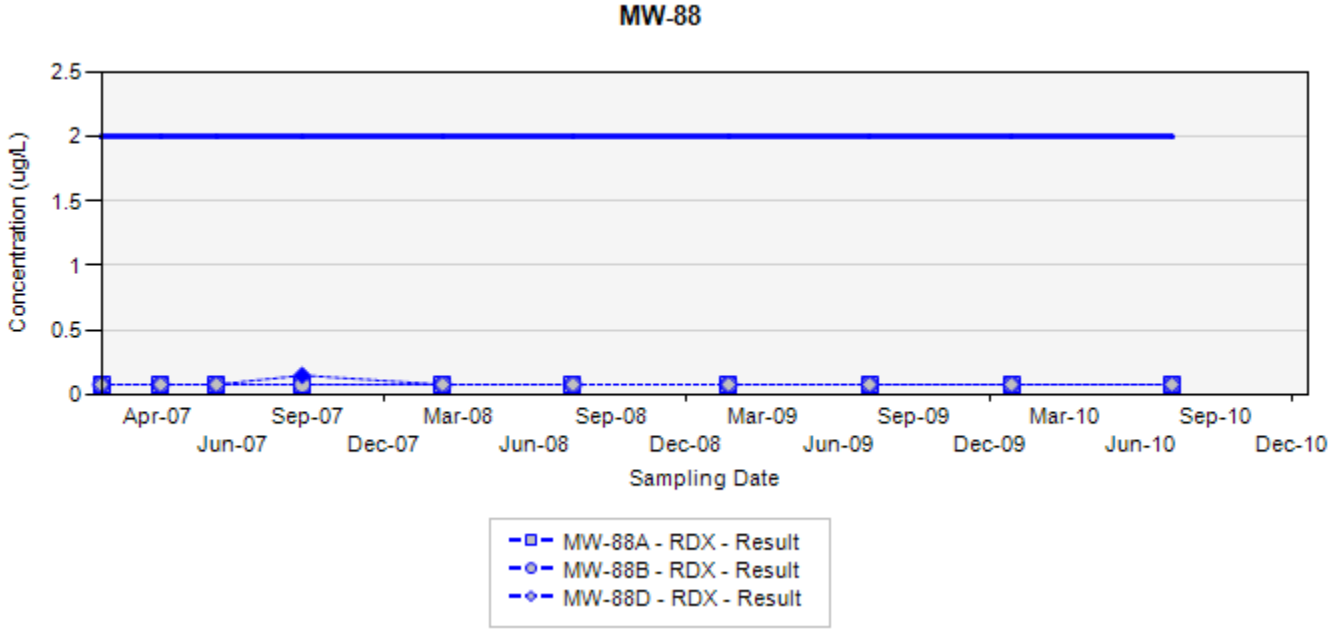

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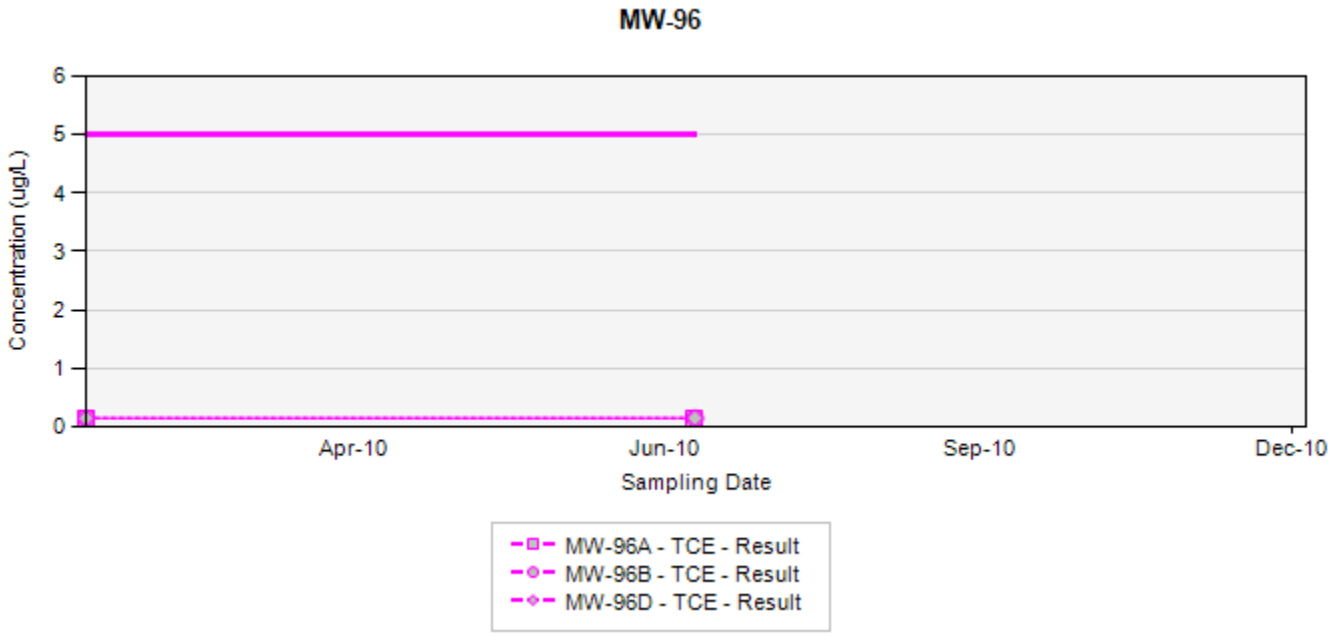

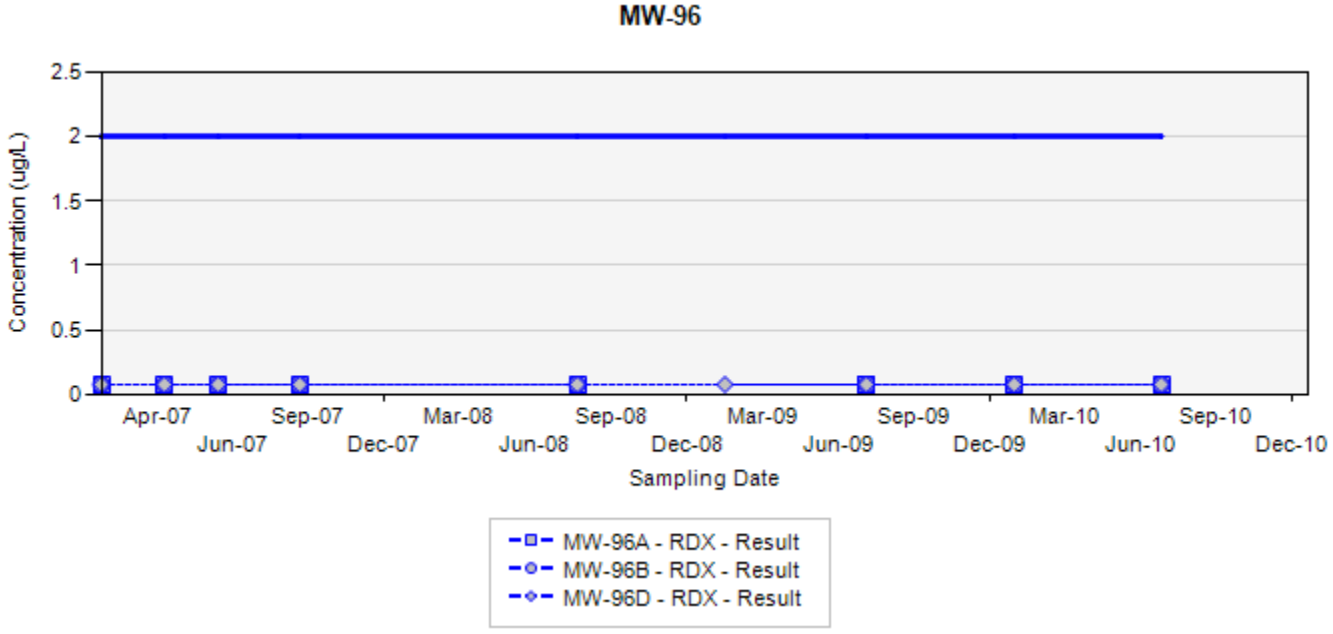

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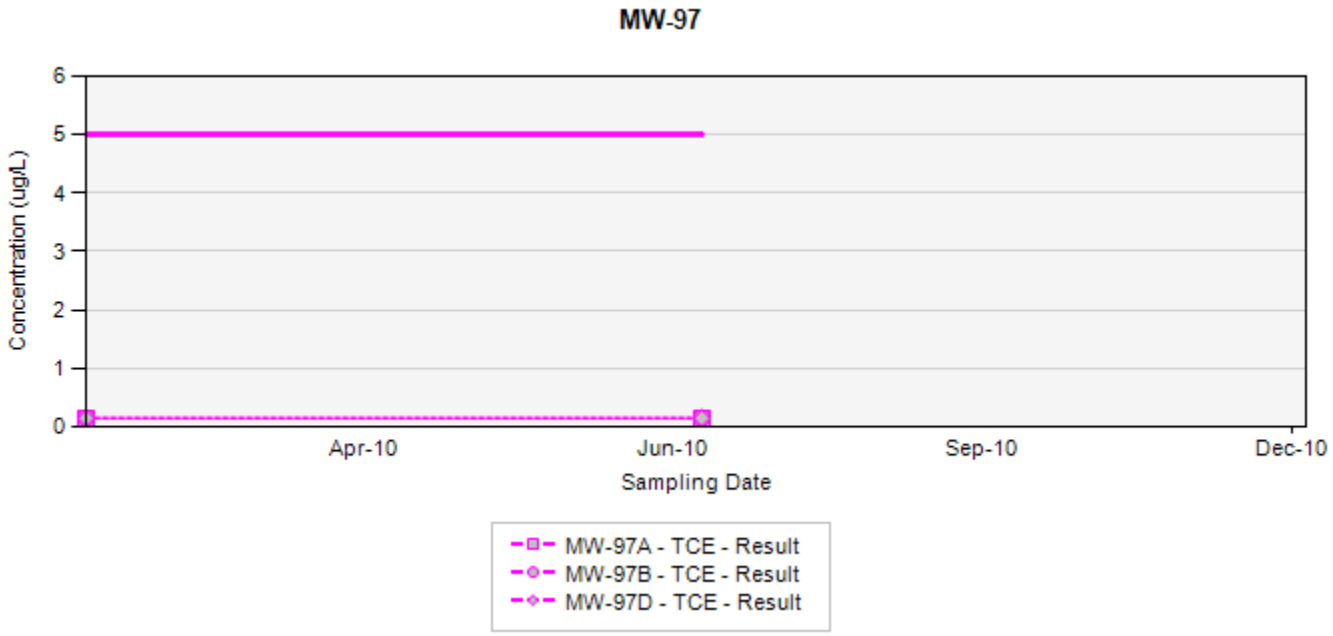

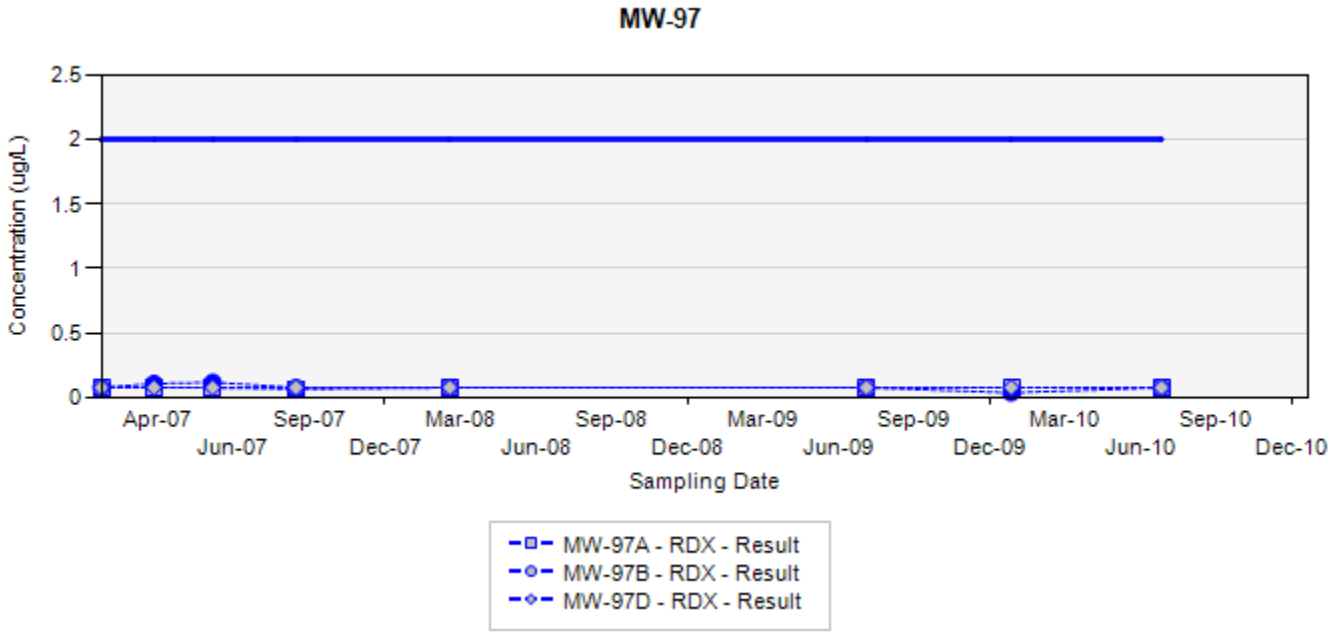

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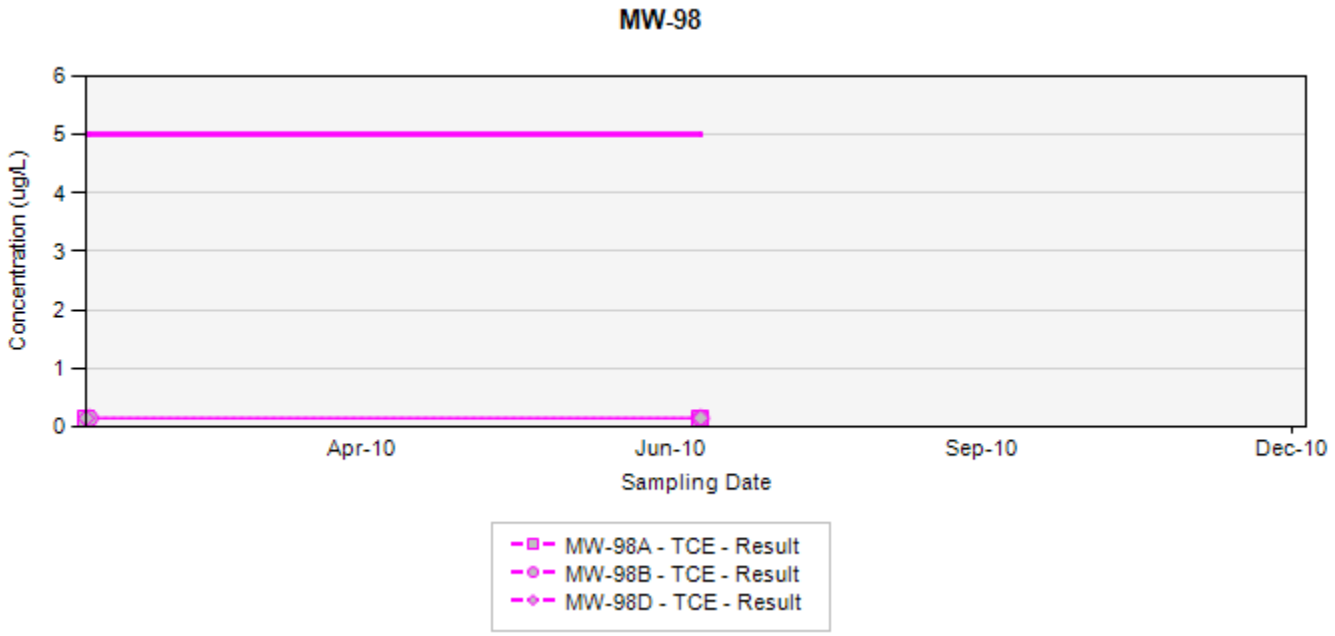

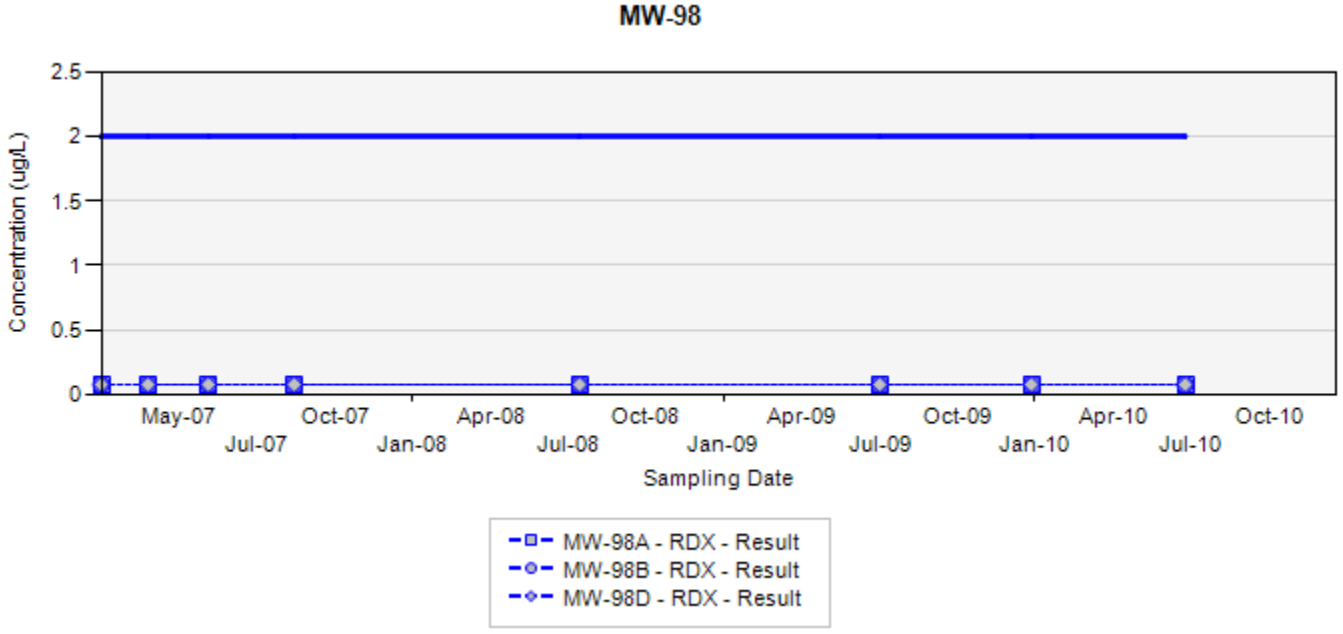

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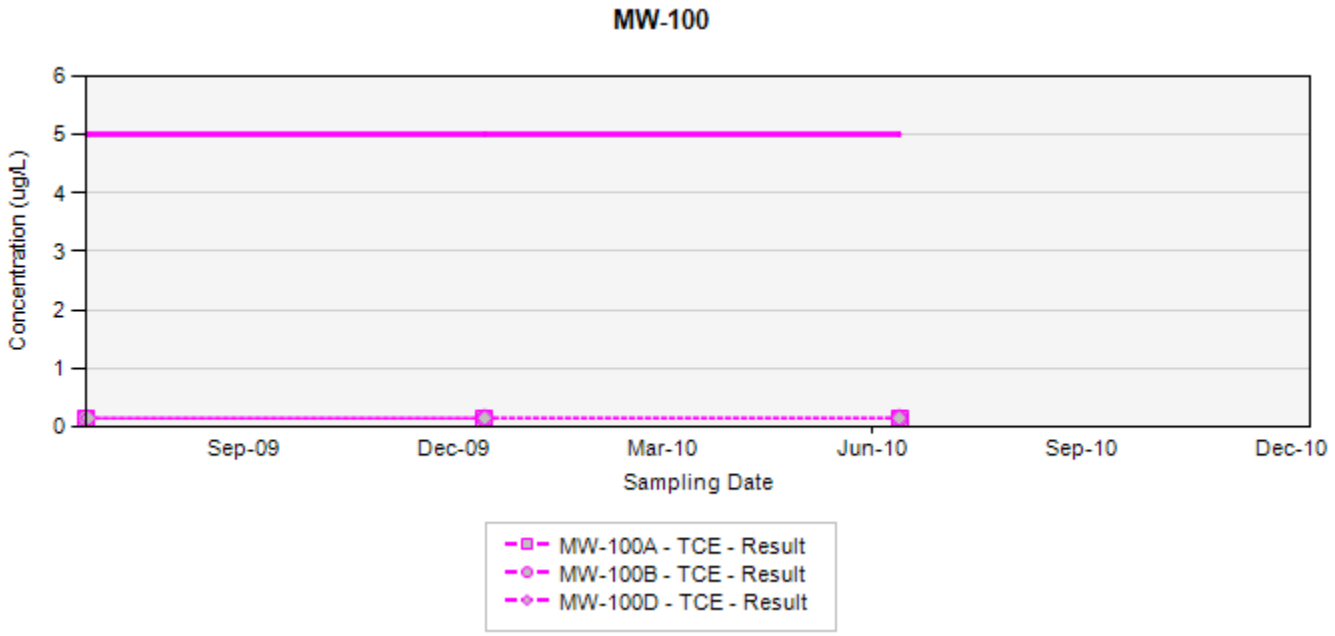

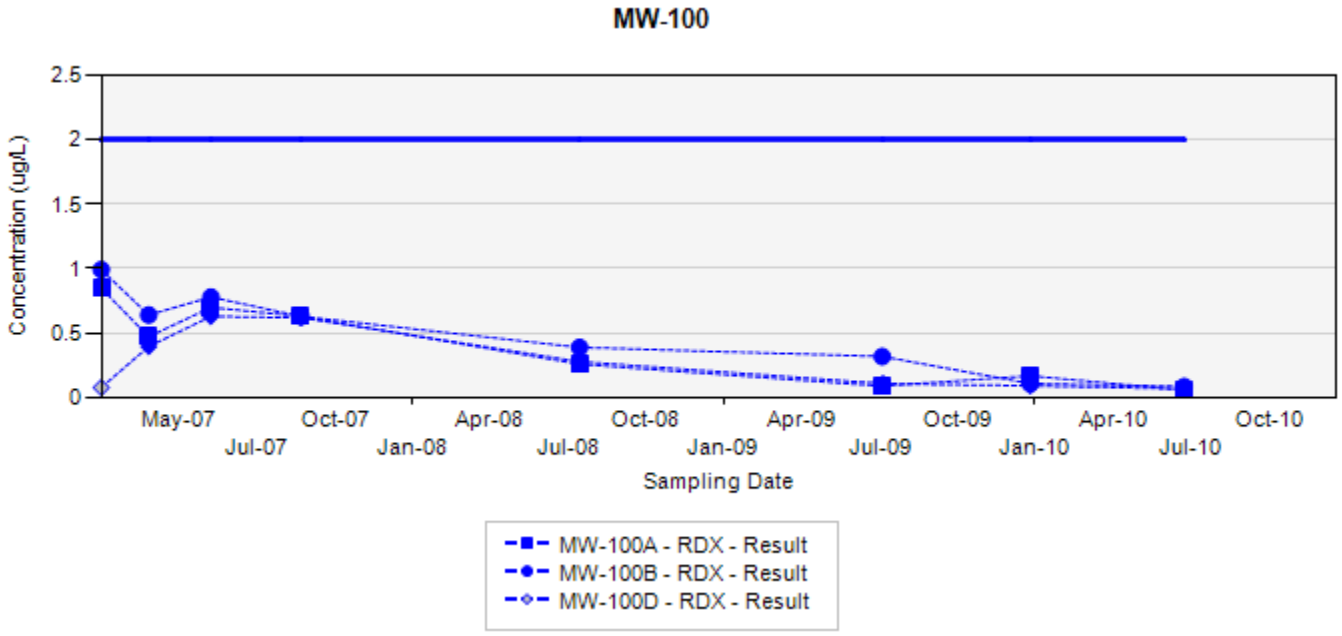

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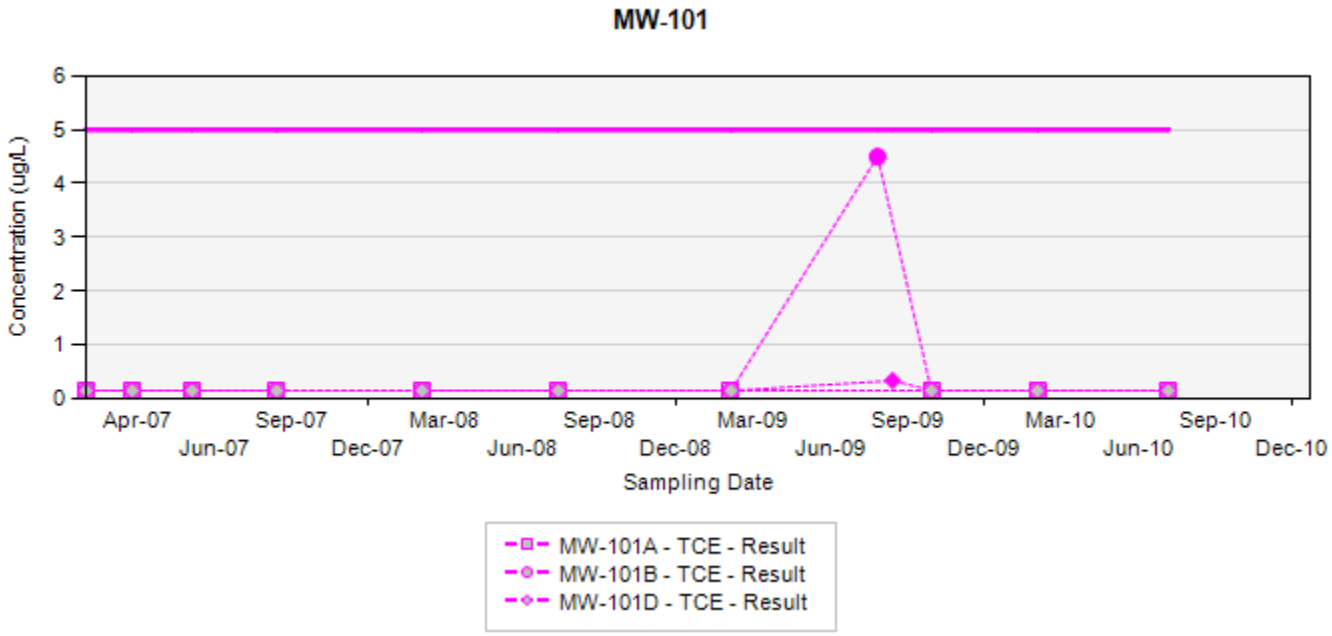

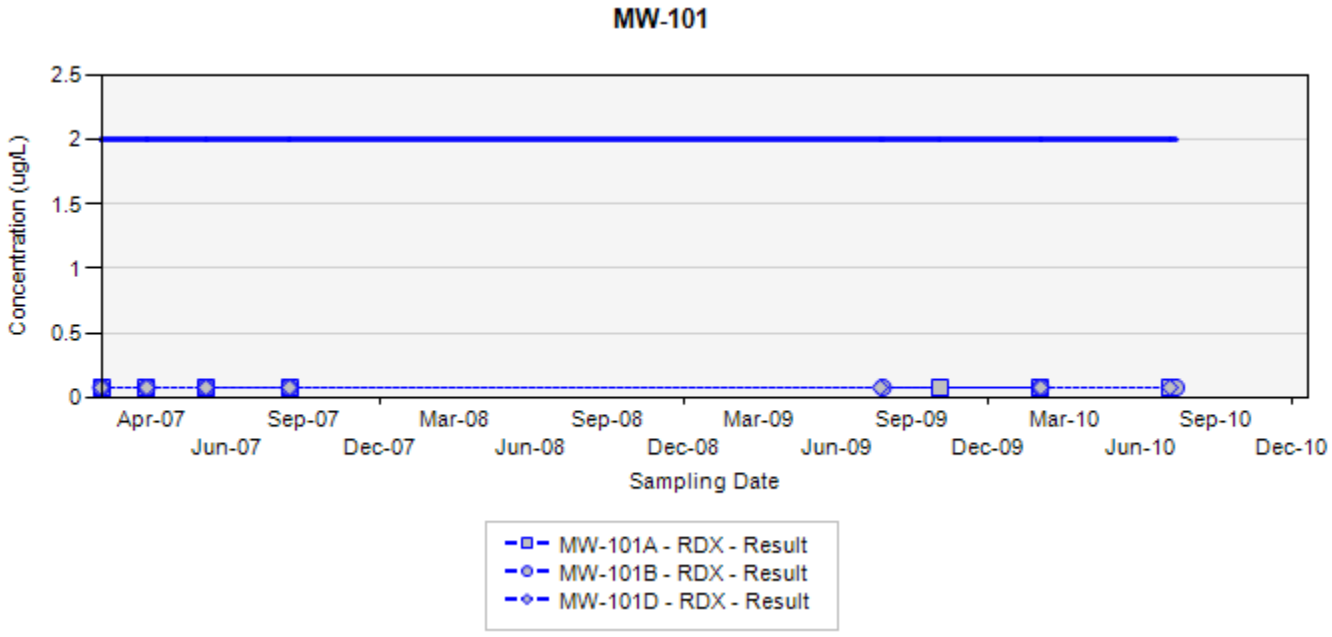

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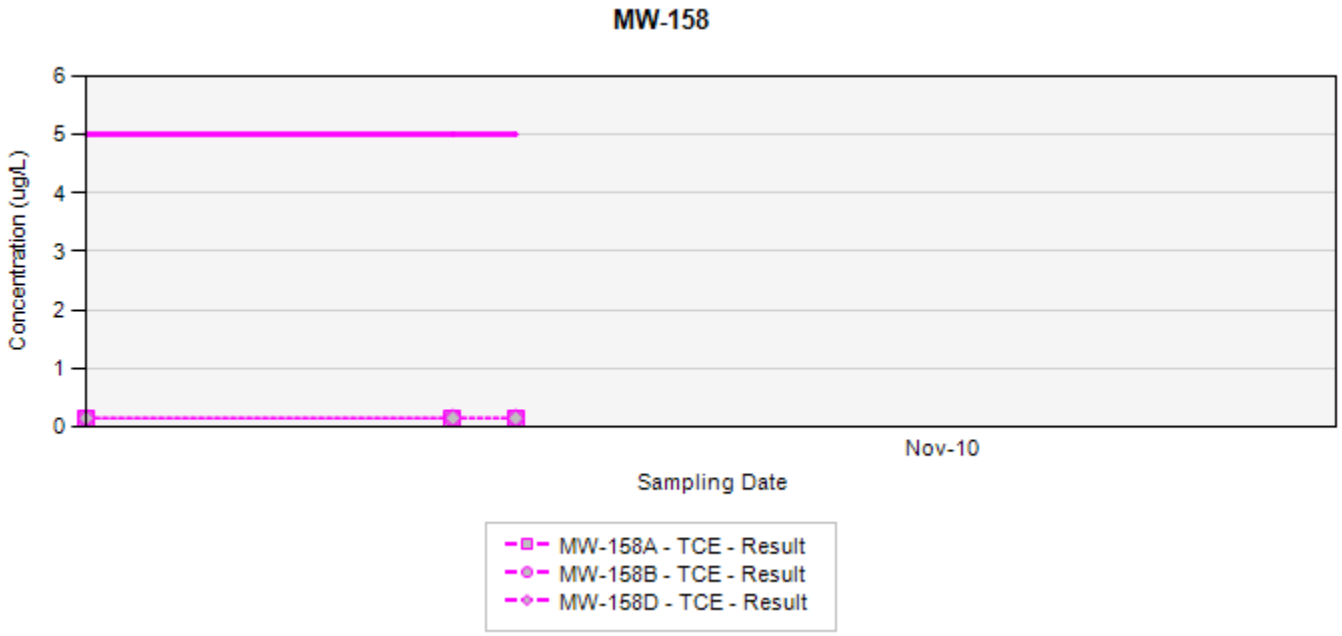

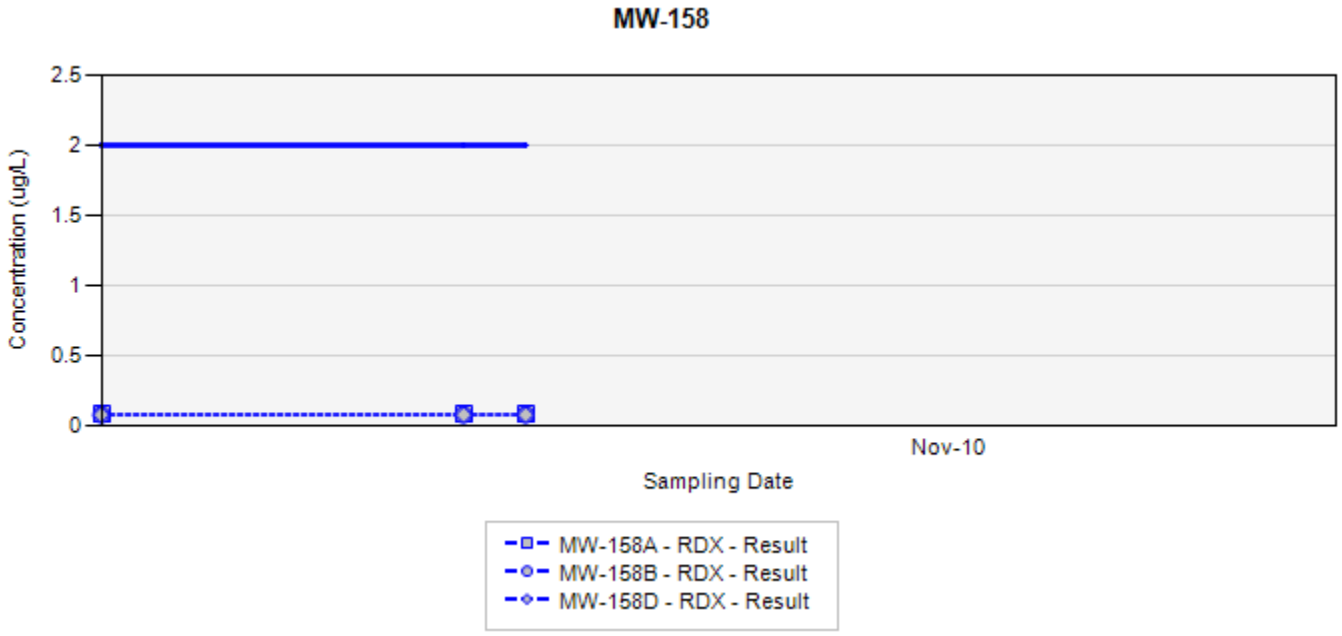

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Appendix B
Concentration Trend Charts for Perimeter Monitoring Wells

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Appendix B
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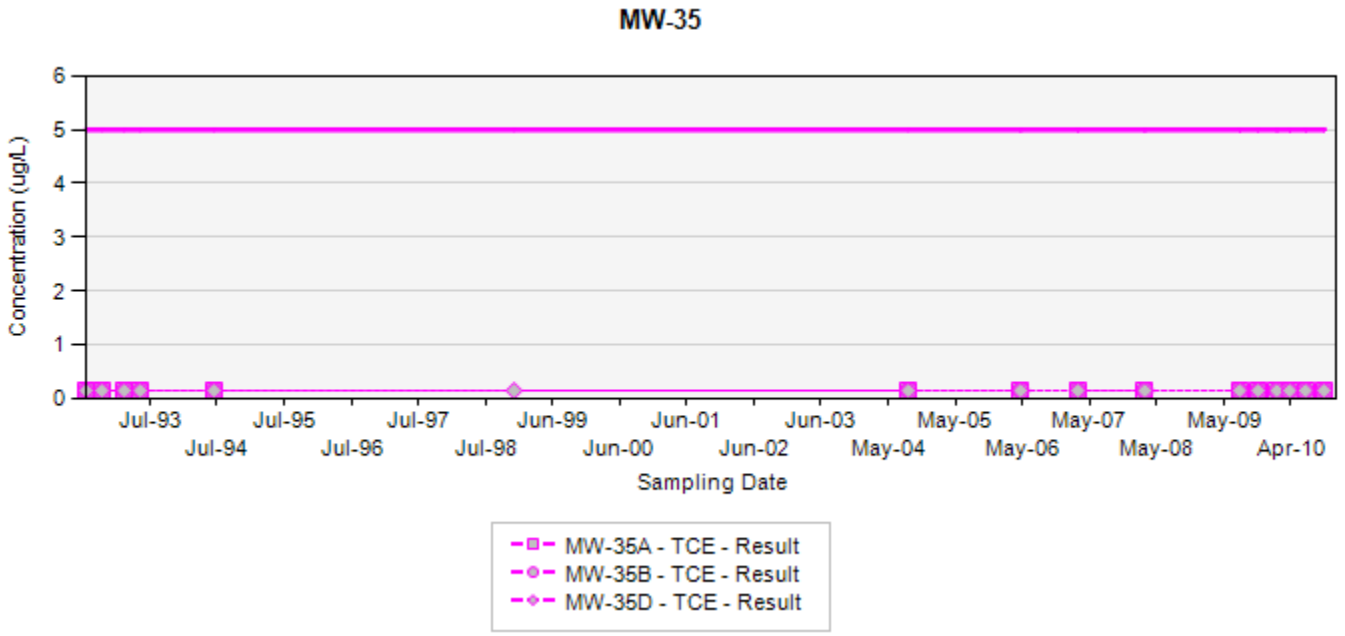

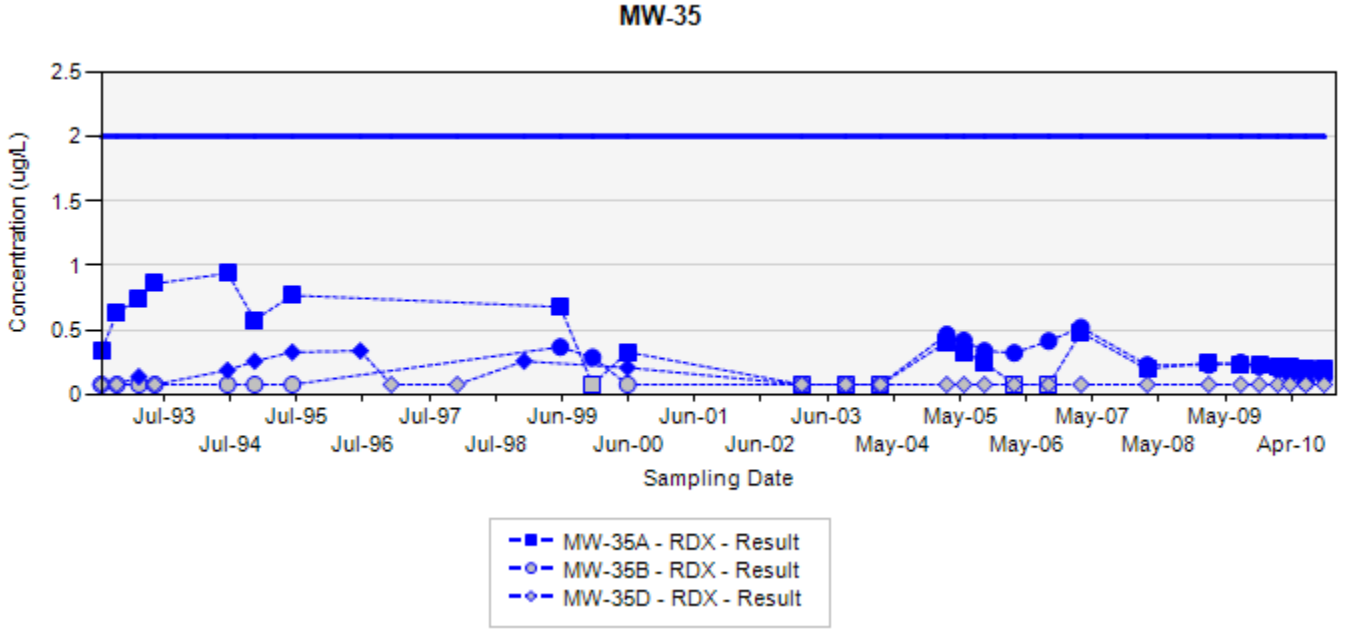

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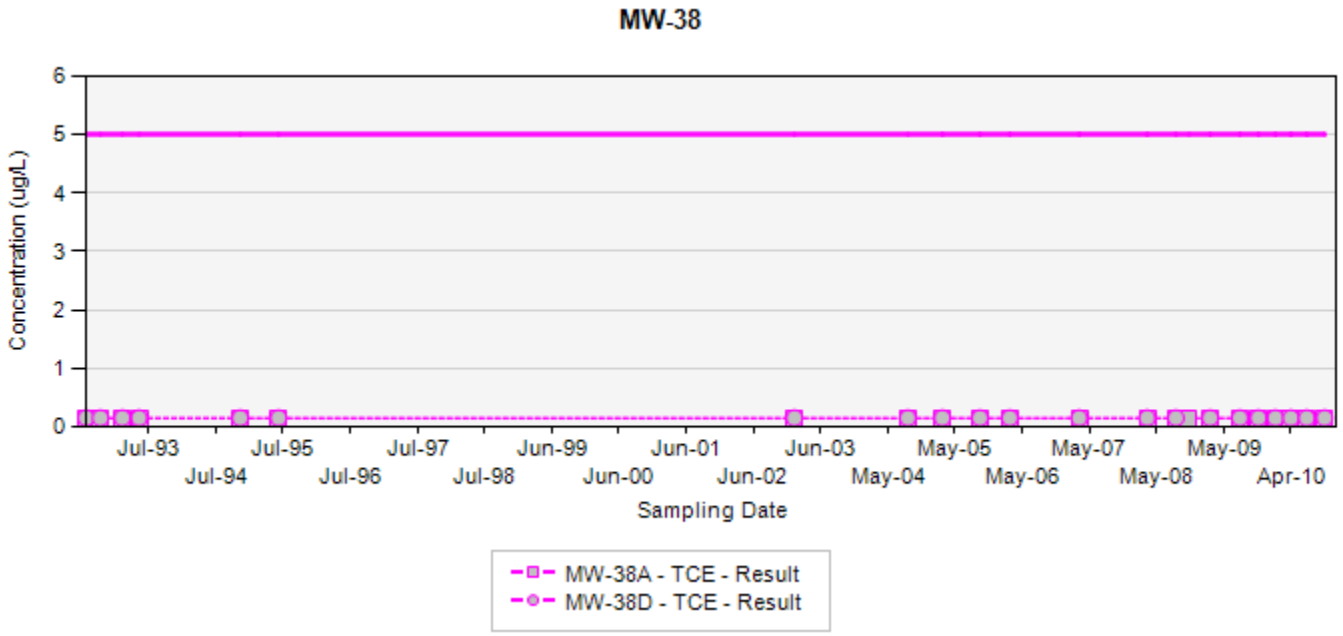

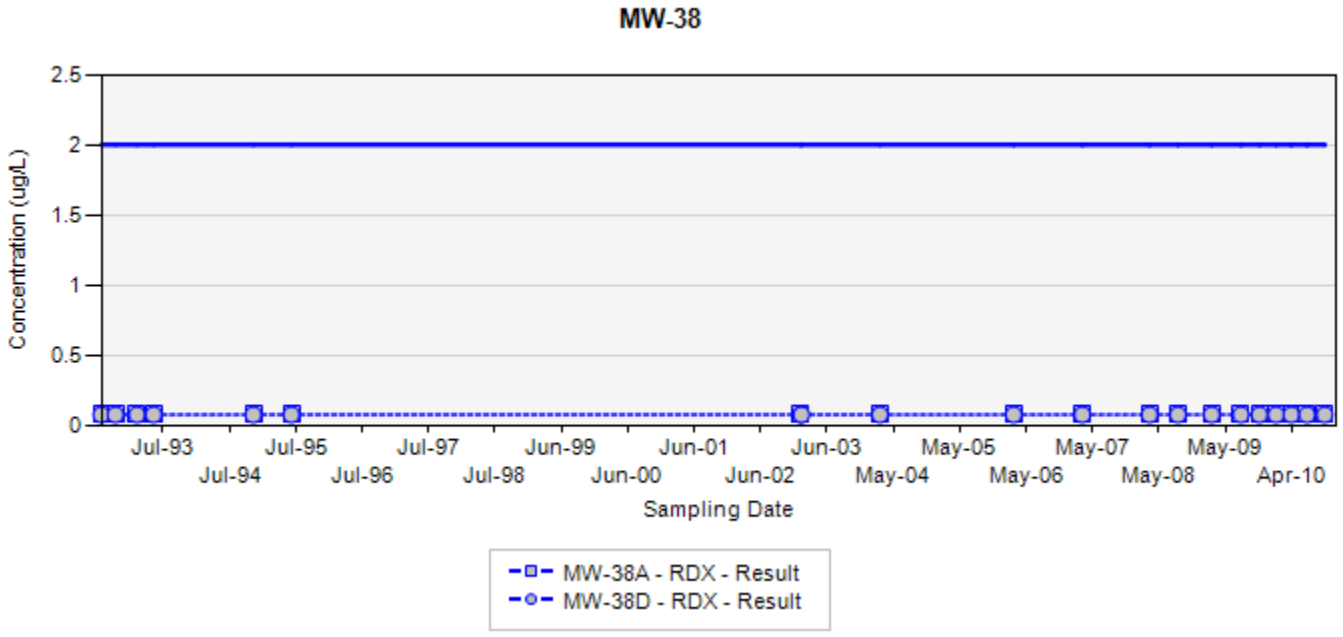

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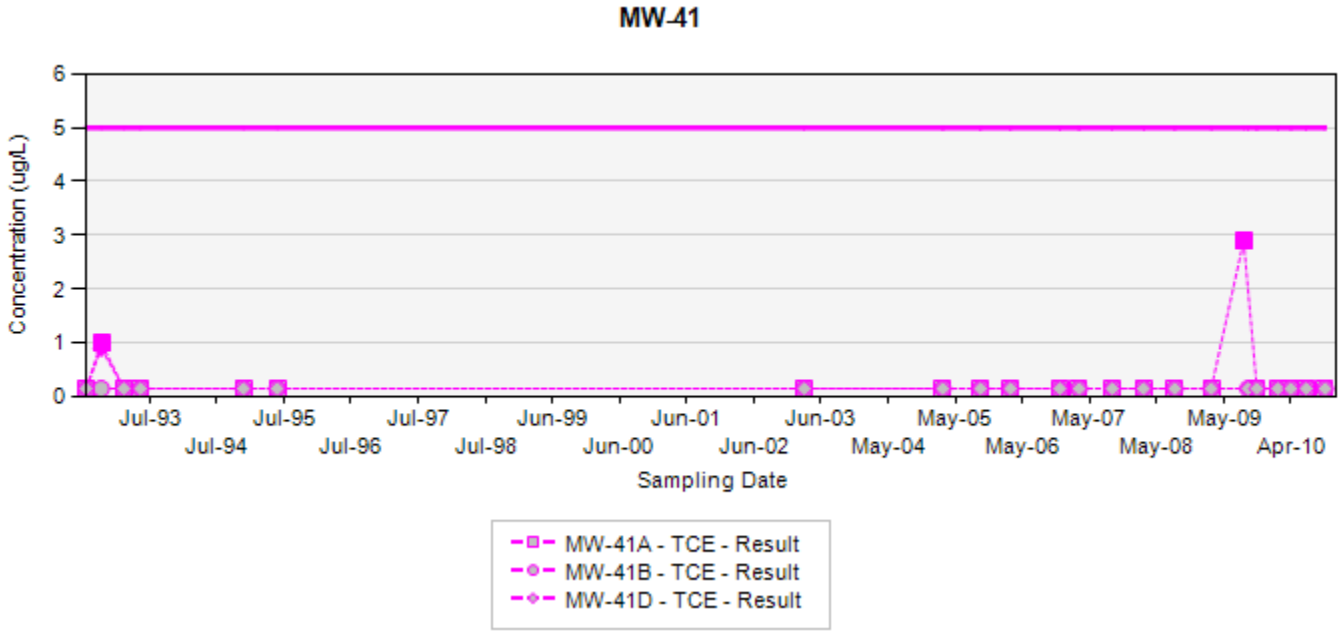

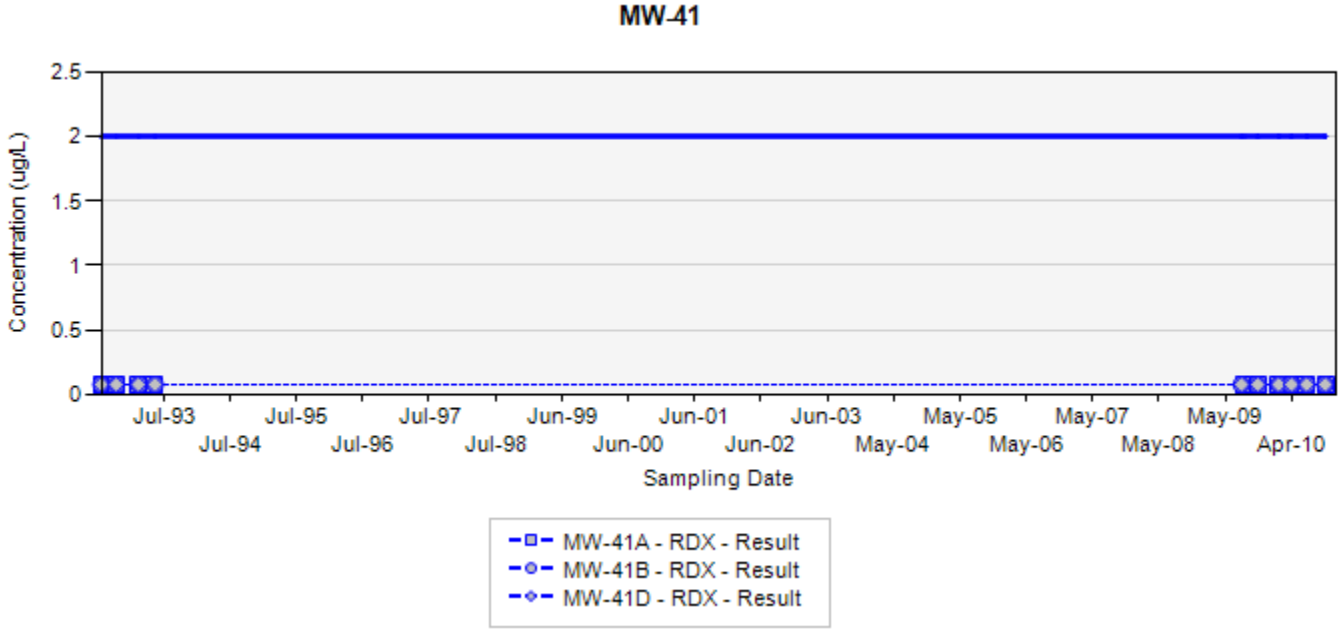

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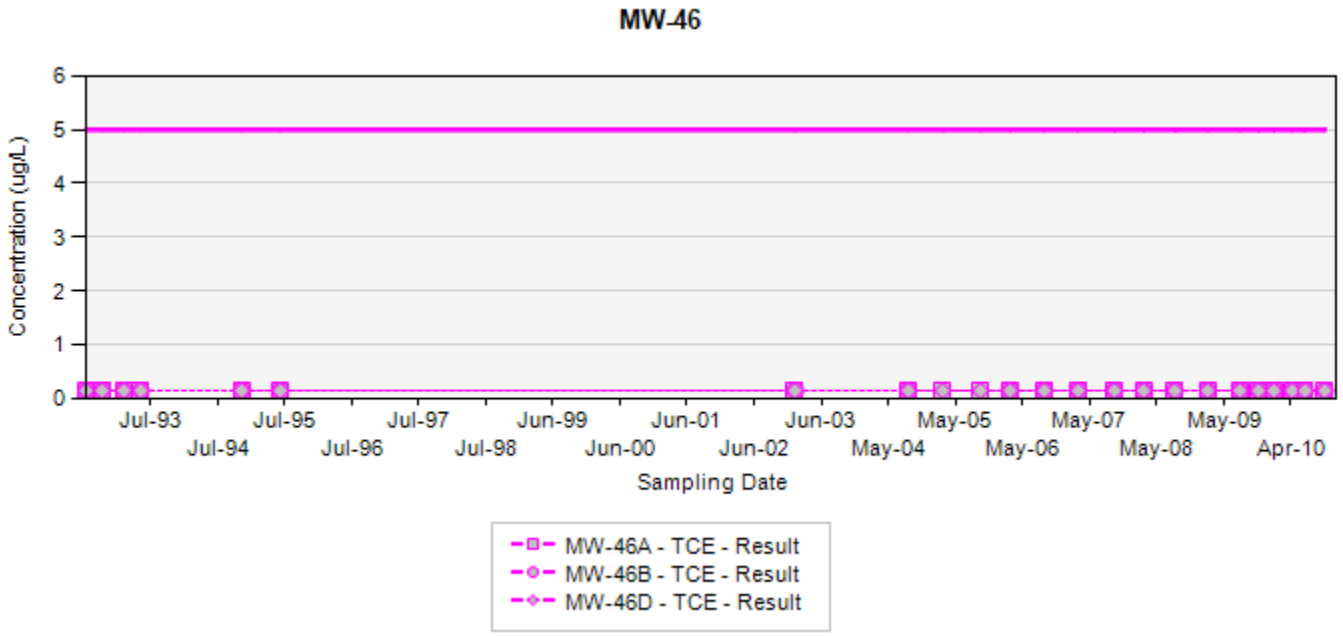

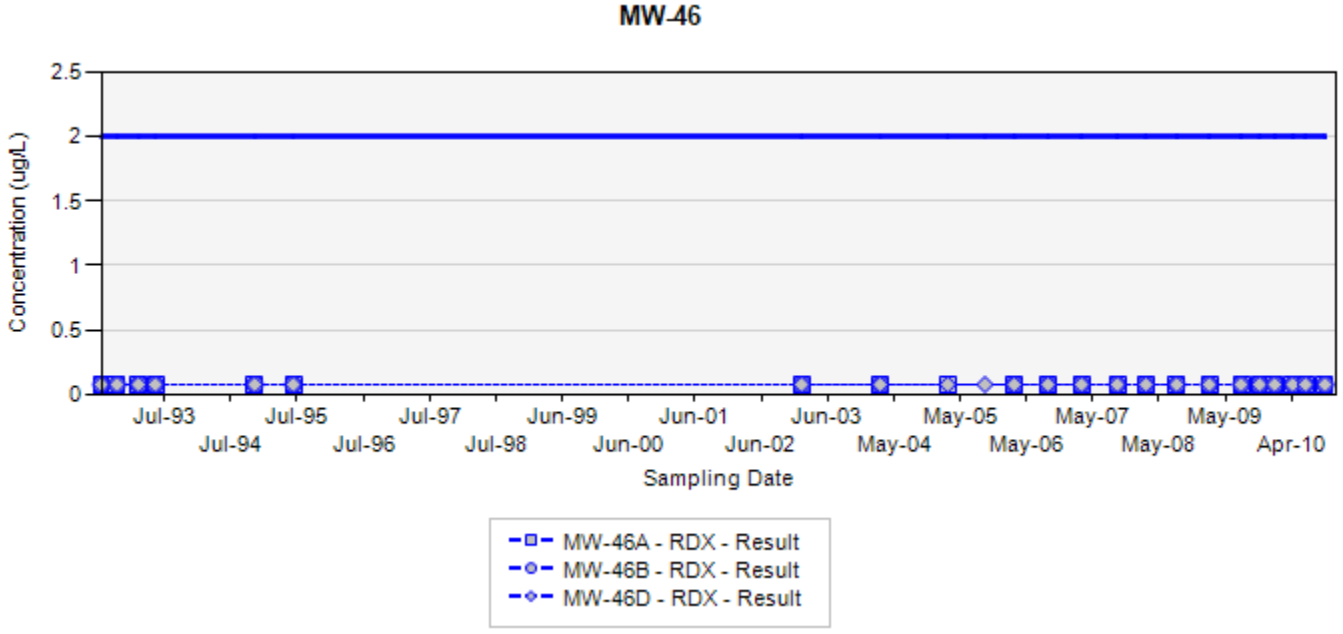

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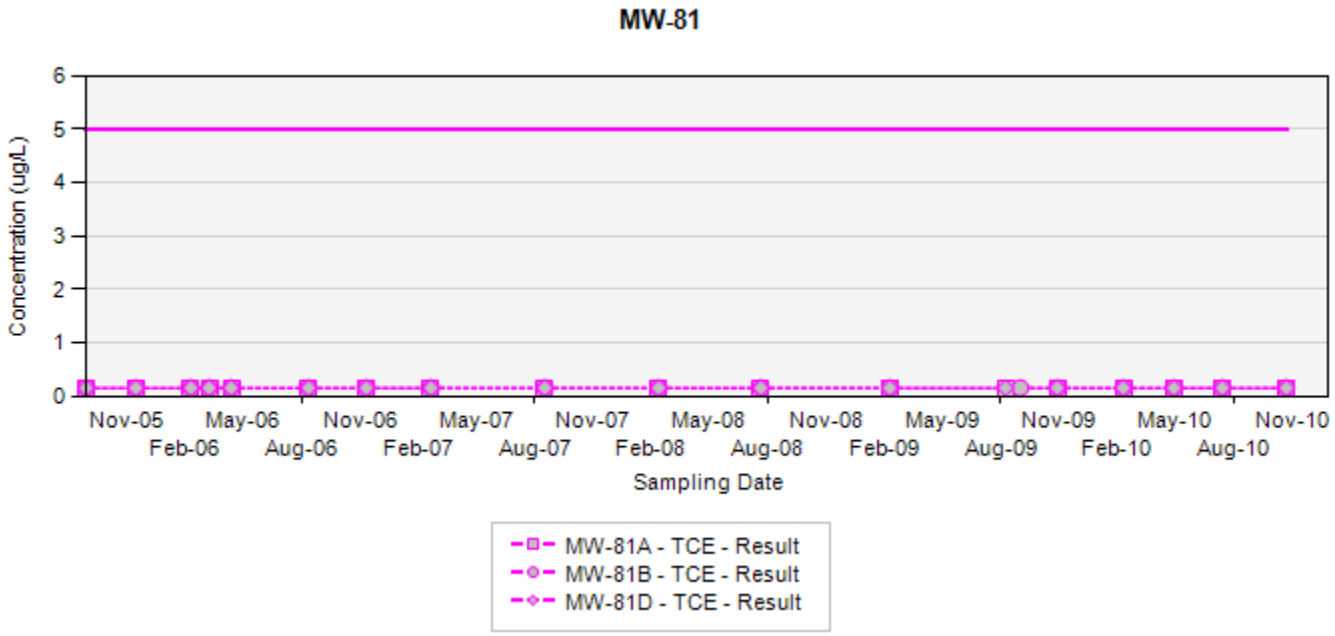

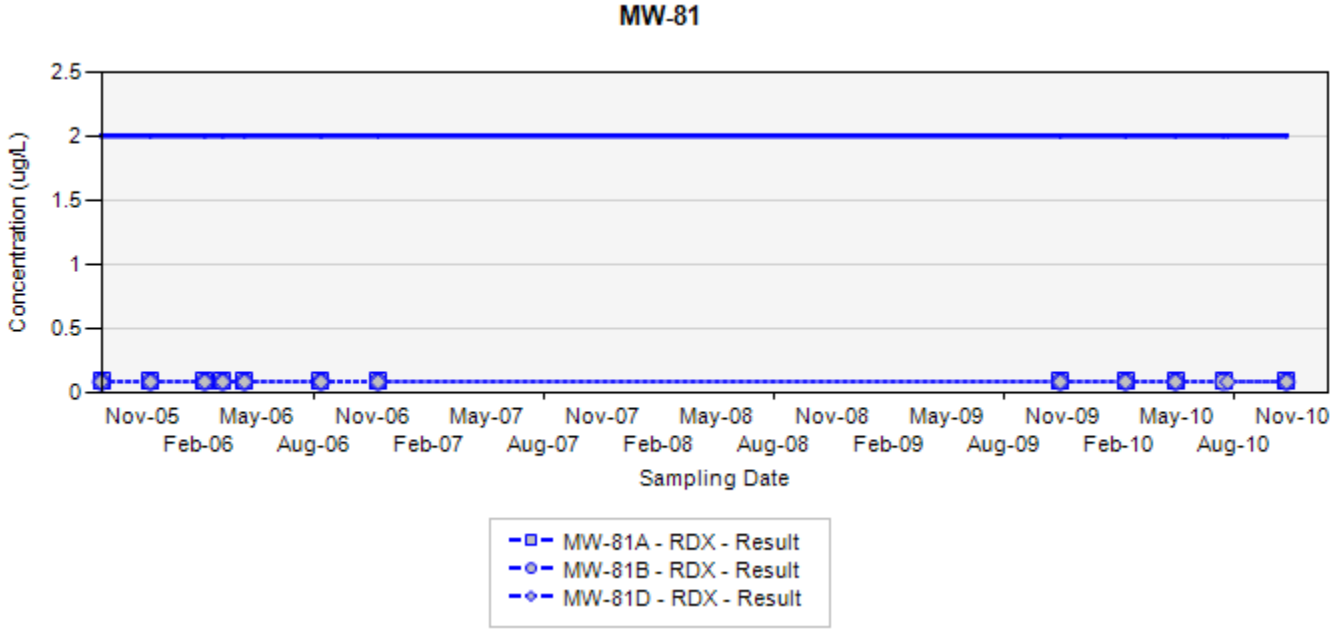

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Final Target Groundwater Cleanup Goals for TCE is 5 UG/L
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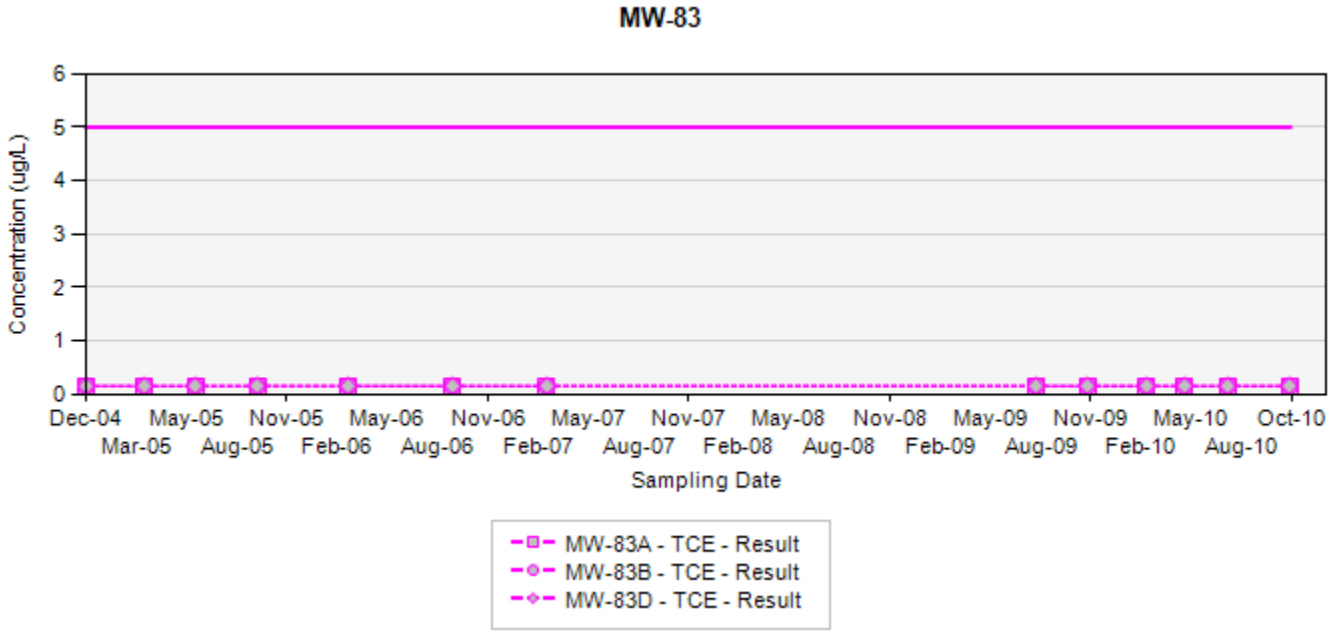
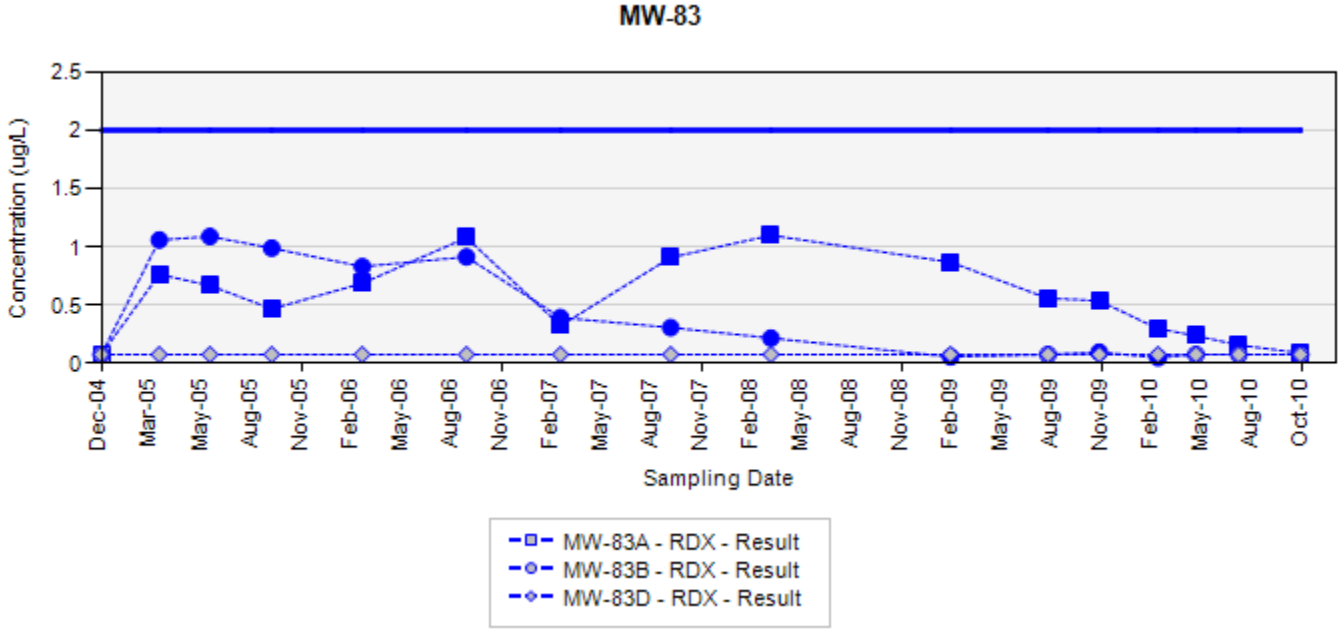
Concentration Trend Charts for Perimeter Monitoring Wells





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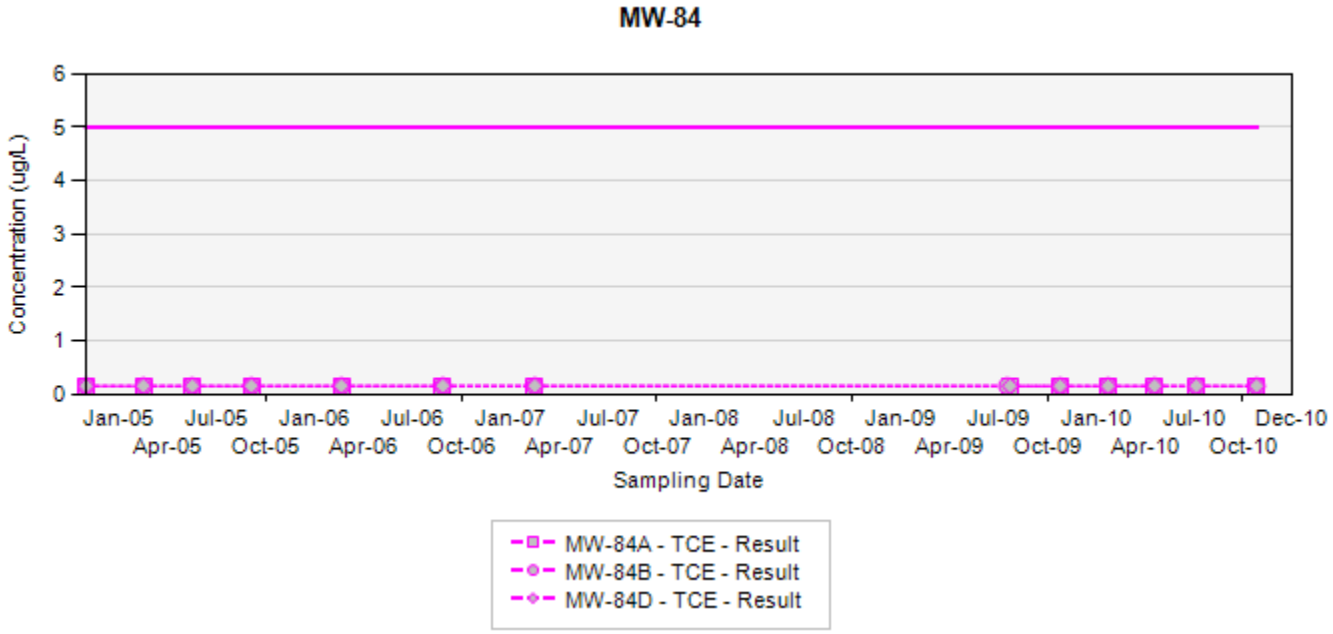

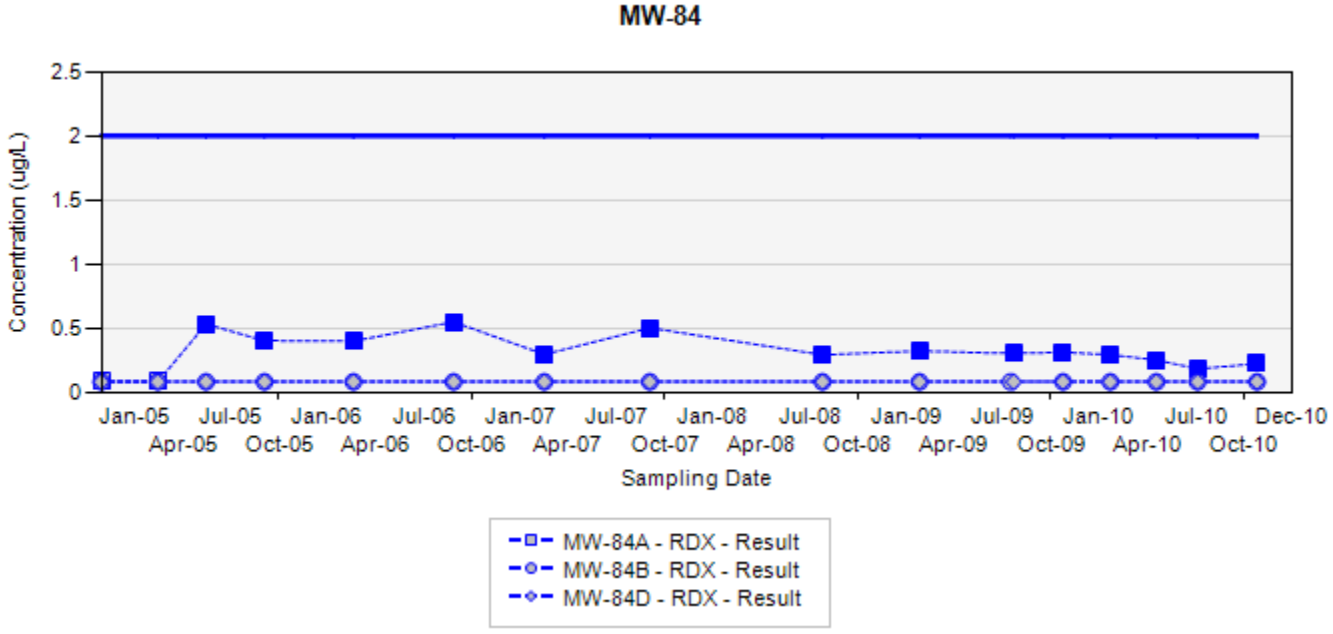

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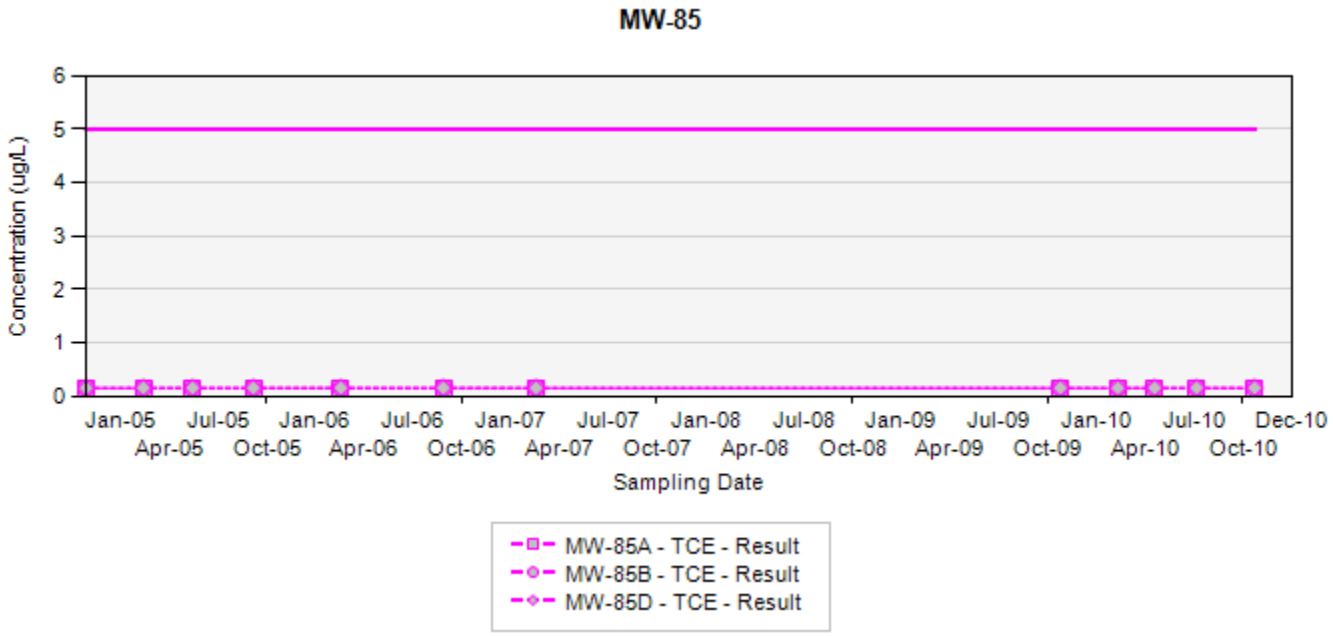

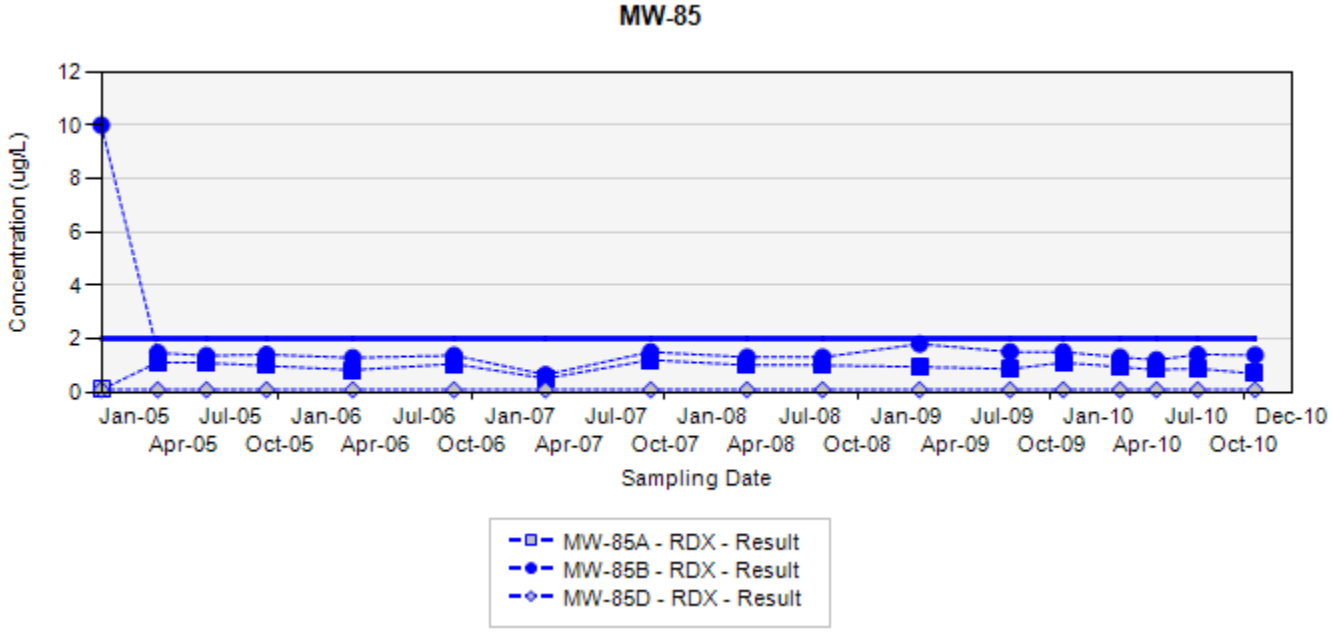

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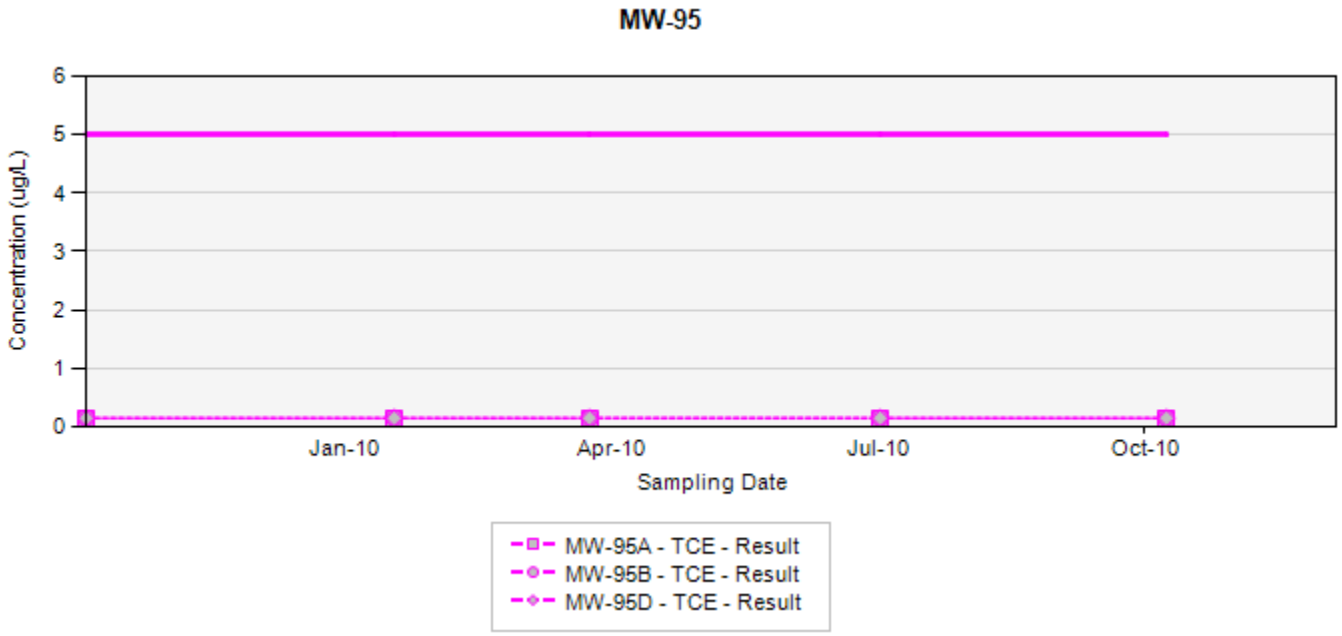

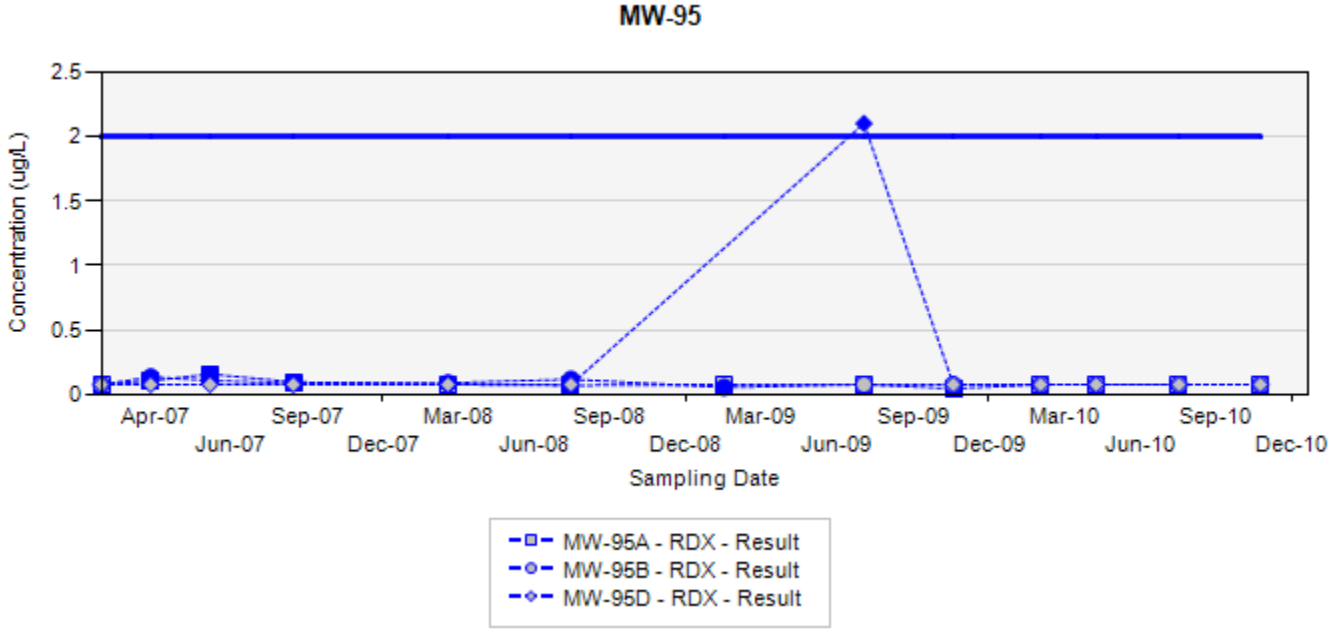

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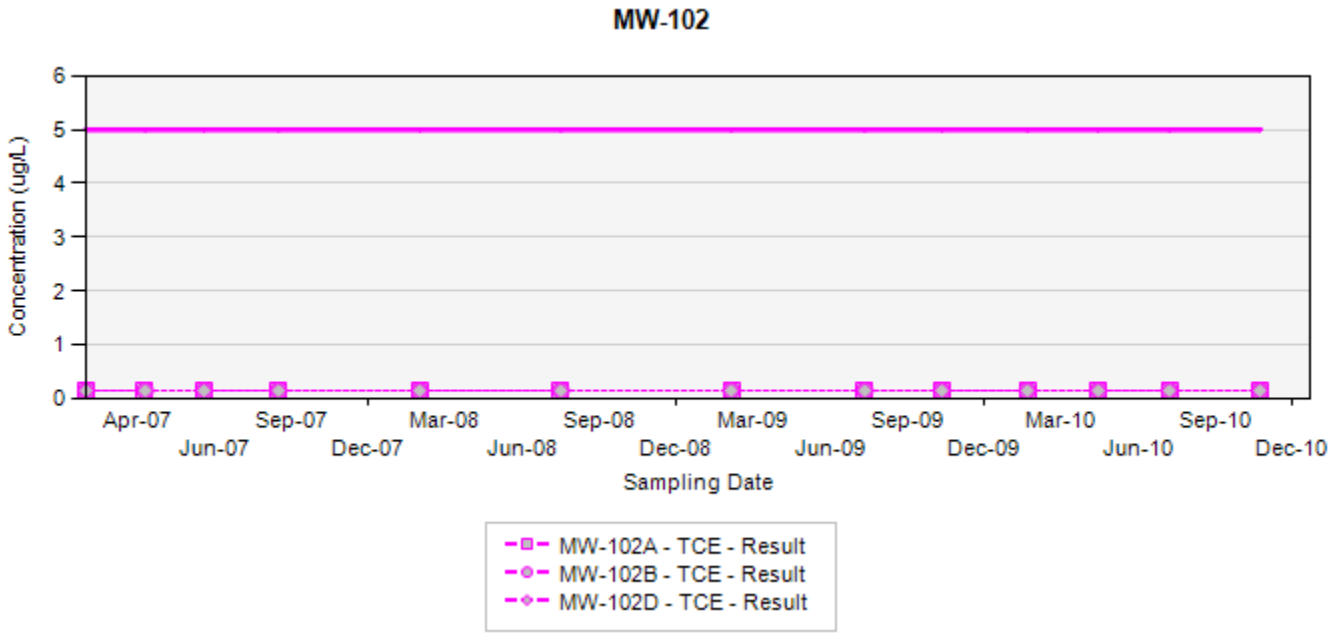

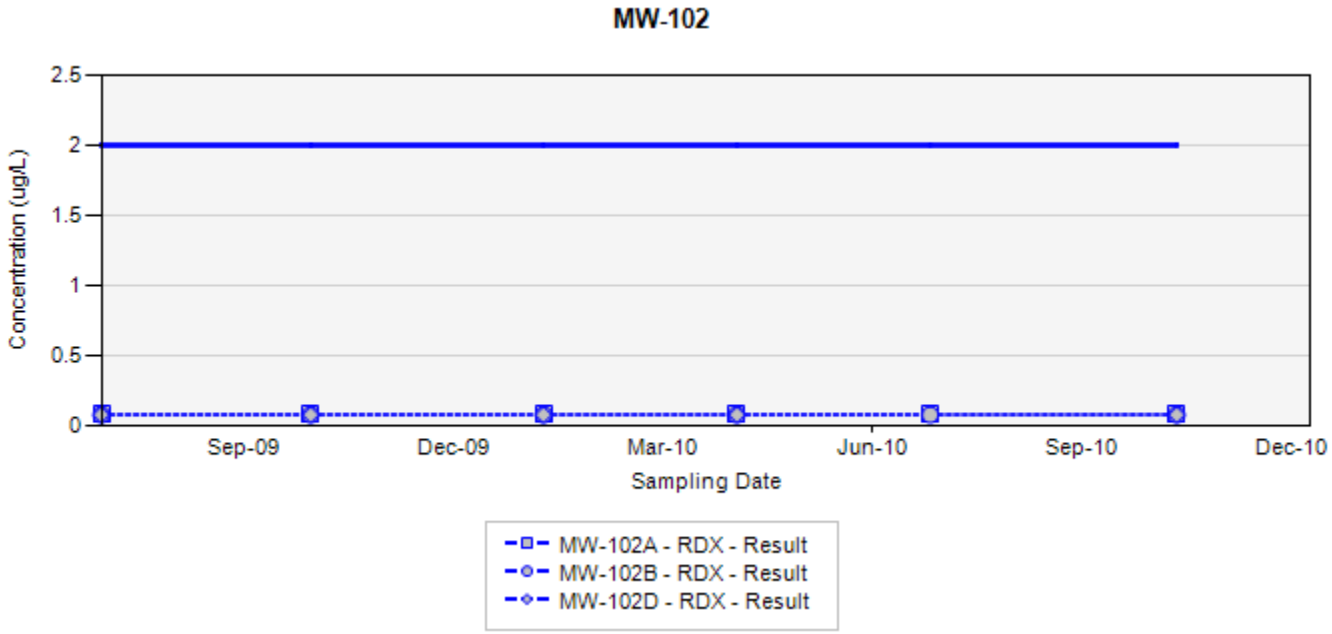

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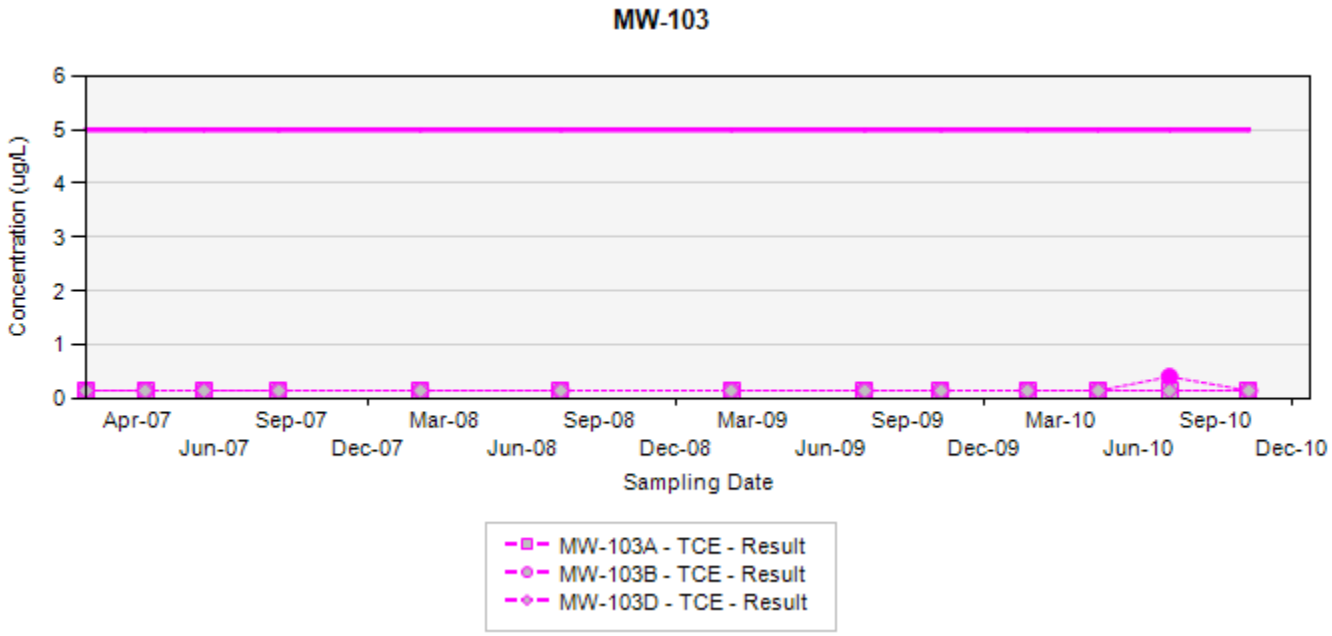

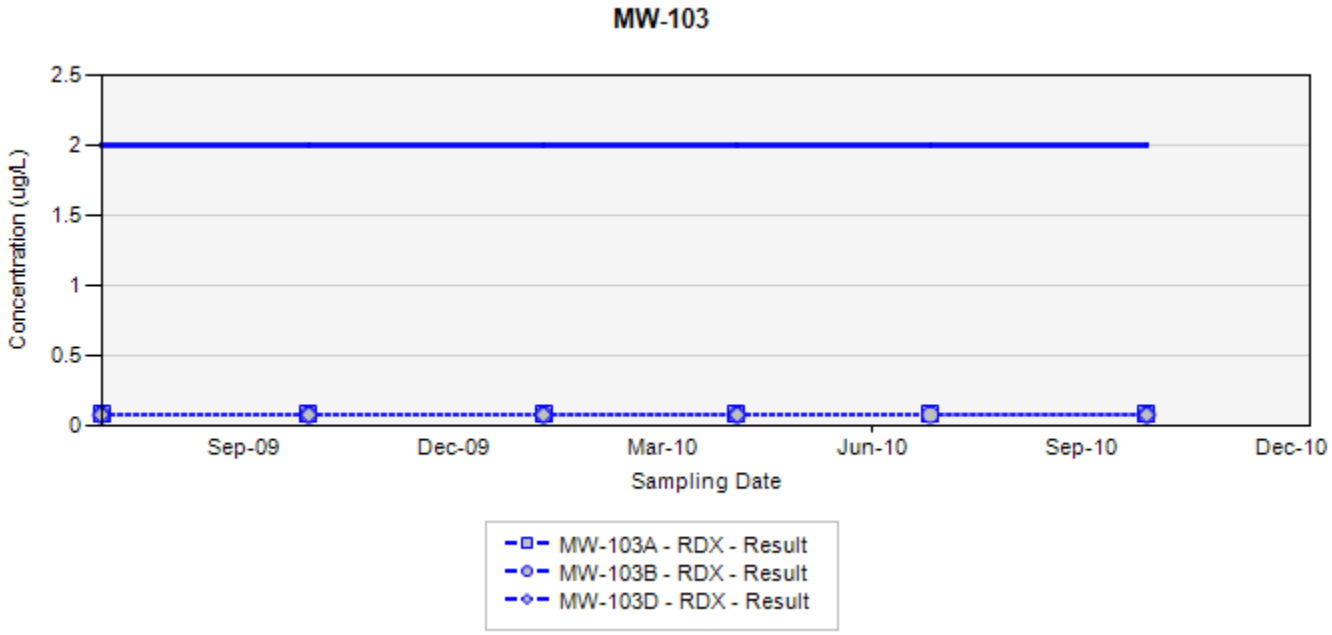

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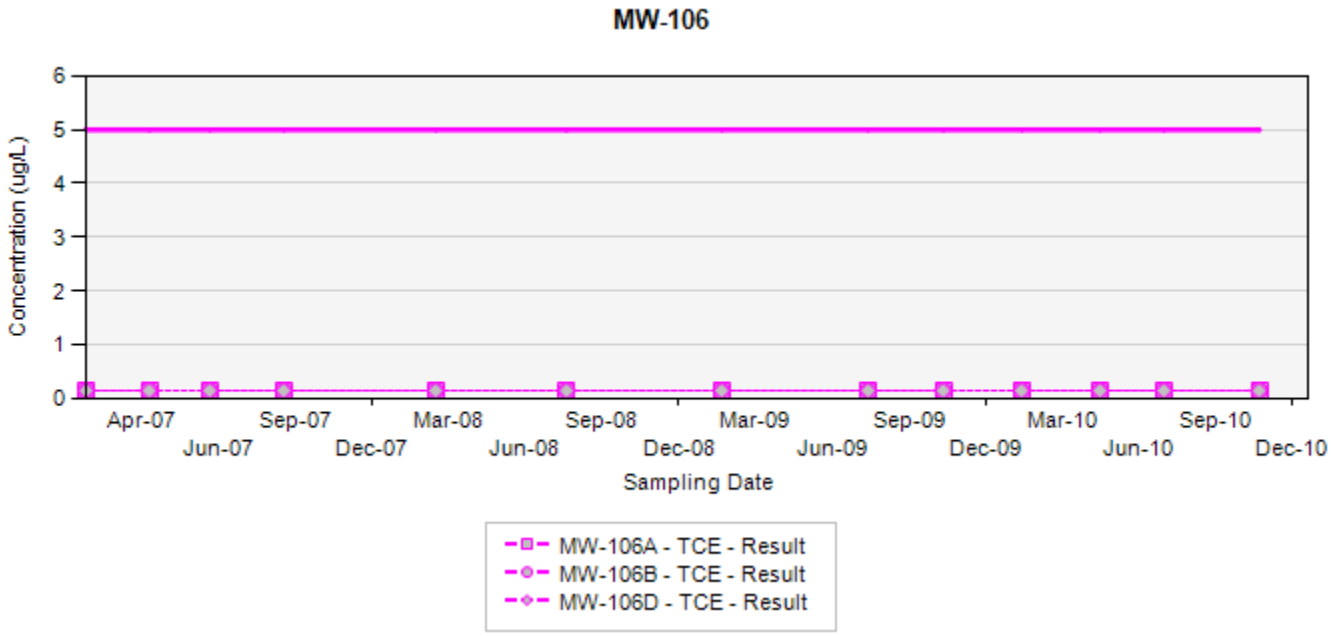

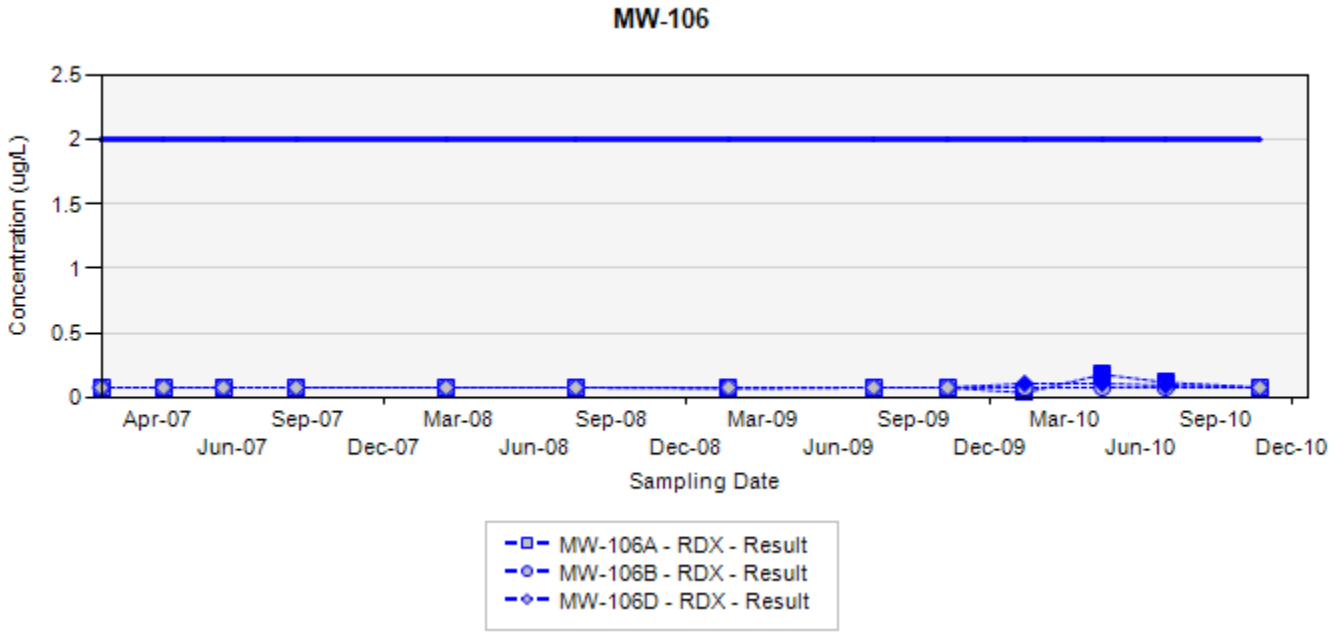

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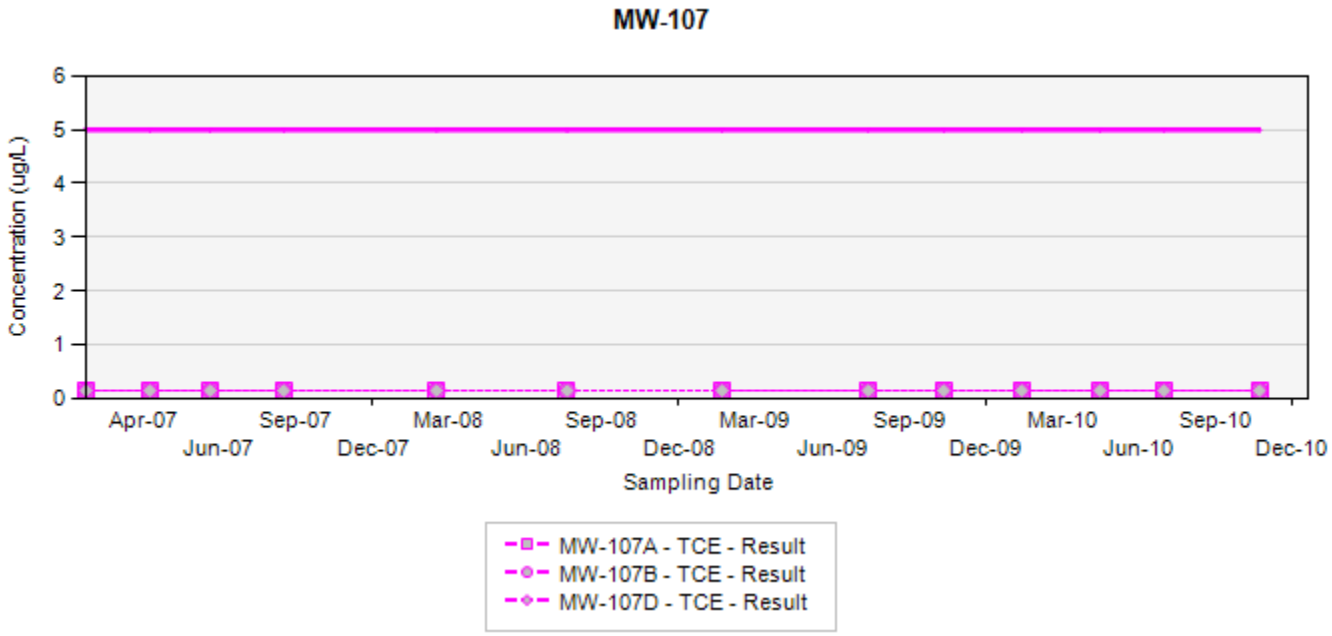

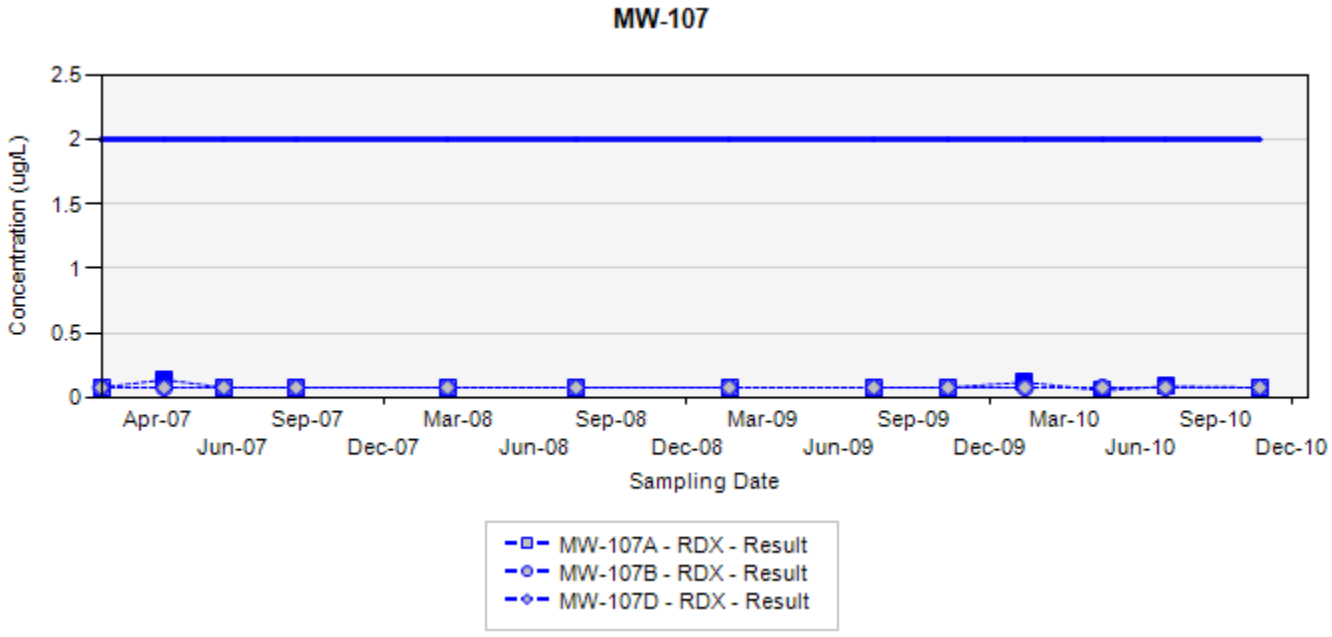

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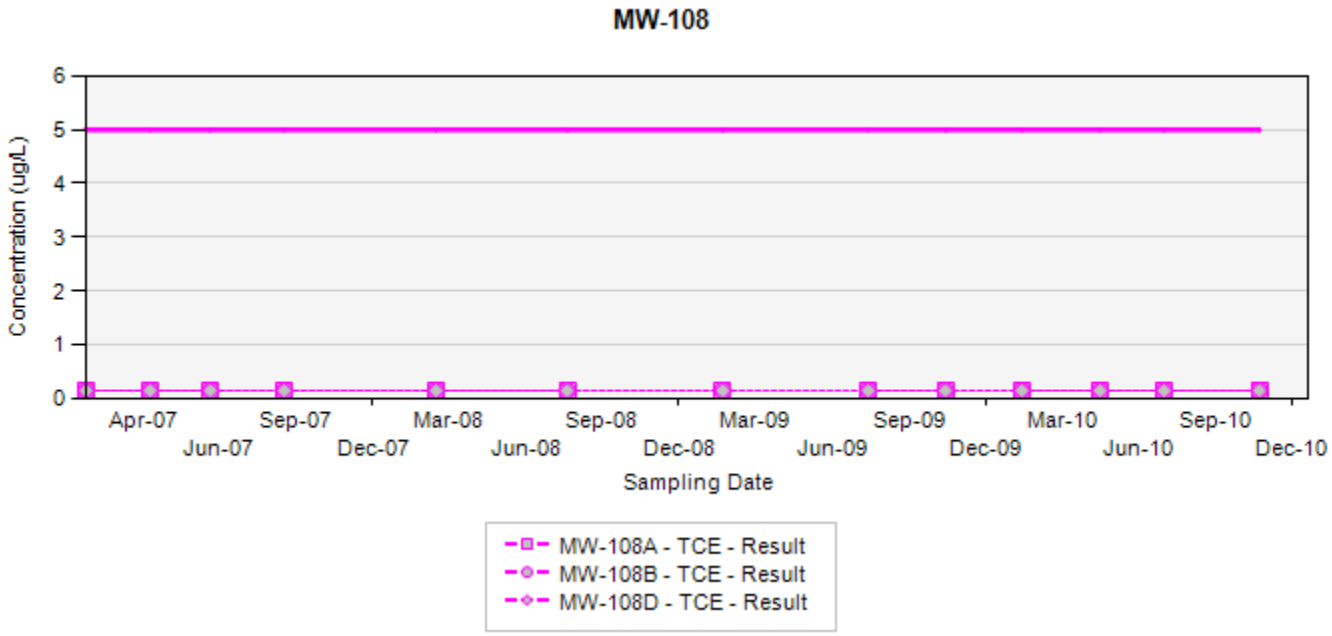

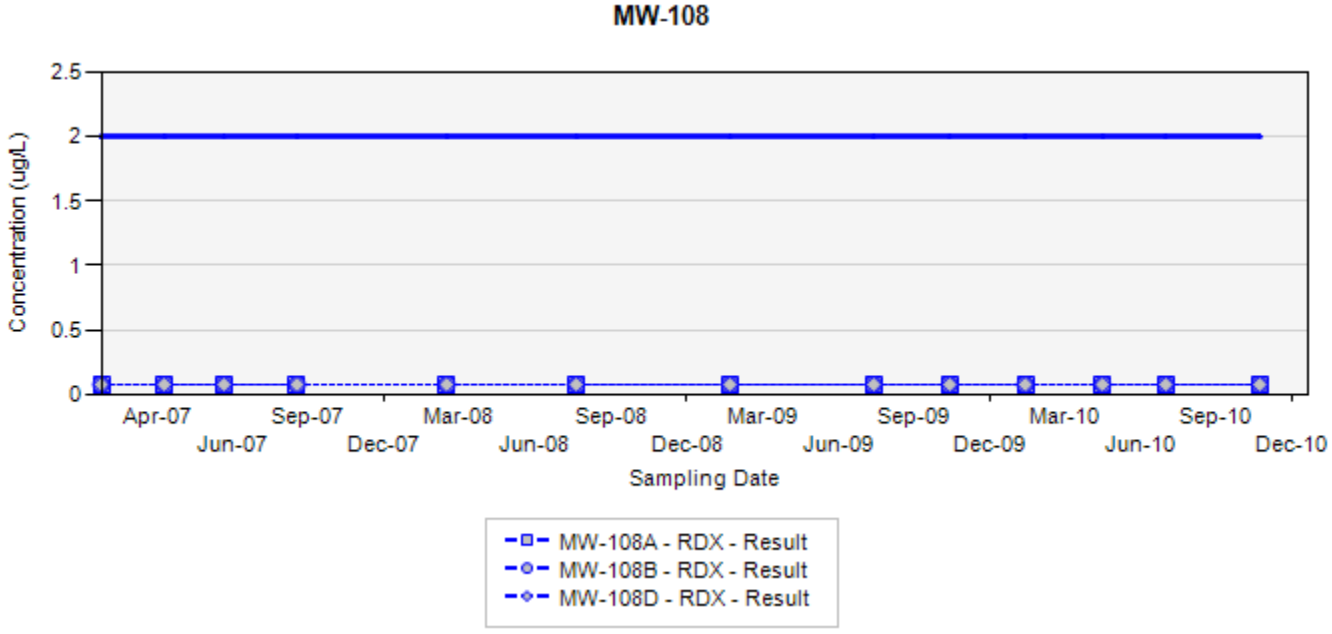

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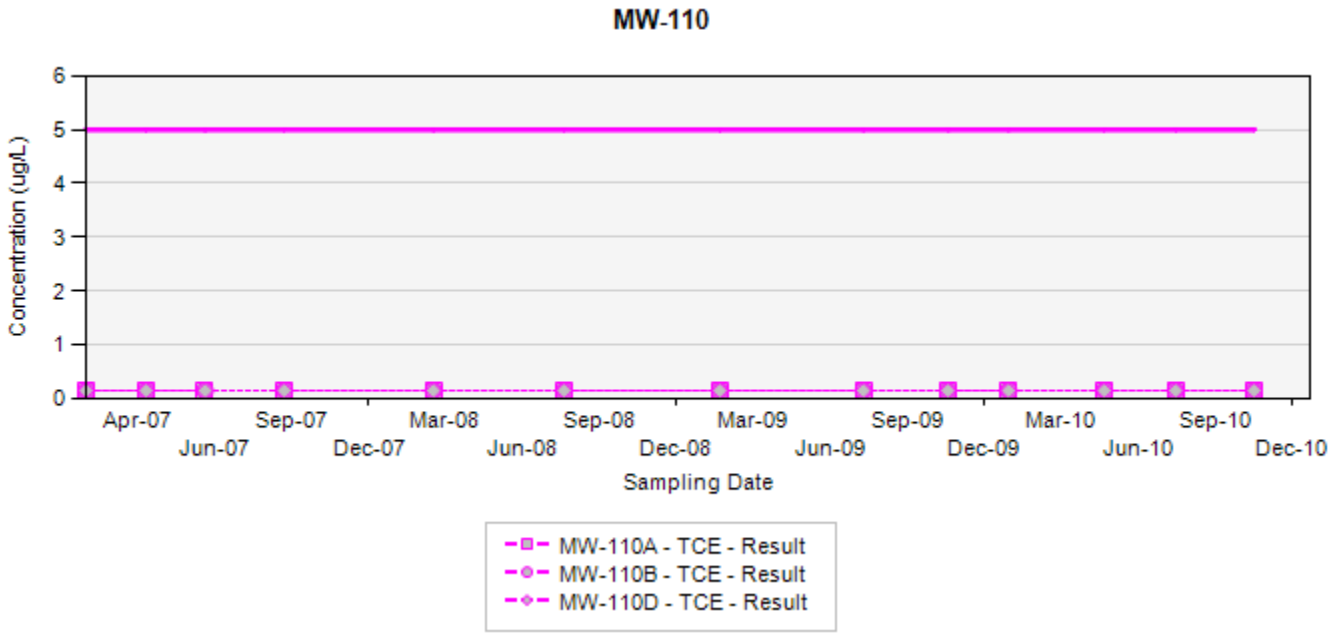

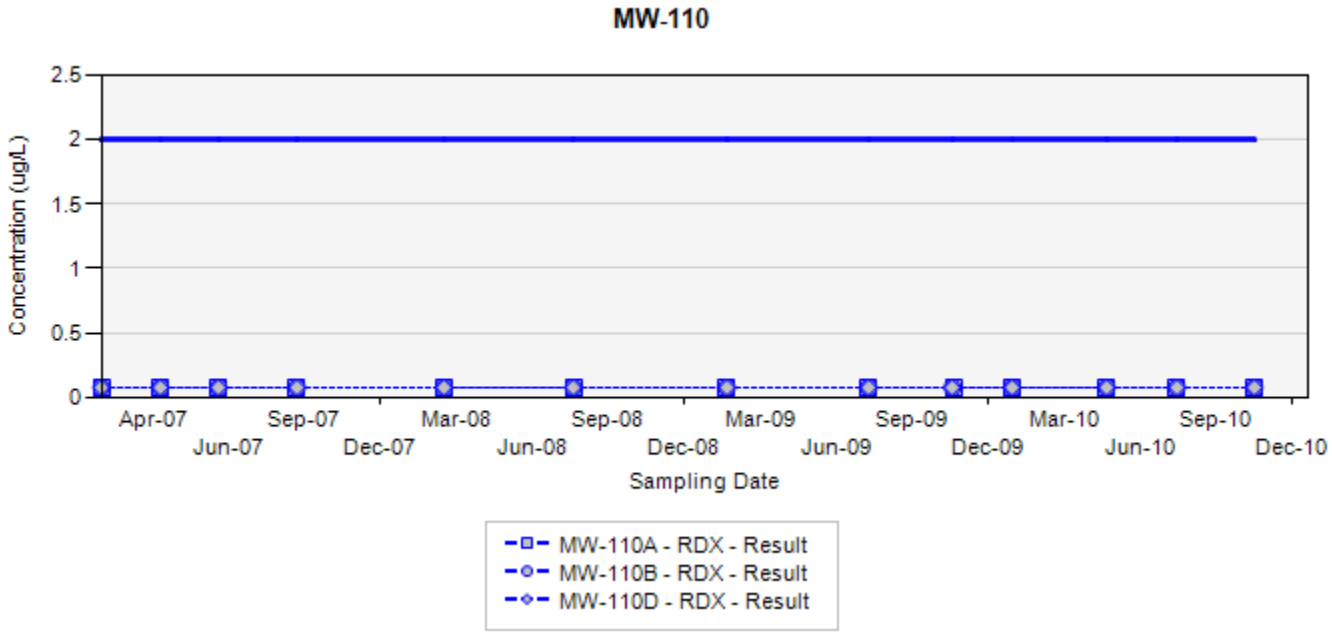

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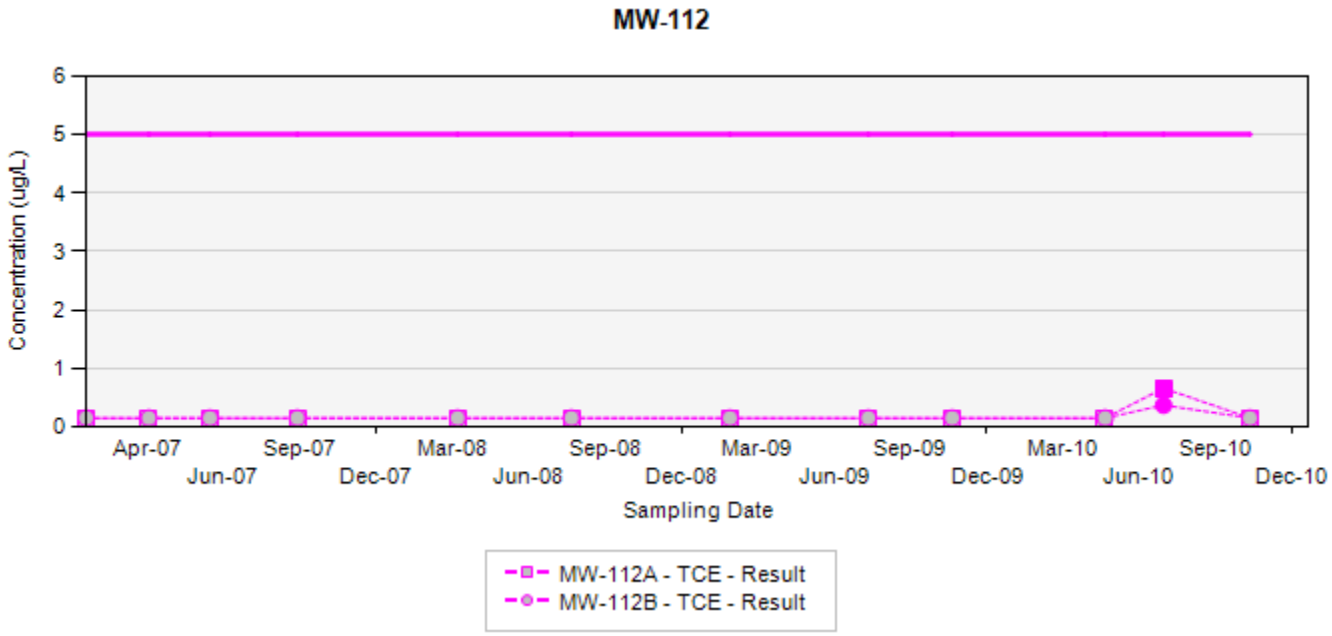

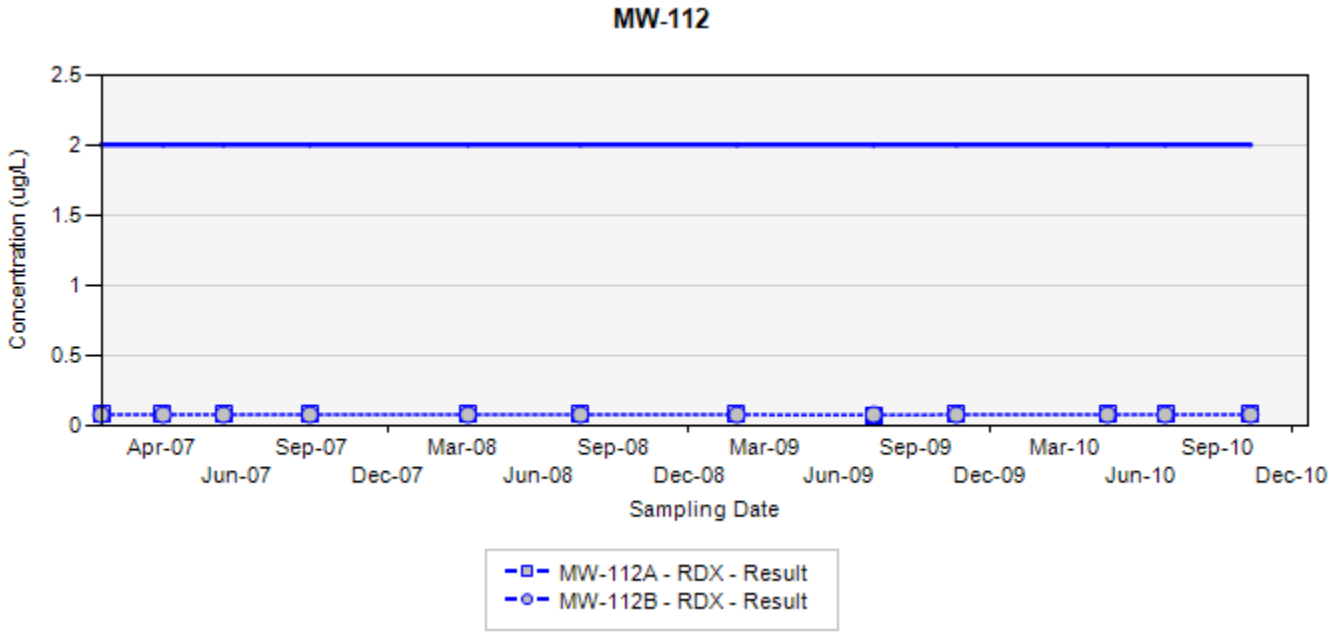

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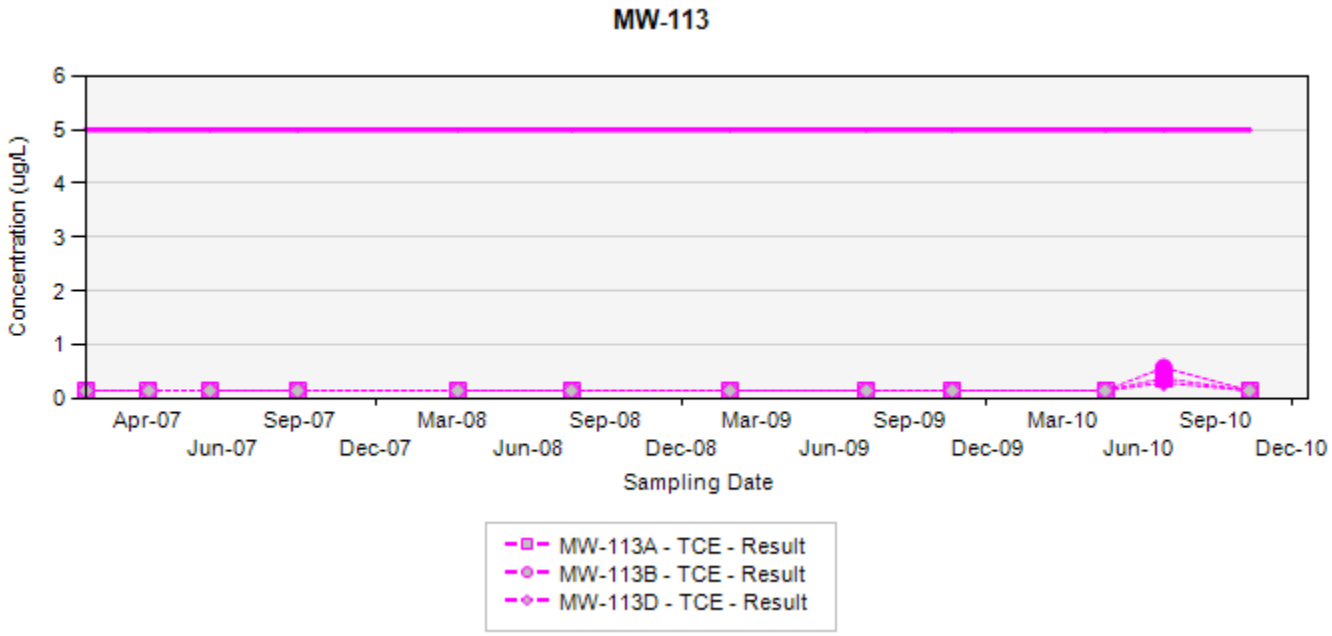

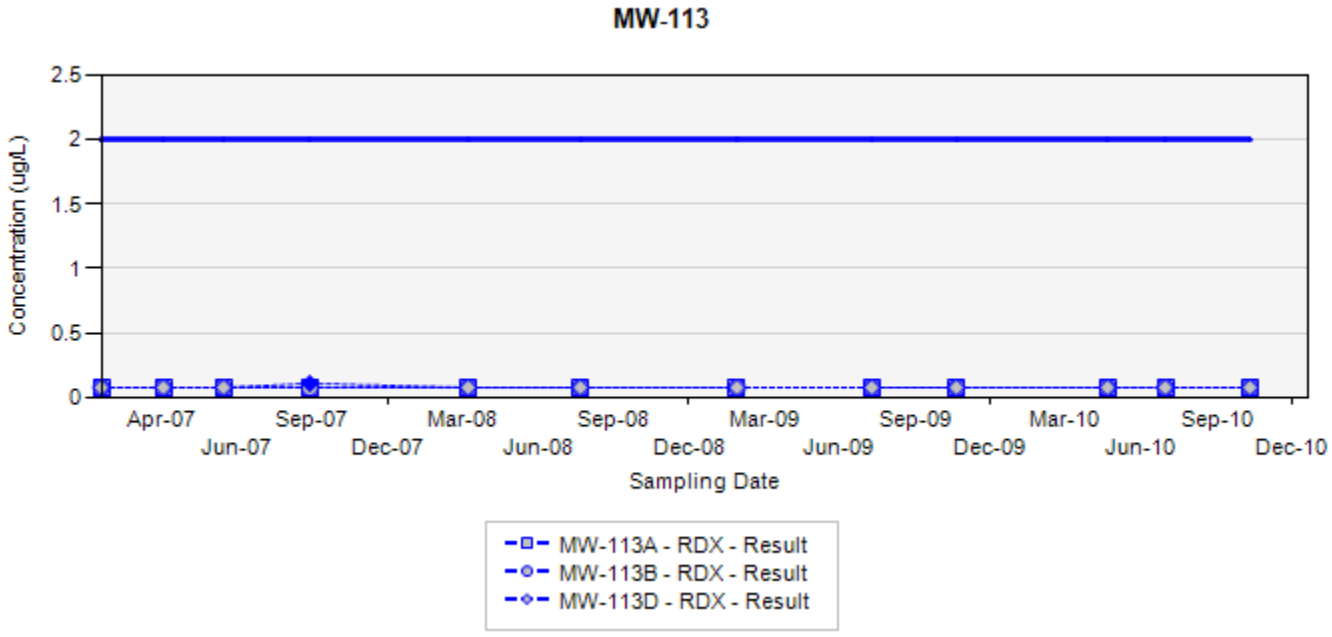

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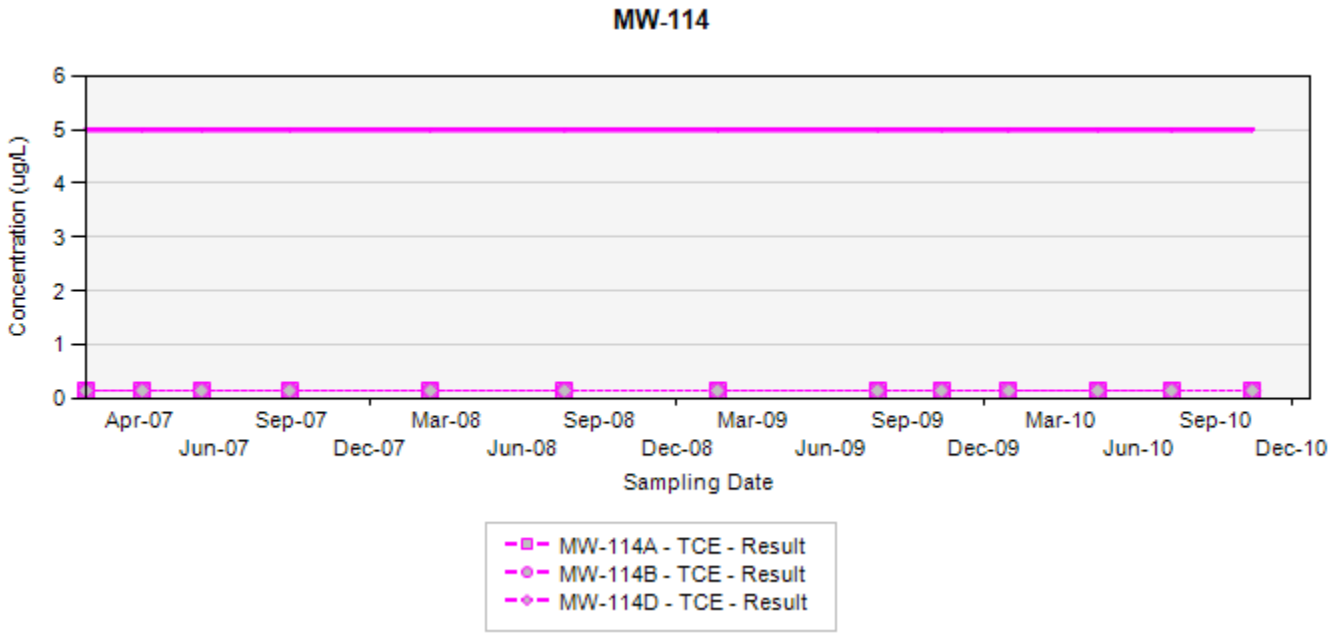

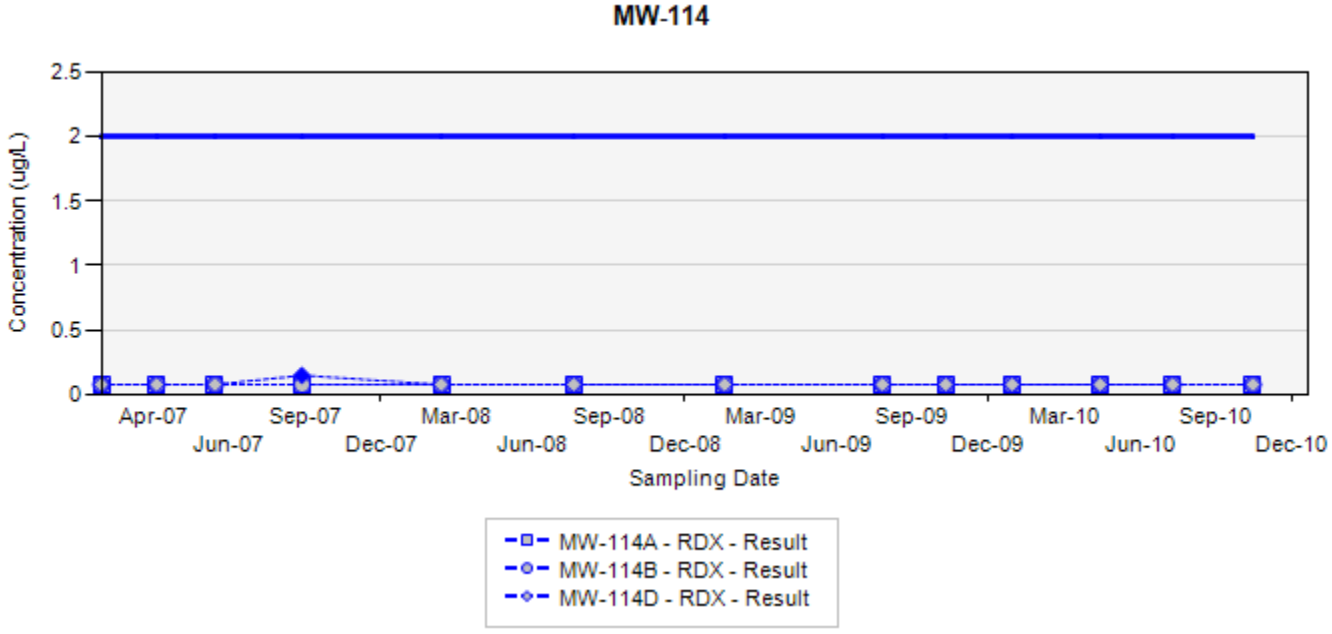

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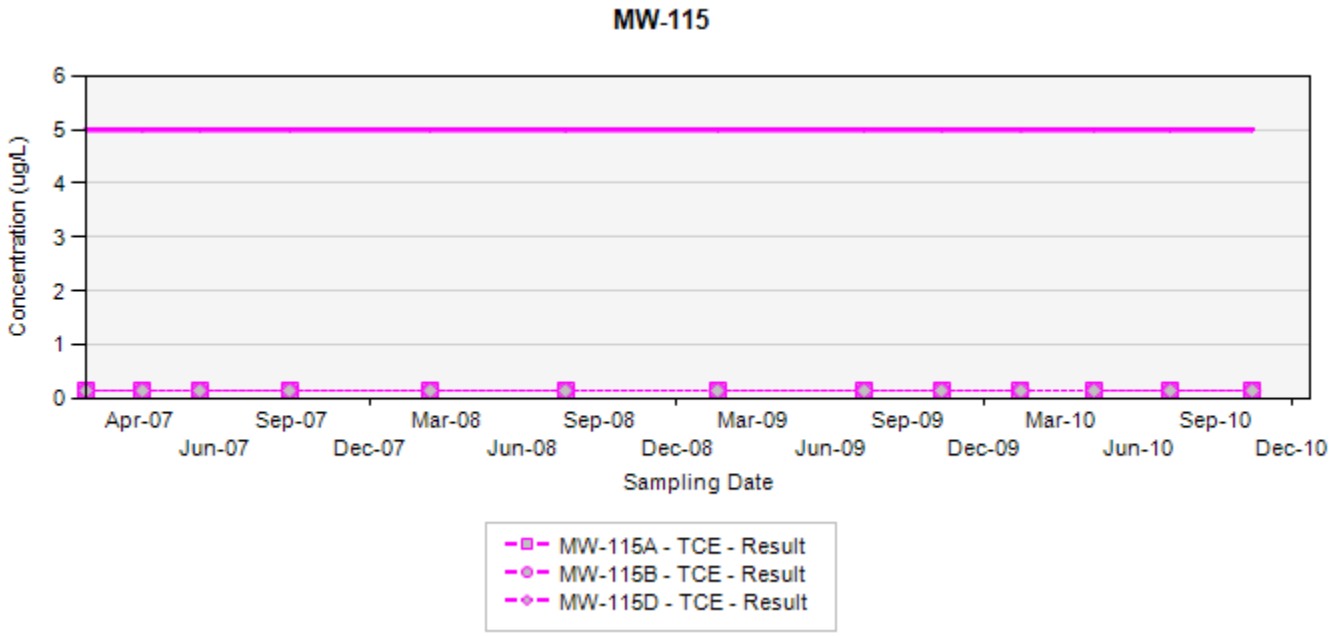

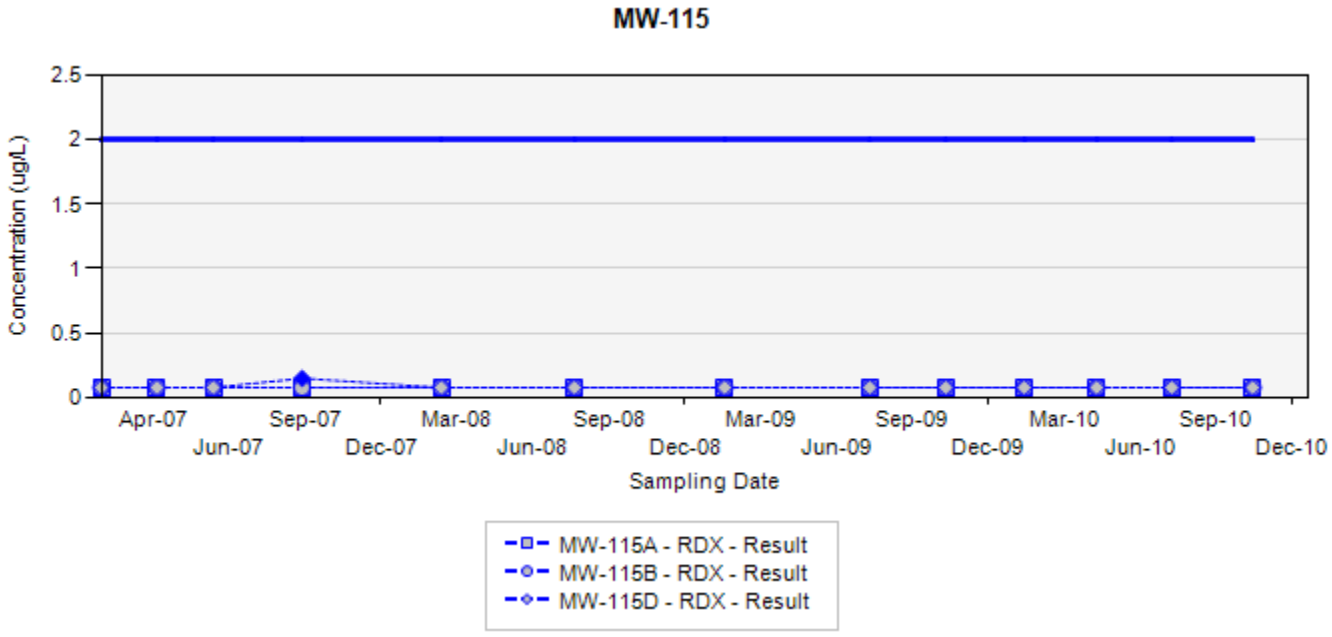

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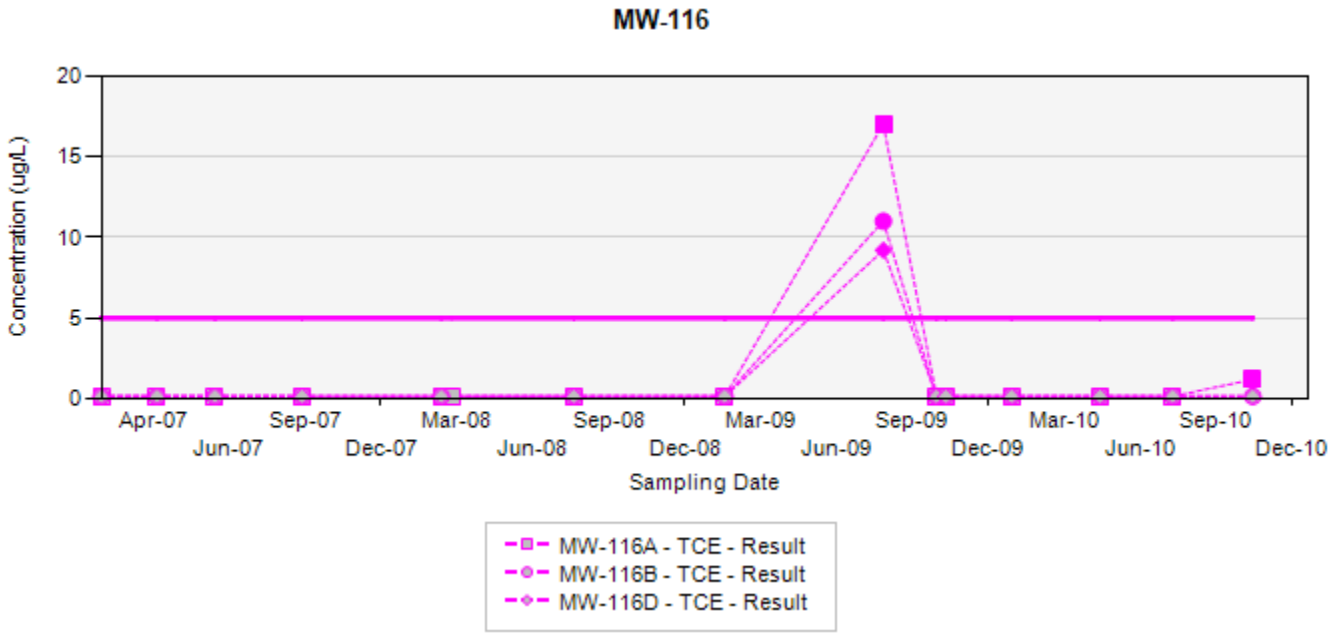

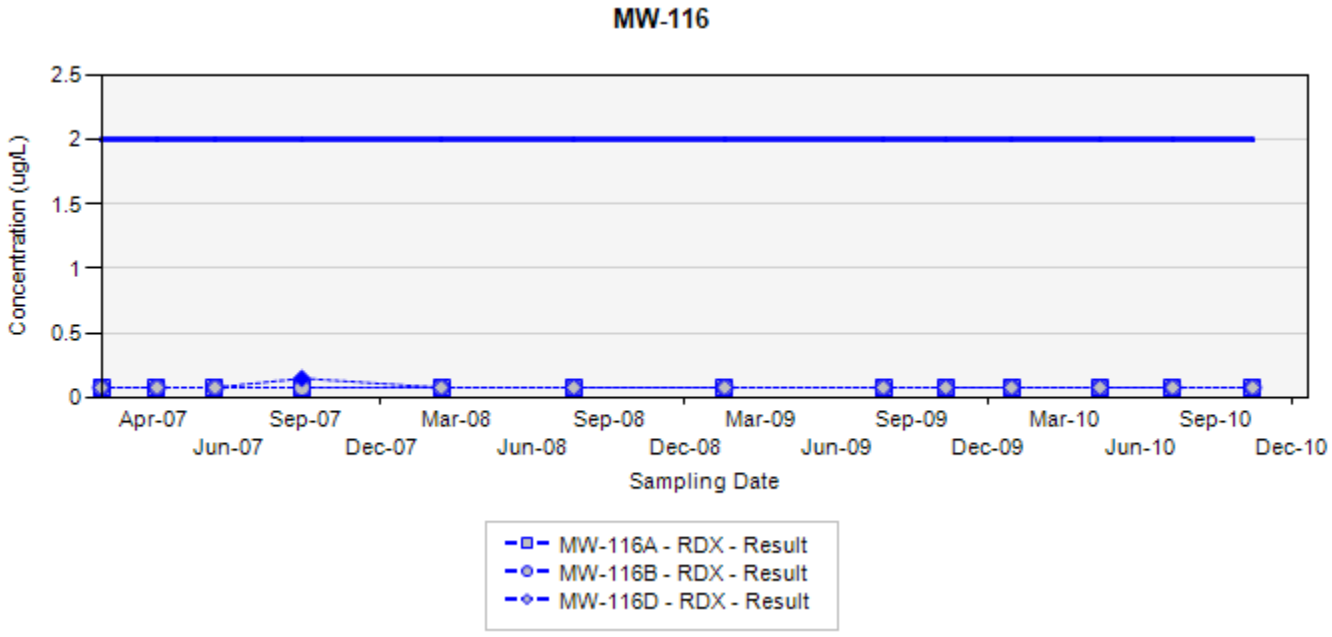

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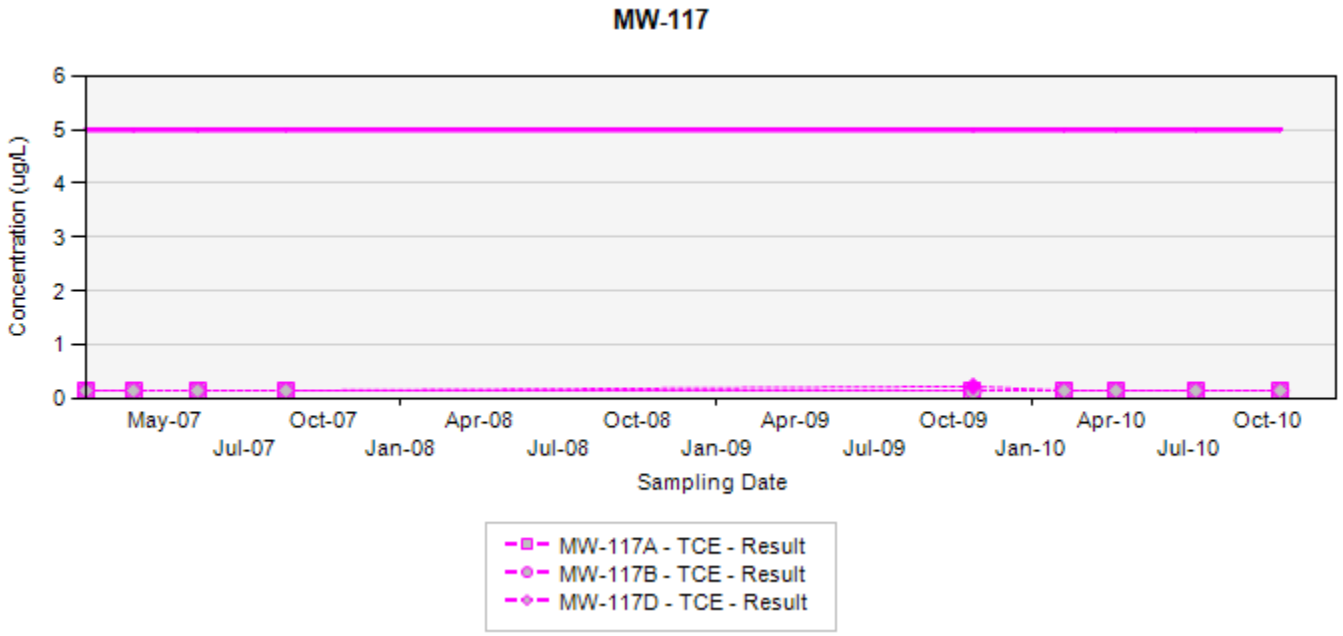

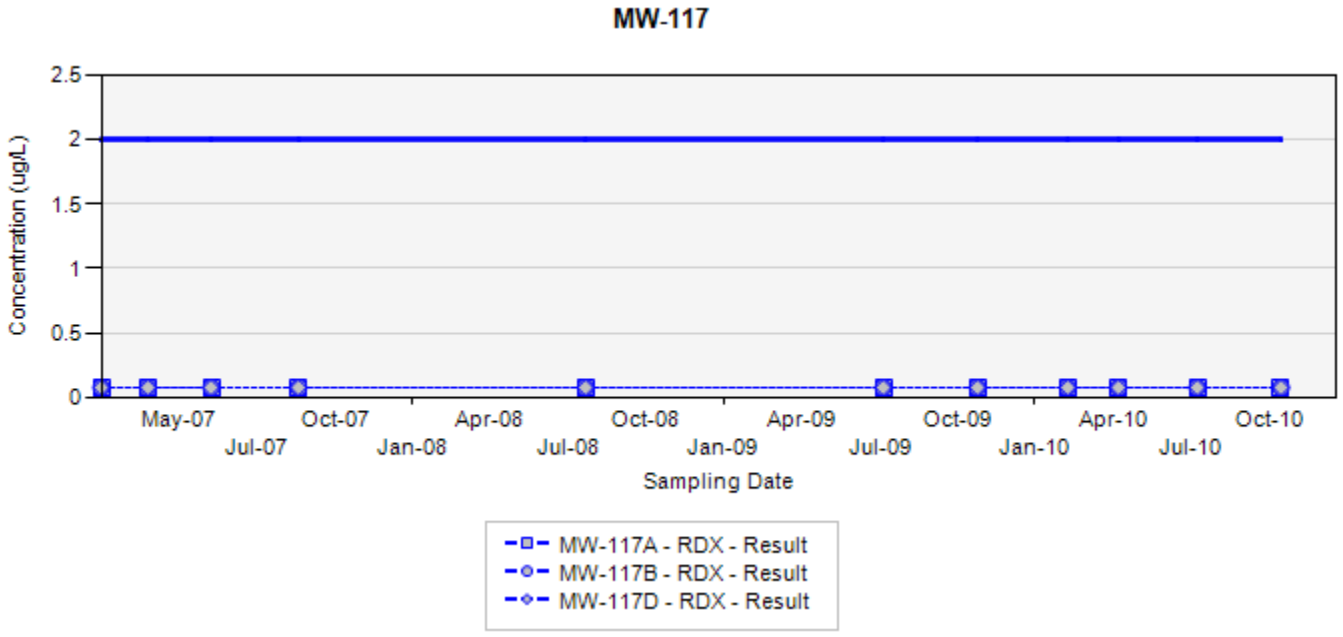

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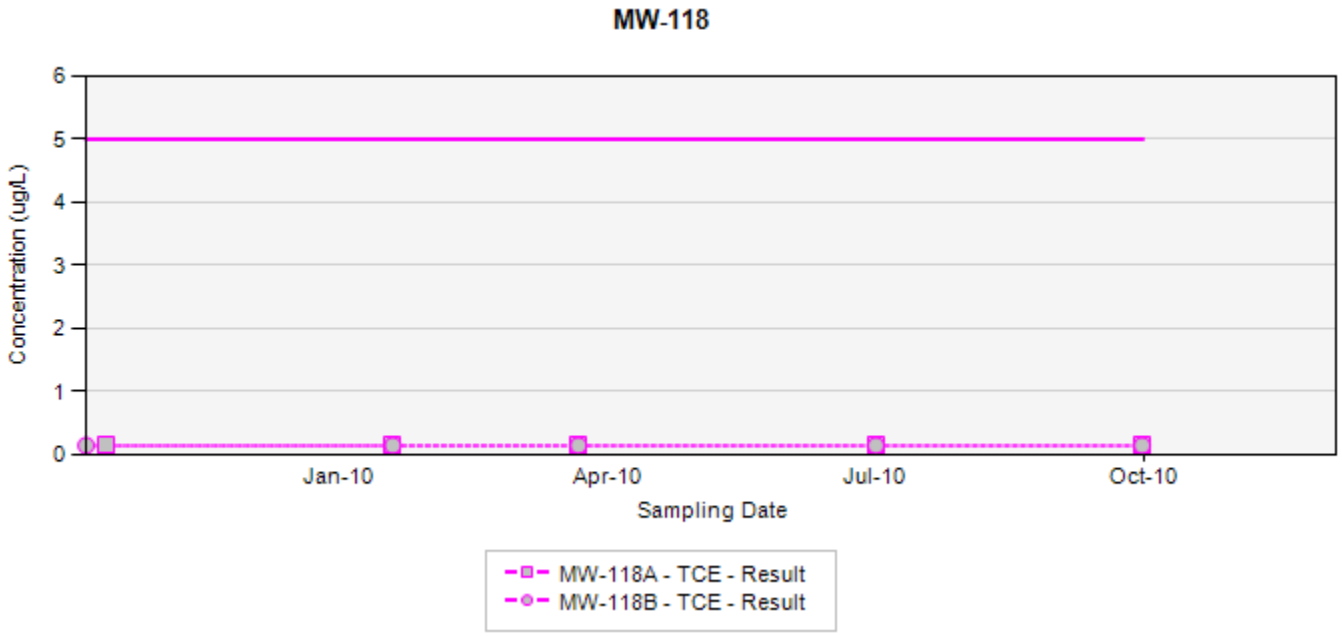

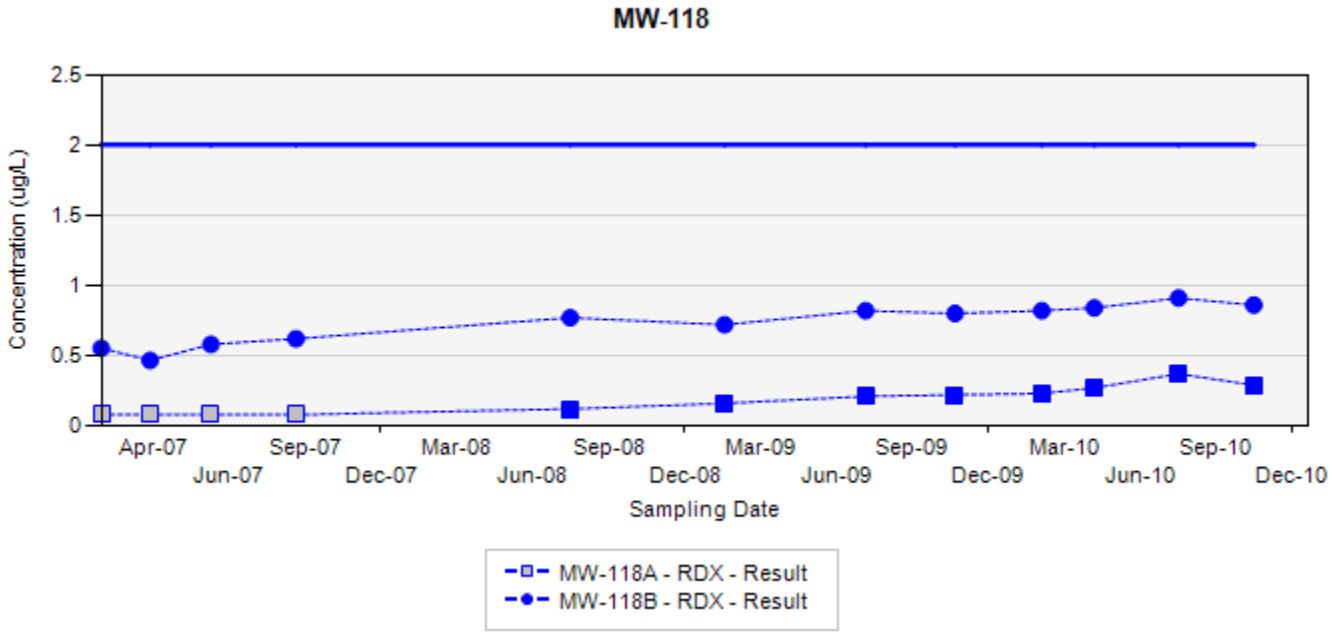

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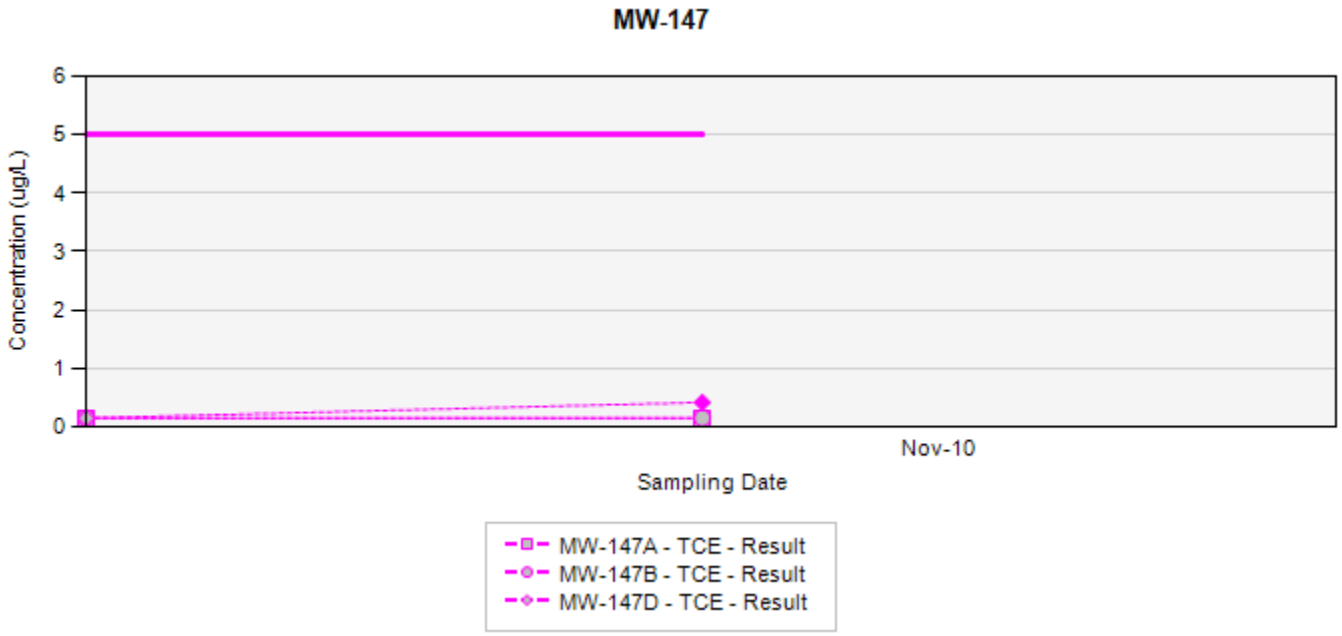

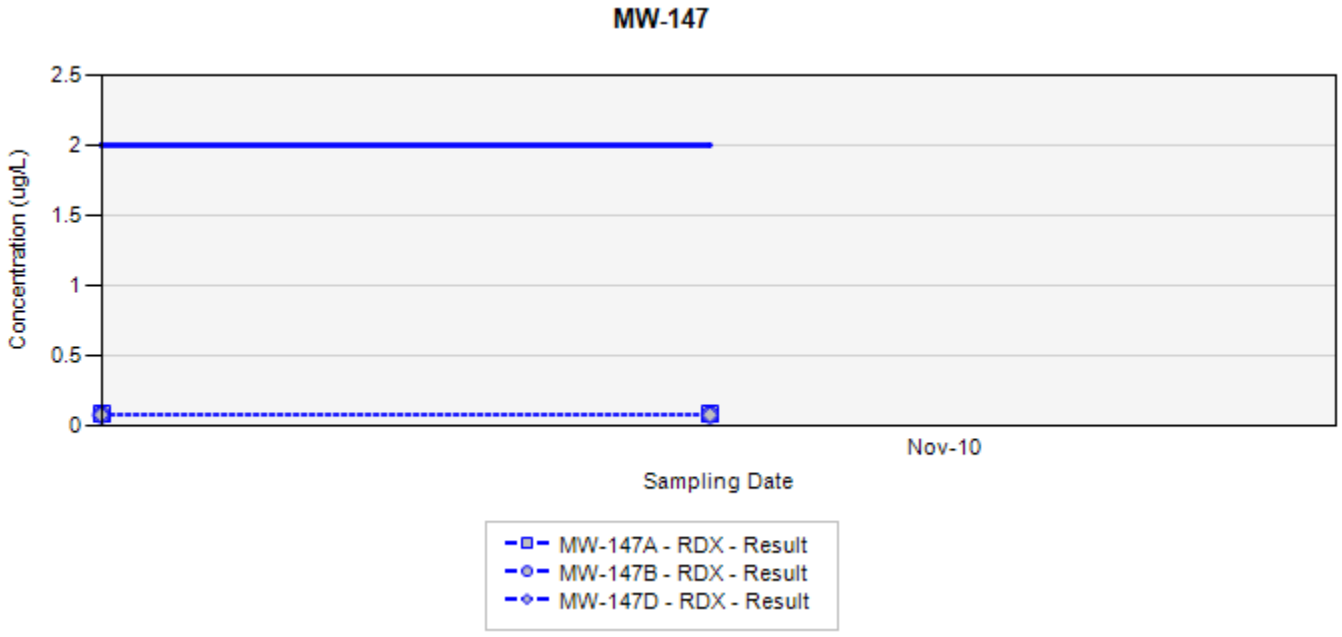

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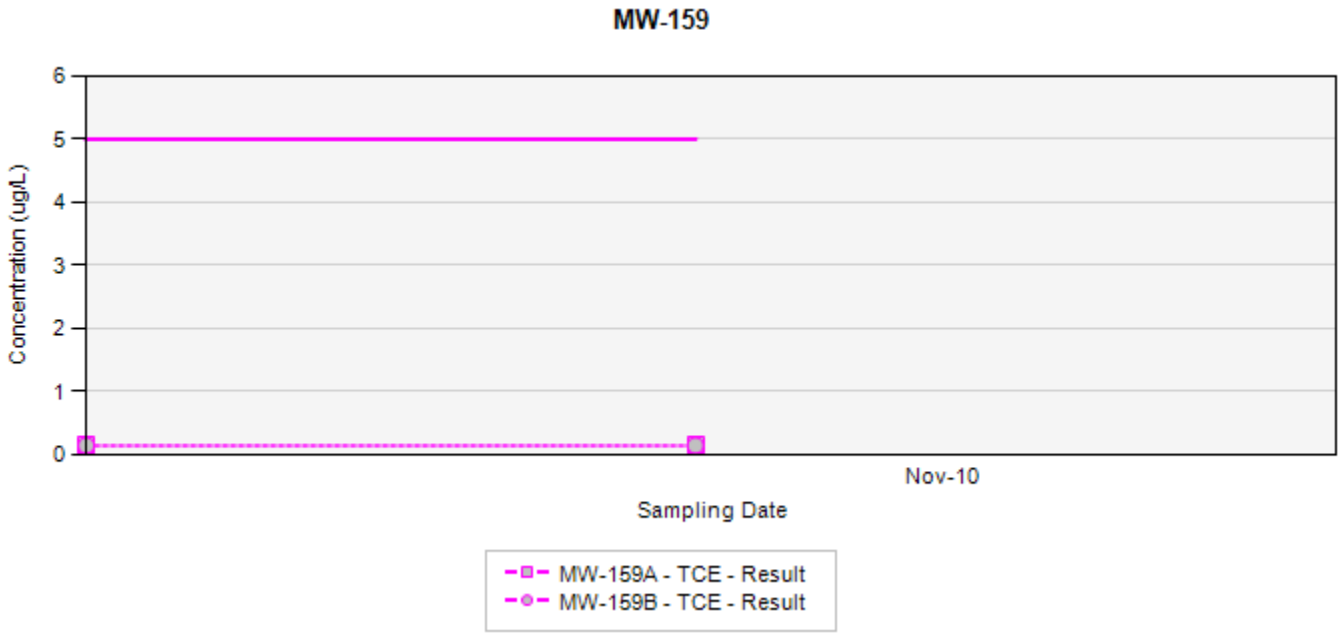

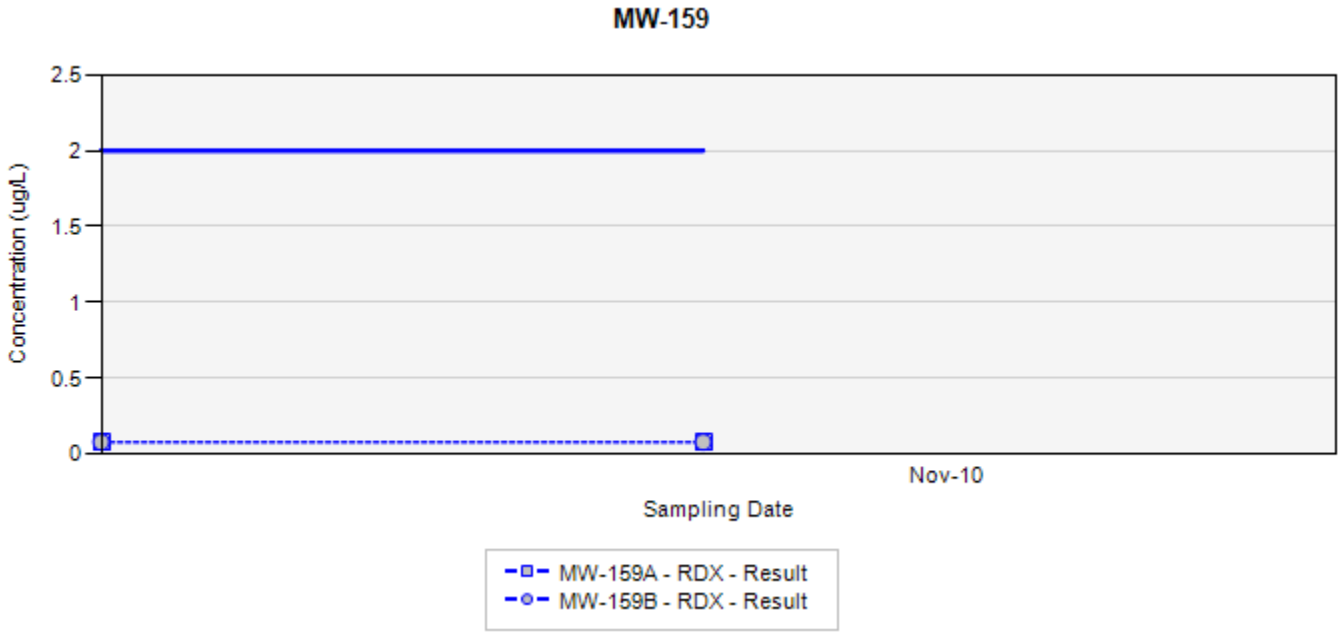

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Appendix C
Concentration Trend Charts for Water Supply Wells

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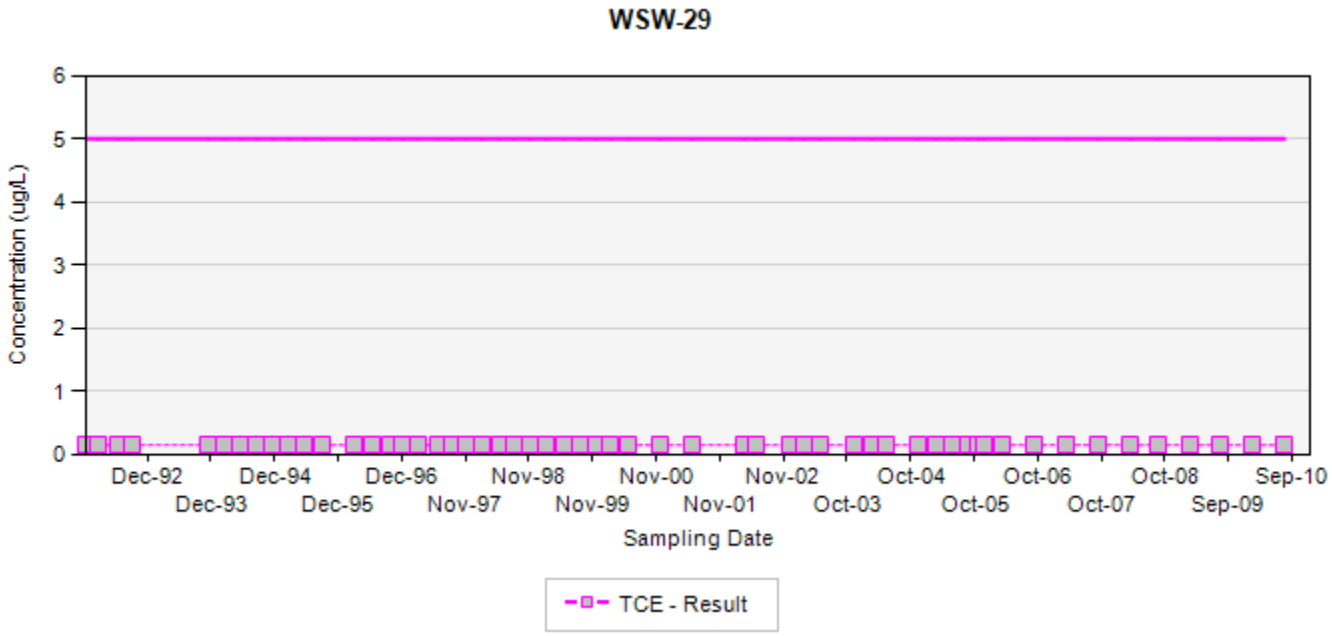
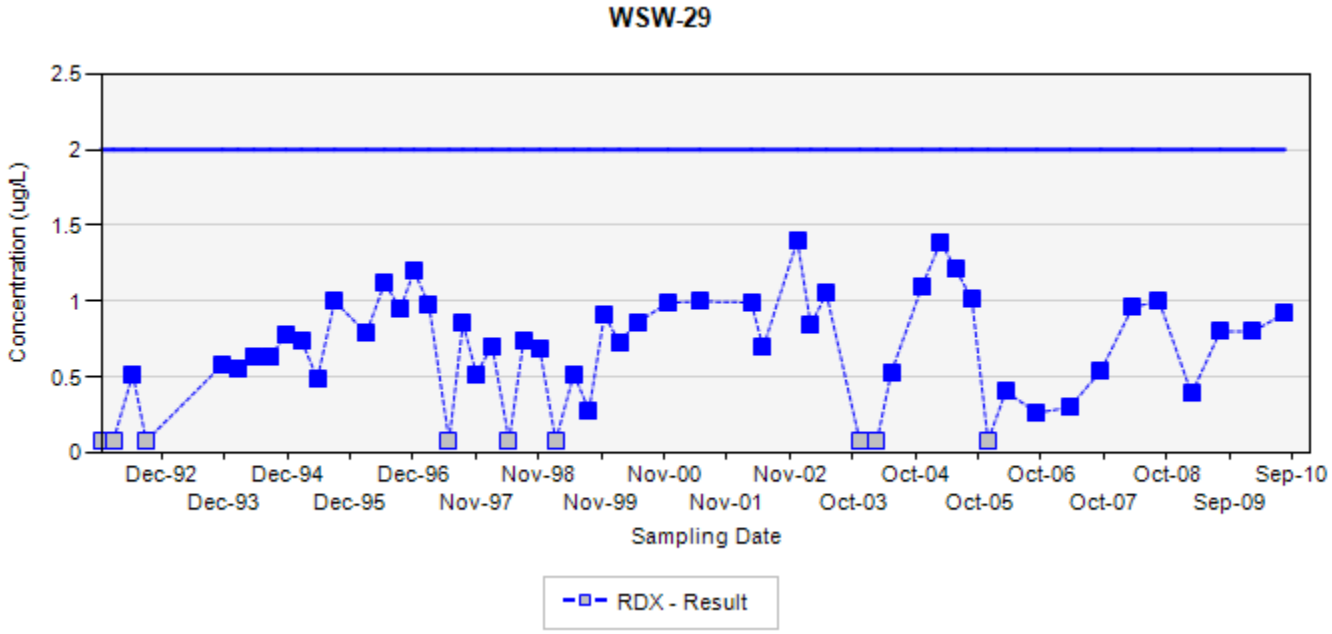
Concentration Trend Charts for Water Supply Wells





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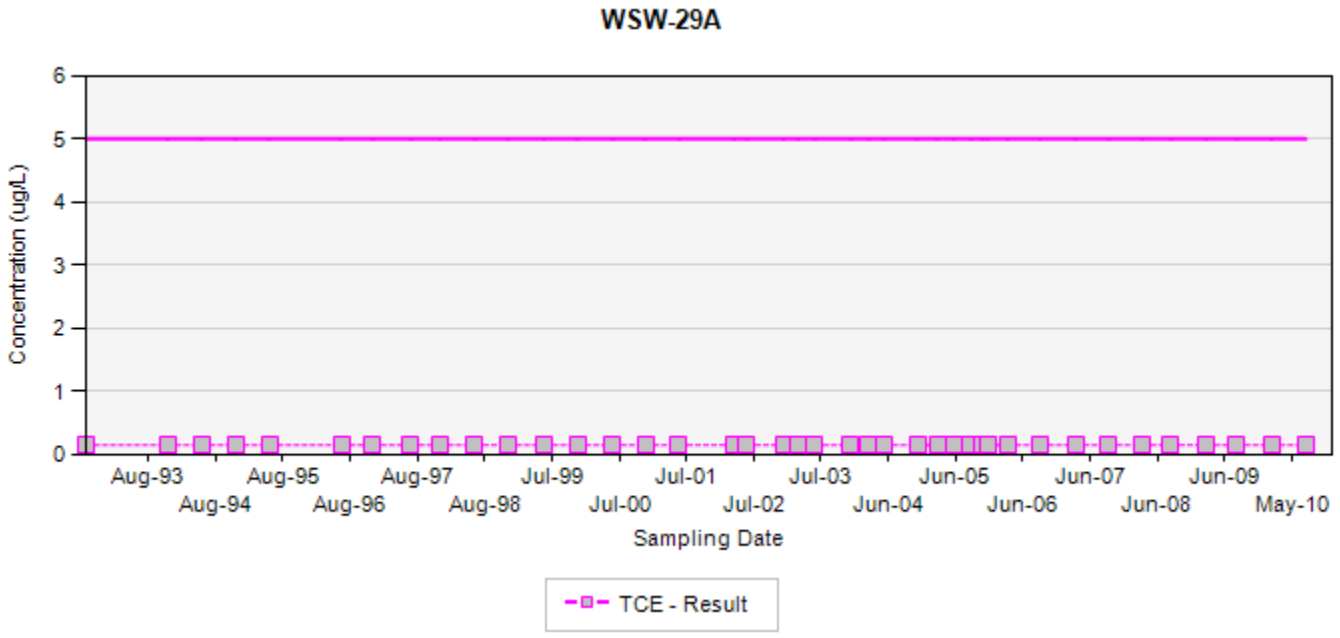
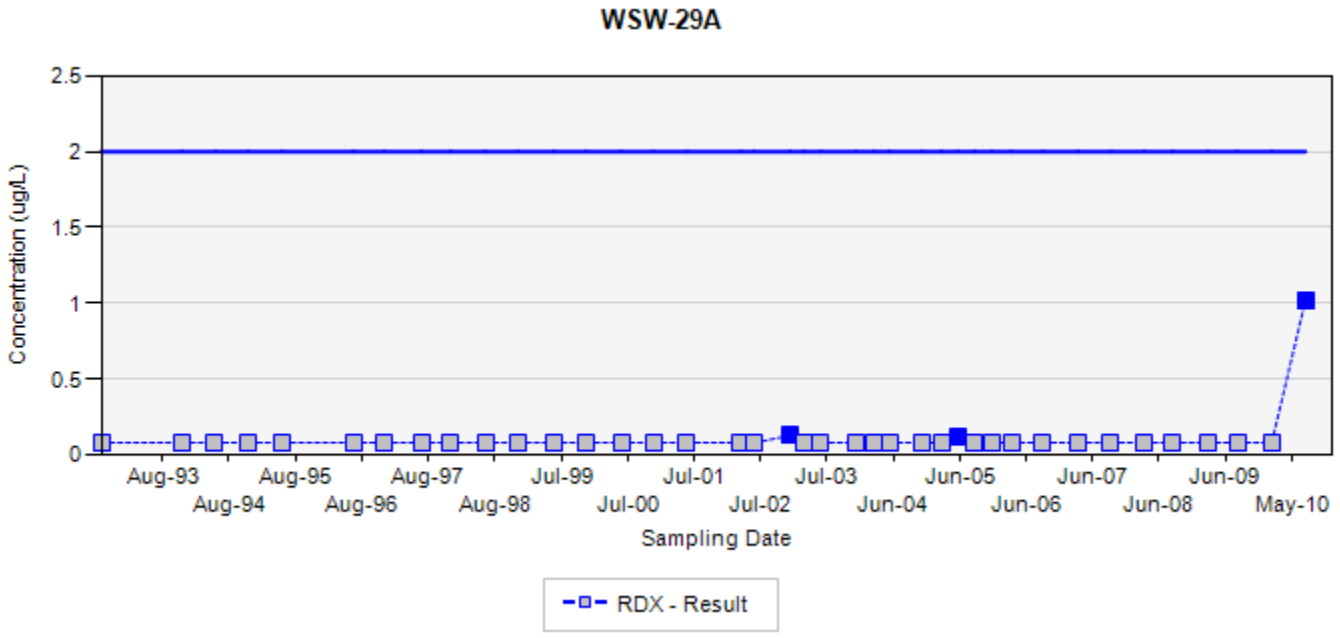
Appendix C
Concentration Trend Charts for Water Supply Wells





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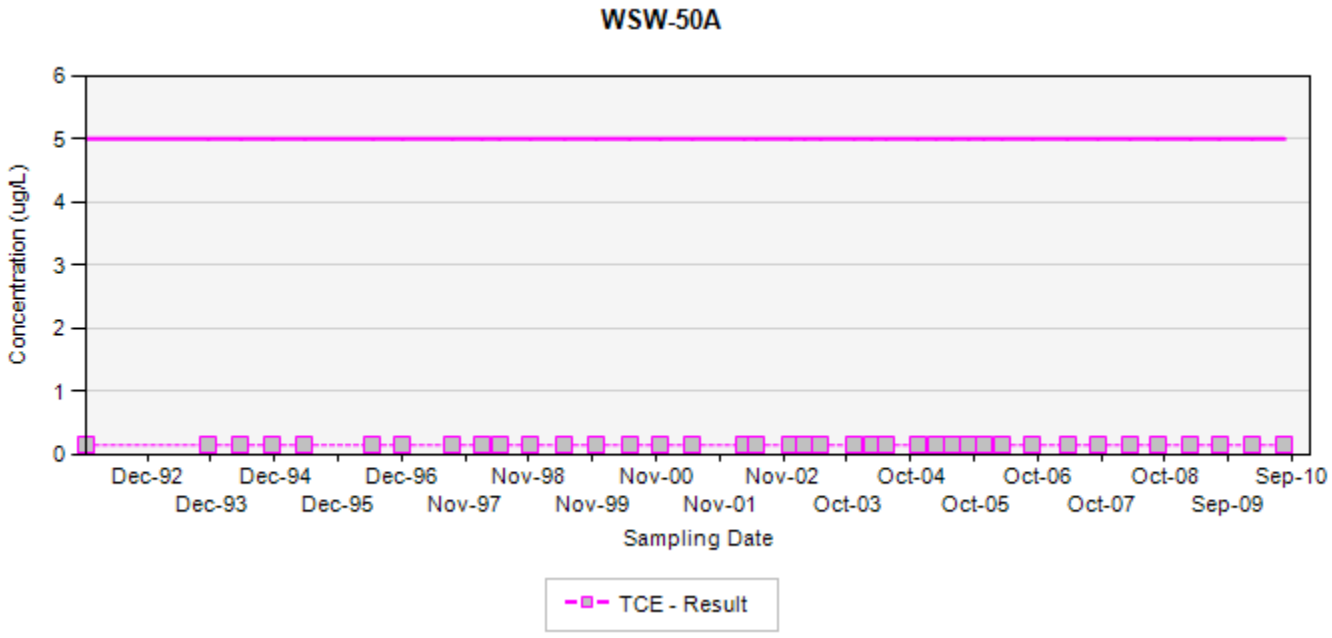

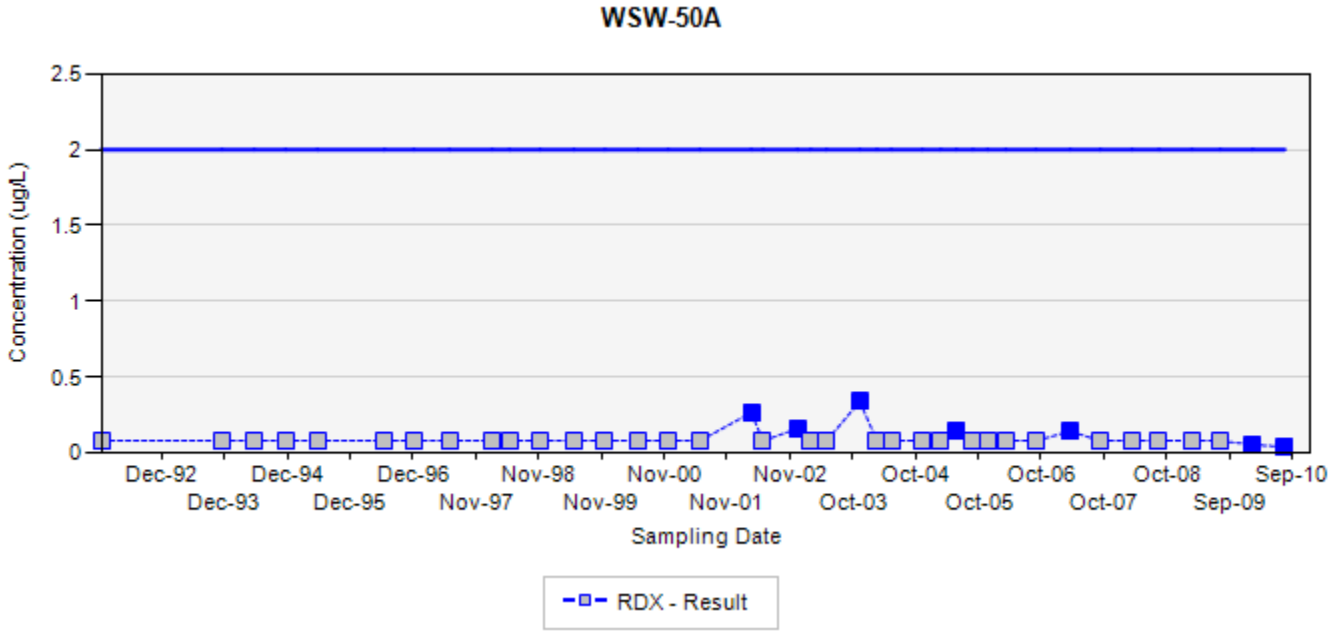

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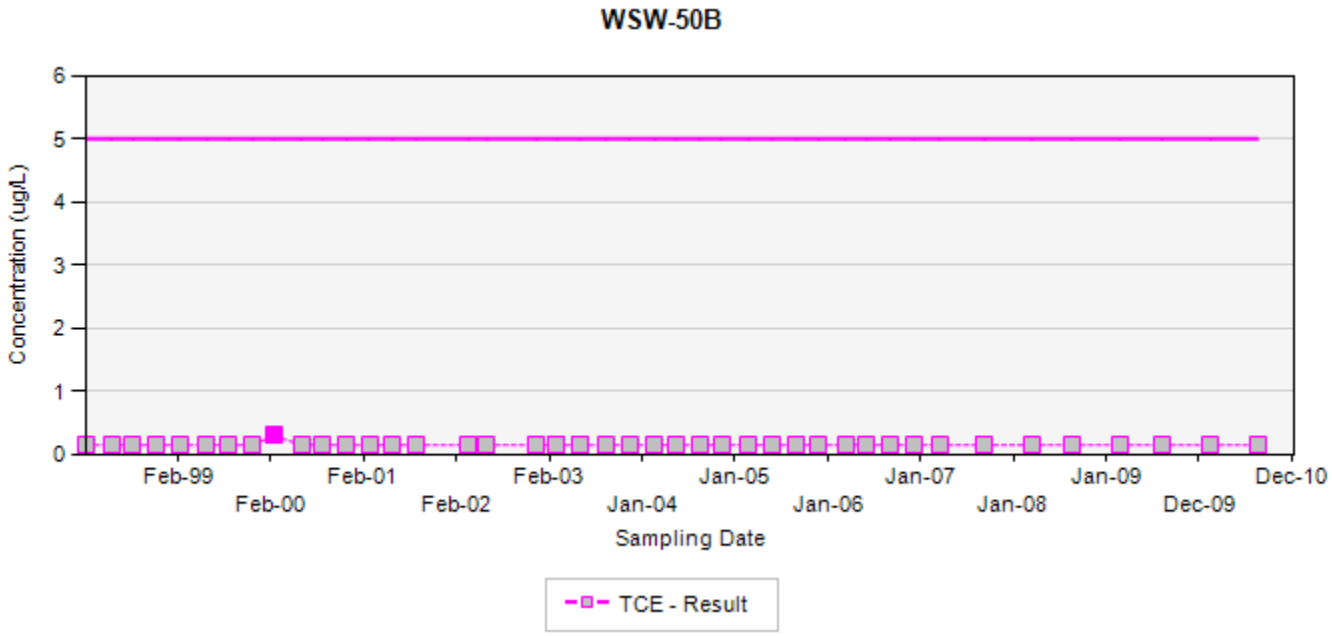

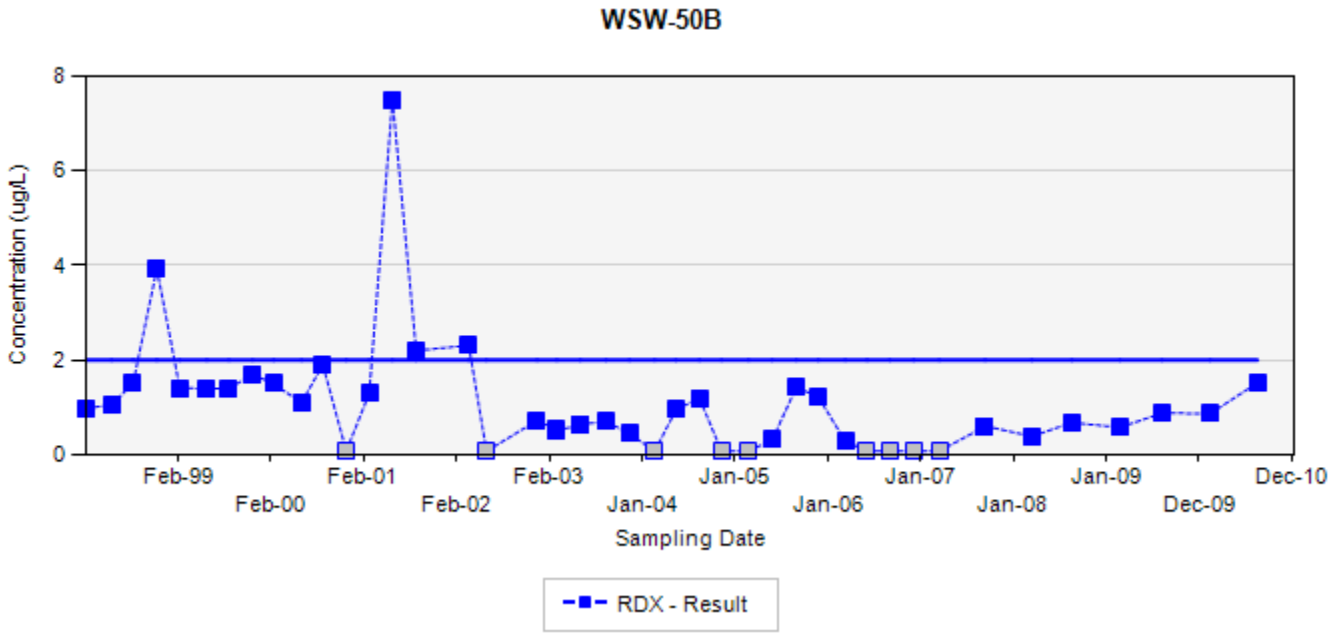

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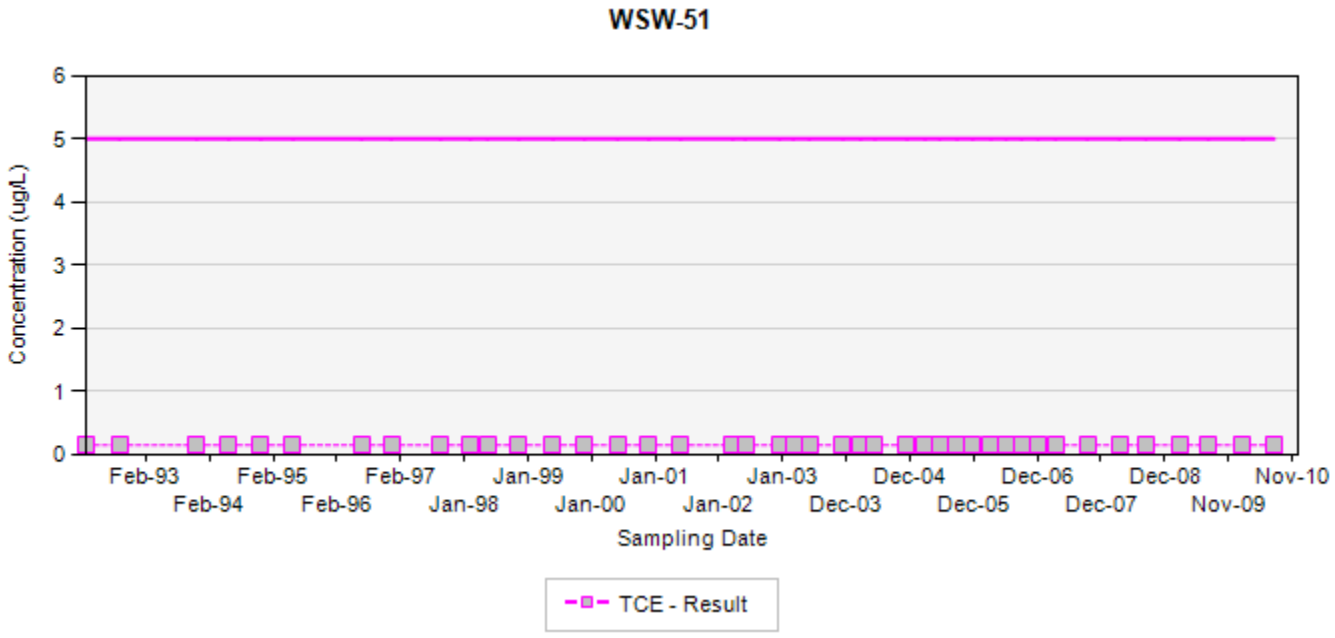

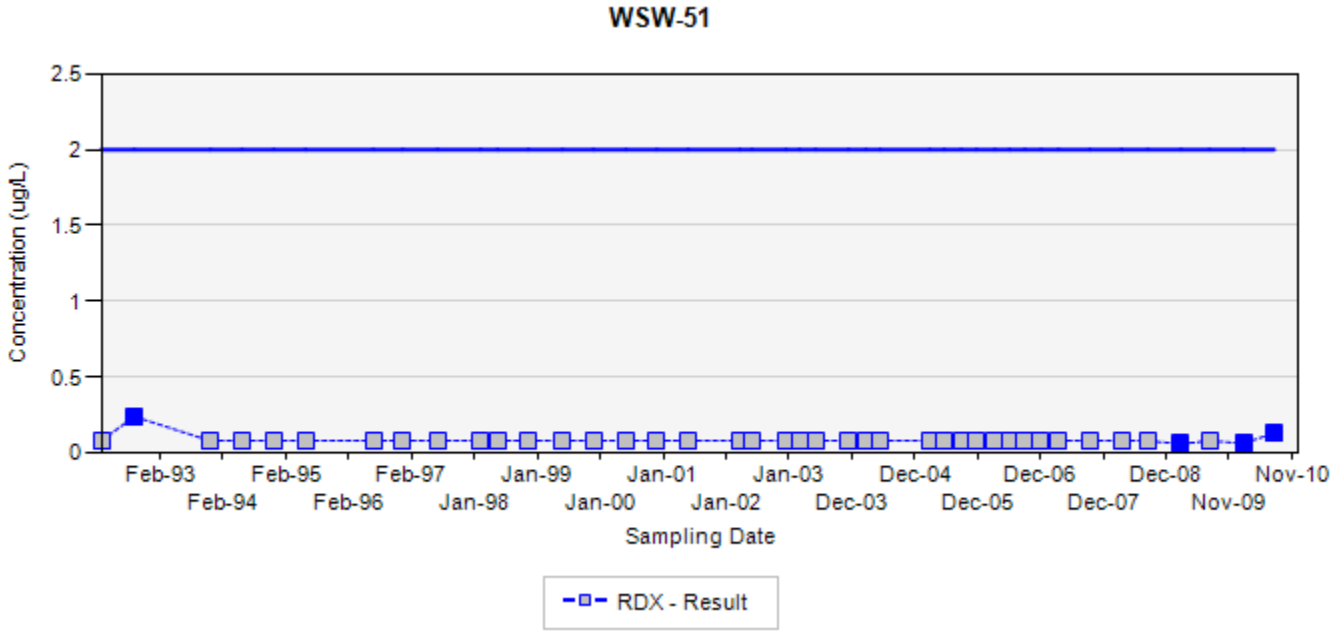

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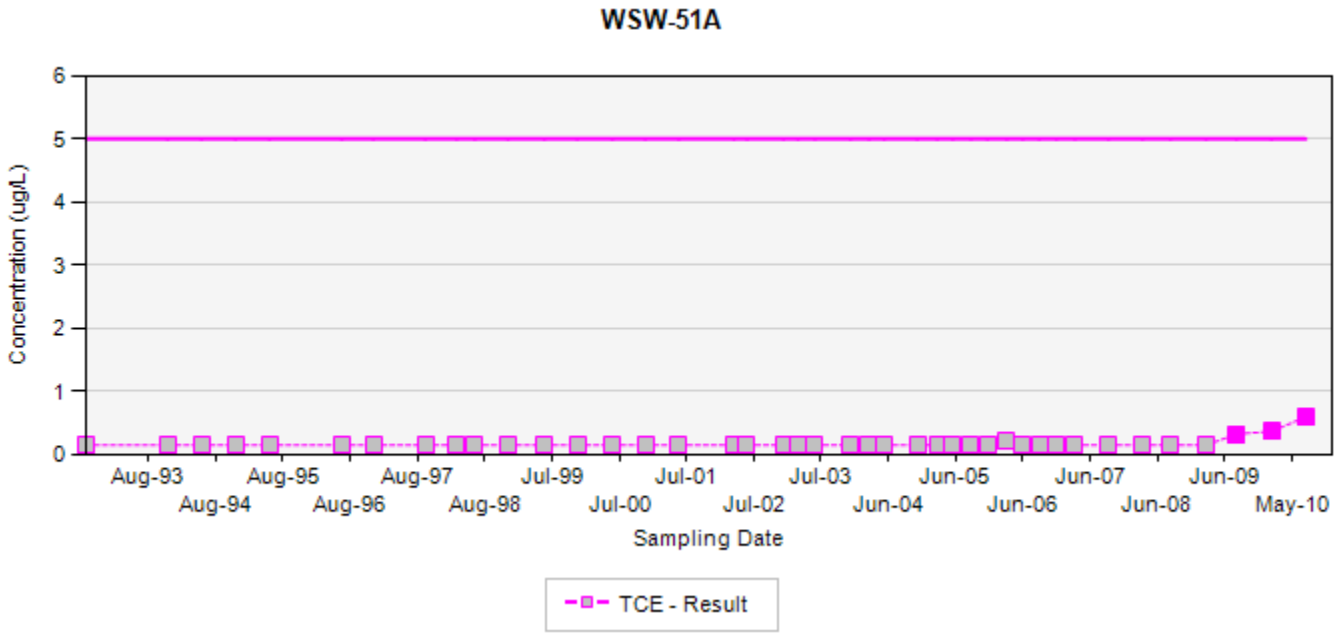

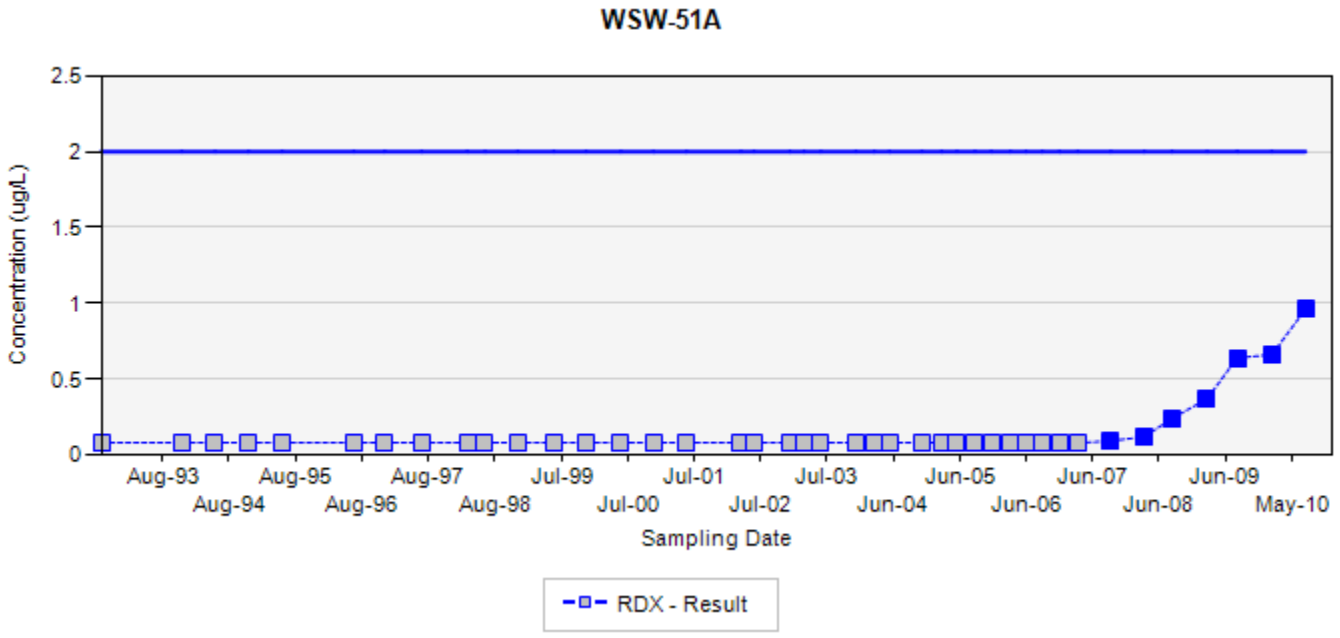

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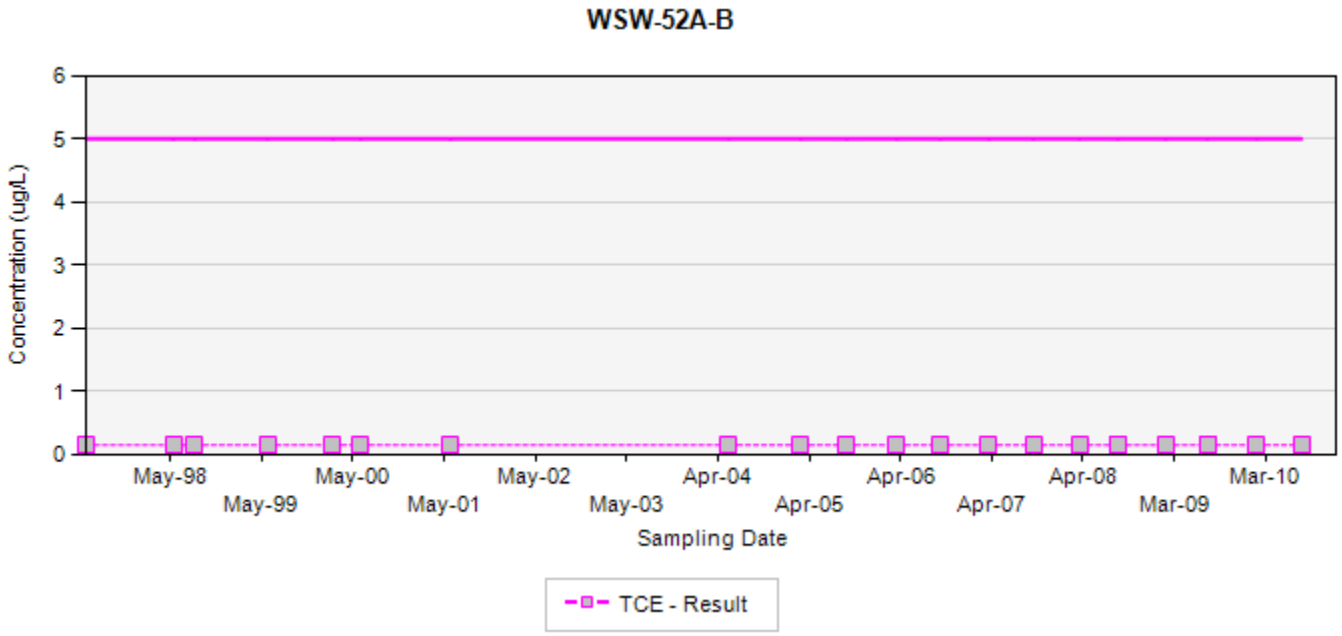

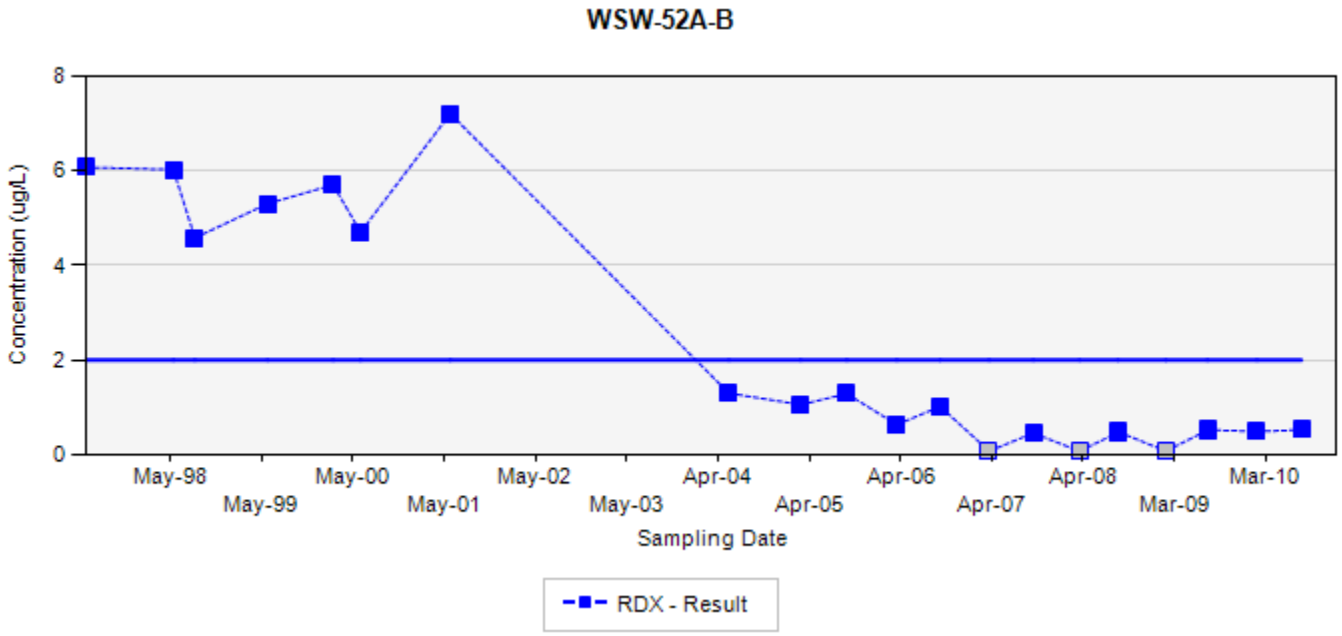

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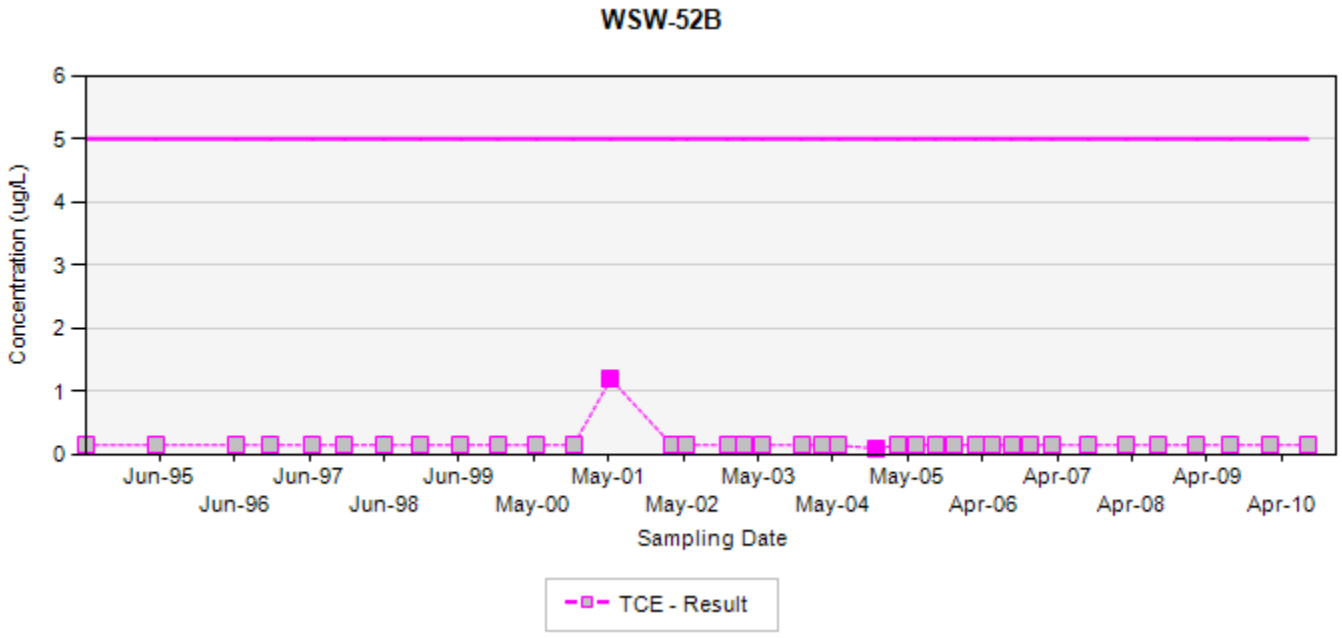

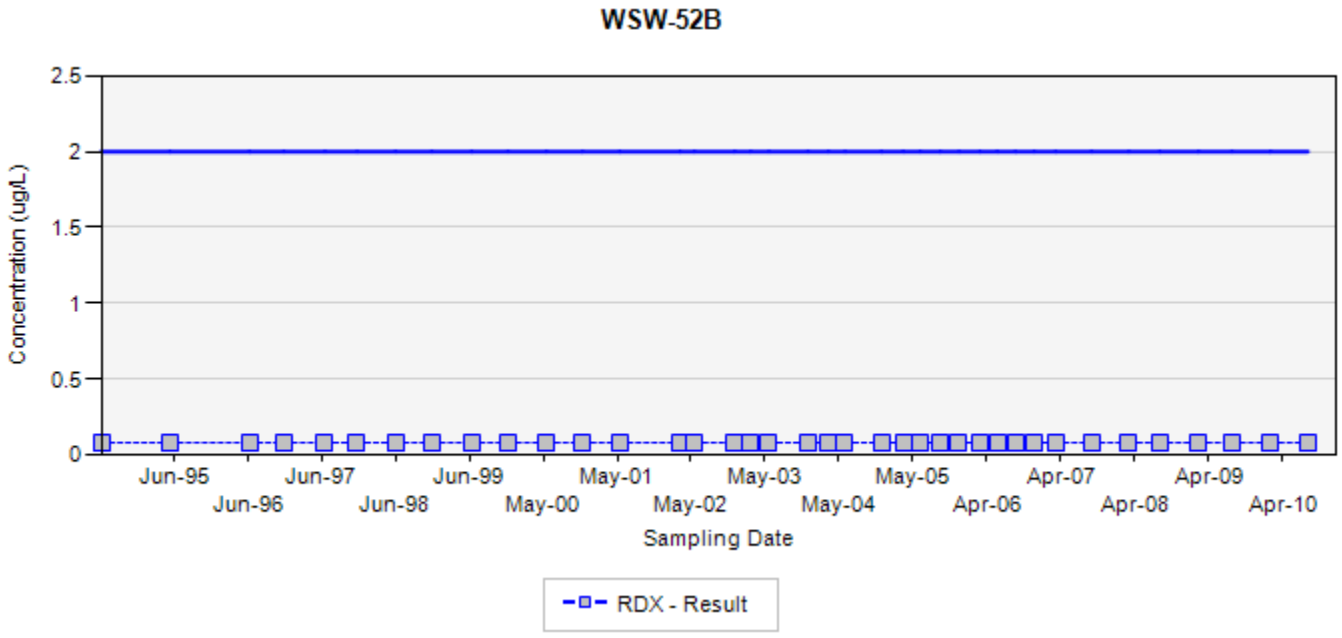

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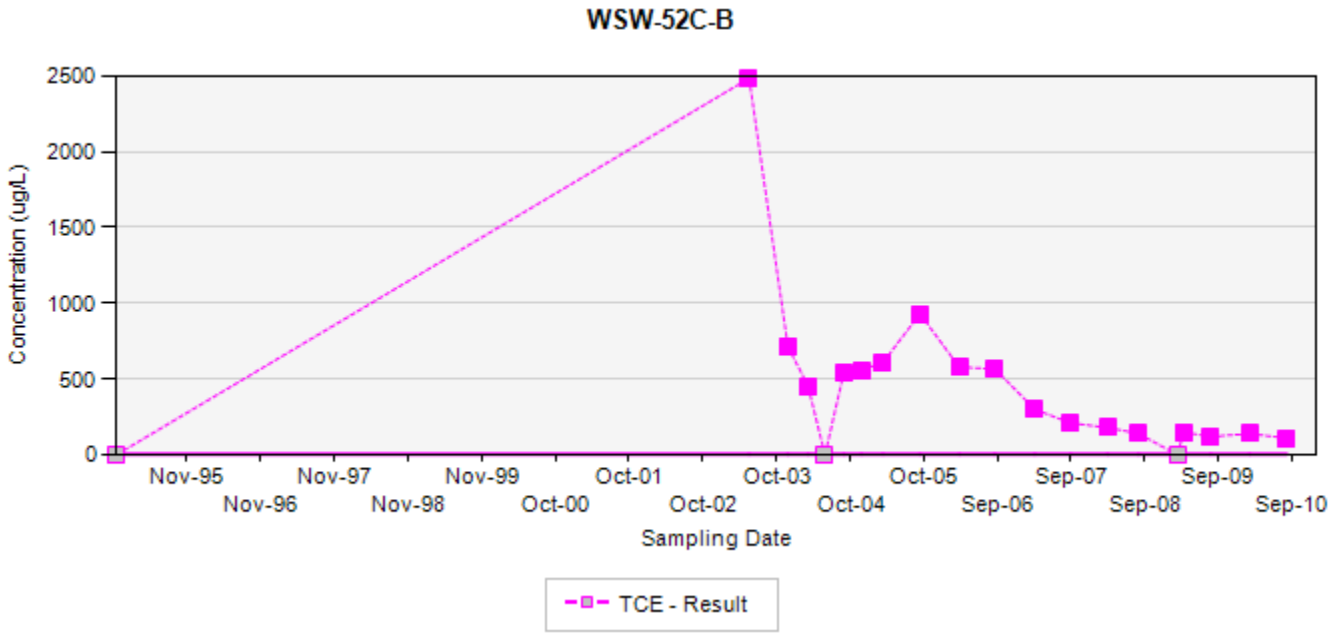

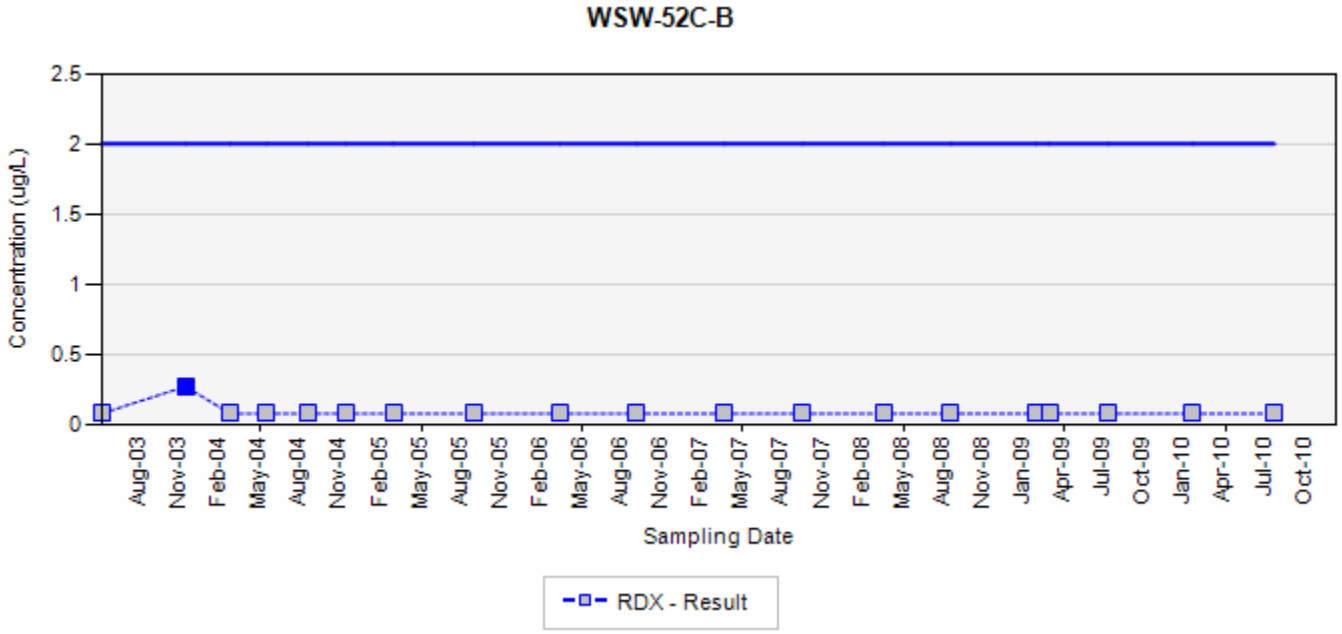

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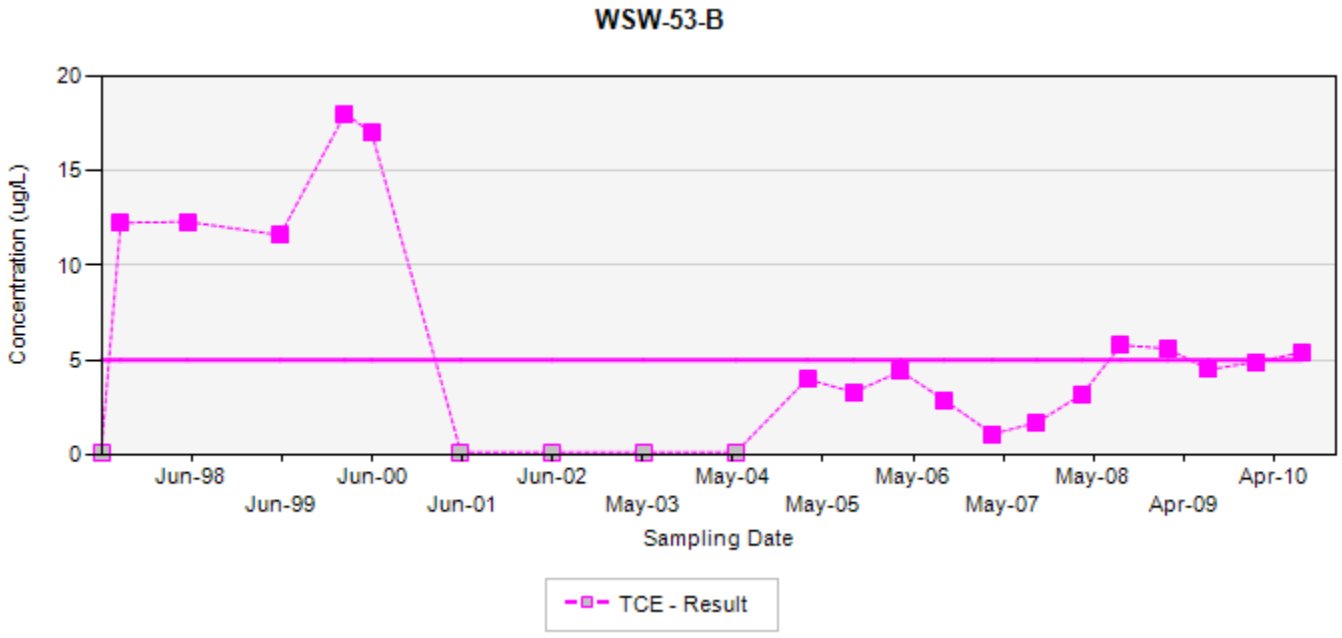

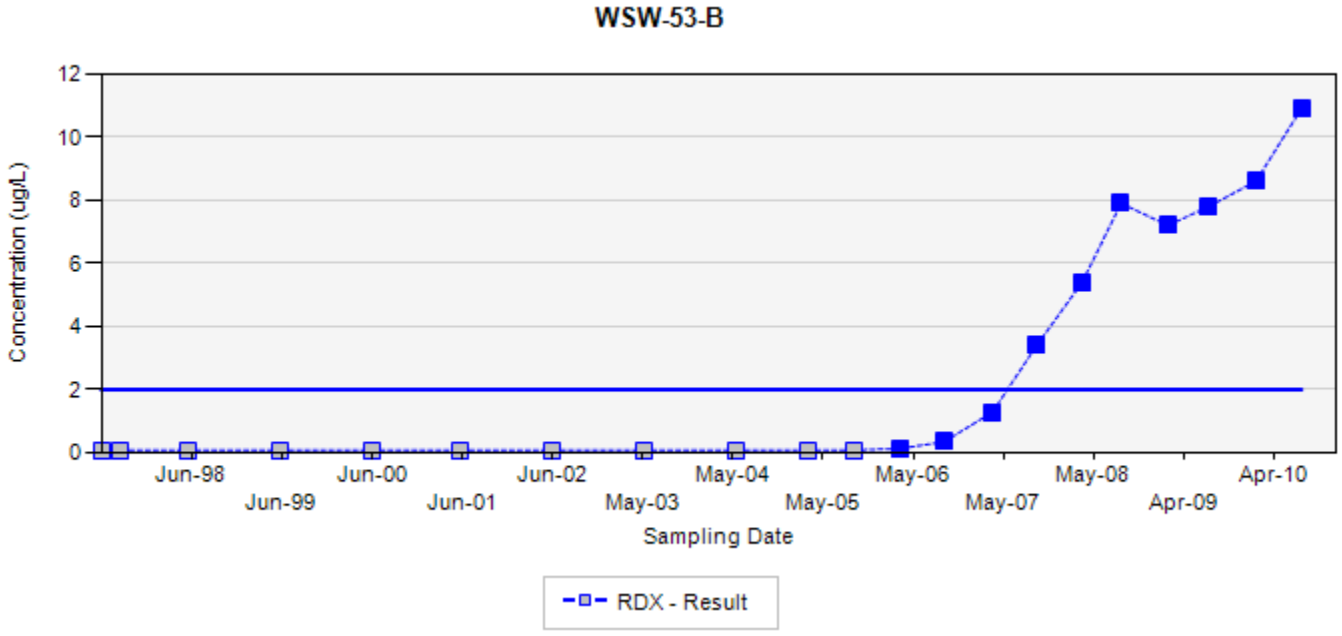

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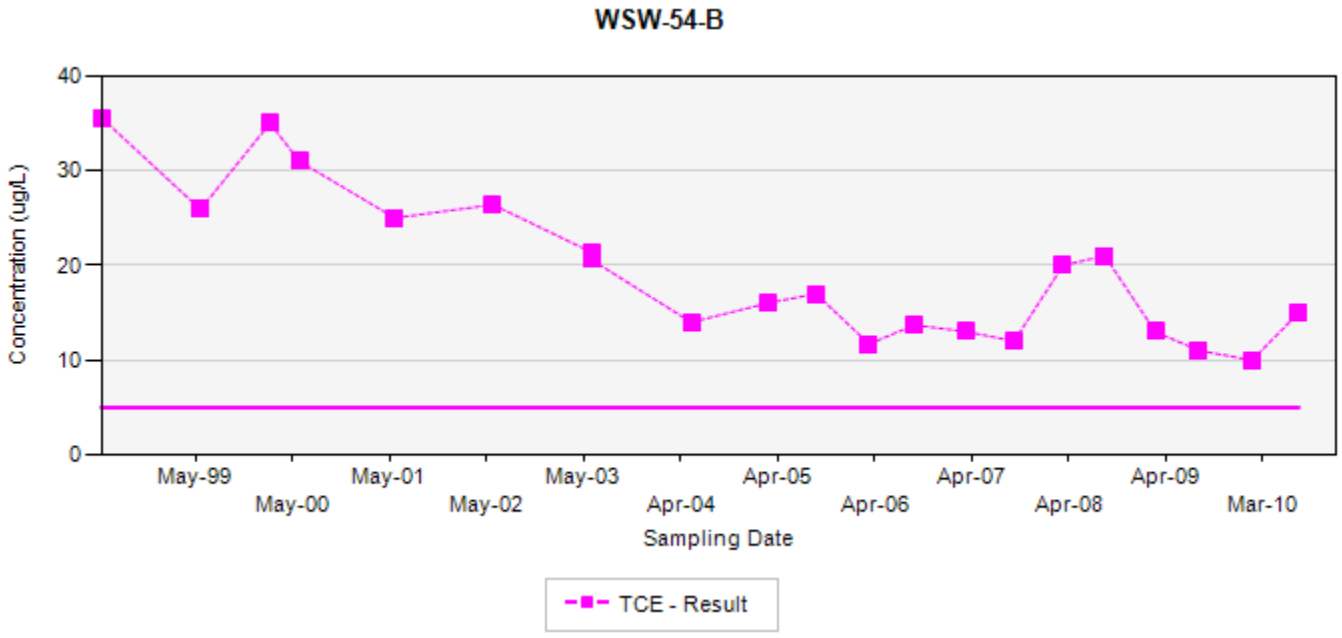

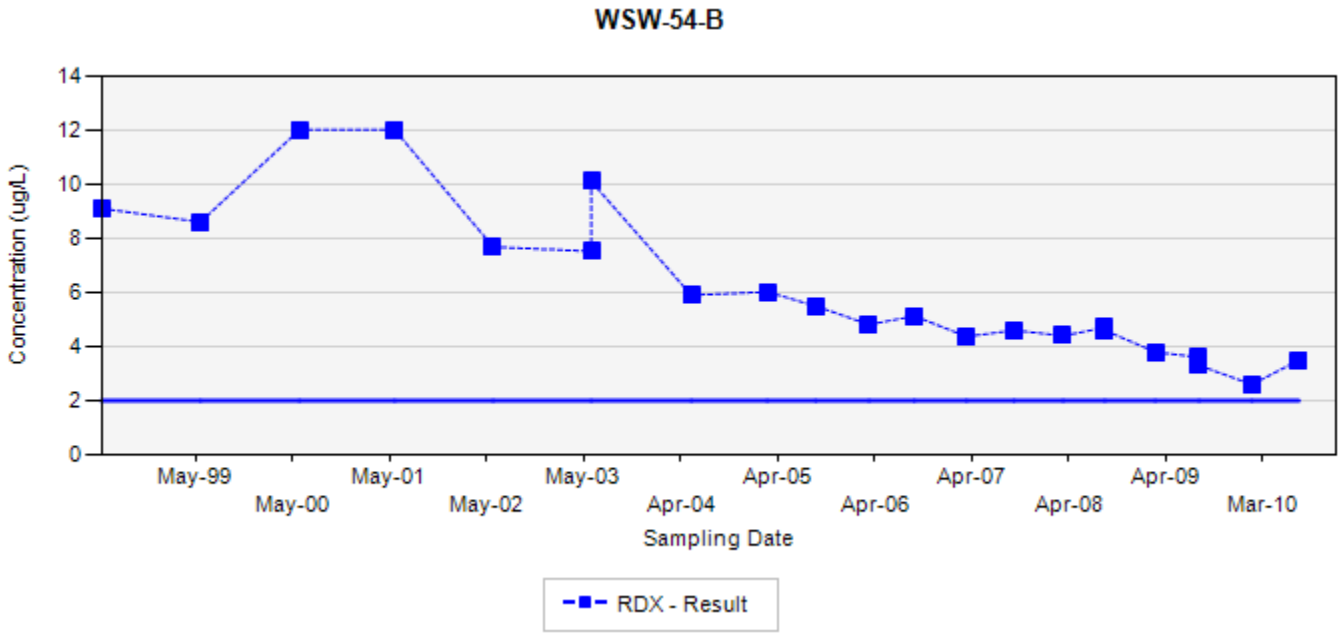

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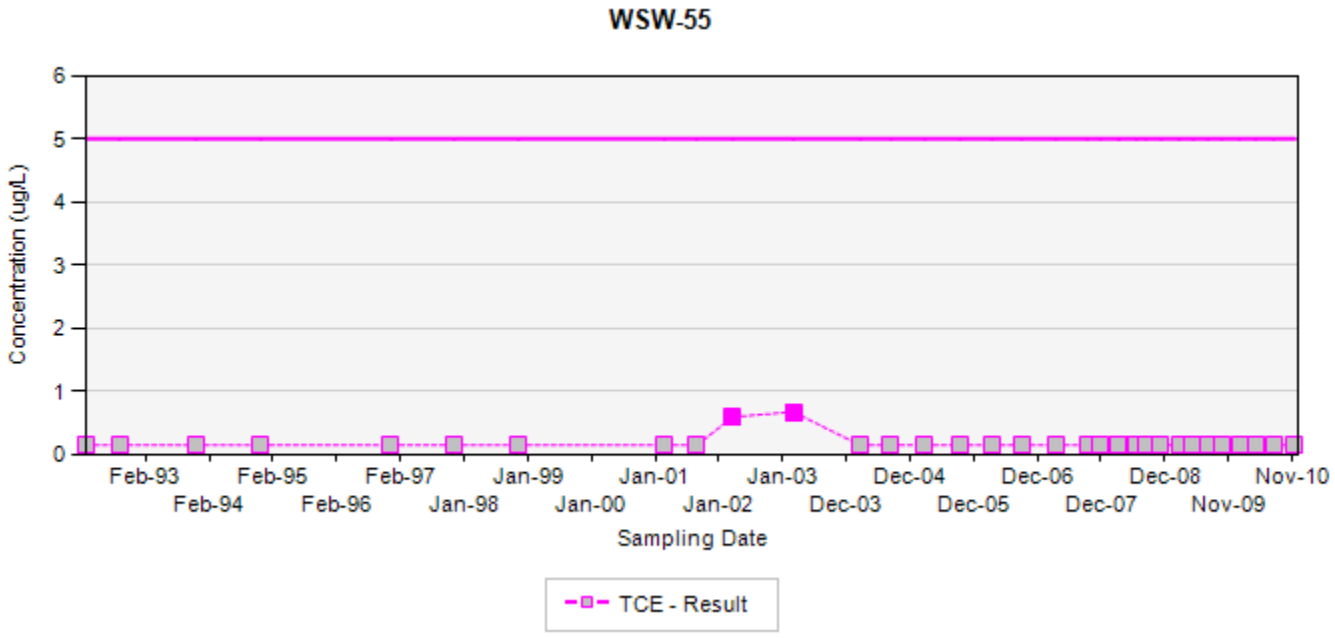

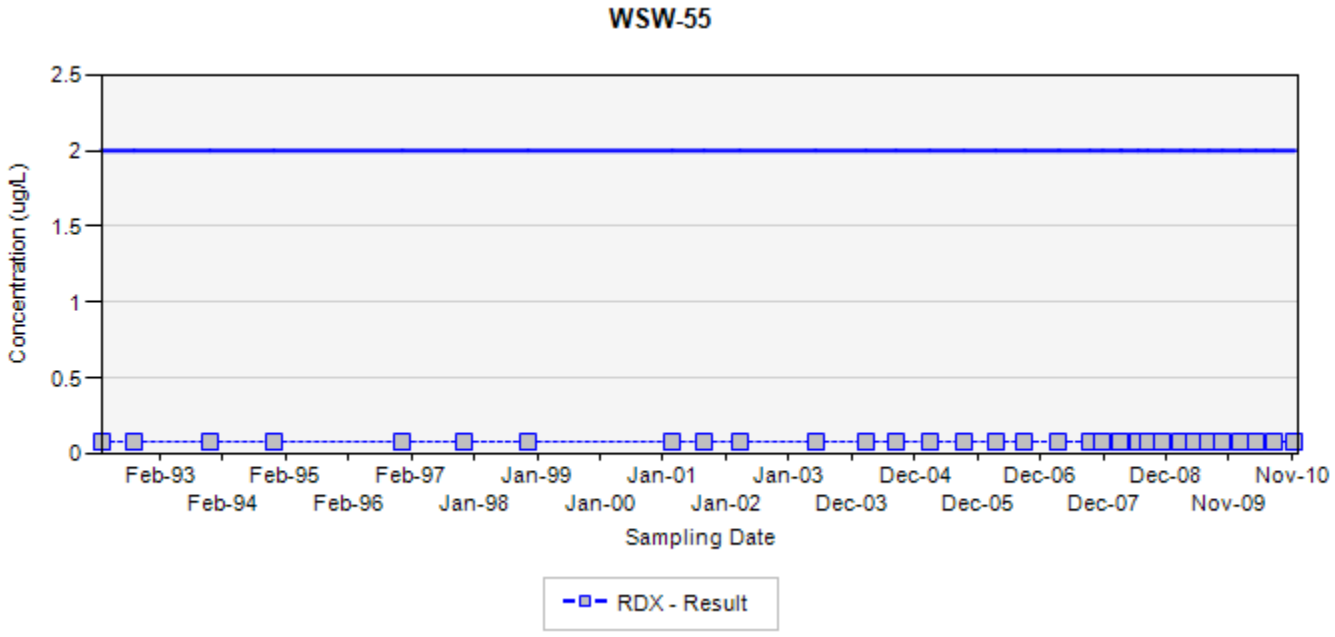

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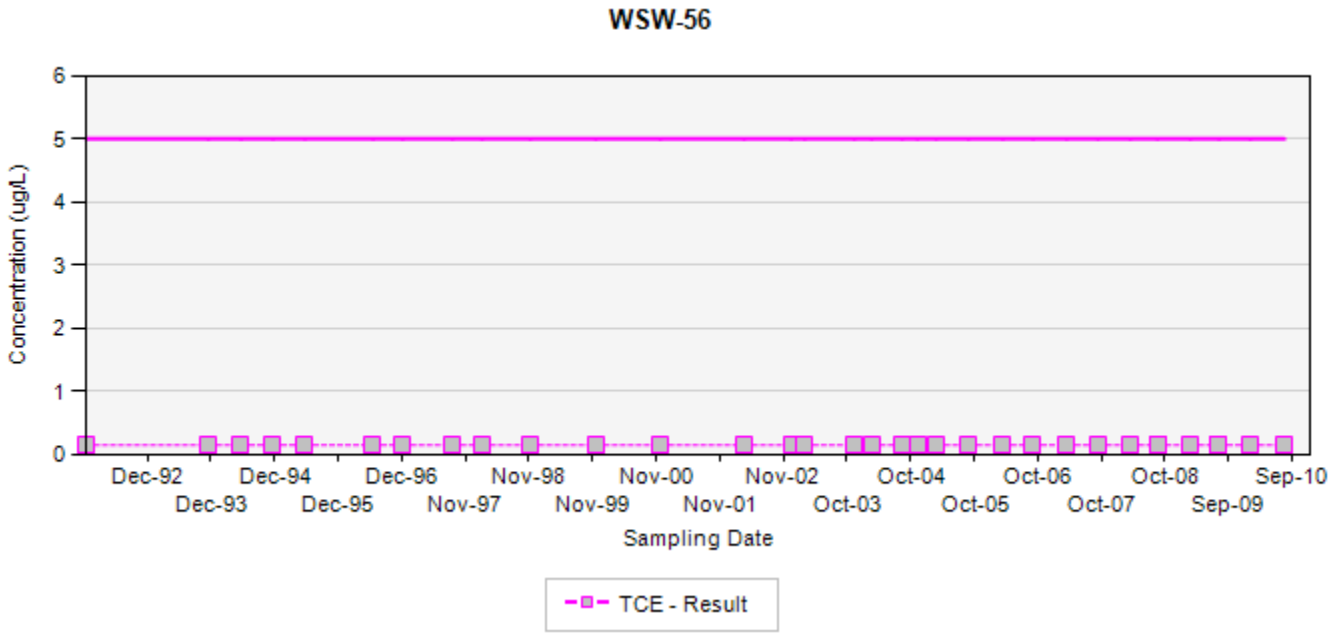

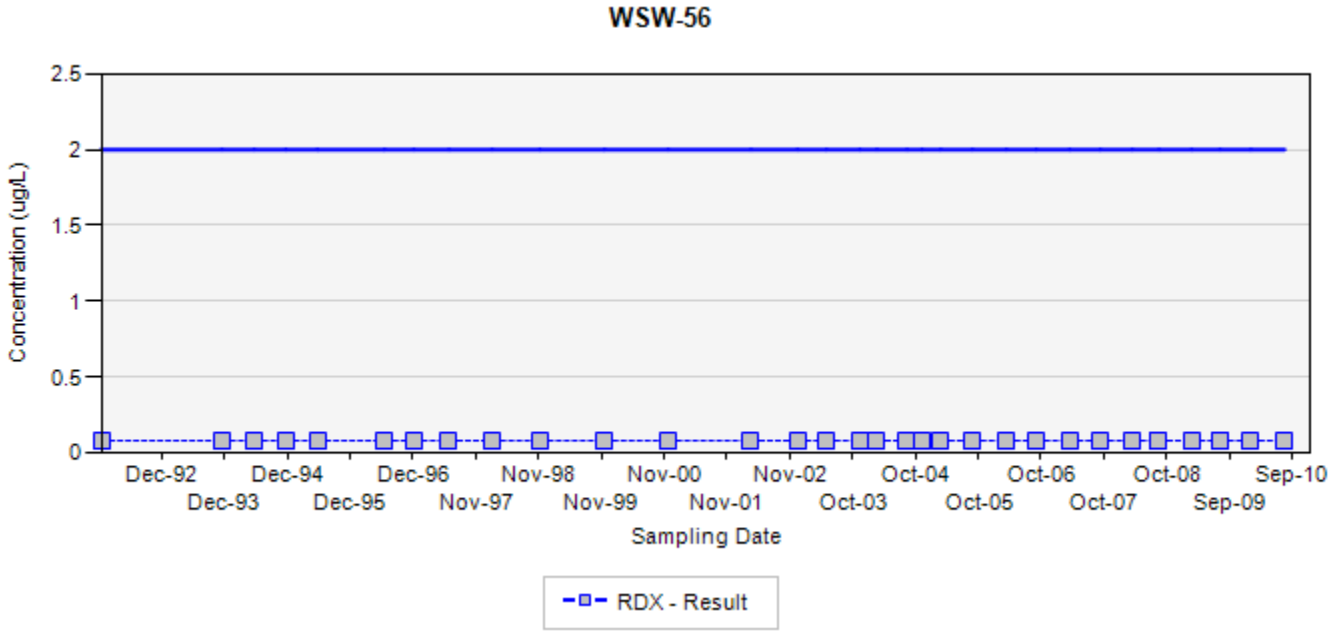

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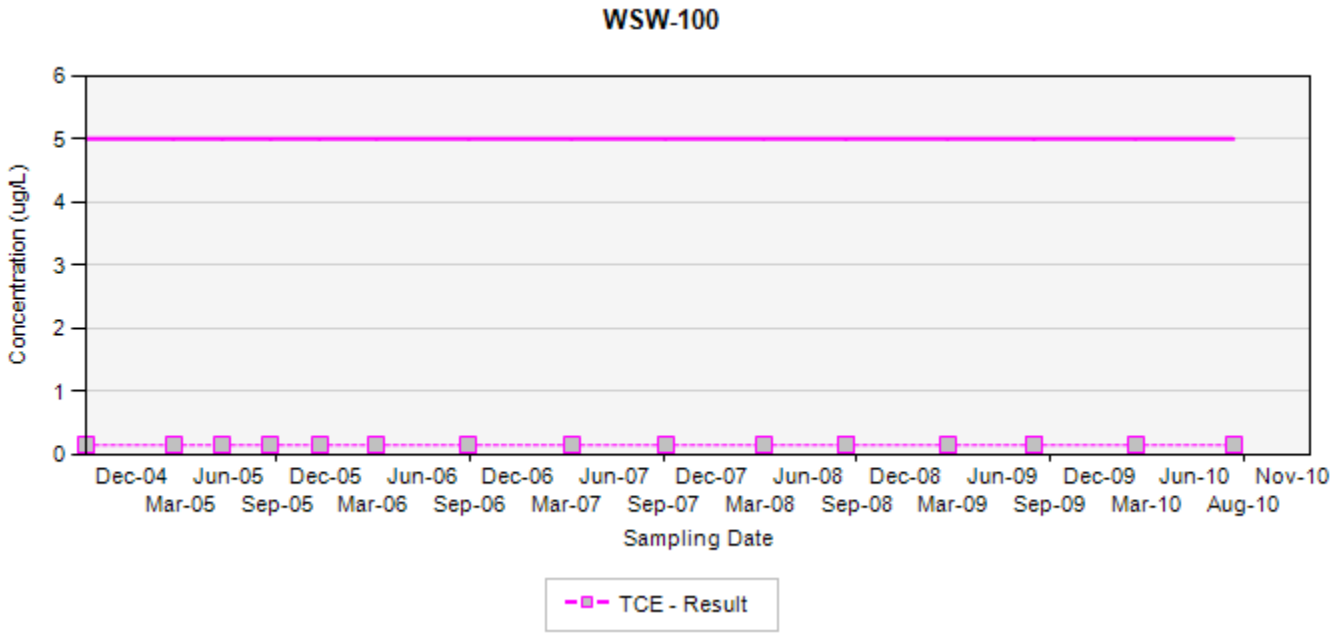

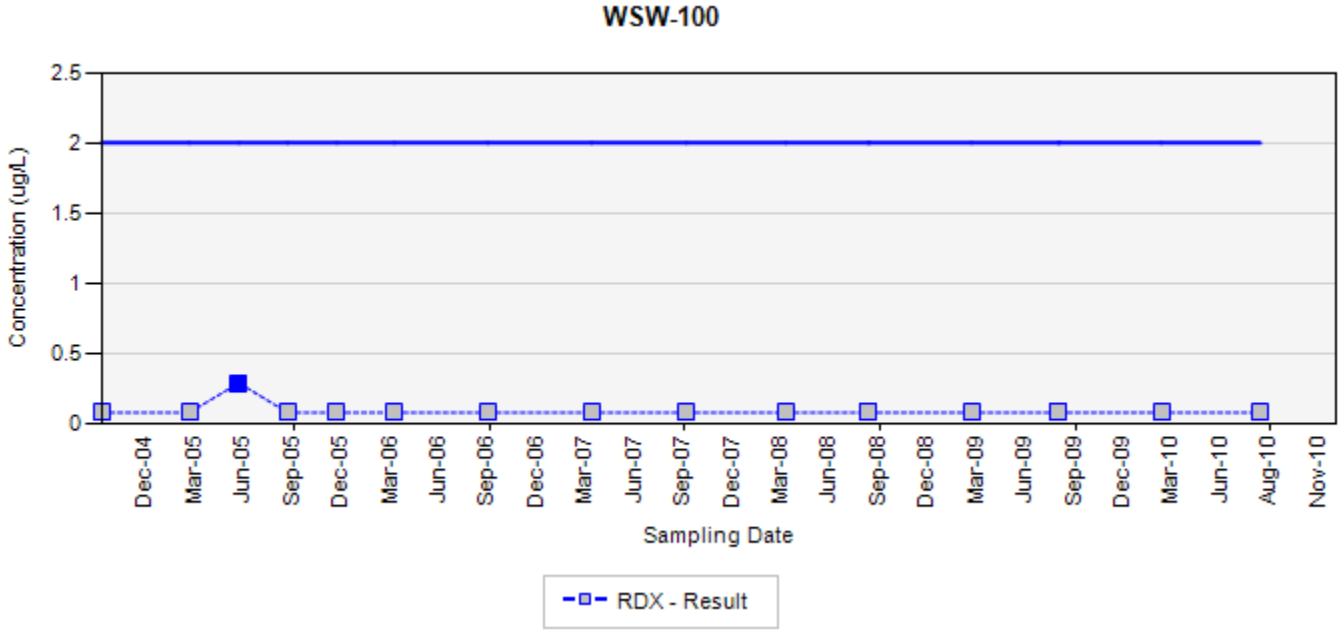

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Appendix D
Inputs and Assumptions for Transport Simulations

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Appendix D
Table D-1
General Assumptions for CE Transport Simulations
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Assumptions	Reference	Figure, Table, or Section
Initial Plumes	2010 CE (this document)	Figure 1-2
Former Nebraska Ordnance Plant Extraction Wells Pumping Rates	2010 CE (this document)	Table D-4
Metropolitan Utilities District (Omaha) Pumping Rates	2010 CE (this document)	Table D-5
Other Municipal Wells (Memphis, Mead, Wahoo, Ithaca, Ashland)	2010 CE (this document)	Table D-6
Lincoln Water Service Pumping Rates	2010 CE (this document)	Table D-7
Irrigation Wells Pumping Rates	2010 CE (this document)	Table D-8
Initial Heads	GWM10 Calibration, Stress Period 22, Time Step 10 (8/27/2010), GWM10 Update	Section 5.2.2
Boundary Conditions	GWM10 Update	Section 4.4
Hydraulic Conductivity	GWM10 Update	Section 5.4.1
Storage Coefficients	GWM10 Update	Table 5-7
Effective porosity	GWM10 Update	Table 5-7
Boundary Conductance	GWM10 Update	Section 5.4.5
Evapotranspiration, Platte Valley (1)	GWM10 Update	Section 5.4.3
Evapotranspiration, Phreatophyte Zone (1)	GWM10 Update	Section 5.4.3
Recharge, Platte Valley(2)	GWM10 Update	Section 5.4.2
Recharge, Todd Valley and Wahoo Valley (2)	GWM10 Update	Section 5.4.2
Dispersivity	GWM10 Update	Table 6-1
Bulk Density	GWM10 Update	Table 6-1
TCE Half-Life	GWM10 Update	Table 6-1
MT3DMS Computation Algorithm	GWM10 Update	Section 6.1
Distribution Coefficient	GWM10 Update	Table 6-1

Notes:
(1) Refer to Table D-2 for details
(2) Refer to Table D-3 for details
(3) CE = Containment Evaluation
(4) GWM10 = 2010 Groundwater Model

Appendix D
Table D-2
Evapotranspiration Assumptions
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

	Evapotranspiration Rate (feet/day)		Evapotranspiration Rate (inches/day)	
Transient (2 Stress Periods):	Non-Irrigation Season	Irrigation Season	Non-Irrigation Season	Irrigation Season
Phreatophyte Zone	9.4E-03	1.88E-02	7.83E-04	1.57E-03
Platte Valley	4.0E-03	8.0E-03	3.33E-04	6.67E-04
Todd Valley, Wahoo Valley	1.0E-03	1.8E-03	8.33E-05	1.5E-04

Appendix D
Table D-3
Recharge Assumptions
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

	Recharge Rate (feet/day)		Recharge Rate (inches/day)	
Transient (2 Stress Periods):	Non-Irrigation Season	Irrigation Season	Non-Irrigation Season	Irrigation Season
Todd Valley,Wahoo Valley	7.75E-04	1.485E-03	6.46E-05	1.24E-04
Platte Valley	1.033E-03	1.98E-03	8.61E-05	1.65E-04

Appendix D
Table D-4
Former NOP Extraction Well Pumping Rates
2010 Containment Evaluation
Former NOP, Mead, Nebraska

	gallons per minute						
Stress Period:	1-2	3-5	6-15	16-25	26-35	36-45	46-61
Management Period:	1	1	2	3	4	5	6
Start Date:	9/1/10	6/1/11	9/1/12	9/1/17	9/1/22	9/1/27	9/1/32
End Date:	5/31/11	8/31/12	8/31/17	8/31/22	8/31/27	8/31/32	8/31/40
EW-1	148	191	200	200	200	200	200
EW-2	0	0	0	0	0	0	0
EW-3	243	243	200	250	0	0	0
EW-4	66	66	100	100	0	0	100
EW-5	0	0	0	0	0	0	0
EW-6	52	52	70	100	0	0	0
EW-7	287	287	290	300	350	350	350
EW-9	139	139	123	110	100	100	0
EW-10	0	0	0	0	0	0	0
FEW-11	476	476	550	550	520	515	515
EW-12	225	225	234	234	234	234	234
EW-13	0	0	40	40	40	40	40
FEW-14	196	196	190	190	250	250	250
FEW-15	360	500	500	500	500	500	500
EW-16	106	106	190	190	190	190	190

	$feet^3$/day						
Stress Period:	1-2	3-5	6-15	16-25	26-35	36-45	46-61
Management Period:	1	1	2	3	4	5	6
Start Date:	9/1/10	6/1/11	9/1/12	9/1/17	9/1/22	9/1/27	9/1/32
End Date:	5/31/11	8/31/12	8/31/17	8/31/22	8/31/27	8/31/32	8/31/40
EW-1	28,492	36,771	38,504	38,504	38,504	38,504	38,504
EW-2	0	0	0	0	0	0	0
EW-3	46,825	46,825	38,500	48,125	0	0	0
EW-4	12,668	12,668	19,250	19,250	0	0	19,250
EW-5	0	0	0	0	0	0	0
EW-6	10,057	10,057	13,475	19,250	0	0	0
EW-7	55,178	55,178	55,825	57,750	67,375	67,375	67,375
EW-9	26,855	26,855	23,677	21,176	19,250	19,250	0
EW-10	0	0	0	0	0	0	0
FEW-11	91,556	91,556	105,875	105,875	100,100	99,138	99,138
EW-12	43,407	43,407	45,045	45,045	45,045	45,045	45,045
EW-13	0	0	7,700	7,700	7,700	7,700	7,700
FEW-14	37,697	37,697	36,575	36,575	48,125	48,125	48,125
FEW-15	69,371	96,260	96,250	96,250	96,250	96,250	96,250
EW-16	20,363	20,363	36,575	36,575	36,575	36,575	36,575

Notes:

(1) Values reported for Stress Periods 1-2 are based on average of September through December 2010 pumping rates.

(2) FEW-15 started continuously pumping in April 2010. Pumping rate for FEW-15 for stress periods 1-2 calculated from April and May 2010 pumping rates only.

EW - Extraction Well

Appendix D
Table D-5
MUD Platte West Well Field Pumping Rates
2010 Containment Evaluation
Former NOP, Mead, Nebraska

	feet^3/day							gallons per minute						
Stress Period	1,2	3	4	5	6	7,9...61	8,10...60	1,2	3	4	5	6	7,9...61	8,10...60
Start Date	9/1/2010	6/1/2011	9/1/2011	6/1/2012	9/1/2012	6/1	9/1	9/1/2010	6/1/2011	9/1/2011	6/1/2012	9/1/2012	6/1	9/1
End Date	5/31/2011	8/31/2011	5/31/2012	8/31/2012	5/31/2013	8/31	5/31	5/31/2011	8/31/2011	5/31/2012	8/31/2012	5/31/2013	8/31	5/31
PW94-2	163,414	311,350	103,238	311,350	103,238	311,350	103,238	849	1618	536	1618	536	1,618	536
PW91-3	72,809	596,750	596,750	596,750	596,750	596,750	596,750	378	3100	3100	3100	3100	3,100	3,100
PW04-4	1,688	0	0	0	0	0	0	9	0	0	0	0	0	0
PW04-5	1,764	334,180	110,168	334,180	110,168	334,180	110,168	9	1736	572	1736	572	1,736	572
PW04-6	73,192	0	0	0	0	0	0	380	0	0	0	0	0	0
PW04-7	6,345	225,206	0	225,206	0	225,206	0	33	1170	0	1170	0	1,170	0
PW04-8	1,973	334,180	259,509	334,180	259,509	334,180	259,509	10	1736	1348	1736	1348	1,736	1,348
PW04-9	1,008	334,180	110,168	334,180	110,168	334,180	110,168	5	1736	572	1736	572	1,736	572
PW04-10	84,512	0	0	0	0	0	0	439	0	0	0	0	0	0
PW04-11	25,501	0	0	0	0	0	0	132	0	0	0	0	0	0
PW04-12	192,662	0	86,028	0	86,028	0	86,028	1001	0	447	0	447	0	447
PW04-13	78,693	225,206	149,342	225,206	149,342	225,206	149,342	409	1170	776	1170	776	1,170	776
PW04-14	39,418	259,452	86,028	259,452	86,028	259,452	86,028	205	1348	447	1348	447	1,348	447
PW04-15	51,889	125,549	301,802	125,549	301,802	125,549	301,802	270	652	1568	652	1568	652	1,568
PW04-16	211,533	108,974	184,839	108,974	184,839	108,974	184,839	1099	566	960	566	960	566	960
PW04-17	1,107	385,000	215,773	385,000	215,773	385,000	215,773	6	2,000	1,121	2,000	1,121	2,000	1,121
PW91-30	52,579	596,750	596,750	596,750	596,750	596,750	596,750	273	3,100	3,100	3,100	3,100	3,100	3,100
PW94-31	166,592	163,202	276,834	163,202	276,834	163,202	276,834	865	848	1,438	848	1,438	848	1,438
PW94-32	243,850	0	0	0	0	0	0	1267	0	0	0	0	0	0
PW94-33	108,117	311,350	103,238	311,350	103,238	311,350	103,238	562	1,618	536	1,618	536	1,618	536
PW94-34	335,179	442,750	244,899	442,750	244,899	442,750	244,899	1741	2,300	1,272	2,300	1,272	2,300	1,272
PW94-35	358,465	324,324	215,061	324,324	215,061	324,324	215,061	1862	1,685	1,117	1,685	1,117	1,685	1,117
PW94-36	201,320	539,000	418,572	539,000	418,572	539,000	418,572	1046	2,800	2,175	2,800	2,175	2,800	2,175
PW94-37	300,133	500,500	392,334	500,500	392,334	500,500	392,334	1559	2,600	2,038	2,600	2,038	2,600	2,038
PW04-38	49,960	0	358,339	0	358,339	0	358,339	260	0	1,862	0	1,862	0	1,862
PW04-39	268,024	272,426	0	272,426	0	272,426	0	1392	1,415	0	1,415	0	1,415	0
PW04-40	125,256	404,250	316,894	404,250	316,894	404,250	316,894	651	2,100	1,646	2,100	1,646	2,100	1,646
PW04-41	336,877	0	0	0	0	0	0	1750	0	0	0	0	0	0
PW04-42	39,275	91,014	216,755	91,014	216,755	91,014	216,755	204	473	1,126	473	1,126	473	1,126
PW04-43	222,086	272,426	0	272,426	0	272,426	0	1154	1,415	0	1,415	0	1,415	0
PW04-44	0	94,152	95,191	94,152	95,191	94,152	95,191	0	489	495	489	495	489	495
PW04-45	360,317	272,426	180,661	272,426	180,661	272,426	180,661	1872	1,415	939	1,415	939	1,415	939
PW04-46	207,610	442,750	50,281	442,750	50,281	442,750	50,281	1078	2,300	261	2,300	261	2,300	261
PW04-47	59,264	0	0	0	0	0	0	308	0	0	0	0	0	0
PW04-48	62,869	279,125	216,755	279,125	216,755	279,125	216,755	327	1,450	1,126	1,450	1,126	1,450	1,126
PW04-49	0	239,990	79,580	239,990	79,580	239,990	79,580	0	1,247	413	1,247	413	1,247	413
PW04-50	58,683	0	0	0	0	0	0	305	0	0	0	0	0	0
PW04-51	5,403	91,014	31,705	91,014	31,705	91,014	31,705	28	473	165	473	165	473	165
PW04-52	11,879	207,573	0	207,573	0	207,573	0	62	1,078	0	1,078	0	1,078	0
PW04-53	102,276	188,111	122,700	188,111	122,700	188,111	122,700	531	977	637	977	637	977	637
PW04-54	89,926	279,125	94,056	279,125	94,056	279,125	94,056	467	1,450	489	1,450	489	1,450	489
PW04-55	62,902	0	0	0	0	0	0	327	0	0	0	0	0	0

Notes:

(1) Stress Periods 1 and 2 based on average of pumping rates from September-December 2010. (MUD, 2011).
MUD = Metropolitan Utilities District

Source:

Metropolitan Utilities District (MUD), 2011. *Platte West Water Production Facilities, 2010 Ground Water Well Report, Table 1* . Excel© spreadsheet transmitted via email from MUD to Brad Brink, CENWK. April 14, 2011 .

Appendix D
Table D-6
Ashland, Ithaca, Mead, and Memphis Measured and Estimated Pumping Rates
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

	feet^3/day					gallons per minute				
Stress Period	1,2	3	4	5,7,9…61	6,8,10…60	1,2	3	4	5,7,9…61	6,8,10…60
Start Date	9/1/2010	6/1/2011	9/1/2011	6/1	9/1	9/1/2010	6/1/2011	9/1/2011	6/1	9/1
End Date	5/31/2011	8/31/2011	5/31/2012	8/31	5/31	5/31/2011	8/31/2011	5/31/2012	8/31	5/31
Ashland(82-1)	10,107	17,651	9,913	17,651	9,913	53	92	51	92	51
Ashland(#4)	10,107	17,651	9,913	17,651	9,913	53	92	51	92	51
Ashland(#5)	10,107	17,651	9,913	17,651	9,913	53	92	51	92	51
Ashland(2006-1)	10,107	17,651	9,913	17,651	9,913	53	92	51	92	51
Ashland Total	40,429	70,604	39,652	70,604	39,652	210	367	206	367	206
Ithaca(1)	1,116	1,116	1,116	1,116	1,116	5.8	5.8	5.8	5.8	5.8
Ithaca(2)	1,116	1,116	1,116	1,116	1,116	5.8	5.8	5.8	5.8	5.8
Ithaca Total	2,232	2,232	2,232	2,232	2,232	12	12	12	12	12
Mead(1)	2,455	3,212	1,925	3,212	1,925	13	17	10	17	10
Mead(2)	2,455	3,212	1,925	3,212	1,925	13	17	10	17	10
Mead(3)	2,455	3,212	1,925	3,212	1,925	13	17	10	17	10
Mead(4)	2,455	3,212	1,925	3,212	1,925	13	17	10	17	10
Mead Total	9,819	12,849	7,700	12,849	7,700	51	67	40	67	40
Memphis(73-1)	729	729	729	729	729	3.8	3.8	3.8	3.8	3.8
Memphis(94-1)	729	729	729	729	729	3.8	3.8	3.8	3.8	3.8
Memphis Total	1,458	1,458	1,458	1,458	1,458	7.6	7.6	7.6	7.6	7.6

Notes:

(1) Ashland stress period 1,2 pumping rates are average of September - December 2010 measured rates (City of Ashland, 2011).

(2) Rates for Ithaca are population based, assuming a 100 gallons per day per capita water use ("Estimated Water Use in Nebraska, 1995", NNRC, 1998), and a 2005 population of 167 ("Population Estimates and Census Data, 2005 Sub-County Population Estimates", NDNR, 2006).

(3) Mead stress period 1,2 pumping rates are average of September - December 2010 measured rates (Village of Mead, 2011).

(4) Rates for Memphis are population based, assuming a 100 gallons per day per capita water use ("Estimated Water Use in Nebraska, 1995", NNRC, 1998), and a 2005 population of 109 ("Population Estimates and Census Data, 2005 Sub-County Population Estimates", NDNR, 2006).

(5) Ashland and Mead stress period 3-60 pumping rates are based on an average of 2005-2008 seasonal pumping rates.

Sources:

City of Ashland, 2011. Ashland Well Production Since 2004. Excel© spreadsheet transmitted via email from Kent Hoadley, City of Ashland, to Bradley Brink, USACE. April 14.

Nebraska Department of Natural Resources (NDNR), 2006. Relational/Tabular Databases, Population Estimates and Census Data, 2005 Sub-County Population Estimates. http://www.dnr.ne.gov/databank/census/SUB-EST2005-04-31.xls. Accessed September 2006.

Nebraska Natural Resources Commission (NNRC), 1998. "Estimated Water Use in Nebraska, 1995". http://www.dnr.ne.gov/otherresources/waterreport95.html. Accessed September 2006.

Village of Mead, 2011. Mead Water Use. Email message transmitted from Gil Frey, Village of Mead, to Bradley Brink, USACE. April 14.

Appendix D
Table D-7
Lincoln Water System Ashland Well Field Estimated Pumping Rates (ft3/day)
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Stress Period:	1,2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Start Date:	9/1/10	6/1/11	9/1/11	6/1/12	9/1/12	6/1/13	9/1/13	6/1/14	9/1/14	6/1/15	9/1/15	6/1/16	9/1/16	6/1/17	9/1/17	6/1/18	9/1/18	6/1/19	9/1/19	6/1/20	9/1/20
End Date:	5/31/11	8/31/11	5/31/12	8/31/12	5/31/13	8/31/13	5/31/14	8/31/14	5/31/15	8/31/15	5/31/16	8/31/16	5/31/17	8/31/17	5/31/18	8/31/18	5/31/19	8/31/19	5/31/20	8/31/20	5/31/21
LWS56-8	265	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS56-9	144,705	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS56-5	127,702	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS54-3	39,234	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS56-7	20,637	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS54-5	92,581	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS325A	53,348	193,551	103,364	196,479	104,828	199,700	106,585	202,921	108,342	205,850	110,099	209,071	111,856	212,292	113,320	215,220	115,077	218,441	116,834	221,662	118,590
LWS54-7	82,133	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS32-4-2	1,762	98,751	52,737	100,245	53,484	101,888	54,380	103,531	55,276	105,025	56,173	106,669	57,069	108,312	57,816	109,806	58,713	111,449	59,609	113,093	60,505
LWS54-9	148,061	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS32-4A-2	5,110	98,751	52,737	100,245	53,484	101,888	54,380	103,531	55,276	105,025	56,173	106,669	57,069	108,312	57,816	109,806	58,713	111,449	59,609	113,093	60,505
LWS54-6	175,991	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS32-3-2	70,358	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS54-8	76,724	177,751	94,926	180,440	96,271	183,398	97,884	186,356	99,498	189,046	101,111	192,004	102,725	194,962	104,069	197,651	105,683	200,609	107,296	203,567	108,910
LWS32-2-2	61,824	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS54-10	161,070	246,877	131,842	250,612	133,709	254,720	135,950	258,828	138,191	262,563	140,432	266,672	142,673	270,780	144,541	274,515	146,781	278,623	149,022	282,732	151,263
LWS32-1A	31,711	197,501	105,473	200,489	106,967	203,776	108,760	207,063	110,553	210,051	112,346	213,337	114,138	216,624	115,632	219,612	117,425	222,899	119,218	226,185	121,011
LWS56-1	103,781	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS49-7	118,269	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS49-8	147,592	194,045	103,628	196,981	105,096	200,210	106,857	203,439	108,618	206,375	110,380	209,604	112,141	212,833	113,609	215,769	115,370	218,998	117,132	222,227	118,893
LWS49-6	140,434	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS49-9	132,980	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS54-1	154,074	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS66 - 1	5,324	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS76 - 1	148,780	296,252	158,210	300,734	160,451	305,664	163,140	310,594	165,829	315,076	168,519	320,006	171,208	324,936	173,449	329,418	176,138	334,348	178,827	339,278	181,516
LWS66 - 4	13,743	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS76 - 2	325,793	296,252	158,210	300,734	160,451	305,664	163,140	310,594	165,829	315,076	168,519	320,006	171,208	324,936	173,449	329,418	176,138	334,348	178,827	339,278	181,516
LWS66 - 5	4	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS66 - 6	23,283	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS76 - 3	165,649	296,252	158,210	300,734	160,451	305,664	163,140	310,594	165,829	315,076	168,519	320,006	171,208	324,936	173,449	329,418	176,138	334,348	178,827	339,278	181,516
LWS76 - 4	191,848	296,252	158,210	300,734	160,451	305,664	163,140	310,594	165,829	315,076	168,519	320,006	171,208	324,936	173,449	329,418	176,138	334,348	178,827	339,278	181,516
LWS68-1A	85,237	222,189	118,658	225,550	120,338	229,248	122,355	232,946	124,372	236,307	126,389	240,004	128,406	243,702	130,086	247,063	132,103	250,761	134,120	254,459	136,137
LWS76 - 5	121,109	296,252	158,210	300,734	160,451	305,664	163,140	310,594	165,829	315,076	168,519	320,006	171,208	324,936	173,449	329,418	176,138	334,348	178,827	339,278	181,516
LWS76 - 6	247,735	177,751	94,926	180,440	96,271	183,398	97,884	186,356	99,498	189,046	101,111	192,004	102,725	194,962	104,069	197,651	105,683	200,609	107,296	203,567	108,910
LWS78574	190,518	138,251	73,831	140,342	74,877	142,643	76,132	144,944	77,387	147,035	78,642	149,336	79,897	151,637	80,943	153,728	82,198	156,029	83,453	158,330	84,707
LWS86-1	634,665	217,251	116,021	220,538	117,664	224,154	119,636	227,769	121,608	231,056	123,580	234,671	125,552	238,286	127,196	241,573	129,168	245,189	131,140	248,804	133,112
LWS86-2	123,094	217,251	116,021	220,538	117,664	224,154	119,636	227,769	121,608	231,056	123,580	234,671	125,552	238,286	127,196	241,573	129,168	245,189	131,140	248,804	133,112
LWS85451	562,897	1,204,758	643,388	1,222,985	652,501	1,243,034	663,437	1,263,082	674,373	1,281,309	685,309	1,301,358	696,245	1,321,407	705,358	1,339,633	716,294	1,359,682	727,229	1,379,731	738,165
LWS86646	393,587	1,204,758	643,388	1,222,985	652,501	1,243,034	663,437	1,263,082	674,373	1,281,309	685,309	1,301,358	696,245	1,321,407	705,358	1,339,633	716,294	1,359,682	727,229	1,379,731	738,165
Total (MGD)	41.8	66.1	35.3	67.1	35.8	68.2	36.4	69.3	37.0	70.3	37.6	71.4	38.2	72.5	38.7	73.5	39.3	74.6	39.9	75.7	40.5

Notes:
(1) MGD = Millions of Gallons per Day
(2) Stress Periods 1 and 2 based on average of pumping rates from September-December 2010 (LWS, 2011).
LWS = Lincoln Water System
NOP = Nebraska Ordnance Plant
ft^3/day = Cubic feet per day
Source:
Lincoln Water System (LWS), 2011. Monthly Totals for Well Field Pumpage (MG). Excel© spreadsheet transmitted via email from Eric Lee, LWS, to Bradley Brink, USACE. April 14.

Appendix D
Table D-7
Lincoln Water System Ashland Well Field Estimated Pumping Rates (ft3/day)
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Stress Period:	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
Start Date:	6/1/21	9/1/21	6/1/22	9/1/22	6/1/23	9/1/23	6/1/24	9/1/24	6/1/25	9/1/25	6/1/26	9/1/26	6/1/27	9/1/27	6/1/28	9/1/28	6/1/29	9/1/29	6/1/30	9/1/30	6/1/31
End Date:	8/31/21	5/31/22	8/31/22	5/31/23	8/31/23	5/31/24	8/31/24	5/31/25	8/31/25	5/31/26	8/31/26	5/31/27	8/31/27	5/31/28	8/31/28	5/31/29	8/31/29	5/31/30	8/31/30	5/31/31	8/31/31
LWS56-8	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS56-9	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS56-5	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS54-3	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS56-7	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS54-5	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS325A	224,590	120,055	227,811	121,811	231,032	123,568	233,960	125,325	237,181	127,375	241,573	129,717	245,965	132,060	250,065	134,110	254,457	136,452	258,849	138,502	263,242
LWS54-7	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS32-4-2	114,587	61,252	116,230	62,149	117,873	63,045	119,367	63,941	121,011	64,987	123,252	66,182	125,493	67,378	127,584	68,423	129,825	69,618	132,066	70,664	134,307
LWS54-9	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS32-4A-2	114,587	61,252	116,230	62,149	117,873	63,045	119,367	63,941	121,011	64,987	123,252	66,182	125,493	67,378	127,584	68,423	129,825	69,618	132,066	70,664	134,307
LWS54-6	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS32-3-2	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS54-8	206,256	110,254	209,214	111,868	212,172	113,481	214,861	115,095	217,819	116,977	221,853	119,128	225,887	121,280	229,651	123,162	233,685	125,313	237,719	127,196	241,752
LWS32-2-2	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS54-10	286,467	153,131	290,575	155,372	294,683	157,613	298,418	159,854	302,527	162,468	308,129	165,456	313,731	168,444	318,960	171,058	324,563	174,046	330,165	176,661	335,767
LWS32-1A	229,173	122,505	232,460	124,297	235,747	126,090	238,735	127,883	242,021	129,974	246,503	132,365	250,985	134,755	255,168	136,847	259,650	139,237	264,132	141,329	268,614
LWS56-1	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS49-7	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS49-8	225,163	120,361	228,392	122,122	231,621	123,884	234,557	125,645	237,786	127,700	242,189	130,048	246,593	132,397	250,703	134,452	255,106	136,800	259,510	138,855	263,913
LWS49-6	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS49-9	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS54-1	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS66 - 1	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS76 - 1	343,760	183,757	348,690	186,446	353,620	189,135	358,102	191,824	363,032	194,962	369,755	198,547	376,478	202,133	382,752	205,270	389,475	208,855	396,198	211,993	402,921
LWS66 - 4	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS76 - 2	343,760	183,757	348,690	186,446	353,620	189,135	358,102	191,824	363,032	194,962	369,755	198,547	376,478	202,133	382,752	205,270	389,475	208,855	396,198	211,993	402,921
LWS66 - 5	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS66 - 6	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS76 - 3	343,760	183,757	348,690	186,446	353,620	189,135	358,102	191,824	363,032	194,962	369,755	198,547	376,478	202,133	382,752	205,270	389,475	208,855	396,198	211,993	402,921
LWS76 - 4	343,760	183,757	348,690	186,446	353,620	189,135	358,102	191,824	363,032	194,962	369,755	198,547	376,478	202,133	382,752	205,270	389,475	208,855	396,198	211,993	402,921
LWS68-1A	257,820	137,818	261,517	139,835	265,215	141,851	268,576	143,868	272,274	146,221	277,316	148,910	282,358	151,599	287,064	153,952	292,106	156,642	297,148	158,995	302,191
LWS76 - 5	343,760	183,757	348,690	186,446	353,620	189,135	358,102	191,824	363,032	194,962	369,755	198,547	376,478	202,133	382,752	205,270	389,475	208,855	396,198	211,993	402,921
LWS76 - 6	206,256	110,254	209,214	111,868	212,172	113,481	214,861	115,095	217,819	116,977	221,853	119,128	225,887	121,280	229,651	123,162	233,685	125,313	237,719	127,196	241,752
LWS78574	160,421	85,753	162,722	87,008	165,023	88,263	167,114	89,518	169,415	90,982	172,552	92,655	175,690	94,329	178,618	95,793	181,755	97,466	184,892	98,930	188,030
LWS86-1	252,091	134,755	255,706	136,727	259,321	138,699	262,608	140,671	266,223	142,972	271,154	145,601	276,084	148,231	280,685	150,531	285,615	153,161	290,545	155,461	295,475
LWS86-2	252,091	134,755	255,706	136,727	259,321	138,699	262,608	140,671	266,223	142,972	271,154	145,601	276,084	148,231	280,685	150,531	285,615	153,161	290,545	155,461	295,475
LWS85451	1,397,957	747,278	1,418,006	758,214	1,438,055	769,150	1,456,281	780,086	1,476,330	792,844	1,503,670	807,425	1,531,009	822,006	1,556,526	834,764	1,583,865	849,345	1,611,205	862,104	1,638,544
LWS86646	1,397,957	747,278	1,418,006	758,214	1,438,055	769,150	1,456,281	780,086	1,476,330	792,844	1,503,670	807,425	1,531,009	822,006	1,556,526	834,764	1,583,865	849,345	1,611,205	862,104	1,638,544
Total (MGD)	76.7	41.0	77.8	41.6	78.9	42.2	79.9	42.8	81.0	43.5	82.5	44.3	84.0	45.1	85.4	45.8	86.9	46.6	88.4	47.3	89.9

Notes:
(1) MGD = Millions of Gallons per Day
(2) Stress Periods 1 and 2 based on average of pumping rates from September-December 2010 (LWS, 2011).
LWS = Lincoln Water System
NOP = Nebraska Ordnance Plant
ft^3/day = Cubic feet per day
Source:
Lincoln Water System (LWS), 2011. Monthly Totals for Well Field Pumpage (MG). Excel© spreadsheet transmitted via email from Eric Lee, LWS, to Bradley Brink, USACE. April 14.

Appendix D
Table D-7
Lincoln Water System Ashland Well Field Estimated Pumping Rates (ft3/day)
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

Stress Period:	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
Start Date:	9/1/31	6/1/32	9/1/32	6/1/33	9/1/33	6/1/34	9/1/34	6/1/35	9/1/35	6/1/36	9/1/36	6/1/37	9/1/37	6/1/38	9/1/38	6/1/39	9/1/39	6/1/40
End Date:	5/31/32	8/31/32	5/31/33	8/31/33	5/31/34	8/31/34	5/31/35	8/31/35	5/31/36	8/31/36	5/31/37	8/31/37	5/31/38	8/31/38	5/31/39	8/31/39	5/31/40	8/31/40
LWS56-8	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS56-9	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS56-5	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS54-3	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS56-7	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS54-5	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS325A	140,844	267,634	143,187	271,733	145,237	276,125	147,579	280,518	149,922	284,910	151,971	289,302	154,314	293,402	156,364	297,794	158,706	302,186
LWS54-7	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS32-4-2	71,859	136,548	73,055	138,639	74,100	140,880	75,296	143,121	76,491	145,362	77,536	147,603	78,732	149,695	79,777	151,936	80,973	154,177
LWS54-9	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS32-4A-2	71,859	136,548	73,055	138,639	74,100	140,880	75,296	143,121	76,491	145,362	77,536	147,603	78,732	149,695	79,777	151,936	80,973	154,177
LWS54-6	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS32-3-2	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS54-8	129,347	245,786	131,498	249,551	133,381	253,585	135,532	257,618	137,683	261,652	139,566	265,686	141,717	269,450	143,599	273,484	145,751	277,518
LWS32-2-2	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS54-10	179,649	341,370	182,636	346,598	185,251	352,201	188,239	357,803	191,227	363,405	193,841	369,008	196,829	374,237	199,444	379,839	202,431	385,441
LWS32-1A	143,719	273,096	146,109	277,279	148,201	281,761	150,591	286,243	152,981	290,724	155,073	295,206	157,463	299,389	159,555	303,871	161,945	308,353
LWS56-1	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS49-7	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS49-8	141,204	268,317	143,552	272,426	145,607	276,830	147,956	281,233	150,304	285,637	152,359	290,040	154,708	294,150	156,763	298,553	159,111	302,957
LWS49-6	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS49-9	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS54-1	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS66 - 1	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS76 - 1	215,578	409,644	219,164	415,918	222,301	422,641	225,887	429,364	229,472	436,087	232,609	442,809	236,195	449,084	239,332	455,807	242,918	462,530
LWS66 - 4	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS76 - 2	215,578	409,644	219,164	415,918	222,301	422,641	225,887	429,364	229,472	436,087	232,609	442,809	236,195	449,084	239,332	455,807	242,918	462,530
LWS66 - 5	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS66 - 6	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS76 - 3	215,578	409,644	219,164	415,918	222,301	422,641	225,887	429,364	229,472	436,087	232,609	442,809	236,195	449,084	239,332	455,807	242,918	462,530
LWS76 - 4	215,578	409,644	219,164	415,918	222,301	422,641	225,887	429,364	229,472	436,087	232,609	442,809	236,195	449,084	239,332	455,807	242,918	462,530
LWS68-1A	161,684	307,233	164,373	311,939	166,726	316,981	169,415	322,023	172,104	327,065	174,457	332,107	177,146	336,813	179,499	341,855	182,188	346,897
LWS76 - 5	215,578	409,644	219,164	415,918	222,301	422,641	225,887	429,364	229,472	436,087	232,609	442,809	236,195	449,084	239,332	455,807	242,918	462,530
LWS76 - 6	129,347	245,786	131,498	249,551	133,381	253,585	135,532	257,618	137,683	261,652	139,566	265,686	141,717	269,450	143,599	273,484	145,751	277,518
LWS78574	100,603	191,167	102,276	194,095	103,741	197,232	105,414	200,370	107,087	203,507	108,551	206,644	110,224	209,573	111,688	212,710	113,362	215,847
LWS86-1	158,091	300,405	160,720	305,007	163,021	309,937	165,650	314,867	168,280	319,797	170,580	324,727	173,210	329,328	175,510	334,258	178,140	339,188
LWS86-2	158,091	300,405	160,720	305,007	163,021	309,937	165,650	314,867	168,280	319,797	170,580	324,727	173,210	329,328	175,510	334,258	178,140	339,188
LWS85451	876,685	1,665,884	891,266	1,691,400	904,024	1,718,740	918,605	1,746,079	933,186	1,773,419	945,945	1,800,758	960,526	1,826,275	973,284	1,853,615	987,865	1,880,954
LWS86646	876,685	1,665,884	891,266	1,691,400	904,024	1,718,740	918,605	1,746,079	933,186	1,773,419	945,945	1,800,758	960,526	1,826,275	973,284	1,853,615	987,865	1,880,954
Total (MGD)	48.1	91.4	48.9	92.8	49.6	94.3	50.4	95.8	51.2	97.3	51.9	98.8	52.7	100.2	53.4	101.7	54.2	103.2

Notes:
(1) MGD = Millions of Gallons per Day
(2) Stress Periods 1 and 2 based on average of pumping rates from September-December 2010 (LWS, 2011).
LWS = Lincoln Water System
NOP = Nebraska Ordnance Plant
ft^3/day = Cubic feet per day
Source:
Lincoln Water System (LWS), 2011. Monthly Totals for Well Field Pumpage (MG). Excel© spreadsheet transmitted via email from Eric Lee, LWS, to Bradley Brink, USACE. April 14.

Appendix D
Table D-8
Irrigation Well Estimated Pumping Rates
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

	feet^3/day		gallons per minute	
Stress Period:	**1,2,3,5…61**	**4,6,8…60**	**1,2,3,5…61**	**4,6,8…60**
Start Date:	**9/1**	**6/1**	**9/1**	**6/1**
End Date:	**5/31**	**8/31**	**5/31**	**8/31**
G-000350	0	42,174	0	219
G-000377	0	49,027	0	255
G-000744	0	0	0	0
G-000745	0	21,087	0	110
G-000961	0	40,592	0	211
G-002172	0	42,174	0	219
G-002341	0	0	0	0
G-003848	0	21,087	0	110
G-004004	0	13,179	0	68
G-004168	0	9,226	0	48
G-004169	0	9,226	0	48
G-004183	0	0	0	0
G-008876	0	0	0	0
G-009033	0	42,174	0	219
G-009205	0	21,087	0	110
G-011280	0	18,451	0	96
G-013220	0	42,174	0	219
G-014161	0	0	0	0
G-014821	0	0	0	0
G-014822	0	0	0	0
G-014865	0	33,212	0	173
G-014866	0	27,677	0	144
G-015211	0	42,174	0	219
G-016190	0	52,717	0	274
G-017199	0	42,174	0	219
G-017200	0	0	0	0
G-017201	0	42,174	0	219
G-018285	0	26,359	0	137
G-018747	0	0	0	0
G-019020	0	0	0	0
G-019114	0	40,329	0	210
G-020313	0	52,717	0	274
G-020550	0	34,266	0	178
G-020551	0	0	0	0
G-020552	0	0	0	0
G-021194	0	42,174	0	219
G-021492	0	35,321	0	183
G-022336	0	0	0	0
G-022506	0	0	0	0
G-023385	0	21,087	0	110
G-028138	0	0	0	0
G-030654	0	57,989	0	301
G-030678	0	47,446	0	246

Appendix D
Table D-8
Irrigation Well Estimated Pumping Rates
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

	feet^3/day		gallons per minute	
Stress Period:	**1,2,3,5…61**	**4,6,8…60**	**1,2,3,5…61**	**4,6,8…60**
Start Date:	**9/1**	**6/1**	**9/1**	**6/1**
End Date:	**5/31**	**8/31**	**5/31**	**8/31**
G-031913	0	42,174	0	219
G-033472	0	31,630	0	164
G-033505	0	44,810	0	233
G-033747	0	28,386	0	147
G-033749	0	28,683	0	149
G-033750	0	0	0	0
G-033751	0	0	0	0
G-033752	0	25,568	0	133
G-033753	0	26,950	0	140
G-033754	0	0	0	0
G-033755	0	5,086	0	26
G-035213	0	35,584	0	185
G-035237	0	42,174	0	219
G-035273	0	36,902	0	192
G-035300	0	17,924	0	93
G-035461	0	22,405	0	116
G-035862	0	34,266	0	178
G-035976	0	53,772	0	279
G-036098	0	21,087	0	110
G-036212	0	0	0	0
G-036213	0	28,995	0	151
G-036214	0	0	0	0
G-037636	0	0	0	0
G-037637	0	36,902	0	192
G-037677	0	0	0	0
G-037681	0	0	0	0
G-037707	0	42,174	0	219
G-037709	0	31,630	0	164
G-037726	0	0	0	0
G-037984	0	38,220	0	199
G-040328	0	63,261	0	329
G-040351	0	63,261	0	329
G-041584	0	40,592	0	211
G-041786	0	36,902	0	192
G-042325	0	42,174	0	219
G-042792	0	0	0	0
G-042956	0	0	0	0
G-044173	0	39,802	0	207
G-044312	0	26,155	0	136
G-046472	0	21,087	0	110
G-046552	0	30,312	0	157
G-046657	0	42,174	0	219
G-046970	0	0	0	0

Appendix D
Table D-8
Irrigation Well Estimated Pumping Rates
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

	feet^3/day		gallons per minute	
Stress Period:	**1,2,3,5…61**	**4,6,8…60**	**1,2,3,5…61**	**4,6,8…60**
Start Date:	**9/1**	**6/1**	**9/1**	**6/1**
End Date:	**5/31**	**8/31**	**5/31**	**8/31**
G-047016	0	10,543	0	55
G-047077	0	0	0	0
G-047089	0	40,329	0	210
G-047357	0	36,111	0	188
G-047789	0	21,087	0	110
G-047830	0	31,630	0	164
G-048312	0	57,989	0	301
G-048425A	0	0	0	0
G-048425B	0	42,174	0	219
G-049256	0	42,174	0	219
G-049353	0	36,111	0	188
G-049439	0	63,261	0	329
G-050151	0	0	0	0
G-050176	0	42,174	0	219
G-050177	0	42,174	0	219
G-050878	0	5,272	0	27
G-050879	0	0	0	0
G-050995	0	39,538	0	205
G-051424	0	0	0	0
G-051685	0	21,087	0	110
G-051686	0	10,543	0	55
G-051786	0	42,174	0	219
G-051787	0	42,174	0	219
G-051860	0	42,174	0	219
G-051879	0	42,174	0	219
G-051927	0	39,802	0	207
G-052170	0	15,815	0	82
G-052354	0	42,174	0	219
G-052414	0	42,174	0	219
G-052415	0	28,995	0	151
G-052563	0	42,174	0	219
G-052785	0	42,174	0	219
G-052786	0	0	0	0
G-053077	0	42,174	0	219
G-053078	0	0	0	0
G-053273	0	0	0	0
G-053428	0	42,174	0	219
G-053470	0	47,446	0	246
G-053629	0	21,087	0	110
G-053630	0	20,033	0	104
G-053656	0	42,174	0	219
G-053658	0	26,359	0	137
G-053764	0	26,359	0	137

Appendix D
Table D-8
Irrigation Well Estimated Pumping Rates
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

	feet^3/day		gallons per minute	
Stress Period:	**1,2,3,5…61**	**4,6,8…60**	**1,2,3,5…61**	**4,6,8…60**
Start Date:	**9/1**	**6/1**	**9/1**	**6/1**
End Date:	**5/31**	**8/31**	**5/31**	**8/31**
G-053801	0	42,174	0	219
G-053963	0	18,451	0	96
G-054654	0	55,055	0	286
G-054655	0	44,828	0	233
G-054656	0	12,898	0	67
G-055912	0	35,584	0	185
G-055913	0	0	0	0
G-055914	0	52,717	0	274
G-055915	0	39,538	0	205
G-056278	0	10,543	0	55
G-056513	0	7,908	0	41
G-056514	0	10,543	0	55
G-056515	0	0	0	0
G-056729	0	31,630	0	164
G-056849	0	0	0	0
G-057184	0	36,902	0	192
G-057314	0	0	0	0
G-057315	0	26,359	0	137
G-057497	0	42,174	0	219
G-057498	0	42,174	0	219
G-057634	0	52,717	0	274
G-058057	0	10,543	0	55
G-058058	0	15,815	0	82
G-058325	0	10,543	0	55
G-058437	0	15,815	0	82
G-058543	0	34,266	0	178
G-058723	0	21,087	0	110
G-058774	0	0	0	0
G-058820	0	46,128	0	240
G-058958	0	42,174	0	219
G-059114	0	10,543	0	55
G-059115	0	21,087	0	110
G-059231	0	26,359	0	137
G-059549	0	21,087	0	110
G-059681	0	19,769	0	103
G-060250	0	1,318	0	7
G-060417	0	13,970	0	73
G-060900	0	17,133	0	89
G-060987	0	0	0	0
G-060988	0	26,359	0	137
G-061009	0	63,261	0	329
G-061620	0	10,543	0	55
G-061703	0	27,677	0	144

Appendix D
Table D-8
Irrigation Well Estimated Pumping Rates
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

	feet^3/day		gallons per minute	
Stress Period:	**1,2,3,5…61**	**4,6,8…60**	**1,2,3,5…61**	**4,6,8…60**
Start Date:	**9/1**	**6/1**	**9/1**	**6/1**
End Date:	**5/31**	**8/31**	**5/31**	**8/31**
G-062082	0	20,296	0	105
G-062094	0	0	0	0
G-062375	0	15,815	0	82
G-062530A	0	0	0	0
G-062530B	0	0	0	0
G-063187	0	21,087	0	110
G-063202	0	35,057	0	182
G-064065	0	39,538	0	205
G-064207	0	42,174	0	219
G-064243	0	26,622	0	138
G-064703	0	13,179	0	68
G-064906	0	39,538	0	205
G-065584	0	42,174	0	219
G-065589	0	42,174	0	219
G-065682	0	34,266	0	178
G-065683	0	22,405	0	116
G-065684	0	44,810	0	233
G-065908	0	15,815	0	82
G-065987	0	40,856	0	212
G-066246	0	42,174	0	219
G-066364	0	42,174	0	219
G-066531	0	30,312	0	157
G-066614	0	32,158	0	167
G-067290	0	17,133	0	89
G-067472	0	42,174	0	219
G-067620	0	57,989	0	301
G-068060	0	19,828	0	103
G-068383	0	21,087	0	110
G-069184	0	21,087	0	110
G-069208	0	61,943	0	322
G-069511	0	0	0	0
G-070210	0	40,329	0	210
G-070398	0	42,174	0	219
G-070615	0	42,174	0	219
G-071170	0	28,995	0	151
G-071362	0	23,723	0	123
G-071363	0	34,266	0	178
G-072122	0	31,630	0	164
G-072123	0	60,625	0	315
G-072139	0	31,630	0	164
G-072751	0	17,133	0	89
G-072842	0	15,815	0	82
G-073294	0	21,087	0	110

Appendix D
Table D-8
Irrigation Well Estimated Pumping Rates
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

	feet^3/day		gallons per minute	
Stress Period:	**1,2,3,5…61**	**4,6,8…60**	**1,2,3,5…61**	**4,6,8…60**
Start Date:	**9/1**	**6/1**	**9/1**	**6/1**
End Date:	**5/31**	**8/31**	**5/31**	**8/31**
G-073449	0	42,174	0	219
G-073545	0	17,133	0	89
G-073751	0	34,266	0	178
G-073894	0	38,747	0	201
G-074349	0	31,630	0	164
G-074351	0	21,087	0	110
G-076374	0	34,793	0	181
G-076735	0	20,033	0	104
G-077970	0	34,266	0	178
G-078375	0	34,266	0	178
G-078376	0	21,087	0	110
G-078377	0	0	0	0
G-081565	0	32,948	0	171
G-081652	0	35,584	0	185
G-081653	0	20,560	0	107
G-082391	0	41,383	0	215
G-083866	0	0	0	0
G-084655	0	10,280	0	53
G-085344	0	36,111	0	188
G-085522	0	63,261	0	329
G-087076	0	24,777	0	129
G-087283	0	19,769	0	103
G-087637	0	31,630	0	164
G-087929	0	47,206	0	245
G-088331	0	35,584	0	185
G-089306	0	17,133	0	89
G-090720	0	35,584	0	185
G-091546	0	963	0	5
G-091614	0	31,630	0	164
G-094011	0	34,266	0	178
G-094585	0	21,087	0	110
G-096581	0	14,245	0	74
G-096582	0	25,410	0	132
G-096584	0	48,703	0	253
G-096588	0	11,646	0	61
G-096589	0	19,761	0	103
G-096627	0	15,815	0	82
G-096904	0	34,266	0	178
G-096933	0	47,446	0	246
G-097207	0	9,226	0	48
G-098758	0	35,584	0	185
G-101198	0	26,359	0	137
G-104278	0	36,639	0	190

Appendix D
Table D-8
Irrigation Well Estimated Pumping Rates
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

	feet^3/day		gallons per minute	
Stress Period:	**1,2,3,5…61**	**4,6,8…60**	**1,2,3,5…61**	**4,6,8…60**
Start Date:	**9/1**	**6/1**	**9/1**	**6/1**
End Date:	**5/31**	**8/31**	**5/31**	**8/31**
G-105704	0	13,179	0	68
G-105753	0	52,717	0	274
G-105797	0	34,266	0	178
G-105800	0	59,868	0	311
G-105801	0	48,480	0	252
G-105802	0	53,479	0	278
G-107321	0	28,995	0	151
G-108180	0	2,636	0	14
G-108647	0	22,405	0	116
G-109287	0	10,543	0	55
G-109425	0	0	0	0
G-109448	0	39,538	0	205
G-109619	0	6,853	0	36
G-110360	0	26,359	0	137
G-112438	0	31,630	0	164
G-113392	0	34,266	0	178
G-113882	0	22,405	0	116
G-114521	0	35,057	0	182
G-116108	0	23,723	0	123
G-116504	0	23,723	0	123
G-127035	0	26,359	0	137
G-127071	0	39,538	0	205
G-127133	0	42,174	0	219
G-127250	0	28,995	0	151
G-127321	0	26,359	0	137
G-127545	0	17,133	0	89
G-128997	0	19,769	0	103
G-129063	0	81,448	0	423
G-130797	0	21,087	0	110
G-131085	0	46,655	0	242
G-133366	0	28,995	0	151
G-134121	0	39,538	0	205
G-134176	0	18,451	0	96
G-135522	0	19,769	0	103
G-135542	0	21,087	0	110
G-135543	0	2,109	0	11
G-135895	0	17,133	0	89
G-136000	0	17,924	0	93
G-136149	0	23,459	0	122
G-136150	0	68,532	0	356
G-136318	0	36,902	0	192
G-136326	0	17,133	0	89
G-136327	0	22,932	0	119

Appendix D
Table D-8
Irrigation Well Estimated Pumping Rates
2010 Containment Evaluation
Former Nebraska Ordnance Plant, Mead, Nebraska

	feet^3/day		gallons per minute	
Stress Period:	**1,2,3,5…61**	**4,6,8…60**	**1,2,3,5…61**	**4,6,8…60**
Start Date:	**9/1**	**6/1**	**9/1**	**6/1**
End Date:	**5/31**	**8/31**	**5/31**	**8/31**
G-136409	0	23,723	0	123
G-136517	0	21,087	0	110
G-136617	0	26,359	0	137
G-137529	0	36,902	0	192
G-137912	0	20,560	0	107
G-138821	0	26,359	0	137
G-139140	0	35,848	0	186
G-140041	0	42,174	0	219
G-140862	0	791	0	4
G-140863	0	21,087	0	110
G-144326	0	17,660	0	92
G-146158	0	36,902	0	192
G-146939	0	28,995	0	151
G-149433	0	31,630	0	164
G-151522	0	10,543	0	55
G-152097	0	791	0	4

Note:
(1) Refer to the GWM10 Update (ECC and BMcD, 2011a) for details regarding the estimation of irrigation rates.

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Appendix E
TCE Transport Simulations

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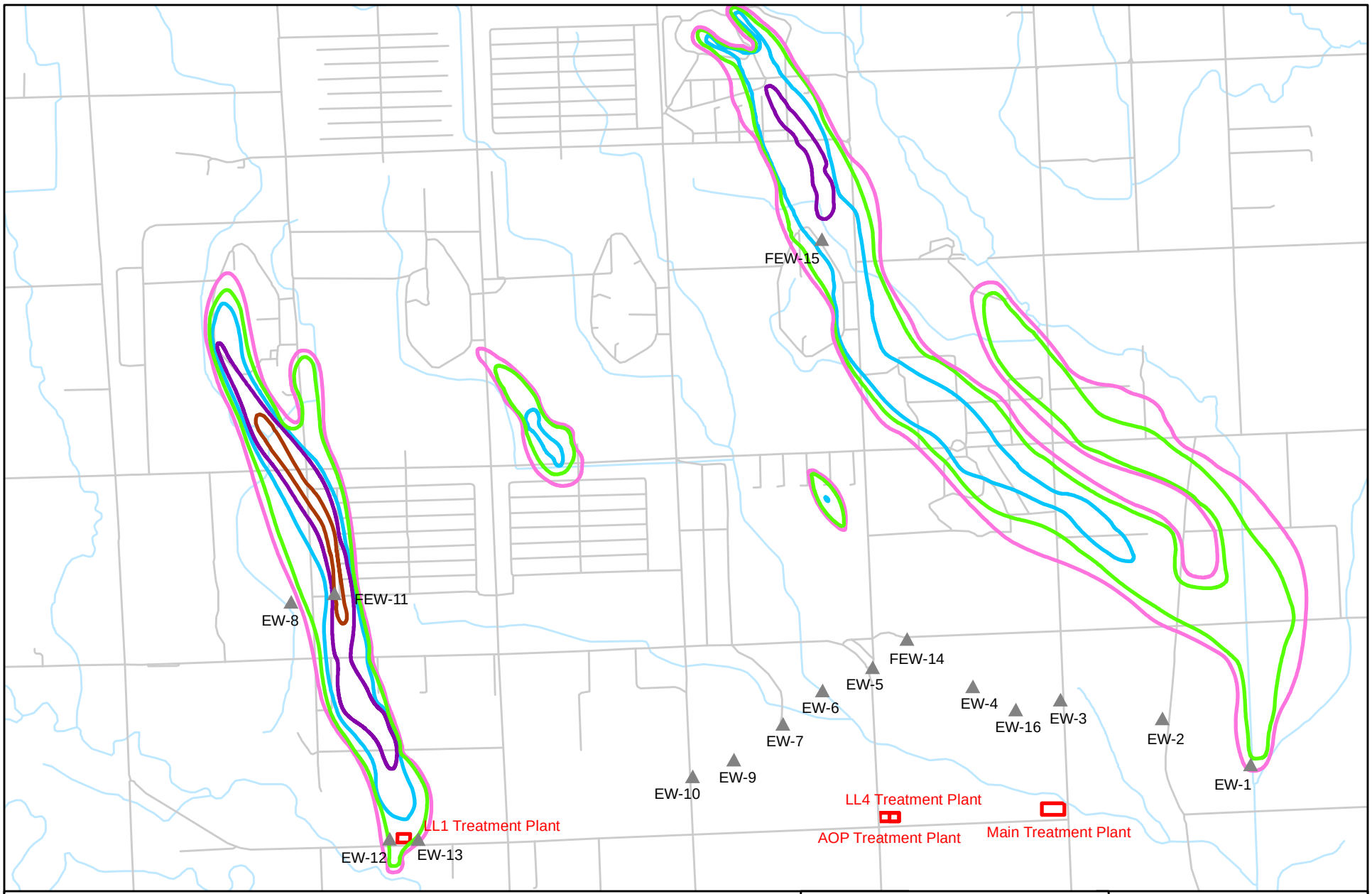

Figure E-1

TCE
2010
LAYER 2

Former NOP

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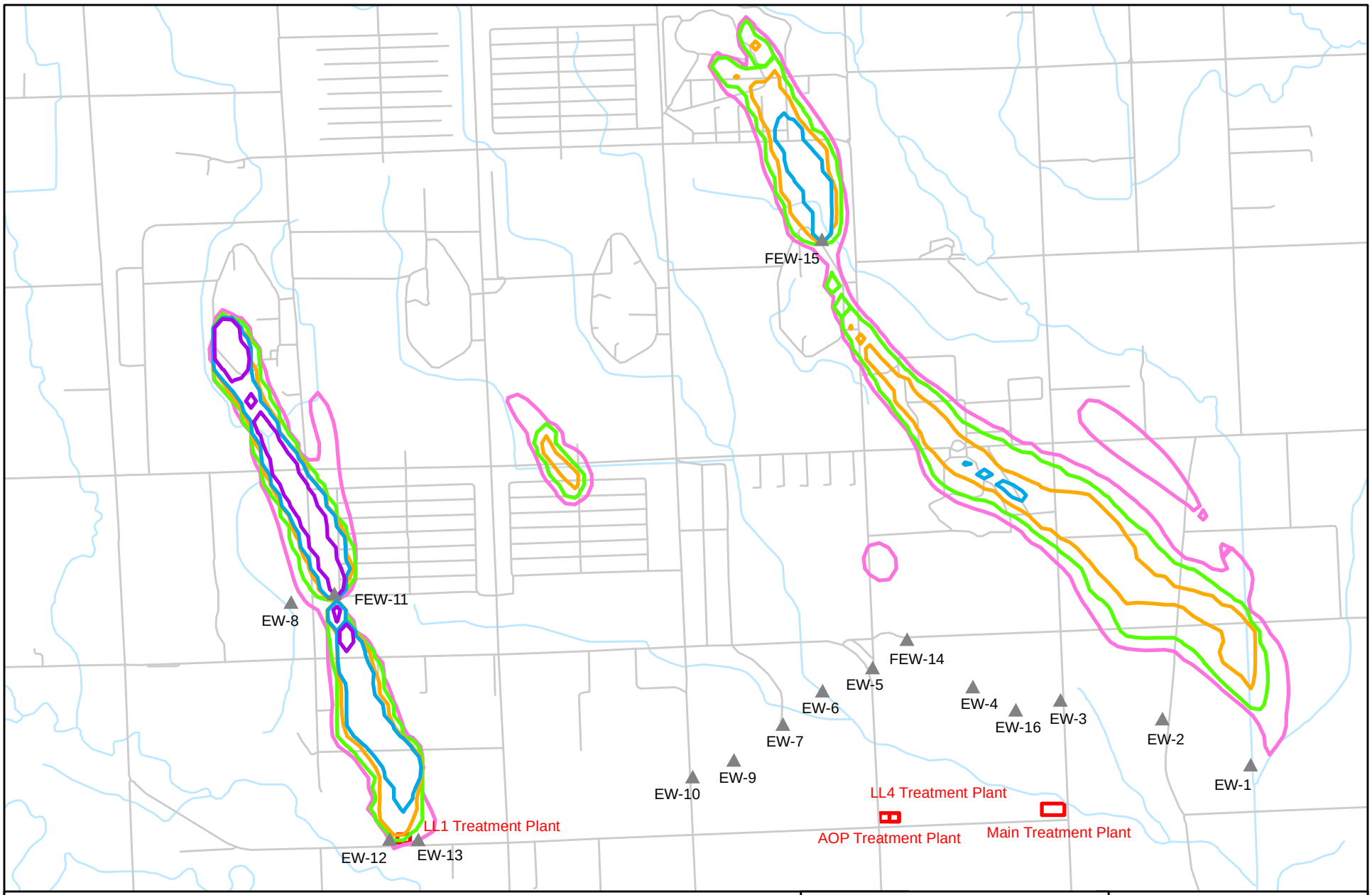

Figure E-2

PREDICTED TCE
LAYER 2
2015

Former NOP

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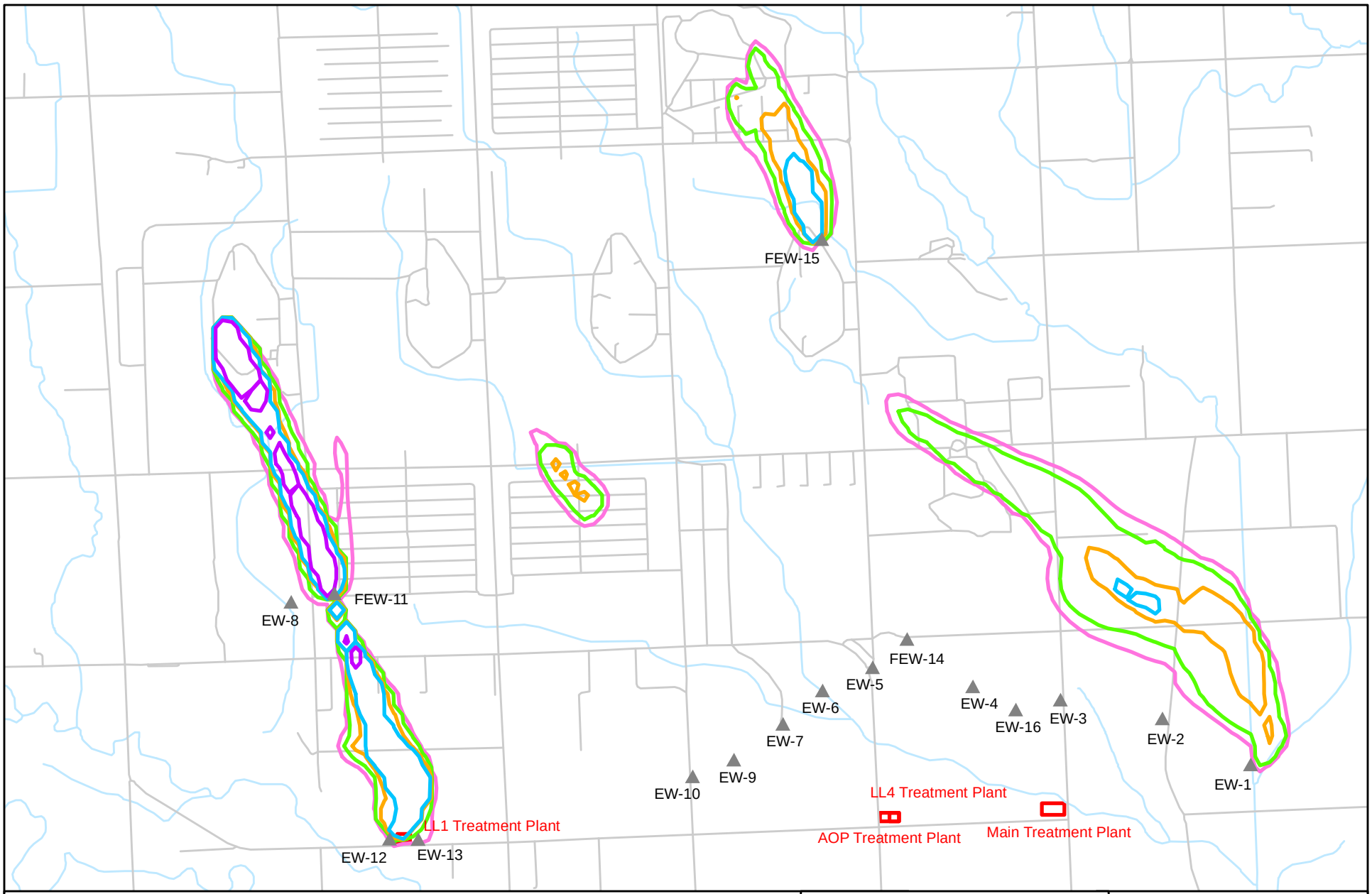

Figure E-2

PREDICTED TCE
LAYER 2
2020

Former NOP

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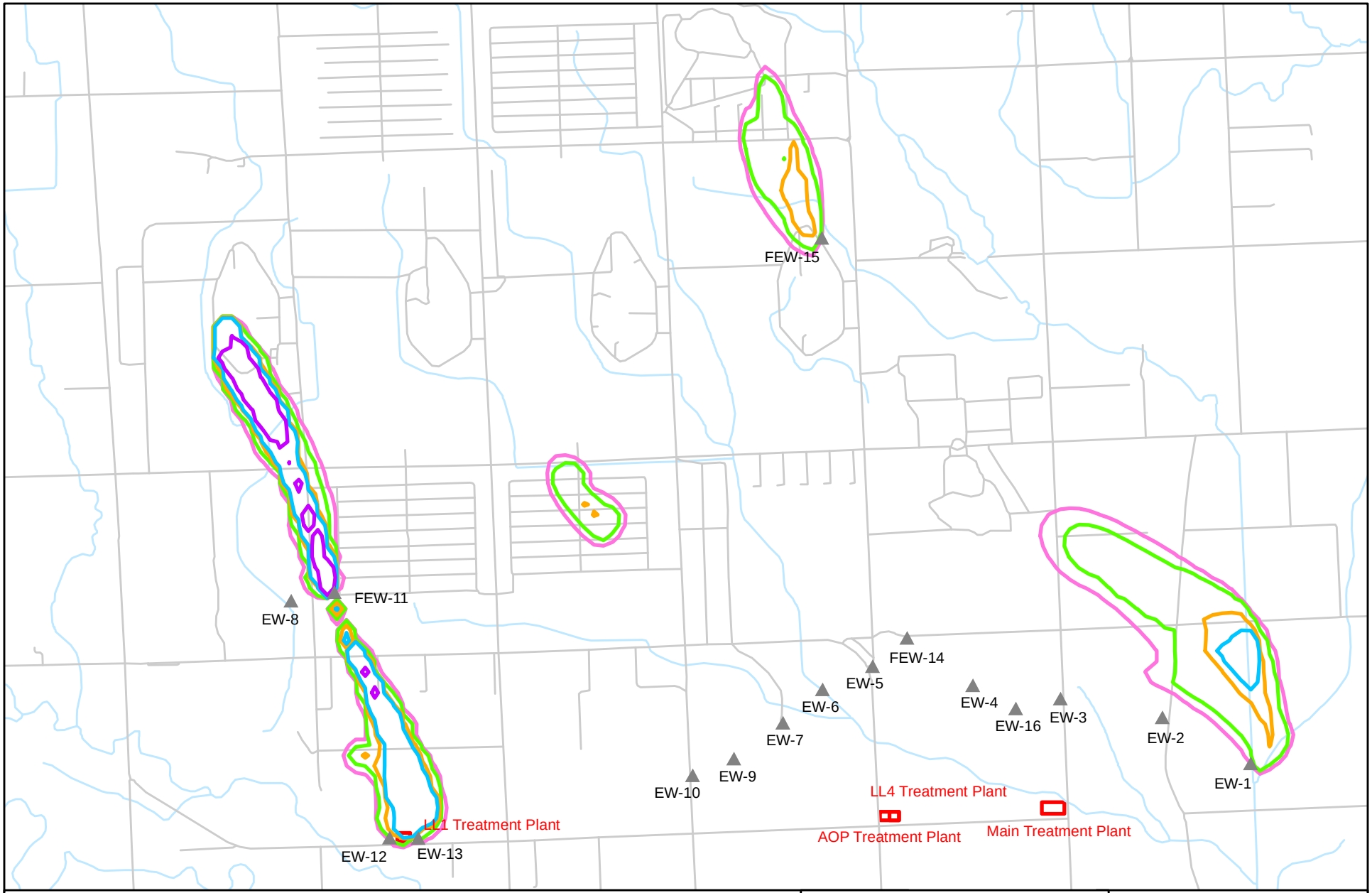

Figure E-4

PREDICTED TCE
LAYER 2
2025

Former NOP

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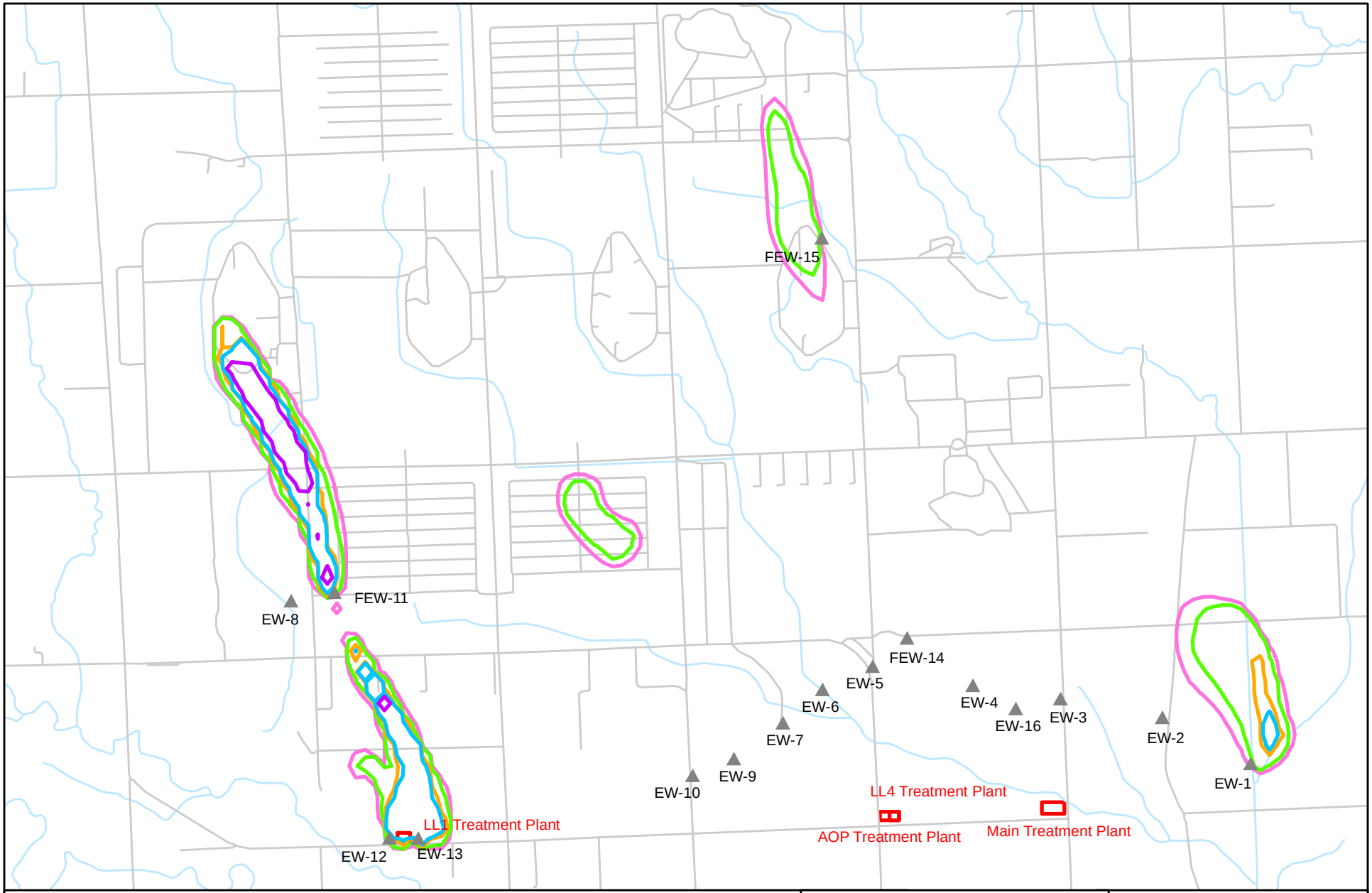

Figure E-5

PREDICTED TCE
LAYER 2
2030

Former NOP

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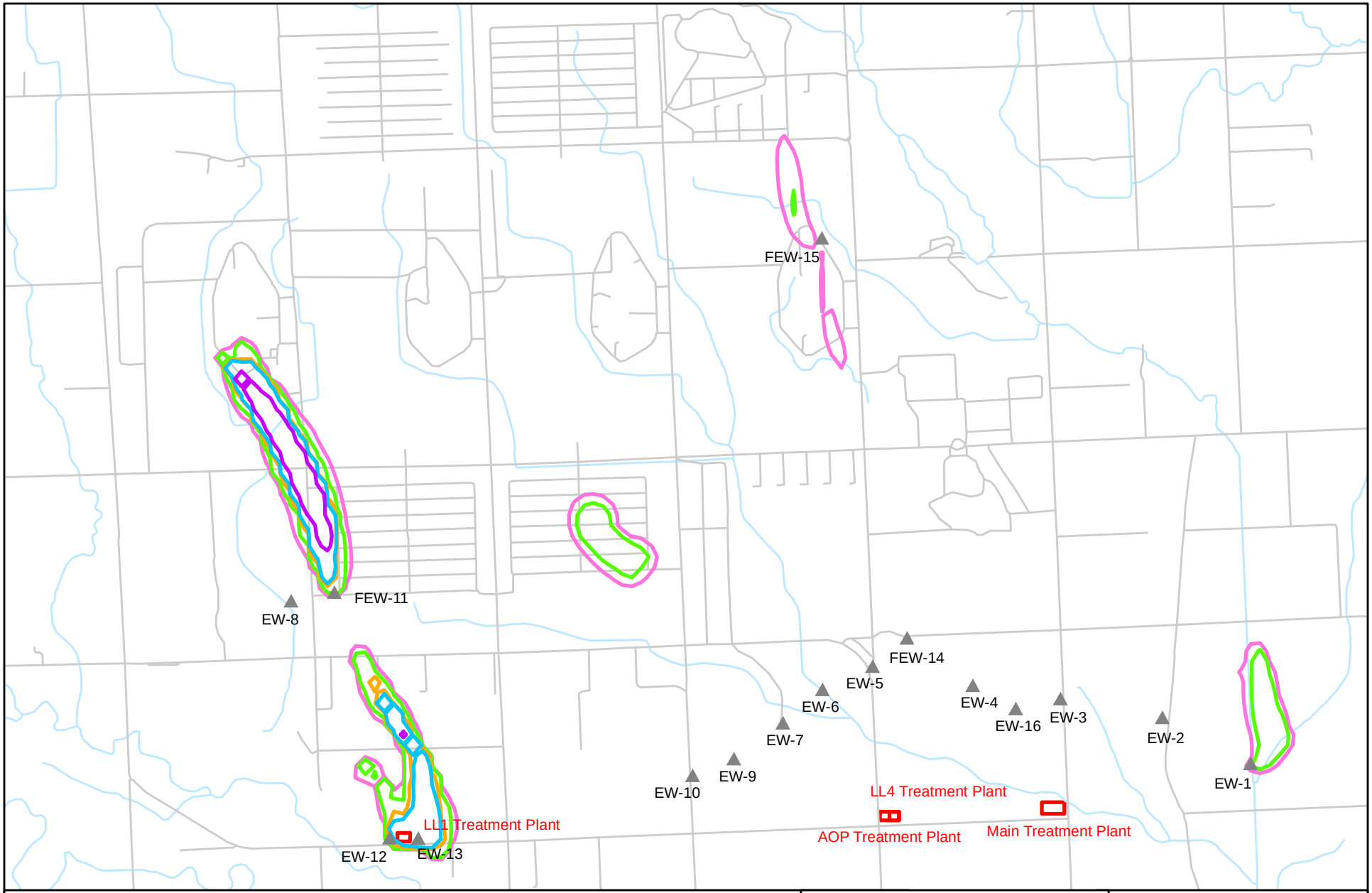

Figure E-6

PREDICTED TCE
LAYER 2
2035

Former NOP

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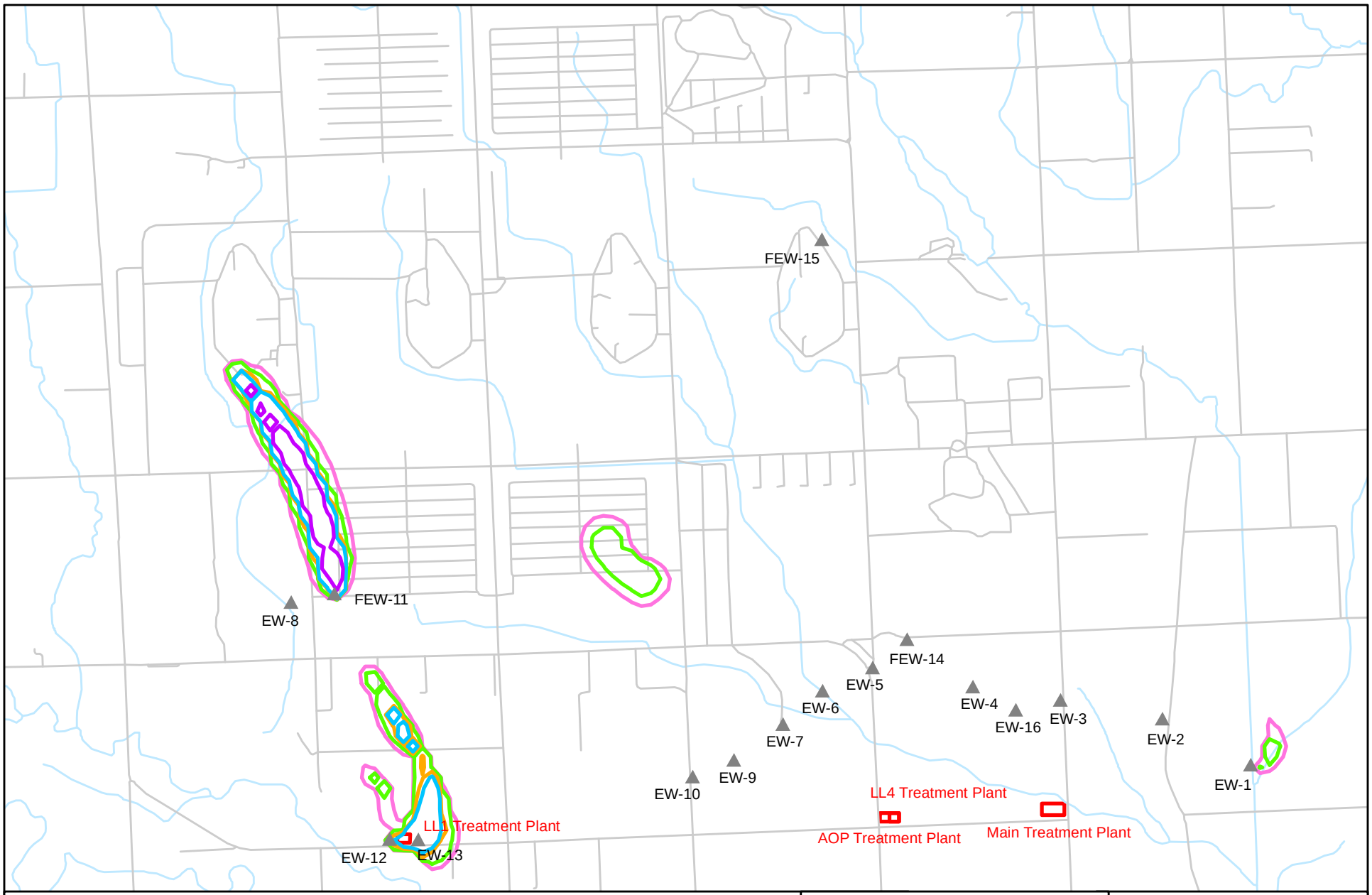

Figure E-7

PREDICTED TCE
LAYER 2
2040

Former NOP

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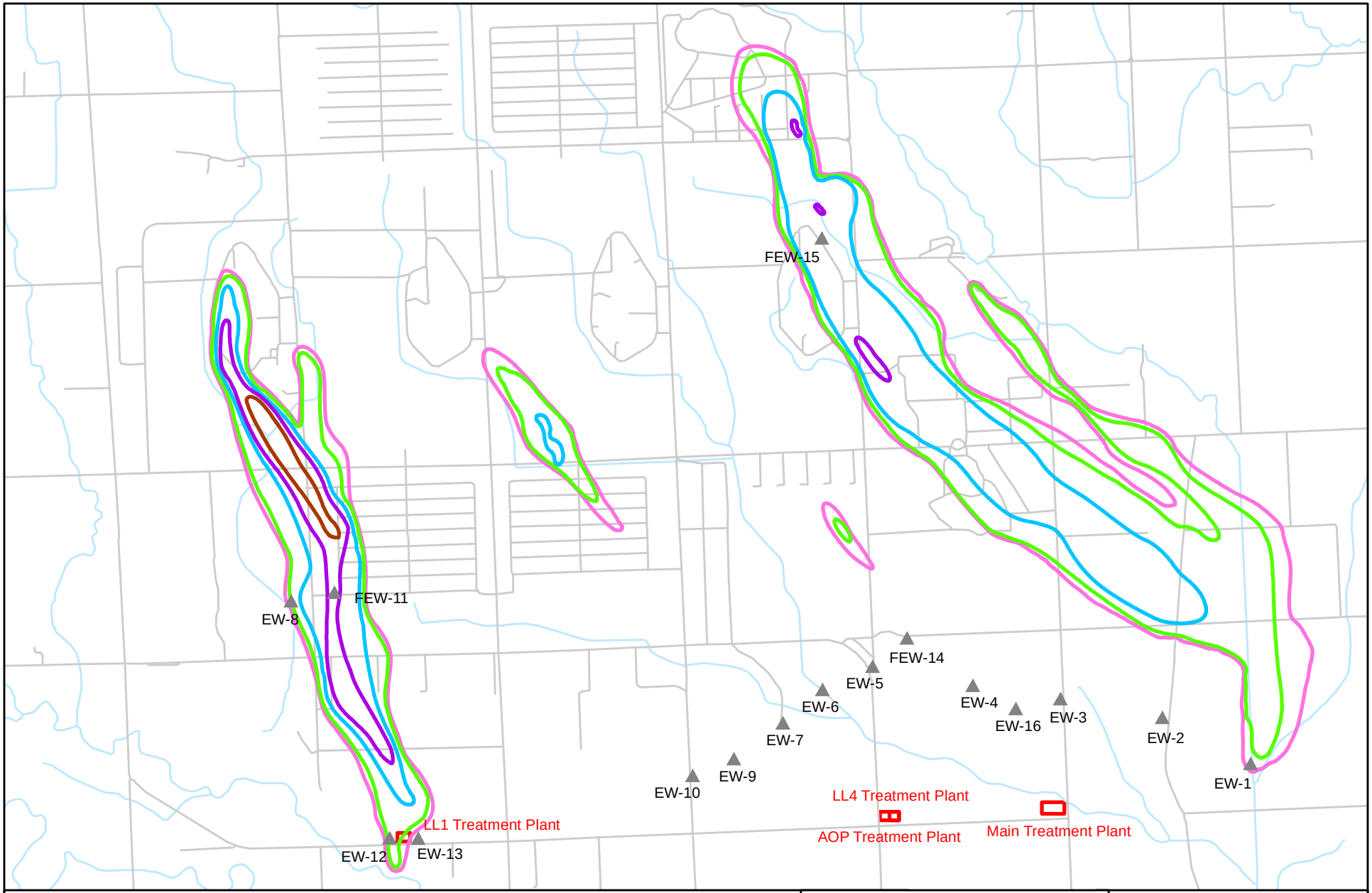

Figure E-8

TCE
2010
LAYER 3

Former NOP

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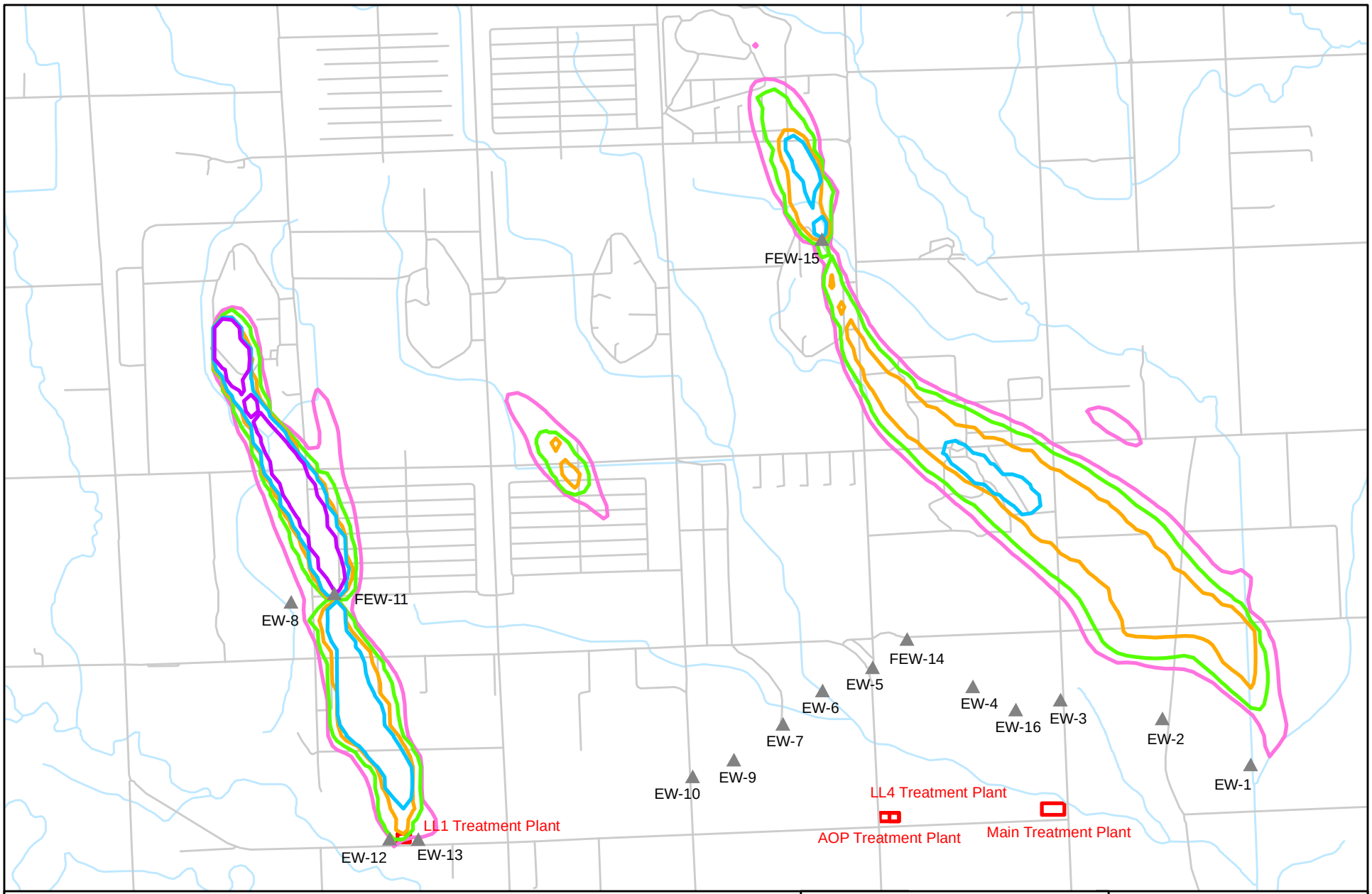

Figure E-9

PREDICTED TCE
LAYER 3
2015

Former NOP

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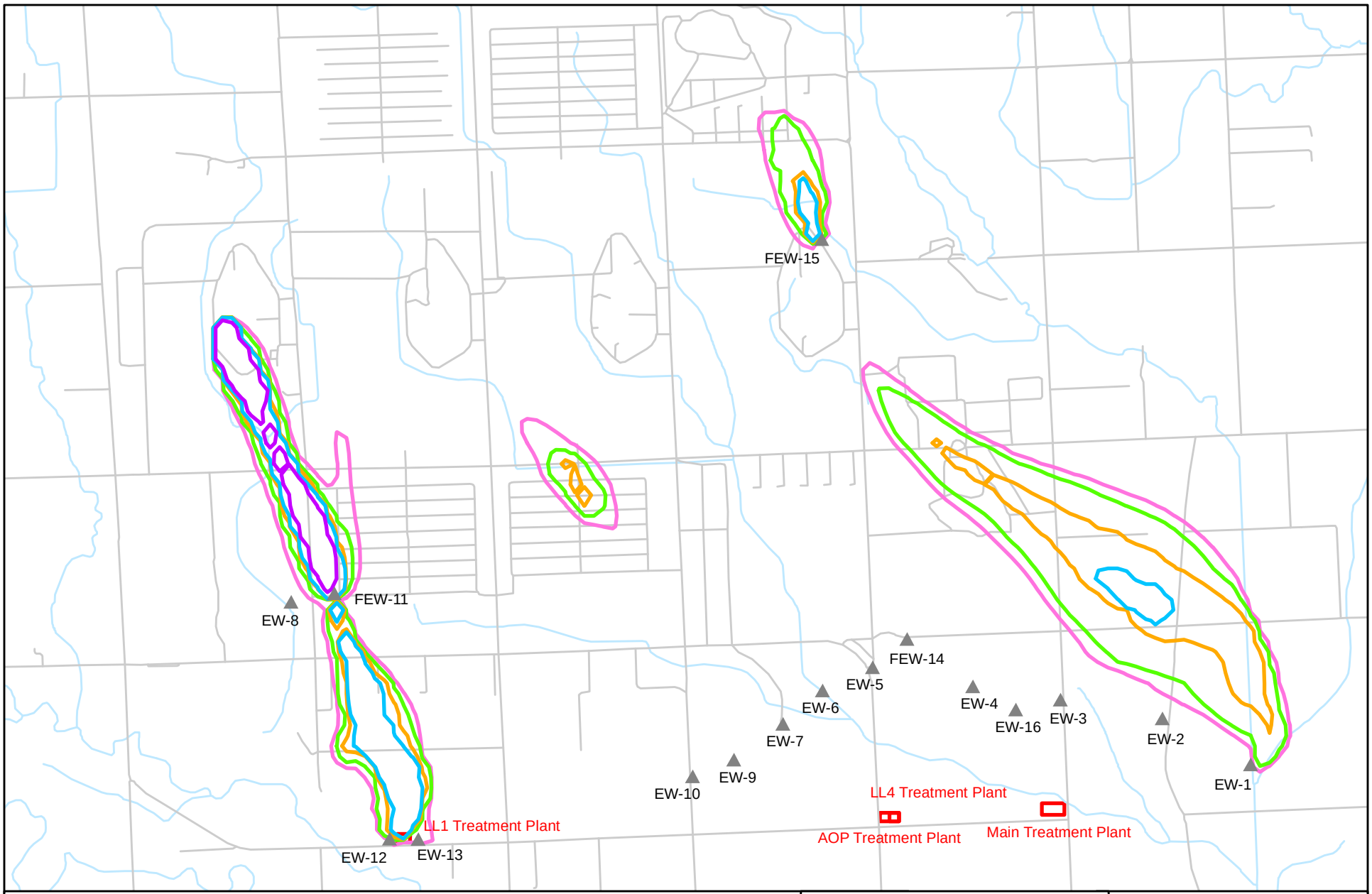

Figure E-10

PREDICTED TCE
LAYER 3
2020

Former NOP

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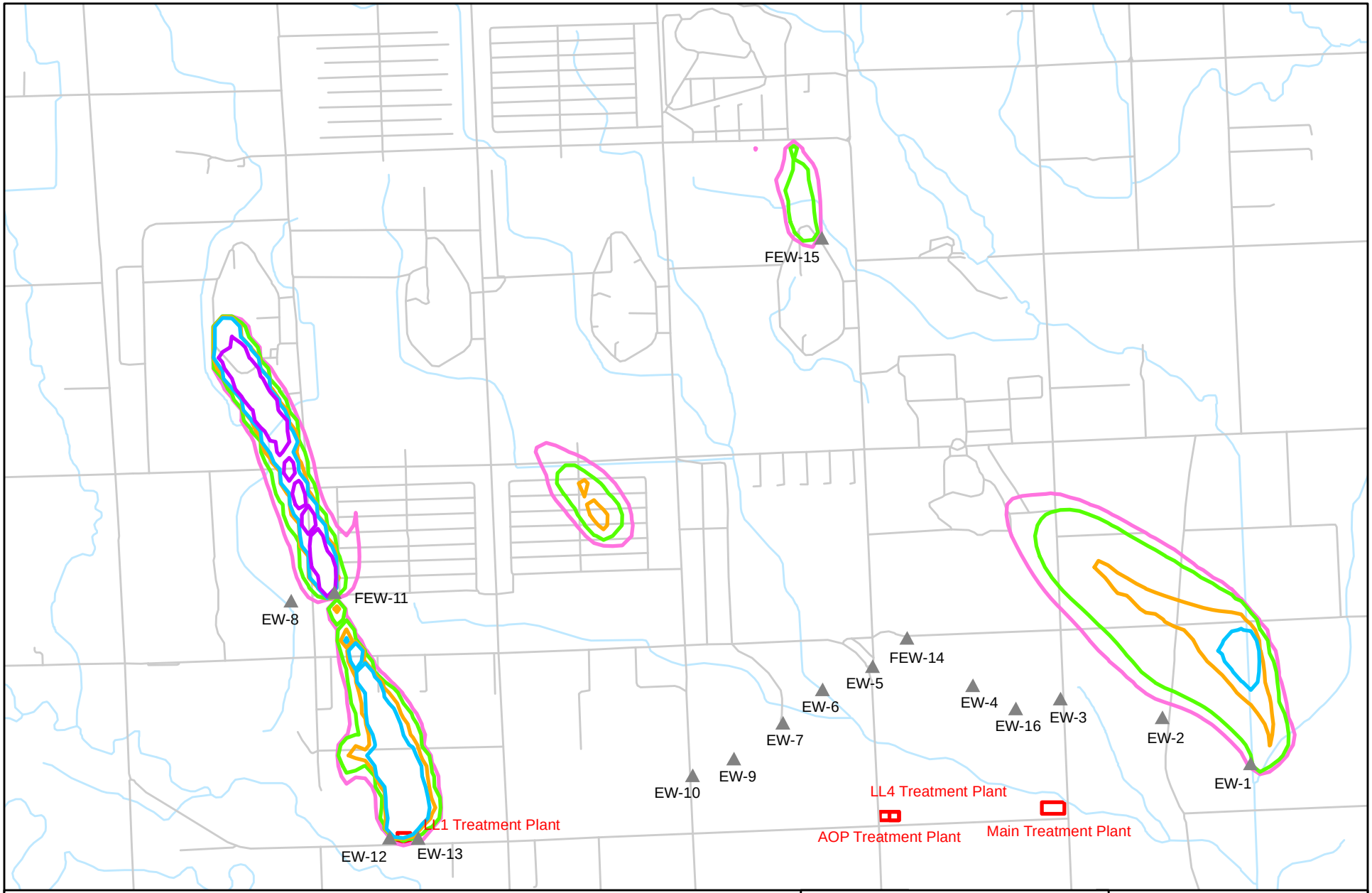

Figure E-11

PREDICTED TCE
LAYER 3
2020

Former NOP

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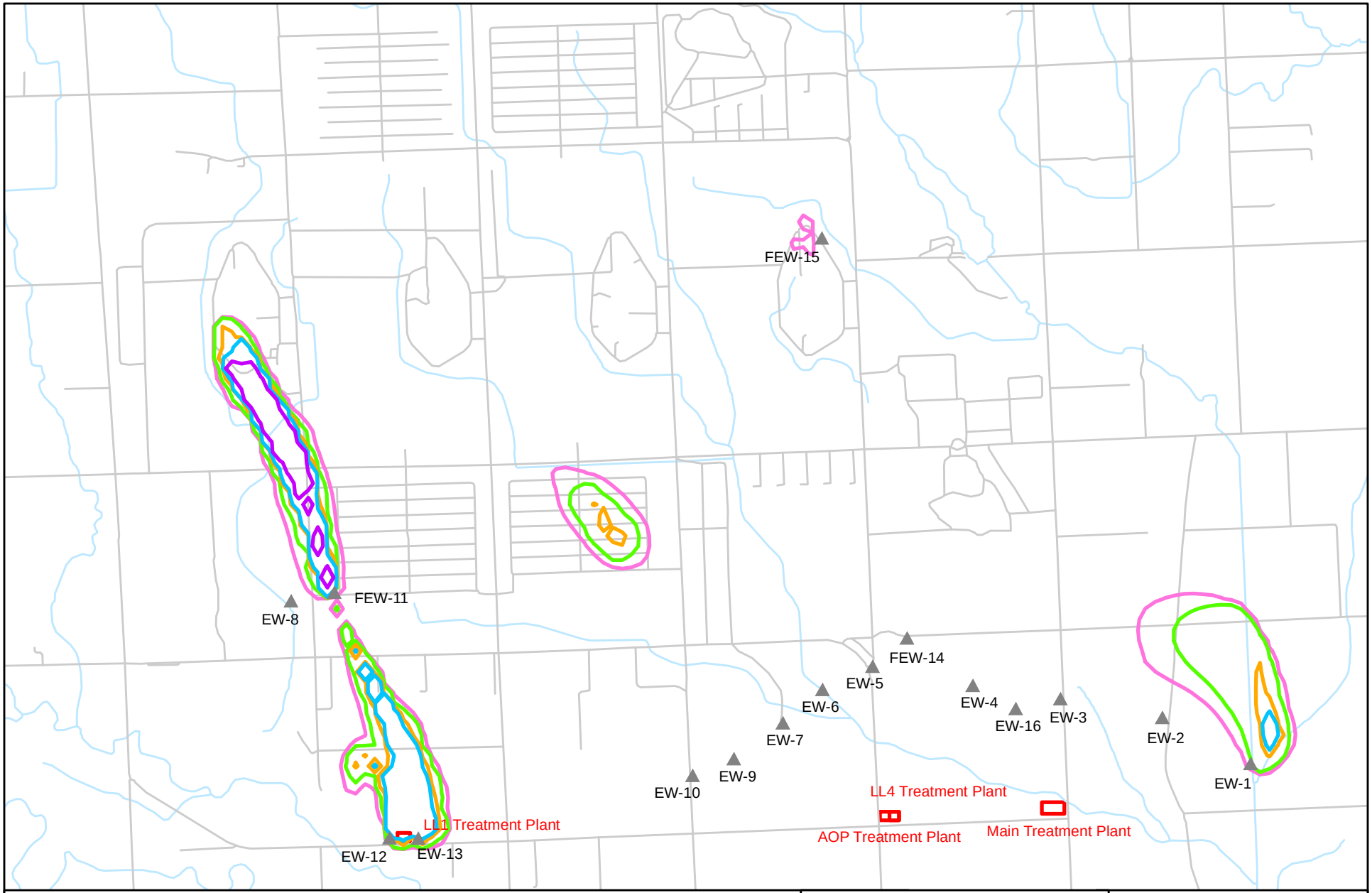

Figure E-12

PREDICTED TCE
LAYER 3
2030

Former NOP

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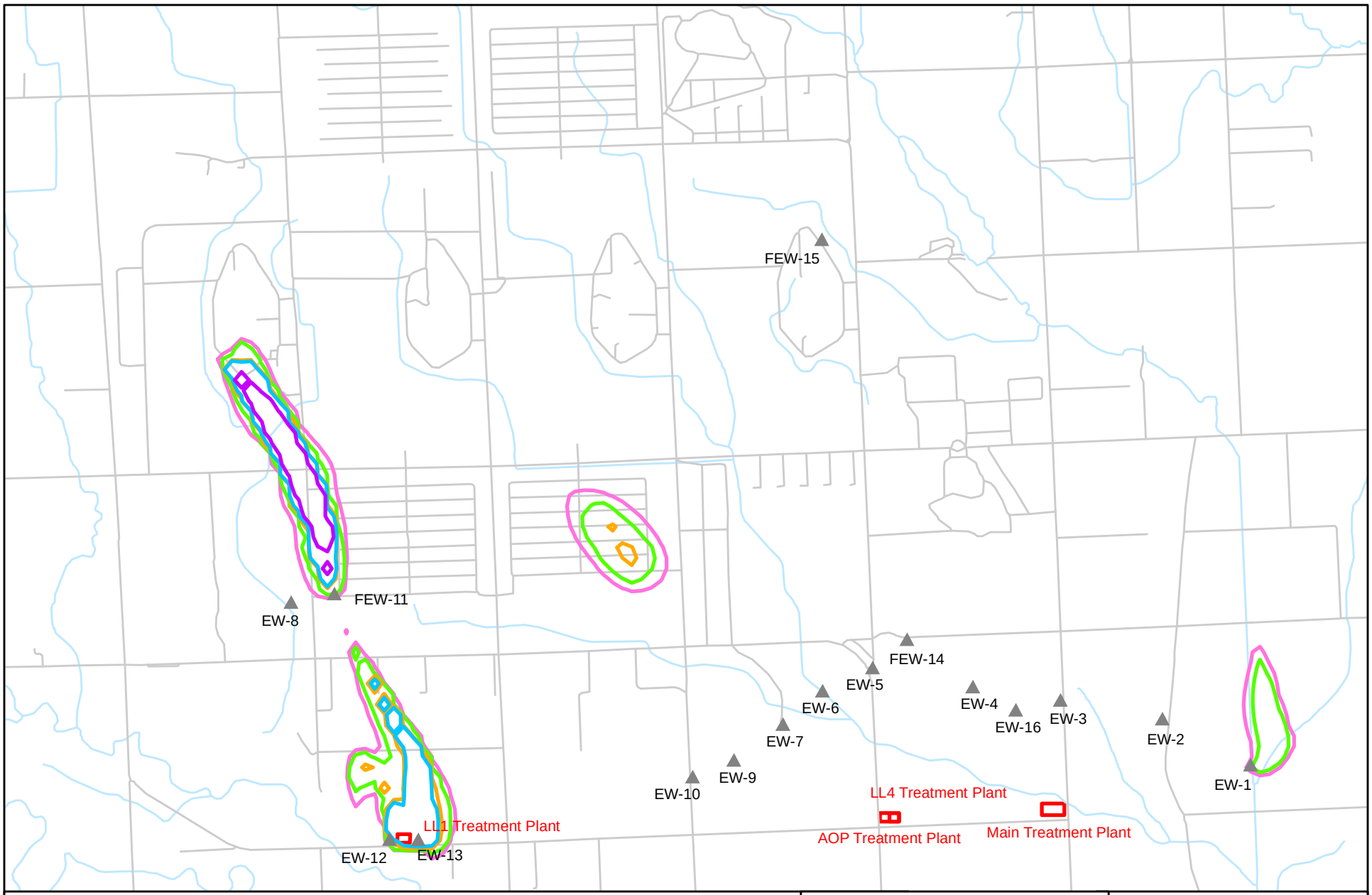

Figure E-13

PREDICTED TCE
LAYER 3
2035

Former NOP

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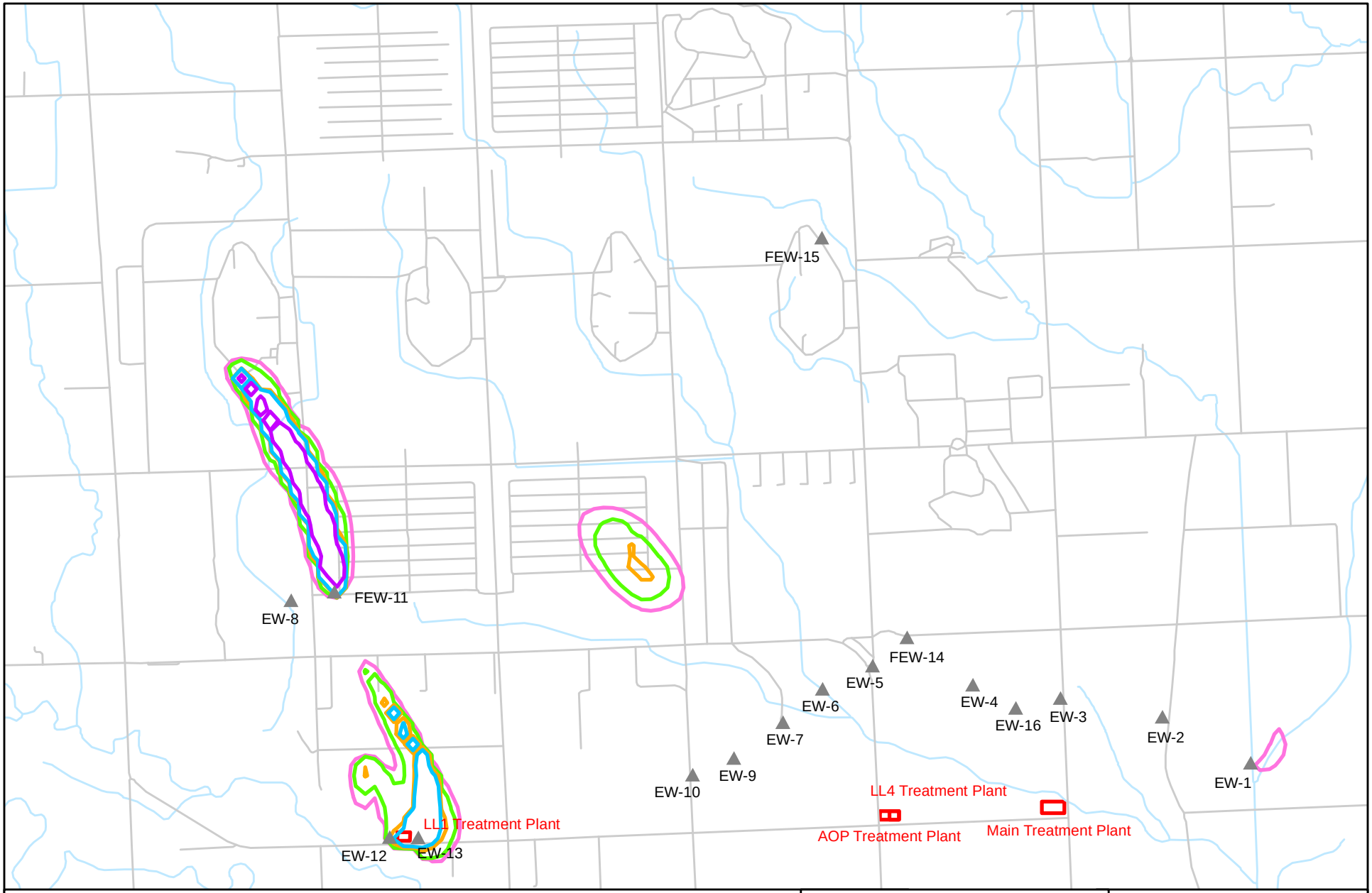

Figure E-14

PREDICTED TCE
LAYER 3
2040

Former NOP

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Appendix F
RDX Transport Simulations

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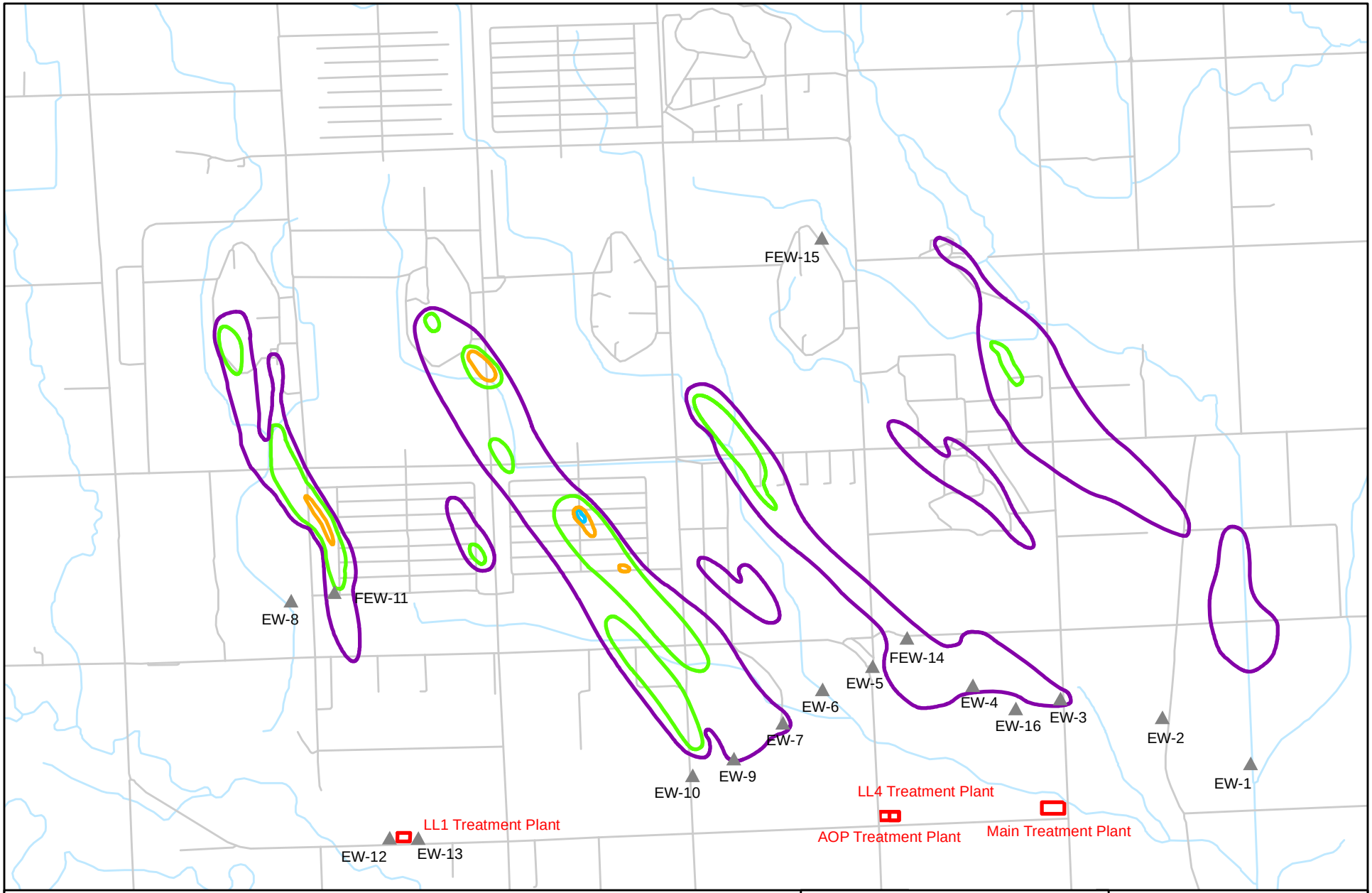

Figure F-1

RDX
2010
LAYER 2

Former NOP

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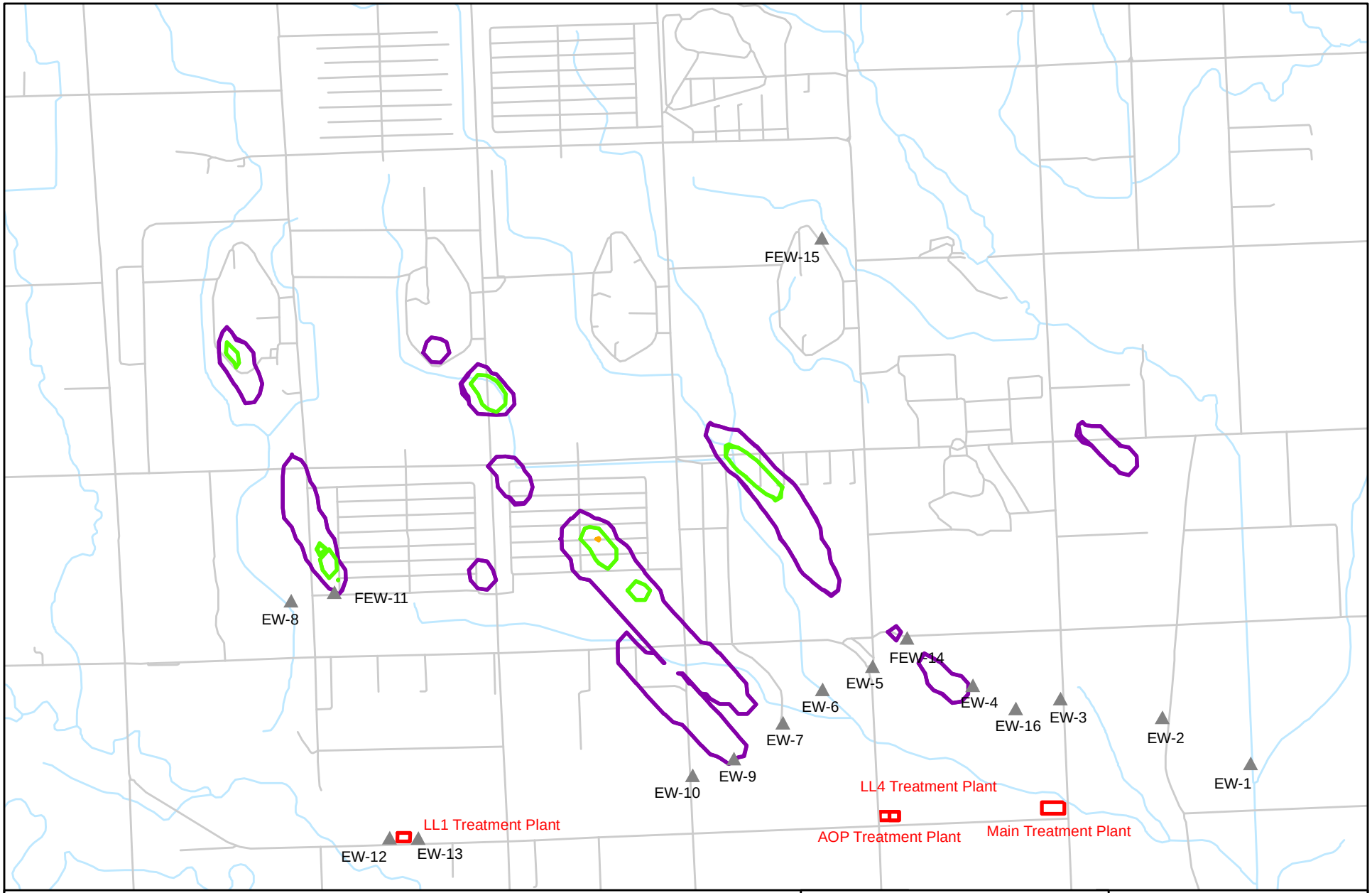

Figure F-2

PREDICTED RDX
LAYER 2
2015

Former NOP

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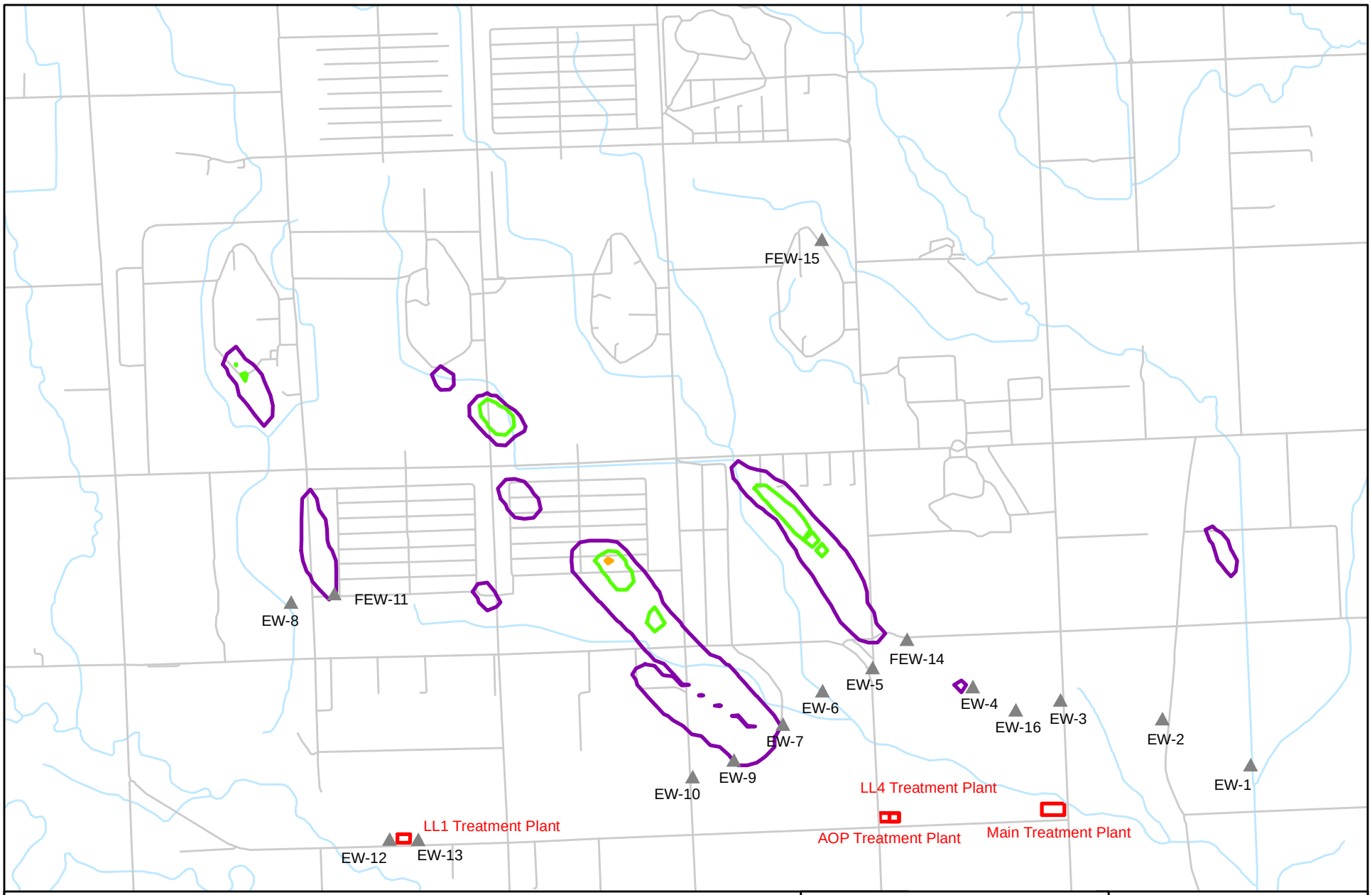

US Army Corps of Engineers
Kansas City District

ECC

Burns & McDonnell

Figure F-3

PREDICTED RDX
LAYER 2
2020

Former NOP

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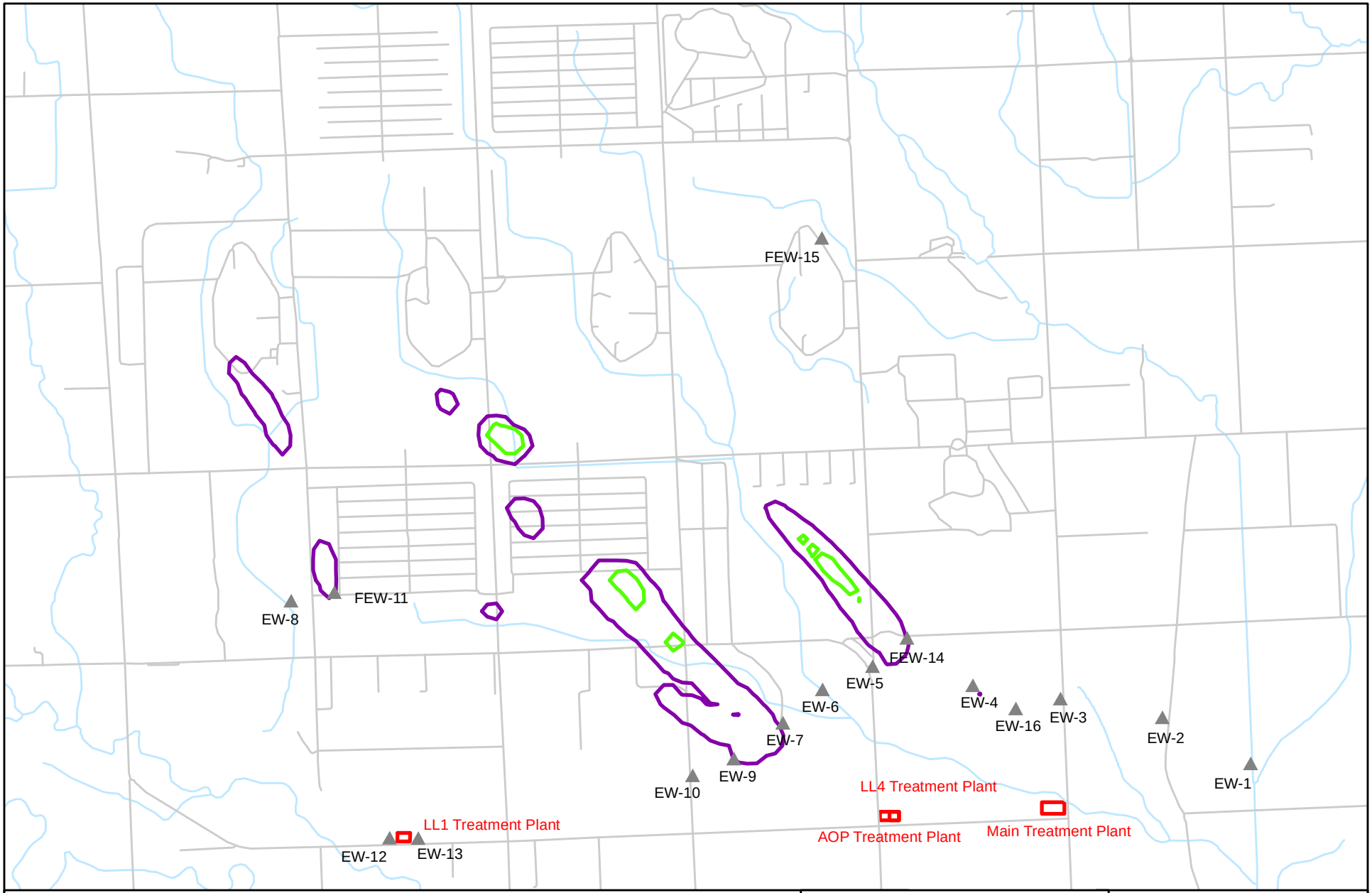

Figure F-4

PREDICTED RDX
LAYER 2
2025

Former NOP

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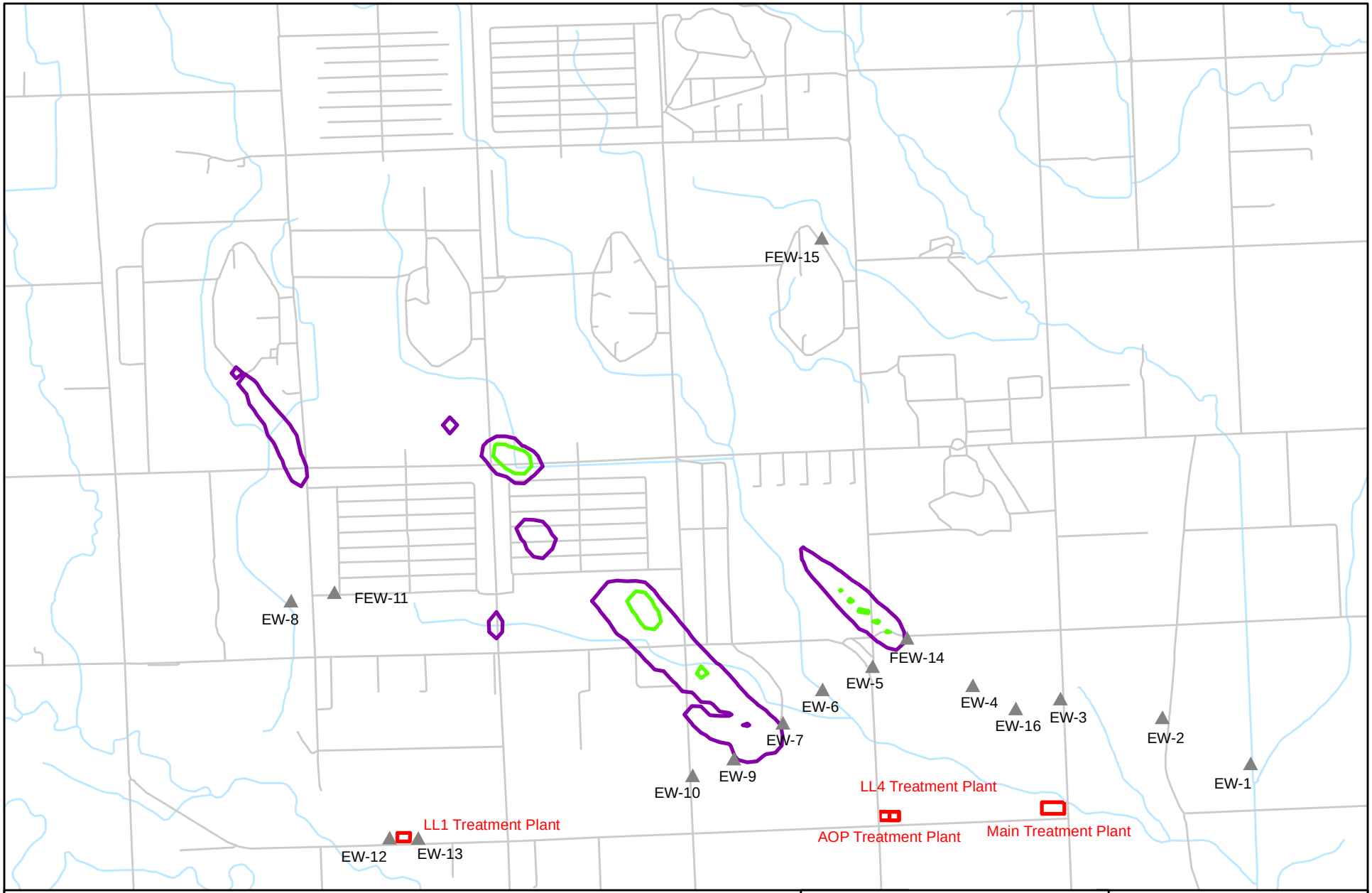

Figure F-5

PREDICTED RDX
LAYER 2
2030

Former NOP

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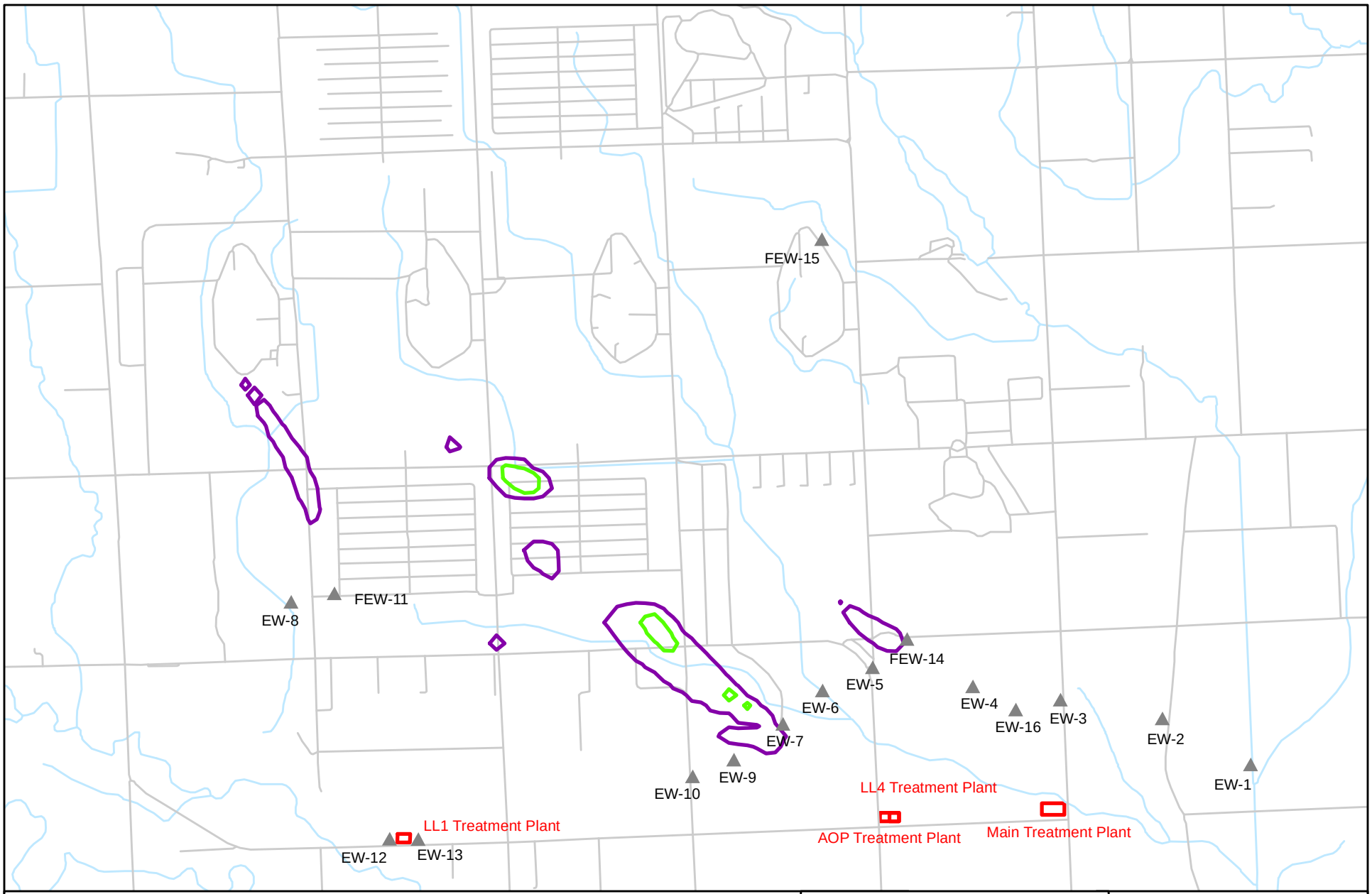

Figure F-6

PREDICTED RDX
LAYER 2
2035

Former NOP

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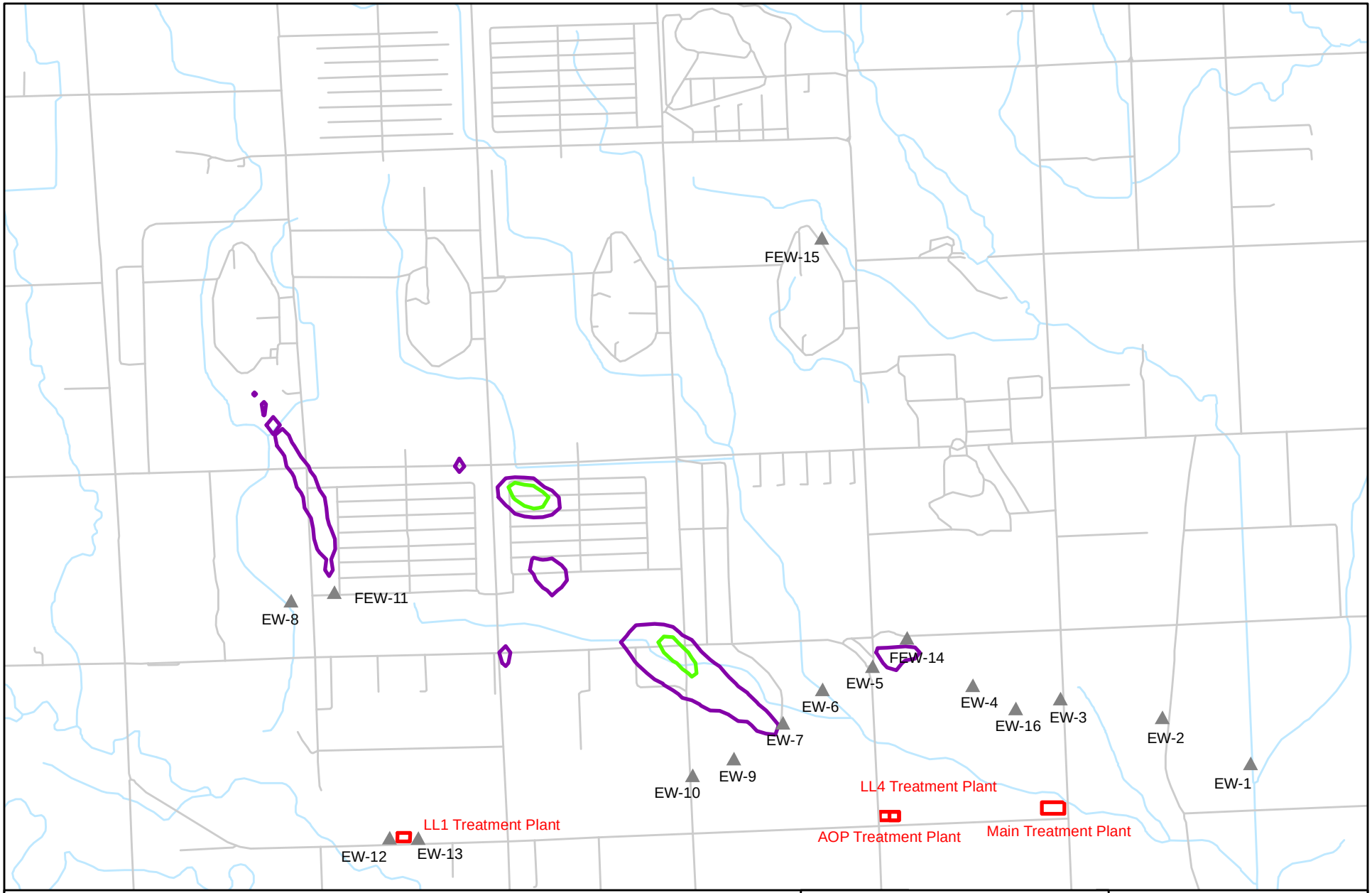

Figure F-7

PREDICTED RDX
LAYER 2
2040

Former NOP

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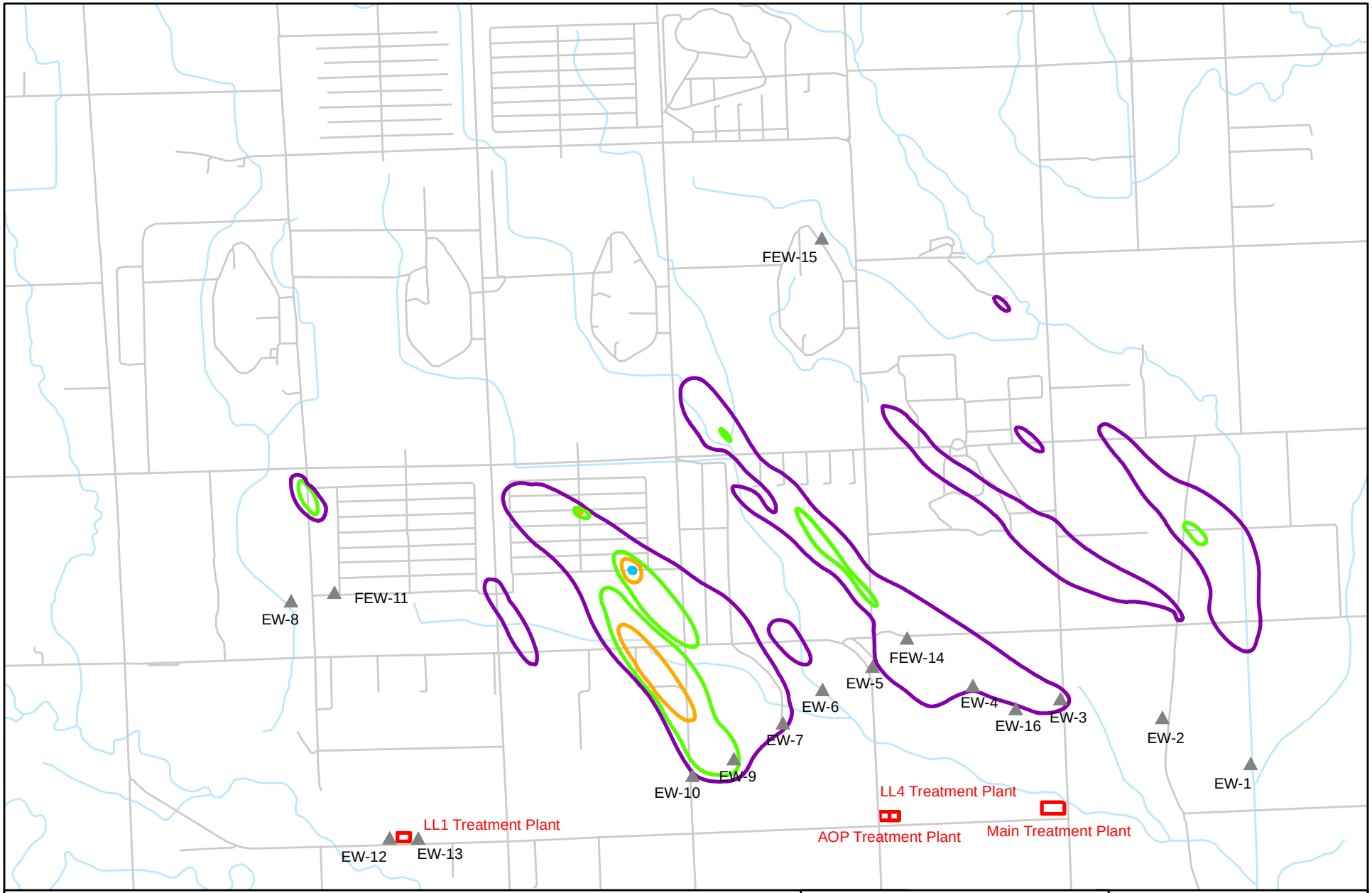

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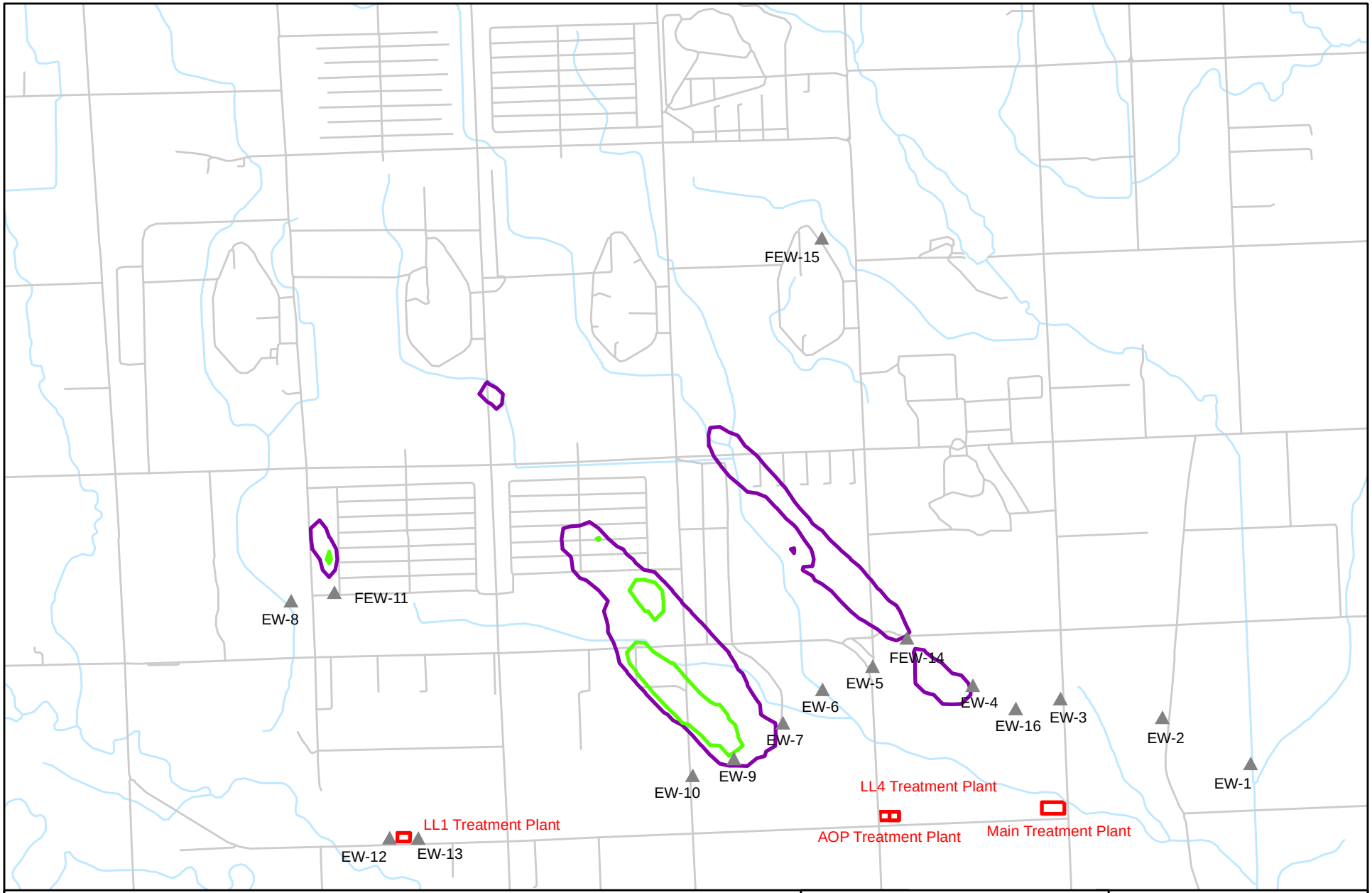

Figure F-9

PREDICTED RDX
LAYER 3
2015

Former NOP

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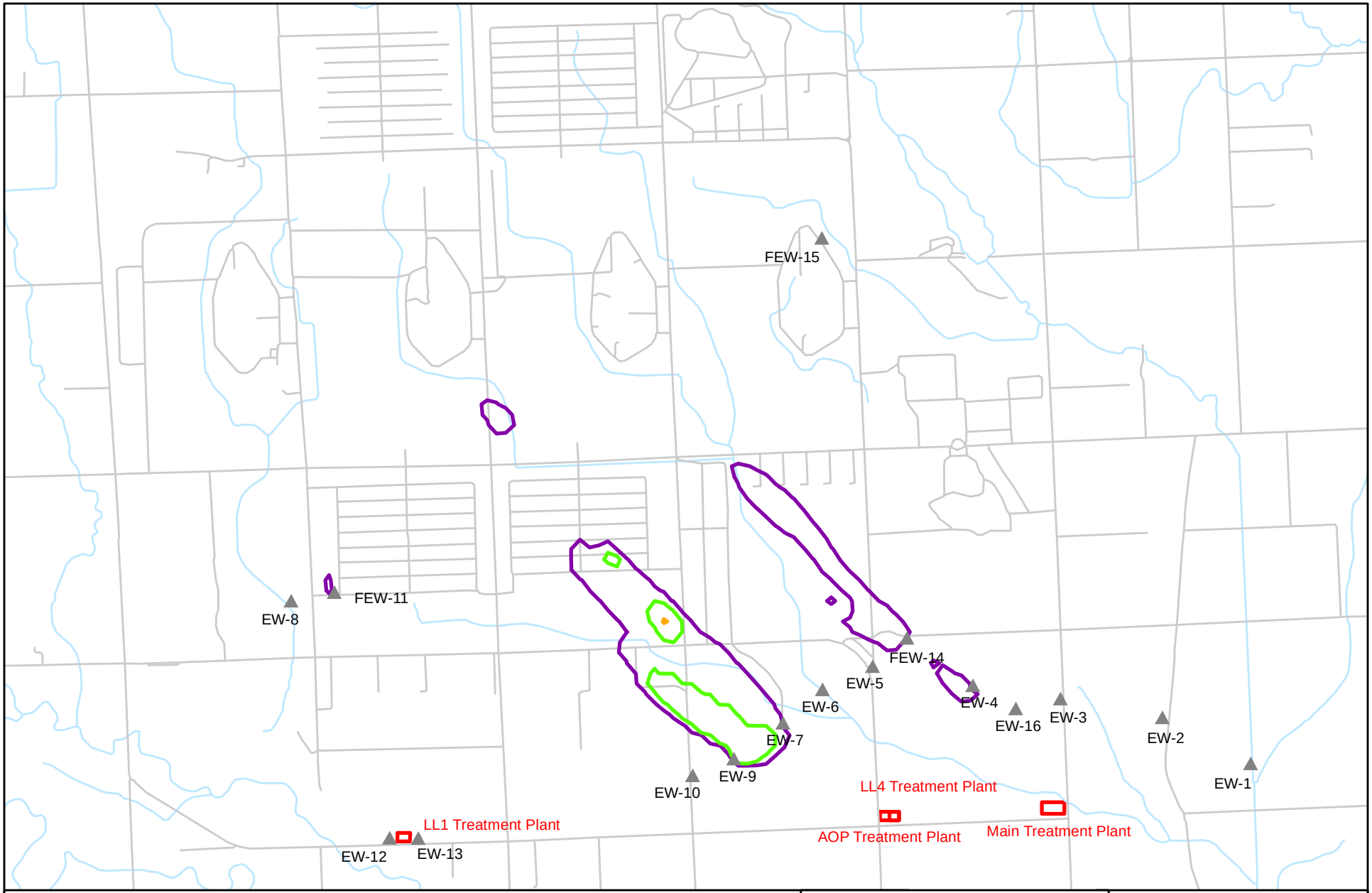

Figure F-10

PREDICTED RDX
LAYER 3
2020

Former NOP

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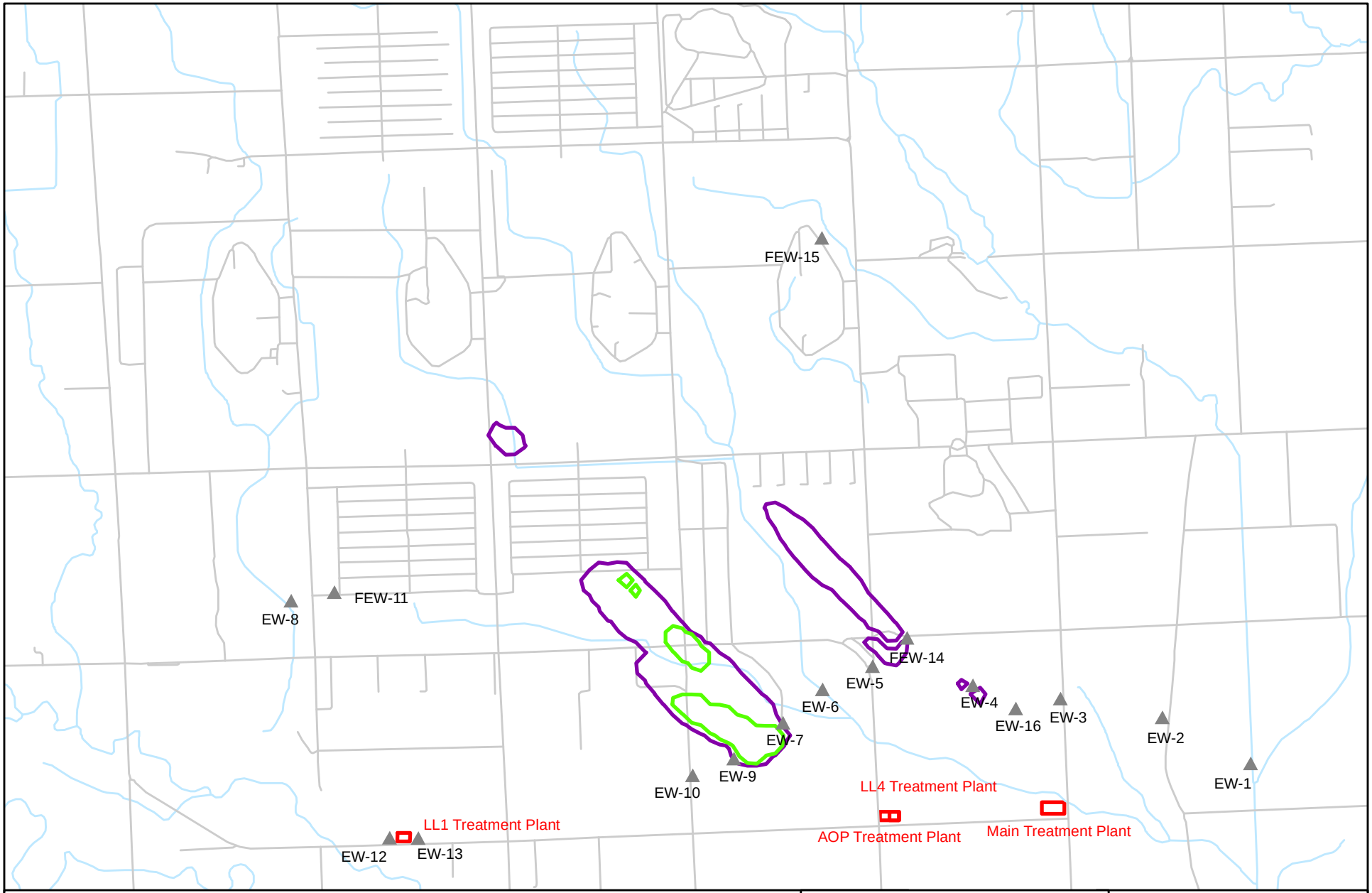

Figure F-11

PREDICTED RDX
LAYER 3
2025

Former NOP

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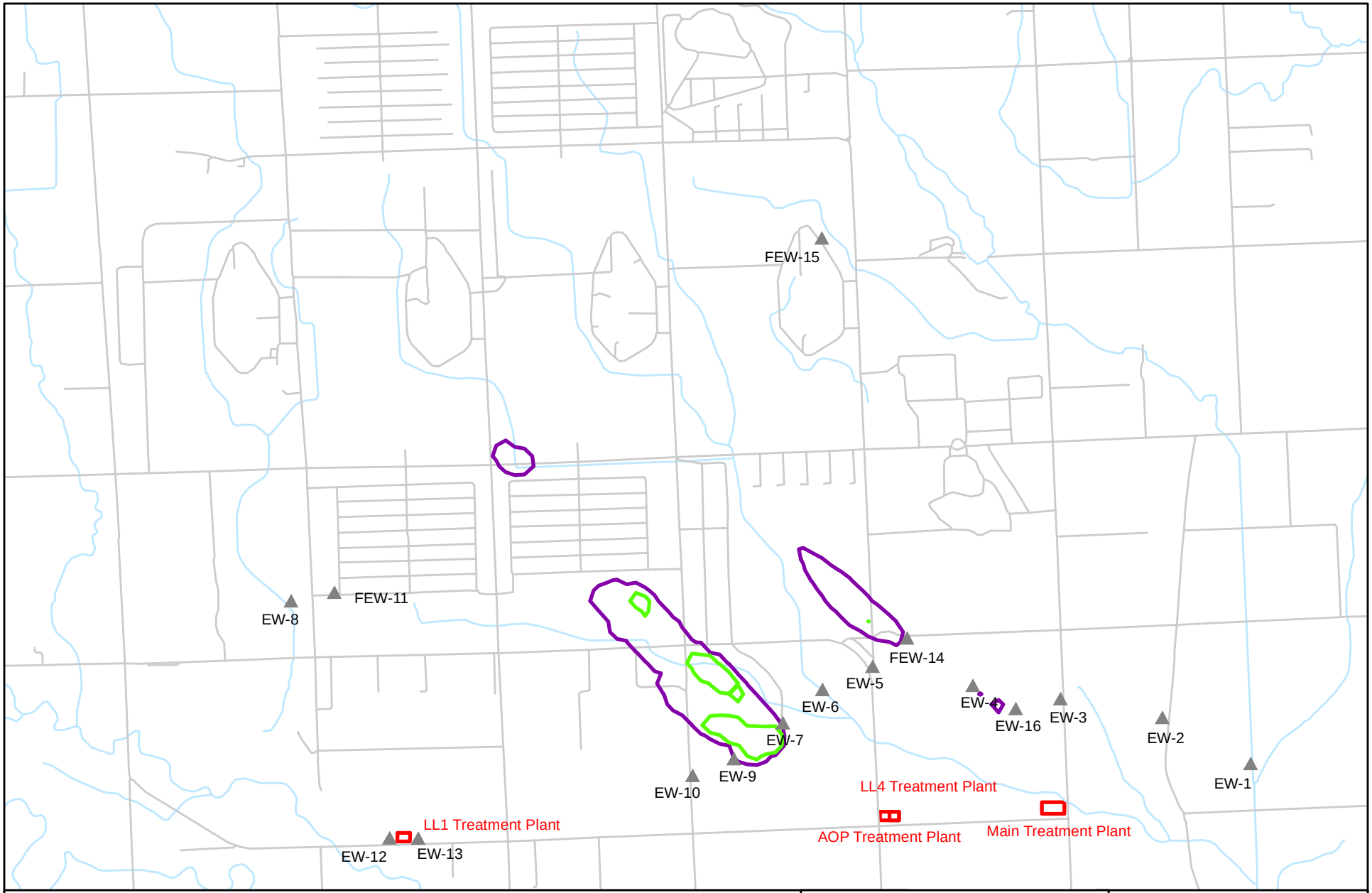

Figure F-12

PREDICTED RDX
LAYER 3
2030

Former NOP

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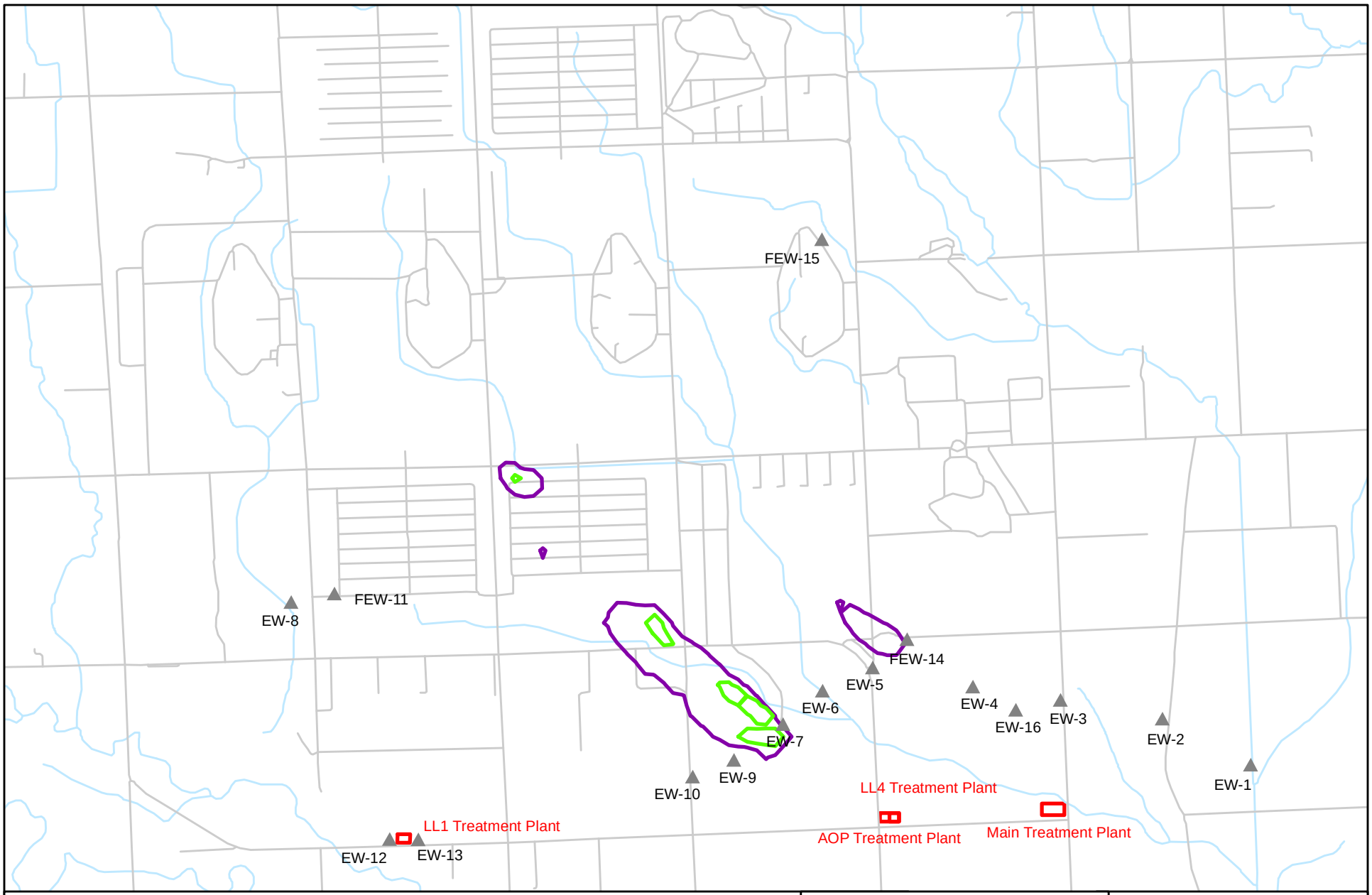

Figure F-13

PREDICTED RDX
LAYER 3
2035

Former NOP

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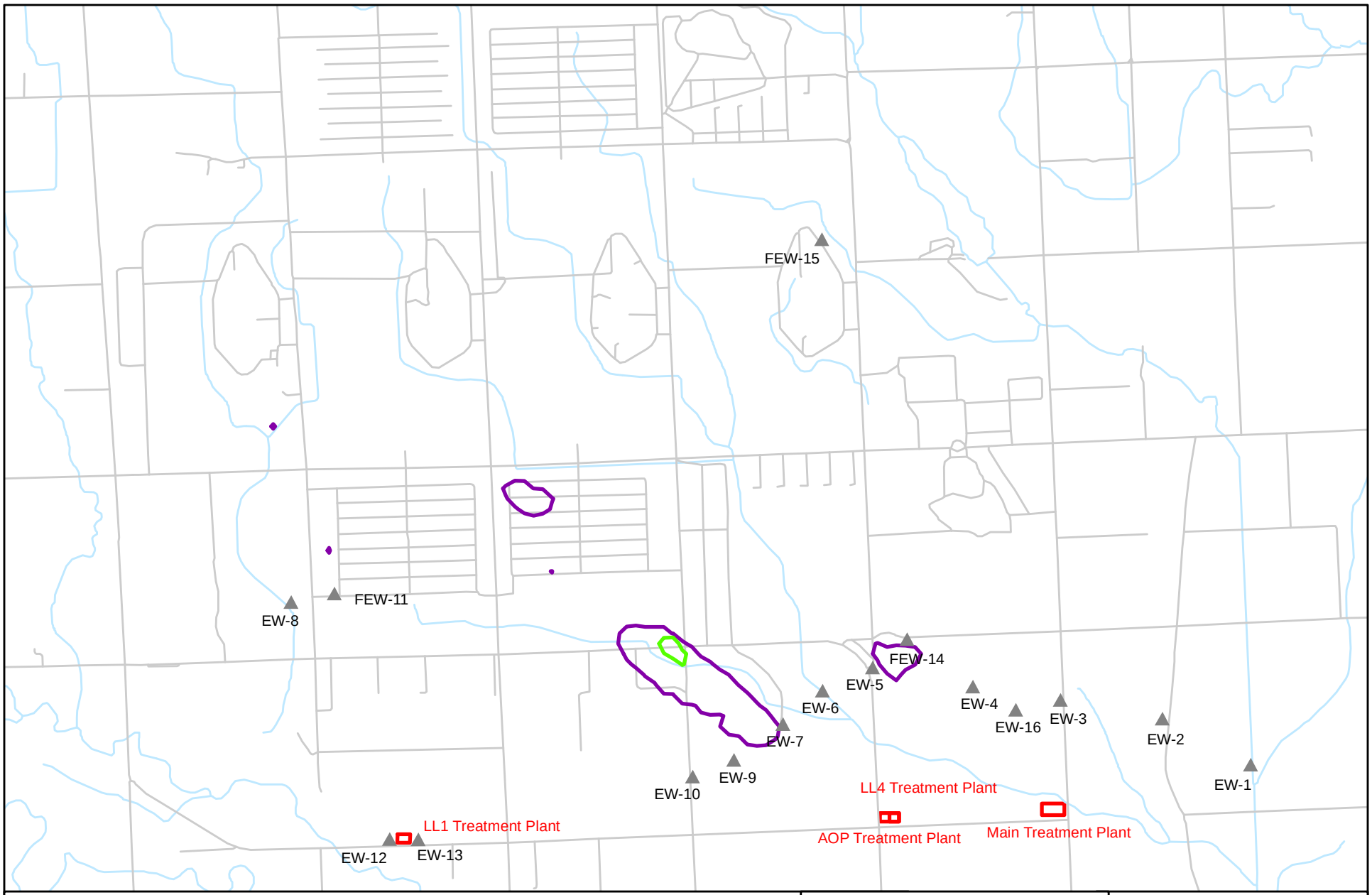

Figure F-14

PREDICTED RDX
LAYER 3
2040

Former NOP

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