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February 25, 2015

Sent VIA OVERNIGHT DELIVERY

Mr. Rusty Lundberg
Division of Radiation Control
Utah Department of Environmental Quality
195 North 1950 West
P.O. Box 144850
Salt Lake City, UT 84114-4820

Re: Transmittal of 4th Quarter 2014 Nitrate Monitoring Report
Stipulation and Consent Order Docket Number UGW12-04 White Mesa Uranium Mill

Dear Mr. Lundberg:

Enclosed are two copies of the White Mesa Uranium Mill Nitrate Monitoring Report for the 4th Quarter of 2014 as required by the Stipulation and Consent Order Docket Number UGW12-04, as well as two CDs each containing a word searchable electronic copy of the report.

If you should have any questions regarding this report please contact me.

Yours very truly,

Kathy Weinel

ENERGY FUELS RESOURCES (USA) INC.
Kathy Weinel
Quality Assurance Manager

cc: David C. Frydenlund
Dan Hillsten
Harold R. Roberts
David E. Turk
Scott Bakken

White Mesa Uranium Mill

Nitrate Monitoring Report

State of Utah
Stipulated Consent Agreement, January 2009
Docket No. UGW09-03

4th Quarter
(October through December)
2014

Prepared by:

Energy Fuels Resources (USA) Inc.
225 Union Boulevard, Suite 600
Lakewood, CO 80228

February 25, 2015

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ACRONYM LIST

AWAL	American West Analytical Laboratory
CA	Consent Agreement
CAP	Corrective Action Plan
CIR	Contamination Investigation Report
DIFB	Deionized Field Blanks
DRC	Utah Division of Radiation Control
EFRI	Energy Fuels Resources (USA) Inc.
ft amsl	feet above mean sea level
GWDP	Groundwater Discharge Permit
LCS	Laboratory Control Spike
MS	Matrix Spike
MSD	Matrix Spike Duplicate
QA	Quality Assurance
QAP	Groundwater Monitoring Quality Assurance Plan
QC	Quality Control
RPD	Relative Percent Difference
SCO	Stipulated Consent Order
SOPs	Standard Operating Procedures
UDEQ	Utah Department of Environmental Quality
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

The Utah Department of Environmental Quality ("UDEQ") Division of Radiation Control ("DRC") noted in a Request dated September 30, 2008 (the "Request"), for a Voluntary Plan and Schedule to Investigate and Remediate Nitrate Contamination at the White Mesa Uranium Mill (the "Mill") (the "Plan"), that nitrate levels have exceeded the State water quality standard of 10 mg/L in certain monitoring wells. As a result of the Request, Energy Fuels Resources (USA) Inc. ("EFRI") entered into a Stipulated Consent Agreement with the Utah Water Quality Board in January 2009 which directed the preparation of a Nitrate Contamination Investigation Report ("CIR"). A subsequent letter dated December 1, 2009, among other things, recommended that EFRI also address elevated chloride concentrations in the CIR. The Stipulated Consent Agreement was amended in August 2011. Under the amended Consent Agreement ("CA"), EFRI submitted a Corrective Action Plan ("CAP"), pursuant to the requirements of the Utah Groundwater Quality Protection Rules [UAC R317-6-6.15(C – E)] on November 29, 2011 and revised versions of the CAP on February 27, 2012 and May 7, 2012. On December 12, 2012, DRC signed the Stipulation and Consent Order ("SCO"), Docket Number UGW12-04, which approved the EFRI CAP, dated May 7, 2012. The SCO ordered EFRI to fully implement all elements of the May 7, 2012 CAP.

Based on the schedule included in the CAP and as delineated and approved by the SCO, the activities associated with the implementation of the CAP began in January 2013. The reporting requirements specified in the CAP and SCO are included in this quarterly nitrate report.

This is the Quarterly Nitrate Monitoring Report, as required under the SCO, State of UDEQ Docket No. UGW12-04 for the fourth quarter of 2014. This report meets the requirements of the SCO, State of UDEQ Docket No. UGW12-04 and is the document which covers nitrate corrective action and monitoring activities during the fourth quarter of 2014.

2.0 GROUNDWATER NITRATE MONITORING

2.1 Samples and Measurements Taken During the Quarter

A map showing the location of all groundwater monitoring wells, piezometers, existing wells, temporary chloroform contaminant investigation wells and temporary nitrate investigation wells is attached under Tab A. Nitrate samples and measurements taken during this reporting period are discussed in the remainder of this section.

2.1.1 Nitrate Monitoring

Quarterly sampling for nitrate monitoring parameters was performed in the following wells:

TWN-1	TW4-24*
TWN-2	TW4-25*
TWN-3	Piezometer 1
TWN-4	Piezometer 2
TWN-7	Piezometer 3
TWN-18	
TW4-22*	

As discussed in Section 2.1.2 the analytical constituents required by the CAP are inorganic chloride and nitrate+nitrite as N (referred to as nitrate in this document)

* Wells TW4-22, TW4-24, TW4-25 are chloroform investigation wells (wells installed and sampled primarily for the chloroform investigation) and are sampled as part of the chloroform program. The analytical suite for these three wells includes nitrate, chloride and a select list of Volatile Organic Compounds ("VOCs") as specified in the chloroform program. These three wells are included here because they are being pumped as part of the remediation of the nitrate contamination as required by the SCO and the CAP. The nitrate and chloride data are included in this report as well as in the chloroform program quarterly report. The VOC data for these three wells will be reported in the chloroform quarterly monitoring report only.

The December 12, 2012 SCO approved the CAP, which specified the cessation of sampling in TWN-5, TWN-6, TWN-8, TWN-9, TWN-10, TWN-11, TWN-12, TWN-13, TWN-14, TWN-15, TWN-16, TWN-17, and TWN-19. The CAP and SCO also approved the abandonment of TWN-5, TWN-8, TWN-9, TWN-10, TWN-11, TWN-12, TWN-13, TWN-15, and TWN-17 within 1 year of the SCO approval. These wells were abandoned in accordance with the DRC-approved Well Abandonment Procedure on July 31, 2013. Wells TWN-6, TWN-14, TWN-16, and TWN-19 have been maintained for depth to groundwater monitoring only, as noted in the CAP.

Table 1 provides an overview of all locations sampled during the current period, along with the date samples were collected from each location, and the date(s) upon which analytical data were received from the contract laboratory. Table 1 also identifies rinsate samples collected, as well as sample numbers associated with any required duplicates.

As indicated in Table 1, nitrate monitoring was performed in the nitrate monitoring wells, chloroform wells TW4-22, TW4-24, TW4-25 and Piezometers 1, 2, and 3. Analytical data for all of the above-listed wells, and the piezometers, are included in Tab G.

Nitrate and chloride are also monitored in all of the Mill's groundwater monitoring wells and chloroform investigation wells. Data from those wells for this quarter are incorporated in certain maps and figures in this report but are discussed in their respective programmatic reports.

2.1.2 Parameters Analyzed

Locations sampled during this reporting period were analyzed for the following constituents:

- Inorganic Chloride
- Nitrate plus Nitrite as Nitrogen (referred to herein as nitrate)

Use of analytical methods consistent with the requirements found in the White Mesa Mill Groundwater Quality Assurance Plan, ("QAP") Revision 7.2, dated June 6, 2012 was confirmed for all analytes, as discussed later in this report.

2.1.3 Groundwater Head and Level Monitoring

Depth to groundwater was measured in the following wells and/or piezometers, pursuant to Part I.E.3 of the Groundwater Discharge Permit ("GWDP") (dated August 24, 2012):

- The quarterly groundwater compliance monitoring wells
- Existing well MW-4 and all of the temporary chloroform investigation wells
- Piezometers – P-1, P-2, P-3, P-4 and P-5
- MW-20, MW-22, and MW-34
- The DR piezometers that were installed during the Southwest Hydrogeologic Investigation
- Nitrate wells TWN-1, TWN-2, TWN-3, TWN-4, TWN-6, TWN-7, TWN-14, TWN-16, TWN-18 and TWN-19

In addition to the above, depth to water measurements are routinely observed in conjunction with sampling events for all wells sampled during quarterly and accelerated efforts, regardless of the sampling purpose.

All well levels used for groundwater contour mapping were measured and recorded within 5 calendar days of each other as indicated by the measurement dates in the summary sheet under Tab C. Field data sheets for groundwater measurements are also provided in Tab C.

Weekly and monthly depth to groundwater measurements were taken in the chloroform pumping wells MW-4, MW-26, TW4-19, TW4-20, and TW4-4, and the nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2. In addition, monthly water level measurements were taken in non-pumping wells MW-27, MW-30, MW-31, TW4-21, TWN-1, TWN-3, TWN-4, TWN-7, and TWN-18 as required by the CAP.

2.2 Sampling Methodology and Equipment and Decontamination Procedures

The QAP provides a detailed presentation of procedures utilized for groundwater sampling activities under the GWDP (August 24, 2012).

The sampling methodology, equipment and decontamination procedures that were performed for the nitrate contaminant investigation, as summarized below, are consistent with the QAP.

2.2.1 Well Purging, Sampling and Depth to Groundwater

A list of the wells in order of increasing nitrate contamination is generated quarterly. The order for purging is thus established. The list is included with the Field Data Worksheets under Tab B. Mill personnel start purging with all of the nondetect wells and then move to the wells with detectable nitrate concentrations, progressing from the wells having the lowest nitrate contamination to wells with the highest nitrate contamination.

Before leaving the Mill office, the pump and hose are decontaminated using the cleaning agents described in Attachment 2-2 of the QAP. Rinsate blanks are collected at a frequency of one rinsate per 20 field samples.

Purging is completed to remove stagnant water from the casing and to assure that representative samples of formation water are collected for analysis. There are three purging strategies specified in the QAP that are used to remove stagnant water from the casing during groundwater sampling at the Mill. The three strategies are as follows:

1. Purging three well casing volumes with a single measurement of field parameters
2. Purging two casing volumes with stable field parameters (within 10% Relative Percent Difference ["RPD"])
3. Purging a well to dryness and stability (within 10% RPD) of a limited list of field parameters after recovery.

Mill personnel proceed to the first well, which is the well with the lowest concentration (i.e. non-dectect) of nitrate based on the previous quarter's sampling results. Well depth measurements are taken and the one casing volume is calculated. The purging strategy that will be used for the well is determined at this time based on the depth to water measurement and the previous production of the well. The Grundfos pump (a 6 to 10 gallon per minute [gpm] pump) is then lowered to the appropriate depth in the well and purging is started. At the first well, the purge rate is measured for the purging event by using a calibrated 5 gallon bucket. After the evacuation of the well has been completed, the well is sampled when possible, and the pump is removed from the well and the process is repeated at each well location moving from the least contaminated to most contaminated well. If sample collection is not possible due to the well being purged dry, a sample is collected after recovery using a disposable bailer and as described in Attachment 2-3 of the QAP. Sample collection follows the procedures described in Attachment 2-4 of the QAP.

After the samples have been collected for a particular well, the samples are placed into a cooler that contains ice. The well is then recapped and Mill personnel proceed to the next well. If a bailer has been used it is disposed of.

Decontamination of non-dedicated equipment, using the reagents in Attachment 2-2 of the QAP, is performed between each sample location, and at the beginning of each sampling day, in addition to the pre-event decontamination described above.

2.2.2 Piezometer Sampling

Samples are collected from Piezometers 1, 2 and 3, if possible. Samples are collected from piezometers using a disposable bailer after one set of field measurements have been collected. Due to the difficulty in obtaining samples from the piezometers, the purging protocols set out in the QAP are not followed.

After samples are collected, the bailer is disposed of and samples are placed into a cooler containing ice for sample preservation and transit to the Mill's contract analytical laboratory, American West Analytical Laboratories ("AWAL").

2.3 Field Data

Attached under Tab B are copies of all Field Data Worksheets that were completed during the quarter for the nitrate investigation monitoring wells and piezometers identified in Section 2.1.1 and Table 1.

2.4 Depth to Groundwater Data and Water Table Contour Map

Depth-to-groundwater measurements that were utilized for groundwater contours are included on the Quarterly Depth to Water Sheet at Tab C of this Report along with the kriged groundwater contour map for the current quarter generated from this data. All well levels used for groundwater contour mapping were measured and recorded within 5 calendar days of each other as indicated by the measurement dates in the summary sheet under Tab C. A copy of the kriged groundwater contour map generated from the previous quarter's data is provided under Tab D.

2.5 Laboratory Results

2.5.1 Copy of Laboratory Results

The analytical results were provided by AWAL. Table 1 lists the dates when analytical results were reported to the Quality Assurance ("QA") Manager for each well or other sample.

Analytical results for the samples collected for this quarter's nitrate investigation and a limited list of chloroform investigation nitrate and chloride results are provided under Tab G of this Report. Also included under Tab G are the results of analyses for duplicate samples and rinsate samples for this sampling effort, as identified in Table 1. See the Groundwater Monitoring Report and Chloroform Monitoring Report for this quarter for nitrate and chloroform analytical results for the groundwater monitoring wells and chloroform investigation wells not listed in Table 1.

2.5.2 Regulatory Framework

As discussed in Section 1.0 above, the Request, Plan, and CA each triggered a series of actions on EFRI's part. Potential surficial sources of nitrate and chloride have been described in the December 30, 2009 CIR and additional investigations into potential sources were completed and discussed with DRC in 2011. Pursuant to the CA, the CAP was submitted to the Director of the Division of Radiation Control (the "Director") on May 7, 2012. The CAP describes activities

associated with the nitrate in groundwater. The CAP was approved by the Director on December 12, 2012. This quarterly report documents the monitoring consistent with the program described in the CAP.

3.0 QUALITY ASSURANCE AND DATA VALIDATION

EFRI's QA Manager performed a QA/Quality Control ("QC") review to confirm compliance of the monitoring program with the requirements of the QAP. As required in the QAP, data QA includes preparation and analysis of QC samples in the field, review of field procedures, an analyte completeness review, and QC review of laboratory data methods and data. Identification of field QC samples collected and analyzed is provided in Section 3.1. Discussion of adherence to Mill sampling Standard Operating Procedures ("SOPs") is provided in Section 3.2. Analytical completeness review results are provided in Section 3.3. The steps and tests applied to check field data QA/QC, holding times, receipt temperature and laboratory data QA/QC are discussed in Sections 3.4.1 through 3.4.7 below.

The analytical laboratory has provided summary reports of the analytical QA/QC measurements necessary to maintain conformance with National Environmental Laboratory Accreditation Conference certification and reporting protocol. The Analytical Laboratory QA/QC Summary Reports, including copies of the Mill's Chain of Custody and Analytical Request Record forms for each set of Analytical Results, follow the analytical results under Tab G. Results of the review of the laboratory QA/QC information are provided under Tab H and discussed in Section 3.4, below.

3.1 Field QC Samples

The following QC samples were generated by Mill personnel and submitted to the analytical laboratory in order to assess the quality of data resulting from the field sampling program.

Field QC samples for the nitrate investigation program consist of one field duplicate sample for each 20 samples, DI Field Blanks ("DIFB"), and equipment rinsate samples.

During the quarter, one duplicate sample was collected as indicated in Table 1. The duplicate was sent blind to the analytical laboratory and analyzed for the same parameters as the nitrate wells.

One rinsate blank sample was collected as indicated on Table 1. Rinsate samples are labeled with the name of the subsequently purged well with a terminal letter "R" added (e.g. TWN-7R).

The field QC sample results are included with the routine analyses under Tab G.

3.2 Adherence to Mill Sampling SOPs

The QA Manager review of Mill Personnel's adherence to the existing SOPs, confirmed that the QA/QC requirements established in the QAP and Chloroform QAP were met.

3.3 Analyte Completeness Review

All analyses required by the GWDP for nitrate monitoring for the period were performed.

3.4 Data Validation

The QAP and GWDP (August 24, 2012) identify the data validation steps and data QC checks required for the nitrate monitoring program. Consistent with these requirements, the QA Manager performed the following evaluations: a field data QA/QC evaluation, a holding time evaluation, an analytical method check, a reporting limit evaluation, a QC evaluation of sample duplicates, a QC evaluation of control limits for analysis and blanks, a receipt temperature evaluation, and a rinsate evaluation. Because no VOCs are analyzed for the nitrate contamination investigation, no trip blanks are required in the sampling program. Each evaluation is discussed in the following sections. Data check tables indicating the results of each test are provided under Tab H.

3.4.1 Field Data QA/QC Evaluation

The QA Manager performs a review of all field recorded parameters to assess their adherence with QAP requirements. The assessment involved review of two sources of information: the Field Data Sheets and the Quarterly Depth to Water summary sheet. Review of the Field Data Sheets addresses well purging volumes and stability of five parameters: conductance, pH, temperature, redox potential, and turbidity. Review of the Depth to Water data confirms that all depth measurements used for development of groundwater contour maps were conducted within a five-day period of each other. The results of this quarter's review are provided under Tab H.

Based upon the review of the field data sheets, field work conformed with the QAP purging and field measurement requirements. A summary of the purging techniques employed and field measurements taken is described below:

<u>Purging Two Casing Volumes with Stable Field Parameters (within 10% RPD)</u>
Wells TWN-01, TWN-04, and TWN-18 were sampled after two casing volumes were removed. Field parameters pH, specific conductivity, turbidity, water temperature, and redox potential were measured during purging. All field parameters for this requirement were stable within 10% RPD.

<u>Purging a Well to Dryness and Stability of a Limited List of Field Parameters</u>
Wells TWN-03 and TWN-07 were purged to dryness before two casing volumes were evacuated. After well recovery, one set of measurements for the field parameters of pH, specific conductivity, and water temperature only were taken; the samples were collected, and another set of measurements for pH, specific conductivity, and water temperature were taken. Stabilization of pH, conductivity and temperature are required within 10% RPD under the QAP. All field parameters for this requirement were stable within 10% RPD.

<u>Continuously Pumped Wells</u>
Wells TWN-02, TW4-22, TW4-24, and TW4-25 are continuously pumped wells. These wells are pumped on a set schedule per the remediation plan and are considered sufficiently evacuated to

immediately collect a sample. As previously noted, TW4-22, TW4-24, and TW4-25 are chloroform investigation wells and are sampled under the chloroform program. Data for nitrate and chloride are provided here for completeness purposes.

During review of the field data sheets, it was observed that sampling personnel consistently recorded depth to water to the nearest 0.01 foot.

All field parameters for all wells were within the QAP required limits, as indicated below.

The review of the field sheets for compliance with QAP requirements resulted in the observations noted below. The QAP requirements in Attachment 2-3 specifically state that field parameters must be stabilized to within 10% over at least 2 consecutive measurements for wells purged to two casing volumes or to dryness. The QAP Attachment 2-3 states that turbidity should be less than 5 NTU prior to sampling unless the well is characterized by water that has a higher turbidity. The QAP Attachment 2-3 does not require that turbidity measurements be less than 5 NTU prior to sampling. As such the noted observations regarding turbidity measurements greater than 5 NTU below are included for information purposes only.

- Six well measurements exceeded the QAP's 5 NTU turbidity goal as noted in Tab H. All required turbidity RPD's met the QAP Requirement to stabilize within 10%.

EFRI's letter to DRC of March 26, 2010 discusses further why turbidity does not appear to be an appropriate parameter for assessing well stabilization. In response to DRC's subsequent correspondence dated June 1, 2010 and June 24, 2010, EFRI completed a monitoring well redevelopment program. The redevelopment report was submitted to DRC on September 30, 2011. DRC responded to the redevelopment report via letter on November 15, 2012. Per the DRC letter dated November 15, 2012, the field data generated this quarter are compliant with the turbidity requirements of the approved QAP.

3.4.2 Holding Time Evaluation

QAP Table 1 identifies the method holding times for each suite of parameters. Sample holding time checks are provided in Tab H. All samples were received and analyzed within the required holding time.

3.4.3 Analytical Method Checklist

All analytical methods reported by the laboratory were checked against the required methods enumerated in the QAP. Analytical method checks are provided in Tab H. All methods were consistent with the requirements of the QAP.

3.4.4 Reporting Limit Evaluation

All analytical method reporting limits ("RLs") reported by the laboratory were checked against the reporting limits enumerated in the QAP. Reporting Limit Checks are provided in Tab H. All analytes were measured and reported to the required reporting limits, with the exception of several samples that had increased reporting limits due to matrix interference or required dilution due to the sample concentration. However, in all of those cases the analytical results were

greater than the reporting limit used.

3.4.5 QA/QC Evaluation for Sample Duplicates

Section 9.1.4 a) of the QAP states that RPDs will be calculated for the comparison of duplicate and original field samples. The QAP acceptance limits for RPDs between the duplicate and original field sample is less than or equal to 20% unless the measured results are less than 5 times the required detection limit. This standard is based on the EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994, 9240.1-05-01 as cited in the QAP. The RPDs are calculated for duplicate pairs for all analytes regardless of whether or not the reported concentrations are greater than 5 times the required detection limits. However, data will be considered noncompliant only when the results are greater than 5 times the required detection limit and the RPD is greater than 20%.

The duplicate results were within a 20% RPD. Results of the RPD test are provided in Tab H.

3.4.6 Other Laboratory QA/QC

Section 9.2 of the QAP requires that the laboratory's QA/QC Manager check the following items in developing data reports: (1) sample preparation information is correct and complete, (2) analysis information is correct and complete, (3) appropriate Analytical Laboratory procedures are followed, (4) analytical results are correct and complete, (5) QC samples are within established control limits, (6) blanks are within QC limits, (7) special sample preparation and analytical requirements have been met, and (8) documentation is complete. In addition to other laboratory checks described above, EFRI's QA Manager rechecks QC samples and blanks (items (5) and (6)) to confirm that the percent recovery for spikes and the relative percent difference for spike duplicates are within the method-specific required limits, or that the case narrative sufficiently explains any deviation from these limits. Results of this quantitative check are provided in Tab H.

The lab QA/QC results met these specified acceptance limits.

The QAP Section 8.1.2 requires that a Matrix Spike/Matrix Spike Duplicate ("MS/MSD") pair be analyzed with each analytical batch. The QAP does not specify acceptance limits for the MS/MSD pair, and the QAP does not specify that the MS/MSD pair be prepared on EFRI samples only. Acceptance limits for MS/MSDs are set by the laboratories. The review of the information provided by the laboratories in the data packages verified that the QAP requirement to analyze an MS/MSD pair with each analytical batch was met. While the QAP does not require it, the recoveries were reviewed for compliance with the laboratory established acceptance limits. The QAP does not require this level of review, and the results of this review are provided for information only.

The information from the Laboratory QA/QC Summary Reports indicates that the MS/MSDs recoveries and the associated RPDs for the samples were within acceptable laboratory limits for the regulated compounds except as indicated in Tab H. The MS/MSD recoveries that are outside the laboratory established acceptance limits do not affect the quality or usability of the data because recoveries above or below the acceptance limits are indicative of matrix interference. Matrix interferences are applicable to the individual sample results only. The requirement in the

QAP to analyze a MS/MSD pair with each analytical batch was met and as such the data are compliant with the QAP.

The information from the Laboratory QA/QC Summary Reports indicates that the Laboratory Control Sample recoveries were acceptable, which indicate that the analytical system was operating properly.

The QAP Section 8.1.2 requires that each analytical batch shall be accompanied by a reagent blank. All analytical batches routinely contain a blank, which is a laboratory-grade water blank sample made and carried through all analytical steps. For the Mill samples, a method blank is prepared for all analytical methods. The information from the Laboratory QA/QC Summary Reports indicates that the method blanks did not contain detections of any target analytes above the Reporting Limit.

3.4.7 Receipt Temperature Evaluation

Chain of Custody sheets were reviewed to confirm compliance with the QAP requirement in QAP Table 1 that samples be received at 6°C or lower. Sample temperatures checks are provided in Tab H. All samples were received within the required temperature limit.

3.4.8 Rinsate Check

Rinsate checks are provided in Tab H. A comparison of the rinsate blank sample concentration levels to the QAP requirements – that rinsate sample concentrations be one order of magnitude lower than that of the actual well – indicated that all of the rinsate blank analytes met this criterion. All rinsate and DIFB blank samples were non-detect for the quarter.

4.0 INTERPRETATION OF DATA

4.1 Interpretation of Groundwater Levels, Gradients and Flow Directions.

4.1.1 Current Site Groundwater Contour Map

As stated above, a listing of groundwater level readings for the current quarter (shown as depth to groundwater in feet) is included under Tab C. The data from this tab has been interpreted (interpolated by kriging) and plotted in a water table contour map, provided under the same tab. The contour map is based on the current quarter's data for all wells.

The water level contour map indicates that perched water flow ranges from generally southwesterly beneath the Mill site and tailings cells to generally southerly along the eastern and western margins of White Mesa. Perched water mounding associated with the wildlife ponds locally changes the generally southerly perched water flow patterns. For example, northeast of the Mill site, mounding associated with wildlife ponds results in locally northerly flow near PIEZ-1. The impact of the mounding associated with the northern ponds, to which water has not been delivered since March 2012, is diminishing and is expected to continue to diminish as the mound decays due to reduced recharge.

Not only has recharge from the wildlife ponds impacted perched water elevations and flow directions at the site, but the cessation of water delivery to the northern ponds, which are generally upgradient of the nitrate and chloroform plumes at the site, has resulted in changing conditions that are expected to impact constituent concentrations and migration rates within the plumes. Specifically, past recharge from the ponds has helped limit many constituent concentrations within the plumes by dilution while the associated groundwater mounding has increased hydraulic gradients and contributed to plume migration. Since use of the northern wildlife ponds ceased in March 2012, the reduction in recharge and decay of the associated groundwater mound are expected to increase many constituent concentrations within the plumes while reducing hydraulic gradients and acting to reduce rates of plume migration. EFRI and its consultants have raised the issues and potential effects associated with cessation of water delivery to the northern wildlife ponds during discussions with DRC in March 2012 and May 2013.

The impacts associated with cessation of water delivery to the northern ponds are expected to propagate downgradient (south and southwest) over time. Wells close to the ponds are generally expected to be impacted sooner than wells farther downgradient of the ponds. Therefore, constituent concentrations are generally expected to increase in downgradient wells close to the ponds before increases are detected in wells farther downgradient of the ponds. Although such increases are anticipated to result from reduced dilution, the magnitude and timing of the increases are difficult to predict due to the complex permeability distribution at the site and factors such as pumping and the rate of decay of the groundwater mound. The potential exists for some wells completed in higher permeability materials to be impacted sooner than some wells completed in lower permeability materials even though the wells completed in lower permeability materials may be closer to the ponds.

Localized increases in concentrations of constituents such as nitrate and chloride within and near the nitrate plume may occur even when the nitrate plume is under control based on the Nitrate CAP requirements. Ongoing mechanisms that can be expected to increase the concentrations of nitrate and chloride locally as a result of reduced wildlife pond recharge include but are not limited to:

1) Reduced dilution - the mixing of low constituent concentration pond recharge into existing perched groundwater will be reduced over time.
2) Reduced saturated thicknesses – dewatering of higher permeability zones receiving primarily low constituent concentration pond water will result in wells intercepting the zones receiving a smaller proportion of the low constituent concentration water.

The combined impact of the above two mechanisms may be especially evident at chloroform pumping wells MW-4, MW-26, TW4-4, TW4-19, and TW4-20; nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2; and non-pumped wells adjacent to the pumped wells. The overall impact is expected to be generally higher constituent concentrations in these wells over the short term until mass reduction resulting from pumping and natural attenuation eventually reduce concentrations.

In addition to changes in the flow regime caused by reduced wildlife pond recharge, perched flow directions are locally influenced by operation of the chloroform and nitrate pumping wells.

As shown in the detail water level map provided under Tab C, well defined cones of depression are evident in the vicinity of all chloroform pumping wells except TW4-4, which began pumping in the first quarter of 2010. Although operation of chloroform pumping well TW4-4 has depressed the water table in the vicinity of TW4-4, a well-defined cone of depression is not clearly evident. The lack of a well-defined cone of depression near TW4-4 likely results from 1) variable permeability conditions in the vicinity of TW4-4, and 2) persistent relatively low water levels at adjacent well TW4-14.

Pumping of nitrate wells TW4-22, TW4-24, TW4-25, and TWN-2 began during the first quarter of 2013. Water level patterns near these wells are expected to be influenced by the presence of and the decay of the groundwater mound associated with the northern wildlife ponds, and by the persistently low water level elevation at TWN-7, which is located upgradient of the nitrate pumping wells.

Capture associated with nitrate pumping is expected to increase over time as water levels decline due to pumping and to cessation of water delivery to the northern wildlife ponds. Interaction between nitrate and chloroform pumping is expected to enhance the capture of the nitrate pumping system. The long term interaction between the nitrate and chloroform pumping systems will, however, require more data to be collected as part of routine monitoring.

As discussed above, variable permeability conditions are one likely reason for the lack of a well-defined cone of depression near chloroform pumping well TW4-4. Changes in water levels at wells immediately south of TW4-4 resulting from TW4-4 pumping are expected to be muted because TW4-4 is located at a transition from relatively high to relatively low permeability conditions south (downgradient) of TW4-4. The permeability of the perched zone at TW4-6 and TW4-26, recently installed wells TW4-29, TW4-30, TW4-31, TW4-33, and TW4-34, and new well TW4-35 is one to two orders of magnitude lower than at TW4-4. Any drawdown of water levels at wells immediately south of TW4-4 resulting from TW4-4 pumping is also difficult to determine because of the general, long-term increase in water levels in this area due to recharge from the wildlife ponds.

Water levels at TW4-4 and TW4-6 increased by nearly 2.7 and 2.9 feet, respectively, between the fourth quarter of 2007 and the fourth quarter of 2009 (just prior to the start of TW4-4 pumping) at rates of approximately 1.2 feet/year and 1.3 feet/year, respectively. However, the rate of increase in water level at TW4-6 after the start of pumping at TW4-4 (first quarter of 2010) was reduced to less than 0.5 feet/year suggesting that TW4-6 is within the hydraulic influence of TW4-4. Furthermore, water levels at TW4-6 have been trending downward since the fourth quarter of 2013 suggesting an additional influence related to the cessation of water delivery to the northern wildlife ponds as discussed above. (note: hydrographs for these wells are provided in the quarterly Chloroform Monitoring Report). Recharge from the southern wildlife pond is expected to continue to have an effect on water levels near TW4-4 even as the groundwater mound associated with recharge from the northern ponds diminishes over time due to cessation of water delivery to those ponds.

The lack of a well-defined cone of depression at TW4-4 is also influenced by the persistent, relatively low water level at non-pumping well TW4-14, located east of TW4-4 and TW4-6. For the current quarter, the water level at TW4-14 was measured at approximately 5530.4 feet above

mean sea level ("ft amsl"). This is approximately 8 feet lower than the water level at TW4-6 (approximately 5538.7 ft amsl) and 13 feet lower than the water level at TW4-4 (approximately 5543.7 ft amsl) even though TW4-4 is pumping.

Well TW4-27 (installed south of TW4-14 in the fourth quarter of 2011) has a static water level of approximately 5527.8 ft amsl, similar to TW4-14 (approximately 5530.4 ft amsl). TW4-27 was positioned at a location considered likely to detect any chloroform present and/or to bound the chloroform plume to the southeast and east (respectively) of TW4-4 and TW4-6. As will be discussed below, groundwater data collected since installation indicates that TW4-27 does indeed bound the chloroform plume to the southeast and east of TW4-4 and TW4-6 (respectively); however chloroform exceeding 70 μg/L has been detected at recently installed temporary perched wells TW4-29 (located south of TW4-27) and TW4-33 (located between TW4-4 and TW4-29).

The lack of a well-defined cone of depression at TW4-4 is also influenced by the persistent, relatively low water level at non-pumping well TW4-14, located east of TW4-4 and TW4-6. For the current quarter, the water level at TW4-14 was measured at approximately 5530.4 feet above mean sea level ("ft amsl"). This is approximately 8 feet lower than the water level at TW4-6 (approximately 5538.7 ft amsl) and 13 feet lower than the water level at TW4-4 (approximately 5543.7 ft amsl) even though TW4-4 is pumping.

Well TW4-27 (installed south of TW4-14 in the fourth quarter of 2011) has a static water level of approximately 5527.8 ft amsl, similar to TW4-14 (approximately 5530.4 ft amsl). Prior to the installation of TW4-27, the persistently low water level at TW4-14 was considered anomalous because it appeared to be downgradient of all three wells TW4-4, TW4-6, and TW4-26, yet chloroform had not been detected at TW4-14. Chloroform had apparently migrated from TW4-4 to TW4-6 and from TW4-6 to TW4-26 which suggested that TW4-26 was actually downgradient of TW4-6, and TW4-6 was actually downgradient of TW4-4, regardless of the flow direction implied by the low water level at TW4-14. The water level at TW4-26 (5537.1 feet amsl) is, however, lower than water levels at adjacent wells TW4-6 (5538.7 feet amsl), and TW4-23 (5540.3 feet amsl), as shown in the detail water level map under Tab C.

Hydraulic tests indicate that the permeability at TW4-27 is an order of magnitude lower than at TW4-6 and three orders of magnitude lower than at TW4-4 (see Hydro Geo Chem, Inc. [HGC], September 20, 2010: Hydraulic Testing of TW4-4, TW4-6, and TW4-26, White Mesa Uranium Mill, July 2010; and HGC, November 28, 2011: Installation, Hydraulic Testing, and Perched Zone Hydrogeology of Perched Monitoring Well TW4-27, White Mesa Uranium Mill Near Blanding, Utah). The similar water levels at TW4-14 and TW4-27, and the low permeability estimate at TW4-27 suggest that both wells are completed in materials having lower permeability than nearby wells. The low permeability condition likely reduced the rate of long-term water level increase at TW4-14 and TW4-27 compared to nearby wells, yielding water levels that appeared anomalously low. This behavior is consistent with hydraulic test data collected from recently installed wells TW4-29, TW4-30, TW4-31, TW4-33 and TW4-34 which indicate that the permeability of these wells is one to two orders of magnitude higher than the permeability of TW4-27 (see HGC, January 23, 2014; Contamination Investigation Report, TW4-12 and TW4-27 Areas, White Mesa Uranium Mill Near Blanding, Utah; and HGC, July 1, 2014, Installation and Hydraulic Testing of TW4-35 and TW4-36, White Mesa Uranium Mill Near Blanding, Utah

[As-Built Report]). Hydraulic tests also indicate that the permeability at TW4-36 is slightly higher than but comparable to the low permeability at TW4-27, suggesting that TW4-36, TW4-14 and TW4-27 are completed in a continuous low permeability zone.

4.1.2 Comparison of Current Groundwater Contour Map to Groundwater Contour Map for Previous Quarter

The groundwater contour maps for the Mill site for the previous quarter, as submitted with the Nitrate Monitoring Report for the previous quarter, are attached under Tab D.

A comparison of the water table contour maps for the current quarter (fourth quarter of 2014) to the water table contour maps for the previous quarter (third quarter of 2014) indicates slightly larger drawdowns related to operation of chloroform pumping wells MW-26and TW4-20 and nitrate pumping well TW4-25. Nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2 were brought into operation during the first quarter of 2013 and their impact on water level patterns was evident as of the fourth quarter of 2013. While water levels in nitrate pumping wells TW4-22, TW4-24, and TW4-25 showed decreases, the water level at TWN-2 showed an increase this quarter.

As discussed in Section 4.1.1, pumping at chloroform well TW4-4, which began in the first quarter of 2010, has depressed the water table near TW4-4, but a well-defined cone of depression is not clearly evident, likely due to variable permeability conditions near TW4-4 and the persistently low water level at adjacent well TW4-14.

Small (<1 foot) changes in water levels were reported at the majority of site wells; water levels and water level contours for the site have not changed significantly since the last quarter except for a few locations. Reported decreases in water levels (increases in drawdown) of approximately 3.4, 1.6, 1.4, 2.5, and 2.8 feet occurred in chloroform pumping wells MW-26 and TW4-20, and nitrate pumping wells TW4-22, TW4-24, and TW4-25, respectively. An increase in water level (decrease in drawdown) of approximately 5 feet was reported for nitrate pumping well TWN-2. Changes in water levels at other pumping wells (chloroform pumping wells MW-4, TW4-4, and TW4-19 were less than 1 foot. Water level fluctuations at pumping wells typically occur in part because of fluctuations in pumping conditions just prior to and at the time the measurements are taken.

Although decreases in water levels (decreases in drawdown) occurred at chloroform pumping wells MW-26 and TW4-20, and nitrate pumping wells TW4-22, TW4-24, and TW4-25 the apparent capture of these wells relative to other pumping wells has increased in some cases and decreased in others, while the overall capture of the combined pumping systems has increased slightly.

Reported water level decreases of less than 1 foot at Piezometers 1 through 3, TWN-1, TWN-4, TWN-6, TWN-18, and MW-19 may result from cessation of water delivery to the northern wildlife ponds as discussed in Section 4.1.1 and the consequent continuing decay of the associated perched water mound. Reported water level decreases of approximately 0.6 feet and 0.7 feet at Piezometers 4 and 5 may result from reduced recharge at the southern wildlife pond.

Reported water levels decreased by approximately 4.3 feet at MW-20 and increased by approximately 4.8 feet at MW-37 between the previous quarter and the current quarter. Water level variability at these wells is likely the result of low permeability and variable intervals between purging/sampling and water level measurement. A decrease in water level of approximately 2.9 feet and increases of approximately 2.4 feet and 2.9 feet were reported at DR-17, MW-23 and TW4-21, respectively.

4.1.3 Hydrographs

Attached under Tab E are hydrographs showing groundwater elevation in each nitrate contaminant investigation monitor well over time. Per the CAP, nitrate wells TWN-6, TWN-14, TWN-16, and TWN-19 have been maintained for depth to groundwater monitoring only. These hydrographs are also included in Tab E.

4.1.4 Depth to Groundwater Measured and Groundwater Elevation

Attached in Tab F are tables showing depth to groundwater measured and groundwater elevation over time for each of the wells listed in Section 2.1.1 above.

4.2 Effectiveness of Hydraulic Containment and Capture

4.2.1 Hydraulic Containment and Control

The CAP states that hydraulic containment and control will be evaluated in part based on water level data and in part on concentrations in wells downgradient of pumping wells TW4-22 and TW4-24.

As per the CAP, the fourth quarter of 2013 was the first quarter that hydraulic capture associated with nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2 was evaluated. Hydraulic containment and control based on water level data is considered successful per the CAP if the entire nitrate plume upgradient of TW4-22 and TW4-24 falls within the combined capture of the nitrate pumping wells. Capture zones based on water level contours calculated by kriging the current quarter's water level data are provided on water level contour maps included under Tab C. The nitrate capture zones are defined by the bounding stream tubes associated with nitrate pumping wells. Each bounding stream tube represents a flow line parallel to the hydraulic gradient and therefore perpendicular to the intersected water level contours. Assuming that the stream tubes do not change over time, all flow between the bounding stream tubes associated with a particular pumping well is presumed to eventually reach and be removed by that well. Capture associated with chloroform pumping wells is also included on these maps because the influence of the chloroform and nitrate pumping systems overlap.

The specific methodology for calculating the nitrate capture zones is substantially the same as that used since the fourth quarter of 2005 to calculate the capture zones for the chloroform program, as agreed to by the DRC and International Uranium (USA) Corp. The procedure for calculating nitrate capture zones is as follows:

1) Calculate water level contours by gridding the water level data on approximately 50-foot centers using the ordinary linear kriging method in Surfer™. Default kriging parameters are used that include a linear variogram, an isotropic data search, and all the available water level data for the quarter, including relevant seep and spring elevations.
2) Calculate the capture zones by hand from the kriged water level contours following the rules for flow nets:
   - from each pumping well, reverse track the stream tubes that bound the capture zone of each well,
   - maintain perpendicularity between each stream tube and the kriged water level contours.

Compared to last quarter, reported changes in water levels at nitrate pumping wells other than TWN-2 were less than three feet, as were the reported water level changes at chloroform pumping wells other than MW-26. A large increase of approximately 5 feet was reported for nitrate pumping well TWN-2, and a decrease of approximately 3.4 feet was reported for chloroform pumping well MW-26. Overall, the apparent capture of the combined nitrate and chloroform pumping systems has increased slightly since last quarter.

The capture associated with nitrate pumping wells is expected to increase over time as water levels continue to decline due to pumping and to cessation of water delivery to the northern wildlife ponds. Slow development of hydraulic capture is consistent with and expected based on the relatively low permeability of the perched zone at the site. Furthermore, the presence of the perched groundwater mound, and the apparently anomalously low water level at TWN-7, will influence the definition of capture associated with the nitrate pumping system.

That pumping is likely sufficient to eventually capture the entire plume upgradient of TW4-22 and TW4-24 can be demonstrated by comparing the combined average pumping rates of all nitrate pumping wells for the current quarter to estimates of pre-pumping flow through the nitrate plume near the locations of TW4-22 and TW4-24. The pre-pumping flow calculation is assumed to represent a steady state 'background' condition that includes constant recharge, hydraulic gradients, and saturated thicknesses, and does not account for reduced recharge and saturated thickness caused by cessation of water delivery to the northern wildlife ponds since March, 2012. Changes after pumping are conservatively assumed to result only from pumping. As will be discussed below, the average combined nitrate pumping rate for the quarter is approximately the same as, to a factor approximately 2.1 times greater than, the calculated pre-pumping rate of perched water flow through the nitrate plume.

The cumulative volume of water removed by TW4-22, TW4-24, TW4-25, and TWN-2 during the current quarter was approximately 357,427 gallons. This equates to an average total extraction rate of approximately 2.7 gpm over the 92 day quarter. This average accounts for time periods when pumps were off due to insufficient water columns in the wells.

Pre-pumping flow through the nitrate plume near TW4-22 and TW4-24 was estimated using Darcy's Law to lie within a range of approximately 1.31 gpm to 2.79 gpm. Calculations were based on an average hydraulic conductivity range of 0.15 feet per day (ft/day) to 0.32 ft/day (depending on the calculation method), a pre-pumping hydraulic gradient of 0.025 feet per foot

(ft/ft), a plume width of 1,200 feet, and a saturated thickness (at TW4-22 and TW4-24) of 56 feet. The hydraulic conductivity range was estimated by averaging the results obtained from slug test data that were collected automatically by data loggers from wells within the plume and analyzed using the KGS unconfined slug test solution available in Aqtesolve™ (see Hydro Geo Chem, Inc. [HGC], August 3, 2005: Perched Monitoring Well Installation and Testing at the White Mesa Uranium Mill, April Through June 2005; HGC, March 10, 2009: Perched Nitrate Monitoring Well Installation and Hydraulic Testing, White Mesa Uranium Mill; and HGC, March 17 2009: Letter Report to David Frydenlund, Esq, regarding installation and testing of TW4-23, TW4-24, and TW4-25). These results are summarized in Table 6. Data from fourth quarter 2012 were used to estimate the pre-pumping hydraulic gradient and saturated thickness. These data are also summarized in Tables 7 and 8.

The average hydraulic conductivity was estimated to lie within a range of 0.15 ft/day to 0.32 ft/day. Averages were calculated four ways. As shown in Table 6 arithmetic and geometric averages for wells MW-30, MW-31, TW4-22, TW4-24, TW4-25, TWN-2, and TWN-3 were calculated as 0.22 and 0.15 ft/day, respectively. Arithmetic and geometric averages for a subset of these wells (MW-30, MW-31, TW4-22, and TW4-24) were calculated as 0.32 and 0.31 ft/day, respectively. The lowest value, 0.15 ft/day, represented the geometric average of the hydraulic conductivity estimates for all the plume wells. The highest value, 0.32 ft/day, represented the arithmetic average for the four plume wells having the highest hydraulic conductivity estimates (MW-30, MW-31, TW4-22, and TW4-24).

Pre-pumping hydraulic gradients were estimated at two locations; between TW4-25 and MW-31 (estimated as 0.023 ft/ft), and between TWN-2 and MW-30 (estimated as 0.027 ft/ft). These results were averaged to yield the value used in the calculation (0.025 ft/ft). The pre-pumping saturated thickness of 56 feet was an average of pre-pumping saturated thicknesses at TW4-22 and TW4-24.

The hydraulic gradient and saturated thickness used in the calculations are assumed to represent a steady state 'background' condition. However, assumption of a steady state 'background' is inconsistent with the cessation of water delivery to the northern wildlife ponds, located upgradient of the nitrate plume. Hydraulic gradients and saturated thicknesses within the plume are declining as a result of two factors: reduced recharge from the ponds, and the effects of nitrate pumping. Separating the impacts of nitrate pumping from the impacts of reduced recharge from the ponds is problematic. Should pumping cease and 'background' conditions be allowed to re-establish, however, smaller hydraulic gradients and saturated thicknesses would be expected due to reduced recharge, which would lower estimates of 'background' flow.

As a result, the 'background' flow calculated using the hydraulic gradient of 0.025 ft/ft and saturated thickness of 56 feet is considered conservatively large. Furthermore, using the arithmetic average hydraulic conductivity of a subset of plume wells having the highest conductivities is considered less representative of actual conditions than using the geometric average conductivity of all of the plume wells. Nitrate pumping may therefore exceed flow through the plume by a factor greater than 2.1, the high end of the calculated range.

The CAP states that MW-5, MW-11, MW-30, and MW-31 are located downgradient of TW4-22 and TW4-24. MW-30 and MW-31 are within the plume near its downgradient edge and MW-5

and MW-11 are outside and downgradient of the plume. Per the CAP, hydraulic control based on concentration data will be considered successful if the concentrations of nitrate in MW-30 and MW-31 remain stable or decline, and concentrations of nitrate in downgradient wells MW-5 and MW-11 do not exceed the 10 mg/L standard.

Table 5 presents the nitrate concentration data for MW-30, MW-31, MW-5 and MW-11, which are down-gradient of pumping wells TW4-22 and TW4-24. Based on these concentration data, the nitrate plume is under control.

The plume has not migrated downgradient to MW-5 or MW-11 because the nitrate concentration at MW-5 is approximately 0.2 mg/L this quarter and nitrate was not detected at MW-11. Between the previous and current quarters, nitrate concentrations increased in both MW-30 and MW-31. Nitrate in MW-30 increased from 13.8 mg/L to 16.2 mg/L and nitrate in MW-31 increased from 15.2 mg/L to 20.9 mg/L. Although short-term fluctuations have occurred, nitrate concentrations in MW-30 and MW-31 have been relatively stable, demonstrating that plume migration is minimal or absent.

Chloride has been relatively stable at MW-30 but is increasing at MW-31 (see Tab J and Tab K, discussed in Section 4.2.4). The apparent increase in chloride and stable nitrate at MW-31 suggests a natural attenuation process that is affecting nitrate but not chloride. A likely process that would degrade nitrate but leave chloride unaffected is reduction of nitrate by pyrite. The likelihood of this process in the perched zone is discussed in HGC, December 7 2012; Investigation of Pyrite in the Perched Zone, White Mesa Uranium Mill Site, Blanding, Utah.

4.2.2 Current Nitrate and Chloride Isoconcentration Maps

Included under Tab I of this Report are current nitrate and chloride iso-concentration maps for the Mill site. Nitrate iso-contours start at 5 mg/L and chloride iso-contours start at 100 mg/L because those values appear to separate the plumes from background. All nitrate and chloride data used to develop these iso-concentration maps are from the current quarter's sampling events.

4.2.3 Comparison of Areal Extent

Increases in nitrate concentrations in most wells within the nitrate plume since last quarter have resulted in a slight expansion of the plume area. The concentration in TWN-3 decreased from approximately 20 mg/L to 19 mg/L; the concentration in MW-30 increased from approximately 14 mg/L to 16 mg/L; and the concentration in MW-31 increased from approximately 15 mg/L to 21 mg/L. The concentration in nitrate pumping well TWN-2 increased from approximately 42 mg/L to 71 mg/L; the concentration in nitrate pumping well TW4-22 increased from approximately 42 mg/L to 55 mg/L; and the concentration in nitrate pumping well TW4-24 increased from approximately 32 mg/L to 36 mg/L. In addition, the concentration in TW4-21 increased from 7.1 mg/L last quarter to 10 mg/L this quarter, bringing it again just within the nitrate plume boundary. (see Tab J and Tab K, discussed in Section 4.2.4).

The nitrate concentration at TW4-18 (located east of the nitrate plume) increased from 9.8 mg/L to 11.1 mg/L after decreasing for the previous three quarters. Changes in nitrate concentrations near TW4-18 are expected to result from changes in pumping and from the cessation of water

delivery to the northern wildlife ponds. The reduction in low-nitrate recharge from the ponds appeared to be having the anticipated effect of generally increased nitrate concentrations in wells downgradient of the ponds. However, decreasing nitrate concentrations at most wells in the vicinity of TW4-18 over the previous three quarters after previous increases suggests that conditions in this area have stabilized.

Although increases in concentration in the area downgradient of the wildlife ponds have been anticipated as the result of reduced dilution, the magnitude and timing of the increases are difficult to predict due to the measured variations in hydraulic conductivity at the site and other factors. Nitrate in the area directly downgradient (south to south-southwest) of the northern wildlife ponds is associated with the chloroform plume, is cross-gradient of the nitrate plume as defined in the CAP, and is within the capture zone of the chloroform pumping system (primarily chloroform pumping well MW-26). Perched water flow in the area is to the southwest in the same approximate direction as the main body of the nitrate plume.

Nitrate concentrations at the downgradient edge of the plume (MW-30 and MW-31) continue to be relatively stable, demonstrating that plume migration is minimal or absent. With regard to chloroform, since the initiation of nitrate pumping, the boundary of the chloroform plume has migrated to the west toward nitrate pumping well TW4-24, and more recently has migrated to the southwest to reincorporate chloroform monitoring wells TW4-6 and TW4-16. More details regarding the chloroform data and interpretation are included in the Quarterly Chloroform Monitoring Report submitted under separate cover.

4.2.4 Nitrate and Chloride Concentration Trend Data and Graphs

Attached under Tab J is a table summarizing values for nitrate and chloride for each well over time.

Attached under Tab K are graphs showing nitrate and chloride concentration plots in each monitor well over time.

4.2.5 Interpretation of Analytical Data

Comparing the nitrate analytical results to those of the previous quarter, as summarized in the tables included under Tab J, the following observations can be made for wells within and immediately surrounding the nitrate plume:

a) Nitrate concentrations have increased by more than 20% in the following wells compared to last quarter: MW-26, MW-27, MW-31, TW4-10, TW4-16, TW4-19, TW4-20, TW4-21, TW4-22, and TWN-2;

b) Nitrate concentrations have decreased by more than 20% in the following wells compared to last quarter: TW4-25 and TWN-4;

c) Nitrate concentrations have remained within 20% in the following wells compared to last quarter: MW-30, TW4-5, TW4-18, TW4-24, TWN-1, TWN-3, TWN-7 and TWN-18; and

d) MW-11, MW-25, and MW-32 remained non-detect

As indicated, nitrate concentrations for many of the wells with detected nitrate were within 20% of the values reported during the previous quarter, suggesting that variations are within the range typical for sampling and analytical error. The remaining wells had changes in concentration greater than 20%. The latter includes chloroform pumping wells MW-26, TW4-19, and TW4-20; nitrate pumping wells TW4-22, TW4-25 and TWN-2; and non-pumping wells MW-27, MW-31, TW4-10, TW4-16, TW4-21, and TWN-4. TW4-10 and TW4-16 are located adjacent to chloroform pumping well MW-26; TW4-21 is located adjacent to chloroform pumping well TW4-19; and TWN-4 is located between the northern wildlife ponds and nitrate pumping wells TW4-25 and TWN-2. Fluctuations in concentrations at pumping wells and wells adjacent to pumping wells likely result in part from the effects of pumping as discussed in Section 4.1.1. Concentrations at TW4-21 are also influenced by its location near the eastern nitrate and northern chloroform plume boundaries. MW-31 is located in the downgradient portion of the nitrate plume and is expected to be influenced by changes in upgradient pumping at nitrate pumping wells TW4-22 and TW4-24 and chloroform pumping wells MW-26, TW4-19 and TW4-20.

As discussed in Section 4.2.3, the nitrate concentration at TW4-21 increased from 7.1 mg/L last quarter to 10 mg/L this quarter, bringing it again just within the nitrate plume boundary. The nitrate concentration in nitrate pumping well TW4-25 decreased from approximately 1.6 mg/L last quarter to 1.0 mg/L this quarter. The nitrate concentrations in chloroform pumping wells MW-26, TW4-19, and TW4-20 increased from approximately 0.7 mg/L, 1.6 mg/L and 4.3 mg/L, respectively, to approximately 1.1 mg/L, 4.7 mg/L, and 7.7 mg/L. The chloroform concentration at nitrate pumping well TW4-24 decreased from 76.3 μg/L to 25.8 μg/L. The decrease at TW4-24 pushed the chloroform plume boundary back to the east of TW4-24; last quarter, a chloroform concentration increase from 62.7 μg/L to 76.3 μg/L moved the chloroform plume boundary to the west of TW4-24. Chloroform changes at TW4-22 and TW4-24 are likely in response to the start-up of nitrate pumping in the first quarter of 2013 and are affected by the presence of historically high chloroform concentrations at adjacent, cross-gradient well TW4-20. MW-27, located west of TWN-2, and TWN-18, located north of TWN-3, bound the nitrate plume to the west and north (See Figure I-1 under Tab I). In addition, the southernmost (downgradient) boundary of the plume remains between MW-30/MW-31 and MW-5/MW-11. Nitrate concentrations at MW-5 (adjacent to MW-11) and MW-11 have historically been low (< 1 mg/L) or non-detect for nitrate (See Table 5). MW-25, MW-26, MW-32, TW4-16, TW4-19, TW4-20, TW4-25, TWN-1, and TWN-4 bound the nitrate plume to the east.

As discussed above, the areal extent of the plume has expanded slightly, with the plume boundaries moving outward in some areas, primarily due to increases in concentrations at wells within the plume. Nitrate concentrations outside the nitrate plume exceed 10 mg/L at a few locations: TW4-12 (16.1 mg/L), TW4-26 (12.3 mg/L), TW4-27 (28.2 mg/L), and TW4-28 (16.5 mg/L). All these wells are located southeast of the nitrate plume as defined in the CAP and all are separated from the plume by wells having nitrate concentrations that are either non-detect, or, if detected, are less than 10 mg/L. Concentrations at TW4-26, TW4-27 and TW4-28 are within 20% of their concentrations during the previous quarter, while the concentration at TW4-12 increased more than 20%, from approximately 13 mg/L to 16 mg/L. From the third quarter of 2013 through the second quarter of 2014, nitrate concentrations at TW4-10 and TW4-18 exceeded 10 mg/L. Although last quarter, nitrate concentrations at both TW4-10 and TW4-18

decreased to 9.8 mg/L, both are again above 10 mg/L this quarter. Elevated nitrate concentrations at these wells are associated with the chloroform plume, and both are within the capture zone of the chloroform pumping system. Elevated nitrate at TW4-12, TW4-26, TW4-27, and TW4-28 is likely related to former cattle ranching operations at the site.

Chloride concentrations are measured because elevated chloride (greater than 100 mg/L) is associated with the nitrate plume. Chloride concentrations at all sampled locations this quarter are within 20% of their respective concentrations during the previous quarter. Although changes were within 20%, more increases were detected than decreases. Increases in concentrations at wells near (and downgradient of) the northern wildlife ponds are anticipated as a result of reduced dilution caused by cessation of water delivery to the northern wildlife ponds.

4.3 Estimation of Pumped Nitrate Mass and Residual Nitrate Mass within the Plume

Nitrate mass removed by pumping is summarized in Table 2, and includes mass removed by both chloroform and nitrate pumping wells. Table 3 shows the volume of water pumped at each well and Table 4 provides the details of the nitrate removal for each well. Mass removal calculations begin with the third quarter of 2010 because the second quarter, 2010 data were specified to be used to establish a baseline mass for the nitrate plume. As stated in the CAP, the baseline mass is to be calculated using the second quarter, 2010 concentration and saturated thickness data "within the area of the kriged 10 mg/L plume boundary." The second quarter, 2010 data set was considered appropriate because "the second quarter, 2010 concentration peak at TWN-2 likely identifies a high concentration zone that still exists but has migrated away from the immediate vicinity of TWN-2."

As shown in Table 2, a total of approximately 1,173 lb of nitrate has been removed from the perched zone since the third quarter of 2010. Prior to the first quarter of 2013, all direct nitrate mass removal resulted from operation of chloroform pumping wells MW-4, MW-26, TW4-4, TW4-19, and TW4-20. During the current quarter:

- A total of approximately 109 lb of nitrate was removed by the chloroform pumping wells and by nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2.
- Of the 109 lb removed during the current quarter, approximately 93 lb, (or 85 %), was removed by the nitrate pumping wells.

Baseline mass and current quarter mass estimates (nitrate + nitrite as N) for the nitrate plume are approximately 43,700 lb and 34,370 lbs, respectively. Mass estimates were calculated within the plume boundaries as defined by the kriged 10 mg/L isocon by 1) gridding (kriging) the nitrate concentration data on 50-foot centers; 2) calculating the volume of water in each grid cell based on the saturated thickness and assuming a porosity of 0.18; 3) calculating the mass of nitrate+nitrite as N in each cell based on the concentration and volume of water for each cell; and 4) totaling the mass of all grid cells within the 10 mg/L plume boundary. Data used in these calculations included data from wells listed in Table 3 of the CAP.

The nitrate mass estimate for the current quarter is lower than the baseline estimate by 9,330 lb, and this difference is greater than the amount of nitrate mass removed directly by pumping. Changes in the quarterly mass estimates are expected to result primarily from 1) nitrate mass

removed directly by pumping, 2) natural attenuation of nitrate, and 3) changes in nitrate concentrations in wells within the plume as a result of re-distribution of nitrate within the plume and changes in saturated thicknesses. Redistribution of nitrate within the plume and changes in saturated thicknesses will be impacted by changes in pumping and in background conditions such as the decay of the perched water mound associated with the northern wildlife ponds. Cessation of water delivery to the northern wildlife ponds is expected to result in reduced saturated thicknesses and reduced dilution, which in turn is expected to result in increases in concentrations.

The mass estimate during the current quarter (34,370 lb) was larger than the mass estimate during the previous quarter (24,140 lb) by 10,230 lb or 42 %. This difference results from higher nitrate concentrations measured in most wells within the plume and the resulting increased areal extent this quarter compared to last quarter.

Nitrate mass removal by pumping and natural attenuation (expected to result primarily from pyrite oxidation/nitrate reduction) act to lower nitrate mass within the plume. Changes resulting from redistribution of nitrate within the plume are expected to result in both increases and decreases in concentrations at wells within the plume and therefore increases and decreases in mass estimates based on those concentrations, thus generating 'noise' in the mass estimates. Furthermore, because the sum of sampling and analytical error is typically about 20%, changes in the mass estimates from quarter to quarter of up to 20% could result from typical sampling and analytical error alone. Only longer-term analyses of the mass estimates that minimize the impacts of these quarter to quarter variations will provide useful information on plume mass trends. Over the long term, nitrate mass estimates are expected to trend downward as a result of direct removal by pumping and through natural attenuation.

As specified in the CAP, once eight quarters of data have been collected (starting with the first quarter of 2013), a regression trend line is to be applied to the quarterly mass estimates and evaluated. The trend line will then be updated quarterly and reevaluated as additional quarters of data are collected. The evaluation will determine whether the mass estimates are increasing, decreasing, or stable.

As the current quarter constitutes the eighth quarter as specified in the CAP, the mass estimates were plotted and a regression line fitted to the data, as shown in Figure M.1 of Tab M. The fitted line shows a decreasing trend in the mass estimates.

As discussed above, the quarterly mass estimates are based on gridded (kriged) concentration data and saturated thicknesses (derived from gridded water level and base of perched zone data). Mass estimates are thus expected to depend primarily on wells within the plume having both relatively high concentrations and saturated thicknesses. An analysis of the relative influence of individual wells on the mass estimates was performed based on data from the eight wells originally within the plume (TWN-2, TWN-3, TW4-21, TW4-22, TW4-24, TW4-25, MW-30, and MW-31). Although TW4-21 has been both within and outside the plume, and TW4-25 is no longer within the plume, these wells were originally within the plume as defined in the CAP and were included in the analysis. Both are important due to their close proximities to the plume boundary.

Figures M.2 through M.9 are plots comparing the mass estimates to concentration, saturated thickness, and the product of concentration and saturated thickness (in units of pounds per square foot of plume [lbs/ft2]) at each well originally within the plume. Examination of these plots suggests that changes in concentration and in the product of concentration and saturated thickness at TWN-2 have the largest impact on changes in the mass estimates. This is reasonable because both concentrations and saturated thicknesses at TWN-2 are relatively large.

Ten methods were used to quantitatively evaluate the relative influence of individual wells on the mass calculations. Well rankings derived from the ten methods are provided in Table M.1, with a rank of 1 indicating the greatest influence and a rank of 8 indicating the least influence.

Methods 1, 2, and 3 rank each well based on the averages of concentration, saturated thickness, and product of concentration and saturated thickness, respectively. Averages were calculated from data over the last eight quarters (including the current quarter) and the baseline (second quarter, 2010) data.

Methods 4, 5, 6, and 7 constitute sensitivity analyses using average concentration and saturated thickness data from the baseline (second quarter, 2010) data, and data from the last eight quarters (including the current quarter). These averages were used to compute an 'average plume' and 'average plume' mass estimate. Thirty two additional mass estimates were then computed by leaving out of the gridding process either the data from one of the original eight wells within the plume (method 4) or by modifying the data from one of the original eight wells within the plume. Data modification included: increasing the average nitrate concentration at a particular well by 20% (method 5); decreasing the average nitrate concentration at a particular well by 20% (method 6); and decreasing the average saturated thickness at a particular well by 20% (method 7). These methodologies automatically account for the variation in the lateral influence of individual wells, and the kriged plume boundaries are allowed to change based on the imposed changes.

Methods 8, 9, and 10 constituted evaluation of the relative influence of each of the eight original wells on the kriged 'average plume'. A polygonal estimator was used to apportion the mass, volume, and average concentration associated with each well within the kriged average plume boundary. These methodologies also account for variations in the lateral influence of individual wells within the fixed 'average plume' boundary.

Results of methods 1 through 3, 4 through 7, 8 through 10, and 3 and 8, were also scored collectively for overall rank. In each case, the score for a well consists of the sum of ranks for that well obtained by the indicated methods. Grouping of the methods were based on similarity. As discussed above, methods 1 through 3 rank influence based on raw concentration and saturated thickness data at individual wells and do not account for variable lateral influence of individual wells. Methods 4 through 10 rank influence based on gridded data and therefore account for variation in the lateral influence of wells. Methods 4 through 7 constitute sensitivity analyses; and methods 8 through 10 apportion mass, volume, and average concentration within the average kriged plume to individual wells using a polygonal estimator. Methods 3 and 8 are similar in that both rank influence based on the product of concentration and saturated thickness. Because method 8 ranks influence based on gridded data it additionally accounts for lateral influence.

The results of collectively scoring methods 1 through 3 are shown in Table M.2. The wells in order of importance are: TWN-2, TW4-22, MW-31, TW4-24, TWN-3, TW4-21/TW4-25, and MW-30.

The results of collectively scoring methods 4 through 7 are shown in Table M.3. Wells in descending order of influence are: TWN-2, TW4-24/MW-31, TW4-22, MW-30, TW4-25, TWN-3, and TW4-21. As indicated in Table M.1, rankings for methods 5, 6, and 7 were similar, with the top four consisting, in descending influence, of TW4-24, TWN-2, MW-31, and TW4-22. Method 4 ranked the top 4 wells as TWN-2, MW-30, MW-31, and TW4-22.

The results of collectively scoring methods 8 through 10 are shown in Table M.4. Wells in descending order of influence are: TWN-2, TW4-22, MW-31, TW4-24, TWN-3, TW4-21/TW4-25, and MW-30. As indicated in Table M.1, rankings for methods 8, 9, and 10 were similar with regard to the top 4 rankings; wells TWN-2, TW4-22, TW4-24, and MW-31 were in the top 4 of each method albeit in different order for each method. The top four (in descending influence) were for method 8: TW4-24, TWN-2, TW4-22, and MW-31; for method 9: TW4-24, TWN-2, MW-31, and TW4-22; and for method 10: TWN-2, TW4-22, TW4-24, and MW-31.

The results of collectively scoring methods 3 and 8 are shown in Table M.5. The ranking of the top four consists (in descending order of influence) of TWN-2, TW4-24, TW4-22, and MW-31.

The result of collectively scoring all methods is shown in Table M.6. Although this scoring lumps dissimilar methods, the results are similar to those obtained from the collective scoring of groups of similar methods described above. Well TWN-2 is ranked as having the most influence. The top four wells (in descending order of influence) are: TWN-2, TW4-24, MW-31, and TW4-22.

The results of the visual and quantitative analyses indicate that variations in plume mass estimates can be expected to depend primarily on variations in data from TWN-2. Wells TW4-22, TW4-24, and MW-31 (not necessarily in that order) are collectively the next most important with regard to influence on the mass estimates.

5.0 LONG TERM PUMP TEST AT TWN-02, TW4-22, TW4-24, and TW4-25 OPERATIONS REPORT

5.1 Introduction

Beginning in January 2013, EFRI began long term pumping of TW4-22, TW4-24, TW4-25, and TWN-02 as required by the Nitrate CAP, dated May 7, 2012 and the SCO dated December 12, 2012.

In addition, as a part of the investigation of chloroform contamination at the Mill site, EFRI has been conducting a Long Term Pump Test on MW-4, TW4-19, MW-26, and TW4-20, and, since January 31, 2010, TW4-4. The purpose of the test is to serve as an interim action that will

remove a significant amount of chloroform-contaminated water while gathering additional data on hydraulic properties in the area of investigation.

Because wells MW-4, TW4-19, MW-26, TW4-4 and TW4-20 are pumping wells that may impact the removal of nitrate, they are included in this report and any nitrate removal realized as part of this pumping is calculated and included in the quarterly reports.

The following information documents the operational activities during the quarter.

5.2 Pumping Well Data Collection

Data collected during the quarter included the following:

- Measurement of water levels at MW-4, TW4-19, MW-26, and TW4-20 and, commencing regularly on March 1, 2010, TW4-4, on a weekly basis, and at selected temporary wells and permanent monitoring wells on a monthly basis.
- Measurement of pumping history, including:
  - pumping rates
  - total pumped volume
  - operational and non-operational periods.
- Periodic sampling of pumped water for chloroform and nitrate/nitrite analysis and other constituents
- Measurement of water levels weekly at TW4-22, TW4-24, TW4-25, and TWN-02 commencing January 28, 2013, and on a monthly basis selected temporary wells and permanent monitoring wells.

5.3 Water Level Measurements

Beginning August 16, 2003, water level measurements from chloroform pumping wells MW-4, MW-26, and TW4-19 were conducted weekly. From commencement of pumping TW4-20, and regularly after March 1, 2010 for TW4-4, water levels in these two chloroform pumping wells have been measured weekly. From commencement of pumping in January 2013, water levels in wells TW4-22, TW4-24, TW4-25, and TWN-02 have been measured weekly. Copies of the weekly Depth to Water monitoring sheets for MW-4, MW-26, TW4-19, TW4-20, TW4-4, TW4-22, TW4-24, TW4-25 and TWN-02 are included under Tab C.

Monthly depth to water monitoring is required for all of the chloroform contaminant investigation wells and non-pumping wells MW-27, MW-30, MW-31, TW4-21, TWN-1, TWN-3, TWN-4, TWN-7, and TWN-18. Copies of the monthly depth to Water monitoring sheets are included under Tab C.

5.4 Pumping Rates and Volumes

The pumping wells do not pump continuously, but are on a delay device. The wells purge for a set amount of time and then shut off to allow the well to recharge. Water from the pumping wells is either transferred to the Cell 1 evaporation pond or is used in the Mill process.

The pumped wells are fitted with a flow meter which records the volume of water pumped from the well in gallons. The flow meter readings shown in Tab C are used to calculate the gallons of water pumped from the wells each quarter as required by Section 7.2.2 of the CAP. The average pumping rates and quarterly volumes for each of the pumping wells are shown in Table 3. The cumulative volume of water pumped from each of the wells is shown in Table 4.

Specific operational problems observed with the well or pumping equipment which occurred during the quarter are noted for each well below in Sections 5.4.1 through 5.4.4.

The following two issues were noted as affecting multiple wells in the pumping network as and are not repeated under the Section for each well.

On November 23, 2014, the Mill experienced a power outage resulting from high winds (in excess of 60+ mph) in the area. During the power outage all of the pumping wells (MW-04, TW4-04, MW-26, TW4-19, TW4-20, TW4-22, TW4-24, and TW4-25) ceased pumping. Power was partially restored to portions of the Mill on November 23, 2014 and power was fully restored to the entire Mill facility by 7:00 AM November 24, 2014. Pumping of the chloroform wells was restored within 24-hours of discovery. No official notifications to DRC were required as the issue was rectified within 24-hours. DRC was notified by telephone that the issue was resolved within the 24-hour window and no further actions were necessary.

On December 29, 2014, an unscheduled down time occurred which lasted more than 24 hours. The down time was the caused by frozen transfer lines resulting from system/discharge line upgrades. The upgrades were necessary to add three more continuous pumping wells to the chloroform pumping network. The up-sizing of the discharge line required that the old 1-inch lines be excavated while the 4-inch lines were connected. During the excavation the 1-inch lines, which were still connected to the existing pumping system, were exposed to the elements in the open trench. The Mill experienced below freezing temperatures for most of the week prior to December 29, 2014. The down time during construction caused six continuous pumping wells (MW-04, MW-26, TW4-04, TW4-20, TW4-22, and TW4-24) to be off (not pumping) until the completion of construction. Initial notice of this outage was given by telephone to DRC at approximately 1:00 pm on Monday December 29, 2014 (within 24 hours of the discovery). As required by the O&M Plan, a 5-day written notification was also provided to DRC. The 5-day written notification is included in Tab N. The pumps were returned to service On January 9, 2015.

Unless specifically noted below, no additional operational problems were observed with the well or pumping equipment during the quarter.

5.4.1 MW-04

On November 24, 2014, Mill Field Personnel noted that the discharge line from MW-04 was frozen. The frozen discharge line was likely caused by the power outage which began the previous day as noted above. Upon discovery, the discharge line was thawed and full functionality was restored within several hours of discovery. No official notifications to DRC were required as the issue was rectified within 24-hours.

On December 8, 2014 Mill Field Personnel noted that the heat lamp on MW-04 had burned out. No adverse affects were noted due to the nonfunctioning bulb. The bulb was immediately replaced. No official notifications to DRC were required as the issue was rectified within 24-hours.

On December 22, 2014, Mill Field Personnel noted that due to intermittent power issues, the pump timer had lost its settings. The pump timer was reset immediately upon discovery. No official notifications to DRC were required as the issue was rectified within 24-hours.

5.4.2 TW4-04

On November 24, 2014, Mill Field Personnel noted that the discharge line and the flow meter from TW4-04 were frozen. Mill Field Personnel also noted that the flow meter on TW4-04 was cracked. The frozen discharge line and flow meter was likely caused by the power outage which began the previous day as noted above. Upon discovery, the discharge line was thawed and the flow meter was replaced and full functionality was restored within several hours of discovery. No official notifications to DRC were required as the issue was rectified within 24-hours.

5.4.3 MW-26

On November 18, 2014 power was shut down to several pumping wells to upgrade the power pole transformer to accommodate more pumping wells being added to the pumping network. The power was shut down for a few hours during the upgrade. When power was restored the pumping wells were checked and it was noted that the MW-26 pump timer had lost its settings. The pump timer was reset immediately upon discovery. No official notifications to DRC were required as the issue was rectified within 24-hours.

5.4.4 TW4-25

On November 3, 2014 Mill Field Personnel noted that the TW4-25 pump had lost electrical power due to a poor connection. The well was inspected during the monthly depth check on October 29, 2014 and was fully operational at that time. The power loss happened between the monthly depth check and the weekly inspection. Some loss of pumped volume may have occurred as a result of the power loss. The power was immediately restored upon discovery. The pump timer was reset immediately upon discovery. No official notifications to DRC were required as the issue was rectified within 24-hours.

On November 26, 2014, Mill Personnel notified EFRI Corporate Environmental Staff that pumping of TW4-25 had to be stopped to accommodate construction activities in the area associated with the ammonium sulfate concrete cover required under the Nitrate CAP. Pumping was stopped for several hours and no notification to DRC was necessary. On December 1, 2014, Mill Field Personnel requested cessation of pumping in TW4-25 for several days to accommodate re-routing of the discharge lines and electrical lines. The discharge and electrical lines were rerouted as a result of the ammonium sulfate concrete cover. EFRI Corporate Environmental Staff contacted DRC and requested approval for the cessation of pumping. DRC provided verbal approval and requested the incident be documented in this report. Pumping was resumed on December 4, 2014.

On December 8, 2014 during the weekly check, Mill Field Personnel noted that the TW4-25 pump timer had lost its settings. The pump timer was reset immediately upon discovery. No official notifications to DRC were required as the issue was rectified within 24-hours.

6.0 CORRECTIVE ACTION REPORT

There are no corrective actions required during the current monitoring period.

6.1 Assessment of Previous Quarter's Corrective Actions

The third quarter nitrate report included a corrective action report to address low level nitrate contamination in the rinsate samples. Since the DIFB collected for the third quarter were non-detect, EFRI believed the nitrate present in the rinsate samples was due to laboratory contamination and did not represent actual nitrate contamination. EFRI used an alternative laboratory, CTF, during the quarter, because the Mill's usual contract laboratory, AWAL, suffered a catastrophic fire and could not accept samples.

The corrective action specified in the third quarter report was to resume sending samples to AWAL as soon as their laboratory was able. The fourth quarter samples were sent to AWAL and all rinsate samples were nondetect for all analytes. As such the corrective action is deemed closed and no further actions are required.

7.0 CONCLUSIONS AND RECOMMENDATIONS

As per the CAP, the current quarter is the fifth quarter that hydraulic capture associated with nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2 was evaluated. Water level monitoring indicates that the apparent combined capture of the nitrate and chloroform pumping systems is similar to and slightly larger than to last quarter. Capture associated with nitrate pumping wells is developing and is expected to increase over time as water levels decline due to pumping and to cessation of water delivery to the northern wildlife ponds. Furthermore, the evaluation of the long term interaction between nitrate and chloroform pumping systems will require more data to be collected as part of routine monitoring. Slow development of hydraulic capture by the nitrate pumping system is consistent with and expected based on the relatively low permeability of the perched zone at the site. Definition of capture associated with the nitrate pumping system will also be influenced by the perched groundwater mound and the apparently anomalously low water level at TWN-7.

Current pumping is likely sufficient to eventually capture the entire nitrate plume upgradient of TW4-22 and TW4-24. Pumping during the current quarter is approximately the same as to a factor of 2.1 times greater than the estimated pre-pumping ('background') rate of perched water flow through the nitrate plume. Because the pre-pumping flow calculations likely overestimate the new 'background' conditions caused by reduced recharge from the northern wildlife ponds, and because the average plume hydraulic conductivity estimate from the low end of the calculated range is likely to be more representative of actual conditions, nitrate pumping may exceed flow through the plume by a factor greater than 2.1.

Fourth quarter, 2014 nitrate concentrations at many of the wells within and adjacent to the nitrate plume were within 20% of the values reported during the previous quarter, suggesting that variations are within the range typical for sampling and analytical error. Changes in concentration greater than 20% occurred in MW-26, MW-27, MW-31, TW4-10, TW4-16, TW4-19, TW4-20, TW4-21, TW4-22, TW4-25, TWN-2, and TWN-4. The concentrations in wells MW-11, MW-25, and MW-32 remained non-detect.

Of the wells showing changes in concentration greater than 20%, MW-26, TW4-19, and TW4-20 are chloroform pumping wells; and TW4-22, TW4-25 and TWN-2 are nitrate pumping wells. TW4-10 and TW4-16 are located adjacent to chloroform pumping well MW-26; TW4-21 is located adjacent to chloroform pumping well TW4-19; and TWN-4 is located between the northern wildlife ponds and nitrate pumping wells TW4-25 and TWN-2. Nitrate concentration fluctuations at pumping wells and adjacent wells likely result in part from the effects of pumping. Concentrations at TW4-21 are also influenced by its location near the eastern nitrate and northern chloroform plume boundaries. MW-31 is located in the downgradient portion of the nitrate plume and is expected to be influenced by changes in upgradient pumping at nitrate pumping wells TW4-22 and TW4-24 and chloroform pumping wells MW-26, TW4-19 and TW4-20.

The nitrate concentration at TW4-21 increased from 7.1 mg/L last quarter to 10 mg/L this quarter, bringing it again just within the nitrate plume boundary. The nitrate concentration in nitrate pumping well TW4-25 decreased from approximately 1.6 mg/L last quarter to 1.0 mg/L this quarter. The nitrate concentrations in chloroform pumping wells MW-26, TW4-19, and TW4-20 increased from approximately 0.7 mg/L, 1.6 mg/L and 4.3 mg/L, respectively, to approximately 1.1 mg/L, 4.7 mg/L, and 7.7 mg/L. The chloroform concentration at nitrate pumping well TW4-24 decreased from 76.3 μg/L to 25.8 μg/L. The decrease at TW4-24 pushed the chloroform plume boundary back to the east of TW4-24; last quarter, a chloroform concentration increase from 62.7 μg/L to 76.3 μg/L moved the chloroform plume boundary to the west of TW4-24. Chloroform changes at TW4-22 and TW4-24 are likely in response to the start-up of nitrate pumping in the first quarter of 2013 and are affected by the presence of historically high chloroform concentrations at adjacent, cross-gradient well TW4-20.

Increases in nitrate concentrations at wells within the nitrate plume since the last quarter have resulted in a slight expansion of the plume area. MW-27, located west of TWN-2, and TWN-18, located north of TWN-3, bound the nitrate plume to the west and north (See Figure I-1 under Tab I). In addition, the southernmost (downgradient) boundary of the plume remains between MW-30/MW-31 and MW-5/MW-11. Nitrate concentrations at MW-5 (adjacent to MW-11) and MW-11 have historically been low (< 1 mg/L) or non-detect for nitrate (See Table 5). MW-25, MW-26, MW-32, TW4-16, TW4-19, TW4-20, TW4-25, TWN-1, and TWN-4 bound the nitrate plume to the east.

Although short-term fluctuations have occurred, nitrate concentrations in MW-30 and MW-31 have been relatively stable, demonstrating that plume migration is minimal or absent. Nitrate in MW-30 increased from 13.8 mg/L to 16.2 mg/L and nitrate in MW-31 increased from 15.2 mg/L to 20.9 mg/L. Based on the concentration data at MW-5, MW-11, MW-30, and MW-31, the nitrate plume is under control.

Chloride has been relatively stable at MW-30 but is increasing at MW-31. The apparent increase in chloride and relatively stable nitrate at MW-31 suggests a natural attenuation process that is affecting nitrate but not chloride. A likely process that would degrade nitrate but leave chloride unaffected is reduction of nitrate by pyrite. The likelihood of this process in the perched zone is discussed in HGC, December 7 2012; Investigation of Pyrite in the Perched Zone, White Mesa Uranium Mill Site, Blanding, Utah.

Nitrate mass removal by pumping and natural attenuation (expected to result primarily from pyrite oxidation/nitrate reduction) act to lower nitrate mass within the plume. Changes resulting from redistribution of nitrate within the plume are expected to result in both increases and decreases in concentrations at wells within the plume and therefore increases and decreases in mass estimates based on those concentrations, thus generating 'noise' in the mass estimates. Furthermore, because the sum of sampling and analytical error is typically about 20%, changes in the mass estimates from quarter to quarter of up to 20% could result from typical sampling and analytical error alone. Longer-term analyses of the mass estimates that minimize the impact of these quarter to quarter variations are expected to provide useful information on plume mass trends. Over the long term, nitrate mass estimates are expected to trend downward as a result of direct removal by pumping and through natural attenuation.

As specified in the CAP, once eight quarters of data have been collected (starting with the first quarter of 2013), a regression trend line is to be applied to the quarterly mass estimates and evaluated. The trend line is then to be updated quarterly and reevaluated as additional quarters of data are collected. As the current quarter constitutes the eighth quarter as specified in the CAP, the mass estimates were plotted and a regression line fitted to the data, as shown in Figure M.1 of Tab M. The fitted line shows a decreasing trend in the mass estimates.

The influence of individual wells on the mass estimates was evaluated qualitatively and quantitatively as discussed in Section 4.3. The results of the visual and quantitative analyses indicate that variations in plume mass estimates can be expected to depend primarily on variations in data from TWN-2. Wells TW4-22, TW4-24, and MW-31 (not necessarily in that order) are collectively the next most important with regard to influence on the mass estimates

During the current quarter, a total of approximately 109 lb of nitrate was removed by the chloroform pumping wells and by nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2. Of the 109 lb removed during the current quarter, approximately 93 lb, (or 85 %), was removed by the nitrate pumping wells.

The baseline nitrate (nitrate+nitrite as N) plume mass calculated as specified in the CAP (based on second quarter, 2010 data) was approximately 43,700 lb. The mass estimate during the current quarter was calculated as 34,370 lb which was larger than the mass estimate during the previous quarter (24,140 lb) by 10,230 lb or 42 %. This difference results from higher nitrate concentrations measured in most wells within the plume and the resulting increased areal extent this quarter compared to last quarter

Nitrate concentrations outside the nitrate plume exceed 10 mg/L at a few locations: TW4-12 (16.1 mg/L), TW4-26 (12.3 mg/L), TW4-27 (28.2 mg/L), and TW4-28 (16.5 mg/L). All these

wells are located southeast of the nitrate plume as defined in the CAP and all are separated from the plume by wells having nitrate concentrations that are either non-detect, or, if detected, are less than 10 mg/L. Concentrations at TW4-26, TW4-27 and TW4-28 are within 20% of their concentrations during the previous quarter, while the concentration at TW4-12 increased more than 20%, from approximately 13 mg/L to 16 mg/L. From the third quarter of 2013 through the second quarter of 2014, nitrate concentrations at TW4-10 and TW4-18 exceeded 10 mg/L. Although last quarter, nitrate concentrations at both TW4-10 and TW4-18 decreased to 9.8 mg/L, both are again above 10 mg/L this quarter. Elevated nitrate concentrations at these wells are associated with the chloroform plume, and both are within the capture zone of the chloroform pumping system. Elevated nitrate at TW4-12, TW4-26, TW4-27, and TW4-28 is likely related to former cattle ranching operations at the site. Increases in both nitrate and chloride concentrations at wells near the northern wildlife ponds (for example TW4-18) were anticipated as a result of reduced dilution caused by cessation of water delivery to the northern wildlife ponds. However, decreasing nitrate concentrations at most wells in the vicinity of TW4-18 over the previous three quarters after a previously increasing trend (interrupted in the first quarter of 2014) suggest that conditions in this area have stabilized.

Nitrate mass removal from the perched zone was increased substantially by the start-up of nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2 during the first quarter of 2013. Continued operation of these wells is therefore recommended. Pumping these wells, regardless of any short term fluctuations in concentrations detected at the wells, helps to reduce downgradient nitrate migration by removing nitrate mass and reducing average hydraulic gradients, thereby allowing natural attenuation to be more effective. Continued operation of the nitrate pumping system is expected to eventually reduce nitrate concentrations within the plume and to further reduce or halt downgradient nitrate migration.

EFRI and its consultants have raised the issues and potential effects associated with cessation of water delivery to the northern wildlife ponds in March, 2012 during discussions with DRC in March 2012 and May 2013. While past recharge from the ponds has helped limit many constituent concentrations within the chloroform and nitrate plumes by dilution, the associated groundwater mounding has increased hydraulic gradients and contributed to plume migration. Since use of the northern wildlife ponds ceased in March 2012, the reduction in recharge and decay of the associated groundwater mound was expected to increase many constituent concentrations within the plumes while reducing hydraulic gradients and rates of plume migration.

The net impact of reduced wildlife pond recharge is expected to be beneficial even though it was also expected to result in temporarily higher concentrations until continued mass reduction via pumping and natural attenuation ultimately reduce concentrations. Temporary increases in nitrate concentrations are judged less important than reduced nitrate migration rates. The actual impacts of reduced recharge on concentrations and migration rates will be defined by continued monitoring.

8.0 ELECTRONIC DATA FILES AND FORMAT

EFRI has provided to the Director an electronic copy of all laboratory results for groundwater quality monitoring conducted under the nitrate contaminant investigation during the quarter, in Comma Separated Values ("CSV") format. A copy of the transmittal e-mail is included under Tab L.

9.0 SIGNATURE AND CERTIFICATION

This document was prepared by Energy Fuels Resources (USA) Inc. on February 25, 2015.

Energy Fuels Resources (USA) Inc.

By:

Scott Bakken
Director, Permitting & Environmental Affairs

Certification:

I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Scott Bakken
Director, Permitting & Environmental Affairs
Energy Fuels Resources (USA) Inc.

Tables

Table 1

Summary of Well Sampling and Constituents for the Period

Well	Sample Collection Date	Date of Lab Report
Piezometer 01	10/8/2014	10/27/2014
Piezometer 02	10/8/2014	10/27/2014
Piezometer 03	10/8/2014	10/27/2014
TWN-01	10/8/2014	10/27/2014
TWN-02	10/8/2014	10/27/2014
TWN-03	10/9/2014	10/27/2014
TWN-04	10/8/2014	10/27/2014
TWN-07	10/9/2014	10/27/2014
TWN-07R	10/8/2014	10/27/2014
TWN-18	10/8/2014	10/27/2014
TW4-22	10/21/2014	11/12/2014
TW4-24	10/21/2014	11/12/2014
TW4-25	10/21/2014	11/12/2014
TWN-60	10/8/2014	10/27/2014
TW4-60	12/23/2014	11/12/2014
TWN-65	10/8/2014	10/27/2014

Note: All wells were sampled for Nitrate and Chloride.

TWN-60 is a DI Field Blank.

TWN-65 is a duplicate of TWN-18.

TW4-60 is the chloroform program DI Field Blank.

Continuously pumped well.

Table 2
Nitrate Mass Removal Per Well Per Quarter

Quarter	MW-4 (lbs.)	MW-26 (lbs.)	TW4-19 (lbs.)	TW4-20 (lbs.)	TW4-4 (lbs.)	TW4-22 (lbs.)	TW4-24 (lbs.)	TW4-25 (lbs.)	TWN-02 (lbs.)	Quarter Totals (lbs.)
Q3 2010	3.2	0.3	5.8	1.7	4.7	NA	NA	NA	NA	15.7
Q4 2010	3.8	0.4	17.3	1.4	5.1	NA	NA	NA	NA	28.0
Q1 2011	2.9	0.2	64.5	1.4	4.3	NA	NA	NA	NA	73.3
Q2 2011	3.5	0.1	15.9	2.7	4.7	NA	NA	NA	NA	27.0
Q3 2011	3.5	0.5	3.5	3.9	5.4	NA	NA	NA	NA	16.8
Q4 2011	3.8	0.8	6.2	2.5	6.4	NA	NA	NA	NA	19.7
Q1 2012	3.6	0.4	0.7	5.0	6.0	NA	NA	NA	NA	15.9
Q2 2012	3.7	0.6	3.4	2.1	5.2	NA	NA	NA	NA	15.0
Q3 2012	3.8	0.5	3.6	2.0	4.7	NA	NA	NA	NA	14.7
Q4 2012	3.2	0.4	5.4	1.8	4.2	NA	NA	NA	NA	14.9
Q1 2013	2.5	0.4	14.1	1.4	3.6	8.1	43.4	7.5	14.8	95.7
Q2 2013	2.5	0.4	5.6	1.6	3.4	10.7	37.1	6.4	23.9	91.7
Q3 2013	3.0	0.4	48.4	1.4	3.8	6.3	72.8	6.9	33.4	176.5
Q4 2013	3.1	0.3	15.8	1.6	3.9	9.4	75.2	6.4	46.3	162.1
Q1 2014	2.7	0.4	4.1	1.2	3.6	11.2	60.4	2.3	17.2	103.1
Q2 2014	2.4	0.3	3.3	0.9	3.0	9.5	63.4	1.3	17.8	101.87
Q3 2014	2.3	0.1	4.1	0.6	3.1	8.5	56.2	1.6	16.4	92.99
Q4 2014	2.7	0.2	7.8	1.0	3.8	11.0	53.2	0.9	28.0	108.57
Well Totals (pounds)	**56.3**	**6.9**	**229.6**	**34.4**	**78.9**	**74.7**	**461.6**	**33.4**	**197.8**	**1173.5**

Table 3 Well Pumping Rates and Volumes

Pumping Well Name	Volume of Water Pumped During the Quarter (gals)	Average Pump Rate (gpm)
MW-4	63,093.0	4.39
MW-26	21,875.8	9.74
TW4-4	64,422.6	7.69
TW4-19	198,331.0	10.88
TW4-20	16,341.8	8.25
TW4-22	23,956.9	17.72
TW4-24	178,468.7	17.25
TW4-25	107,416.1	17.34
TWN-2	47,585.6	18.25

Table 4

Table 4 Quarterly Calculation of Nitrate Removed and Total Volume of Water Pumped

	MW-4							MW-26						
Quarter	Total Pumped (gal)	Conc (mg/L)	Conc (ug/L)	Total Pumped (liters)	Total (ug)	Total (grams)	Total (pounds)	Total Pumped (gal)	Conc (mg/L)	Conc (ug/L)	Total Pumped (liters)	Total (ug)	Total (grams)	Total (pounds)
Calculations and Data Origination	Total Gallons pumped for the quarter from the Flow Meter data	Concentration from the analytical data	Concentration in mg/LX1000 to convert to ug/L	Total pumped gallons/3.785 to conver to liters	Concentration in ug/L X total liters	Total ug/1000000 to convert to grams	Total grams/453.592 to convert to pounds							
Q3 2010	79859.1	4.8	4800	302266.7	1450880129	1450.9	3.20	63850.0	0.6	600	241672.3	145003350	145	0.32
Q4 2010	90042.2	5	5000	340809.7	1704048635	1704.0	3.76	60180.0	0.7	700	227781.3	159446910	159	0.35
Q1 2011	76247.6	4.6	4600	288597.2	1327546964	1327.5	2.93	55130.0	0.5	500	208667.1	104333525	104	0.23
Q2 2011	85849.3	4.9	4900	324939.6	1592204042	1592.2	3.51	55800.6	0.3	300	211205.3	63361581	63	0.14
Q3 2011	85327.7	4.9	4900	322965.3	1582530188	1582.5	3.49	65618.0	0.9	900	248364.1	223527717	224	0.49
Q4 2011	89735.0	5.1	5100	339647.0	1732199573	1732.2	3.82	50191.3	2	2000	189974.1	379948141	380	0.84
Q1 2012	90376.4	4.8	4800	342074.7	1641958435	1642.0	3.62	31440.1	1.7	1700	119000.8	202301323	202	0.45
Q2 2012	90916.5	4.9	4900	344118.8	1686181940	1686.2	3.72	26701.2	2.5	2500	101064.1	252660294	253	0.56
Q3 2012	91607.0	5	5000	346732.5	1733662475	1733.7	3.82	25246.0	2.6	2600	95556.1	248445886	248	0.55
Q4 2012	78840.0	4.8	4800	298409.4	1432365120	1432.4	3.16	30797.0	1.46	1460	116566.6	170187302	170	0.38
Q1 2013	62943.7	4.78	4780	238241.9	1138796304	1138.8	2.51	22650.7	2.27	2270	85732.9	194613682	195	0.43
Q2 2013	71187.3	4.22	4220	269443.9	1137053387	1137.1	2.51	25343.4	2.11	2110	95924.8	202401263	202	0.45
Q3 2013	72898.8	4.89	4890	275922.0	1349258375	1349.3	2.97	25763.0	1.98	1980	97513.0	193075651	193	0.43
Q4 2013	70340.4	5.25	5250	266238.4	1397751674	1397.8	3.08	24207.6	1.38	1380	91625.8	126443557	126	0.28
Q1 2014	69833.8	4.7	4700	264320.9	1242308385	1242.3	2.74	23263.1	2.12	2120	88050.8	186667767	187	0.41
Q2 2014	71934.9	4.08	4080	272273.6	1110876274	1110.9	2.45	23757.5	1.42	1420	89922.1	127689435	128	0.28
Q3 2014	74788.2	3.7	3700	283073.3	1047371347	1047.4	2.31	24062.4	0.7	700	91076.2	63753329	64	0.14
Q4 2014	63093.0	5.07	5070	238807.0	1210751515	1210.8	2.67	21875.8	0.934	934	82799.9	77335109	77	0.17
Totals Since Q3 2010	1415820.85						56.26	655877.7						6.88

Highlighted cells are the total for the current quarter

Table 4

Table 4 Quarterly Calculation of Nitrate Removed and Total Volume of Water Pumped

	TW4-19							TW4-20						
Quarter	Total Pumped (gal)	Conc (mg/L)	Conc (ug/L)	Total Pumped (liters)	Total (ug)	Total (grams)	Total (pounds)	Total Pumped (gal)	Conc (mg/L)	Conc (ug/L)	Total Pumped (liters)	Total (ug)	Total (grams)	Total (pounds)
Calculations and Data Origination														
Q3 2010	116899.2	5.9	5900	442463.5	2.611E+09	2611	5.76	39098.3	5.3	5300	147987.1	784331447	784	1.73
Q4 2010	767970.5	2.7	2700	2906768.3	7.848E+09	7848	17.30	36752.5	4.6	4600	139108.2	639897778	640	1.41
Q1 2011	454607.9	17	17000	1720690.9	2.925E+10	29252	64.49	37187.5	4.4	4400	140754.7	619320625	619	1.37
Q2 2011	159238.9	12	12000	602719.2	7.233E+09	7233	15.95	67907.7	4.8	4800	257030.6	1.234E+09	1234	2.72
Q3 2011	141542.6	3	3000	535738.7	1.607E+09	1607	3.54	72311.2	6.5	6500	273697.9	1.779E+09	1779	3.92
Q4 2011	147647.2	5	5000	558844.7	2.794E+09	2794	6.16	72089.3	4.2	4200	272858.0	1.146E+09	1146	2.53
Q1 2012	148747.0	0.6	600	563007.4	337804437	338	0.74	76306.0	7.9	7900	288818.2	2.282E+09	2282	5.03
Q2 2012	172082.0	2.4	2400	651330.5	1.563E+09	1563	3.45	22956.4	11	11000	86890.1	955790963	956	2.11
Q3 2012	171345.0	2.5	2500	648540.8	1.621E+09	1621	3.57	22025.0	10.8	10800	83364.6	900337950	900	1.98
Q4 2012	156653.0	4.1	4100	592931.6	2.431E+09	2431	5.36	20114.0	11	11000	76131.5	837446390	837	1.85
Q1 2013	210908.0	7.99	7990	798286.8	6.378E+09	6378	14.06	18177.0	9.07	9070	68799.9	624015501	624	1.38
Q2 2013	226224.0	2.95	2950	856257.8	2.526E+09	2526	5.57	20252.4	9.76	9760	76655.3	748156060	748	1.65
Q3 2013	329460.1	17.6	17600	1247006.5	2.195E+10	21947	48.39	19731.0	8.65	8650	74681.8	645997873	646	1.42
Q4 2013	403974.0	4.7	4700	1529041.6	7.186E+09	7186	15.84	19280.2	9.64	9640	72975.6	703484369	703	1.55
Q1 2014	304851.0	1.62	1620	1153861.0	1.869E+09	1869	4.12	18781.6	7.56	7560	71088.4	537427971	537	1.18
Q2 2014	297660.0	1.34	1340	1126643.1	1.51E+09	1510	3.33	18462.4	5.95	5950	69880.2	415787095	416	0.92
Q3 2014	309742.0	1.6	1600	1172373.5	1.876E+09	1876	4.14	17237.9	4.3	4300	65245.5	280555441	281	0.62
Q4 2014	198331.0	4.72	4720	750682.8	3.543E+09	3543	7.81	16341.8	7.67	7670	61853.7	474417979	474	1.05
Totals Since Q3 2010	4717883.4						229.58	615012.2						34.41

Highlighted cells are the total for the current quarter

Table 4
Quarterly Calculation of Nitrate Removed and Total Volume of Water Pumped

	TW4-4							TW4-22						
Quarter	Total Pumped (gal)	Conc (mg/L)	Conc (ug/L)	Total Pumped (liters)	Total (ug)	Total (grams)	Total (pounds)	Total Pumped (gal)	Conc (mg/L)	Conc (ug/L)	Total Pumped (liters)	Total (ug)	Total (grams)	Total (pounds)
Calculations and Data Origination														
Q3 2010	76916.8	7.30	7300.00	291130.1	2.1E+09	2125.25	4.69	NA	NA	NA	NA	NA	NA	NA
Q4 2010	86872.1	7.10	7100.00	328810.9	2.3E+09	2334.56	5.15	NA	NA	NA	NA	NA	NA	NA
Q1 2011	73360.0	7.00	7000.00	277667.6	1.9E+09	1943.67	4.29	NA	NA	NA	NA	NA	NA	NA
Q2 2011	80334.6	7.00	7000.00	304066.5	2.1E+09	2128.47	4.69	NA	NA	NA	NA	NA	NA	NA
Q3 2011	97535.0	6.60	6600.00	369170.0	2.4E+09	2436.52	5.37	NA	NA	NA	NA	NA	NA	NA
Q4 2011	109043.5	7.00	7000.00	412729.6	2.9E+09	2889.11	6.37	NA	NA	NA	NA	NA	NA	NA
Q1 2012	101616.8	7.10	7100.00	384619.6	2.7E+09	2730.80	6.02	NA	NA	NA	NA	NA	NA	NA
Q2 2012	87759.1	7.10	7100.00	332168.2	2.4E+09	2358.39	5.20	NA	NA	NA	NA	NA	NA	NA
Q3 2012	80006.0	7.10	7100.00	302822.7	2.2E+09	2150.04	4.74	NA	NA	NA	NA	NA	NA	NA
Q4 2012	71596.0	7.00	7000.00	270990.9	1.9E+09	1896.94	4.18	NA	NA	NA	NA	NA	NA	NA
Q1 2013	58716.8	7.36	7360.00	222243.1	1.6E+09	1635.71	3.61	16677.4	58.0	58000.0	63124.0	3661189622.0	3661.2	8.07
Q2 2013	65603.4	6.30	6300.00	248308.9	1.6E+09	1564.35	3.45	25523.2	50.2	50200.0	96605.3	4849586662.4	4849.6	10.69
Q3 2013	63515.4	7.22	7220.00	240405.8	1.7E+09	1735.73	3.83	25592.9	29.7	29700.0	96869.1	2877013057.1	2877.0	6.34
Q4 2013	60233.6	7.84	7840.00	227984.2	1.8E+09	1787.40	3.94	24952.2	45.2	45200.0	94444.1	4268872280.4	4268.9	9.41
Q1 2014	58992.9	7.28	7280.00	223288.1	1.6E+09	1625.54	3.58	24532.0	54.6	54600.0	92853.6	5069807652.0	5069.8	11.18
Q2 2014	60235.3	5.91	5910.00	227990.6	1.3E+09	1347.42	2.97	24193.9	47.2	47200.0	91573.9	4322288622.8	4322.3	9.53
Q3 2014	69229.4	5.30	5300.00	262033.3	1.4E+09	1388.78	3.06	24610.9	41.5	41500.0	93152.3	3865818644.8	3865.8	8.52
Q4 2014	64422.6	7.02	7020.00	243839.5	1.7E+09	1711.75	3.77	23956.9	54.9	54900.0	90676.9	4978159970.9	4978.2	10.97
Totals Since Q3 2010	1365989.3						78.90	190039.4						74.72

Highlighted cells are the total for the current quarter

Table 4
Quarterly Calculation of Nitrate Removed and Total Volume of Water Pumped

	TW4-24							TW4-25						
Quarter	Total Pumped (gal)	Conc (mg/L)	Conc (ug/L)	Total Pumped (liters)	Total (ug)	Total (grams)	Total (pounds)	Total Pumped (gal)	Conc (mg/L)	Conc (ug/L)	Total Pumped (liters)	Total (ug)	Total (grams)	Total (pounds)
Calculations and Data Origination														
Q3 2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q4 2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q1 2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q3 2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q4 2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q1 2012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q3 2012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q4 2012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q1 2013	144842.6	35.9	35900.0	548229.2	19681429751.9	19681.4	43.39	99369.9	9.0	9000.0	376115.1	3385035643.5	3385.0	7.46
Q2 2013	187509.3	23.7	23700.0	709722.7	16820428001.9	16820.4	37.08	147310.4	5.2	5240.0	557569.9	2921666087.4	2921.7	6.44
Q3 2013	267703.5	32.6	32600.0	1013257.7	33032202568.5	33032.2	72.82	145840.9	5.69	5690.0	552007.8	3140924419.0	3140.9	6.92
Q4 2013	260555.3	34.6	34600.0	986201.8	34122582643.3	34122.6	75.23	126576.5	6.10	6100.0	479092.1	2922461520.3	2922.5	6.44
Q1 2014	229063.9	31.6	31600.0	867006.9	27397416823.4	27397.4	60.40	129979.2	2.16	2160.0	491971.3	1062657947.5	1062.7	2.34
Q2 2014	216984.1	35.0	35000.0	821284.8	28744968647.5	28745.0	63.37	124829.8	1.21	1210.0	472480.8	571701759.5	571.7	1.26
Q3 2014	213652.5	31.5	31500.0	808674.7	25473253443.8	25473.3	56.16	119663.9	1.60	1600.0	452927.9	724684578.4	724.7	1.60
Q4 2014	178468.7	35.7	35700.0	675504.0	24115493853.2	24115.5	53.17	107416.1	1.03	1030.0	406569.9	418767036.7	418.8	0.92
Totals Since Q3 2010	1698779.9						461.62	1000986.7						33.40

Highlighted cells are the total for the current quarter

Table 4
Quarterly Calculation of Nitrate Removed and Total Volume of Water Pumped

	TWN-02							
Quarter	Total Pumped (gal)	Conc (mg/L)	Conc (ug/L)	Total Pumped (liters)	Total (ug)	Total (grams)	Total (pounds)	Total Removed by All Wells (pounds)
Calculations and Data Origination								
Q3 2010	NA	NA	NA	NA	NA	NA	NA	15.69
Q4 2010	NA	NA	NA	NA	NA	NA	NA	27.97
Q1 2011	NA	NA	NA	NA	NA	NA	NA	73.30
Q2 2011	NA	NA	NA	NA	NA	NA	NA	27.01
Q3 2011	NA	NA	NA	NA	NA	NA	NA	16.82
Q4 2011	NA	NA	NA	NA	NA	NA	NA	19.71
Q1 2012	NA	NA	NA	NA	NA	NA	NA	15.86
Q2 2012	NA	NA	NA	NA	NA	NA	NA	15.03
Q3 2012	NA	NA	NA	NA	NA	NA	NA	14.67
Q4 2012	NA	NA	NA	NA	NA	NA	NA	14.92
Q1 2013	31009.4	57.3	57300.0	117370.6	6725334176.7	6725.3	14.83	95.73
Q2 2013	49579.3	57.7	57700.0	187657.7	10827846433.9	10827.8	23.87	91.71
Q3 2013	50036.5	80.0	80000.0	189388.2	15151052200.0	15151.1	33.40	176.53
Q4 2013	49979.9	111.0	111000.0	189173.9	20998305286.5	20998.3	46.29	162.07
Q1 2014	48320.4	42.6	42600.0	182892.7	7791229616.4	7791.2	17.18	103.14
Q2 2014	47611.9	44.7	44700.0	180211.0	8055433555.1	8055.4	17.76	101.87
Q3 2014	46927.2	42.0	42000.0	177619.5	7460016984.0	7460.0	16.45	92.99
Q4 2014	47585.6	70.6	70600.0	180111.5	12715871617.6	12715.9	28.03	108.57
Totals Since Q3 2010	371050.2						197.81	1173.58

Highlighted cells are the total for the current quarter

Table 5
Nitrate Data Over Time for MW-30, MW-31, MW-5, and MW-11

Location	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012	Q2 2012	Q3 2012	Q4 2012	Q1 2013	Q2 2013	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014
MW-30	15.8	15	16	16	17	16	16	17	16	17	18.5	21.4	18.8	17.6	19.5	18.4	19.4	16.8	16.2
MW-31	22.5	21	20	21	22	21	21	21	20	21	23.6	19.3	23.8	21.7	23.9	20.6	23.1	18.9	20.9
MW-5	ND	NS	0.2	NS	0.2	NS	0.2	NS	0.1	NS	ND	NS	ND	NS	0.279	NS	ND	NS	0.21
MW-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not detected
NS = Not Sampled

TABLE 6
Slug Test Results
(Using KGS Solution and Automatically Logged Data)

Well	K (cm/s)	K (ft/day)
MW-30	1.0E-04	0.28
MW-31	7.1E-05	0.20
TW4-22	1.3E-04	0.36
TW4-24	1.6E-04	0.45
TW4-25	5.8E-05	0.16
TWN-2	1.5E-05	0.042
TWN-3	8.6E-06	0.024
	Average 1	0.22
	Average 2	0.15
	Average 3	0.32
	Average 4	0.31

Notes:

Average 1 = arithemetic average of all wells

Average 2 = geometric average of all wells

Average 3 = arithemetic average of MW-30, MW-31, TW4-22, and TW4-24

Average 4 = geometric average of MW-30, MW-31, TW4-22, and TW4-24

cm/s = centimeters per second

ft/day = feet per day

K = hydraulic conductivity

KGS = KGS Unconfined Slug Test Solution in Aqtesolve™.

TABLE 7
Pre-Pumping Saturated Thicknesses

Well	Depth to Brushy Basin (ft)	Depth to Water Fourth Quarter, 2012 (ft)	Saturated Thickness Above Brushy Basin (ft)
TW4-22	112	53	58
TW4-24	110	55	55

Notes:
ft = feet

TABLE 8
Pre-Pumping Hydraulic Gradients and Flow Calculations

Pathline Boundaries	Path Length (ft)	Head Change (ft)	Hydraulic Gradient (ft/ft)
TW4-25 to MW-31	2060	48	0.023
TWN-2 to MW-30	2450	67	0.027
		average	0.025
		[1] ***min flow (gpm)***	***1.31***
		[2] ***max flow (gpm)***	***2.79***

Notes:

ft = feet

ft/ft = feet per foot

gpm = gallons per minute

[1] assumes width = 1,200 ft; saturated thickness = 56 ft; K = 0.15 ft/day; and gradient = 0.025 ft/ft

[2] assumes width = 1,200 ft; saturated thickness = 56 ft; K = 0.32 ft/day; and gradient = 0.025 ft/ft

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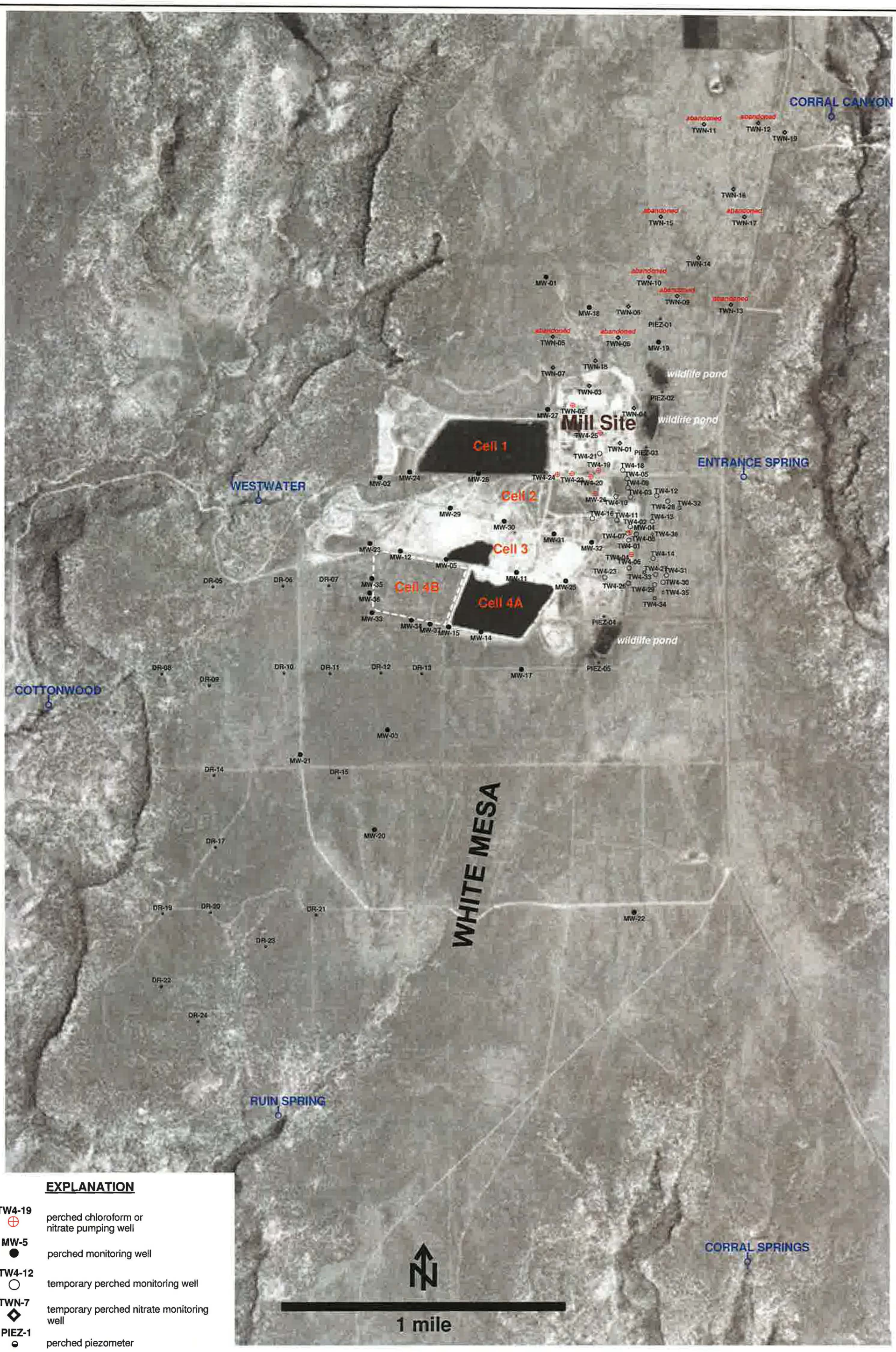
Tab A

Site Plan and Perched Well Locations White Mesa Site



EXPLANATION

TW4-19	perched chloroform or nitrate pumping well
MW-5	perched monitoring well
TW4-12	temporary perched monitoring well
TWN-7	temporary perched nitrate monitoring well
PIEZ-1	perched piezometer
TW4-32	temporary perched monitoring well installed September, 2013
TW4-35	temporary perched monitoring well installed May, 2014
RUIN SPRING	seep or spring

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WHITE MESA SITE PLAN SHOWING LOCATIONS OF PERCHED WELLS AND PIEZOMETERS

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/aug14/Uwelloc0614.srf	A-1

Tab B

Order of Sampling and Field Data Worksheets

Nitrate Order
4th Quarter 2014

Nitrate Samples						Rinsate Samples		
Name	Nitrate Mg/L Previous Qrt.	Date/Purge	sample	Depth	Total Depth	Name	Date	Sample
TWN-7	0.9	10/9/14	0655		105	TWN-7R	10/8/14	0729
TWN-1	1.7	10/8/14	0812		112.5	TWN-1R		
TWN-1B	1.8	10/8/14	0847		145	TWN-1BR		
TWN-4	2	10/8/14	0923		125.7	TWN-4R		
TWN-3	19.5	10/9/14	0705		96	TWN-3R		
TWN-2	42.0	10/8/14	1233		96	TWN-2R		
Duplicate of	1B TWN-1B	10/8/14	0847					
Rinsate								
DI Sample	10/8/2014 0645							
Piez 1	5.1	10/8/14	1302					
Piez 2	0.8	10/8/14	1240			Samplers:		
Piez 3	1.7	10/8/14	1250					

ENERGYFUELS

See instruction

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

Description of Sampling Event: 4th Quarter Nitrate 2014

Location (well name): Piez-01

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: Piez-01_10082014

Date and Time for Purging: 10/8/2014 and Sampling (if different): N/A

Well Purging Equip Used: ☐ pump or ☒ bailer

Well Pump (if other than Bennet): N/A

Purging Method Used: ☐ 2 casings ☐ 3 casings

Sampling Event: Quarterly Nitrate

Prev. Well Sampled in Sampling Event: Piez-03

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 1000 µMHOS/ cm

Well Depth(0.01ft): 0

Depth to Water Before Purging: 63.40

Casing Volume (V) 4" Well: 0 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event): 22°

Time	1301	Gal. Purged	0
Conductance	2130	pH	8.40
Temp. °C	15.33		
Redox Potential Eh (mV)	150		
Turbidity (NTU)	1.3		

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Volume of Water Purged [0] gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = [0]

Time to evacuate two casing volumes (2V)
T = 2V/Q = [0]

Number of casing volumes evacuated (if other than two) [0]

If well evacuated to dryness, number of gallons evacuated [0]

Name of Certified Analytical Laboratory if Other Than Energy Labs [AWAL]

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☐	☐	3x40 ml	☐	☐	HCL	☐	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth [64.30] Sample Time [1302]

See instruction

Comment

Arrived on site at 1258 Tanner and Garrin present to collect samples.
Samples bailed at 1302 water was mostly clear with a few wood like Particles floating in it
Left site at 1305

Piez-01 10-08-2014 Do not touch this cell (SheetName)

ENERGY FUELS

See instruction

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

Description of Sampling Event: 4Th Quarter Nitrate 2014

Location (well name): Piez-02

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: Piez-02_10082014

Date and Time for Purging: 10/8/2014 and Sampling (if different): N/A

Well Purging Equip Used: ☐ pump or ☒ bailer

Well Pump (if other than Bennet): N/A

Purging Method Used: ☐ 2 casings ☐ 3 casings

Sampling Event: Quarterly Nitrate

Prev. Well Sampled in Sampling Event: ~~N/A~~ TWN-02

TWN-02

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 1000 µMHOS/ cm

Well Depth(0.01ft): 0

Depth to Water Before Purging: 35.84

Casing Volume (V) 4" Well: 0 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event): 22°

Time	1239	Gal. Purged	0
Conductance	816	pH	6.94
Temp. °C	15.43		
Redox Potential Eh (mV)	236		
Turbidity (NTU)	8.5		

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

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Volume of Water Purged [0] gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = [0]

Time to evacuate two casing volumes (2V)
T = 2V/Q = [0]

Number of casing volumes evacuated (if other than two) [0]

If well evacuated to dryness, number of gallons evacuated [0]

Name of Certified Analytical Laboratory if Other Than Energy Labs [AWAL]

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☐	☐	3x40 ml	☐	☐	HCL	☐	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth [36.94] Sample Time [1240]

See instruction

Comment

Arrived on site at 1236 Tanner and Garrin present to collect samples
Samples bailed at 1240 water was mostly clear
Left site at 1243

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ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

See instruction

Description of Sampling Event: 4Th Quarter Nitrate 2014

Location (well name): Piez-03

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: Piez-03_10082014

Date and Time for Purging: 10/8/2014 and Sampling (if different): N/A

Well Purging Equip Used: ☐ pump or ☒ bailer

Well Pump (if other than Bennet): N/A

Purging Method Used: ☐ 2 casings ☐ 3 casings

Sampling Event: Quarterly Nitrate

Prev. Well Sampled in Sampling Event: Piez-02

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 1000 µMHOS/ cm

Well Depth(0.01ft): 0

Depth to Water Before Purging: 47.04

Casing Volume (V) 4" Well: 0 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event): 22°

Time	1249	Gal. Purged	0
Conductance	2743	pH	11.56
Temp. °C	15.29		
Redox Potential Eh (mV)	88		
Turbidity (NTU)	5.2		

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Volume of Water Purged [0] gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = [0]

Time to evacuate two casing volumes (2V)
T = 2V/Q = [0]

Number of casing volumes evacuated (if other than two) [0]

If well evacuated to dryness, number of gallons evacuated [0]

Name of Certified Analytical Laboratory if Other Than Energy Labs [AWAL]

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☐	☐	3x40 ml	☐	☐	HCL	☐	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth [52.80] Sample Time [1250]

See instruction

Comment

Arrived on site at 1246 Tanner and Garrin present to collect samples.
Samples bailed at 1250 water was mostly clear with a High PH
Left site at 1253

Piez-03 10-08-2014 Do not touch this cell (SheetName)

ENERGY FUELS

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

See instruction

Description of Sampling Event: 4Th Quarter Nitrate 2014

Location (well name): TWN-01

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID TWN-01_10082014

Date and Time for Purging 10/8/2014 and Sampling (if different) N/A

Well Purging Equip Used: ☒ pump or ☐ bailer

Well Pump (if other than Bennet) Grundfos

Purging Method Used: ☒ 2 casings ☐ 3 casings

Sampling Event Quarterly Nitrate

Prev. Well Sampled in Sampling Event TWN-07

pH Buffer 7.0 7.0

pH Buffer 4.0 4.0

Specific Conductance 1000 µMHOS/ cm

Well Depth(0.01ft): 112.50

Depth to Water Before Purging 59.97

Casing Volume (V) 4" Well: 34.30 (.653h)
3" Well: 0 (.367h)

Weather Cond. Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event) 14°

Time	0809	Gal. Purged	55
Conductance	838	pH	6.94
Temp. °C	15.00		
Redox Potential Eh (mV)	230		
Turbidity (NTU)	4.6		

Time	0810	Gal. Purged	66
Conductance	846	pH	6.94
Temp. °C	15.00		
Redox Potential Eh (mV)	228		
Turbidity (NTU)	5.0		

Time	0811	Gal. Purged	77
Conductance	845	pH	6.94
Temp. °C	15.00		
Redox Potential Eh (mV)	227		
Turbidity (NTU)	5.0		

Time	0812	Gal. Purged	88
Conductance	852	pH	6.94
Temp. °C	15.00		
Redox Potential Eh (mV)	226		
Turbidity (NTU)	5.2		

Volume of Water Purged 88 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = 11.0

Time to evacuate two casing volumes (2V)
T = 2V/Q = 6.23

Number of casing volumes evacuated (if other than two) 0

If well evacuated to dryness, number of gallons evacuated 0

Name of Certified Analytical Laboratory if Other Than Energy Labs AWAL

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☐	☐	3x40 ml	☐	☐	HCL	☐	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth 107.12 Sample Time 0812

See instruction

Comment

Arrived on site at 0802 Tanner and Garrin present for purge and sampling event.
Purge began at 0804 Purged well for a total of 8 minutes
Purge ended and samples were collected at 0812. water was clear

Left site at 0814

TWN-01 10-08-2014 Do not touch this cell (SheetName)

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

See instruction

Description of Sampling Event: 4Th Quarter Nitrate 2014

Location (well name): TWN-02

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID TWN-02_10082014

Date and Time for Purging 10/8/2014 and Sampling (if different) N/A

Well Purging Equip Used: ☒ pump or ☐ bailer

Well Pump (if other than Bennet) Continuous

Purging Method Used: ☒ 2 casings ☐ 3 casings

Sampling Event Quarterly Nitrate

Prev. Well Sampled in Sampling Event TWN-03

pH Buffer 7.0 7.0

pH Buffer 4.0 4.0

Specific Conductance 1000 µMHOS/ cm

Well Depth(0.01ft): 96.00

Depth to Water Before Purging 27.60

Casing Volume (V) 4" Well: 44.66 (.653h)
3" Well: 0 (.367h)

Weather Cond. Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event) 22°

Time	1232	Gal. Purged	0
Conductance	3438	pH	6.30
Temp. °C	16.70		
Redox Potential Eh (mV)	291		
Turbidity (NTU)	6.9		

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Volume of Water Purged [0] gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = [18.0]

Time to evacuate two casing volumes (2V)
T = 2V/Q = [4.96]

Number of casing volumes evacuated (if other than two) [0]

If well evacuated to dryness, number of gallons evacuated [0]

Name of Certified Analytical Laboratory if Other Than Energy Labs [AWAL]

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☐	☐	3x40 ml	☐	☐	HCL	☐	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth [86.11] Sample Time [1233]

See instruction

Comment

Arrived on site at 1227. Tanner and Garrin present to collect samples
Samples collected at 1233. water was clear
Left site at 1235

Continuous Pumping well

TWN-02 10-08-2014 Do not touch this cell (SheetName)

ENERGY FUELS

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

See instruction

Description of Sampling Event: 4th Quarter Nitrate 2014

Location (well name): TWN-03

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TWN-03_~~10082014~~ TWN-03_10092014

Date and Time for Purging: 10/8/2014 and Sampling (if different): 10/9/2014

Well Purging Equip Used: ☒ pump or ☐ bailer

Well Pump (if other than Bennet): Grundfos

Purging Method Used: ☒ 2 casings ☐ 3 casings

Sampling Event: Quarterly Nitrate

Prev. Well Sampled in Sampling Event: TWN-04

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 1000 µMHOS/ cm

Well Depth(0.01ft): 96.00

Depth to Water Before Purging: 37.98

Casing Volume (V) 4" Well: 37.88 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event): 15°

Time	0952	Gal. Purged	47.66
Conductance	2330	pH	6.62
Temp. °C	14.70		
Redox Potential Eh (mV)	243		
Turbidity (NTU)	22		

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time	0705	Gal. Purged	0
Conductance	2271	pH	6.83
Temp. °C	14.48		
Redox Potential Eh (mV)			
Turbidity (NTU)			

Before

Time	0706	Gal. Purged	0
Conductance	2283	pH	6.81
Temp. °C	14.58		
Redox Potential Eh (mV)			
Turbidity (NTU)			

After

Volume of Water Purged 47.66 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = 11.0

Time to evacuate two casing volumes (2V)
T = 2V/Q = 6.88

Number of casing volumes evacuated (if other than two) 1.25

If well evacuated to dryness, number of gallons evacuated 47.66

Name of Certified Analytical Laboratory if Other Than Energy Labs AWAL

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☐	☐	3x40 ml	☐	☐	HCL	☐	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth 94.01 Sample Time 0705

See instruction

Comment

Arrived on site at 0945 Tanner and Garrin present for purge. Purge began at 0948 Purged well for a total of 4 minutes and 20 seconds. Purged well dry Purge ended at 0952. water was a little murky. Left site at 0954
Arrived on site at 0702 Tanner and Garrin present to collect samples. Depth to water was 37.60 samples bailed at 0705 Left site at 0708. Raining at time of sampling

TWN-03 10-08-2014 Do not touch this cell (SheetName)

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

See instruction

Description of Sampling Event: 4Th Quarter Nitrate 2014

Location (well name): TWN-04

Sampler Name and initials: Tanner Holliday TH

Field Sample ID TWN-04_10082014

Date and Time for Purging 10/8/2014 and Sampling (if different) N/A

Well Purging Equip Used: ☒ pump or ☐ bailer

Well Pump (if other than Bennet) Grundfos

Purging Method Used: ☒ 2 casings ☐ 3 casings

Sampling Event Quarterly Nitrate

Prev. Well Sampled in Sampling Event TWN-18

pH Buffer 7.0 7.0

pH Buffer 4.0 4.0

Specific Conductance 1000 µMHOS/ cm

Well Depth(0.01ft): 125.70

Depth to Water Before Purging 52.30

Casing Volume (V) 4" Well: 47.93 (.653h)
3" Well: 0 (.367h)

Weather Cond. Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event) 15°

Time	0920	Gal. Purged	88
Conductance	968	pH	6.73
Temp. °C	14.68		
Redox Potential Eh (mV)	224		
Turbidity (NTU)	10		

Time	0921	Gal. Purged	99
Conductance	969	pH	6.73
Temp. °C	14.70		
Redox Potential Eh (mV)	224		
Turbidity (NTU)	11		

Time	0922	Gal. Purged	110
Conductance	963	pH	6.73
Temp. °C	14.69		
Redox Potential Eh (mV)	223		
Turbidity (NTU)	11.3		

Time	0923	Gal. Purged	121
Conductance	971	pH	6.73
Temp. °C	14.70		
Redox Potential Eh (mV)	222		
Turbidity (NTU)	11.5		

Volume of Water Purged 121 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = 11.0

Time to evacuate two casing volumes (2V)
T = 2V/Q = 8.71

Number of casing volumes evacuated (if other than two) 0

If well evacuated to dryness, number of gallons evacuated 0

Name of Certified Analytical Laboratory if Other Than Energy Labs AWAL

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☐	☐	3x40 ml	☐	☐	HCL	☐	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth 53.95 Sample Time 0923

See instruction

Comment

Arrived on site at 0909 Tanner and Garrin present for purge and sampling event.
Purge began at 0912 Purged well for a total of 11 minutes
Purge ended and samples were collected at 0923 water was clear
Left site at 0925

TWN-04 10-08-2014 Do not touch this cell (SheetName)

ENERGY FUELS

See instruction

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

Description of Sampling Event: 4Th Quarter Nitrate 2014

Location (well name): TWN-07

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TWN-07_10092014

Date and Time for Purging: 10/8/2014 and Sampling (if different): 10/9/2014

Well Purging Equip Used: ☒ pump or ☐ bailer

Well Pump (if other than Bennet): Grundfos

Purging Method Used: ☒ 2 casings ☐ 3 casings

Sampling Event: Quarterly Nitrate

Prev. Well Sampled in Sampling Event: TWN-07R

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 1000 µMHOS/ cm

Well Depth(0.01ft): 105.00

Depth to Water Before Purging: 86.18

Casing Volume (V) 4" Well: 12.28 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event): 13°

Time	0743	Gal. Purged	16.50
Conductance	1237	pH	6.85
Temp. °C	14.95		
Redox Potential Eh (mV)	260		
Turbidity (NTU)	16.7		

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time	0655	Gal. Purged	5
Conductance	1287	pH	7.38
Temp. °C	15.47		
Redox Potential Eh (mV)			
Turbidity (NTU)			

Before

Time	0656	Gal. Purged	0
Conductance	1281	pH	7.35
Temp. °C	15.45		
Redox Potential Eh (mV)			
Turbidity (NTU)			

After

Volume of Water Purged 16.50 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = 11.0

Time to evacuate two casing volumes (2V)
T = 2V/Q = 2.23

Number of casing volumes evacuated (if other than two) 1.34

If well evacuated to dryness, number of gallons evacuated 16.50

Name of Certified Analytical Laboratory if Other Than Energy Labs AWAL

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☐	☐	3x40 ml	☐	☐	HCL	☐	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth 102.79 Sample Time 0655

See instruction

Comment

Arrived on site at 0739. Tanner and Garrin present for purge. Purge began at 0742
Purged well for a total of 1 minute 30 seconds. Purged well dry! water was mostly clear. Purge ended at 0743. Left site at 0746
Arrived on site at 0651 Tanner and Garrin present to collect samples. Depth to water was 95.26 samples bailed at 0655 Left site at 0657. Raining at time of sampling.

TWN-07 10-08-2014 Do not touch this cell (SheetName)

ENERGY FUELS

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

See instruction

Description of Sampling Event: 4TH Quarter Nitrate 2014

Location (well name): TWN-07R

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID TWN-07R_10082014

Date and Time for Purging 10/8/2014 and Sampling (if different) N/A

Well Purging Equip Used: ☒ pump or ☐ bailer

Well Pump (if other than Bennet) Grundfos

Purging Method Used: ☒ 2 casings ☐ 3 casings

Sampling Event Quarterly Nitrate

Prev. Well Sampled in Sampling Event TWN-60

pH Buffer 7.0 7.0

pH Buffer 4.0 4.0

Specific Conductance 1000 µMHOS/ cm

Well Depth(0.01ft): 0

Depth to Water Before Purging 0

Casing Volume (V) 4" Well: 0 (.653h)
3" Well: 0 (.367h)

Weather Cond. Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event) 13°

Time	0728	Gal. Purged	143
Conductance	0.8	pH	6.05
Temp. °C	18.77		
Redox Potential Eh (mV)	315		
Turbidity (NTU)	2.4		

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Volume of Water Purged 150 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = ~~15~~ 11.0 11.0

Time to evacuate two casing volumes (2V)
T = 2V/Q = 0

Number of casing volumes evacuated (if other than two) 0

If well evacuated to dryness, number of gallons evacuated 0

Name of Certified Analytical Laboratory if Other Than Energy Labs AWAL

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☐	☐	3x40 ml	☐	☐	HCL	☐	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth 0 Sample Time 0729

See instruction

Comment

Arrived on site at 0712 Tanner and Garrin present for rinsate
Rinsate began at 0715 Pumped 50 Gallons of soap water
and 100 Gallons of DI water. Rinsate ended at 0729
Left site at 0735

TWN-07R 10-08-2014 Do not touch this cell (SheetName)

ENERGY FUELS

See instruction

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

Description of Sampling Event: 4Th Quarter Nitrate 2014

Location (well name): TWN-18

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TWN-18_10082014

Date and Time for Purging: 10/8/2014 and Sampling (if different): N/A

Well Purging Equip Used: ☒ pump or ☐ bailer

Well Pump (if other than Bennet): Grundfos

Purging Method Used: ☒ 2 casings ☐ 3 casings

Sampling Event: Quarterly Nitrate

Prev. Well Sampled in Sampling Event: TWN-01

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 1000 µMHOS/ cm

Well Depth(0.01ft): 145.00

Depth to Water Before Purging: 59.49

Casing Volume (V) 4" Well: 55.83 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event): 14°

Time	0844	Gal. Purged	99
Conductance	2177	pH	6.47
Temp. °C	14.51		
Redox Potential Eh (mV)	240		
Turbidity (NTU)	12		

Time	0845	Gal. Purged	110
Conductance	2180	pH	6.47
Temp. °C	14.48		
Redox Potential Eh (mV)	239		
Turbidity (NTU)	13		

Time	0846	Gal. Purged	121
Conductance	2191	pH	6.46
Temp. °C	14.51		
Redox Potential Eh (mV)	239		
Turbidity (NTU)	13		

Time	0847	Gal. Purged	132
Conductance	2180	pH	6.47
Temp. °C	14.50		
Redox Potential Eh (mV)	238		
Turbidity (NTU)	14		

Volume of Water Purged 132 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = 11.0

Time to evacuate two casing volumes (2V)
T = 2V/Q = 10.15

Number of casing volumes evacuated (if other than two) 0

If well evacuated to dryness, number of gallons evacuated 0

Name of Certified Analytical Laboratory if Other Than Energy Labs AWAL

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☐	☐	3x40 ml	☐	☐	HCL	☐	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth 61.10 Sample Time 0847

See instruction

Comment

Arrived on site at 0832 Tanner and Garrin present for purge and sampling event.
Purge began at 0835 Purged well for a total of 12 minutes.
Purge ended and samples collected at 0847 water was a little milky white.
Left site at 0849

TWN-18 10-08-2014 Do not touch this cell (SheetName)

ENERGY FUELS

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

See instruction

Description of Sampling Event: 4Th Quarter Chloroform 2014

Location (well name): TW4-22

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TW4-22_10212014

Date and Time for Purging: 10/21/2014 and Sampling (if different): N/A

Well Purging Equip Used: ☒ pump or ☐ bailer

Well Pump (if other than Bennet): Continuous

Purging Method Used: ☐ 2 casings ☐ 3 casings

Sampling Event: Quarterly Chloroform

Prev. Well Sampled in Sampling Event: TW4-24

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 1000 µMHOS/ cm

Well Depth(0.01ft): 113.50

Depth to Water Before Purging: 61.20

Casing Volume (V) 4" Well: 34.15 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event): 18°

Time	1312	Gal. Purged	0
Conductance	5992	pH	6.40
Temp. °C	15.55		
Redox Potential Eh (mV)	174		
Turbidity (NTU)	3.0		

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Volume of Water Purged [0] gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = [18.0]

Time to evacuate two casing volumes (2V)
T = 2V/Q = [3.79]

Number of casing volumes evacuated (if other than two) [0]

If well evacuated to dryness, number of gallons evacuated [0]

Name of Certified Analytical Laboratory if Other Than Energy Labs [AWAL]

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☒	☐	3x40 ml	☐	☒	HCL	☒	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth [84.76] Sample Time [1313]

See instruction

Comment

Arrived on site at 1309 Tanner and Garrin present to collect samples
Samples were collected at 1313 water was clear
Left site at 1315

Continuous Pumping Well

TW4-22 10-21-2014 Do not touch this cell (SheetName)

ENERGY FUELS

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

See instruction

Description of Sampling Event: 4Th Quarter Chloroform

Location (well name): TW4-24

Sampler Name and initials: Tanner Holliday /TH

Field Sample ID TW4-24_10212014

Date and Time for Purging 10/21/2014 and Sampling (if different) N/A

Well Purging Equip Used: ☒ pump or ☐ bailer

Well Pump (if other than Bennet) Continuous

Purging Method Used: ☐ 2 casings ☐ 3 casings

Sampling Event Quarterly Chloroform

Prev. Well Sampled in Sampling Event TW4-25

pH Buffer 7.0 7.0

pH Buffer 4.0 4.0

Specific Conductance 1000 µMHOS/ cm

Well Depth(0.01ft): 112.50

Depth to Water Before Purging 68.42

Casing Volume (V) 4" Well: 28.78 (.653h)
3" Well: 0 (.367h)

Weather Cond. Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event) 18°

Time	1304	Gal. Purged	0
Conductance	8998	pH	6.35
Temp. °C	15.28		
Redox Potential Eh (mV)	182		
Turbidity (NTU)	1.5		

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Volume of Water Purged [0] gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = [17.0]

Time to evacuate two casing volumes (2V)
T = 2V/Q = [3.38]

Number of casing volumes evacuated (if other than two) [0]

If well evacuated to dryness, number of gallons evacuated [0]

Name of Certified Analytical Laboratory if Other Than Energy Labs [AWAL]

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☒	☐	3x40 ml	☐	☒	HCL	☒	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth [75.34] Sample Time [1305]

See instruction

Comment

Arrived on site at 1301 Tanner and Garrin present to collect samples
Samples collected at 1305 water was clear
Left site at 1307
Continuous pumping well

TW4-24 10-21-2014 Do not touch this cell (SheetName)

ENERGY FUELS

See instruction

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

Description of Sampling Event: 4Th Quarter Chloroform 2014

Location (well name): TW4-25_

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TW4-25_10212014

Date and Time for Purging: 10/21/2014 and Sampling (if different): N/A

Well Purging Equip Used: ☒ pump or ☐ bailer

Well Pump (if other than Bennet): Continuous

Purging Method Used: ☐ 2 casings ☐ 3 casings

Sampling Event: Quarterly Chloroform

Prev. Well Sampled in Sampling Event: N/A

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 1000 µMHOS/ cm

Well Depth(0.01ft): 134.80

Depth to Water Before Purging: 88.50

Casing Volume (V) 4" Well: 30.23 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event): 18°

Time	1251	Gal. Purged	0
Conductance	2614	pH	6.35
Temp. °C	15.95		
Redox Potential Eh (mV)	290		
Turbidity (NTU)	0		

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Volume of Water Purged [0] gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = [17.4]

Time to evacuate two casing volumes (2V)
T = 2V/Q = [3.47]

Number of casing volumes evacuated (if other than two) [0]

If well evacuated to dryness, number of gallons evacuated [0]

Name of Certified Analytical Laboratory if Other Than Energy Labs [AWAL]

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☒	☐	3x40 ml	☐	☒	HCL	☒	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth [94.11] Sample Time [1252]

See instruction

Comment

Arrived on site at 1249 Tanner and Garrin present to collect samples.
collected samples at 1252 water was clear
Left site at 1255

Continuous Pumping Well

TW4-25 10-21-2014 Do not touch this cell (SheetName)

ENERGY FUELS

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

See instruction

Description of Sampling Event: 4th Quarter Chloroform 2014

Location (well name): TW4-60

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TW4-60_10232014

Date and Time for Purging: 10/23/2014 and Sampling (if different): N/A

Well Purging Equip Used: ☒ pump or ☐ bailer

Well Pump (if other than Bennet): N/A

Purging Method Used: ☐ 2 casings ☐ 3 casings

Sampling Event: Quarterly Chloroform

Prev. Well Sampled in Sampling Event: N/A

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 1000 µMHOS/ cm

Well Depth(0.01ft): 0

Depth to Water Before Purging: 0

Casing Volume (V) 4" Well: 0 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event): 20°

Time	0829	Gal. Purged	0
Conductance	0.7	pH	~~5.8~~ 6.30
Temp. °C	20.17		
Redox Potential Eh (mV)	~~650~~ 294		
Turbidity (NTU)	1.0		

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Volume of Water Purged 0 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = 0

Time to evacuate two casing volumes (2V)
T = 2V/Q = 0

Number of casing volumes evacuated (if other than two) 0

If well evacuated to dryness, number of gallons evacuated 0

Name of Certified Analytical Laboratory if Other Than Energy Labs AWAL

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☒	☐	3x40 ml	☐	☒	HCL	☒	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth 0 Sample Time 0830

See instruction

Comment

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TW4-60 10-23-2014 Do not touch this cell (SheetName)

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

See instruction

Description of Sampling Event: 4Th Quarter Nitrate 2014

Location (well name): TWN-60

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TWN-60_10082014

Date and Time for Purging: 10/8/2014 and Sampling (if different): N/A

Well Purging Equip Used: ☐ pump or ☐ bailer

Well Pump (if other than Bennet): N/A

Purging Method Used: ☐ 2 casings ☐ 3 casings

Sampling Event: Quarterly Nitrate

Prev. Well Sampled in Sampling Event: N/A

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 1000 µMHOS/ cm

Well Depth(0.01ft): 0

Depth to Water Before Purging: 0

Casing Volume (V) 4" Well: 0 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event): 20°

Time	0644	Gal. Purged	0
Conductance	0.4	pH	7.00
Temp. °C	21.73		
Redox Potential Eh (mV)	231		
Turbidity (NTU)	1.6		

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Volume of Water Purged [0] gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = [0]

Time to evacuate two casing volumes (2V)
T = 2V/Q = [0]

Number of casing volumes evacuated (if other than two) [0]

If well evacuated to dryness, number of gallons evacuated [0]

Name of Certified Analytical Laboratory if Other Than Energy Labs [AWAL]

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☐	☐	3x40 ml	☐	☐	HCL	☐	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth [0] Sample Time [0645]

See instruction

Comment

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TWN-60 10-08-2014 Do not touch this cell (SheetName)

ATTACHMENT 1-2
WHITE MESA URANIUM MILL
FIELD DATA WORKSHEET FOR GROUNDWATER

See instruction

Description of Sampling Event: 4Th Quarter Nitrate 2014

Location (well name): TWN-65

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID TWN-65_10082014

Date and Time for Purging 10/8/2014 and Sampling (if different) N/A

Well Purging Equip Used: ☒ pump or ☐ bailer

Well Pump (if other than Bennet) Grundfos

Purging Method Used: ☒ 2 casings ☐ 3 casings

Sampling Event Quarterly Nitrate

Prev. Well Sampled in Sampling Event TWN-01

pH Buffer 7.0 7.0

pH Buffer 4.0 4.0

Specific Conductance 1000 µMHOS/ cm

Well Depth(0.01ft): 145.00

Depth to Water Before Purging 59.49

Casing Volume (V) 4" Well: 55.83 (.653h)
3" Well: 0 (.367h)

Weather Cond. Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event) 14°

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Time		Gal. Purged	
Conductance		pH	
Temp. °C			
Redox Potential Eh (mV)			
Turbidity (NTU)			

Volume of Water Purged 132 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = 11.0

Time to evacuate two casing volumes (2V)
T = 2V/Q = 10.15

Number of casing volumes evacuated (if other than two) 0

If well evacuated to dryness, number of gallons evacuated 0

Name of Certified Analytical Laboratory if Other Than Energy Labs AWAL

Type of Sample	Sample Taken		Sample Vol (indicate if other than as specified below)	Filtered		Preservative Type	Preservative Added	
	Y	N		Y	N		Y	N
VOCs	☐	☐	3x40 ml	☐	☐	HCL	☐	☐
Nutrients	☒	☐	100 ml	☐	☒	H2SO4	☒	☐
Heavy Metals	☐	☐	250 ml	☐	☐	HNO3	☐	☐
All Other Non Radiologics	☐	☐	250 ml	☐	☐	No Preserv.	☐	☐
Gross Alpha	☐	☐	1,000 ml	☐	☐	HNO3	☐	☐
Other (specify)	☒	☐	Sample volume	☐	☒		☐	☒
Chloride								

If preservative is used, specify
Type and Quantity of Preservative:

Final Depth 61.10 Sample Time 0847

See instruction

Comment

Duplicate of TWN-18

TWN-65 10-08-2014 Do not touch this cell (SheetName)

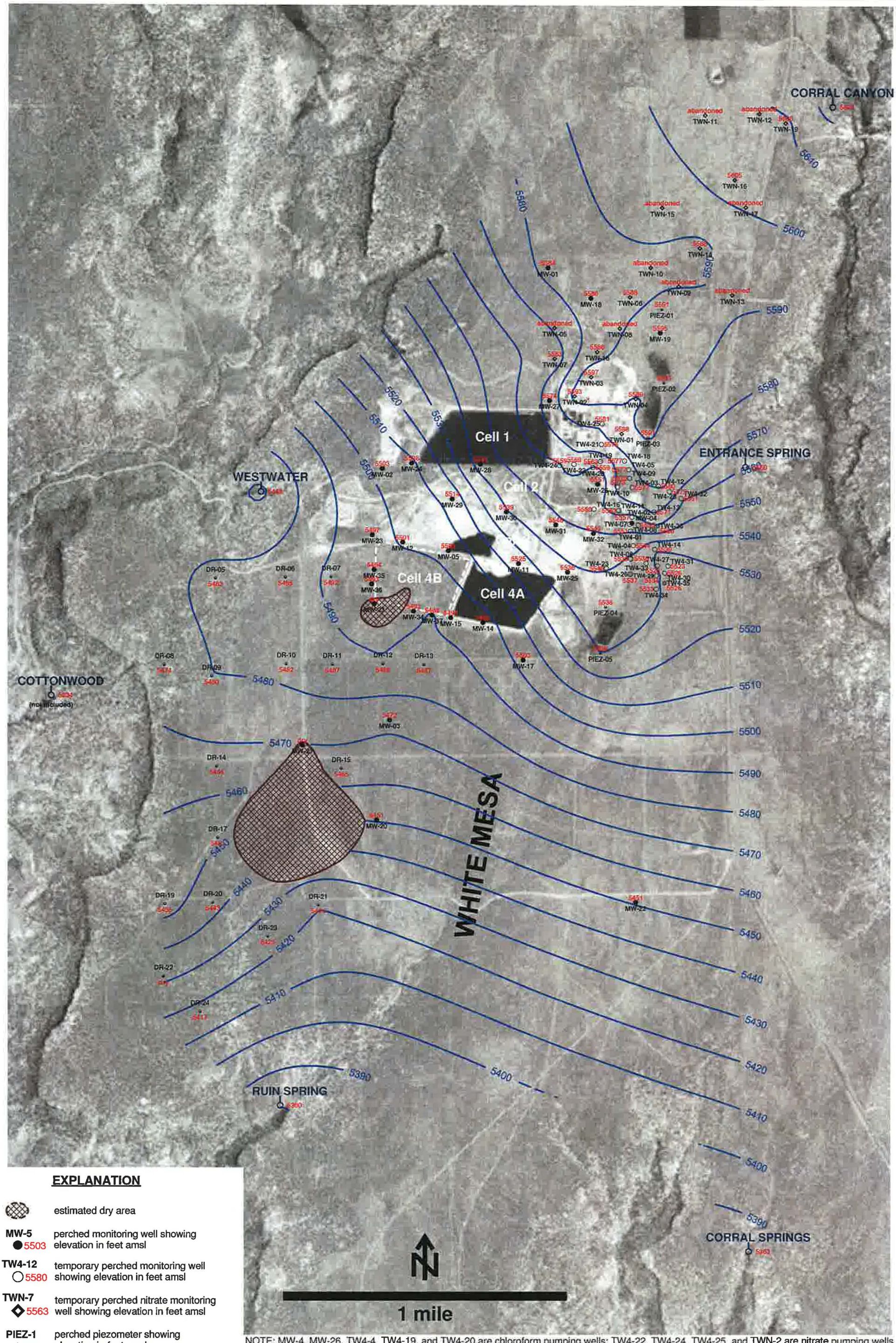
Tab C

Kriged Current Quarter Groundwater Contour Map, Capture Zone Map, Capture Zone Details Map, and Weekly, Monthly and Quarterly Depth to Water Data

NAME: Garrin Palmer, Tanner Holliday

DATE: 12/17/14

TIME	WELL	Depth to Water (ft.)	TIME	WELL	Depth to Water (ft.)	TIME	WELL	Depth to Water (ft.)	TIME	WELL	Depth to Water (ft.)
1250	MW-1	64.06	927	MW-4	70.25	1238	PIEZ-1	64.10	NA	DR-1	ABANDON
1029	MW-2	109.69	931	TW4-1	67.86	1233	PIEZ-2	36.15	NA	DR-2	ABANDON
725	MW-3	82.71	929	TW4-2	67.65	1231	PIEZ-3	47.36	1340	DR-5	83.00
726	MW-3A	84.65	924	TW4-3	54.83	1004	PIEZ-4	55.12	1343	DR-6	94.35
1024	MW-5	106.10	932	TW4-4	69.80	1002	PIEZ-5	54.17	738	DR-7	92.03
1213	MW-11	86.20	921	TW4-5	63.26	1304	TWN-1	60.35	1353	DR-8	51.20
1021	MW-12	108.21	934	TW4-6	70.07	1303	TWN-2	34.03	1349	DR-9	86.41
1010	MW-14	103.15	927	TW4-7	68.45	1259	TWN-3	37.95	1347	DR-10	78.15
1012	MW-15	106.05	926	TW4-8	66.45	1229	TWN-4	52.45	732	DR-11	98.20
719	MW-17	72.13	922	TW4-9	61.15		TWN-5	ABANDON	729	DR-12	90.51
1256	MW-18	71.24	919	TW4-10	61.05	1247	TWN-6	77.25	722	DR-13	69.73
1236	MW-19	59.85	1219	TW4-11	60.25	1253	TWN-7	86.05	1358	DR-14	76.24
1425	MW-20	90.00	955	TW4-12	43.90		TWN-8	ABANDON	1429	DR-15	92.83
1435	MW-22	66.79	953	TW4-13	48.86		TWN-9	ABANDON	NA	DR-16	ABANDON
746	MW-23	115.28	950	TW4-14	82.36		TWN-10	ABANDON	1401	DR-17	67.91
1032	MW-24	113.35	916	TW4-15	74.80		TWN-11	ABANDON	NA	DR-18	ABANDON
1008	MW-25	75.00	1217	TW4-16	66.02		TWN-12	ABANDON	1404	DR-19	63.02
916	MW-26	74.80	1211	TW4-17	76.25		TWN-13	ABANDON	1413	DR-20	55.58
1224	MW-27	53.39	1305	TW4-18	64.17	1241	TWN-14	61.65	1419	DR-21	101.13
1034	MW-28	75.30	1158	TW4-19	68.40		TWN-15	ABANDON	1406	DR-22	DRY
1029	MW-29	101.00	914	TW4-20	70.14	1244	TWN-16	47.45	1417	DR-23	70.50
1206	MW-30	75.20	1306	TW4-21	63.22		TWN-17	ABANDON	1409	DR-24	44.00
1208	MW-31	68.15	912	TW4-22	60.40	1226	TWN-18	59.46	NA	DR-25	ABANDON
1211	MW-32	76.25	1006	TW4-23	67.03	853	TWN-19	53.00			
741	MW-33	DRY	910	TW4-24	66.86						
1017	MW-34	107.71	1308	TW4-25	63.78						
744	MW-35	112.16	936	TW4-26	64.54						
742	MW-36	110.32	941	TW4-27	80.13						
1015	MW-37	110.00	956	TW4-28	38.28						
			949	TW4-29	72.44						
			944	TW4-30	76.40						
			942	TW4-31	81.31						
			958	TW4-32	50.91						
			939	TW4-33	71.00						
			947	TW4-34	70.35						
			945	TW4-35	74.15						
			952	TW4-36	56.82						



EXPLANATION

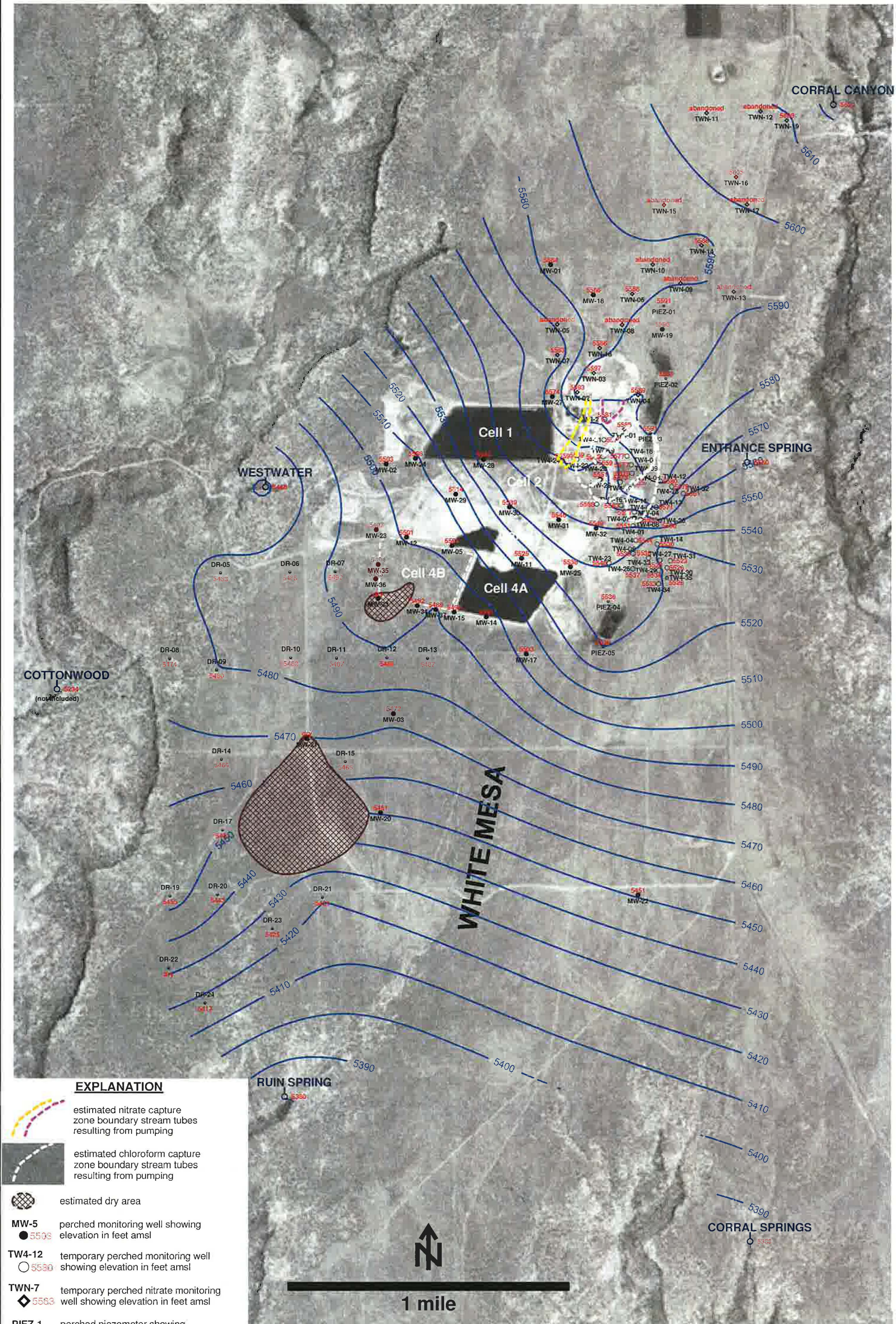
	estimated dry area
MW-5 ● 5503	perched monitoring well showing elevation in feet amsl
TW4-12 ○ 5580	temporary perched monitoring well showing elevation in feet amsl
TWN-7 ◇ 5563	temporary perched nitrate monitoring well showing elevation in feet amsl
PIEZ-1 ⊖ 5591	perched piezometer showing elevation in feet amsl
TW4-35 ☼ 5526	temporary perched monitoring well installed May, 2014 showing elevation in feet amsl
RUIN SPRING 5380	seep or spring showing elevation in feet amsl

NOTE: MW-4, MW-26, TW4-4, TW4-19, and TW4-20 are chloroform pumping wells; TW4-22, TW4-24, TW4-25, and TWN-2 are nitrate pumping wells

HYDRO GEO CHEM, INC.

KRIGED 4th QUARTER, 2014 WATER LEVELS WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/feb15/WL/Uwl1214.srf	C-1



NOTE: MW-4, MW-26, TW4-4, TW4-19, and TW4-20 are chloroform pumping wells; TW4-22, TW4-24, TW4-25, and TWN-2 are nitrate pumping wells

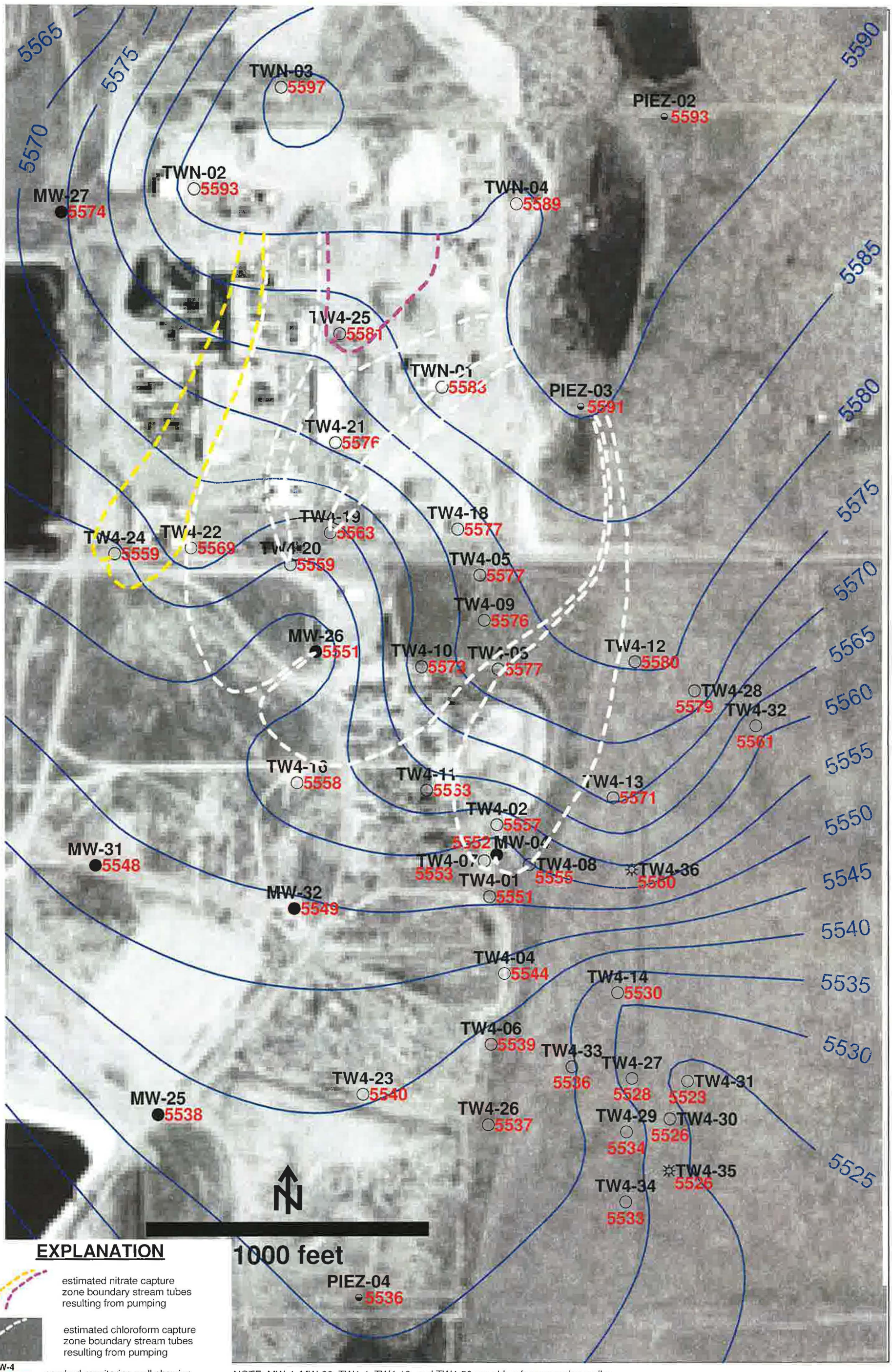
EXPLANATION

- estimated nitrate capture zone boundary stream tubes resulting from pumping
- estimated chloroform capture zone boundary stream tubes resulting from pumping
- estimated dry area
- **MW-5** ● 5503 — perched monitoring well showing elevation in feet amsl
- **TW4-12** ○ 5530 — temporary perched monitoring well showing elevation in feet amsl
- **TWN-7** ◇ 5563 — temporary perched nitrate monitoring well showing elevation in feet amsl
- **PIEZ-1** ◒ 5591 — perched piezometer showing elevation in feet amsl
- **TW4-35** ☼ 5526 — temporary perched monitoring well installed May, 2014 showing elevation in feet amsl
- **RUIN SPRING** 5380 — seep or spring showing elevation in feet amsl

HYDRO GEO CHEM, INC.

KRIGED 4th QUARTER, 2014 WATER LEVELS AND ESTIMATED CAPTURE ZONES WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/ feb15/nitrate/Uwl1214NTcz2.srf	C-2



EXPLANATION

estimated nitrate capture zone boundary stream tubes resulting from pumping

estimated chloroform capture zone boundary stream tubes resulting from pumping

MW-4 ● 5552 perched monitoring well showing elevation in feet amsl

TW4-1 ○ 5551 temporary perched monitoring well showing elevation in feet amsl

PIEZ-2 ◒ 5593 perched piezometer showing elevation in feet amsl

TW4-35 ☼ 5526 temporary perched monitoring well installed May, 2014 showing elevation in feet amsl

NOTE: MW-4, MW-26, TW4-4, TW4-19, and TW4-20 are chloroform pumping wells; TW4-22, TW4-24, TW4-25, and TWN-2 are nitrate pumping wellsC

HYDRO GEO CHEM, INC.

KRIGED 4th QUARTER, 2014 WATER LEVELS AND ESTIMATED CAPTURE ZONES WHITE MESA SITE (detail map)

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/ feb15/nitrate/Uwl1214NTcz.srf	C-3

Weekly Inspection Form

Date 10/6/14 **Name** Garrin, Tanner

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1343	MW-4	71.93	Flow 4.4 GPM	Yes No
			Meter 495345.91	Yes No
1339	MW-26	71.20	Flow 10.0 GPM	Yes No
			Meter 459524.81	Yes No
1235	TW4-19	67.42	Flow 11.5 GPM	Yes No
			Meter 2909727.00	Yes No
1336	TW4-20	70.01	Flow 8.8 GPM	Yes No
			Meter 30251.71	Yes No
1346	TW4-4	69.92	Flow 8.0 GPM	Yes No
			Meter 441615.30	Yes No
1325	TWN-2	27.20	Flow 18.4 GPM	Yes No
			Meter 327178.40	Yes No
1333	TW4-22	61.12	Flow 17.6 GPM	Yes No
			Meter 167826.40	Yes No
1329	TW4-24	97.02	Flow 17.0 GPM	Yes No
			Meter 1536340.80	Yes No
1320	TW4-25	62.58	Flow 17.4 GPM	Yes No
			Meter 902667.80	Yes No

Operational Problems (Please list well number):

Corrective Action(s) Taken (Please list well number):

* Depth is measured to the nearest 0.01 feet.

Weekly Inspection Form

Date 10/13/2014 **Name** Tanner Holliday, Garrin Palmer

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1453	MW-4	71.25	Flow 4.3	Yes No
			Meter 501119.43	Yes No
1450	MW-26	68.95	Flow 10.0	Yes No
			Meter 461517.20	Yes No
~~1507~~	TW4-19	~~69.85~~	Flow 11.0	Yes No
1510		75.10	Meter 29341 2000	Yes No
1447	TW4-20	71.05	Flow 8.3	Yes No
			Meter 31685.02	Yes No
1457	TW4-4	69.70	Flow 8.0	Yes No
			Meter 446779.9	Yes No
1438	TWN-2	26.90	Flow 18.0	Yes No
			Meter 3308219	Yes No
1444	TW4-22	62.40	Flow 17.0	Yes No
			Meter 169767.7	Yes No
1441	TW4-24	69.83	Flow 17.3	Yes No
			Meter 1552426.1	Yes No
1434	TW4-25	61.37	Flow 16.8	Yes No
			Meter 9116605	Yes No

Operational Problems (Please list well number): _____

Corrective Action(s) Taken (Please list well number): _____

* Depth is measured to the nearest 0.01 feet.

Weekly Inspection Form

Date 10/21/14 **Name** Garrin Palmer / Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1330	MW-4	72.44	Flow 4.4 GPM	Yes No
			Meter 507973.20	Yes No
1324	MW-26	71.60	Flow ~~71.60~~ 9.7 GPM	Yes No
			Meter 463585.70	Yes No
1415	TW4-19	68.20	Flow 11.0 GPM	Yes No
			Meter 2991441.00	Yes No
1317	TW4-20	69.08	Flow 8.0 GPM	Yes No
			Meter 33031.08	Yes No
1339	TW4-4	69.74	Flow 8.0 GPM	Yes No
			Meter 452554	Yes No
1250	TWN-2	27.42	Flow 18.2 GPM	Yes No
			Meter 335187.40	Yes No
1308	TW4-22	61.20	Flow 18.0 GPM	Yes No
			Meter 171994.50	Yes No
1300	TW4-24	~~27.42~~ 68.42	Flow 17.0 GPM	Yes No
			Meter 1570521.10	Yes No
1247	TW4-25	88.50	Flow 17.4 GPM	Yes No
			Meter 922094.10	Yes No

Operational Problems (Please list well number):

Corrective Action(s) Taken (Please list well number):

* Depth is measured to the nearest 0.01 feet.

Weekly Inspection Form

Date 10/27/14 **Name** Garrin Palmer / Tanner Halliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
0951	MW-4	79.98	Flow 4.4 GPM	Yes No
			Meter 512809.82	Yes No
0948	MW-26	72.25	Flow 10.0 GPM	Yes No
			Meter 464542.36	Yes No
1009	TW4-19	84.46	Flow 11.0 GPM	Yes No
			Meter 2981400.05	Yes No
0945	TW4-20	70.12	Flow 8.5 GPM	Yes No
			Meter 34119.53	Yes No
0934	TW4-4	70.48	Flow 6.0 GPM	Yes No
			Meter 456679.80	Yes No
0934	TWN-2	28.40	Flow 18.6 GPM	Yes No
			Meter 338218.70	Yes No
0942	TW4-22	61.15	Flow 18.0 GPM	Yes No
			Meter 173017.50	Yes No
0938	TW4-24	68.85	Flow 16.6 GPM	Yes No
			Meter 1584046.90	Yes No
0930	TW4-25	71.48	Flow 17.3 GPM	Yes No
			Meter 929605.00	Yes No

Operational Problems (Please list well number): _____

Corrective Action(s) Taken (Please list well number): _____

* Depth is measured to the nearest 0.01 feet.

Monthly Depth Check Form

Date 10/29/2014 **Name** Tanner Holliday / Garrin Palmer

Time	Well	Depth*	Time	Well	Depth*
0939	MW-4	76.12	1247	TWN-1	60.35
0910	TW4-1	67.90	1251	TWN-2	28.40
1040	TW4-2	68.10	1257	TWN-3	37.78
1347	TW4-3	55.02	1254	TWN-4	52.62
1350	TW4-4	69.18	1302	TWN-7	86.60
1346	TW4-5	63.97	1253	TWN-18	59.70
0829	TW4-6	70.42	1259	MW-27	53.75
0933	TW4-7	68.60	1307	MW-30	75.50
0801	TW4-8	67.30	1310	MW-31	68.37
0745	TW4-9	61.72	1410	TW4-28	38.28
0959	TW4-10	61.42	0821	TW4-29	72.70
0904	TW4-11	61.20	1400	TW4-30	76.80
1409	TW4-12	43.86	1402	TW4-31	81.85
1408	TW4-13	49.24	1411	TW4-32	50.03
1405	TW4-14	82.85	0753	TW4-33	71.19
1346	TW4-15	73.18	1356	TW4-34	70.51
0837	TW4-16	66.15	1358	TW4-35	74.36
0717	TW4-17	76.23	1406	TW4-36	57.17
1249	TW4-18	64.95			
1440	TW4-19	69.70			
1344	TW4-20	70.07			
0810	TW4-21	66.35			
1342	TW4-22	59.95			
1352	TW4-23	67.01			
1340	TW4-24	68.44			
1250	TW4-25	62.80			
1353	TW4-26	64.59			
1354	TW4-27	80.45			

Comments: (Please note the well number for any comments)

* Depth is measured to the nearest 0.01 feet

5055086

Weekly Inspection Form

Date 11/3/14 **Name** Garrin Palmer

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1429	MW-4	70.28	Flow 4.4 GPM	Yes No
			Meter 518805.84	Yes No
1424	MW-26	73.23	Flow 10.0 GPM	Yes No
			Meter 466344.11	Yes No
1510	TW4-19	76.40	Flow 10.5 GPM	Yes No
			Meter 3009557.00	Yes No
1420	TW4-20	70.48	Flow 8.2 GPM	Yes No
			Meter 35445.08	Yes No
1432	TW4-4	69.70	Flow 7.6 GPM	Yes No
			Meter 461723.00	Yes No
1359	TWN-2	28.90	Flow 18.7 GPM	Yes No
			Meter 342090.60	Yes No
1415	TW4-22	67.90	Flow 18.0 GPM	Yes No
			Meter 175580.10	Yes No
1410	TW4-24	69.20	Flow 17.4 GPM	Yes No
			Meter 1600878.00	Yes No
1330	TW4-25	58.50	Flow ~~18.7 GPM~~ 18.0 GPM	Yes No
			Meter 932585.60	Yes No

Operational Problems (Please list well number): TW4-25 was found w/out power. Power was restored to pump. well is back to operation.

Corrective Action(s) Taken (Please list well number):

* Depth is measured to the nearest 0.01 feet.

Weekly Inspection Form

Date 11/11/14 **Name** Garrin Palmer / Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1337	MW-4	71.57	Flow 4.4 GPM	(Yes) No
			Meter 522792.55	(Yes) No
1337	MW-26	80.20	Flow 9.8 GPM	(Yes) No
			Meter 468438.13	(Yes) No
1223	TW4-19	78.92	Flow 10.0 GPM	(Yes) No
			Meter 3032154.00	(Yes) No
1334	TW4-20	71.04	Flow 8.3 GPM	(Yes) No
			Meter 36986.17	(Yes) No
1340	TW4-4	70.30	Flow 7.7 GPM	(Yes) No
			Meter 467441.70	(Yes) No
1324	TWN-2	28.40	Flow 18.2 GPM	(Yes) No
			Meter 346208.70	(Yes) No
1330	TW4-22	~~113.08~~ 72.95	Flow 18.0 GPM	(Yes) No
			Meter 177698.30	(Yes) No
1328	TW4-24	107.60	Flow 17.0 GPM	(Yes) No
			Meter 1621203.20	(Yes) No
1320	TW4-25	62.31	Flow 18.0 GPM	(Yes) No
			Meter 943773.80	(Yes) No

Operational Problems (Please list well number): _____

Corrective Action(s) Taken (Please list well number): _____

* Depth is measured to the nearest 0.01 feet.

Weekly Inspection Form

Date 11/18/14 **Name** Garrin Palmer / Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1519	MW-4	65.55	Flow 4.4 GPM	(Yes) No
			Meter 527319.08	(Yes) No
1510	MW-26	71.90	Flow 9.0 GPM	(Yes) No
			Meter 470520.56	(Yes) No
1448	TW4-19	66.44	Flow 10.0 GPM	(Yes) No
			Meter 3052086.02	(Yes) No
1540	TW4-20	70.43	Flow 8.2 GPM	(Yes) No
			Meter 38140.16	(Yes) No
1520	TW4-4	69.14	Flow 7.4 GPM	(Yes) No
			Meter 472750.90	(Yes) No
1459	TWN-2	29.33	Flow 17.8 GPM	(Yes) No
			Meter 349978.60	(Yes) No
1506	TW4-22	61.89	Flow 17.1 GPM	(Yes) No
			Meter 179928.70	(Yes) No
1503	TW4-24	68.45	Flow 17.4 GPM	(Yes) No
			Meter 1634244.30	(Yes) No
1456	TW4-25	61.43	Flow 17.4 GPM	(Yes) No
			Meter 953479.60	(Yes) No

Operational Problems (Please list well number): Timer on MW-26 needed to be reset because data was lost when power was turned off to well.

Corrective Action(s) Taken (Please list well number): Reset timer. Well functioning properly.

* Depth is measured to the nearest 0.01 feet.

Weekly Inspection Form

Date 11/24/14 **Name** Garrin Palmer / Tanner Halliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
0930	MW-4	67.80	Flow 4.4 GPM	(Yes) No
			Meter 532314.62	(Yes) No
0922	MW-26	78.68	Flow 9.8 GPM	(Yes) No
			Meter 471641.23	(Yes) No
0845	TW4-19	72.95	Flow 11.0 GPM	(Yes) No
			Meter 3058396.50	(Yes) No
0920	TW4-20	69.50	Flow 8.5 GPM	(Yes) No
			Meter 39036.80	(Yes) No
0926	TW4-4	69.10	Flow 8.8 GPM	(Yes) No
			Meter 476424.80	(Yes) No
0909	TWN-2	49.60	Flow 18.2 GPM	(Yes) No
			Meter 353029.30	(Yes) No
0916	TW4-22	61.63	Flow 17.6 GPM	(Yes) No
			Meter 181190.40	(Yes) No
0913	TW4-24	67.72	Flow 17.0 GPM	(Yes) No
			Meter 1643861.80	(Yes) No
0905	TW4-25	102.42	Flow 17.2 GPM	(Yes) No
			Meter 961325.60	(Yes) No

Operational Problems (Please list well number): TW4-4, MW-4 discharge lines found frozen. Flow meter on TW4-4 froze and cracked.

Corrective Action(s) Taken (Please list well number): Replaced flow meter on TW4-4 and un-thawed frozen discharge lines.

* Depth is measured to the nearest 0.01 feet.

Monthly Depth Check Form

Date 11/25/14 **Name** Garrin Palmer/Tanner Holliday

Time	Well	Depth*	Time	Well	Depth*
0930	MW-4	68.80	1233	TWN-1	60.46
1256	TW4-1	67.97	0909	TWN-2	~~49.60~~ 29.60
1259	TW4-2	67.55	1241	TWN-3	37.93
1301	TW4-3	55.23	1245	TWN-4	52.70
0926	TW4-4	69.80	1253	TWN-7	86.05
1303	TW4-5	63.98	1248	TWN-18	59.63
1252	TW4-6	70.31	1250	MW-27	53.74
1323	TW4-7	67.24	1259	MW-30	75.41
1317	TW4-8	66.52	1301	MW-31	68.33
1304	TW4-9	61.80	1223	TW4-28	38.41
1306	TW4-10	61.41	1233	TW4-29	72.75
1311	TW4-11	60.41	1240	TW4-30	76.80
1221	TW4-12	44.08	1241	TW4-31	81.78
1226	TW4-13	49.60	1224	TW4-32	50.20
1229	TW4-14	82.70	1244	TW4-33	71.25
0923	TW4-15	76.82	1234	TW4-34	70.65
1309	TW4-16	66.19	1238	TW4-35	74.34
1305	TW4-17	76.31	1246	TW4-36	57.24
1236	TW4-18	64.81			
0850	TW4-19	74.68			
0920	TW4-20	69.60			
1238	TW4-21	65.61			
0916	TW4-22	61.83			
1250	TW4-23	67.25			
0913	TW4-24	67.72			
0903	TW4-25	70.18			
1248	TW4-26	64.71			
1230	TW4-27	80.47			

Comments: (Please note the well number for any comments)

* Depth is measured to the nearest 0.01 feet

Weekly Inspection Form

Date 12/2/14 **Name** Garrin Palmer / Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1230	MW-4	64.49	Flow 4.4 GPM	Yes No
			Meter 5034671.58	Yes No
1227	MW-26	80.61	Flow 9.8 GPM	Yes No
			Meter 473685.54	Yes No
1300	TW4-19	68.49	Flow 11.4 GPM	Yes No
			Meter 3064457.00	Yes No
1224	TW4-20	68.80	Flow 8.4 GPM	Yes No
			Meter 40515.36	Yes No
1233	TW4-4	69.70	Flow 7.8 GPM	Yes No
			Meter 6243.30	Yes No
1215	TWN-2	43.98	Flow 18.4 GPM	Yes No
			Meter 357655.40	Yes No
1221	TW4-22	61.45	Flow 17.4 GPM	Yes No
			Meter 183393.60	Yes No
1218	TW4-24	67.20	Flow 16.7 GPM	Yes No
			Meter 1656422.70	Yes No
1212	TW4-25	58.70	Flow ——	Yes No
			Meter 970907.90	Yes No

Operational Problems (Please list well number): TW4-25 will be off until Thursday the 4th because of construction in the area.

Corrective Action(s) Taken (Please list well number):

* Depth is measured to the nearest 0.01 feet.

Weekly Inspection Form

Date 12/8/14 **Name** Garrin Palmer

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1238	MW-4	71.45	Flow 4.4 GPM	(Yes) No
			Meter 540913.04	(Yes) No
1235	MW-26	77.60	Flow 9.8 GPM	(Yes) No
			Meter 474539.17	(Yes) No
1310	TW4-19	68.42	Flow 11.0 GPM	(Yes) No
			Meter 3069078.00	(Yes) No
1233	TW4-20	68.27	Flow 8.5 GPM	(Yes) No
			Meter 416970.60	(Yes) No
1242	TW4-4	69.89	Flow 8.2 GPM	(Yes) No
			Meter 10064.30	(Yes) No
1217	TWN-2	36.62	Flow 18.6 GPM	(Yes) No
			Meter 360472.80	(Yes) No
1229	TW4-22	61.55	Flow 18.0 GPM	(Yes) No
			Meter 184923.40	(Yes) No
1226	TW4-24	66.82	Flow 17.8 GPM	(Yes) No
			Meter 1665844.50	(Yes) No
1211	TW4-25	58.58	Flow 17.2 GPM	(Yes) No
			Meter 970941.00	(Yes) No

Operational Problems (Please list well number): Timer on TW4-25 lost settings due to being off. Heat lamp bulb went out on ~~TW4~~ MW-4.

Corrective Action(s) Taken (Please list well number): Reset timer on TW4-25 and date/time. Replaced bulb on MW-4.

* Depth is measured to the nearest 0.01 feet.

5266050

Weekly Inspection Form

Date 12/15/14 **Name** Garrin Palmer

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1434	MW-4	73.18	Flow 4.4 GPM	Yes No
			Meter 548485.56	Yes No
1426	MW-26	69.30	Flow 9.0 GPM	Yes No
			Meter 476405.11	Yes No
1506 ~~1438~~	TW4-19	75.92	Flow 11.0 GPM	Yes No
			Meter 3074328.00	Yes No
1430	TW4-20	68.20	Flow 8.2 GPM	Yes No
			Meter 42904.58	Yes No
1438	TW4-4	69.87	Flow 8.0 GPM	Yes No
			Meter 16410.90	Yes No
1417	TWN-2	30.70	Flow 18.2 GPM	Yes No
			Meter 364091.30	Yes No
1426	TW4-22	69.32	Flow 18.1 GPM	Yes No
			Meter 186969.30	Yes No
1422	TW4-24	67.40	Flow 17.8 GPM	Yes No
			Meter 1677079.60	Yes No
1410	TW4-25	61.40	Flow 17.4 GPM	Yes No
			Meter 981260.00	Yes No

Operational Problems (Please list well number):

Corrective Action(s) Taken (Please list well number):

* Depth is measured to the nearest 0.01 feet.

Weekly Inspection Form

Date 12/22/14 **Name** Garrin Palmer, Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1305	MW-4	64.80	Flow 4.4 GPM	Yes No
			Meter 549521.45	Yes No
1302	MW-26	71.15	Flow 10.0 GPM	Yes No
			Meter 478501.32	Yes No
1348	TW4-19	68.14	Flow 11.0 GPM	Yes No
			Meter 3079543.00	Yes No
1316	TW4-20	83.70	Flow 7.4 GPM	Yes No
			Meter 44258.29	Yes No
1310	TW4-4	69.90	Flow 7.6 GPM	Yes No
			Meter 21498.70	Yes No
1251	TWN-2	31.40	Flow 17.2 GPM	Yes No
			Meter 367741.10	Yes No
1258	TW4-22	60.73	Flow 17.5 GPM	Yes No
			Meter 188721.30	Yes No
1255	TW4-24	68.30	Flow 17.6 GPM	Yes No
			Meter 1687955.30	Yes No
1248	TW4-25	54.79	Flow 16.8 GPM	Yes No
			Meter 991253.60	Yes No

Operational Problems (Please list well number): MW-4 settings were erased.

Corrective Action(s) Taken (Please list well number): Re programed well settings

* Depth is measured to the nearest 0.01 feet.

Weekly Inspection Form

Date 12/29/14 **Name** Garrin Palmer

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1207	MW-4	64.80	Flow —	Yes (No)
			Meter 552582.49	Yes (No)
1204	MW-26	68.80	Flow —	Yes (No)
			Meter 479490.56	Yes (No)
1401	TW4-19	69.72	Flow 11.0 GPM	(Yes) No
			Meter 3084882.00	(Yes) No
1200	TW4-20	67.00	Flow 7.9 GPM	(Yes) No
			Meter 45401.03	(Yes) No
1208	TW4-4	69.02	Flow —	Yes (No)
			Meter 24524.60	Yes (No)
1148	TWN-2	31.81	Flow 18.8 GPM	(Yes) No
			Meter 37105020	(Yes) No
1156	TW4-22	58.80	Flow 18.0 GPM	(Yes) No
			Meter 190029.40	(Yes) No
1152	TW4-24	67.89	Flow 17.7 GPM	(Yes) No
			Meter 1698779.90	(Yes) No
1144	TW4-25	62.74	Flow 17.2 GPM	(Yes) No
			Meter 1000986.70	(Yes) No

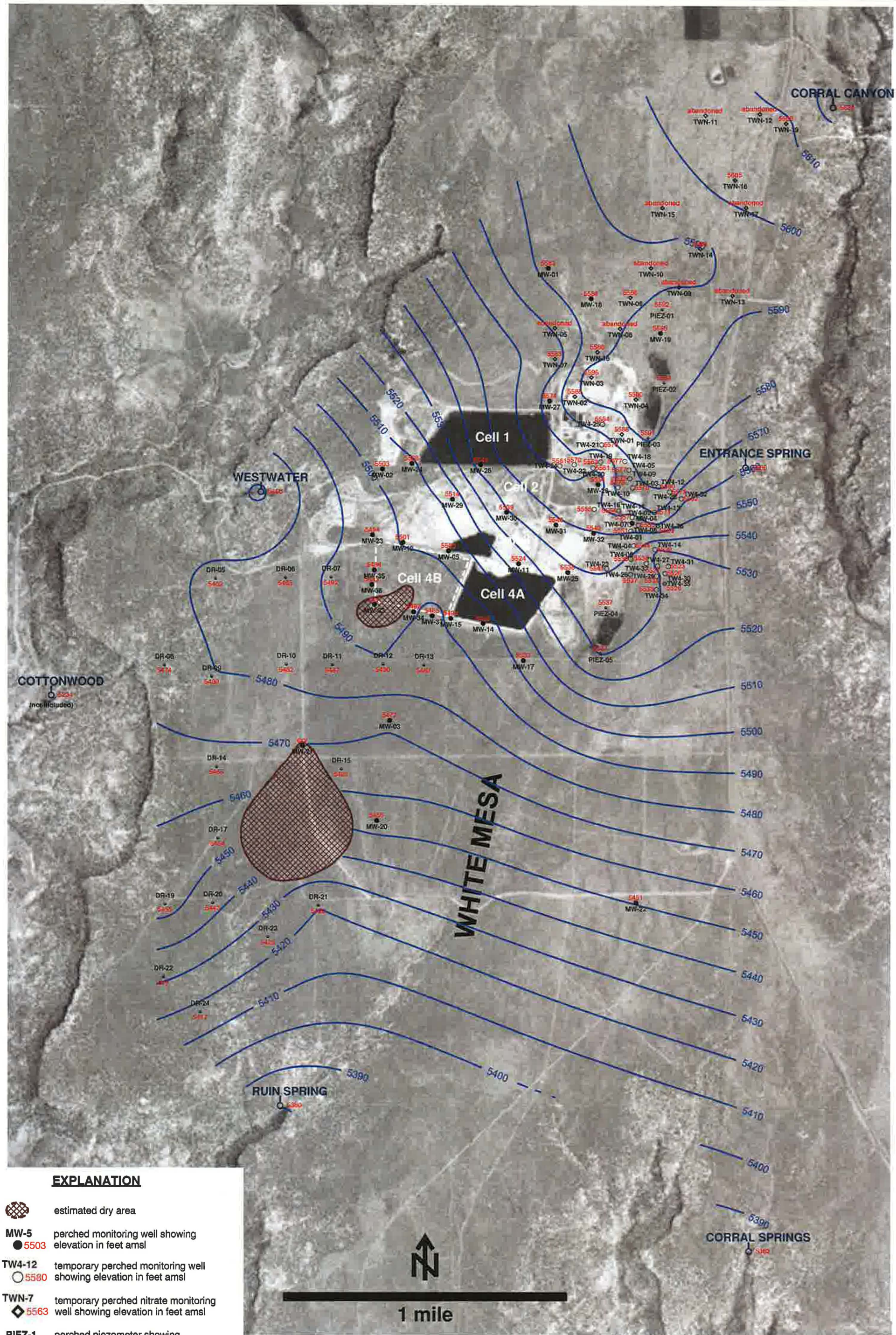
Operational Problems (Please list well number): MW-4, MW-26, TW4-4 discharge lines are frozen.

Corrective Action(s) Taken (Please list well number): Kathy Weinel spoke with Phil Gobk and wells will be started when wells are connected to new discharge line.

* Depth is measured to the nearest 0.01 feet.

Tab D

Kriged Previous Quarter Groundwater Contour Map



EXPLANATION

- estimated dry area
- **MW-5** ● 5503 — perched monitoring well showing elevation in feet amsl
- **TW4-12** ○ 5580 — temporary perched monitoring well showing elevation in feet amsl
- **TWN-7** ◇ 5563 — temporary perched nitrate monitoring well showing elevation in feet amsl
- **PIEZ-1** ⊖ 5592 — perched piezometer showing elevation in feet amsl
- **TW4-35** ☼ 5526 — temporary perched monitoring well installed May, 2014 showing elevation in feet amsl
- **RUIN SPRING** 5380 — seep or spring showing elevation in feet amsl

NOTE: MW-4, MW-26, TW4-4, TW4-19, and TW4-20 are chloroform pumping wells; TW4-22, TW4-24, TW4-25, and TWN-2 are nitrate pumping wells

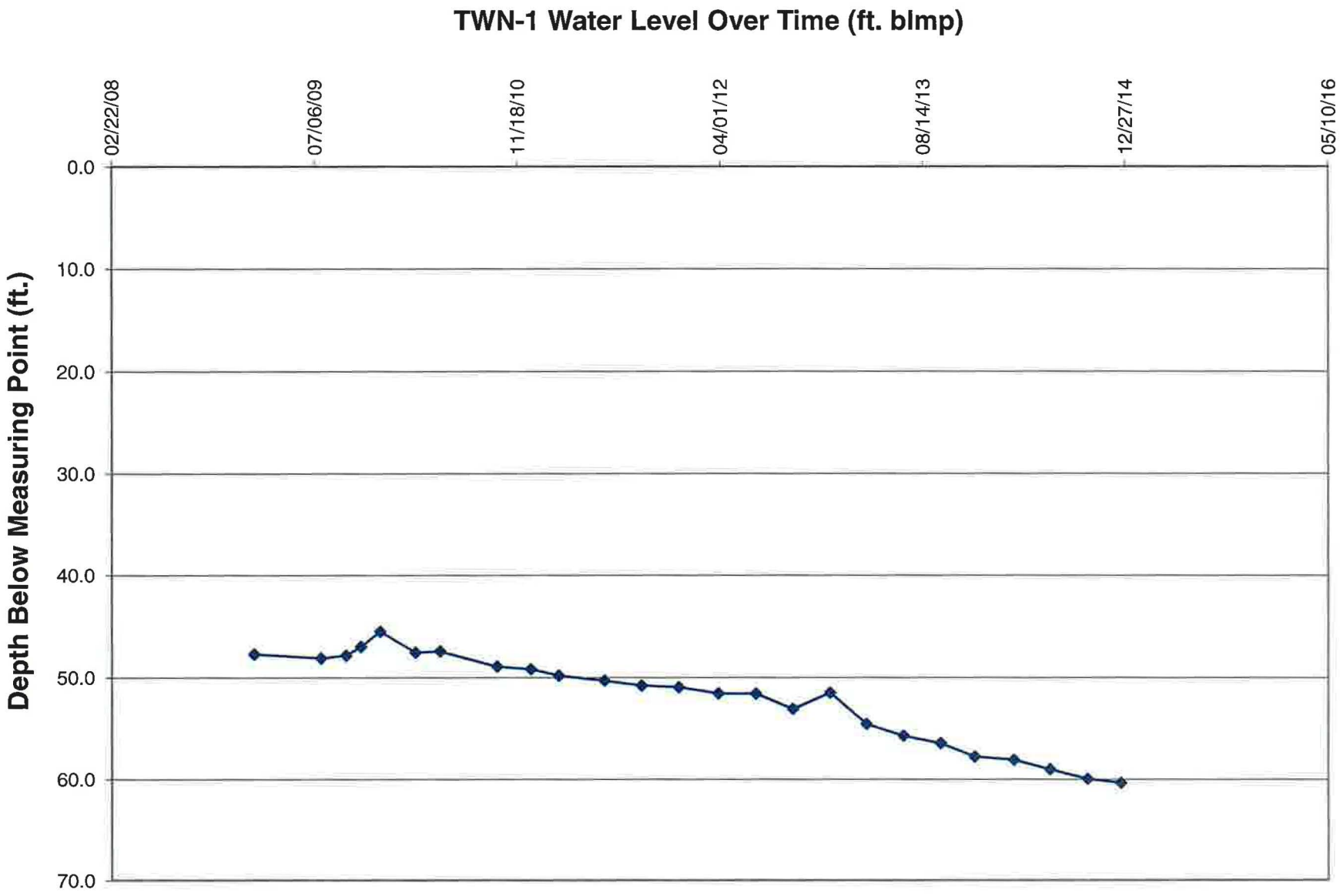
HYDRO GEO CHEM, INC.

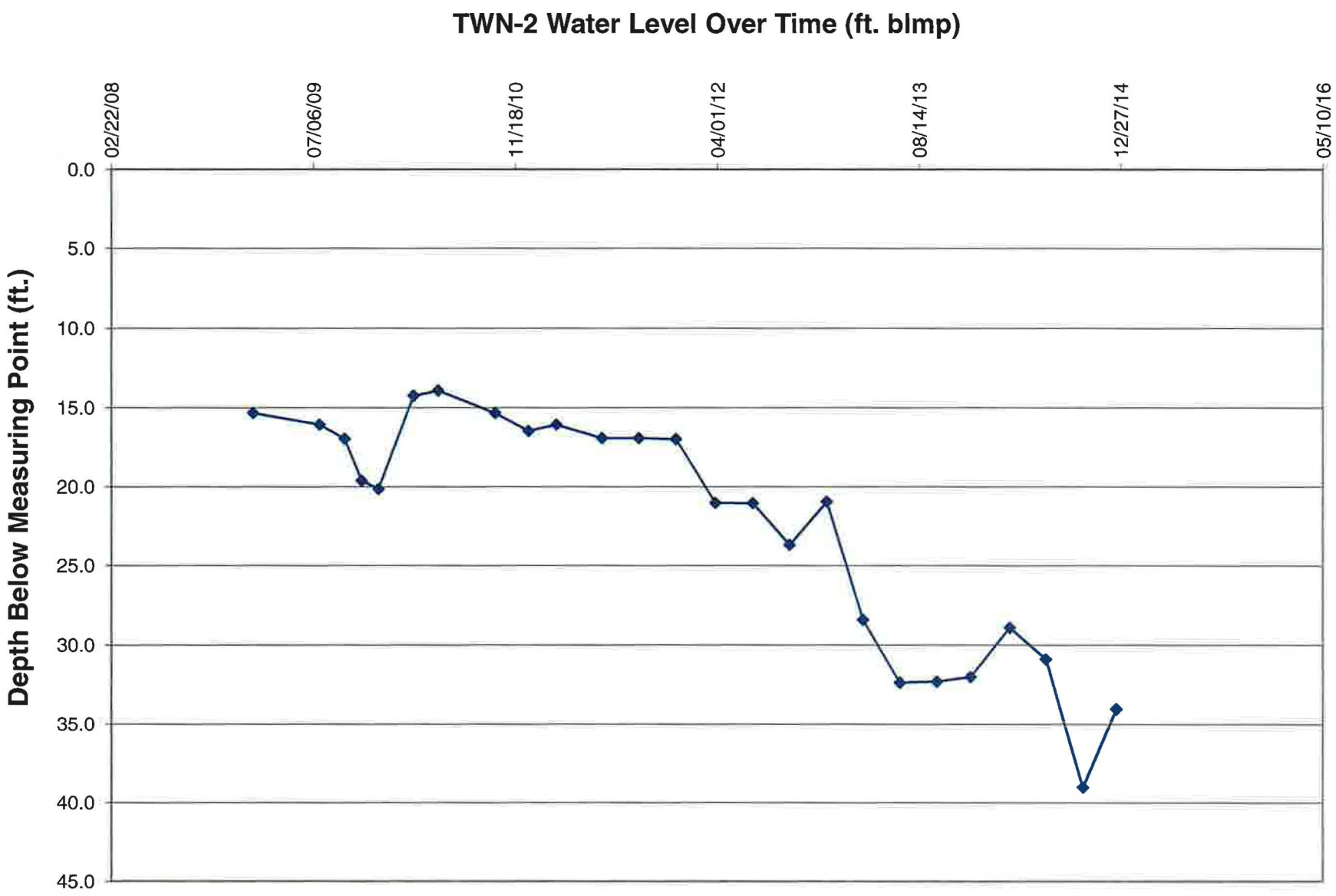
KRIGED 3rd QUARTER, 2014 WATER LEVELS WHITE MESA SITE

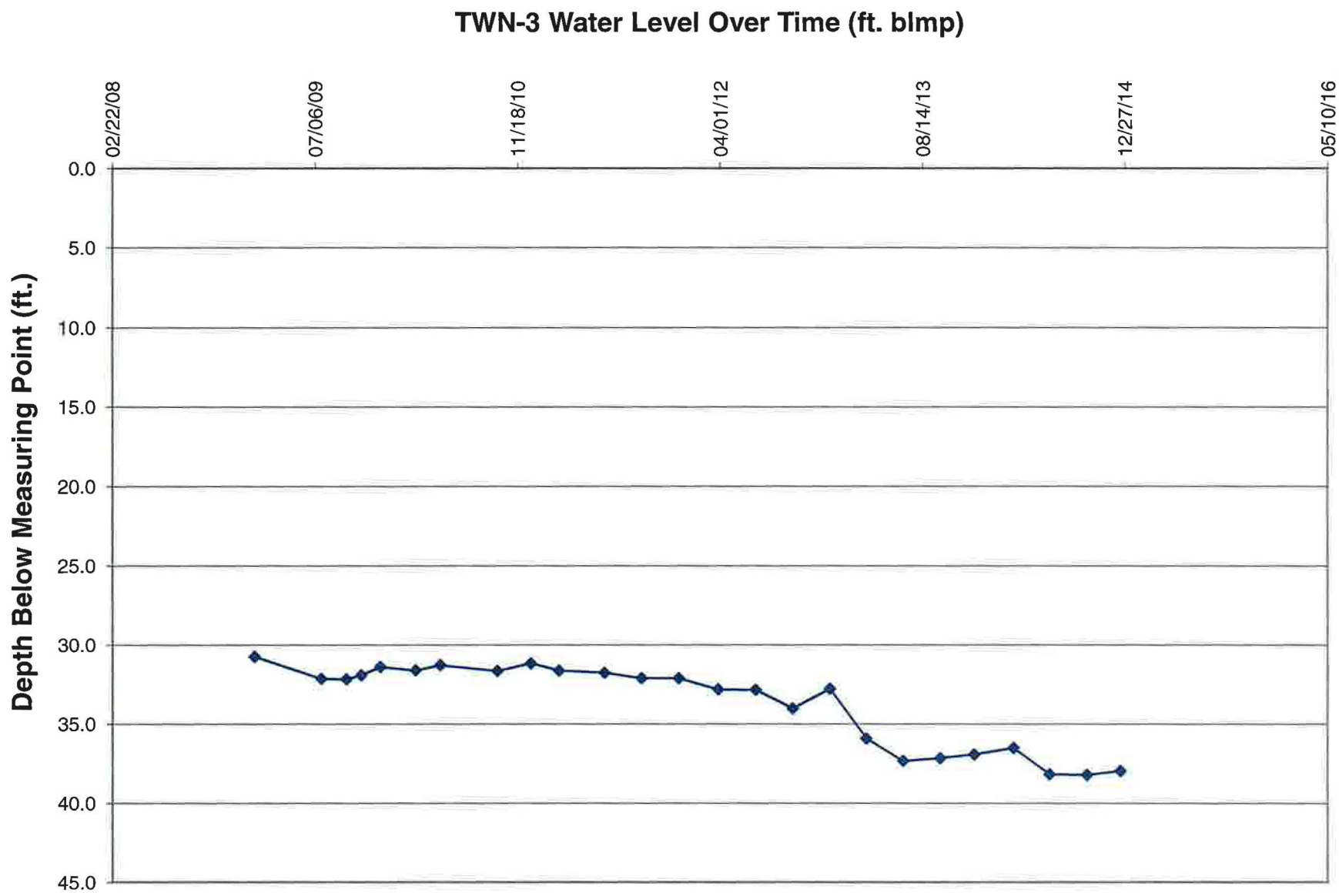
APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/nov14/Uwl0914.srf	D-1

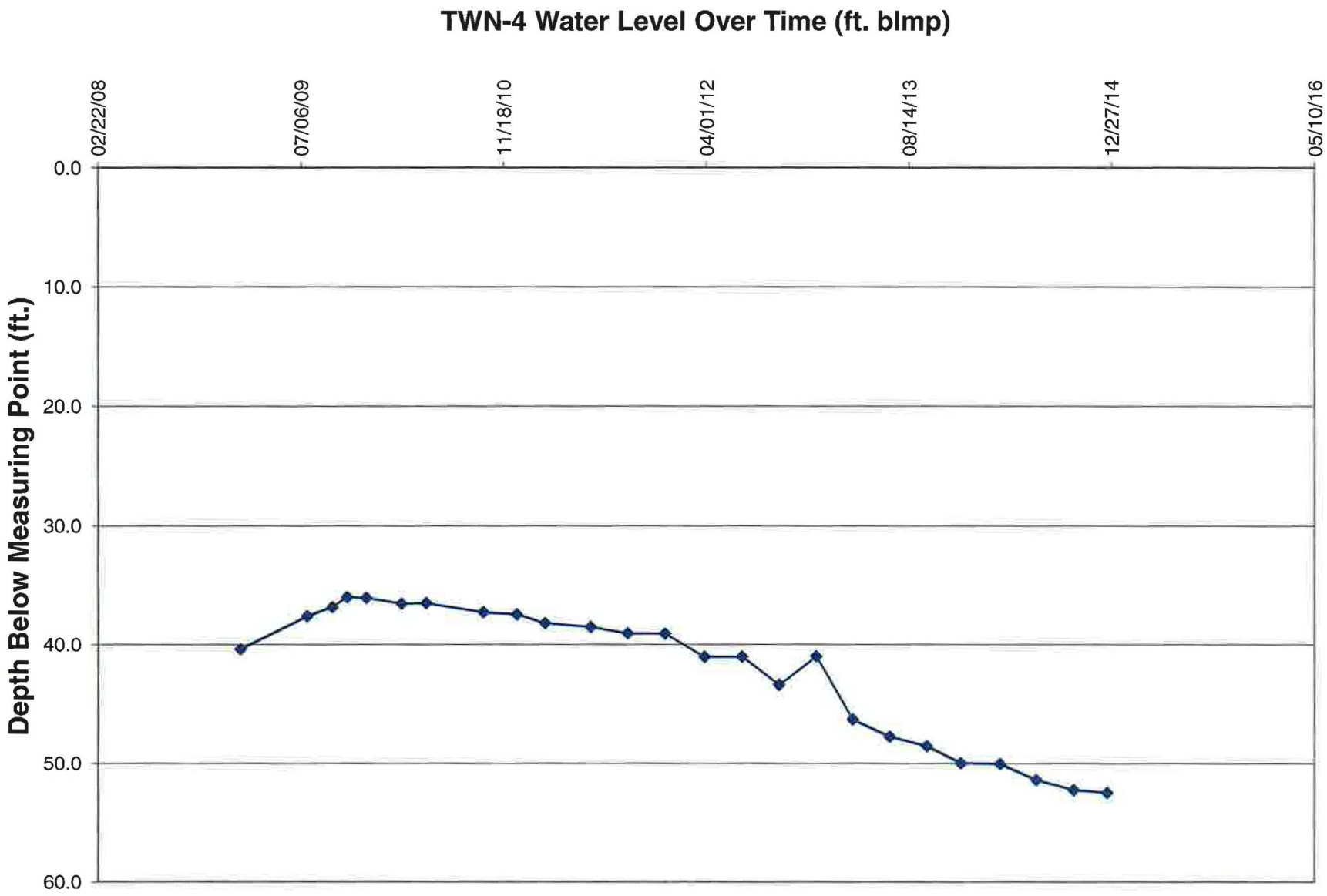
Tab E

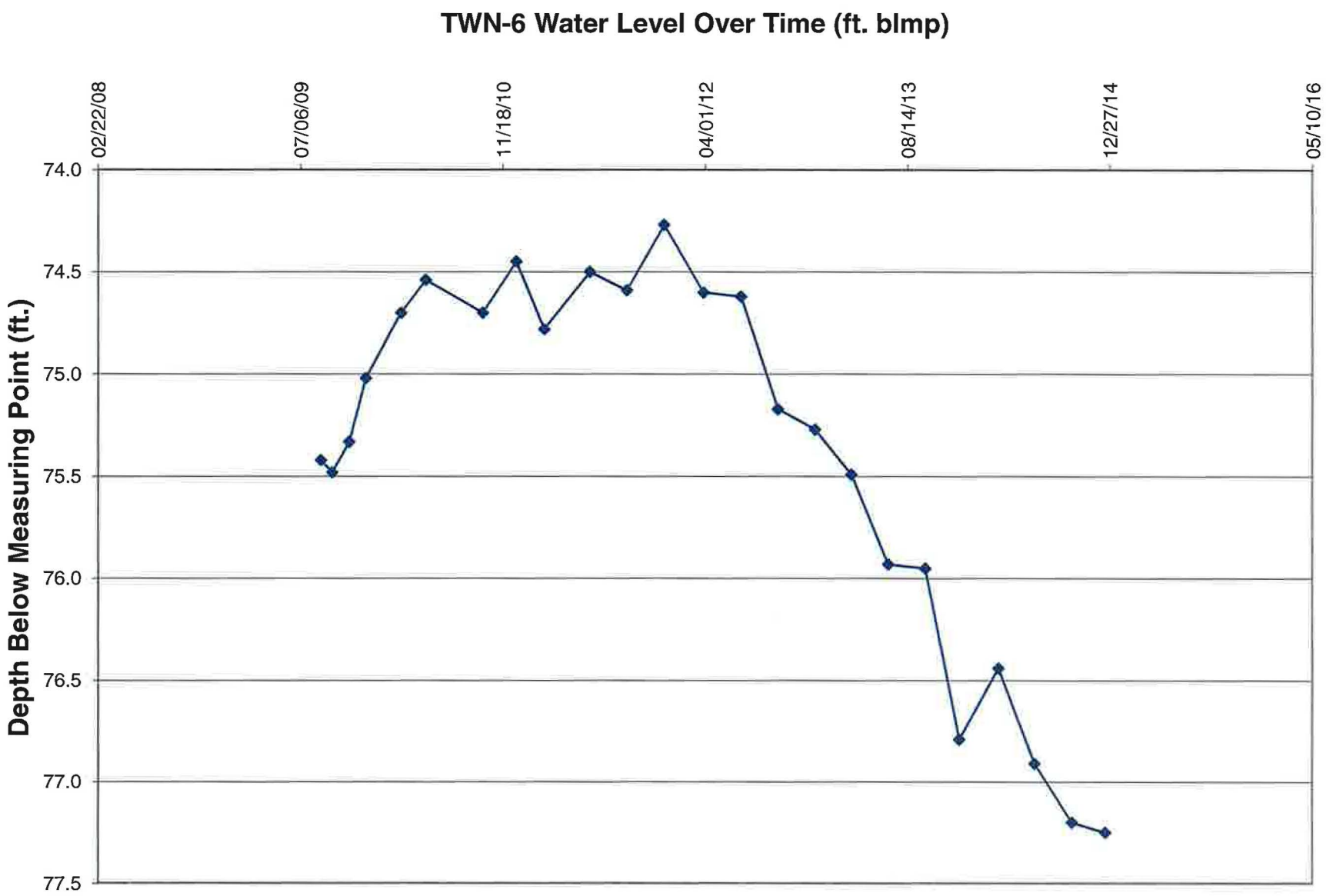
Hydrographs of Groundwater Elevations Over Time for Nitrate Monitoring Wells

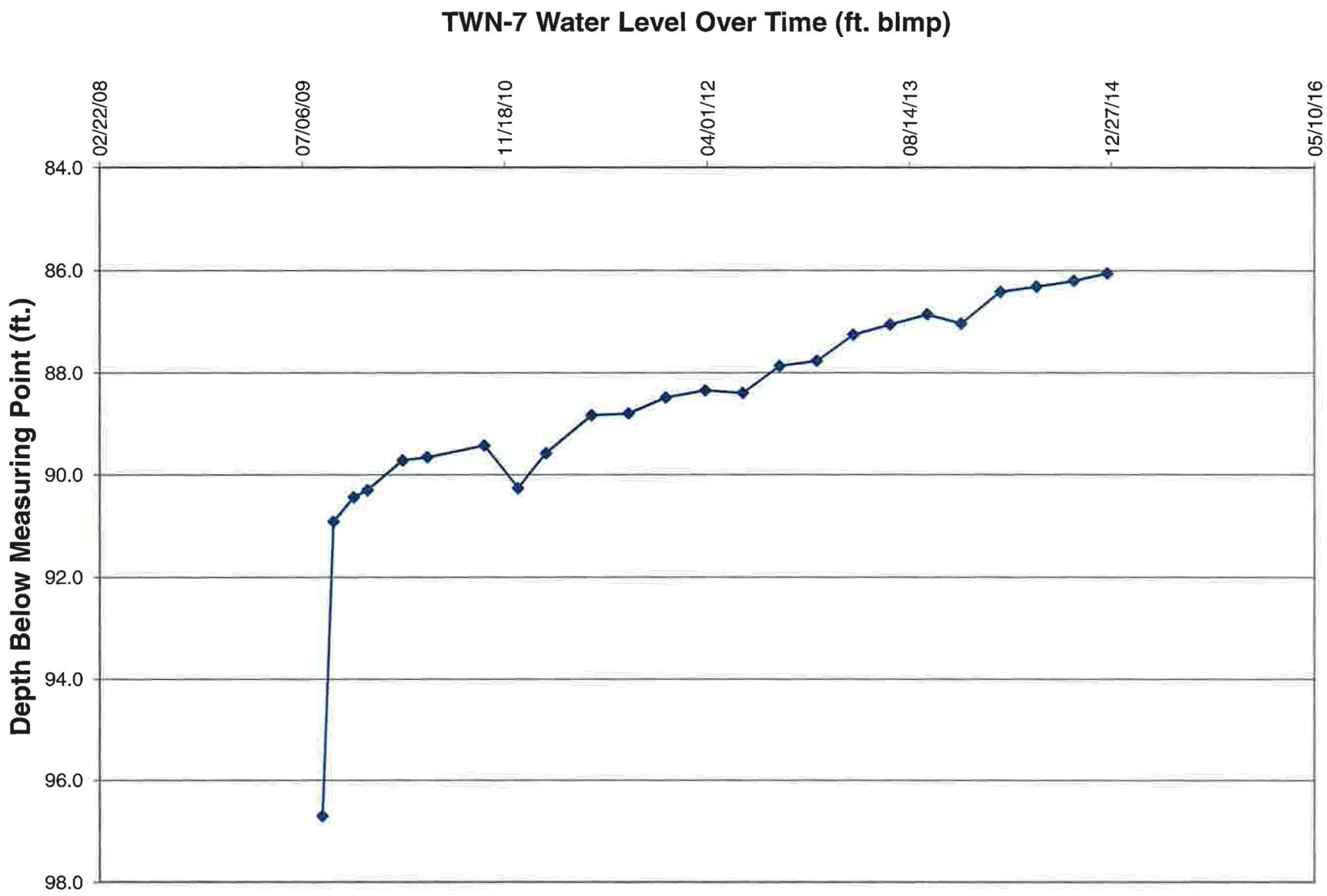

TWN-1 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
02/22/08
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16

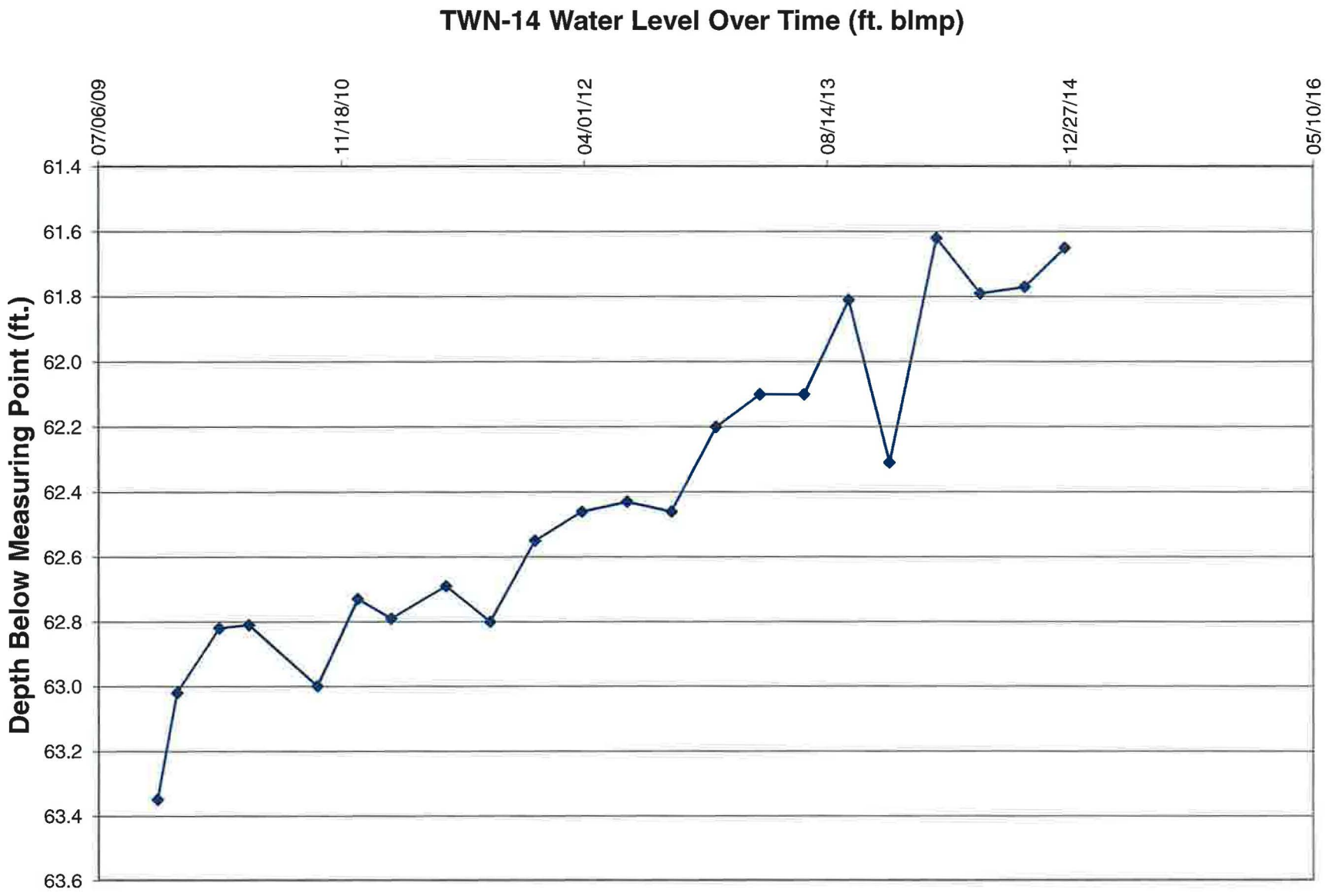

TWN-2 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0
02/22/08
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16

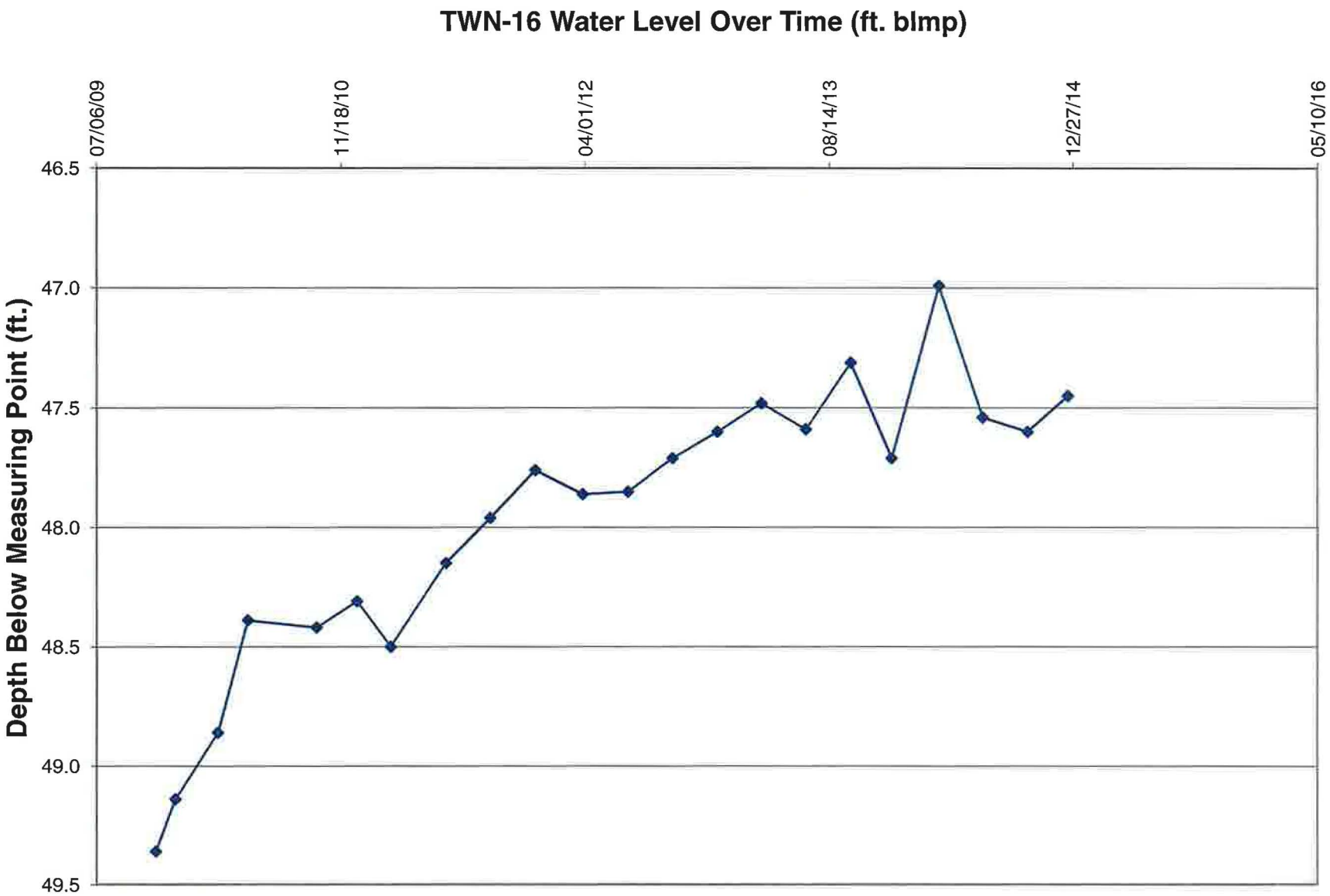

TWN-3 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0
02/22/08
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16

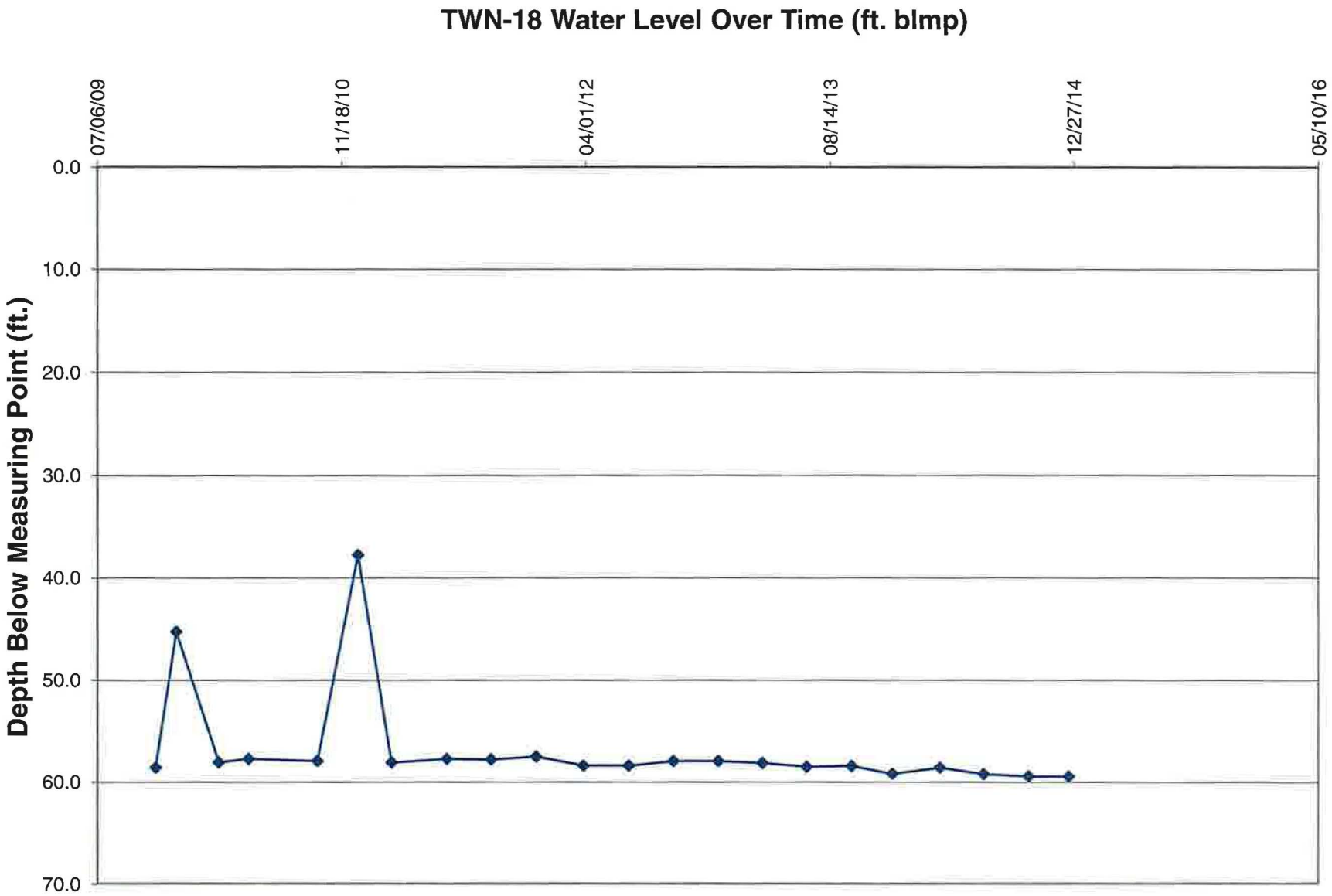

TWN-4 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
0.0
10.0
20.0
30.0
40.0
50.0
60.0
02/22/08
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16

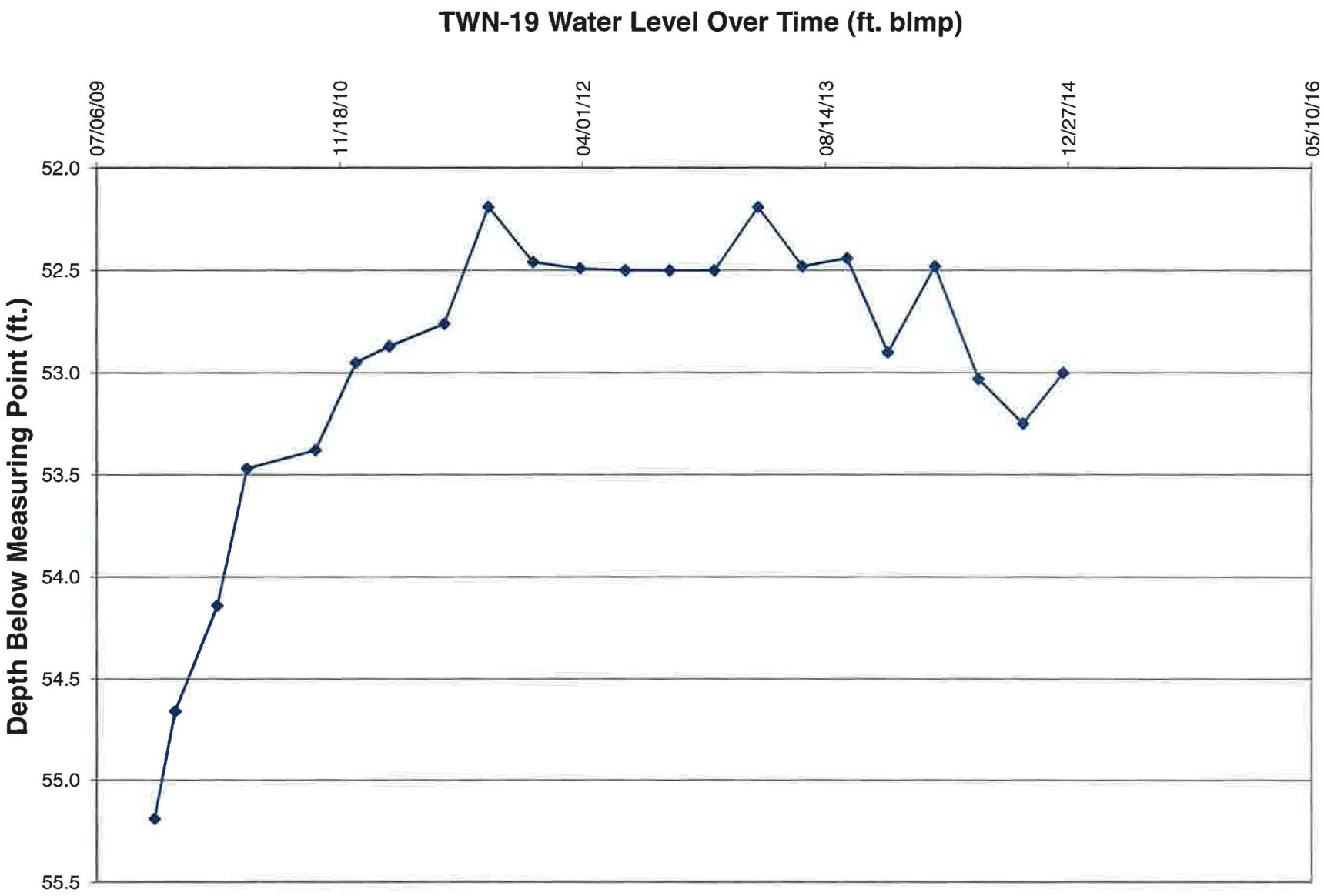

TWN-6 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
74.0
74.5
75.0
75.5
76.0
76.5
77.0
77.5
02/22/08
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16

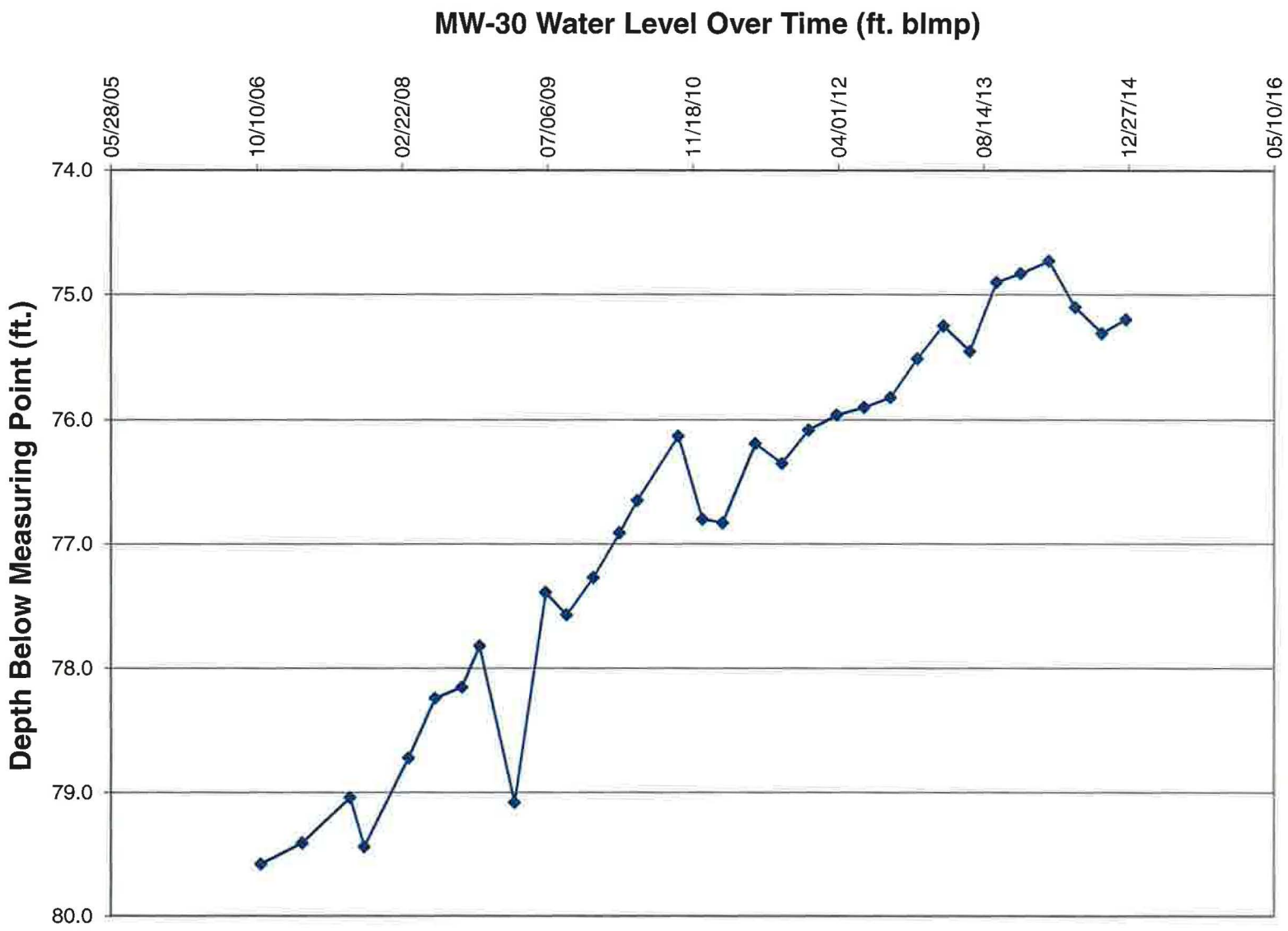

TWN-7 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
84.0
86.0
88.0
90.0
92.0
94.0
96.0
98.0
02/22/08
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16

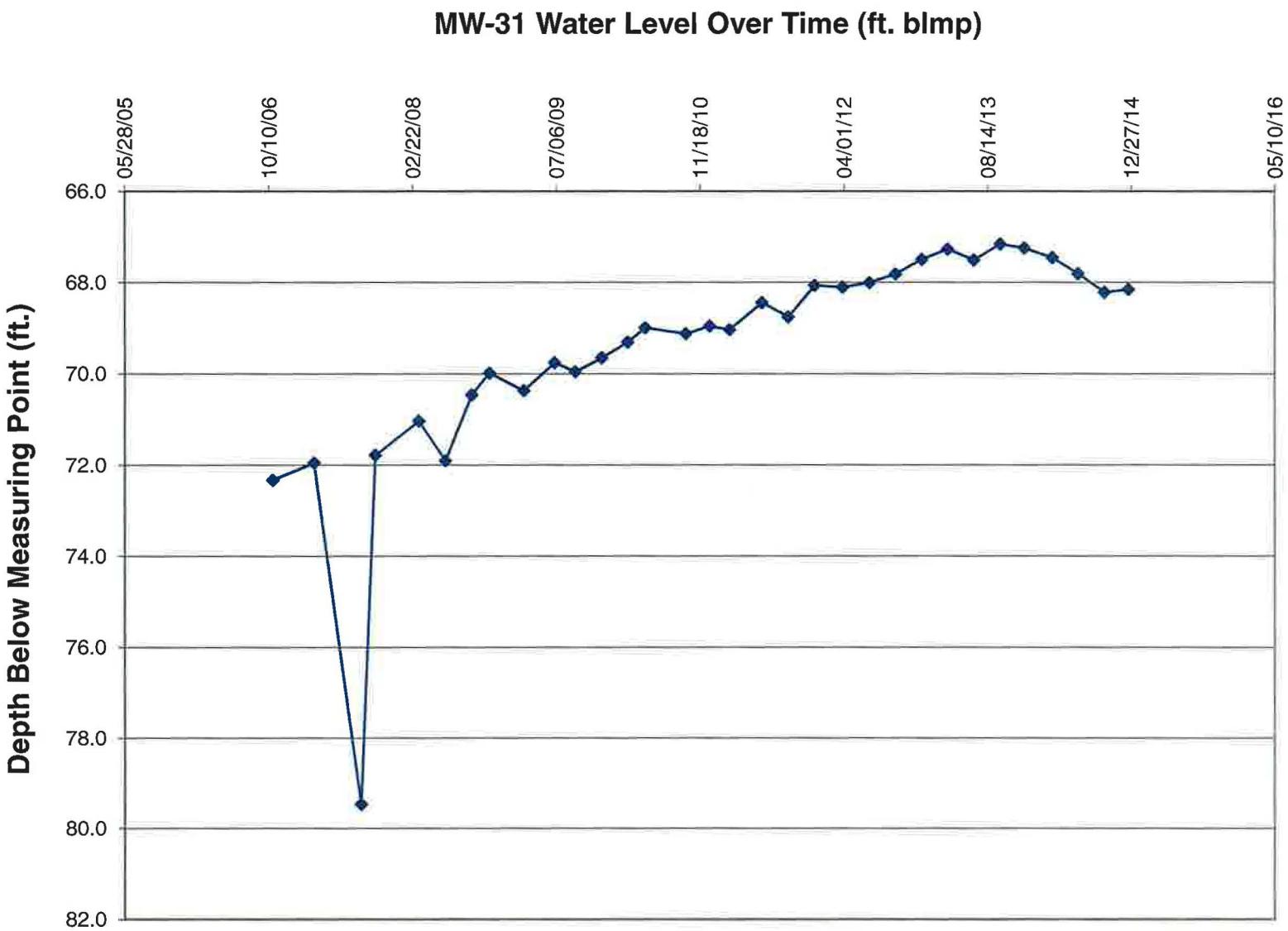

TWN-14 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
61.4
61.6
61.8
62.0
62.2
62.4
62.6
62.8
63.0
63.2
63.4
63.6
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16


TWN-16 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
46.5
47.0
47.5
48.0
48.5
49.0
49.5
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16


TWN-18 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16


TWN-19 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
52.0
52.5
53.0
53.5
54.0
54.5
55.0
55.5
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16


MW-30 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
74.0
75.0
76.0
77.0
78.0
79.0
80.0
05/28/05
10/10/06
02/22/08
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16


MW-31 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
66.0
68.0
70.0
72.0
74.0
76.0
78.0
80.0
82.0
05/28/05
10/10/06
02/22/08
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16

Tab F

Depths to Groundwater and Elevations Over Time for Nitrate Monitoring Wells

Water Levels and Data over Time
White Mesa Mill - Well TWN-1

Water Elevation (WL)	Land Surface (LSD)	Measuring Point Elevation (MP)	Length Of Riser (L)	Date Of Monitoring	Total or Measured Depth to Water (blw.MP)	Total Depth to Water (blw.LSD)	Total Depth Of Well
	5,646.96	5,648.09	1.13				112.5
5,600.38				02/06/09	47.71	46.58	
5,599.99				07/21/09	48.10	46.97	
5,600.26				09/21/09	47.83	46.70	
5,601.10				10/28/09	46.99	45.86	
5,602.59				12/14/09	45.50	44.37	
5,600.55				03/11/10	47.54	46.41	
5,600.66				05/11/10	47.43	46.30	
5,599.18				09/29/10	48.91	47.78	
5,598.92				12/21/10	49.17	48.04	
5,598.29				02/28/11	49.80	48.67	
5,597.80				06/21/11	50.29	49.16	
5,597.32				09/20/11	50.77	49.64	
5,597.15				12/21/11	50.94	49.81	
5,596.54				03/27/12	51.55	50.42	
5,596.52				06/28/12	51.57	50.44	
5,595.03				09/27/12	53.06	51.93	
5,596.62				12/28/12	51.47	50.34	
5,593.54				03/28/13	54.55	53.42	
5,592.38				06/27/13	55.71	54.58	
5,591.65				09/27/13	56.44	55.31	
5,590.34				12/20/13	57.75	56.62	
5,590.03				03/27/14	58.06	56.93	
5,589.09				06/25/14	59.00	57.87	
5,588.15				09/25/14	59.94	58.81	
5,587.74				12/17/14	60.35	59.22	

Water Levels and Data over Time
White Mesa Mill - Well TWN-2

Water Elevation (WL)	Land Surface (LSD)	Measuring Point Elevation (MP)	Length Of Riser (L)	Date Of Monitoring	Total or Measured Depth to Water (blw.MP)	Total Depth to Water (blw.LSD)	Total Depth Of Well
	5,625.75	5,626.69	0.94				95
5,611.37				02/06/09	15.32	14.38	
5,610.63				07/21/09	16.06	15.12	
5,609.73				09/21/09	16.96	16.02	
5,607.08				11/02/09	19.61	18.67	
5,606.57				12/14/09	20.12	19.18	
5,612.45				03/11/10	14.24	13.30	
5,612.78				05/11/10	13.91	12.97	
5,611.37				09/29/10	15.32	14.38	
5,610.24				12/21/10	16.45	15.51	
5,610.64				02/28/11	16.05	15.11	
5,609.78				06/21/11	16.91	15.97	
5609.79				09/20/11	16.90	15.96	
5609.72				12/21/11	16.97	16.03	
5,605.69				03/27/12	21.00	20.06	
5,605.67				06/28/12	21.02	20.08	
5,603.03				09/27/12	23.66	22.72	
5,605.76				12/28/12	20.93	19.99	
5,598.28				03/28/13	28.41	27.47	
5,594.32				06/27/13	32.37	31.43	
5,594.38				09/27/13	32.31	31.37	
5,594.68				12/20/13	32.01	31.07	
5,597.79				03/27/14	28.90	27.96	
5,595.80				06/25/14	30.89	29.95	
5,587.67				09/25/14	39.02	38.08	
5,592.66				12/17/14	34.03	33.09	

Water Levels and Data over Time
White Mesa Mill - Well TWN-3

Water Elevation (WL)	Land Surface (LSD)	Measuring Point Elevation (MP)	Length Of Riser (L)	Date Of Monitoring	Total or Measured Depth to Water (blw.MP)	Total Depth to Water (blw.LSD)	Total Depth Of Well
	5,633.64	5,634.50	0.86				110
5,603.77				02/06/09	30.73	29.87	
5,602.37				07/21/09	32.13	31.27	
5,602.34				09/21/09	32.16	31.30	
5,602.60				10/28/09	31.90	31.04	
5,603.12				12/14/09	31.38	30.52	
5,602.90				03/11/10	31.60	30.74	
5,603.23				05/11/10	31.27	30.41	
5,602.86				09/29/10	31.64	30.78	
5,603.35				12/21/10	31.15	30.29	
5,602.89				02/28/11	31.61	30.75	
5,602.75				06/21/11	31.75	30.89	
5,602.40				09/20/11	32.10	31.24	
5,602.40				12/21/11	32.10	31.24	
5,601.70				03/27/12	32.80	31.94	
5,601.67				06/28/12	32.83	31.97	
5,600.50				09/27/12	34.00	33.14	
5,601.74				12/28/12	32.76	31.90	
5,598.60				03/28/13	35.90	35.04	
5,597.18				06/27/13	37.32	36.46	
5,597.36				09/27/13	37.14	36.28	
5,597.60				12/20/13	36.90	36.04	
5,598.00				03/27/14	36.50	35.64	
5,596.34				06/25/14	38.16	37.30	
5,596.30				09/25/14	38.20	37.34	
5,596.55				12/17/14	37.95	37.09	

Water Levels and Data over Time
White Mesa Mill - Well TWN-4

Water Elevation (WL)	Land Surface (LSD)	Measuring Point Elevation (MP)	Length Of Riser (L)	Date Of Monitoring	Total or Measured Depth to Water (blw.MP)	Total Depth to Water (blw.LSD)	Total Depth Of Well
	5,641.04	5,641.87	0.83				136
5,601.47				02/06/09	40.40	39.57	
5,604.26				07/21/09	37.61	36.78	
5,605.02				09/21/09	36.85	36.02	
5,605.87				10/28/09	36.00	35.17	
5,605.81				12/14/09	36.06	35.23	
5,605.31				03/11/10	36.56	35.73	
5,605.36				05/11/10	36.51	35.68	
5,604.59				09/29/10	37.28	36.45	
5,604.42				12/21/10	37.45	36.62	
5,603.69				02/28/11	38.18	37.35	
5,603.36				06/21/11	38.51	37.68	
5,602.82				09/20/11	39.05	38.22	
5,602.79				12/21/11	39.08	38.25	
5,600.82				03/27/12	41.05	40.22	
5,600.84				06/28/12	41.03	40.20	
5,598.47				09/27/12	43.40	42.57	
5,600.86				12/28/12	41.01	40.18	
5,595.57				03/28/13	46.30	45.47	
5,594.12				06/27/13	47.75	46.92	
5,593.33				09/27/13	48.54	47.71	
5,591.92				12/20/13	49.95	49.12	
5,591.85				03/27/14	50.02	49.19	
5,590.49				06/25/14	51.38	50.55	
5,589.64				09/25/14	52.23	51.40	
5,589.42				12/17/14	52.45	51.62	

Water Levels and Data over Time
White Mesa Mill - Well TWN-6

Water Elevation (WL)	Land Surface (LSD)	Measuring Point Elevation (MP)	Length Of Riser (L)	Date Of Monitoring	Total or Measured Depth to Water (blw.MP)	Total Depth to Water (blw.LSD)	Total Depth Of Well
	5,663.03	5,664.94	1.91				135
5,589.52				08/25/09	75.42	73.51	
5,589.46				09/22/09	75.48	73.57	
5,589.61				11/03/09	75.33	73.42	
5,589.92				12/14/09	75.02	73.11	
5,590.24				03/11/10	74.70	72.79	
5,590.40				05/11/10	74.54	72.63	
5,590.24				09/29/10	74.70	72.79	
5,590.49				12/21/10	74.45	72.54	
5,590.16				02/28/11	74.78	72.87	
5,590.44				06/21/11	74.50	72.59	
5,590.35				09/20/11	74.59	72.68	
5,590.67				12/21/11	74.27	72.36	
5,590.34				03/27/12	74.60	72.69	
5,590.32				06/28/12	74.62	72.71	
5,589.77				09/27/12	75.17	73.26	
5,589.67				12/28/12	75.27	73.36	
5,589.45				03/28/13	75.49	73.58	
5,589.01				06/27/13	75.93	74.02	
5,588.99				09/27/13	75.95	74.04	
5,588.15				12/20/13	76.79	74.88	
5,588.50				03/27/14	76.44	74.53	
5,588.03				06/25/14	76.91	75.00	
5,587.74				09/25/14	77.20	75.29	
5,587.69				12/17/14	77.25	75.34	

Water Levels and Data over Time
White Mesa Mill - Well TWN-7

Water Elevation (WL)	Land Surface (LSD)	Measuring Point Elevation (MP)	Length Of Riser (L)	Date Of Monitoring	Total or Measured Depth to Water (blw.MP)	Total Depth to Water (blw.LSD)	Total Depth Of Well
	5,647.39	5,649.26	1.87				120
5,552.56				08/25/09	96.70	94.83	
5,558.34				09/21/09	90.92	89.05	
5,558.82				11/10/09	90.44	88.57	
5,558.96				12/14/09	90.30	88.43	
5,559.54				03/11/10	89.72	87.85	
5,559.60				05/11/10	89.66	87.79	
5,559.83				09/29/10	89.43	87.56	
5,559.00				12/21/10	90.26	88.39	
5,559.68				02/28/11	89.58	87.71	
5,560.43				06/21/11	88.83	86.96	
5,560.46				09/20/11	88.80	86.93	
5,560.78				12/21/11	88.48	86.61	
5,560.92				03/27/12	88.34	86.47	
5,560.87				06/28/12	88.39	86.52	
5,561.40				09/27/12	87.86	85.99	
5,561.50				12/28/12	87.76	85.89	
5,562.01				03/28/13	87.25	85.38	
5,562.21				06/27/13	87.05	85.18	
5,562.41				09/27/13	86.85	84.98	
5,562.23				12/20/13	87.03	85.16	
5,562.85				03/27/14	86.41	84.54	
5,562.95				06/25/14	86.31	84.44	
5,563.06				09/25/14	86.20	84.33	
5,563.21				12/17/14	86.05	84.18	

Water Levels and Data over Time
White Mesa Mill - Well TWN-14

Water Elevation (WL)	Land Surface (LSD)	Measuring Point Elevation (MP)	Length Of Riser (L)	Date Of Monitoring	Total or Measured Depth to Water (blw.MP)	Total Depth to Water (blw.LSD)	Total Depth Of Well
	5,647.80	5,649.53	1.73				135
5,586.18				11/04/09	63.35	61.62	
5,586.51				12/14/09	63.02	61.29	
5,586.71				03/11/10	62.82	61.09	
5,586.72				05/11/10	62.81	61.08	
5,586.53				09/29/10	63.00	61.27	
5,586.80				12/21/10	62.73	61.00	
5,586.74				02/28/11	62.79	61.06	
5,586.84				06/21/11	62.69	60.96	
5,586.73				09/20/11	62.80	61.07	
5,586.98				12/21/11	62.55	60.82	
5,587.07				03/27/12	62.46	60.73	
5,587.10				06/28/12	62.43	60.70	
5,587.07				09/27/12	62.46	60.73	
5,587.33				12/28/12	62.20	60.47	
5,587.43				03/28/13	62.10	60.37	
5,587.43				06/27/13	62.10	60.37	
5,587.72				09/27/13	61.81	60.08	
5,587.22				12/20/13	62.31	60.58	
5,587.91				03/27/14	61.62	59.89	
5,587.74				06/25/14	61.79	60.06	
5,587.76				09/25/14	61.77	60.04	
5,587.88				12/17/14	61.65	59.92	

Water Levels and Data over Time
White Mesa Mill - Well TWN-16

Water Elevation (WL)	Land Surface (LSD)	Measuring Point Elevation (MP)	Length Of Riser (L)	Date Of Monitoring	Total or Measured Depth to Water (blw.MP)	Total Depth to Water (blw.LSD)	Total Depth Of Well
	5,651.07	5,652.70	1.63				100
5,603.34				11/04/09	49.36	47.73	
5,603.56				12/14/09	49.14	47.51	
5,603.84				03/11/10	48.86	47.23	
5,604.31				05/11/10	48.39	46.76	
5,604.28				09/29/10	48.42	46.79	
5,604.39				12/21/10	48.31	46.68	
5,604.20				02/28/11	48.50	46.87	
5,604.55				06/21/11	48.15	46.52	
5,604.74				09/20/11	47.96	46.33	
5,604.94				12/21/11	47.76	46.13	
5,604.84				03/27/12	47.86	46.23	
5,604.85				06/28/12	47.85	46.22	
5,604.99				09/27/12	47.71	46.08	
5,605.10				12/28/12	47.60	45.97	
5,605.22				03/28/13	47.48	45.85	
5,605.11				06/27/13	47.59	45.96	
5,605.39				09/27/13	47.31	45.68	
5,604.99				12/20/13	47.71	46.08	
5,605.71				03/27/14	46.99	45.36	
5,605.16				06/25/14	47.54	45.91	
5,605.10				09/25/14	47.60	45.97	
5,605.25				12/17/14	47.45	45.82	

Water Levels and Data over Time
White Mesa Mill - Well TWN -18

Water Elevation (WL)	Land Surface (LSD)	Measuring Point Elevation (MP)	Length Of Riser (L)	Date Of Monitoring	Total or Measured Depth to Water (blw.MP)	Total Depth to Water (blw.LSD)	Total Depth Of Well
	5,643.95	5,645.45	1.50				100
5,586.85				11/02/09	58.60	57.10	
5,600.14				12/14/09	45.31	43.81	
5,587.36				03/11/10	58.09	56.59	
5,587.71				05/11/10	57.74	56.24	
5,587.50				09/29/10	57.95	56.45	
5,607.66				12/21/10	37.79	36.29	
5,587.35				02/28/11	58.10	56.60	
5,587.71				06/21/11	57.74	56.24	
5,587.65				09/20/11	57.80	56.30	
5,587.95				12/21/11	57.50	56.00	
5,587.05				03/27/12	58.40	56.90	
5,587.05				06/28/12	58.40	56.90	
5,587.50				09/27/12	57.95	56.45	
5,587.50				12/28/12	57.95	56.45	
5,587.32				03/28/13	58.13	56.63	
5,586.95				06/27/13	58.50	57.00	
5,587.02				09/27/13	58.43	56.93	
5,586.26				12/20/13	59.19	57.69	
5,586.87				03/27/14	58.58	57.08	
5,586.23				06/25/14	59.22	57.72	
5,586.02				09/25/14	59.43	57.93	
5,585.99				12/17/14	59.46	57.96	

Water Levels and Data over Time
White Mesa Mill - Well TWN-19

Water Elevation (WL)	Land Surface (LSD)	Measuring Point Elevation (MP)	Length Of Riser (L)	Date Of Monitoring	Total or Measured Depth to Water (blw.MP)	Total Depth to Water (blw.LSD)	Total Depth Of Well
	5,659.59	5,661.36	1.77				110
5,606.17				11/02/09	55.19	53.42	
5,606.70				12/14/09	54.66	52.89	
5,607.22				03/11/10	54.14	52.37	
5,607.89				05/11/10	53.47	51.70	
5,607.98				09/29/10	53.38	51.61	
5,608.41				12/21/10	52.95	51.18	
5,608.49				02/28/11	52.87	51.10	
5,608.60				06/21/11	52.76	50.99	
5,609.17				09/20/11	52.19	50.42	
5,608.90				12/21/11	52.46	50.69	
5,608.87				03/27/12	52.49	50.72	
5,608.86				06/28/12	52.50	50.73	
5,608.86				09/27/12	52.50	50.73	
5,608.86				12/28/12	52.50	50.73	
5,609.17				03/28/13	52.19	50.42	
5,608.88				06/27/13	52.48	50.71	
5,608.92				09/27/13	52.44	50.67	
5,608.46				12/20/13	52.90	51.13	
5,608.88				03/27/14	52.48	50.71	
5,608.33				06/25/14	53.03	51.26	
5,608.11				09/25/14	53.25	51.48	
5,608.36				12/17/14	53.00	51.23	

Water Levels and Data over Time
White Mesa Mill - Well MW-30

Water Elevation (WL)	Land Surface (LSD)	Measuring Point Elevation (MP)	Length Of Riser (L)	Date Of Monitoring	Total or Measured Depth to Water (blw.MP)	Total Depth to Water (blw.LSD)	Total Depth Of Well
	5,613.34	5,614.50	1.16				110
5,534.92				10/24/2006	79.58	78.42	
5,535.09				3/16/2007	79.41	78.25	
5,535.46				8/27/2007	79.04	77.88	
5,535.06				10/15/2007	79.44	78.28	
5,535.78				3/15/2008	78.72	77.56	
5,536.26				6/15/2008	78.24	77.08	
5,536.35				9/15/2008	78.15	76.99	
5,536.68				11/15/2008	77.82	76.66	
5,535.42				3/15/2009	79.08	77.92	
5,537.11				6/30/2009	77.39	76.23	
5,536.93				9/10/2009	77.57	76.41	
5,537.23				12/11/2009	77.27	76.11	
5,537.59				3/11/2010	76.91	75.75	
5,537.85				5/11/2010	76.65	75.49	
5,538.37				9/29/2010	76.13	74.97	
5537.70				12/21/2010	76.8	75.64	
5537.67				2/28/2011	76.83	75.67	
5538.31				6/21/2011	76.19	75.03	
5538.15				9/20/2011	76.35	75.19	
5538.42				12/21/2011	76.08	74.92	
5538.54				3/27/2012	75.96	74.8	
5538.60				6/28/2012	75.9	74.74	
5538.68				9/27/2012	75.82	74.66	
5538.99				12/28/2012	75.51	74.35	
5539.25				3/28/2013	75.25	74.09	
5539.05				6/27/2013	75.45	74.29	
5539.60				9/27/2013	74.90	73.74	
5539.67				12/20/2013	74.83	73.67	
5539.77				3/27/2014	74.73	73.57	
5539.40				6/25/2014	75.10	73.94	
5539.19				9/25/2014	75.31	74.15	
5539.30				12/17/2014	75.20	74.04	

Water Levels and Data over Time
White Mesa Mill - Well MW-31

Water Elevation (WL)	Land Surface (LSD)	Measuring Point Elevation (MP)	Length Of Riser (L)	Date Of Monitoring	Total or Measured Depth to Water (blw.MP)	Total Depth to Water (blw.LSD)	Total Depth Of Well
	5,615.26	5,616.40	1.14				130
5,544.07				10/24/2006	72.33	71.19	
5,544.45				3/16/2007	71.95	70.81	
5,536.94				8/27/2007	79.46	78.32	
5,544.62				10/15/2007	71.78	70.64	
5,545.37				3/15/2008	71.03	69.89	
5,544.50				6/15/2008	71.90	70.76	
5,545.94				9/15/2008	70.46	69.32	
5,546.42				11/15/2008	69.98	68.84	
5,546.03				3/15/2009	70.37	69.23	
5,546.65				6/30/2009	69.75	68.61	
5,546.45				9/10/2009	69.95	68.81	
5,546.75				12/11/2009	69.65	68.51	
5,547.09				3/11/2010	69.31	68.17	
5,547.41				5/11/2010	68.99	67.85	
5,547.28				9/29/2010	69.12	67.98	
5547.45				12/21/2010	68.95	67.81	
5547.37				2/28/2011	69.03	67.89	
5547.96				6/21/2011	68.44	67.3	
5547.65				9/20/2011	68.75	67.61	
5548.34				12/21/2011	68.06	66.92	
5548.30				3/27/2012	68.10	66.96	
5548.40				6/28/2012	68.00	66.86	
5548.59				9/27/2012	67.81	66.67	
5548.91				12/28/2012	67.49	66.35	
5549.14				3/28/2013	67.26	66.12	
5548.90				6/27/2013	67.50	66.36	
5549.25				9/27/2013	67.15	66.01	
5549.16				12/20/2013	67.24	66.10	
5548.95				3/27/2014	67.45	66.31	
5548.60				6/25/2014	67.80	66.66	
5548.19				9/25/2014	68.21	67.07	
5548.25				12/17/2014	68.15	67.01	

Tab G

Laboratory Analytical Reports

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Sample ID: 1410138-010
Client Sample ID: Piez-01_10082014
Collection Date: 10/8/2014 1302h
Received Date: 10/10/2014 1030h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/13/2014 1350h	SM4500-Cl-E	5.00	**57.6**	
Nitrate/Nitrite (as N)	mg/L		10/10/2014 1724h	E353.2	0.100	**5.75**	

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

All analyses applicable to the CWA, SDWA, and RCRA are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the name of this company or any member of its staff, or reproduction of this report in connection with the advertisement, promotion or sale of any product or process, or in connection with the re-publication of this report for any purpose other than for the addressee will be granted only on contact. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Sample ID: 1410138-011
Client Sample ID: Piez-02_10082014
Collection Date: 10/8/2014 1240h
Received Date: 10/10/2014 1030h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/13/2014 1354h	SM4500-Cl-E	5.00	**12.2**	
Nitrate/Nitrite (as N)	mg/L		10/20/2014 1510h	E353.2	0.0100	**0.755**	

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Laboratory Director

Jose Rocha
QA Officer

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Sample ID: 1410138-012
Client Sample ID: Piez-03_10082014
Collection Date: 10/8/2014 1250h
Received Date: 10/10/2014 1030h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/13/2014 1355h	SM4500-Cl-E	5.00	**28.3**	
Nitrate/Nitrite (as N)	mg/L		10/10/2014 1709h	E353.2	0.0100	**1.74**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Sample ID: 1410138-003
Client Sample ID: TWN-01_10082014
Collection Date: 10/8/2014 812h
Received Date: 10/10/2014 1030h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/13/2014 1340h	SM4500-Cl-E	5.00	**27.6**	
Nitrate/Nitrite (as N)	mg/L		10/10/2014 1649h	E353.2	0.0100	**1.46**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Sample ID: 1410138-007
Client Sample ID: TWN-02_10082014
Collection Date: 10/8/2014 1233h
Received Date: 10/10/2014 1030h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/13/2014 1345h	SM4500-Cl-E	5.00	**81.0**	
Nitrate/Nitrite (as N)	mg/L		10/10/2014 1723h	E353.2	1.00	**70.6**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Sample ID: 1410138-006
Client Sample ID: TWN-03_10092014
Collection Date: 10/9/2014 705h
Received Date: 10/10/2014 1030h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/13/2014 1359h	SM4500-Cl-E	50.0	**153**	
Nitrate/Nitrite (as N)	mg/L		10/10/2014 1653h	E353.2	1.00	**19.1**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Sample ID: 1410138-005
Client Sample ID: TWN-04_10082014
Collection Date: 10/8/2014 923h
Received Date: 10/10/2014 1030h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/13/2014 1342h	SM4500-Cl-E	5.00	**30.7**	
Nitrate/Nitrite (as N)	mg/L		10/10/2014 1652h	E353.2	0.0100	**1.44**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Sample ID: 1410138-001
Client Sample ID: TWN-07_10092014
Collection Date: 10/9/2014 655h
Received Date: 10/10/2014 1030h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/13/2014 1332h	SM4500-Cl-E	5.00	**5.93**	[1]
Nitrate/Nitrite (as N)	mg/L		10/10/2014 1644h	E353.2	0.0100	**0.968**	

[1] - *Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.*

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Sample ID: 1410138-002
Client Sample ID: TWN-07R-10082014
Collection Date: 10/8/2014 729h
Received Date: 10/10/2014 1030h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/23/2014 1444h	E300.0	1.00	< 1.00	
Nitrate/Nitrite (as N)	mg/L		10/10/2014 1648h	E353.2	0.100	< 0.100	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Sample ID: 1410138-004
Client Sample ID: TWN-18_10082014
Collection Date: 10/8/2014 847h
Received Date: 10/10/2014 1030h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/13/2014 1341h	SM4500-Cl-E	5.00	**74.8**	
Nitrate/Nitrite (as N)	mg/L		10/10/2014 1651h	E353.2	0.0100	**1.47**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Chloroform 2014
Lab Sample ID: 1410353-003
Client Sample ID: TW4-22_10212014
Collection Date: 10/21/2014 1313h
Received Date: 10/24/2014 950h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		11/2/2014 1320h	E300.0	100	**596**	
Nitrate/Nitrite (as N)	mg/L		11/3/2014 1119h	E353.2	10.0	**54.9**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Chloroform 2014
Lab Sample ID: 1410353-002
Client Sample ID: TW4-24_10212014
Collection Date: 10/21/2014 1305h
Received Date: 10/24/2014 950h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		11/2/2014 1303h	E300.0	100	**1,050**	
Nitrate/Nitrite (as N)	mg/L		11/3/2014 1118h	E353.2	10.0	**35.7**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Chloroform 2014
Lab Sample ID: 1410353-001
Client Sample ID: TW4-25_10212014
Collection Date: 10/21/2014 1252h
Received Date: 10/24/2014 950h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		11/5/2014 2310h	E300.0	10.0	**58.1**	
Nitrate/Nitrite (as N)	mg/L		11/3/2014 1037h	E353.2	0.100	**1.03**	1

[1] - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Chloroform 2014
Lab Sample ID: 1410353-020
Client Sample ID: TW4-60_10232014
Collection Date: 10/23/2014 **830h**
Received Date: 10/24/2014 **950h**

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		11/2/2014 2146h	E300.0	1.00	< 1.00	
Nitrate/Nitrite (as N)	mg/L		11/3/2014 1117h	E353.2	0.100	< 0.100	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc.
Contact: Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Sample ID: 1410138-009
Client Sample ID: TWN-60_10082014
Collection Date: 10/8/2014 645h
Received Date: 10/10/2014 1030h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/23/2014 1534h	E300.0	1.00	< 1.00	
Nitrate/Nitrite (as N)	mg/L		10/10/2014 1702h	E353.2	0.100	< 0.100	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Sample ID: 1410138-008
Client Sample ID: TWN-65_10082014
Collection Date: 10/8/2014 847h
Received Date: 10/10/2014 1030h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/13/2014 1347h	SM4500-Cl-E	5.00	**72.3**	
Nitrate/Nitrite (as N)	mg/L		10/10/2014 1728h	E353.2	0.0100	**1.47**	

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Kathy Weinel
Energy Fuels Resources, Inc.
1050 17th Street, # 950
Denver, CO 80265
TEL: (303) 389-4134

RE: 4th Quarter Nitrate 2014

Dear Kathy Weinel: Lab Set ID: 1410138

American West Analytical Laboratories received 12 sample(s) on 10/10/2014 for the analyses presented in the following report.

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, and Missouri.

All analyses were performed in accordance to the NELAP protocols unless noted otherwise. Accreditation scope documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Thank You,

Approved by: Jose G. Rocha

Digitally signed by Jose G. Rocha
DN: cn=Jose G. Rocha, o=American West Analytical Laboratories, ou, email=jose@awal-labs.com, c=US
Date: 2014.10.27 12:46:35 -06'00'

Laboratory Director or designee

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SAMPLE SUMMARY

Client: Energy Fuels Resources, Inc.
Project: 4th Quarter Nitrate 2014
Lab Set ID: 1410138
Date Received: 10/10/2014 1030h

Contact: Kathy Weinel

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Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1410138-001A	TWN-07_10092014	10/9/2014 655h	Aqueous	Chloride, Aqueous
1410138-001B	TWN-07_10092014	10/9/2014 655h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410138-002A	TWN-07R-10082014	10/8/2014 729h	Aqueous	Anions, E300.0
1410138-002B	TWN-07R-10082014	10/8/2014 729h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410138-003A	TWN-01_10082014	10/8/2014 812h	Aqueous	Chloride, Aqueous
1410138-003B	TWN-01_10082014	10/8/2014 812h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410138-004A	TWN-18_10082014	10/8/2014 847h	Aqueous	Chloride, Aqueous
1410138-004B	TWN-18_10082014	10/8/2014 847h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410138-005A	TWN-04_10082014	10/8/2014 923h	Aqueous	Chloride, Aqueous
1410138-005B	TWN-04_10082014	10/8/2014 923h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410138-006A	TWN-03_10092014	10/9/2014 705h	Aqueous	Chloride, Aqueous
1410138-006B	TWN-03_10092014	10/9/2014 705h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410138-007A	TWN-02_10082014	10/8/2014 1233h	Aqueous	Chloride, Aqueous
1410138-007B	TWN-02_10082014	10/8/2014 1233h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410138-008A	TWN-65_10082014	10/8/2014 847h	Aqueous	Chloride, Aqueous
1410138-008B	TWN-65_10082014	10/8/2014 847h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410138-009A	TWN-60_10082014	10/8/2014 645h	Aqueous	Anions, E300.0
1410138-009B	TWN-60_10082014	10/8/2014 645h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410138-010A	Piez-01_10082014	10/8/2014 1302h	Aqueous	Chloride, Aqueous
1410138-010B	Piez-01_10082014	10/8/2014 1302h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410138-011A	Piez-02_10082014	10/8/2014 1240h	Aqueous	Chloride, Aqueous
1410138-011B	Piez-02_10082014	10/8/2014 1240h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410138-012A	Piez-03_10082014	10/8/2014 1250h	Aqueous	Chloride, Aqueous
1410138-012B	Piez-03_10082014	10/8/2014 1250h	Aqueous	Nitrite/Nitrate (as N), E353.2

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Inorganic Case Narrative

American West
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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Client: Energy Fuels Resources, Inc.
Contact: Kathy Weinel
Project: 4th Quarter Nitrate 2014
Lab Set ID: 1410138

Sample Receipt Information:

Date of Receipt: 10/10/14
Date(s) of Collection: 10/8/14 – 10/9/14
Sample Condition: Intact
C-O-C Discrepancies: None

Holding Time and Preservation Requirements: The analysis and preparation for the samples were performed within the method holding times. The samples were properly preserved.

Preparation and Analysis Requirements: The samples were analyzed following the methods stated on the analytical reports.

Analytical QC Requirements: All instrument calibration and calibration check requirements were met. All internal standard recoveries met method criterion.

Batch QC Requirements: MB, LCS, LCSD, MS, MSD, RPD, DUP:

Method Blanks (MB): No target analytes were detected above reporting limits, indicating that the procedure was free from contamination.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD): All LCS and LCSD recoveries were within control limits, indicating that the preparation and analysis were in control.

Matrix Spike / Matrix Spike Duplicates (MS/MSD): All percent recoveries and RPDs (Relative Percent Differences) were inside established limits, with the following exceptions:

Sample ID	Analyte	QC	Explanation
1410137-003C	Chloride	MS/MSD	Sample matrix interference
1410138-001A	Chloride	MS/MSD	Sample matrix interference

Duplicate (DUP): The parameters that required a duplicate analysis had RPDs within the control limits.

Corrective Action: None required.

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1410138
Project: 4th Quarter Nitrate 2014

Contact: Kathy Weinel
Dept: WC
QC Type: LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS-R72257 Date Analyzed: 10/23/2014 1311h Test Code: 300.0-W													
Chloride	5.20	mg/L	E300.0	0.00751	0.100	5.000	0	104	90 - 110				
Lab Sample ID: LCS-R71952 Date Analyzed: 10/13/2014 1325h Test Code: CL-W-4500CLE													
Chloride	26.0	mg/L	SM4500-Cl-E	0.156	5.00	25.00	0	104	90 - 110				
Lab Sample ID: LCS-R71824 Date Analyzed: 10/10/2014 1642h Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.04	mg/L	E353.2	0.00613	0.0100	1.000	0	104	90 - 110				
Lab Sample ID: LCS-R72130 Date Analyzed: 10/20/2014 1458h Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.957	mg/L	E353.2	0.00613	0.0100	1.000	0	95.7	90 - 110				

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1410138
Project: 4th Quarter Nitrate 2014

Contact: Kathy Weinel
Dept: WC
QC Type: LCSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCSD-R71952 Date Analyzed: 10/13/2014 1346h													
Test Code: CL-W-4500CLE													
Chloride	26.2	mg/L	SM4500-Cl-E	0.156	5.00	25.00	0	105	90 - 110	26	0.804	10	

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Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1410138
Project: 4th Quarter Nitrate 2014

Contact: Kathy Weinel
Dept: WC
QC Type: MBLK

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**MB-R72257**	Date Analyzed:	10/23/2014 1254h											
Test Code:	300.0-W													
Chloride		< 0.100	mg/L	E300.0	0.00751	0.100								
Lab Sample ID:	**MB-R71952**	Date Analyzed:	10/13/2014 1324h											
Test Code:	CL-W-4500CLE													
Chloride		< 5.00	mg/L	SM4500-Cl-E	0.156	5.00								
Lab Sample ID:	**MB-R71824**	Date Analyzed:	10/10/2014 1710h											
Test Code:	NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)		< 0.0100	mg/L	E353.2	0.00613	0.0100								
Lab Sample ID:	**MB-R72130**	Date Analyzed:	10/20/2014 1559h											
Test Code:	NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)		< 0.0100	mg/L	E353.2	0.00613	0.0100								

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Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1410138
Project: 4th Quarter Nitrate 2014

Contact: Kathy Weinel
Dept: WC
QC Type: MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1410138-002AMS Date Analyzed: 10/23/2014 1501h													
Test Code: 300.0-W													
Chloride	5.19	mg/L	E300.0	0.00751	0.100	5.000	0	104	90 - 110				
Lab Sample ID: 1410137-003CMS Date Analyzed: 10/13/2014 1326h													
Test Code: CL-W-4500CLE													
Chloride	66.1	mg/L	SM4500-Cl-E	0.156	5.00	10.00	57.7	84.1	90 - 110				[1]
Lab Sample ID: 1410138-001AMS Date Analyzed: 10/13/2014 1333h													
Test Code: CL-W-4500CLE													
Chloride	14.6	mg/L	SM4500-Cl-E	0.156	5.00	10.00	5.93	86.3	90 - 110				[1]
Lab Sample ID: 1410138-001BMS Date Analyzed: 10/10/2014 1645h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.88	mg/L	E353.2	0.00613	0.0100	1.000	0.968	90.8	90 - 110				
Lab Sample ID: 1410137-003BMS Date Analyzed: 10/10/2014 1729h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.61	mg/L	E353.2	0.00613	0.0100	1.000	0.704	90.4	90 - 110				

[1] - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

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Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1410138
Project: 4th Quarter Nitrate 2014

Contact: Kathy Weinel
Dept: WC
QC Type: MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1410238-002AMSD Date Analyzed: 10/23/2014 1518h													
Test Code: 300.0-W													
Chloride	5.37	mg/L	E300.0	0.00751	0.100	5.000	0	107	90 - 110	5.19	3.36	20	
Lab Sample ID: 1410137-003CMSD Date Analyzed: 10/13/2014 1327h													
Test Code: CL-W-4500CLE													
Chloride	65.3	mg/L	SM4500-Cl-E	0.156	5.00	10.00	57.7	76.1	90 - 110	66.1	1.22	10	[1]
Lab Sample ID: 1410138-001AMSD Date Analyzed: 10/13/2014 1335h													
Test Code: CL-W-4500CLE													
Chloride	14.3	mg/L	SM4500-Cl-E	0.156	5.00	10.00	5.93	84.1	90 - 110	14.6	1.52	10	[1]
Lab Sample ID: 1410138-001BMSD Date Analyzed: 10/10/2014 1647h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.92	mg/L	E353.2	0.00613	0.0100	1.000	0.968	95.0	90 - 110	1.88	2.21	10	
Lab Sample ID: 1410137-003BMSD Date Analyzed: 10/10/2014 1735h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.61	mg/L	E353.2	0.00613	0.0100	1.000	0.704	90.6	90 - 110	1.61	0.124	10	

[1] - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

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American West Analytical Laboratories

REVISED: 10/22/2014

Samples except #2 and #9 were changed to method 4500 for Cl. MC

UL
Denison

WORK ORDER Summary

Work Order: **1410138**

Client: Energy Fuels Resources, Inc.

Due Date: 10/21/2014

Client ID: DEN100

Contact: Kathy Weinel

Project: **4th Quarter Nitrate 2014**

QC Level: III

WO Type: Project

Comments: PA Rush. QC 3 (Summary/No chromatograms). MUST report project specific DL's: Cl @ 1 mg/L, NO2/NO3 @ 0.1 mg/L. EDD-Denison & LOCUS. Email Group;

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1410138-001A	**TWN-07_10092014**	10/9/2014 0655h	10/10/2014 1030h	**CL-W-4500CLE**	Aqueous	☐	df - cl	1
1410138-001B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410138-002A	**TWN-07R-10082014**	10/8/2014 0729h	10/10/2014 1030h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - cl	1
1410138-002B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410138-003A	**TWN-01_10082014**	10/8/2014 0812h	10/10/2014 1030h	**CL-W-4500CLE**	Aqueous	☐	df - cl	1
1410138-003B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410138-004A	**TWN-18_10082014**	10/8/2014 0847h	10/10/2014 1030h	**CL-W-4500CLE**	Aqueous	☐	df - cl	1
1410138-004B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410138-005A	**TWN-04_10082014**	10/8/2014 0923h	10/10/2014 1030h	**CL-W-4500CLE**	Aqueous	☐	df - cl	1
1410138-005B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410138-006A	**TWN-03_10092014**	10/9/2014 0705h	10/10/2014 1030h	**CL-W-4500CLE**	Aqueous	☐	df - cl	1
1410138-006B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410138-007A	**TWN-02_10082014**	10/8/2014 1233h	10/10/2014 1030h	**CL-W-4500CLE**	Aqueous	☐	df - cl	1
1410138-007B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410138-008A	**TWN-65_10082014**	10/8/2014 0847h	10/10/2014 1030h	**CL-W-4500CLE**	Aqueous	☐	df - cl	1
1410138-008B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410138-009A	**TWN-60_10082014**	10/8/2014 0645h	10/10/2014 1030h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - cl	1
1410138-009B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	

Printed: 10/22/2014 FOR LABORATORY USE ONLY [fill out on page 1]: %M ☐ RT ☐ CN ☐ TAT ☐ QC ☐ HOK_ _ _ _ HOK_ _ _ _ HOK_ _ _ _ COC Emailed_ _ _ _ _ _

WORK ORDER Summary

Work Order: **1410138**

Client: Energy Fuels Resources, Inc.

Due Date: 10/21/2014

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1410138-010A	**Piez-01_10082014**	10/8/2014 1302h	10/10/2014 1030h	**CL-W-4500CLE**	Aqueous	☐	df - cl	1
1410138-010B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1410138-011A	**Piez-02_10082014**	10/8/2014 1240h	10/10/2014 1030h	**CL-W-4500CLE**	Aqueous	☐	df - cl	1
1410138-011B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1410138-012A	**Piez-03_10082014**	10/8/2014 1250h	10/10/2014 1030h	**CL-W-4500CLE**	Aqueous	☐	df - cl	1
1410138-012B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				

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CHAIN OF CUSTODY

All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAL's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.

1410138
AWAL Lab Sample Set #
Page 1 of 1

QC Level:	Turn Around Time:	Due Date:
3	Standard	

Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due.

Client: Energy Fuels Resources, Inc.
Address: 6425 S. Hwy. 191
Blanding, UT 84511
Contact: Garrin Palmer
Phone #: (435) 678-2221 Cell #:
Email: gpalmer@energyfuels.com; KWeinel@energyfuels.com; dturk@energyfuels.com
Project Name: 4th Quarter Nitrate 2014
Project #:
PO #:
Sampler Name: Garrin Palmer

X Include EDD:
LOCUS UPLOAD
EXCEL
Field Filtered For:

For Compliance With:
☐ NELAP
☐ RCRA
☐ CWA
☐ SDWA
☐ ELAP / A2LA
☐ NLLAP
☐ Non-Compliance
☐ Other:

	Sample ID:	Date Sampled	Time Sampled	# of Containers	Sample Matrix	NO2/NO3 (353.2)	Cl (4500 or 300.0)	Known Hazards & Sample Comments
1	TWN-07_10092014	10/9/2014	655	2	W	X	X	
2	TWN-07R_10082014	10/8/2014	729	2	W	X	X	
3	TWN-01_10082014	10/8/2014	812	2	W	X	X	
4	TWN-18_10082014	10/8/2014	847	2	W	X	X	
5	TWN-04_10082014	10/8/2014	923	2	W	X	X	
6	TWN-03_10092014	10/9/2014	705	2	W	X	X	
7	TWN-02_10082014	10/8/2014	1233	2	W	X	X	
8	TWN-65_10082014	10/8/2014	847	2	W	X	X	
9	TWN-60_10082014	10/8/2014	645	2	W	X	X	
10	Piez-01_10082014	10/8/2014	1302	2	W	X	X	
11	Piez-02_10082014	10/8/2014	1240	2	W	X	X	
12	Piez-03_10082014	10/8/2014	1250	2	W	X	X	
13	Temp Blank							

Laboratory Use Only

Samples Were: FedEx
1 Shipped or hand delivered
2 Ambient or Chilled
3 Temperature 4.2 °C
4 Received Broken/Leaking (Improperly Sealed) Y N
5 Properly Preserved Y N
Checked at bench Y N
6 Received Within Holding Times Y N

COC Tape Was:
1 Present on Outer Package Y N NA
2 Unbroken on Outer Package Y N NA
3 Present on Sample Y N NA
4 Unbroken on Sample Y N NA

Discrepancies Between Sample Labels and COC Record? Y N

DB 10/10/14

Relinquished by: Signature	Date:	Received by: Signature	Date:
Garrin Palmer	10/9/14		
Print Name: Garrin Palmer	Time: 1300	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature Denise Brown	Date: 10/10/14
Print Name:	Time:	Print Name: Denise Brown	Time: 10:30

Special Instructions:

DB 10/10/14

Lab Set ID: 1410138

Preservation Check Sheet

Sample Set Extension and pH -010

Analysis	Preservative	-001	-002	-003	-004	-005	-006	-007	-008	-009	~~-010~~	-011	-012						
Ammonia	pH <2 H_2SO_4																		
COD	pH <2 H_2SO_4																		
Cyanide	pH >12 NaOH																		
Metals	pH <2 HNO_3																		
NO_2 & NO_3	pH <2 H_2SO_4	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes						
O & G	pH <2 HCL																		
Phenols	pH <2 H_2SO_4																		
Sulfide	pH > 9NaOH, Zn Acetate																		
TKN	pH <2 H_2SO_4																		
T PO_4	pH <2 H_2SO_4																		

Procedure:
1) Pour a small amount of sample in the sample lid
2) Pour sample from Lid gently over wide range pH paper
3) **Do Not** dip the pH paper in the sample bottle or lid
4) If sample is not preserved, properly list its extension and receiving pH in the appropriate column above
5) Flag COC, notify client if requested
6) Place client conversation on COC
7) Samples may be adjusted

Frequency: All samples requiring preservation

* The sample required additional preservative upon receipt.

\+ The sample was received unpreserved

▲ The Sample was received unpreserved and therefore preserved upon receipt.

\# The sample pH was unadjustable to a pH < 2 due to the sample matrix

• The sample pH was unadjustable to a pH > ____ due to the sample matrix interference

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Garrin Palmer
Energy Fuels Resources, Inc.
6425 S. Hwy 191
Blanding, UT 84511
TEL: (435) 678-2221

RE: 4th Quarter Chloroform 2014

Dear Garrin Palmer: Lab Set ID: 1410353

American West Analytical Laboratories received 21 sample(s) on 10/24/2014 for the analyses presented in the following report.

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, and Missouri.

All analyses were performed in accordance to the NELAP protocols unless noted otherwise. Accreditation scope documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Thank You,

Kyle F Gross

Digitally signed by Kyle F. Gross
DN: cn=Kyle F. Gross, o=American West Analytical Lab, ou=Laboratory Director, email=kyle@awal-labs.com, c=US
Date: 2014.11.13 06:42:48 -07'00'

Approved by:
Laboratory Director or designee

All analyses applicable to the CWA, SDWA, and RCRA are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the name of this company or any member of its staff, or reproduction of this report in connection with the advertisement, promotion or sale of any product or process, or in connection with the re-publication of this report for any purpose other than for the addressee will be granted only on contact. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

SAMPLE SUMMARY

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Chloroform 2014
Lab Set ID: 1410353
Date Received: 10/24/2014 950h

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1410353-001A	TW4-25_10212014	10/21/2014 1252h	Aqueous	Anions, E300.0
1410353-001B	TW4-25_10212014	10/21/2014 1252h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-001C	TW4-25_10212014	10/21/2014 1252h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-002A	TW4-24_10212014	10/21/2014 1305h	Aqueous	Anions, E300.0
1410353-002B	TW4-24_10212014	10/21/2014 1305h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-002C	TW4-24_10212014	10/21/2014 1305h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-003A	TW4-22_10212014	10/21/2014 1313h	Aqueous	Anions, E300.0
1410353-003B	TW4-22_10212014	10/21/2014 1313h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-003C	TW4-22_10212014	10/21/2014 1313h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-004A	TW4-20_10212014	10/21/2014 1322h	Aqueous	Anions, E300.0
1410353-004B	TW4-20_10212014	10/21/2014 1322h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-004C	TW4-20_10212014	10/21/2014 1322h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-005A	MW-26_10212014	10/21/2014 1328h	Aqueous	Anions, E300.0
1410353-005B	MW-26_10212014	10/21/2014 1328h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-005C	MW-26_10212014	10/21/2014 1328h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-006A	MW-04_10212014	10/21/2014 1335h	Aqueous	Anions, E300.0
1410353-006B	MW-04_10212014	10/21/2014 1335h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-006C	MW-04_10212014	10/21/2014 1335h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-007A	TW4-04_10212014	10/21/2014 1341h	Aqueous	Anions, E300.0
1410353-007B	TW4-04_10212014	10/21/2014 1341h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-007C	TW4-04_10212014	10/21/2014 1341h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-008A	TW4-19_10212014	10/21/2014 1415h	Aqueous	Anions, E300.0
1410353-008B	TW4-19_10212014	10/21/2014 1415h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-008C	TW4-19_10212014	10/21/2014 1415h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-009A	TW4-03R_10222014	10/22/2014 1008h	Aqueous	Anions, E300.0
1410353-009B	TW4-03R_10222014	10/22/2014 1008h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-009C	TW4-03R_10222014	10/22/2014 1008h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-010A	TW4-03_10232104	10/23/2014 709h	Aqueous	Anions, E300.0
1410353-010B	TW4-03_10232104	10/23/2014 709h	Aqueous	Nitrite/Nitrate (as N), E353.2

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Client: Energy Fuels Resources, Inc.
Project: 4th Quarter Chloroform 2014
Lab Set ID: 1410353
Date Received: 10/24/2014 950h

Contact: Garrin Palmer

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1410353-010C	TW4-03_10232104	10/23/2014 709h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-011A	TW4-12_10232014	10/23/2014 719h	Aqueous	Anions, E300.0
1410353-011B	TW4-12_10232014	10/23/2014 719h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-011C	TW4-12_10232014	10/23/2014 719h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-012A	TW4-28_10232014	10/23/2014 726h	Aqueous	Anions, E300.0
1410353-012B	TW4-28_10232014	10/23/2014 726h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-012C	TW4-28_10232014	10/23/2014 726h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-013A	TW4-32_10232014	10/23/2014 734h	Aqueous	Anions, E300.0
1410353-013B	TW4-32_10232014	10/23/2014 734h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-013C	TW4-32_10232014	10/23/2014 734h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-014A	TW4-13_10232014	10/23/2014 740h	Aqueous	Anions, E300.0
1410353-014B	TW4-13_10232014	10/23/2014 740h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-014C	TW4-13_10232014	10/23/2014 740h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-015A	TW4-14_10232014	10/23/2014 746h	Aqueous	Anions, E300.0
1410353-015B	TW4-14_10232014	10/23/2014 746h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-015C	TW4-14_10232014	10/23/2014 746h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-016A	TW4-36_10232014	10/23/2014 755h	Aqueous	Anions, E300.0
1410353-016B	TW4-36_10232014	10/23/2014 755h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-016C	TW4-36_10232014	10/23/2014 755h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-017A	TW4-27_10232014	10/23/2014 802h	Aqueous	Anions, E300.0
1410353-017B	TW4-27_10232014	10/23/2014 802h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-017C	TW4-27_10232014	10/23/2014 802h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-018A	TW4-30_10232014	10/23/2014 808h	Aqueous	Anions, E300.0
1410353-018B	TW4-30_10232014	10/23/2014 808h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-018C	TW4-30_10232014	10/23/2014 808h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-019A	TW4-65_10232014	10/23/2014 719h	Aqueous	Anions, E300.0
1410353-019B	TW4-65_10232014	10/23/2014 719h	Aqueous	Nitrite/Nitrate (as N), E353.2
1410353-019C	TW4-65_10232014	10/23/2014 719h	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-020A	TW4-60_10232014	10/23/2014 830h	Aqueous	Anions, E300.0
1410353-020B	TW4-60_10232014	10/23/2014 830h	Aqueous	Nitrite/Nitrate (as N), E353.2

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Client: Energy Fuels Resources, Inc.
Project: 4th Quarter Chloroform 2014
Lab Set ID: 1410353
Date Received: 10/24/2014 950h

Contact: Garrin Palmer

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1410353-020C	TW4-60_10232014	10/23/2014 **830h**	Aqueous	VOA by GC/MS Method 8260C/5030C
1410353-021A	Trip Blank	10/21/2014	Aqueous	VOA by GC/MS Method 8260C/5030C

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

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Inorganic Case Narrative

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Client: Energy Fuels Resources, Inc.
Contact: Garrin Palmer
Project: 4th Quarter Chloroform 2014
Lab Set ID: 1410353

Sample Receipt Information:

Date of Receipt: 10/24/2014
Date(s) of Collection: 10/21-10/23/2014
Sample Condition: Intact
C-O-C Discrepancies: None

Holding Time and Preservation Requirements: The analysis and preparation for the samples were performed within the method holding times. The samples were properly preserved.

Preparation and Analysis Requirements: The samples were analyzed following the methods stated on the analytical reports.

Analytical QC Requirements: All instrument calibration and calibration check requirements were met. All internal standard recoveries met method criterion.

Batch QC Requirements: MB, LCS, MS, MSD, RPD:

Method Blanks (MB): No target analytes were detected above reporting limits, indicating that the procedure was free from contamination.

Laboratory Control Samples (LCS): All LCS recoveries were within control limits, indicating that the preparation and analysis were in control.

Matrix Spike / Matrix Spike Duplicates (MS/MSD): All percent recoveries and RPDs (Relative Percent Differences) were inside established limits, with the following exceptions:

Sample ID	Analyte	QC	Explanation
1410353-001B	Nitrate-Nitrite (as N)	MS/MSD	Sample matrix interference

Corrective Action: None required.

All analyses applicable to the CWA, SDWA, and RCRA are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the name of this company or any member of its staff, or reproduction of this report in connection with the advertisement, promotion or sale of any product or process, or in connection with the re-publication of this report for any purpose other than for the addressee will be granted only on contact. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

Volatile Case Narrative

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Client:	Energy Fuels Resources, Inc.
Contact:	Garrin Palmer
Project:	4th Quarter Chloroform 2014
Lab Set ID:	1410353

Sample Receipt Information:

Date of Receipt:	10/24/2014
Date(s) of Collection:	10/21-10/23/2014
Sample Condition:	Intact
C-O-C Discrepancies:	None
Method:	SW-846 8260C/5030C
Analysis:	Volatile Organic Compounds

General Set Comments: Multiple target analytes were observed above reporting limits.

Holding Time and Preservation Requirements: All samples were received in appropriate containers and properly preserved. The analysis and preparation of all samples were performed within the method holding times following the methods stated on the analytical reports.

Analytical QC Requirements: All instrument calibration and calibration check requirements were met. All internal standard recoveries met method criterion.

Batch QC Requirements: MB, LCS, MS, MSD, RPD, and Surrogates:

Method Blanks (MBs): No target analytes were detected above reporting limits, indicating that the procedure was free from contamination.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD): All LCS and LCSD recoveries were within control limits, indicating that the preparation and analysis were in control.

Matrix Spike / Matrix Spike Duplicates (MS/MSD): All percent recoveries and RPDs (Relative Percent Differences) were inside established limits, indicating no apparent matrix interferences.

Surrogates: All surrogate recoveries were within established limits.

Corrective Action: None required.

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1410353
Project: 4th Quarter Chloroform 2014

Contact: Garrin Palmer
Dept: WC
QC Type: LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS-R72575 Date Analyzed: 11/02/2014 1156h													
Test Code: 300.0-W													
Chloride	5.08	mg/L	E300.0	0.00751	0.100	5.000	0	102	90 - 110				
Lab Sample ID: LCS-R72715 Date Analyzed: 11/05/2014 1535h													
Test Code: 300.0-W													
Chloride	5.14	mg/L	E300.0	0.00751	0.100	5.000	0	103	90 - 110				
Lab Sample ID: LCS-R72608 Date Analyzed: 11/03/2014 1035h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.04	mg/L	E353.2	0.00833	0.0100	1.000	0	104	90 - 110				
Lab Sample ID: LCS-R72901 Date Analyzed: 11/11/2014 1126h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.06	mg/L	E353.2	0.00833	0.0100	1.000	0	106	90 - 110				

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1410353
Project: 4th Quarter Chloroform 2014

Contact: Garrin Palmer
Dept: WC
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MBLK-R72575 Date Analyzed: 11/02/2014 1139h													
Test Code: 300.0-W													
Chloride	< 0.100	mg/L	E300.0	0.00751	0.100								
Lab Sample ID: MB-R72715 Date Analyzed: 11/05/2014 1519h													
Test Code: 300.0-W													
Chloride	< 0.100	mg/L	E300.0	0.00751	0.100								
Lab Sample ID: MB-R72608 Date Analyzed: 11/03/2014 1034h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	< 0.0100	mg/L	E353.2	0.00833	0.0100								
Lab Sample ID: MB-R72901 Date Analyzed: 11/11/2014 1123h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	< 0.0100	mg/L	E353.2	0.00833	0.0100								

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Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1410353
Project: 4th Quarter Chloroform 2014

Contact: Garrin Palmer
Dept: WC
QC Type: MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1410353-001AMS Date Analyzed: 11/02/2014 1229h													
Test Code: 300.0-W													
Chloride	559	mg/L	E300.0	0.751	10.0	500.0	58.1	100	90 - 110				
Lab Sample ID: 1410353-005AMS Date Analyzed: 11/02/2014 1501h													
Test Code: 300.0-W													
Chloride	110	mg/L	E300.0	0.0751	1.00	50.00	60.1	99.4	90 - 110				
Lab Sample ID: 1410353-015AMS Date Analyzed: 11/02/2014 1841h													
Test Code: 300.0-W													
Chloride	88.7	mg/L	E300.0	0.0751	1.00	50.00	38.9	99.7	90 - 110				
Lab Sample ID: 1410353-009AMS Date Analyzed: 11/02/2014 2113h													
Test Code: 300.0-W													
Chloride	5.15	mg/L	E300.0	0.00751	0.100	5.000	0	103	90 - 110				
Lab Sample ID: 1410466-022AMS Date Analyzed: 11/06/2014 018h													
Test Code: 300.0-W													
Chloride	5.08	mg/L	E300.0	0.00751	0.100	5.000	0	102	90 - 110				
Lab Sample ID: 1410353-001BMS Date Analyzed: 11/03/2014 1038h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.86	mg/L	E353.2	0.00833	0.0100	1.000	1.03	82.7	90 - 110				1
Lab Sample ID: 1410353-011BMS Date Analyzed: 11/03/2014 1121h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	111	mg/L	E353.2	0.833	1.00	100.0	16.1	95.3	90 - 110				
Lab Sample ID: 1411097-001DMS Date Analyzed: 11/11/2014 1131h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.03	mg/L	E353.2	0.00833	0.0100	1.000	0	103	90 - 110				

[1] - *Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.*

All analyses applicable to the CWA, SDWA, and RCRA are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the name of this company or any member of its staff, or reproduction of this report in connection with the advertisement, promotion or sale of any product or process, or in connection with the re-publication of this report for any purpose other than for the addressee will be granted only on contact. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

American West
ANALYTICAL LABORATORIES

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e-mail: awal@awal-labs.com. web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1410353
Project: 4th Quarter Chloroform 2014

Contact: Garrin Palmer
Dept: WC
QC Type: MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1410353-001AMSD Date Analyzed: 11/02/2014 1246h													
Test Code: 300.0-W													
Chloride	562	mg/L	E300.0	0.751	10.0	500.0	58.1	101	90 - 110	559	0.601	20	
Lab Sample ID: 1410353-005AMSD Date Analyzed: 11/02/2014 1518h													
Test Code: 300.0-W													
Chloride	109	mg/L	E300.0	0.0751	1.00	50.00	60.1	98.0	90 - 110	110	0.660	20	
Lab Sample ID: 1410353-015AMSD Date Analyzed: 11/02/2014 1858h													
Test Code: 300.0-W													
Chloride	88.5	mg/L	E300.0	0.0751	1.00	50.00	38.9	99.3	90 - 110	88.7	0.240	20	
Lab Sample ID: 1410353-009AMSD Date Analyzed: 11/02/2014 2129h													
Test Code: 300.0-W													
Chloride	5.26	mg/L	E300.0	0.00751	0.100	5.000	0	105	90 - 110	5.15	2.05	20	
Lab Sample ID: 1410466-022AMSD Date Analyzed: 11/06/2014 035h													
Test Code: 300.0-W													
Chloride	5.08	mg/L	E300.0	0.00751	0.100	5.000	0	102	90 - 110	5.08	0.115	20	
Lab Sample ID: 1410353-001BMSD Date Analyzed: 11/03/2014 1039h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.88	mg/L	E353.2	0.00833	0.0100	1.000	1.03	85.1	90 - 110	1.86	1.28	10	1
Lab Sample ID: 1410353-011BMSD Date Analyzed: 11/03/2014 1122h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	120	mg/L	E353.2	0.833	1.00	100.0	16.1	104	90 - 110	111	7.43	10	
Lab Sample ID: 1411097-001DMSD Date Analyzed: 11/11/2014 1132h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.04	mg/L	E353.2	0.00833	0.0100	1.000	0	104	90 - 110	1.03	0.965	10	

[1] - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

All analyses applicable to the CWA, SDWA, and RCRA are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the name of this company or any member of its staff, or reproduction of this report in connection with the advertisement, promotion or sale of any product or process, or in connection with the re-publication of this report for any purpose other than for the addressee will be granted only on contact. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science

American West Analytical Laboratories

UL
Denison

WORK ORDER Summary

Work Order: **1410353**

Client: Energy Fuels Resources, Inc.

Due Date: 11/4/2014

Client ID: DEN100

Contact: Garrin Palmer

Project: **4th Quarter Chloroform 2014**

QC Level: III

WO Type: Project

Comments: PA Rush. QC 3 (Summary/No chromatograms). RL of 1 ppm for Chloride and VOC and 0.1 ppm for NO2/NO3. Expected levels provided by client - see Jenn. J-flag what we can't meet. EIM Locus and EDD-Denison. Email Group.;

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1410353-001A	**TW4-25_10212014**	10/21/2014 1252h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1410353-001B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410353-001C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1410353-002A	**TW4-24_10212014**	10/21/2014 1305h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1410353-002B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410353-002C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1410353-003A	**TW4-22_10212014**	10/21/2014 1313h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1410353-003B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410353-003C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1410353-004A	**TW4-20_10212014**	10/21/2014 1322h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1410353-004B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410353-004C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1410353-005A	**MW-26_10212014**	10/21/2014 1328h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1410353-005B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410353-005C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3

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WORK ORDER Summary

Work Order: **1410353**

Client: Energy Fuels Resources, Inc.

Due Date: 11/4/2014

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1410353-006A	**MW-04_10212014**	10/21/2014 1335h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	✔	df - wc	1
1410353-006B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		✔	df - no2/no3	
1410353-006C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		✔	VOCFridge	3
1410353-007A	**TW4-04_10212014**	10/21/2014 1341h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	✔	df - wc	1
1410353-007B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		✔	df - no2/no3	
1410353-007C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		✔	VOCFridge	3
1410353-008A	**TW4-19_10212014**	10/21/2014 1415h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	✔	df - wc	1
1410353-008B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		✔	df - no2/no3	
1410353-008C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		✔	VOCFridge	3
1410353-009A	**TW4-03R_10222014**	10/22/2014 1008h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	✔	df - wc	1
1410353-009B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		✔	df - no2/no3	
1410353-009C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		✔	VOCFridge	3
1410353-010A	**TW4-03_10232104**	10/23/2014 0709h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	✔	df - wc	1
1410353-010B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		✔	df - no2/no3	
1410353-010C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		✔	VOCFridge	3
1410353-011A	**TW4-12_10232014**	10/23/2014 0719h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	✔	df - wc	1
1410353-011B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		✔	df - no2/no3	
1410353-011C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		✔	VOCFridge	3
1410353-012A	**TW4-28_10232014**	10/23/2014 0726h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	✔	df - wc	1

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WORK ORDER Summary

Work Order: **1410353**

Client: Energy Fuels Resources, Inc.

Due Date: 11/4/2014

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1410353-012B	**TW4-28_10232014**	10/23/2014 0726h	10/24/2014 0950h	**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*	Aqueous	☑	df - no2/no3	1
1410353-012C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1410353-013A	**TW4-32_10232014**	10/23/2014 0734h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1410353-013B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410353-013C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1410353-014A	**TW4-13_10232014**	10/23/2014 0740h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1410353-014B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410353-014C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1410353-015A	**TW4-14_10232014**	10/23/2014 0746h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1410353-015B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410353-015C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1410353-016A	**TW4-36_10232014**	10/23/2014 0755h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1410353-016B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410353-016C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1410353-017A	**TW4-27_10232014**	10/23/2014 0802h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1410353-017B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1410353-017C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1410353-018A	**TW4-30_10232014**	10/23/2014 0808h	10/24/2014 0950h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1410353-018B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	

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WORK ORDER Summary

Work Order: **1410353**

Client: Energy Fuels Resources, Inc.

Due Date: 11/4/2014

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1410353-018C	**TW4-30_10232014**	10/23/2014 0808h	10/24/2014 0950h	**8260-W**	Aqueous	☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1410353-019A	**TW4-65_10232014**	10/23/2014 0719h	10/24/2014 0950h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1410353-019B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1410353-019C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1410353-020A	**TW4-60_10232014**	10/23/2014 0830h	10/24/2014 0950h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1410353-020B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1410353-020C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1410353-021A	**Trip Blank**	10/21/2014	10/24/2014 0950h	**8260-W**	Aqueous	☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				

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Fax # (801) 263-8687 Email awal@awal-labs.com
www.awal-labs.com

CHAIN OF CUSTODY

All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAL's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.

1410353
AWAL Lab Sample Set #
Page 1 of 2

QC Level:	Turn Around Time:	Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due.	Due Date:
3	Standard		

Client: Energy Fuels Resources, Inc.
Address: 6425 S. Hwy. 191
Blanding, UT 84511
Contact: Garrin Palmer
Phone #: (435) 678-2221 Cell #:
Email: gpalmer@energyfuels.com; KWeinel@energyfuels.com; dturk@energyfuels.com
Project Name: 4th Quarter Chloroform 2014
Project #:
PO #:
Sampler Name: Tanner Holliday

X Include EDD:
LOCUS UPLOAD
EXCEL
Field Filtered For:

For Compliance With:
☐ NELAP
☐ RCRA
☐ CWA
☐ SDWA
☐ ELAP / A2LA
☐ NLLAP
☐ Non-Compliance
☐ Other:

	Sample ID:	Date Sampled	Time Sampled	# of Containers	Sample Matrix	NO2/NO3 (353.2)	Cl (4500 or 300.0)	VOCs (8260C)	Known Hazards & Sample Comments
1	TW4-25_10212014	10/21/14	1252	5	w	x	x	x	
2	TW4-24_10212014	10/21/14	1305	5	w	x	x	x	
3	TW4-22_10212014	10/21/14	1313	5	w	x	x	x	
4	TW4-20_10212014	10/21/14	1322	5	w	x	x	x	
5	MW-26_10212014	10/21/14	1328	5	w	x	x	x	
6	MW-04_10212014	10/21/14	1335	5	w	x	x	x	
7	TW4-04_10212014	10/21/14	1341	5	w	x	x	x	
8	TW4-19_10212014	10/21/14	1415	5	w	x	x	x	
9	TW4-03R_10222014	10/22/14	1008	5	w	x	x	x	
10	TW4-03_10232104	10/23/14	709	5	w	x	x	x	
	TW4-12_10232014	10/23/14	719	5	w	x	x	x	
11	TW4-28_10232014	10/23/14	726	5	w	x	x	x	
12	TW4-32_10232014	10/23/14	734	5	w	x	x	x	

Laboratory Use Only

Samples Were: Fed Ex
1. Shipped or hand delivered
2. Ambient or Chilled
3. Temperature 1.1 °C
4. Received Broken/Leaking (Improperly Sealed) Y N
5. Properly Preserved Y N
Checked at bench Y N
6. Received Within Holding Times Y N

COC Tape Was:
1. Present on Outer Package Y N NA
2. Unbroken on Outer Package Y N NA
3. Present on Sample Y N NA
4. Unbroken on Sample Y N NA

Discrepancies Between Sample Labels and COC Record? Y N

Relinquished by:	Date:	Received by:	Date:
Signature: Garrin Palmer	10/23/14	Signature:	
Print Name: Garrin Palmer	Time: 1200	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature: Denise Bruun	Date: 10/24/14
Print Name:	Time:	Print Name: Denise Bruun	Time: 9:50

Special Instructions:

See the Analytical Scope of Work for Reporting Limits and VOC analyte list.

DB 10/24/14

American West
Analytical Laboratories
463 W. 3600 S. Salt Lake City, UT 84115
Phone # (801) 263-8686 Toll Free # (888) 263-8686
Fax # (801) 263-8687 Email awal@awal-labs.com
www.awal-labs.com

CHAIN OF CUSTODY

All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAL's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.

1410353
AWAL Lab Sample Set #
Page 2 of 2

QC Level: 3
Turn Around Time: Standard
Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due.
Due Date:

Client: Energy Fuels Resources, Inc.
Address: 6425 S. Hwy. 191
Blanding, UT 84511
Contact: Garrin Palmer
Phone #: (435) 678-2221 Cell #:
Email: gpalmer@energyfuels.com; KWeinel@energyfuels.com; dturk@energyfuels.com
Project Name: 4th Quarter Chloroform 2014
Project #:
PO #:
Sampler Name: Tanner Holliday

X Include EDD:
LOCUS UPLOAD
EXCEL
Field Filtered For:

For Compliance With:
☐ NELAP
☐ RCRA
☐ CWA
☐ SDWA
☐ ELAP / A2LA
☐ NLLAP
☐ Non-Compliance
☐ Other:

	Sample ID:	Date Sampled	Time Sampled	# of Containers	Sample Matrix	NO2/NO3 (353.2)	Cl (4500 or 300.0)	VOCs (8260C)	Known Hazards & Sample Comments
1	TW4-13_10232014	10/23/14	740	5	w	x	x	x	
2	TW4-14_10232014	10/23/14	746	5	w	x	x	x	
3	TW4-36_10232014	10/23/14	755	5	w	x	x	x	
4	TW4-27_10232014	10/23/14	802	5	w	x	x	x	
5	TW4-30_10232014	10/23/14	808	5	w	x	x	x	
6	TW4-65_10232014	10/23/14	719	5	w	x	x	x	
7	TW4-60_10232014	10/23/14	830	5	w	x	x	x	
8	Trip Blank	10/21/14		3	w			x	
9	Temp Blank			1	w				
10									
11									
12									

Laboratory Use Only
Samples Were: Fed Ex
Shipped or hand delivered
2 Ambient or Chilled
3 Temperature 1.1 °C
4 Received Broken/Leaking (Improperly Sealed) Y N
5 Properly Preserved Y N
Checked at bench Y N
6 Received Within Holding Times Y N

COC Tape Was:
1 Present on Outer Package Y N NA
2 Unbroken on Outer Package Y N NA
3 Present on Sample Y N NA
4 Unbroken on Sample Y N NA

Discrepancies Between Sample Labels and COC Record Y N

Relinquished by: Signature	Date:	Received by: Signature	Date:
Garrin Palmer	10/23/14		
Print Name: Garrin Palmer	Time: 1700	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature Denise Bruun	Date: 10/24/14
Print Name:	Time:	Print Name: Denise Bruun	Time: 9:50

Special Instructions:

See the Analytical Scope of Work for Reporting Limits and VOC analyte list.

Preservation Check Sheet

Lab Sample Set #: **141353**

	-001	-002	-003	-004	-005	-006	-007	-008	-009	-010	-011	-012	-013	-014	-015	-016
NO_2/NO_3: pH <2 H_2SO_4	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

	-017	-018	-019	-020												
NO_2/NO_3: pH <2 H_2SO_4	YES	YES	YES	YES												

Tab H

Quality Assurance and Data Validation Tables

H-1 Field Data QA/QC Evaluation

Location	Casing Volume	2x Casing Volume	Volume Pumped	Volume Check	Conductivity		RPD	pH		RPD	Temp		RPD	Redox Potential		RPD	Turbidity		RPD
Piezometer 1		--			2130		NC	8.40		NC	15.33		NC	150		NC	1.3		NC
Piezometer 2		--			816		NC	6.94		NC	15.43		NC	236		NC	8.5		NC
Piezometer 3		--			2743		NC	11.56		NC	15.29		NC	88		NC	5.2		NC
TWN-1	34.30	68.60	88.00	OK	845.0	852.0	0.82	6.94	6.94	0.00	15.00	15.00	0.00	227	226	0.44	5.0	5.2	3.92
TWN-2	NA	Continuously Pumped Well			3438		NC	6.30		NC	16.70		NC	291		NC	6.9		NC
TWN-3	37.88	75.76	47.66	Pumped Dry	2271.0	2283.0	0.53	6.83	6.81	0.29	14.48	14.58	0.69	NM		NC	NM		NC
TWN-4	47.93	95.86	121.00	OK	963.0	971.0	0.83	6.73	6.73	0.00	14.69	14.70	0.07	223	222	0.45	11.3	11.5	1.75
TWN-7	12.28	24.56	16.50	Pumped Dry	1287.0	1281.0	0.47	7.38	7.35	0.41	15.47	15.45	0.13	NM		NC	NM		NC
TWN-18	55.83	111.66	132.00	OK	2191.0	2180.0	0.50	6.46	6.47	0.15	14.51	14.50	0.07	239	238	0.42	13.0	14.0	7.41
TW4-22	NA	Continuously pumped well			5992		NC	6.40		NC	15.55		NC	174		NC	3.0		NC
TW4-24	NA	Continuously pumped well			8998		NC	6.35		NC	15.28		NC	182		NC	1.5		NC
TW4-25	NA	Continuously pumped well			2614		NC	6.35		NC	15.95		NC	290		NC	0		NC

NC = Not Calculated

TWN-2 , TW4-22, TW4-24, and TW4-25 are continuously pumping wells.

Piezometers 1, 2, and 3 were not pumped, only one set of parameters were taken.

TWN-3 and TWN-7 were pumped dry and sampled after recovery.

The QAP states that turbidity should be less than 5 Nephelometric Turbidity Units ("NTU") prior to sampling unless the well is characterized by water that has a higher turbidity. The QAP does not require that turbidity measurements be less than 5 NTU prior to sampling. As such, the noted observations regarding turbidity measurements less than 5 NTU below are included for information purposes only.

NM = Not Measured. The QAP does not require the measurement of redox potential or turbidity in wells that were purged to dryness.

H-2: Holding Time Evaluation

Location ID	Parameter Name	Sample Date	Analysis Date	Hold Time (Days)	Allowed Hold Time (Days)	Hold Time Check
PIEZ-01	Chloride	10/8/2014	10/13/2014	5	28	OK
PIEZ-01	Nitrate/Nitrite (as N)	10/8/2014	10/10/2014	2	28	OK
PIEZ-02	Chloride	10/8/2014	10/13/2014	5	28	OK
PIEZ-02	Nitrate/Nitrite (as N)	10/8/2014	10/20/2014	12	28	OK
PIEZ-03	Chloride	10/8/2014	10/13/2014	5	28	OK
PIEZ-03	Nitrate/Nitrite (as N)	10/8/2014	10/10/2014	2	28	OK
TWN-01	Chloride	10/8/2014	10/13/2014	5	28	OK
TWN-01	Nitrate/Nitrite (as N)	10/8/2014	10/10/2014	2	28	OK
TWN-02	Chloride	10/8/2014	10/13/2014	5	28	OK
TWN-02	Nitrate/Nitrite (as N)	10/8/2014	10/10/2014	2	28	OK
TWN-03	Chloride	10/9/2014	10/13/2014	4	28	OK
TWN-03	Nitrate/Nitrite (as N)	10/9/2014	10/10/2014	1	28	OK
TWN-04	Chloride	10/8/2014	10/13/2014	5	28	OK
TWN-04	Nitrate/Nitrite (as N)	10/8/2014	10/10/2014	2	28	OK
TWN-07	Chloride	10/9/2014	10/13/2014	4	28	OK
TWN-07	Nitrate/Nitrite (as N)	10/9/2014	10/10/2014	1	28	OK
TWN-07R	Chloride	10/8/2014	10/23/2014	15	28	OK
TWN-07R	Nitrate/Nitrite (as N)	10/8/2014	10/10/2014	2	28	OK
TWN-18	Chloride	10/8/2014	10/13/2014	5	28	OK
TWN-18	Nitrate/Nitrite (as N)	10/8/2014	10/10/2014	2	28	OK
TW4-22	Chloride	10/21/2014	11/2/2014	12	28	OK
TW4-22	Nitrate/Nitrite (as N)	10/21/2014	11/3/2014	13	28	OK
TW4-24	Chloride	10/21/2014	11/2/2014	12	28	OK
TW4-24	Nitrate/Nitrite (as N)	10/21/2014	11/3/2014	13	28	OK
TW4-25	Chloride	10/21/2014	11/5/2014	15	28	OK
TW4-25	Nitrate/Nitrite (as N)	10/21/2014	11/3/2014	13	28	OK
TW4-60	Chloride	10/23/2014	11/2/2014	10	28	OK
TW4-60	Nitrate/Nitrite (as N)	10/23/2014	11/3/2014	11	28	OK
TWN-60	Chloride	10/8/2014	10/23/2014	15	28	OK
TWN-60	Nitrate/Nitrite (as N)	10/8/2014	10/10/2014	2	28	OK
TWN-65	Chloride	10/8/2014	10/13/2014	5	28	OK
TWN-65	Nitrate/Nitrite (as N)	10/8/2014	10/10/2014	2	28	OK

H-3: Analytical Method Check

Parameter	Method	Method Used by Lab
Nitrate	E353.1 or E353.2	E353.2
Chloride	A4500-Cl B or A4500-Cl E or E300.0	A4500-Cl-E

Both Nitrate and Chloride were analyzed with the correct analytical method.

H-4 Reporting Limit Check

Location	Analyte	Lab Reporting Limit	Units	Qualifier	Required Reporting Limit	RL Check	Dilution Factor
PIEZ-01	Chloride	5	mg/L		1	OK	1
PIEZ-01	Nitrate/Nitrite (as N)	0.1	mg/L		0.1	OK	10
PIEZ-02	Chloride	5	mg/L		1	OK	1
PIEZ-02	Nitrate/Nitrite (as N)	0.01	mg/L		0.1	OK	1
PIEZ-03	Chloride	5	mg/L		1	OK	1
PIEZ-03	Nitrate/Nitrite (as N)	0.01	mg/L		0.1	OK	1
TWN-01	Chloride	5	mg/L		1	OK	1
TWN-01	Nitrate/Nitrite (as N)	0.01	mg/L		0.1	OK	1
TWN-02	Chloride	5	mg/L		1	OK	1
TWN-02	Nitrate/Nitrite (as N)	1	mg/L		0.1	OK	100
TWN-03	Chloride	50	mg/L		1	OK	10
TWN-03	Nitrate/Nitrite (as N)	1	mg/L		0.1	OK	100
TWN-04	Chloride	5	mg/L		1	OK	1
TWN-04	Nitrate/Nitrite (as N)	0.01	mg/L		0.1	OK	1
TWN-07	Chloride	5	mg/L		1	OK	1
TWN-07	Nitrate/Nitrite (as N)	0.01	mg/L		0.1	OK	1
TWN-07R	Chloride	1	mg/L	U	1	OK	1
TWN-07R	Nitrate/Nitrite (as N)	0.1	mg/L	U	0.1	OK	1
TWN-18	Chloride	5	mg/L		1	OK	1
TWN-18	Nitrate/Nitrite (as N)	0.01	mg/L		0.1	OK	1
TW4-22	Chloride	100	mg/L		1	OK	100
TW4-22	Nitrate/Nitrite (as N)	10	mg/L		0.1	OK	100
TW4-24	Chloride	100	mg/L		1	OK	100
TW4-24	Nitrate/Nitrite (as N)	10	mg/L		0.1	OK	100
TW4-25	Chloride	10	mg/L		1	OK	10
TW4-25	Nitrate/Nitrite (as N)	0.1	mg/L		0.1	OK	1
TW4-60	Chloride	1	mg/L	U	1	OK	1
TW4-60	Nitrate/Nitrite (as N)	0.1	mg/L	U	0.1	OK	1
TWN-60	Chloride	1	mg/L	U	1	OK	1
TWN-60	Nitrate/Nitrite (as N)	0.1	mg/L	U	0.1	OK	1
TWN-65	Chloride	5	mg/L		1	OK	1
TWN-65	Nitrate/Nitrite (as N)	0.01	mg/L		0.1	OK	1

U = Value was reported by the laboratory as nondetect.

H-5 QA/QC Evaluation for Sample Duplicates

Constituent	TWN-18	TWN-65	%RPD
Chloride	74.8	72.3	3.40
Nitrogen	1.47	1.47	0.00

H-6 QC Control Limits for Analysis and Blanks

Method Blank Detections

All Method Blanks for the quarter were non-detect.

Matrix Spike % Recovery Comparison

Lab Report	Lab Sample ID	Well	Analyte	MS %REC	MSD %REC	REC Range	RPD
1410138	1410137-003CMS	N/A	Chloride	84.1	76.1	90-110	1.22
1410138	1410138-001AMS	TWN-07	Chloride	86.3	84.1	90-110	1.52
1410353	1410353-001BMS	TW4-25	Nitrate	82.7	85.1	90-110	1.28

* - Recovery was not calculated because the analyte of the sample was greater than 4 times the spike amount

N/A - QC was not performed on an EFRI sample.

NC - Not calculated

Laboratory Control Sample

All Laboratory Control Samples were within acceptance limits for the quarter.

H-7 Receipt Temperature Evaluation

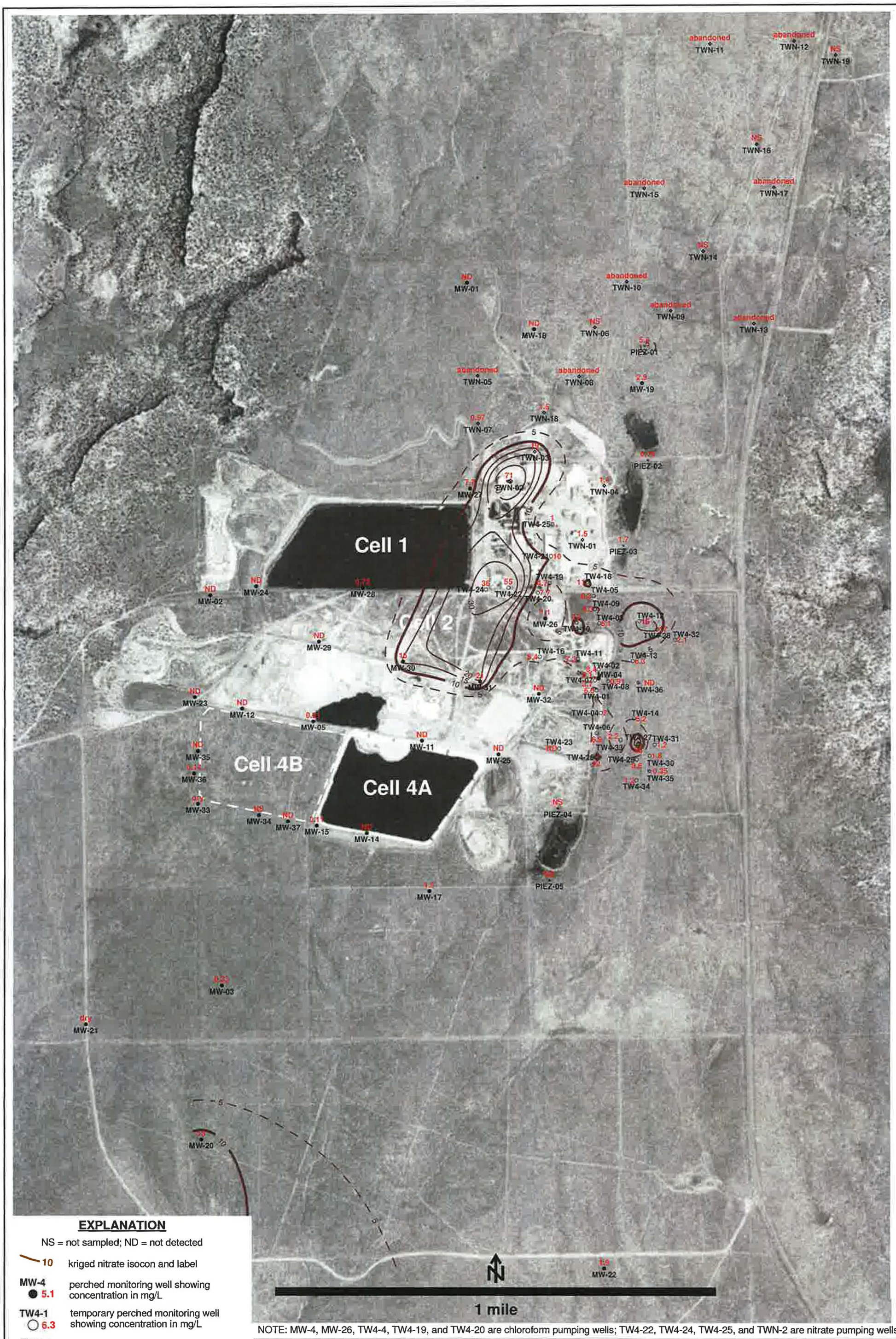
Sample Batch	Wells in Batch	Temperature
1410138	Piezometer 1, Piezometer 2, Piezometer 3, TWN-1, TWN-2, TWN-3, TWN-4, TWN-7, TWN-07R, TWN-18, TWN-60, TWN-65	4.2 °C
1410353	TW4-22, TW4-24, TW4-25, TW4-60	1.1 °C

H-8 Rinsate Evaluation

All rinsate and DI blank samples were non-detect for the quarter.

Tab I

Kriged Current Quarter Isoconcentration Maps

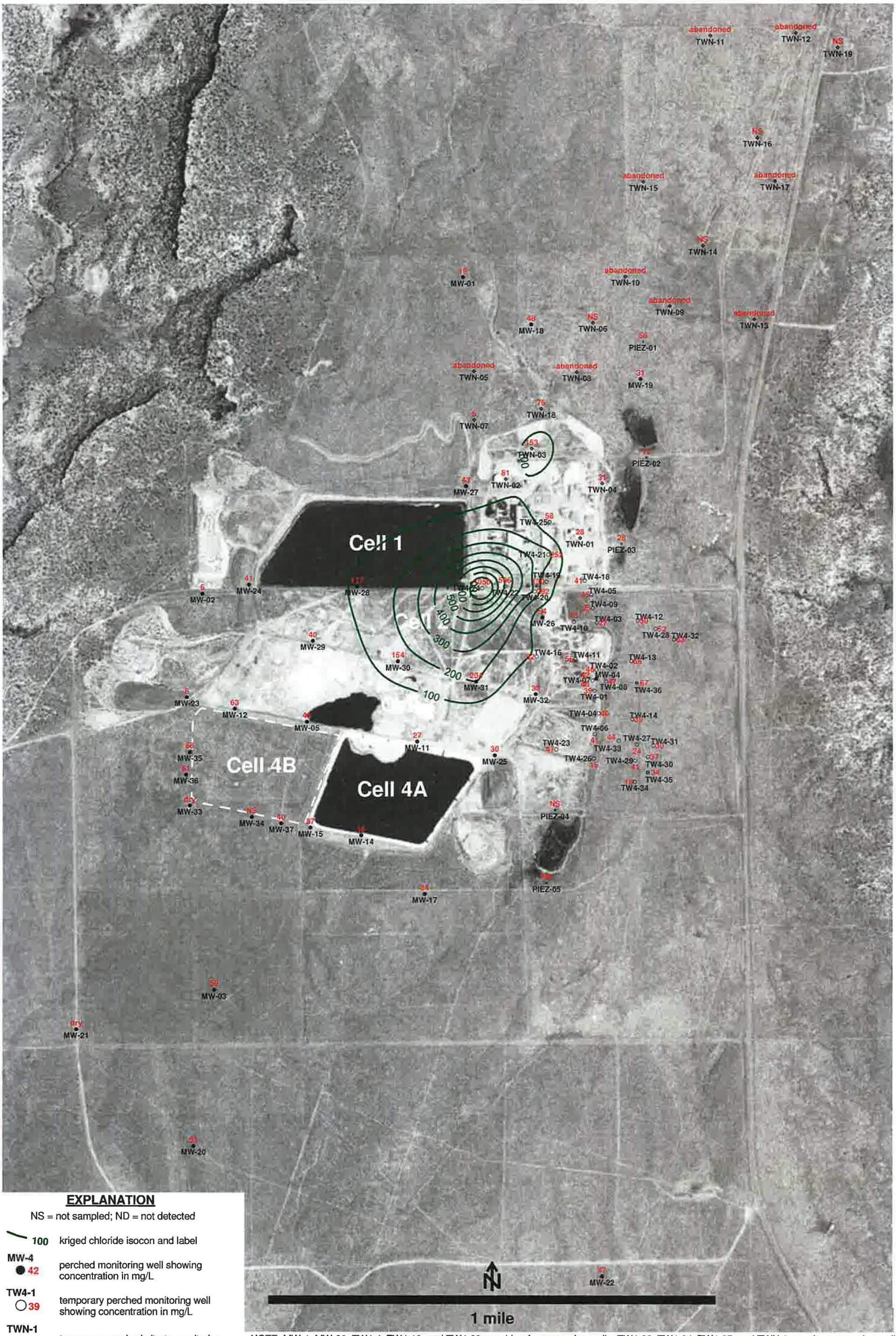


NOTE: MW-4, MW-26, TW4-4, TW4-19, and TW4-20 are chloroform pumping wells; TW4-22, TW4-24, TW4-25, and TWN-2 are nitrate pumping wells

HYDRO GEO CHEM, INC.

KRIGED 4th QUARTER, 2014 NITRATE (mg/L)
(NITRATE + NITRITE AS N)
WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/feb15/nitrate/Unt1214.srf	I-1



EXPLANATION

NS = not sampled; ND = not detected

- 100 — kriged chloride isocon and label
- MW-4 ● 42 — perched monitoring well showing concentration in mg/L
- TW4-1 ○ 39 — temporary perched monitoring well showing concentration in mg/L
- TWN-1 ◇ 28 — temporary perched nitrate monitoring well showing concentration in mg/L
- PIEZ-1 58 — perched piezometer showing concentration in mg/L
- TW4-36 ☼ 67 — temporary perched monitoring well installed May, 2014 showing concentration in mg/L

NOTE: MW-4, MW-26, TW4-4, TW4-19, and TW4-20 are chloroform pumping wells; TW4-22, TW4-24, TW4-25, and TWN-2 are nitrate pumping wells

HYDRO GEO CHEM, INC.

KRIGED 4th QUARTER, 2014 CHLORIDE (mg/L) WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/ffeb15/chloride/Ucl1214.srf	I - 2

Tab J

Analyte Concentrations Over Time

Piezometer 1

Date	Nitrate (mg/l)	Chloride (mg/l)
2/19/2009	6.8	NA
7/14/2009	6.8	60
9/22/2009	7.3	78
10/27/2009	7.4	61
6/2/2010	7.2	52
7/19/2010	6.8	52
12/10/2010	6.5	60
1/31/2011	7	60
4/25/2011	6.8	58
7/25/2011	7	53
10/19/2011	6.6	55
1/11/2012	7.1	78
4/20/2012	6.6	58
7/27/2012	7.2	56
10/17/2012	7.66	55
2/18/2013	8.11	56.7
4/24/2013	8.88	53.3
8/28/2013	7.83	55.1
10/16/2013	6.68	54.1
1/13/2014	6.79	56.2
5/7/2014	7.57	52.1
8/6/2014	5.1	55
10/8/2014	5.75	57.6

Piezometer 2

Date	Nitrate (mg/l)	Chloride (mg/l)
2/19/2009	0.5	NA
7/14/2009	0.5	7
9/22/2009	0.5	17
10/27/2009	0.6	7
6/2/2010	0.6	8
7/19/2010	0.6	8
12/10/2010	0.2	6
1/31/2011	0.3	9
4/25/2011	0.3	8
7/25/2011	0.1	9
10/19/2011	0.1	8
1/11/2012	0.1	9
4/20/2012	0.2	8
7/27/2012	0.2	9
10/17/2012	0.192	9.5
2/19/2013	0.218	9.67
4/24/2013	0.172	10.3
8/28/2013	0.198	9.66
10/16/2013	0.364	9.22
1/13/2014	0.169	11.4
5/7/2014	0.736	11.4
8/6/2014	0.8	12
10/8/2014	0.755	12.2

Piezometer 3

Date	Nitrate (mg/l)	Chloride (mg/l)
2/19/2009	0.7	NA
7/14/2009	0.8	12
9/22/2009	0.8	24
10/27/2009	1.2	19
3/24/2010	1.7	116
6/2/2010	1.6	36
7/19/2010	1.6	35
12/10/2010	1.8	25
1/31/2011	1.8	40
4/25/2011	1.7	35
7/25/2011	1.8	61
10/19/2011	1.7	12
1/11/2012	1.8	20
4/20/2012	1.7	53
7/27/2012	1.8	21
10/17/2012	2.75	20.1
2/19/2013	1.85	21
4/24/2013	1.83	21.2
8/28/2013	1.81	22.4
10/16/2013	1.80	23.5
1/13/2014	1.70	26.0
5/7/2014	1.79	23.9
8/6/2014	1.7	26
10/8/2014	1.74	28.3

TWN-1

Date	Nitrate (mg/l)	Chloride (mg/l)
2/6/2009	0.7	19
7/21/2009	0.4	17
9/21/2009	0.4	19
10/28/2009	0.5	18
3/17/2010	0.5	17
5/26/2010	0.6	20
9/27/2010	0.6	19
12/7/2010	0.6	14
1/26/2011	0.5	17
4/20/2011	0.5	19
7/26/2011	0.5	14
10/17/2011	0.5	10
1/9/2012	0.6	15
4/18/2012	0.6	17
7/24/2012	0.6	17
10/15/2012	0.432	17.5
2/18/2013	0.681	17.6
4/23/2013	0.84	17.4
8/27/2013	1.24	24.1
10/16/2013	1.61	26.8
1/14/2014	1.47	29.2
5/6/2014	1.63	31.1
8/5/2014	1.7	28
10/8/2014	1.46	27.6

TWN-2

Date	Nitrate (mg/l)	Chloride (mg/l)
2/6/2009	25.4	29
7/21/2009	25	25
9/21/2009	22.6	17
11/2/2009	20.8	55
3/24/2010	62.1	85
6/2/2010	69	97
9/29/2010	69	104
12/9/2010	48	93
2/1/2011	43	93
4/28/2011	40	85
7/28/2011	33	74
10/20/2011	33	76
1/12/2012	31	86
4/20/2012	48	103
7/31/2012	54	93
10/17/2012	22.1	79
2/19/2013	57.3	80.5
4/24/2013	57.7	82.1
8/27/2013	80	75.9
10/16/2013	111	70.4
1/13/2014	42.6	72.4
5/7/2014	44.7	84.9
8/6/2014	42	80
10/8/2014	70.6	81

TWN-3

Date	Nitrate (mg/l)	Chloride (mg/l)
2/6/2009	23.6	96
7/21/2009	25.3	96
9/21/2009	27.1	99
11/2/2009	29	106
3/25/2010	25.3	111
6/3/2010	26	118
7/15/2010	27	106
12/10/2010	24	117
2/1/2011	24	138
4/28/2011	26	128
7/29/2011	25	134
10/20/2011	25	129
1/12/2012	25	143
4/20/2012	24	152
7/31/2012	27	158
10/17/2012	12.1	149
2/19/2013	22.2	157
4/24/2013	27.2	158
8/28/2013	20.9	171
10/17/2013	23.5	163
1/15/2014	19.6	160
5/7/2014	23.6	168
8/6/2014	19.5	174
10/9/2014	19.1	153

TWN-4

Date	Nitrate (mg/l)	Chloride (mg/l)
2/6/2009	1	13
7/21/2009	0.05	12
9/21/2009	0.4	13
10/28/2009	0.4	11
3/16/2010	0.9	22
5/27/2010	1.0	22
9/27/2010	0.9	19
12/8/2010	1	21
1/25/2011	0.9	21
4/20/2011	0.9	21
7/26/2011	1.1	35
10/18/2011	0.9	20
1/9/2012	0.9	20
4/18/2012	1.1	24
7/25/2012	1.4	25
10/15/2012	1.45	26.4
2/18/2013	1.51	25.3
4/23/2013	1.63	24.4
8/27/2013	1.58	27.2
10/16/2013	1.69	29.4
1/14/2014	1.41	28.4
5/6/2014	1.55	29.6
8/5/2014	2.0	28
10/8/2014	1.44	30.7

TWN-7

Date	Nitrate (mg/l)	Chloride (mg/l)
8/25/2009	ND	11
9/21/2009	ND	7
11/10/2009	0.1	7
3/17/2010	0.8	6
5/28/2010	1.2	6
7/14/2010	1.6	7
12/10/2010	1	4
1/27/2011	1.3	6
4/21/2011	1.7	6
7/29/2011	0.7	5
10/19/2011	2.2	6
1/11/2012	2.3	5
4/20/2012	1.2	6
7/26/2012	0.9	6
10/16/2012	0.641	5.67
2/19/2013	0.591	5.68
4/24/2013	1.16	5.88
8/28/2013	0.835	6.96
10/16/2013	0.986	5.70
1/15/2014	0.882	5.75
5/7/2014	0.564	5.26
8/6/2014	0.9	6
10/9/2014	0.968	5.93

TWN-18

Date	Nitrate (mg/l)	Chloride (mg/l)
11/2/2009	1.3	57
3/17/2010	1.6	42
6/1/2010	1.8	63
9/27/2010	1.8	64
12/9/2010	1.6	59
1/27/2011	1.4	61
4/26/2011	1.8	67
7/28/2011	1.8	65
10/18/2011	1.9	60
1/10/2012	1.9	64
4/19/2012	2.1	64
7/26/2012	2.3	67
10/16/2012	1.95	67.5
2/18/2013	2.27	68.7
4/23/2013	2.32	64.3
8/27/2013	2.04	70.4
10/16/2013	2.15	67.3
1/14/2014	2.33	68.4
5/6/2014	2.18	76.5
8/5/2014	1.8	70
10/8/2014	1.47	74.8

TW4-19

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
7/22/2002	42.80	12/7/2005	81
9/12/2002	47.60	3/9/2006	86
3/28/2003	61.40	7/20/2006	123
6/23/2003	11.40	11/9/2006	134
7/15/2003	6.80	2/28/2007	133
8/15/2003	4.00	8/15/2007	129
9/12/2003	5.70	10/10/2007	132
9/25/2003	9.20	3/26/2008	131
10/29/2003	7.70	6/25/2008	128
11/9/2003	4.80	9/10/2008	113
8/16/2004	9.91	10/15/2008	124
9/17/2004	4.50	3/4/2009	127
3/16/2005	5.30	6/23/2009	132
6/7/2005	5.70	9/14/2009	43
8/31/2005	4.60	12/14/2009	124
12/1/2005	0.10	2/17/2010	144
3/9/2006	4.00	6/9/2010	132
6/14/2006	5.20	8/16/2010	142
7/20/2006	4.30	10/11/2010	146
11/9/2006	4.60	2/17/2011	135
2/28/2007	4.00	6/7/2011	148
8/15/2007	4.10	8/17/2011	148
10/10/2007	4.00	11/17/2011	148
3/26/2008	2.20	1/23/2012	138
6/25/2008	2.81	6/6/2012	149
9/10/2008	36.20	9/5/2012	149
10/15/2008	47.80	10/3/2012	150
3/4/2009	3.20	2/11/2013	164
6/23/2009	2.40	6/5/2013	148
9/14/2009	0.10	9/3/2013	179
12/14/2009	26.70	10/29/2013	206
2/17/2010	2.00	1/27/2014	134
6/9/2010	4.40	5/19/2014	152
8/16/2010	5.90	8/11/2014	140
10/11/2010	2.70	10/21/2014	130
2/17/2011	17.00		
6/7/2011	12.00		
8/17/2011	3.00		
11/17/2011	5.00		
1/23/2012	0.60		
6/6/2012	2.40		
9/5/2012	2.50		
10/3/2012	4.10		
2/11/2013	7.99		
6/5/2013	2.95		
9/3/2013	17.60		
10/29/2013	4.70		
1/27/2014	1.62		
5/19/2014	1.34		
8/11/2014	1.60		
10/21/2014	4.72		

The sampling program for TW4-19 was updated in the fourth quarter of 2005 to include analysis for chloride as well as nitrate. This change accounts for the different number of data points represented above.

TW4-21

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
5/25/2005	14.6	12/7/2005	353
8/31/2005	10.1	3/9/2006	347
11/30/2005	9.6	7/20/2006	357
3/9/2006	8.5	11/8/2006	296
6/14/2006	10.2	2/28/2007	306
7/20/2006	8.9	6/27/2007	327
11/8/2006	8.7	8/15/2007	300
2/28/2007	8.7	10/10/2007	288
6/27/2007	8.6	3/26/2008	331
8/15/2007	8.6	6/25/2008	271
10/10/2007	8.3	9/10/2008	244
3/26/2008	14.3	10/15/2008	284
6/25/2008	8.8	3/11/2009	279
9/10/2008	7.6	6/24/2009	291
10/15/2008	8.0	9/15/2009	281
3/11/2009	8.3	12/22/2009	256
6/24/2009	8.1	2/25/2010	228
9/15/2009	9.2	6/10/2010	266
12/22/2009	8.4	8/12/2010	278
2/25/2010	8.4	10/13/2010	210
6/10/2010	12.0	2/22/2011	303
8/12/2010	14.0	6/1/2011	297
10/13/2010	7.0	8/17/2011	287
2/22/2011	9.0	11/16/2011	276
6/1/2011	13.0	1/19/2012	228
8/17/2011	14.0	6/13/2012	285
11/16/2011	13.0	9/13/2012	142
1/19/2012	15.0	10/4/2012	270
6/13/2012	11.0	2/13/2013	221
9/13/2012	13.0	6/18/2013	243
10/4/2012	14.0	9/12/2013	207
2/13/2013	11.8	11/13/2013	206
6/18/2013	13.8	2/5/2014	200
9/12/2013	10.3	5/22/2014	243
11/13/2013	9.0	8/27/2014	230
2/5/2014	11.4	10/29/2014	252
5/22/2014	11.5		
8/27/2014	7.1		
10/29/2014	10.0		

The sampling program for TW4-21 was updated in the fourth quarter of 2005 to include analysis for chloride as well as nitrate. This change accounts for the different number of data points represented above.

TW4-22

Date	Nitrate (mg/l)	Chloride (mg/l)
2/28/2007	20.9	347
6/27/2007	19.3	273
8/15/2007	19.3	259
10/10/2007	18.8	238
3/26/2008	39.1	519
6/25/2008	41.9	271
9/10/2008	38.7	524
10/15/2008	36.3	539
3/11/2009	20.7	177
6/24/2009	20.6	177
9/15/2009	40.3	391
12/29/2009	17.8	175
3/3/2010	36.6	427
6/15/2010	19	134
8/12/2010	18	127
8/24/2010	15	130
10/13/2010	16	134
2/23/2011	18	114
6/1/2011	17	138
8/17/2011	15	120
11/16/2011	19	174
1/19/2012	14	36
6/13/2012	12.8	35
9/12/2012	7	121
10/4/2012	14	130
2/11/2013	58	635
6/5/2013	50.2	586
9/3/2013	29.7	487
10/29/2013	45.2	501
1/27/2014	54.6	598
5/19/2014	47.2	614
8/11/2014	41.5	540
10/21/2014	54.9	596

TW4-24

Date	Nitrate (mg/l)	Chloride (mg/l)
6/27/2007	26.1	770
8/15/2007	29	791
10/10/2007	24.7	692
3/26/2008	24.4	740
6/25/2008	45.3	834
9/10/2008	38.4	1180
10/15/2008	44.6	1130
3/4/2009	30.5	1010
6/24/2009	30.4	759
9/15/2009	30.7	618
12/17/2009	28.3	1080
2/25/2010	33.1	896
6/9/2010	30	639
8/11/2010	32	556
8/24/2010	31	587
10/6/2010	31	522
2/17/2011	31	1100
5/26/2011	35	1110
8/17/2011	34	967
11/16/2011	35	608
1/18/2012	37	373
6/6/2012	37	355
8/30/2012	37	489
10/3/2012	38	405
2/11/2013	35.9	1260
6/5/2013	23.7	916
9/3/2013	32.6	998
10/29/2013	34.6	1030
1/27/2014	31.6	809
5/19/2014	35	1020
8/11/2014	31.5	1150
10/21/2014	35.7	1050

TW4-25

Date	Nitrate (mg/l)	Chloride (mg/l)
6/27/2007	17.1	395
8/15/2007	16.7	382
10/10/2007	17	356
3/26/2008	18.7	374
6/25/2008	22.1	344
9/10/2008	18.8	333
10/15/2008	21.3	366
3/4/2009	15.3	332
6/24/2009	15.3	328
9/15/2009	3.3	328
12/16/2009	14.2	371
2/23/2010	14.4	296
6/8/2010	16	306
8/10/2010	14	250
10/5/2010	15	312
2/16/2011	15	315
5/25/2011	16	321
8/16/2011	16	276
11/15/2011	16	294
1/18/2012	16	304
5/31/2012	16	287
9/11/2012	17	334
10/3/2012	17	338
2/11/2013	9.04	190
6/5/2013	5.24	136
9/3/2013	5.69	119
10/29/2013	6.10	88.6
1/27/2014	2.16	85.7
5/19/2014	1.21	51.1
8/11/2014	1.6	67
10/21/2014	1.03	58.1

MW-30

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
6/22/2005	12.4	6/22/2005	125
9/22/2005	12.8	9/22/2005	125
12/14/2005	13.6	12/14/2005	128
3/22/2006	13.8	3/22/2006	125
6/21/2006	14.5	6/21/2006	124
9/13/2006	14.1	9/13/2006	118
10/25/2006	14.6	10/25/2006	124
3/15/2007	14.4	3/15/2007	125
8/22/2007	14.6	8/22/2007	126
10/24/2007	14.9	10/24/2007	122
3/19/2008	14.8	3/19/2008	118
6/3/2008	18.7	6/3/2008	125
8/4/2008	17.3	8/4/2008	121
11/5/2008	15.6	11/5/2008	162
2/3/2009	15.3	2/3/2009	113
5/13/2009	15.1	5/13/2009	122
8/24/2009	20.9	8/24/2009	118
10/14/2009	15.0	10/14/2009	129
1/20/2010	15.4	1/20/2010	106
2/9/2010	16.1	2/9/2010	127
4/27/2010	15.8	4/27/2010	97
5/24/2010	17.0	9/14/2010	111
6/15/2010	15.3	11/9/2010	126
8/24/2010	16.0	2/1/2011	134
9/14/2010	15.0	4/11/2011	134
10/19/2010	15.0	5/10/2011	128
11/9/2010	15.0	6/20/2011	127
12/14/2010	16.0	7/5/2011	127
1/10/2011	15.0	8/3/2011	126
2/1/2011	16.0	9/7/2011	145
3/14/2011	17.0	10/4/2011	129
4/11/2011	16.0	11/8/2011	122
5/10/2011	16.0	12/12/2011	124
6/20/2011	17.0	1/24/2012	124
7/5/2011	17.0	2/14/2012	126
8/3/2011	14.0	3/14/2012	128
9/7/2011	16.0	4/10/2012	128
10/4/2011	16.0	5/2/2012	124
11/8/2011	16.0	6/18/2012	131
12/12/2011	16.0	7/10/2012	128
1/24/2012	17.0	8/7/2012	139
2/14/2012	17.0	9/19/2012	130
3/14/2012	18.0	10/23/2012	135
4/10/2012	17.0	11/13/2012	114
5/2/2012	16.0	12/26/2012	122

MW-30

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
6/18/2012	15.0	1/23/2013	128
7/10/2012	17.0	2/26/2013	129
8/7/2012	18.0	3/20/2013	126
9/19/2012	16.0	4/17/2013	117
10/23/2012	16.2	5/15/2013	119
11/13/2012	18.5	6/25/2013	127
12/26/2012	17.2	7/10/2013	130
1/23/2013	19.2	8/20/2013	126
2/26/2013	21.4	9/18/2013	131
3/20/2013	14.3	10/22/2013	128
4/17/2013	16.8	11/20/2013	124
5/15/2013	18.8	12/18/2013	134
6/25/2013	16.1	1/8/2014	131
7/10/2013	17.6	2/25/2014	135
8/20/2013	16.4	3/11/2014	144
9/18/2013	16.9	4/23/2014	154
10/22/2013	19.7	5/14/2014	128
11/20/2013	19.5	6/3/2014	128
12/18/2013	20.7	7/29/2014	140
1/8/2014	20.3	8/20/2014	139
2/25/2014	18.4	9/9/2014	136
3/11/2014	21.3	10/7/2014	136
4/23/2014	18.3	11/10/2014	154
5/14/2014	17.9	12/10/2014	138
6/3/2014	19.4		
7/29/2014	15.6		
8/20/2014	13.8		
9/9/2014	16.8		
10/7/2014	11.0		
11/10/2014	16.2		
12/10/2014	17.1		

Under the groundwater sampling program, accelerated monitoring for nitrate began in MW-30 prior to when the accelerated monitoring for chloride began. This difference accounts for the different number of data points represented above.

MW-31

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
6/22/2005	24.2	6/22/2005	139
9/22/2005	22.4	9/22/2005	136
12/14/2005	23.8	12/14/2005	135
3/22/2006	24.1	3/22/2006	133
6/21/2006	25.3	6/21/2006	138
9/13/2006	24.6	9/13/2006	131
10/25/2006	25.1	10/25/2006	127
3/15/2007	23.2	3/15/2007	132
3/15/2007	22.0	3/15/2007	132
8/27/2007	23.3	8/27/2007	136
10/24/2007	24.6	10/24/2007	122
3/19/2008	25.0	3/19/2008	124
6/3/2008	29.3	6/3/2008	128
8/4/2008	28.7	8/4/2008	124
11/11/2008	29.9	11/11/2008	119
2/3/2009	23.4	2/3/2009	115
5/13/2009	22.4	5/13/2009	124
8/24/2009	15.4	8/24/2009	122
10/14/2009	22.6	10/14/2009	138
2/9/2010	21.7	2/9/2010	128
4/20/2010	22.5	4/20/2010	128
5/21/2010	23.0	9/13/2010	139
6/15/2010	21.1	11/9/2010	138
8/24/2010	22.0	2/1/2011	145
9/13/2010	21.0	4/1/2011	143
10/19/2010	20.0	5/10/2011	143
11/9/2010	20.0	6/20/2011	145
12/14/2010	20.0	7/5/2011	148
1/10/2011	19.0	8/2/2011	148
2/1/2011	21.0	9/6/2011	148
3/14/2011	22.0	10/3/2011	145
4/1/2011	21.0	11/8/2011	145
5/10/2011	20.0	12/12/2011	148
6/20/2011	22.0	1/24/2012	155
7/5/2011	22.0	2/13/2012	150
8/2/2011	20.0	3/13/2012	152
9/6/2011	21.0	4/9/2012	160
10/3/2011	21.0	5/2/2012	151
11/8/2011	21.0	6/18/2012	138
12/12/2011	21.0	7/9/2012	161
1/24/2012	21.0	8/6/2012	175
2/13/2012	21.0	9/18/2012	172
3/13/2012	22.0	10/22/2012	157
4/9/2012	21.0	11/6/2012	189
5/2/2012	20.0	12/18/2012	170

MW-31

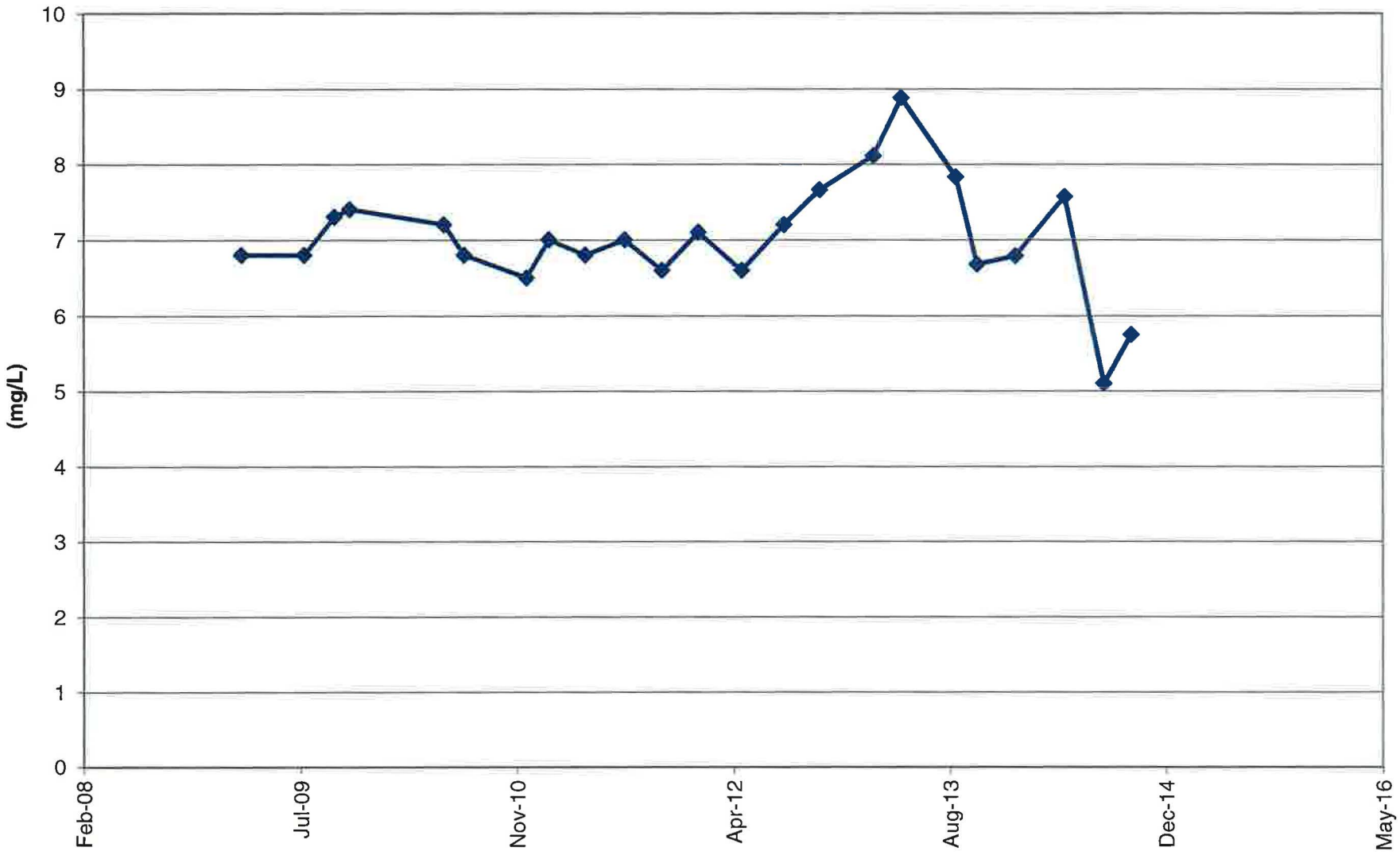
Date	Nitrate (mg/l)	Date	Chloride (mg/l)
6/18/2012	21.6	1/22/2013	176
7/9/2012	21.0	2/19/2013	174
8/6/2012	21.0	3/19/2013	168
9/18/2012	21.0	4/16/2013	171
10/22/2012	18.0	5/13/2013	169
11/6/2012	23.6	6/24/2013	179
12/18/2012	22.2	7/9/2013	182
1/22/2013	22.8	8/19/2013	183
2/19/2013	19.3	9/17/2013	193
3/19/2013	19.1	10/23/2013	188
4/16/2013	18.8	11/18/2013	174
5/13/2013	23.8	12/17/2013	203
6/24/2013	20.0	1/7/2014	194
7/9/2013	21.7	2/17/2014	197
8/19/2013	16.0	3/10/2014	230
9/17/2013	21.2	4/28/2014	230
10/23/2013	21.2	5/13/2014	200
11/18/2013	23.9	6/2/2014	173
12/17/2013	24.2	7/28/2014	200
1/7/2014	24.0	8/18/2014	210
2/17/2014	20.6	9/3/2014	210
3/10/2014	26.2	10/6/2014	205
4/28/2014	19.1	11/4/2014	204
5/13/2014	23.3	12/9/2014	215
6/2/2014	23.1		
7/28/2014	19.0		
8/18/2014	15.2		
9/3/2014	18.9		
10/6/2014	15.9		
11/4/2014	20.9		
12/9/2014	17.0		

Under the groundwater sampling progran, accelerated monitoring for nitrate began in MW-31 prior to when the accelerated monitoring for chloride began. This difference accounts for the different number of data points represented above.

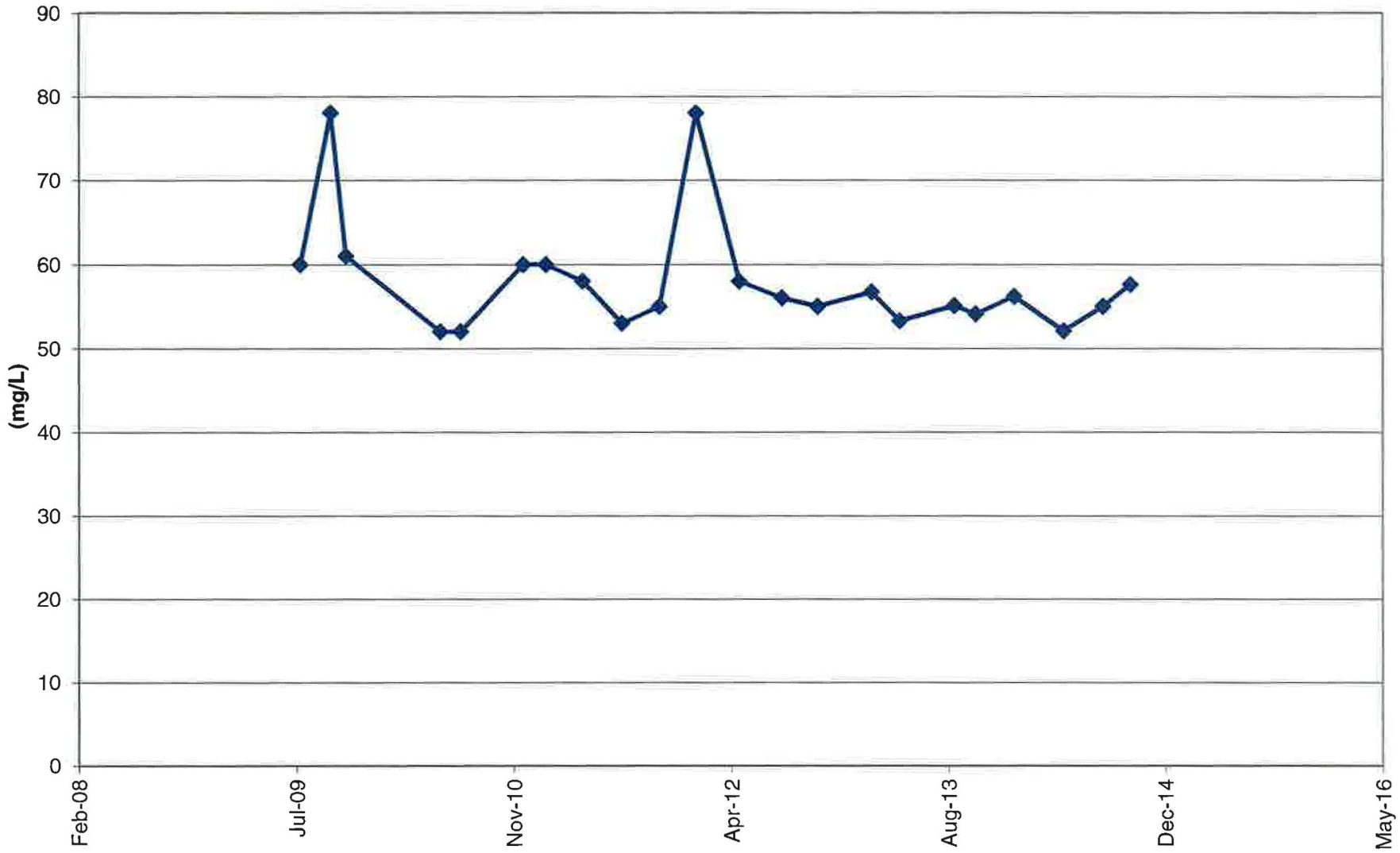
Tab K

Concentration Trend Graphs

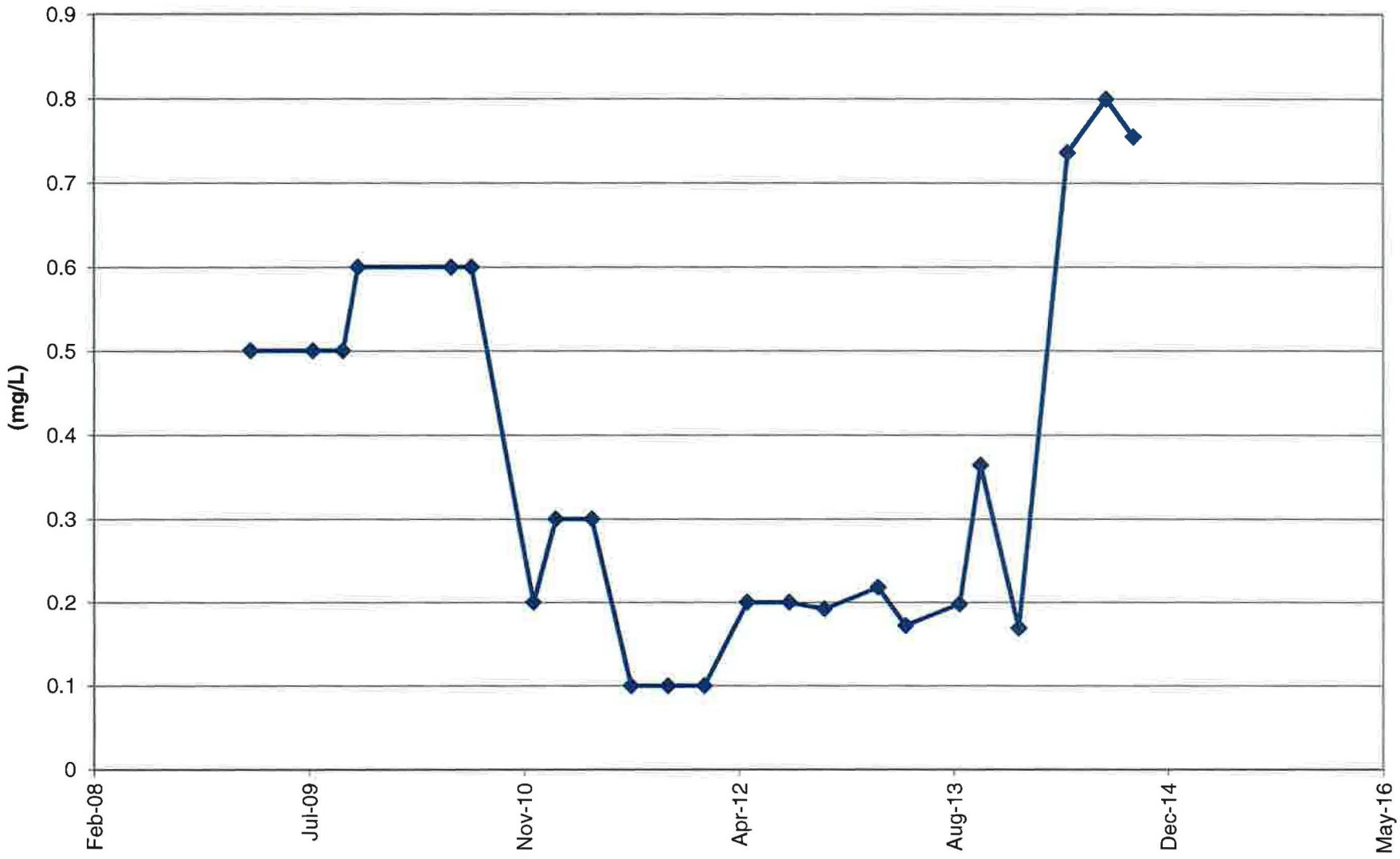
Piezometer 1 Nitrate Concentrations



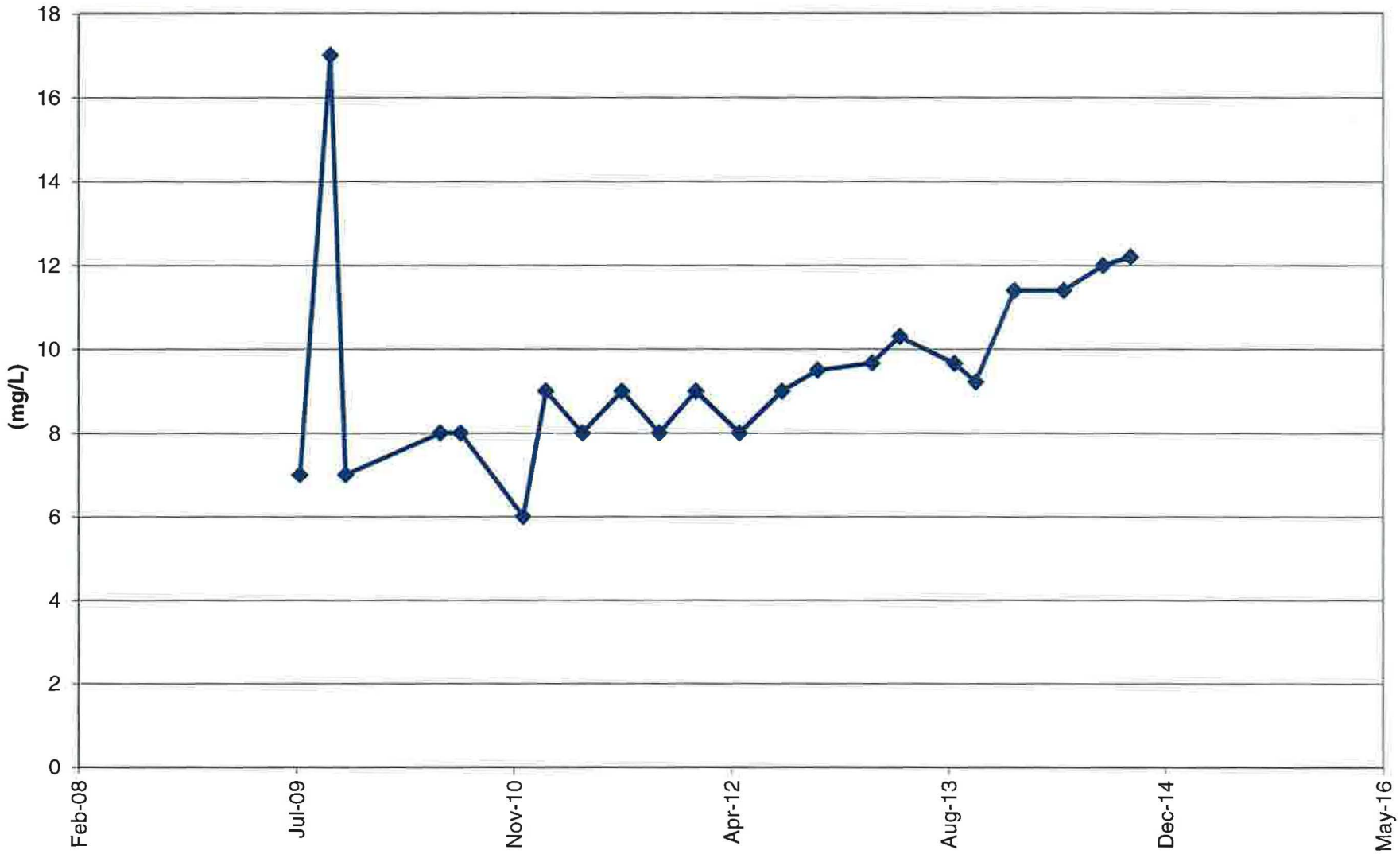
Piezometer 1 Chloride Concentrations



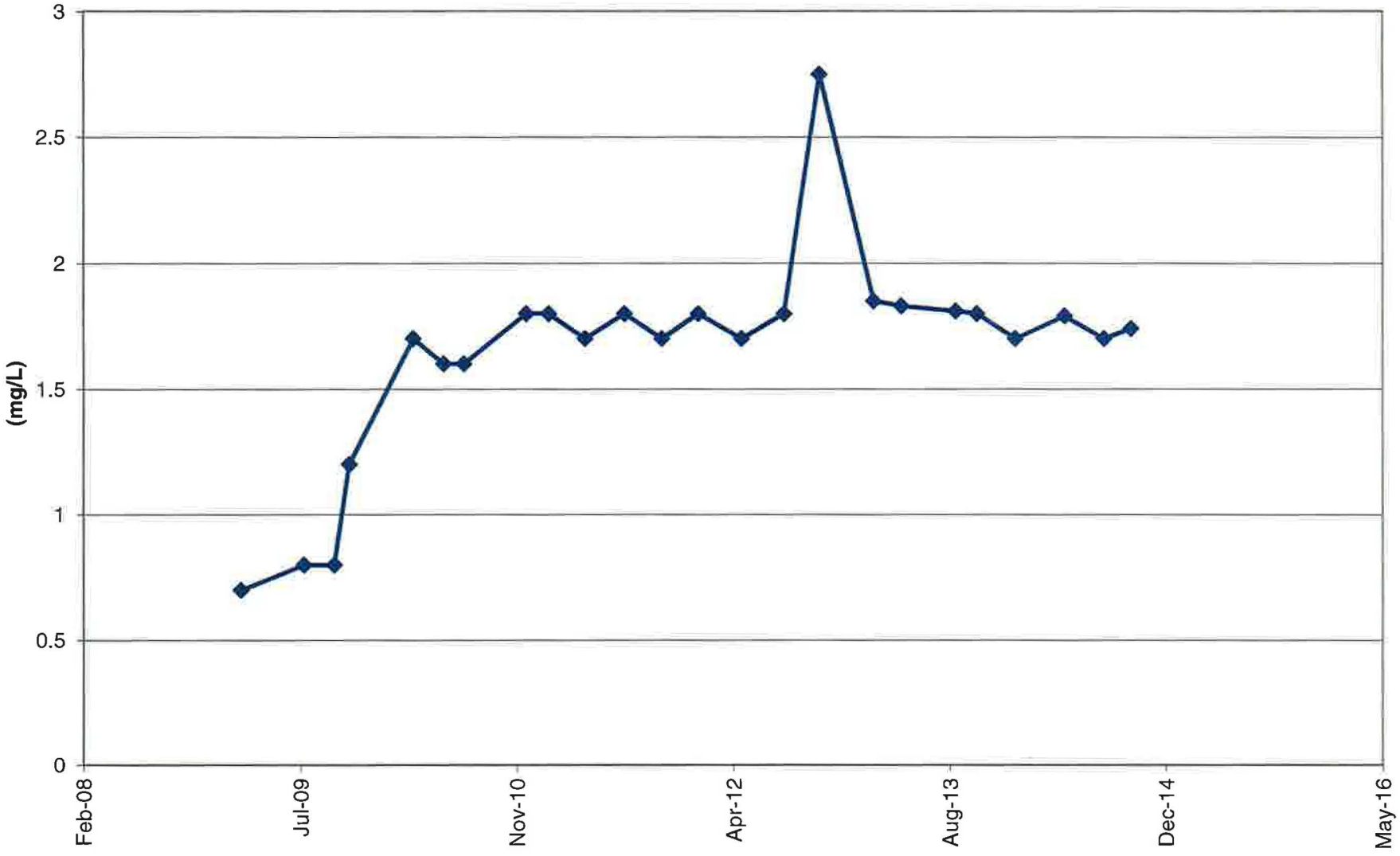
Piezometer 2 Nitrate Concentrations



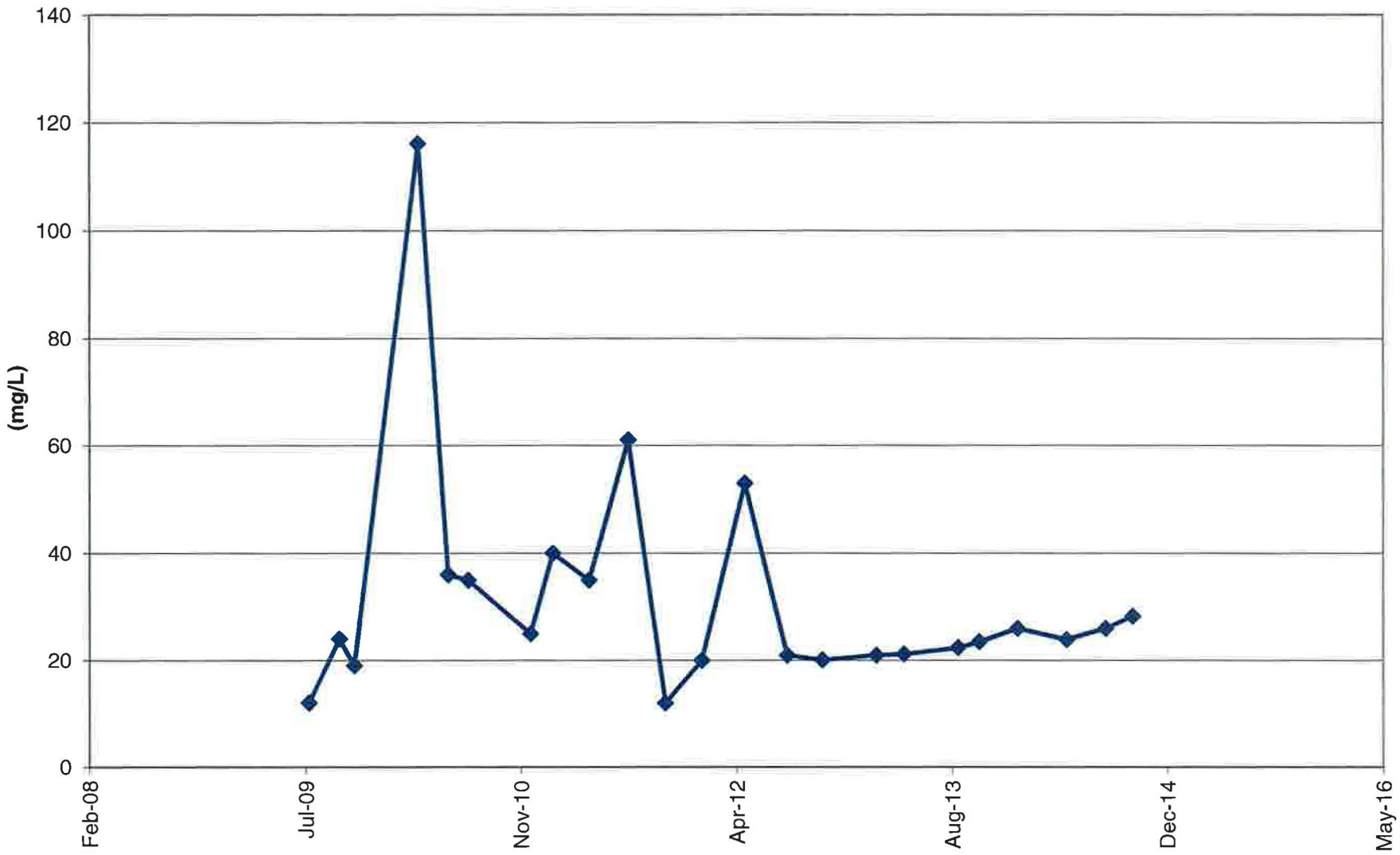
Piezometer 2 Chloride Concentrations

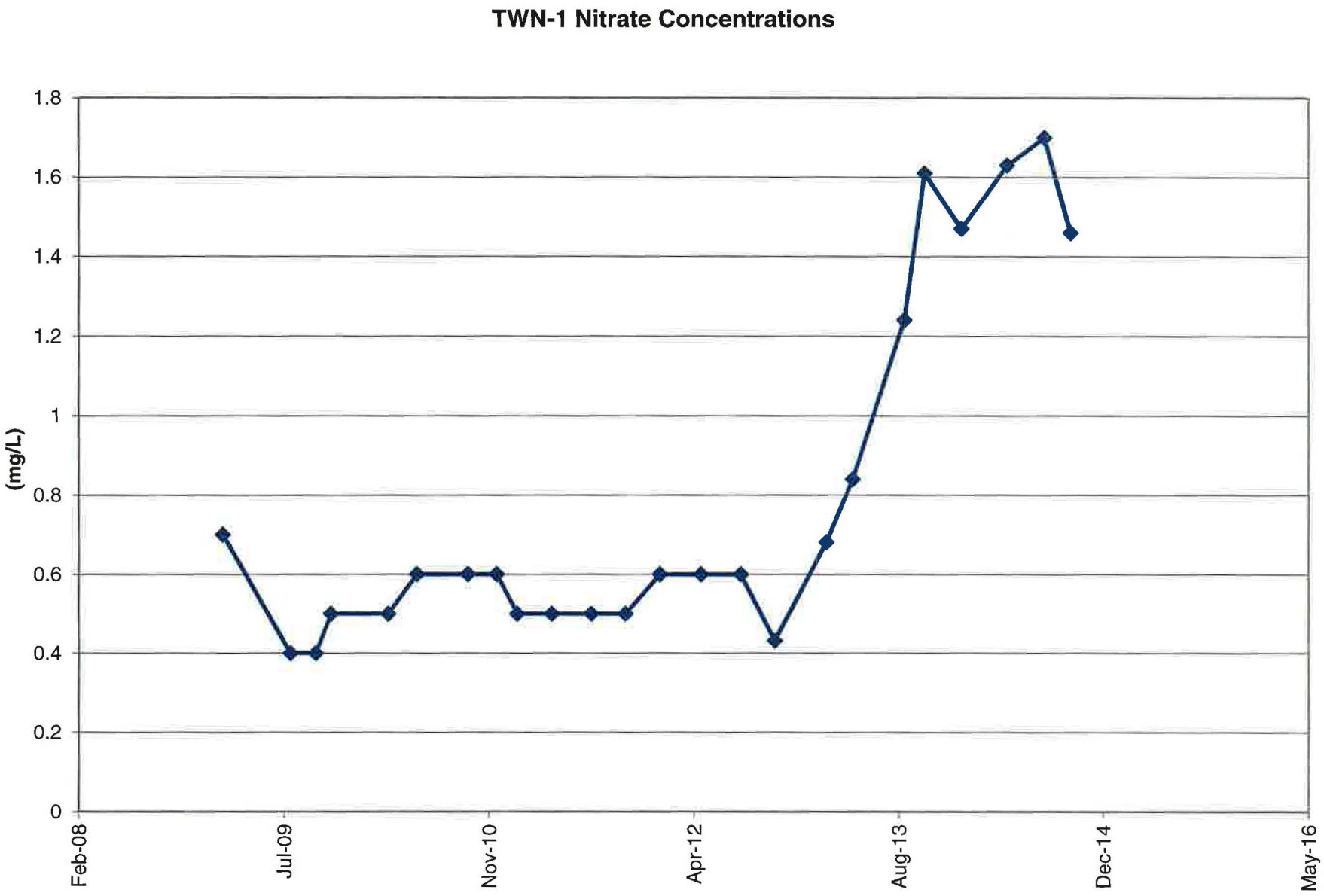


Piezometer 3 Nitrate Concentrations

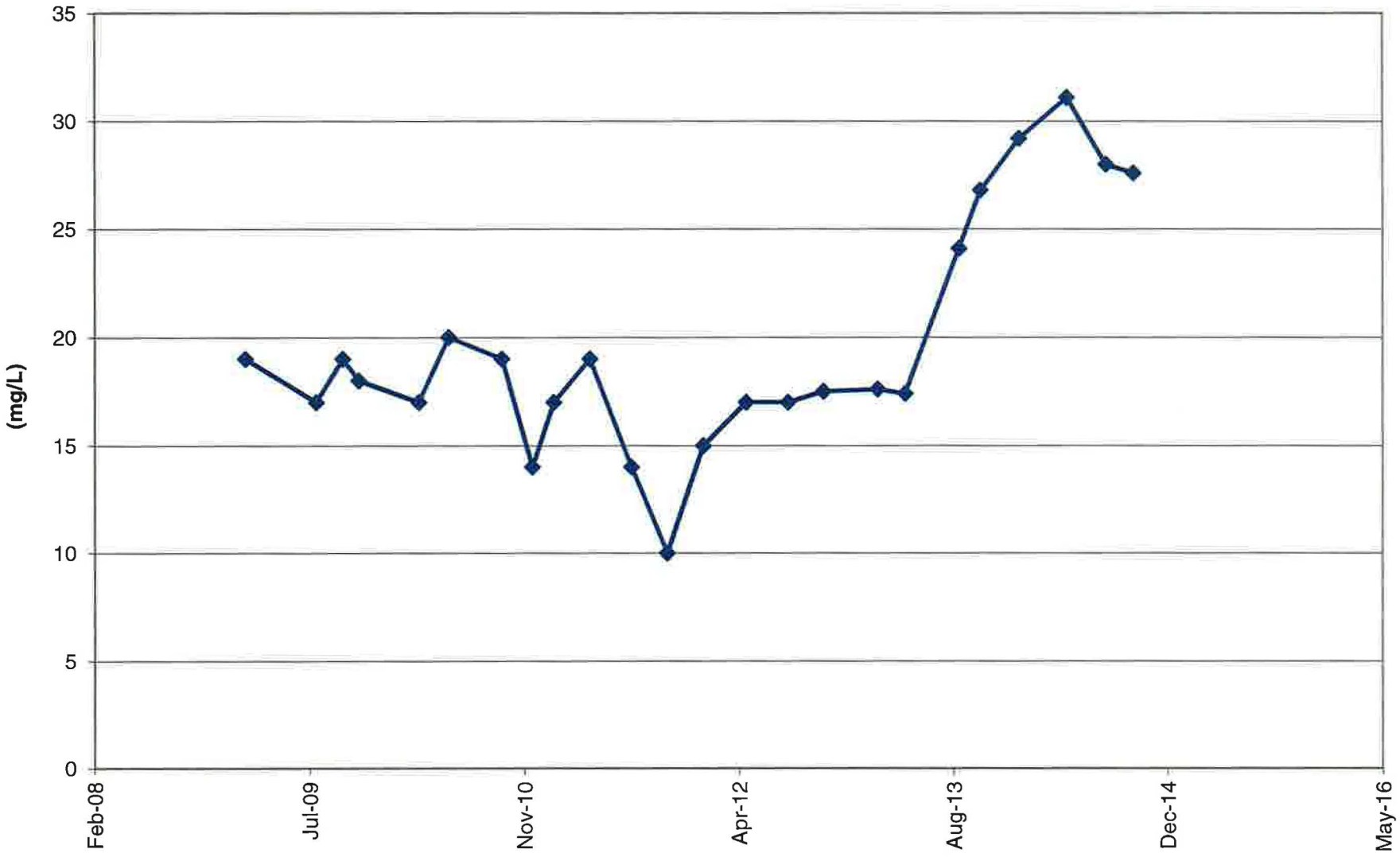


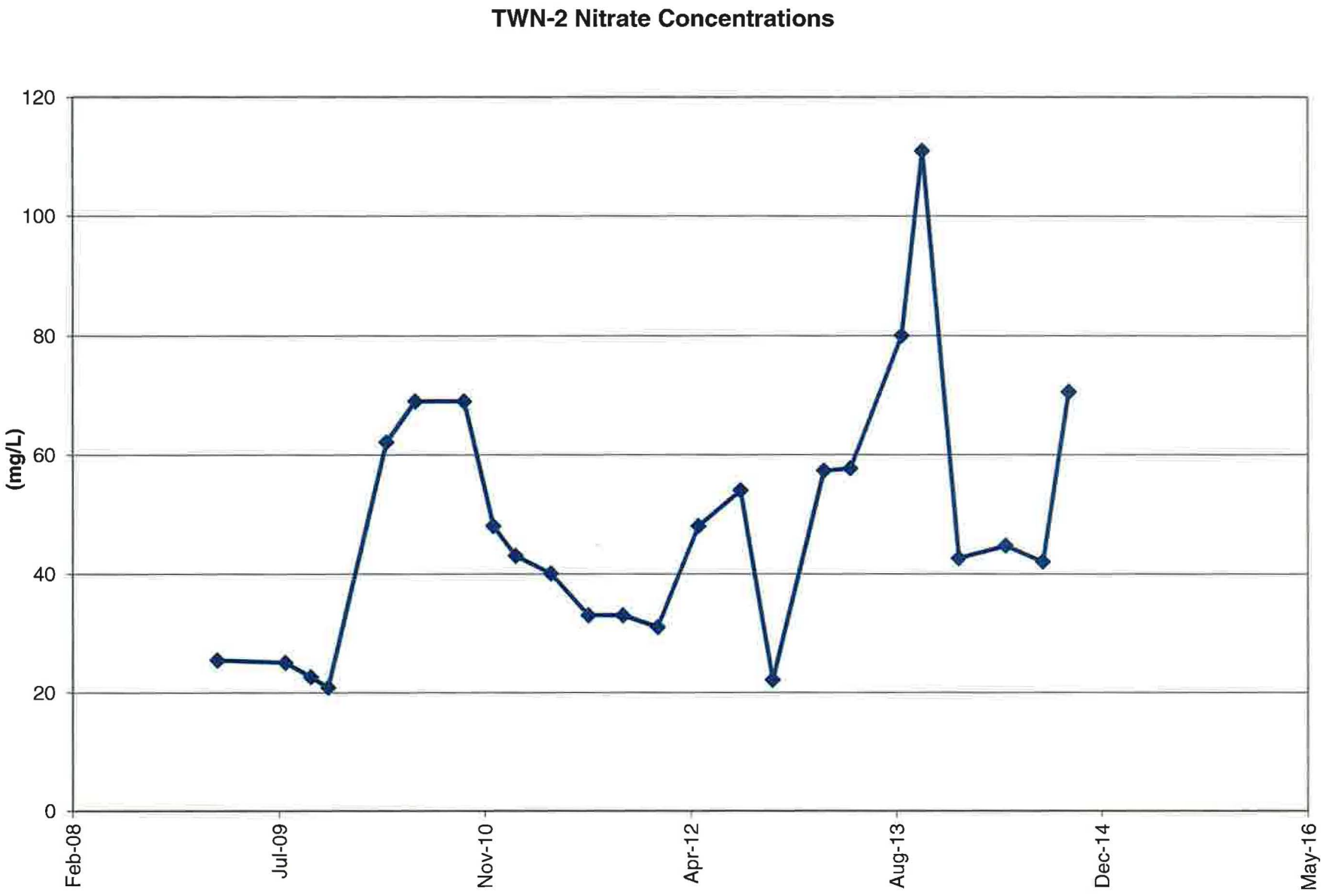
Piezometer 3 Chloride Concentrations

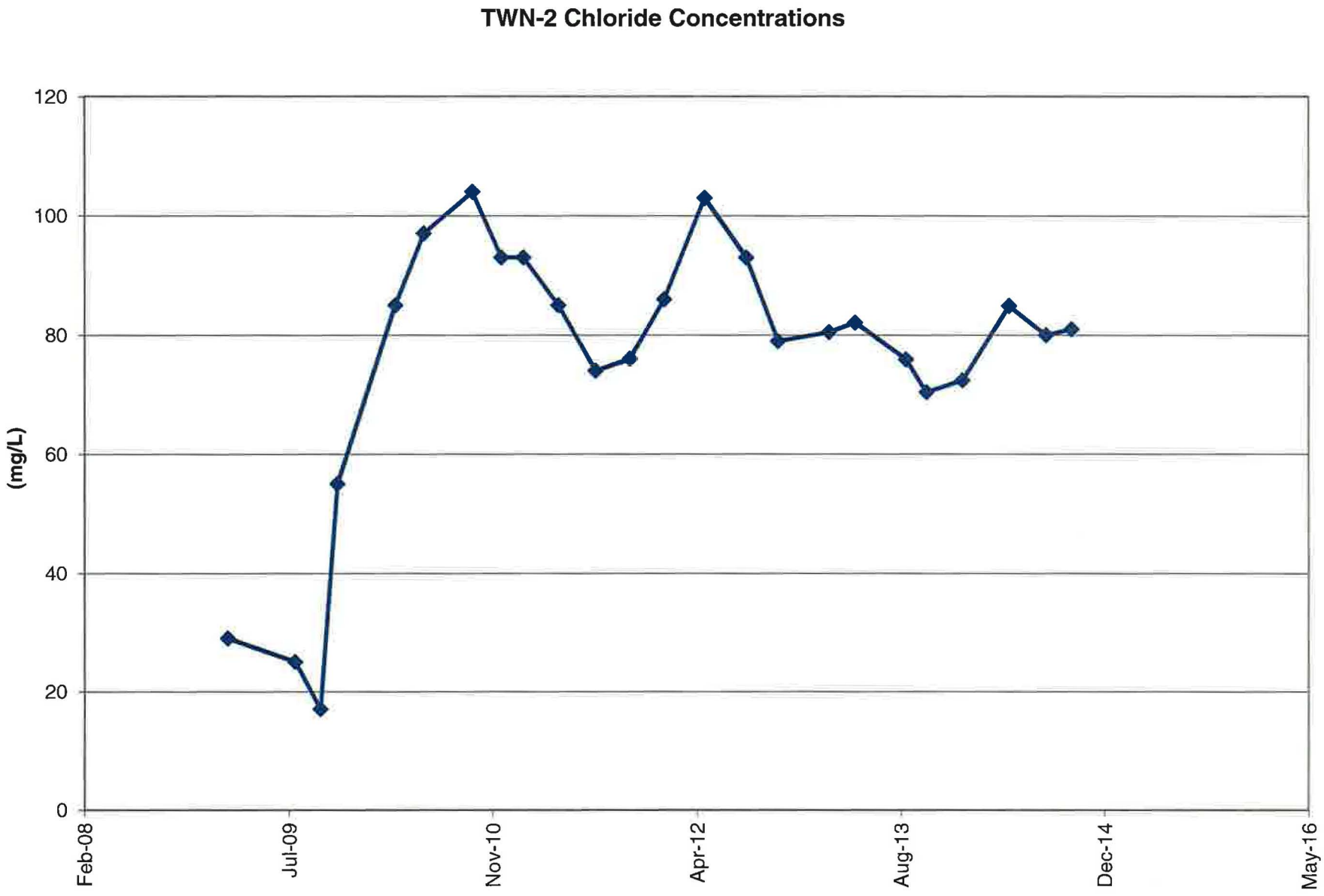



TWN-1 Nitrate Concentrations
(mg/L)
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Feb-08
Jul-09
Nov-10
Apr-12
Aug-13
Dec-14
May-16

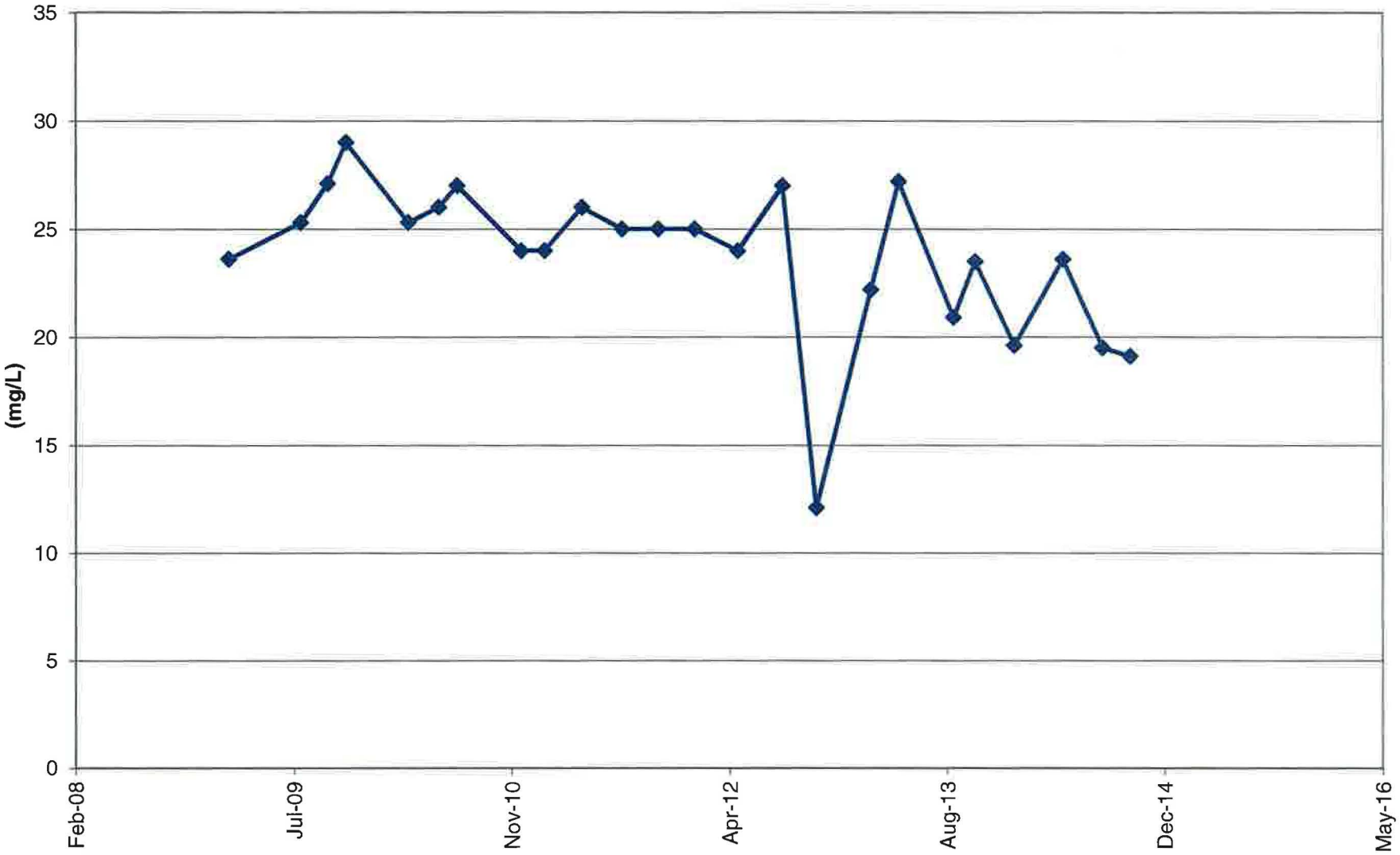
TWN-1 Chloride Concentrations



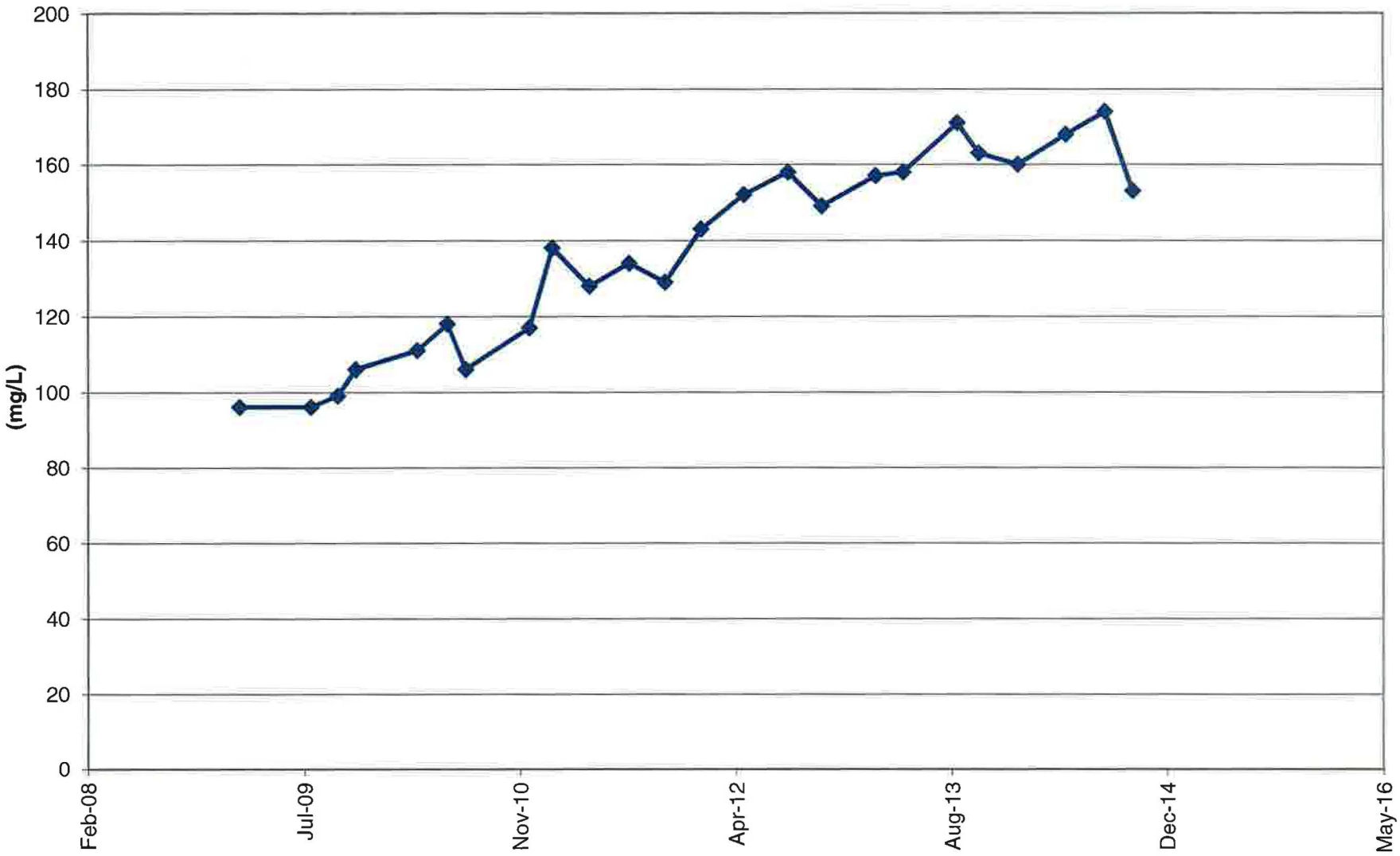

TWN-2 Nitrate Concentrations
(mg/L)
120
100
80
60
40
20
0
Feb-08
Jul-09
Nov-10
Apr-12
Aug-13
Dec-14
May-16

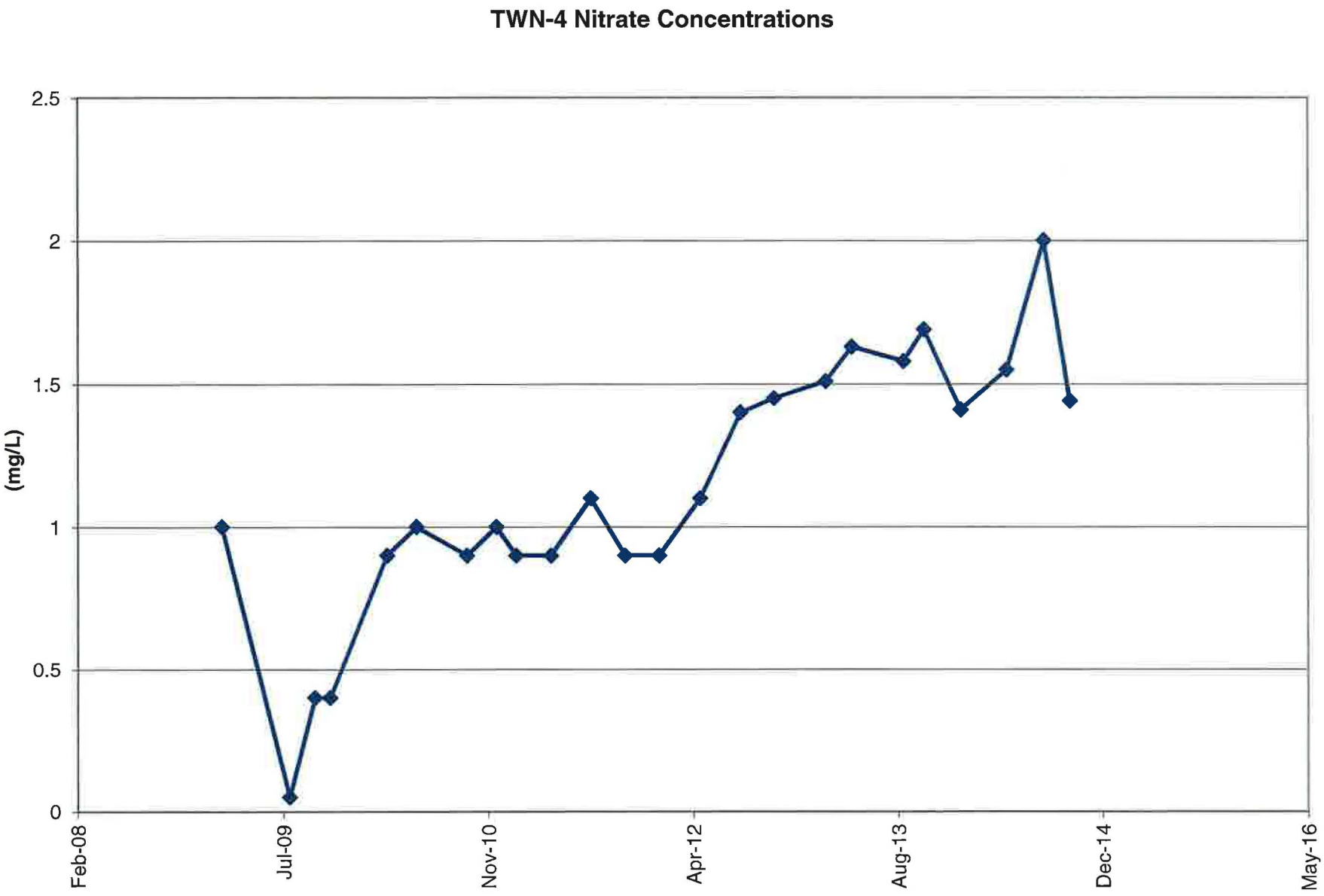

TWN-2 Chloride Concentrations
(mg/L)
120
100
80
60
40
20
0
Feb-08
Jul-09
Nov-10
Apr-12
Aug-13
Dec-14
May-16

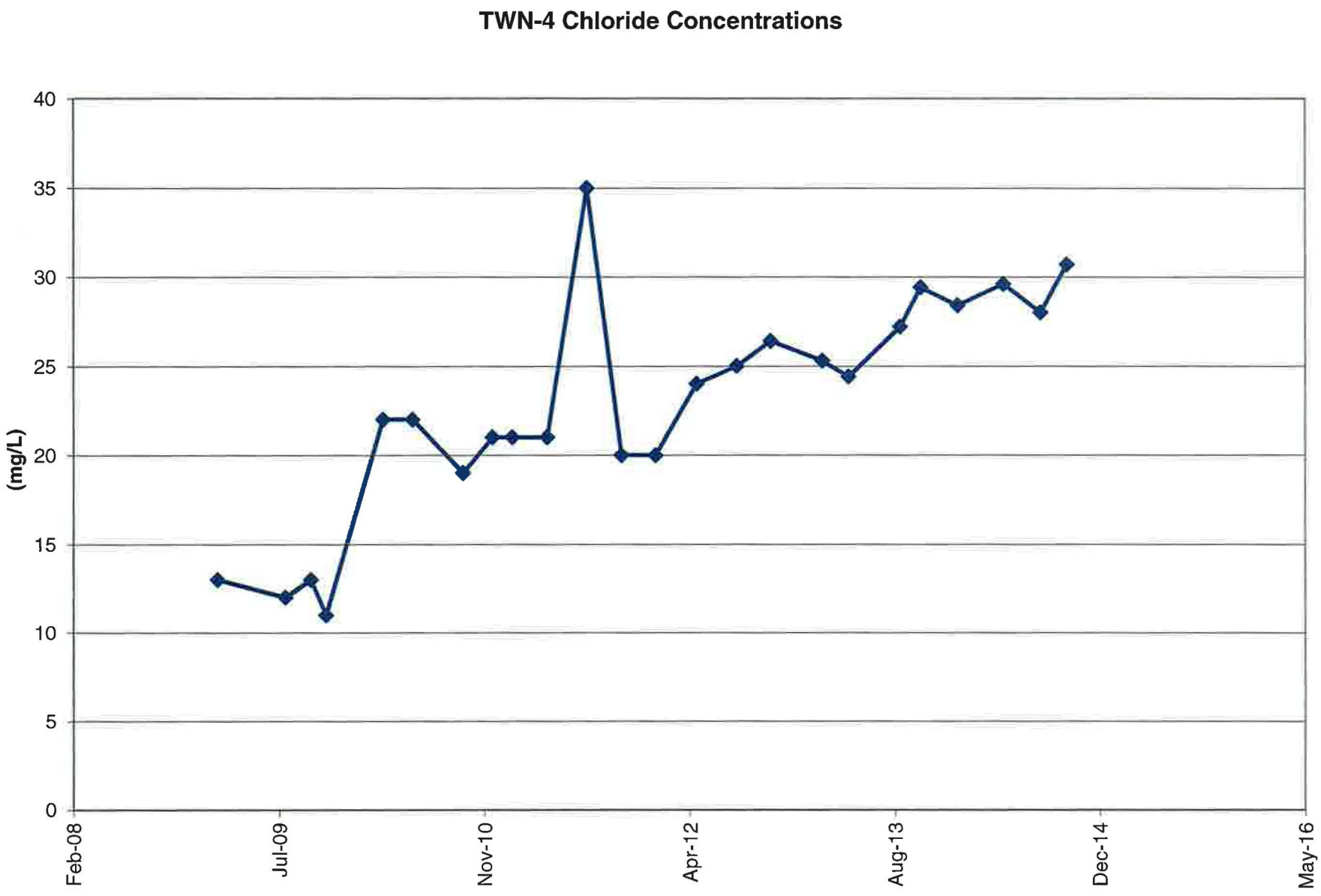
TWN-3 Nitrate Concentrations

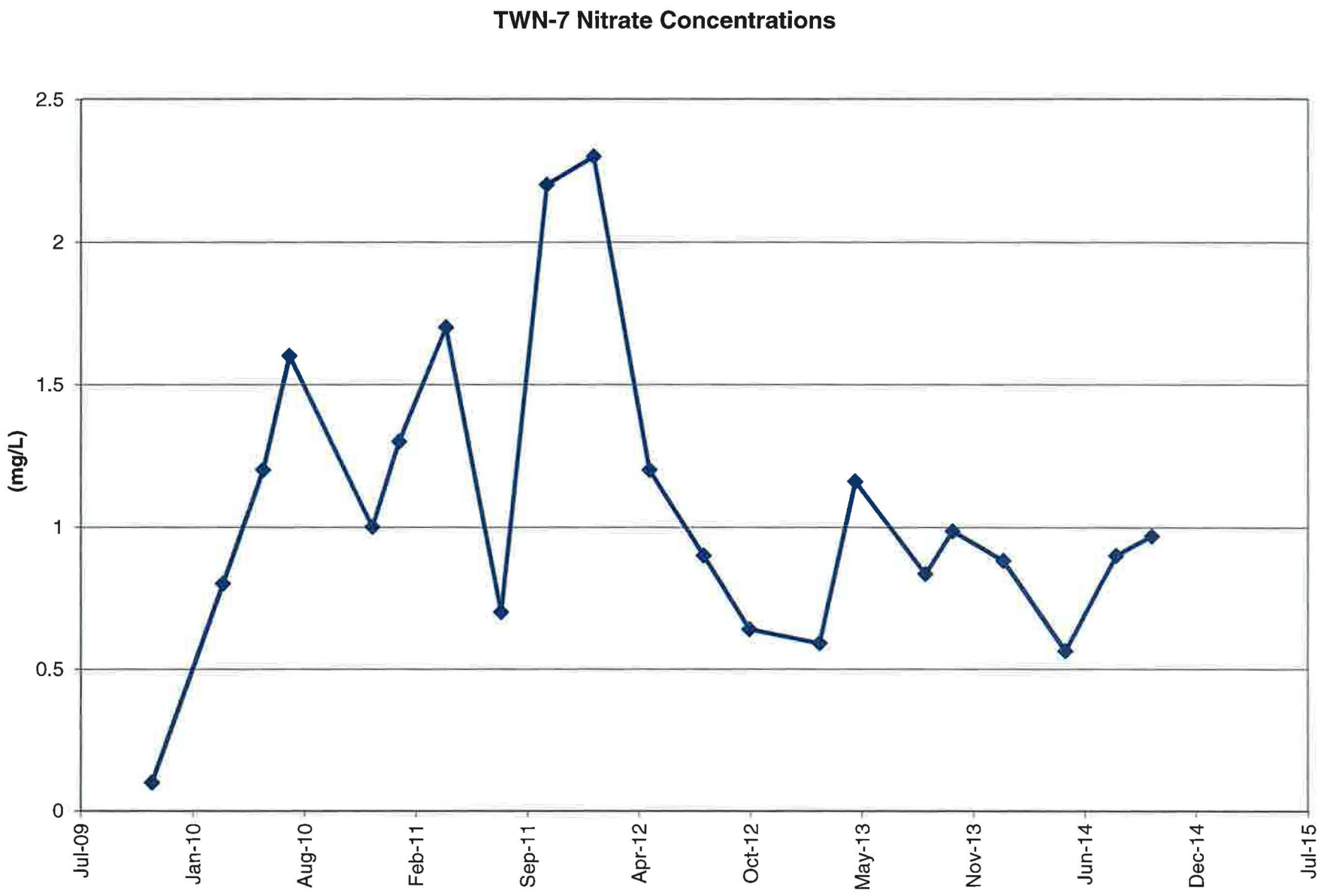


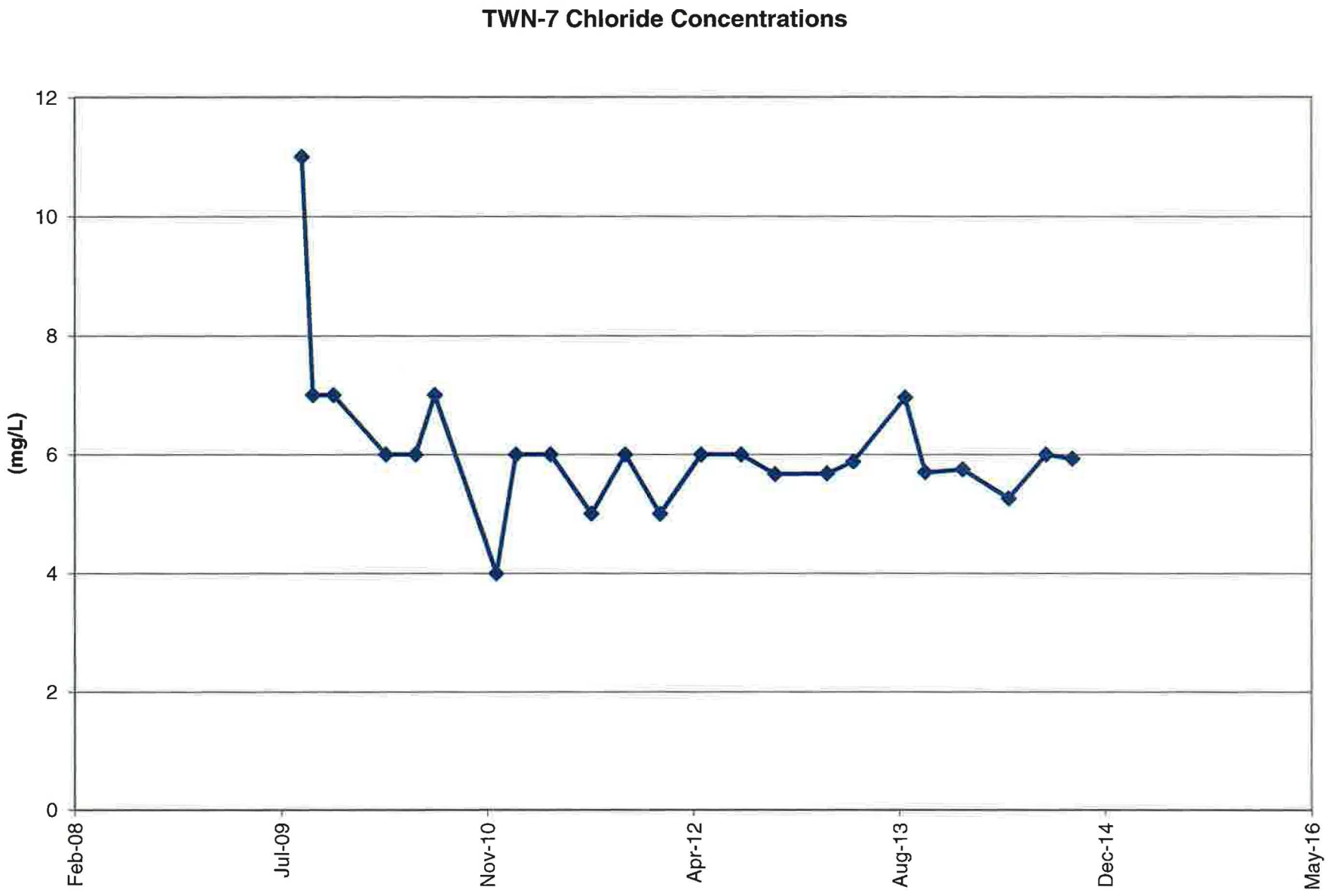
TWN-3 Chloride Concentrations

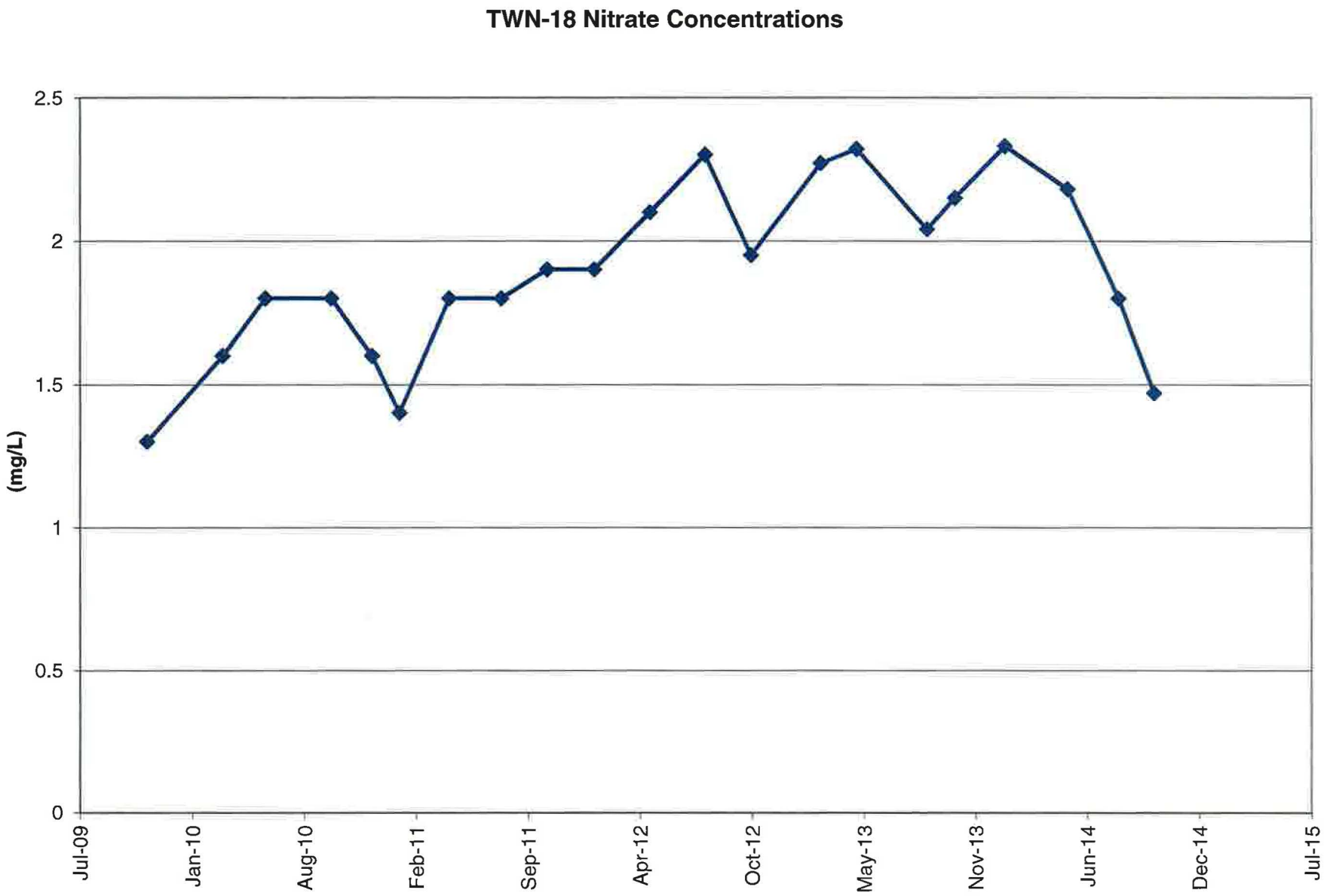


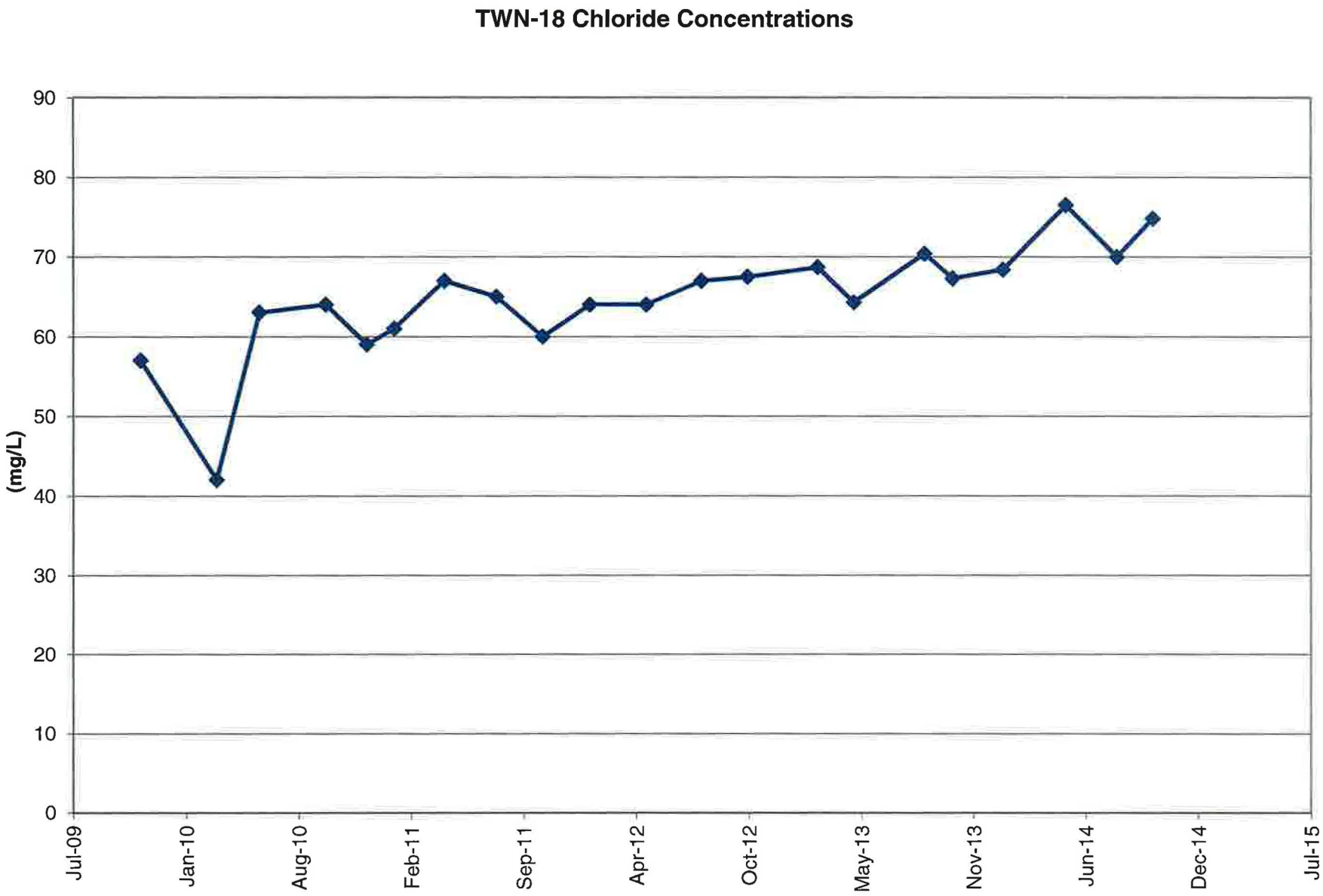

TWN-4 Nitrate Concentrations
(mg/L)
2.5
2
1.5
1
0.5
0
Feb-08
Jul-09
Nov-10
Apr-12
Aug-13
Dec-14
May-16

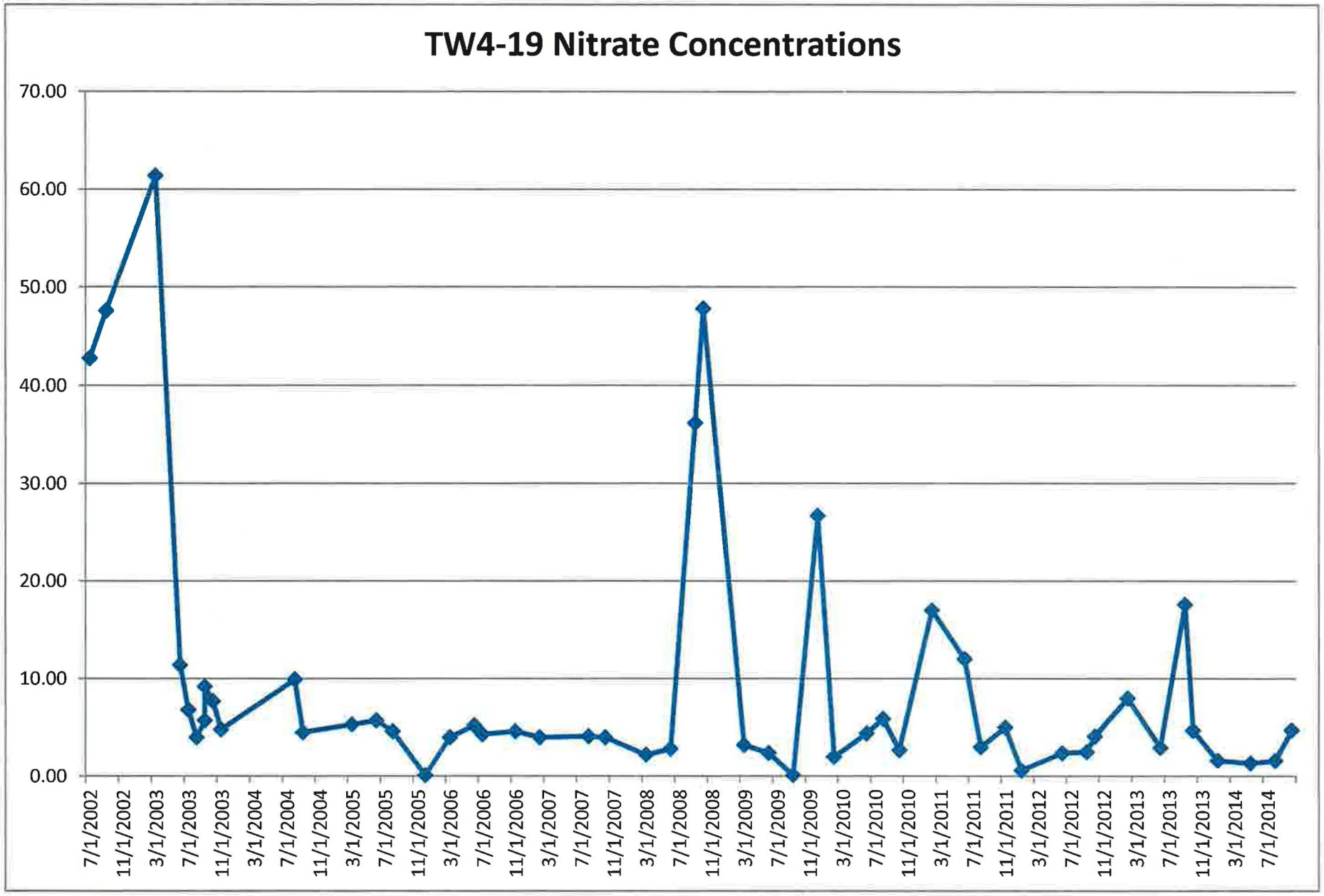

TWN-4 Chloride Concentrations
(mg/L)
40
35
30
25
20
15
10
5
0
Feb-08
Jul-09
Nov-10
Apr-12
Aug-13
Dec-14
May-16

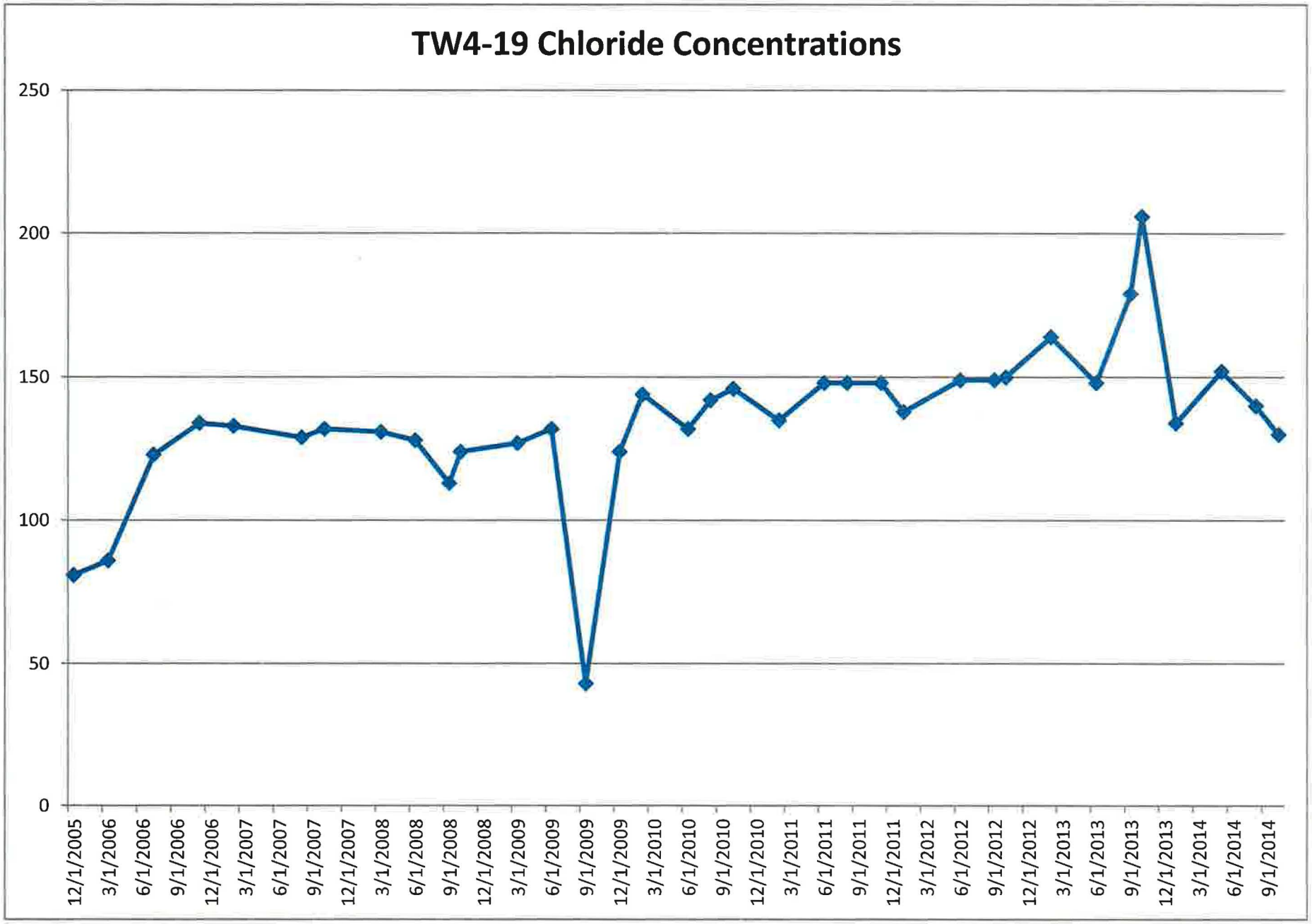

TWN-7 Nitrate Concentrations
(mg/L)
2.5
2
1.5
1
0.5
0
Jul-09
Jan-10
Aug-10
Feb-11
Sep-11
Apr-12
Oct-12
May-13
Nov-13
Jun-14
Dec-14
Jul-15

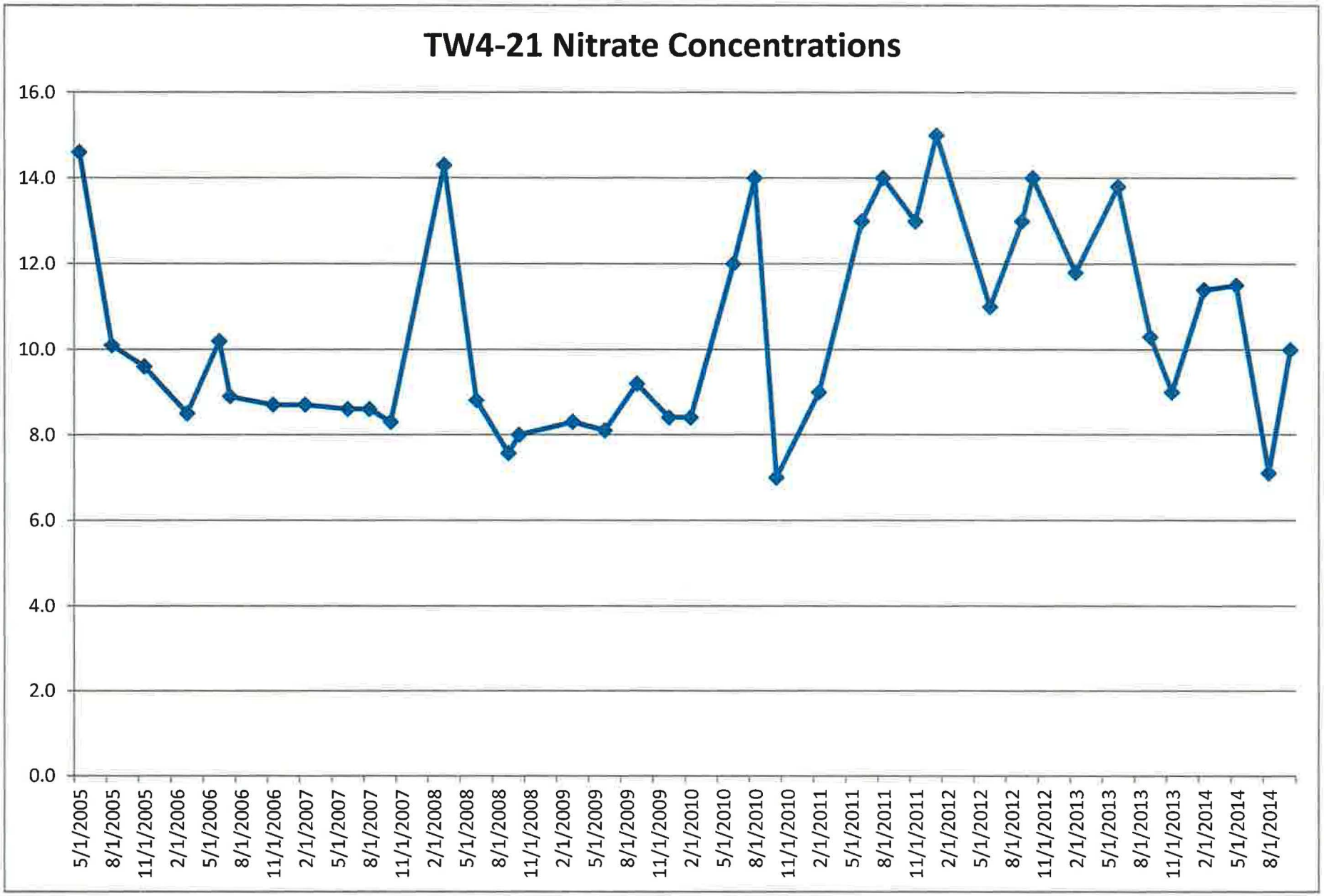

TWN-7 Chloride Concentrations
(mg/L)
12
10
8
6
4
2
0
Feb-08
Jul-09
Nov-10
Apr-12
Aug-13
Dec-14
May-16

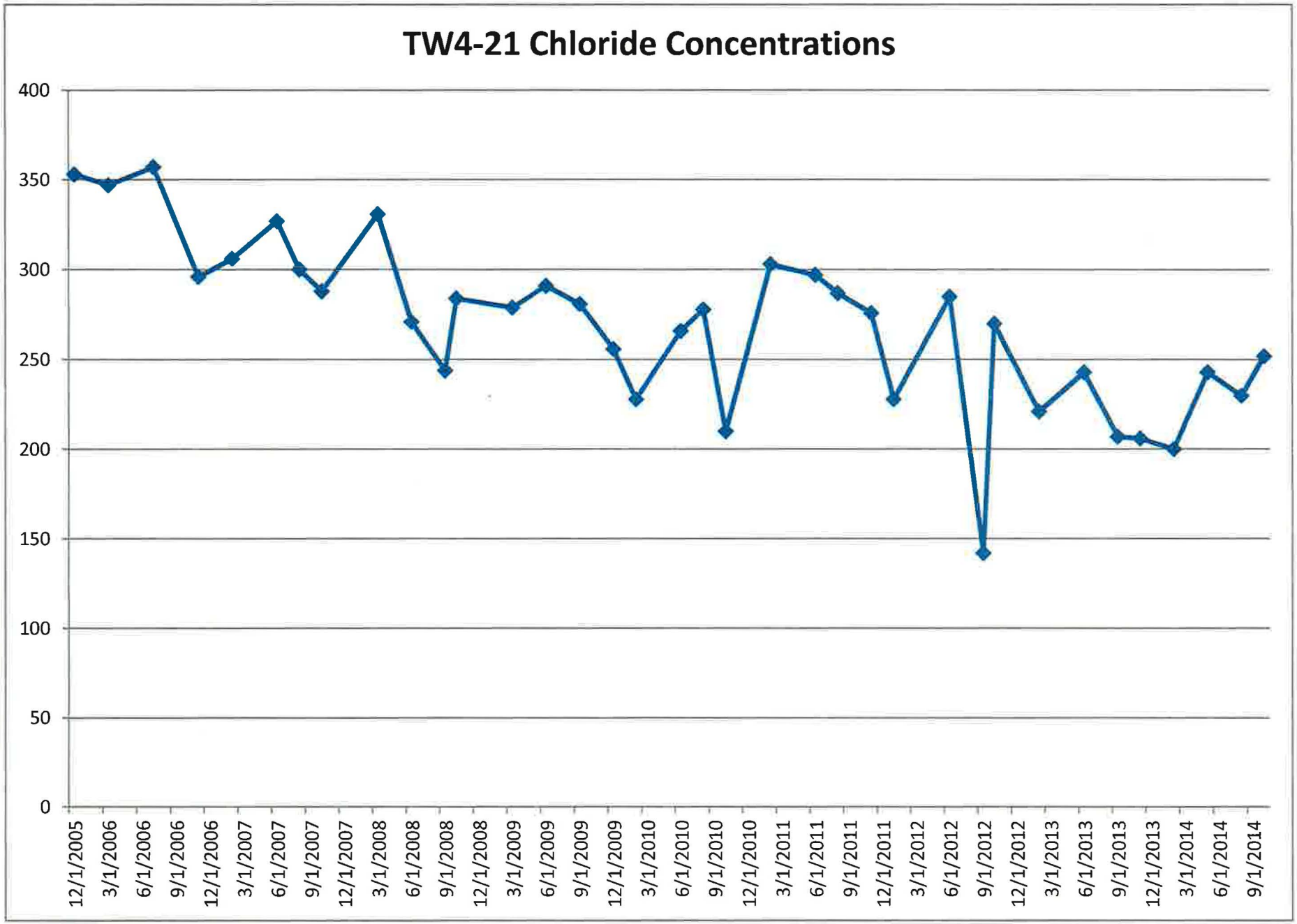

TWN-18 Nitrate Concentrations
(mg/L)
2.5
2
1.5
1
0.5
0
Jul-09
Jan-10
Aug-10
Feb-11
Sep-11
Apr-12
Oct-12
May-13
Nov-13
Jun-14
Dec-14
Jul-15


TWN-18 Chloride Concentrations
(mg/L)
90
80
70
60
50
40
30
20
10
0
Jul-09
Jan-10
Aug-10
Feb-11
Sep-11
Apr-12
Oct-12
May-13
Nov-13
Jun-14
Dec-14
Jul-15


TW4-19 Nitrate Concentrations
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
7/1/2002
11/1/2002
3/1/2003
7/1/2003
11/1/2003
3/1/2004
7/1/2004
11/1/2004
3/1/2005
7/1/2005
11/1/2005
3/1/2006
7/1/2006
11/1/2006
3/1/2007
7/1/2007
11/1/2007
3/1/2008
7/1/2008
11/1/2008
3/1/2009
7/1/2009
11/1/2009
3/1/2010
7/1/2010
11/1/2010
3/1/2011
7/1/2011
11/1/2011
3/1/2012
7/1/2012
11/1/2012
3/1/2013
7/1/2013
11/1/2013
3/1/2014
7/1/2014


TW4-19 Chloride Concentrations
250
200
150
100
50
0
12/1/2005
3/1/2006
6/1/2006
9/1/2006
12/1/2006
3/1/2007
6/1/2007
9/1/2007
12/1/2007
3/1/2008
6/1/2008
9/1/2008
12/1/2008
3/1/2009
6/1/2009
9/1/2009
12/1/2009
3/1/2010
6/1/2010
9/1/2010
12/1/2010
3/1/2011
6/1/2011
9/1/2011
12/1/2011
3/1/2012
6/1/2012
9/1/2012
12/1/2012
3/1/2013
6/1/2013
9/1/2013
12/1/2013
3/1/2014
6/1/2014
9/1/2014


TW4-21 Nitrate Concentrations
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
5/1/2005
8/1/2005
11/1/2005
2/1/2006
5/1/2006
8/1/2006
11/1/2006
2/1/2007
5/1/2007
8/1/2007
11/1/2007
2/1/2008
5/1/2008
8/1/2008
11/1/2008
2/1/2009
5/1/2009
8/1/2009
11/1/2009
2/1/2010
5/1/2010
8/1/2010
11/1/2010
2/1/2011
5/1/2011
8/1/2011
11/1/2011
2/1/2012
5/1/2012
8/1/2012
11/1/2012
2/1/2013
5/1/2013
8/1/2013
11/1/2013
2/1/2014
5/1/2014
8/1/2014


TW4-21 Chloride Concentrations
400
350
300
250
200
150
100
50
0
12/1/2005
3/1/2006
6/1/2006
9/1/2006
12/1/2006
3/1/2007
6/1/2007
9/1/2007
12/1/2007
3/1/2008
6/1/2008
9/1/2008
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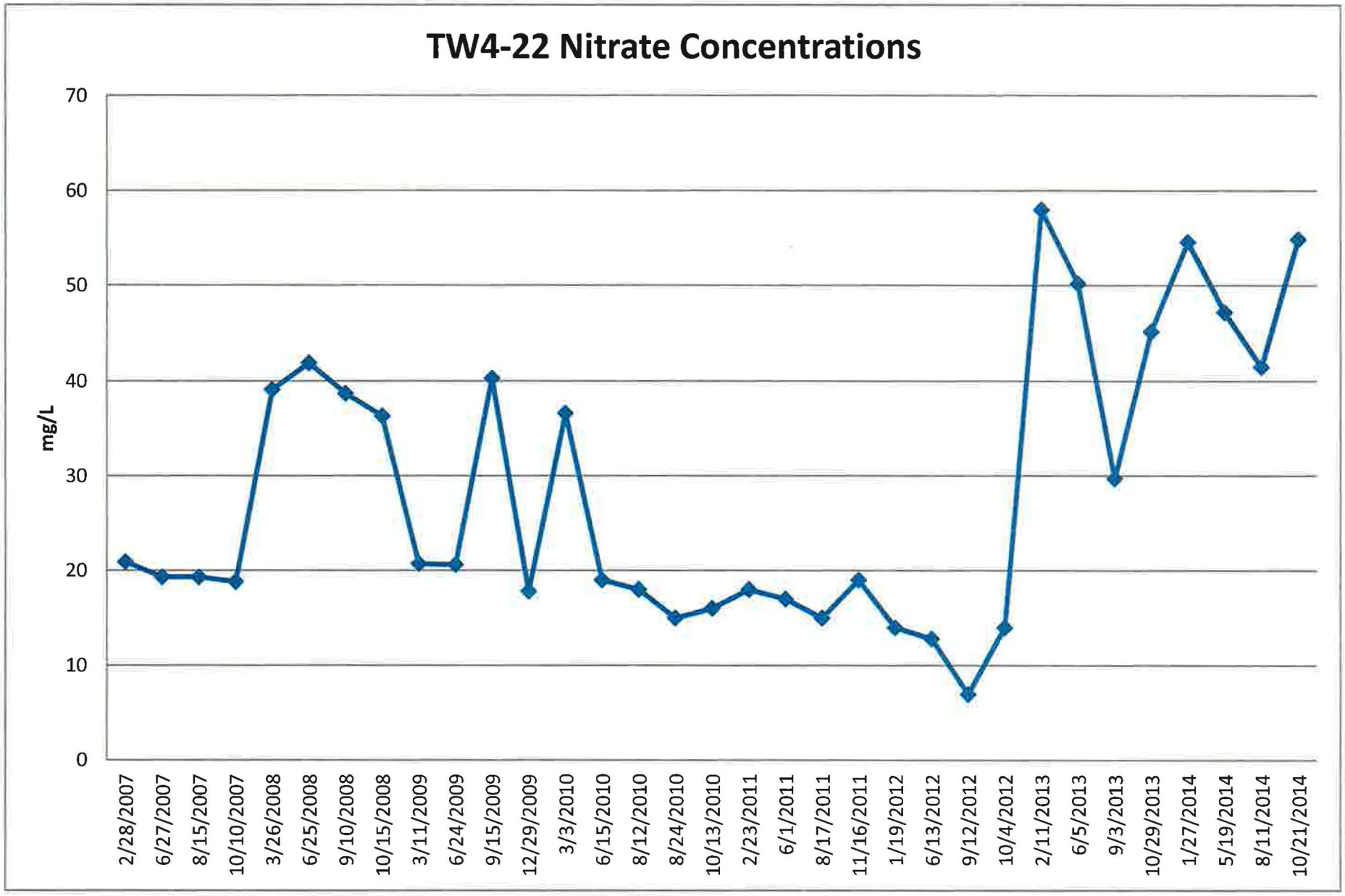
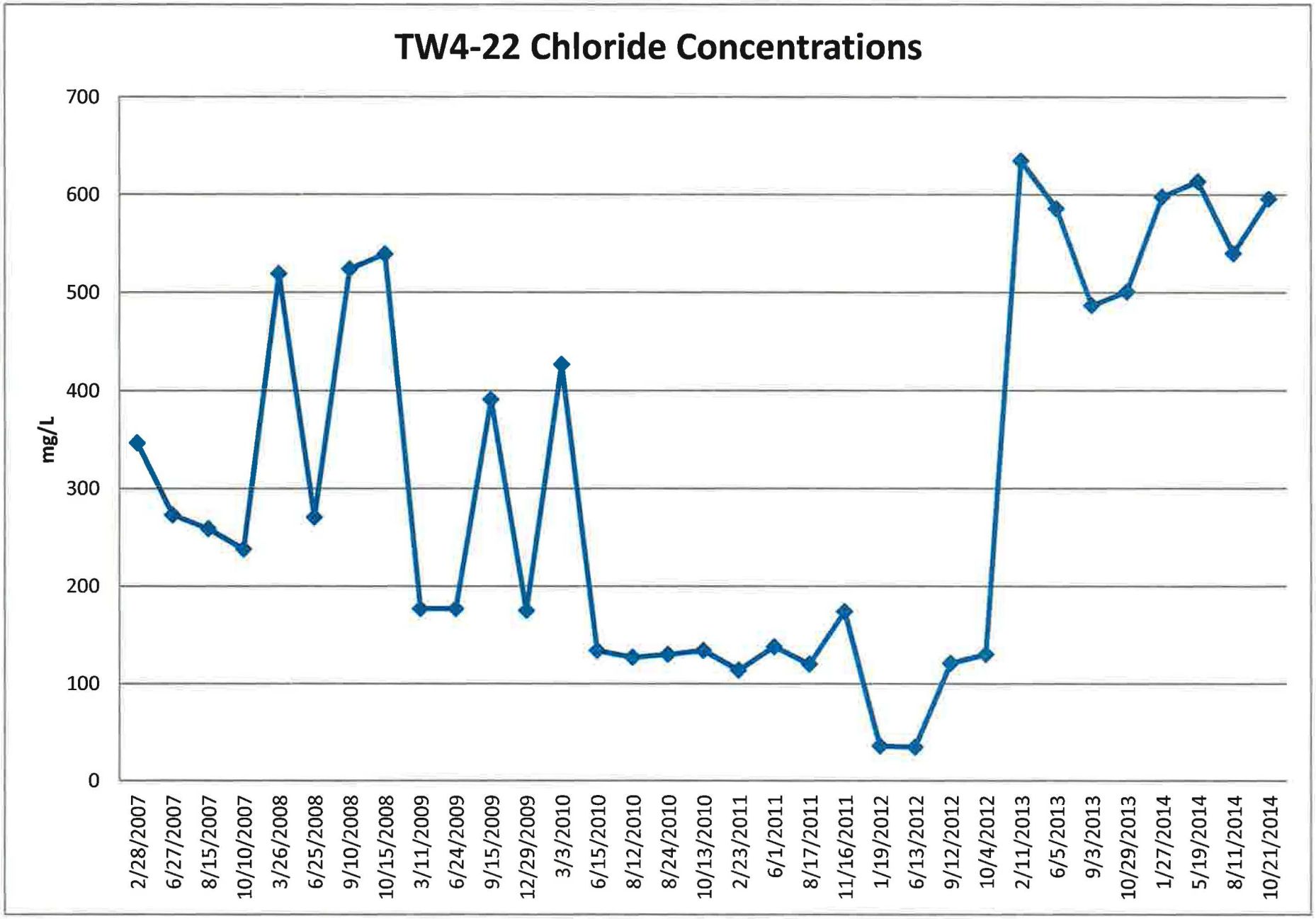
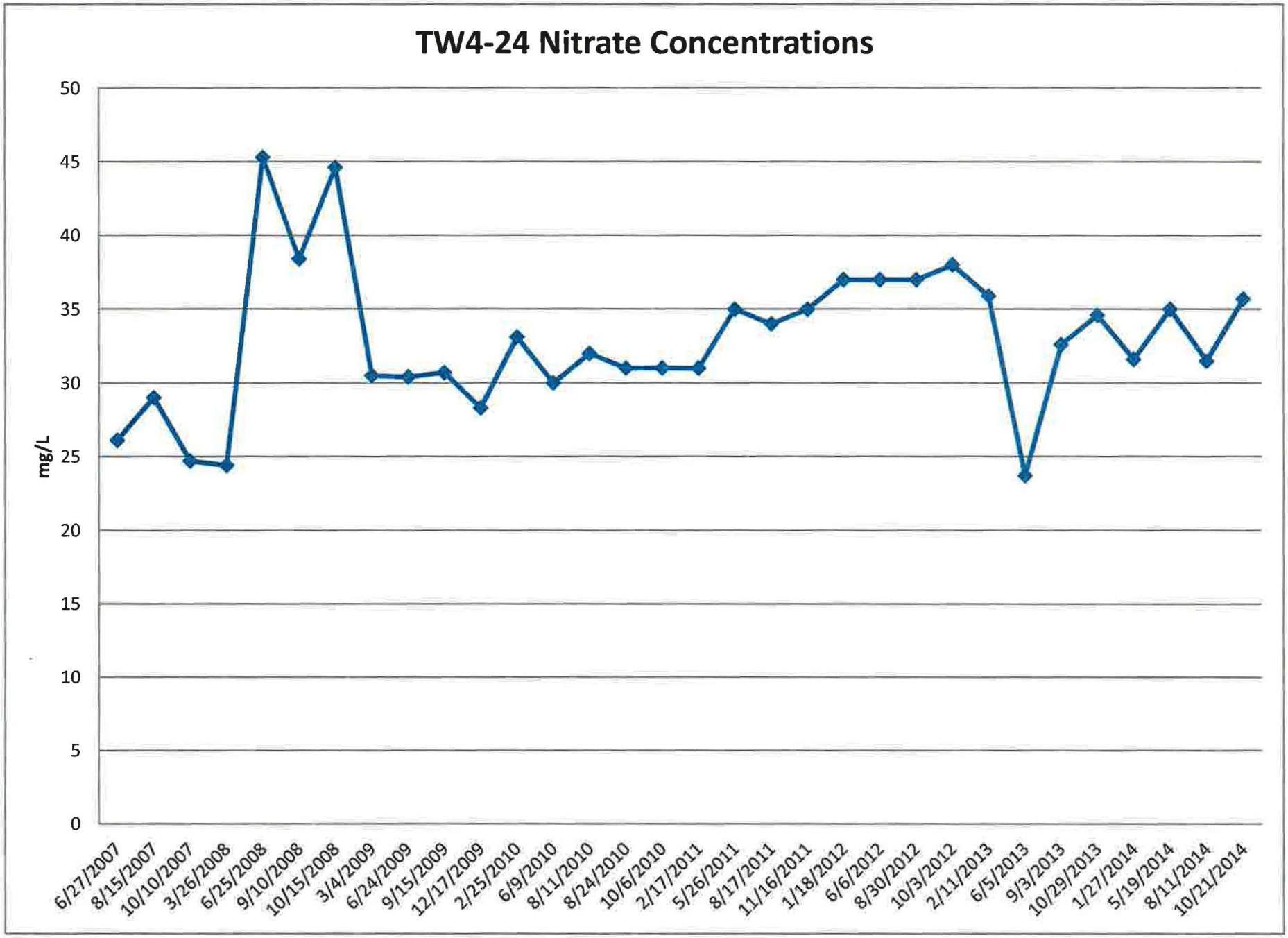
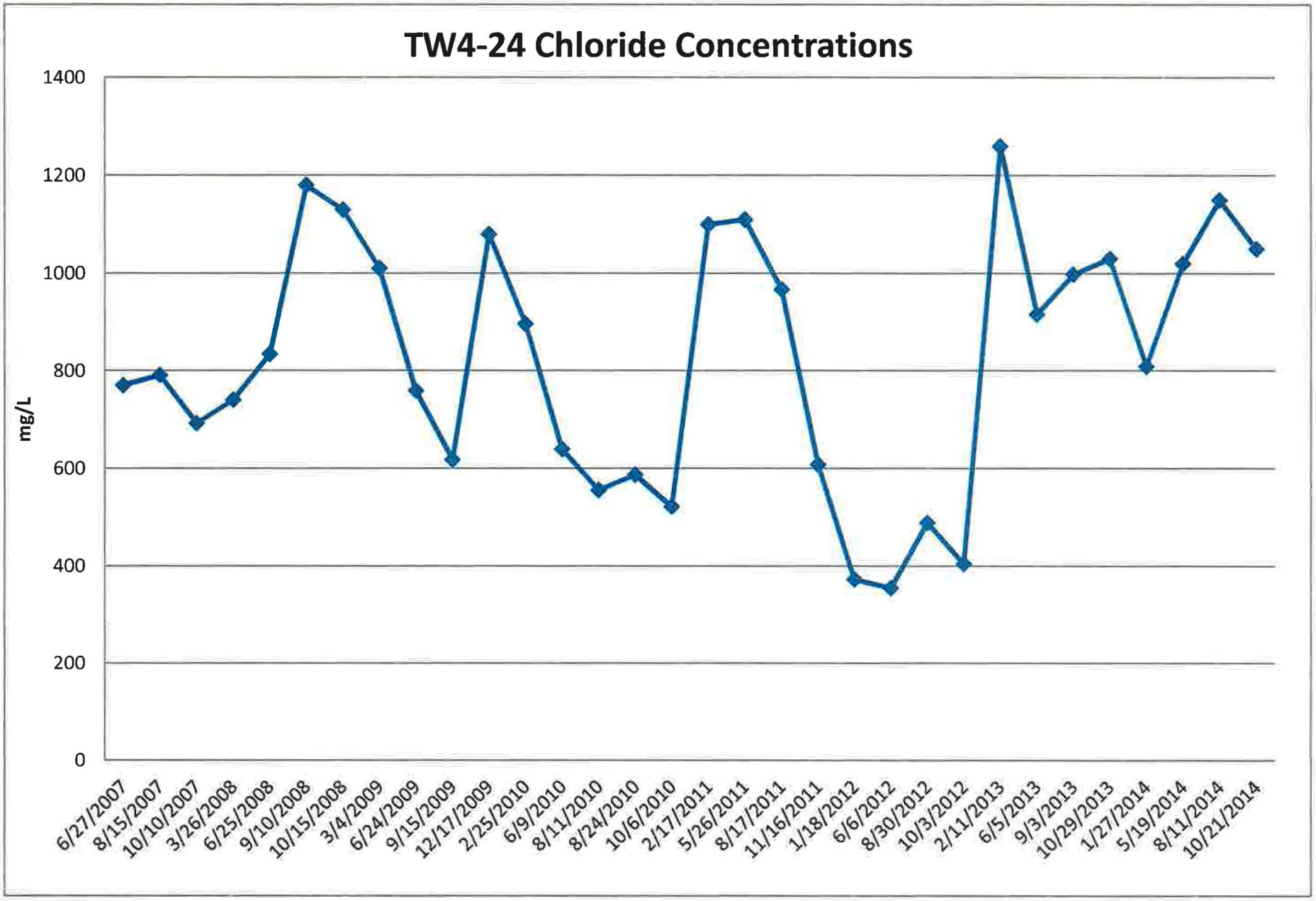
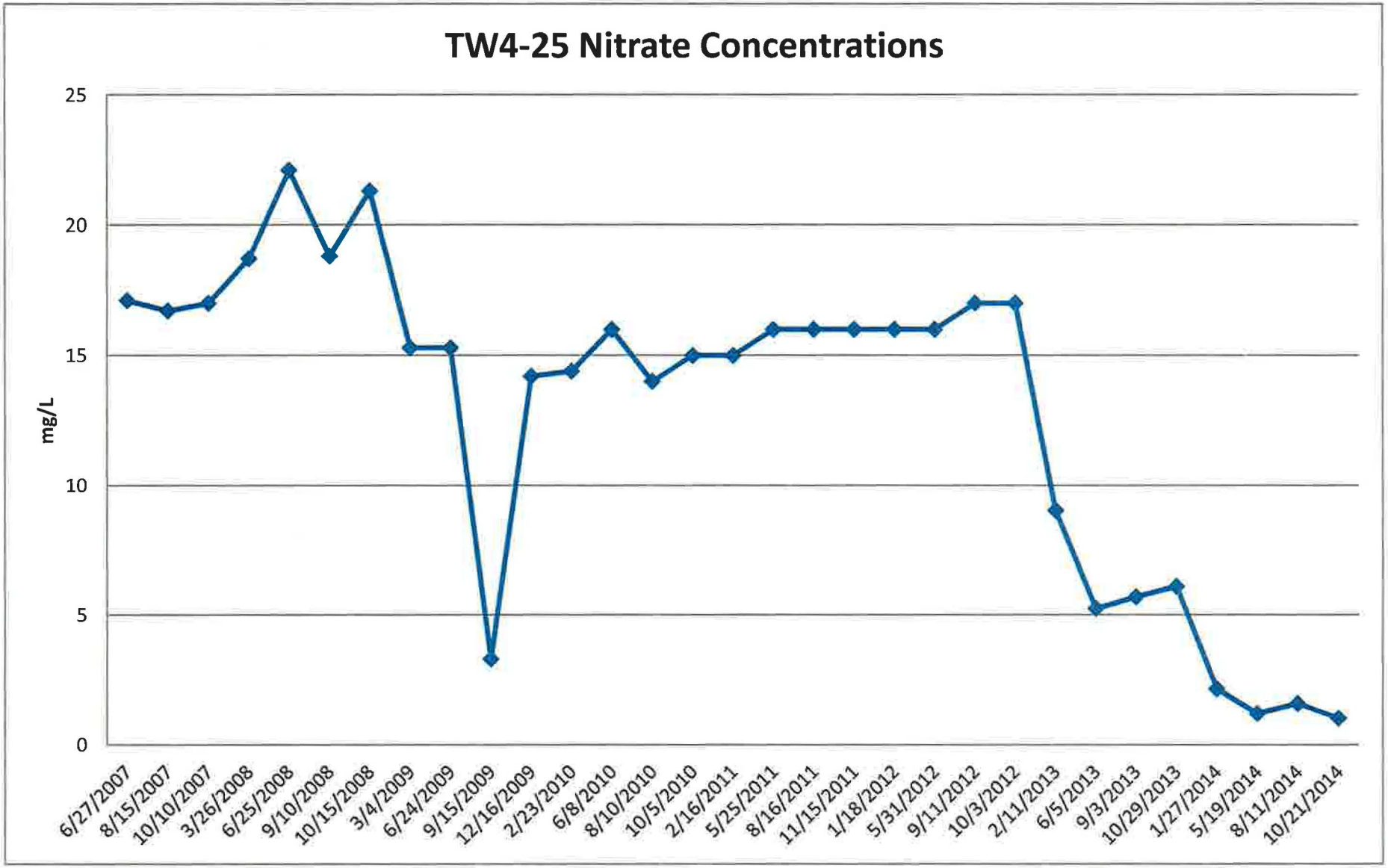
6/1/2012
9/1/2012
12/1/2012
3/1/2013
6/1/2013
9/1/2013
12/1/2013
3/1/2014
6/1/2014
9/1/2014

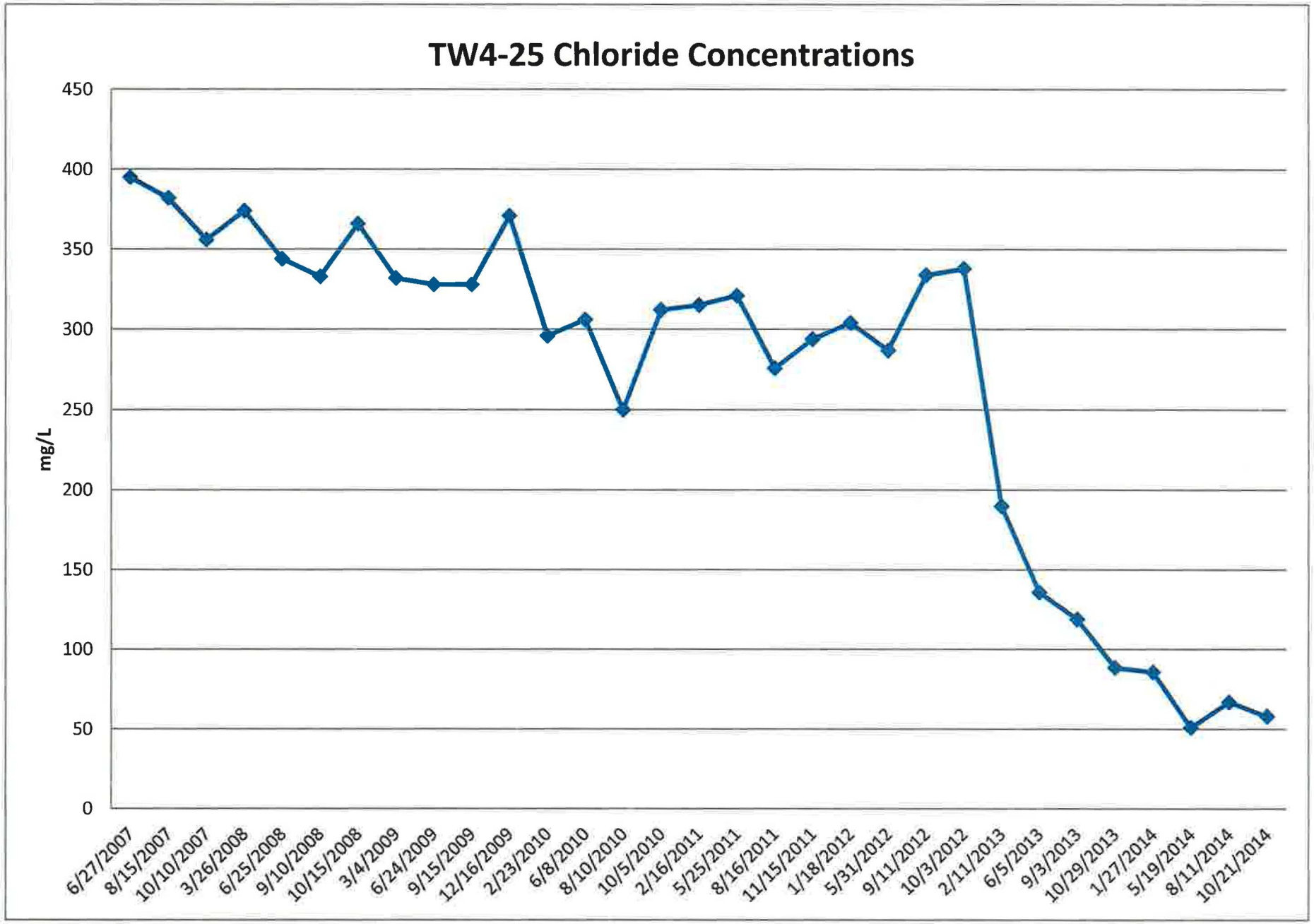

TW4-22 Nitrate Concentrations
mg/L
70
60
50
40
30
20
10
0
2/28/2007
6/27/2007
8/15/2007
10/10/2007
3/26/2008
6/25/2008
9/10/2008
10/15/2008
3/11/2009
6/24/2009
9/15/2009
12/29/2009
3/3/2010
6/15/2010
8/12/2010
8/24/2010
10/13/2010
2/23/2011
6/1/2011
8/17/2011
11/16/2011
1/19/2012
6/13/2012
9/12/2012
10/4/2012
2/11/2013
6/5/2013
9/3/2013
10/29/2013
1/27/2014
5/19/2014
8/11/2014
10/21/2014


TW4-22 Chloride Concentrations
mg/L
700
600
500
400
300
200
100
0
2/28/2007
6/27/2007
8/15/2007
10/10/2007
3/26/2008
6/25/2008
9/10/2008
10/15/2008
3/11/2009
6/24/2009
9/15/2009
12/29/2009
3/3/2010
6/15/2010
8/12/2010
8/24/2010
10/13/2010
2/23/2011
6/1/2011
8/17/2011
11/16/2011
1/19/2012
6/13/2012
9/12/2012
10/4/2012
2/11/2013
6/5/2013
9/3/2013
10/29/2013
1/27/2014
5/19/2014
8/11/2014
10/21/2014


TW4-24 Nitrate Concentrations
mg/L
50
45
40
35
30
25
20
15
10
5
0
6/27/2007
8/15/2007
10/10/2007
3/26/2008
6/25/2008
9/10/2008
10/15/2008
3/4/2009
6/24/2009
9/15/2009
12/17/2009
2/25/2010
6/9/2010
8/11/2010
8/24/2010
10/6/2010
2/17/2011
5/26/2011
8/17/2011
11/16/2011
1/18/2012
6/6/2012
8/30/2012
10/3/2012
2/11/2013
6/5/2013
9/3/2013
10/29/2013
1/27/2014
5/19/2014
8/11/2014
10/21/2014


TW4-24 Chloride Concentrations
mg/L
1400
1200
1000
800
600
400
200
0
6/27/2007
8/15/2007
10/10/2007
3/26/2008
6/25/2008
9/10/2008
10/15/2008
3/4/2009
6/24/2009
9/15/2009
12/17/2009
2/25/2010
6/9/2010
8/11/2010
8/24/2010
10/6/2010
2/17/2011
5/26/2011
8/17/2011
11/16/2011
1/18/2012
6/6/2012
8/30/2012
10/3/2012
2/11/2013
6/5/2013
9/3/2013
10/29/2013
1/27/2014
5/19/2014
8/11/2014
10/21/2014


TW4-25 Nitrate Concentrations
mg/L
25
20
15
10
5
0
6/27/2007
8/15/2007
10/10/2007
3/26/2008
6/25/2008
9/10/2008
10/15/2008
3/4/2009
6/24/2009
9/15/2009
12/16/2009
2/23/2010
6/8/2010
8/10/2010
10/5/2010
2/16/2011
5/25/2011
8/16/2011
11/15/2011
1/18/2012
5/31/2012
9/11/2012
10/3/2012
2/11/2013
6/5/2013
9/3/2013
10/29/2013
1/27/2014
5/19/2014
8/11/2014
10/21/2014


TW4-25 Chloride Concentrations
mg/L
450
400
350
300
250
200
150
100
50
0
6/27/2007
8/15/2007
10/10/2007
3/26/2008
6/25/2008
9/10/2008
10/15/2008
3/4/2009
6/24/2009
9/15/2009
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2/23/2010
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9/11/2012
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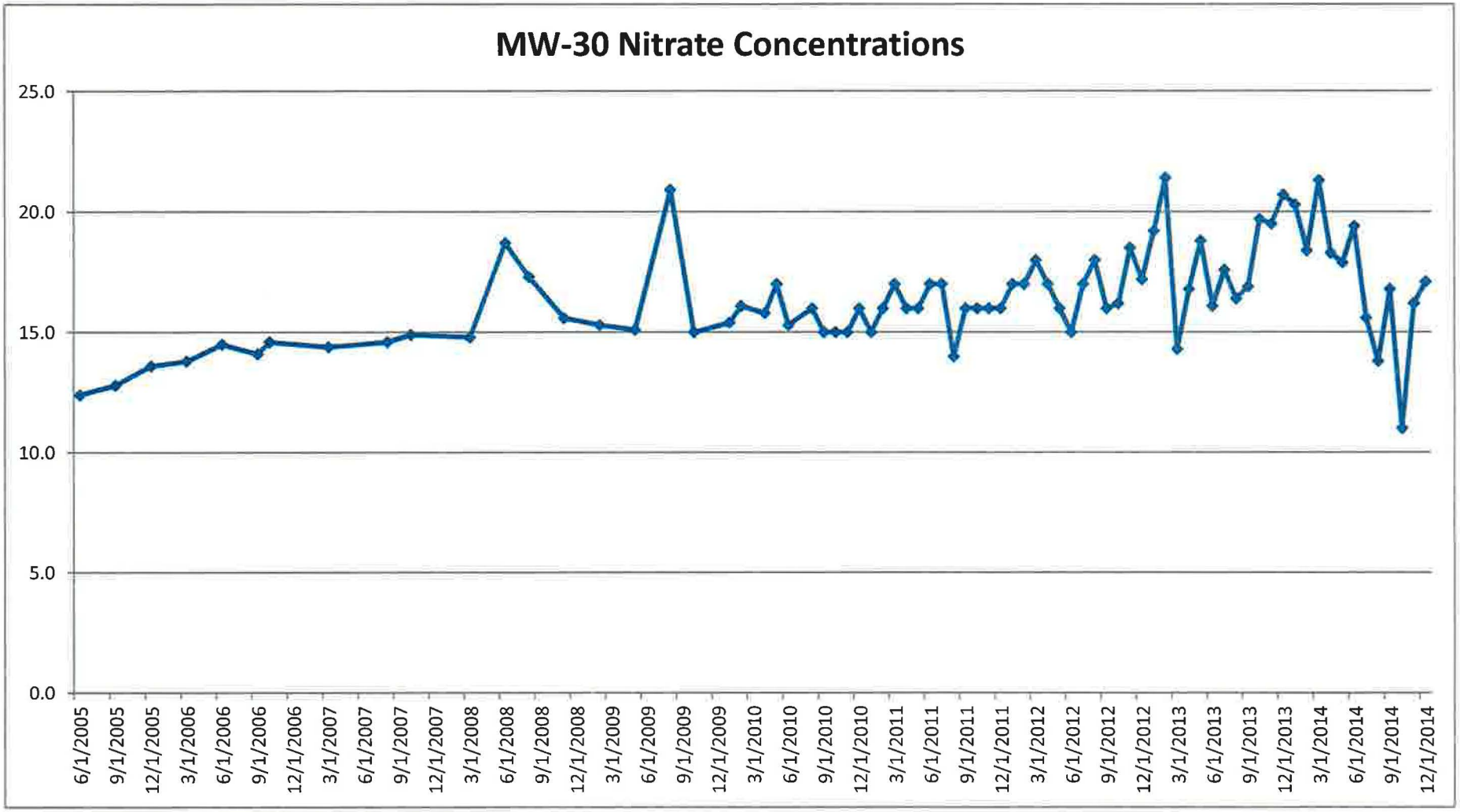
MW-30 Nitrate Concentrations
25.0
20.0
15.0
10.0
5.0
0.0
6/1/2005
9/1/2005
12/1/2005
3/1/2006
6/1/2006
9/1/2006
12/1/2006
3/1/2007
6/1/2007
9/1/2007
12/1/2007
3/1/2008
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12/1/2008
3/1/2009
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12/1/2009
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6/1/2012
9/1/2012
12/1/2012
3/1/2013
6/1/2013
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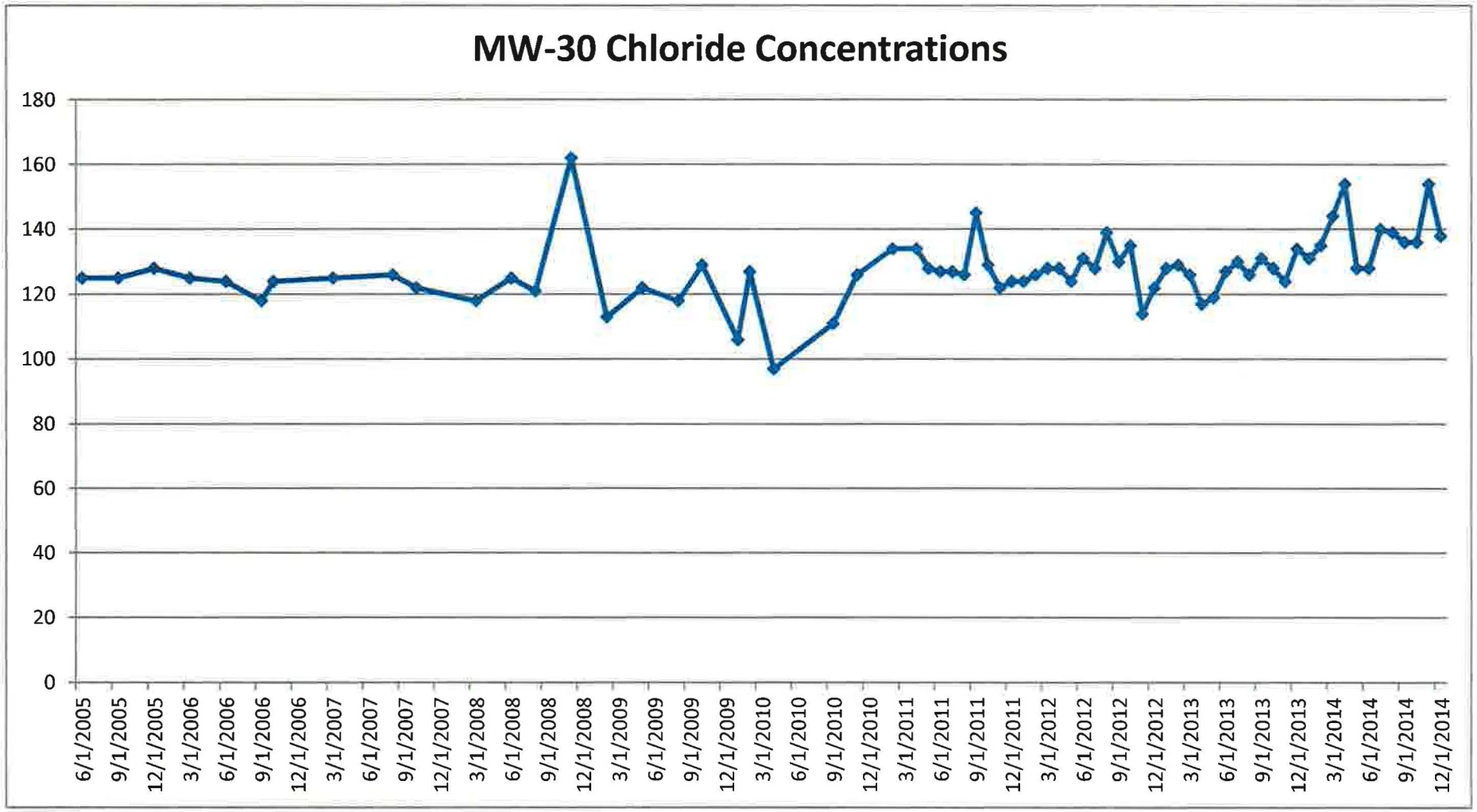
3/1/2014
6/1/2014
9/1/2014
12/1/2014


MW-30 Chloride Concentrations
180
160
140
120
100
80
60
40
20
0
6/1/2005
9/1/2005
12/1/2005
3/1/2006
6/1/2006
9/1/2006
12/1/2006
3/1/2007
6/1/2007
9/1/2007
12/1/2007
3/1/2008
6/1/2008
9/1/2008
12/1/2008
3/1/2009
6/1/2009
9/1/2009
12/1/2009
3/1/2010
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12/1/2010
3/1/2011
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9/1/2011
12/1/2011
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6/1/2012
9/1/2012
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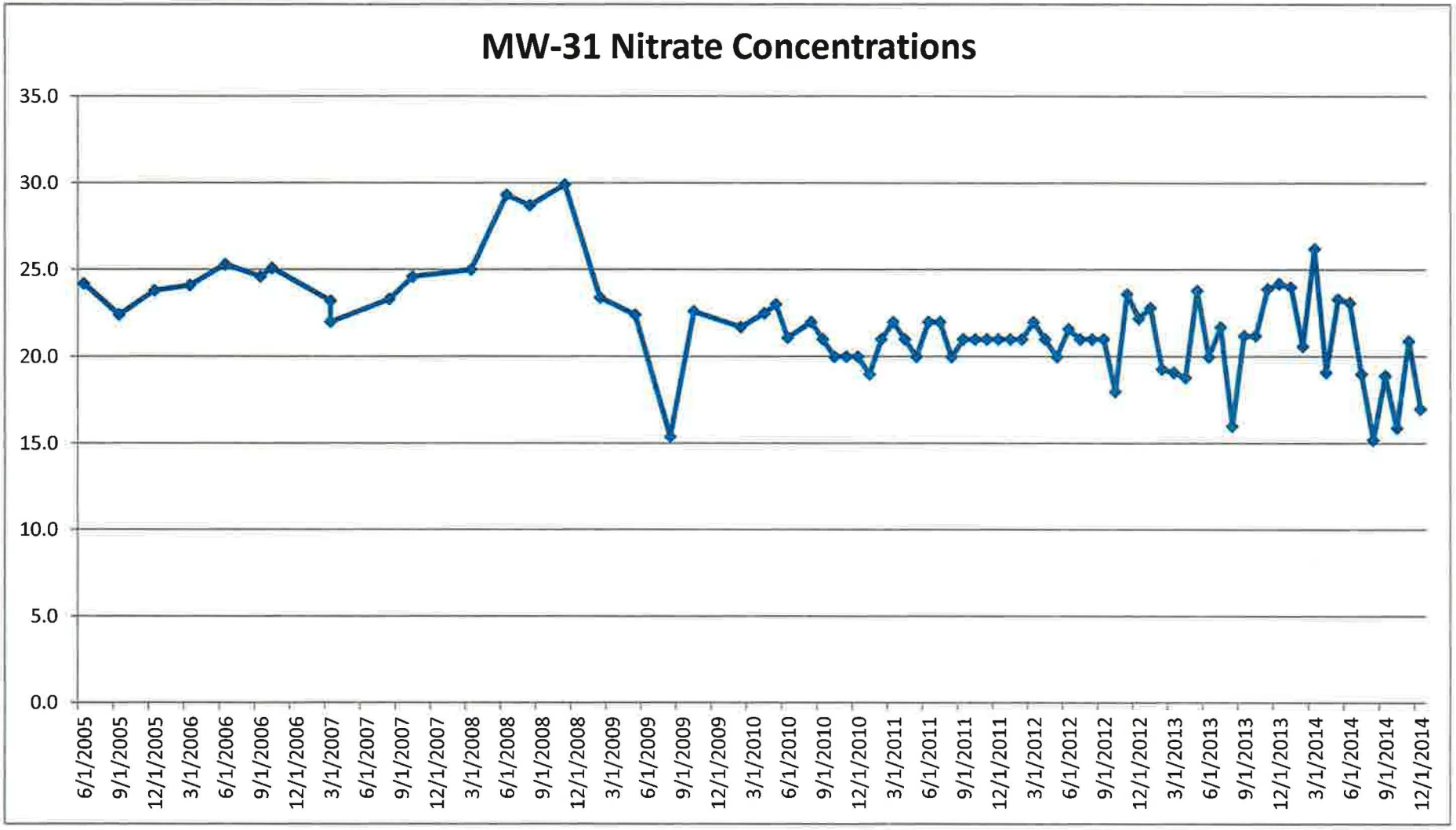
12/1/2014


MW-31 Nitrate Concentrations
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
6/1/2005
9/1/2005
12/1/2005
3/1/2006
6/1/2006
9/1/2006
12/1/2006
3/1/2007
6/1/2007
9/1/2007
12/1/2007
3/1/2008
6/1/2008
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12/1/2008
3/1/2009
6/1/2009
9/1/2009
12/1/2009
3/1/2010
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6/1/2012
9/1/2012
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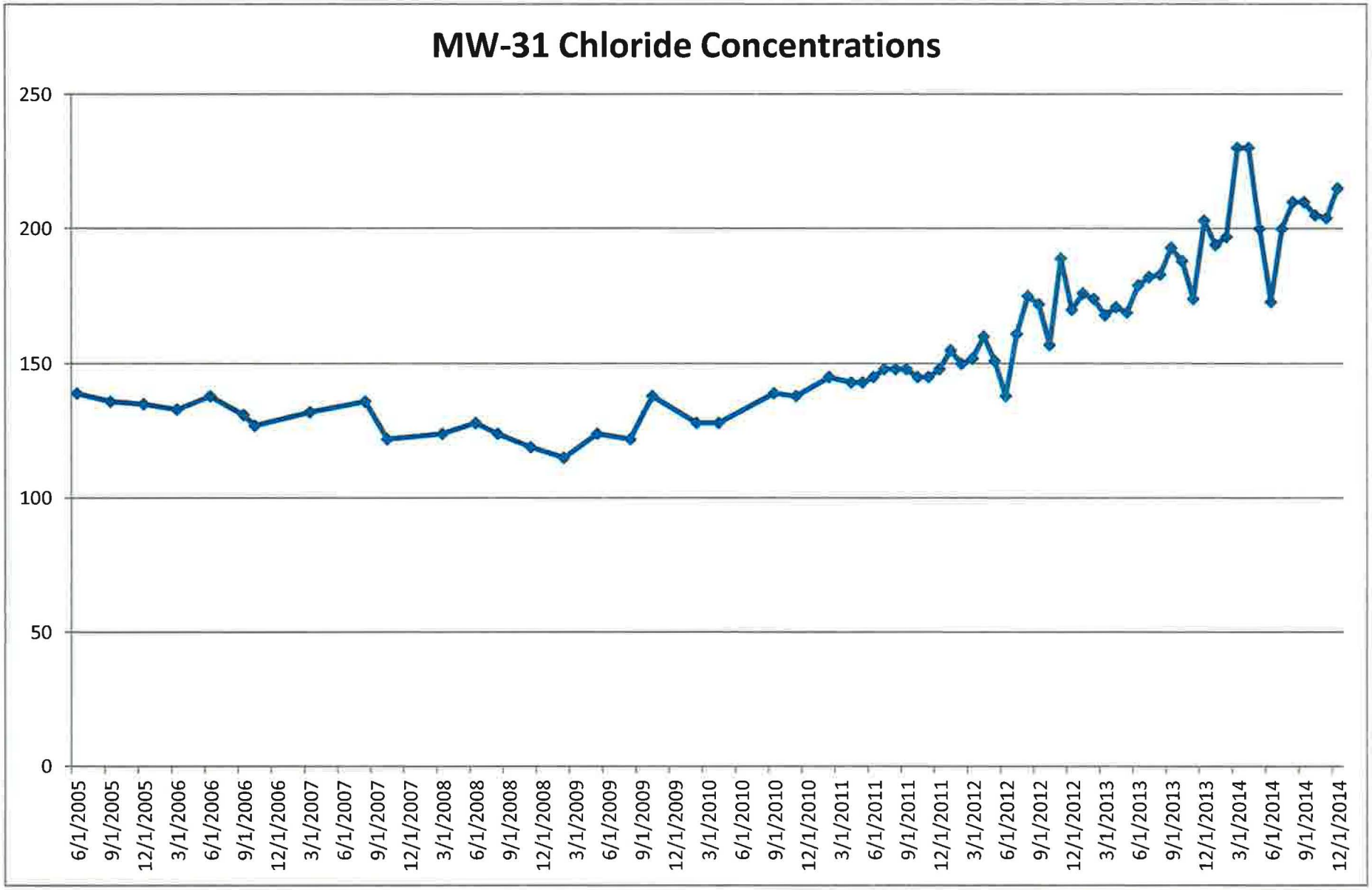
6/1/2014
9/1/2014
12/1/2014


MW-31 Chloride Concentrations
250
200
150
100
50
0
6/1/2005
9/1/2005
12/1/2005
3/1/2006
6/1/2006
9/1/2006
12/1/2006
3/1/2007
6/1/2007
9/1/2007
12/1/2007
3/1/2008
6/1/2008
9/1/2008
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6/1/2012
9/1/2012
12/1/2012
3/1/2013
6/1/2013
9/1/2013
12/1/2013
3/1/2014
6/1/2014
9/1/2014
12/1/2014

Tab L

CSV Transmittal Letter

Kathy Weinel

From: Kathy Weinel
Sent: Monday, February 23, 2015 10:15 AM
To: Rusty Lundberg
Cc: 'Phil Goble'; 'Dean Henderson'; Harold Roberts; David Frydenlund; Scott Bakken; David Turk; Jaime Massey; Dan Hillsten
Subject: Transmittal of CSV Files White Mesa Mill 2014 Q4 Nitrate Monitoring
Attachments: Q4 2014 Nitrate EDD.csv

Dear Mr. Lundberg,

Attached to this e-mail is an electronic copy of laboratory results for nitrate monitoring conducted at the White Mesa Mill during the fourth quarter of 2014, in Comma Separated Value (CSV) format.

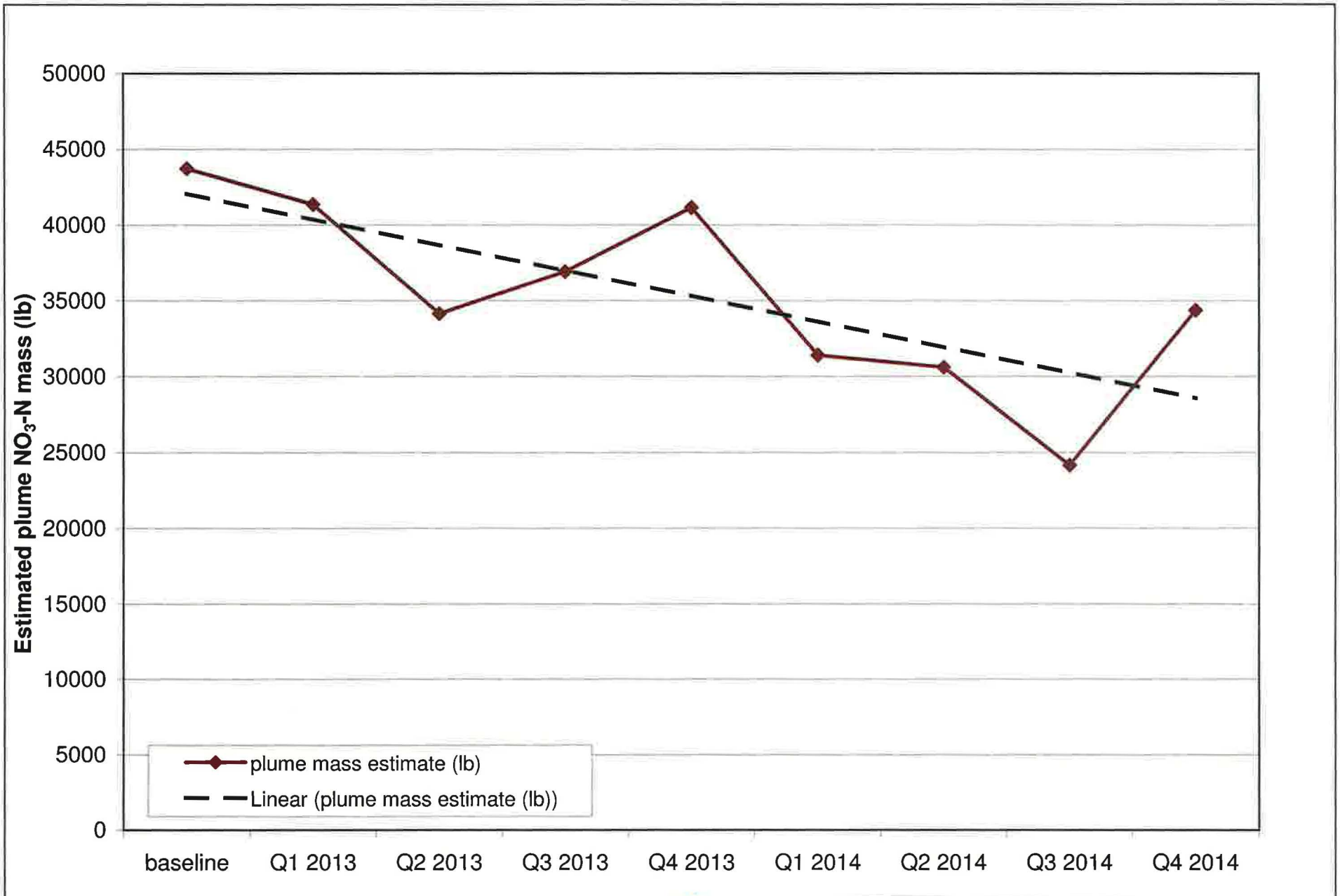
Please contact me at 303-389-4134 if you have any questions on this transmittal.

Yours Truly

Kathy Weinel

Tab M Residual Mass Estimate Analysis Figures and Tables

Tab M – Figures

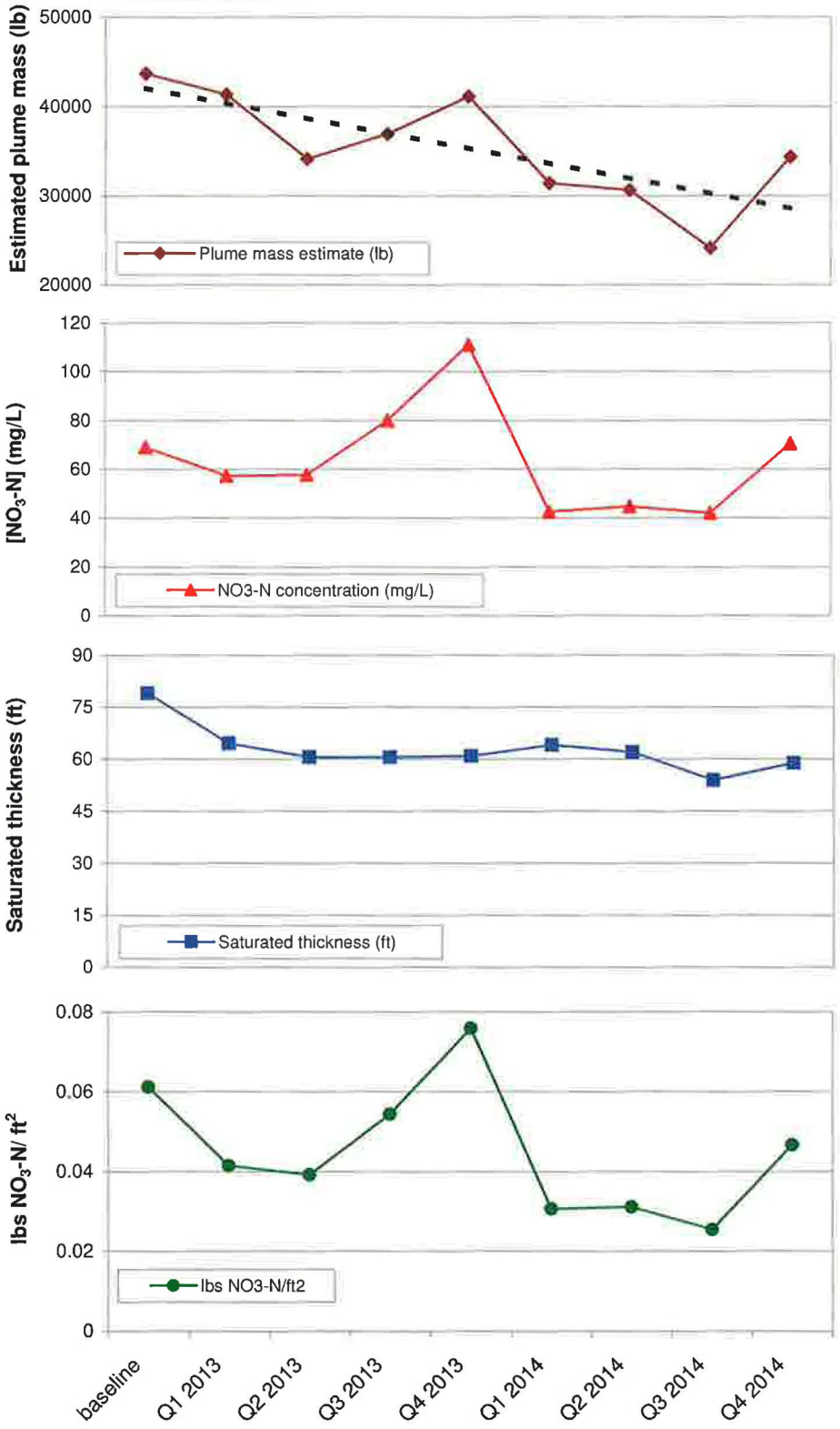


HYDRO GEO CHEM, INC.

ESTIMATED RESIDUAL MASS OF NITRATE (AS NO_3-N) PLUME

Approved	Date	Author	Date	File Name	Figure
SJS	XX	GEM	2/10/15		M.1

H:\718000\feb15\nitrate\TimeSeries.xls: mass (F M.1)a



HYDRO GEO CHEM, INC.

TIME SERIES FOR NO_3-N PLUME MASS ESTIMATES AND TWN-2 [NO_3-N], SATURATED THICKNESS, AND lbs NO_3-N/ft^2

Approved	Date	Author	Date	File Name	Figure
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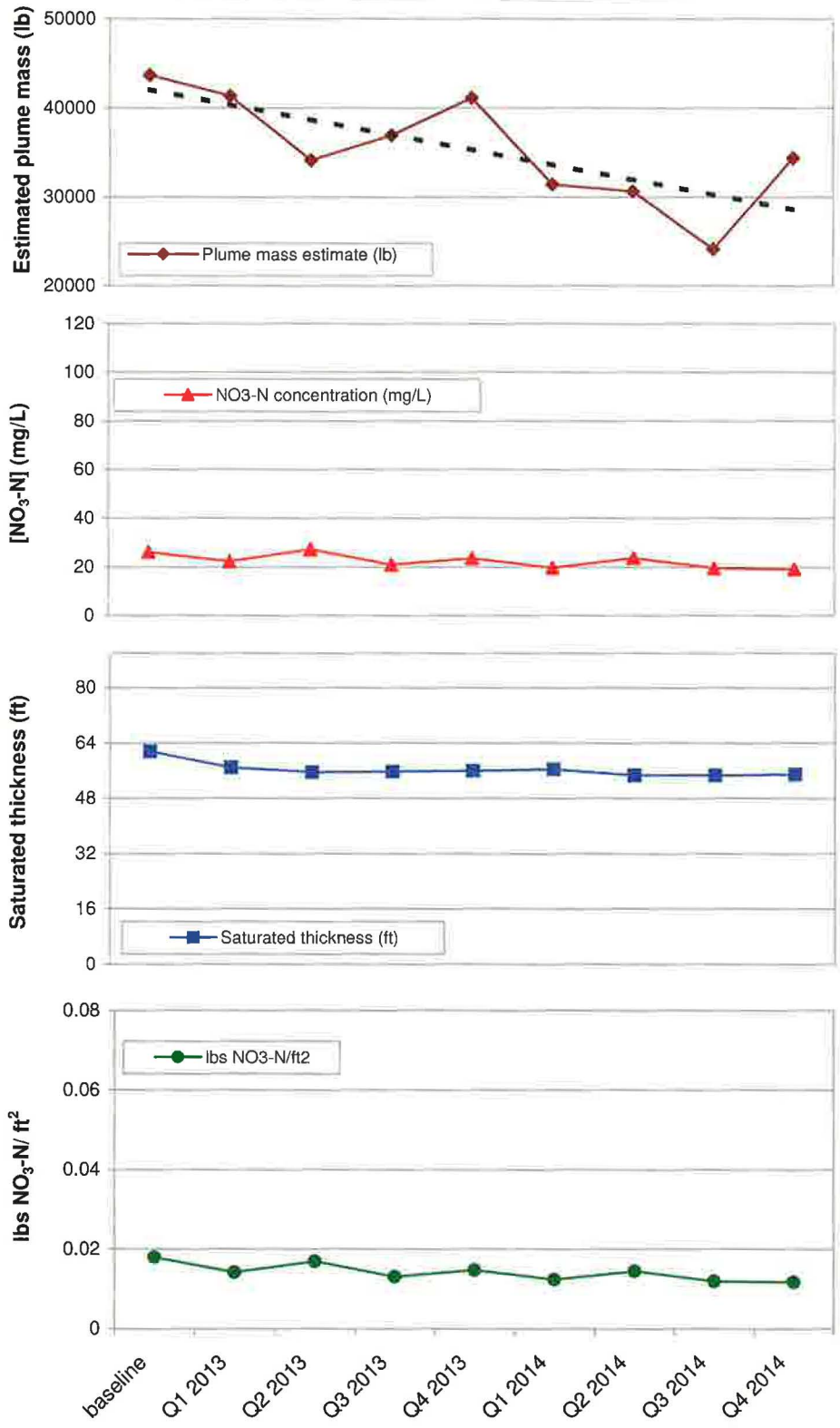
H:\718000\feb15\nitrate\TimeSeries.xls: TWN-2P (F M.2)



HYDRO GEO CHEM, INC.

TIME SERIES FOR NO_3-N PLUME MASS ESTIMATES AND TWN-3 [NO_3-N], SATURATED THICKNESS, AND lbs NO_3-N/ft^2

Approved	Date	Author	Date	File Name	Figure
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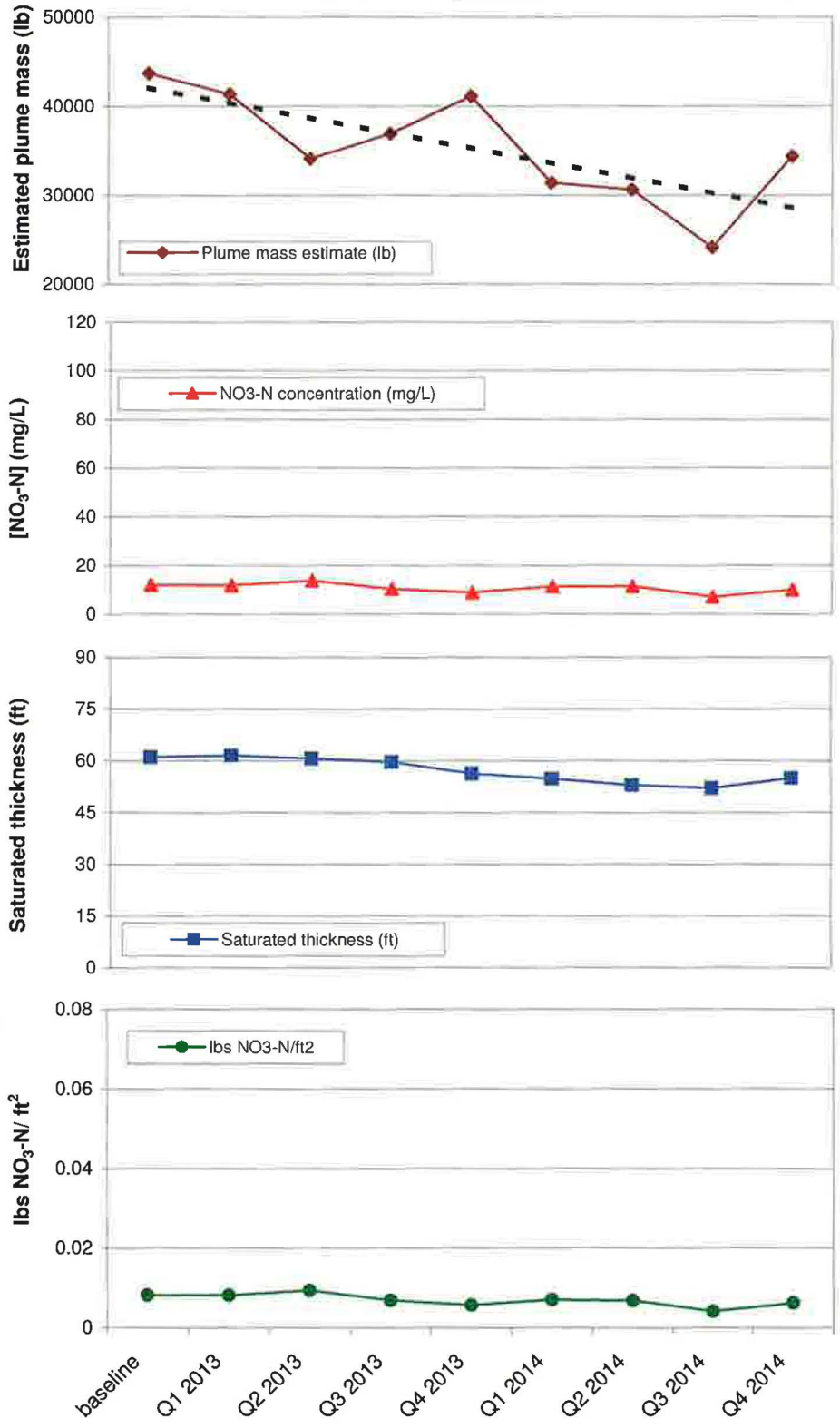
H:\718000\feb15\nitrate\TimeSeries.xls: TWN-3P (F M.3)

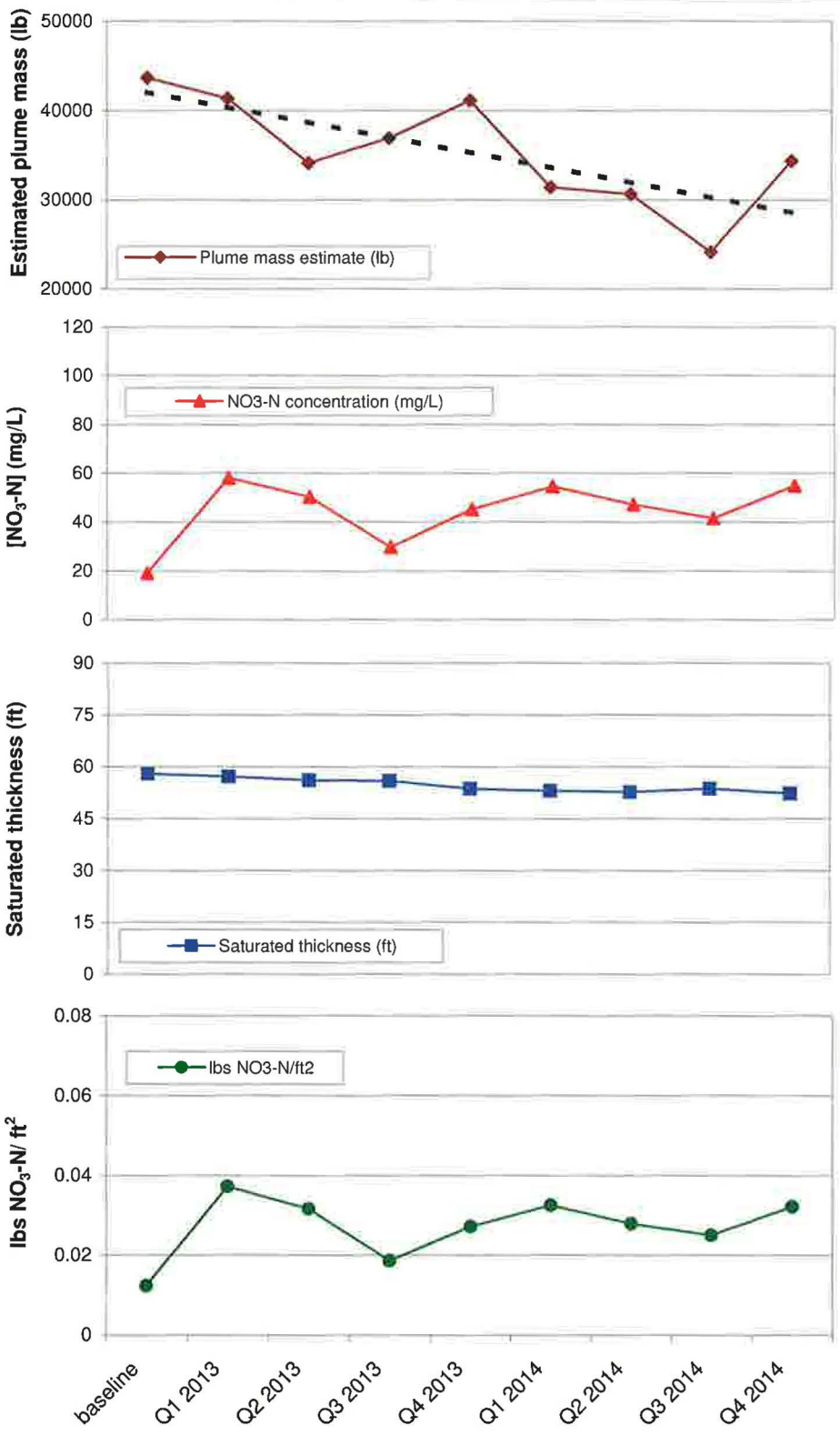


HYDRO GEO CHEM, INC.

TIME SERIES FOR NO_3-N PLUME MASS ESTIMATES AND TW4-21 [NO_3-N], SATURATED THICKNESS, AND lbs NO_3-N/ft^2

Approved	Date	Author	Date	File Name	Figure
XX	XX	GEM	1/29/15		M.4

H:\718000\feb15\nitrate\TimeSeries.xls: TW4-21P (F M.4)



HYDRO GEO CHEM, INC.

TIME SERIES FOR NO_3-N PLUME MASS ESTIMATES AND TW4-22 [NO_3-N], SATURATED THICKNESS, AND lbs NO_3-N/ft^2

Approved	Date	Author	Date	File Name	Figure
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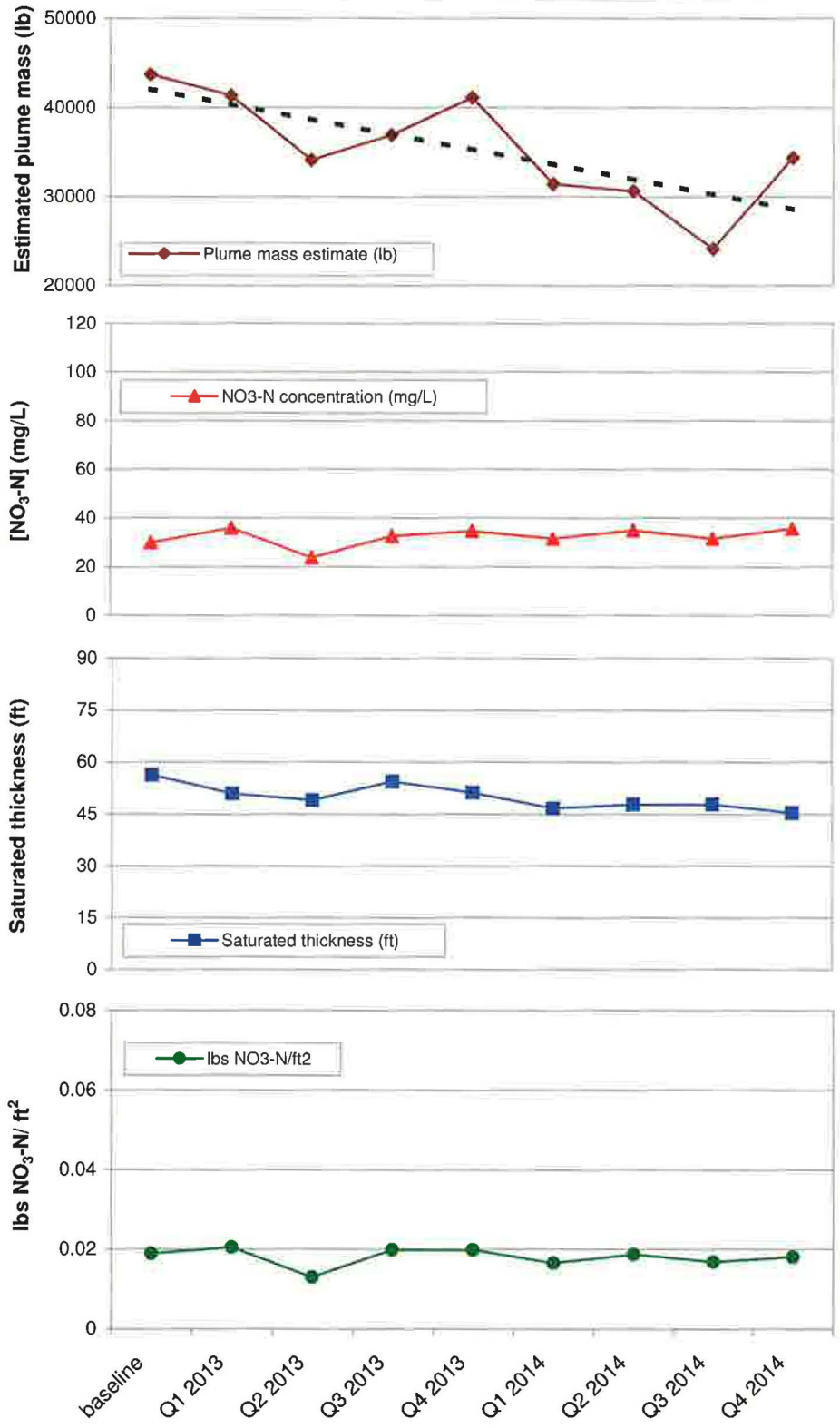
H:\718000\feb15\nitrate\TimeSeries.xls: TW4-22P (F M.5)



HYDRO GEO CHEM, INC.

TIME SERIES FOR NO_3-N PLUME MASS ESTIMATES AND TW4-24 [NO_3-N], SATURATED THICKNESS, AND lbs NO_3-N/ft^2

Approved	Date	Author	Date	File Name	Figure
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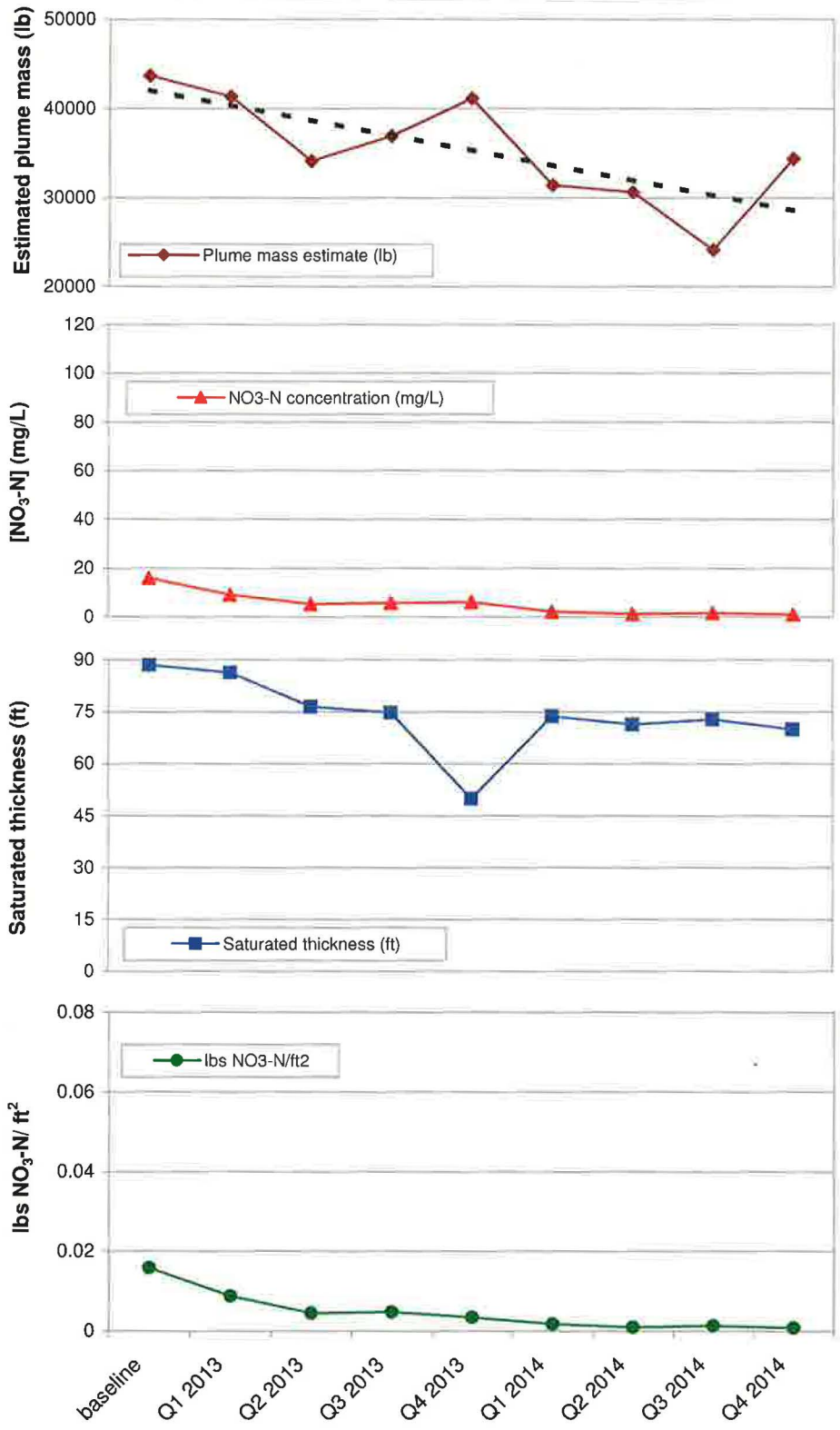
H:\718000\feb15\nitrate\TimeSeries.xls: TW4-24P (F M.6)

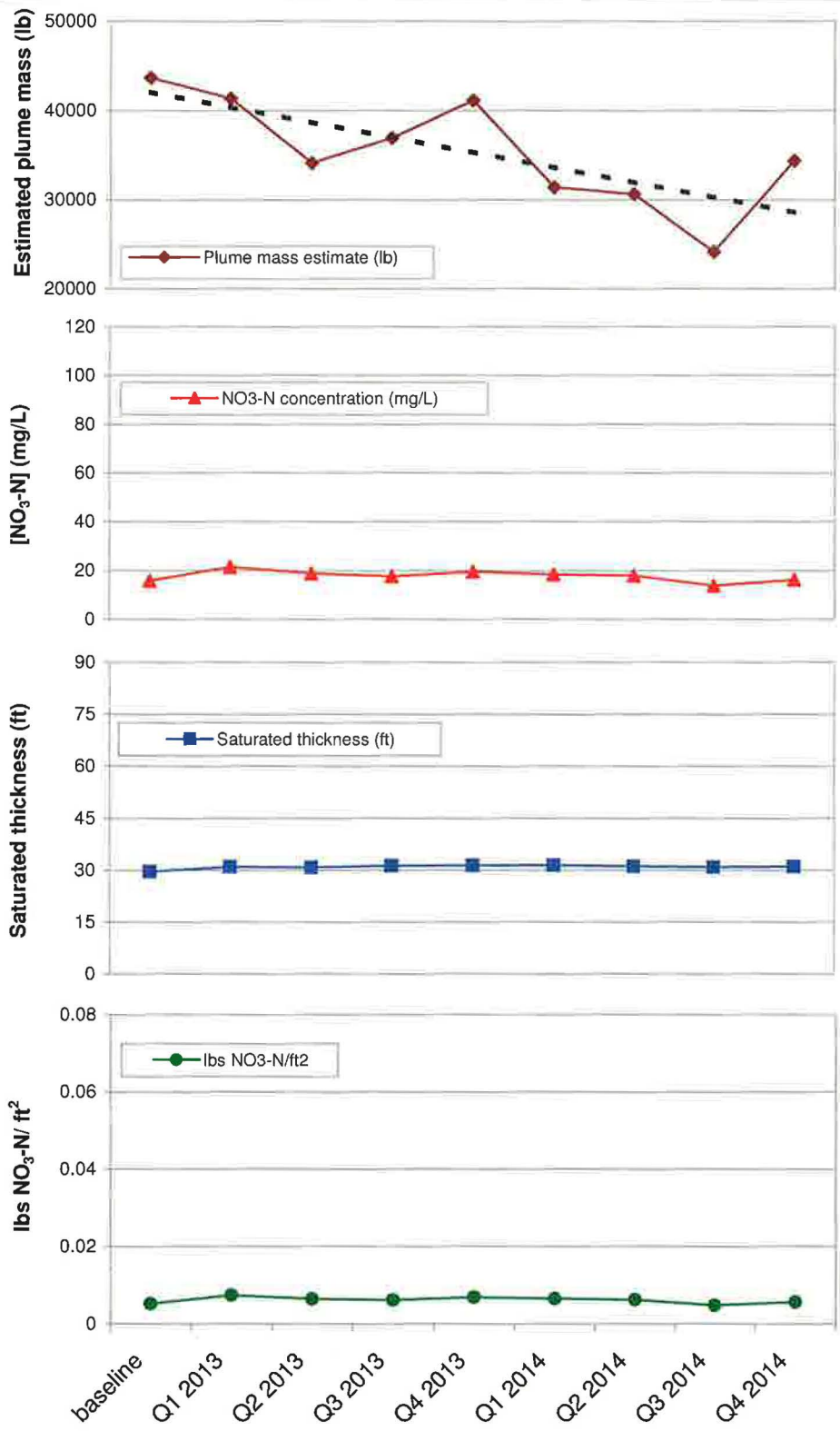


HYDRO GEO CHEM, INC.

TIME SERIES FOR NO_3-N PLUME MASS ESTIMATES AND TW4-25 [NO_3-N], SATURATED THICKNESS, AND lbs NO_3-N/ft^2

Approved	Date	Author	Date	File Name	Figure
XX	XX	GEM	1/29/15	x	M.7

H:\718000\feb15\nitrate\TimeSeries.xls: TW4-25P (F M.7)



HYDRO GEO CHEM, INC.

TIME SERIES FOR NO_3-N PLUME MASS ESTIMATES AND MW-30 [NO_3-N], SATURATED THICKNESS, AND lbs NO_3-N/ft^2

Approved	Date	Author	Date	File Name	Figure
XX	XX	GEM	1/29/15		M.8

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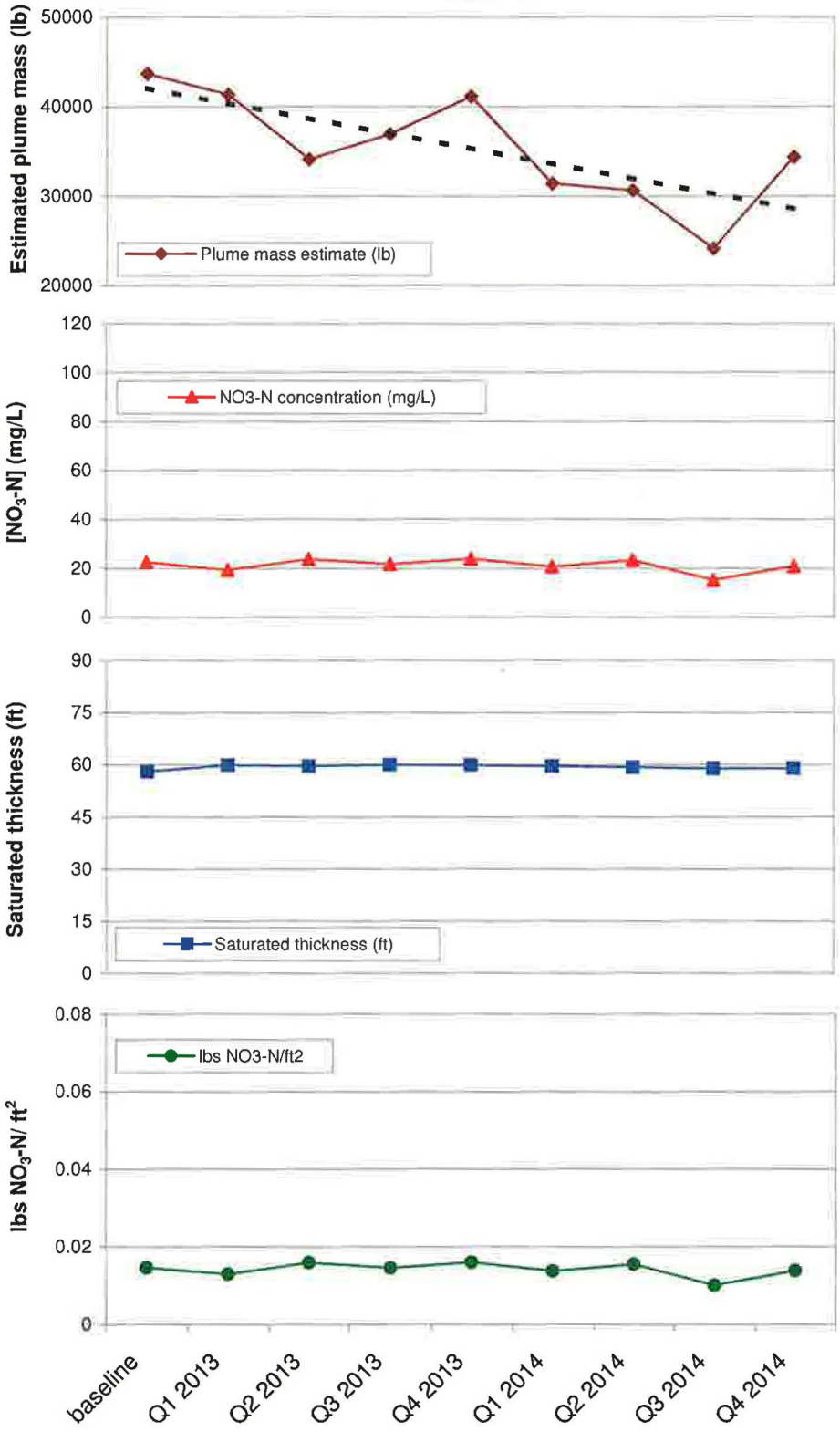

HYDRO GEO CHEM, INC.

TIME SERIES FOR NO_3-N PLUME MASS ESTIMATES AND MW-31 [NO_3-N], SATURATED THICKNESS, AND lbs NO_3-N/ft^2

Approved	Date	Author	Date	File Name	Figure
XX	XX	GEM	1/29/15		M.9

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Tab M - Tables

Table M.1
Well Rankings Based on Methods 1-10

Rank	Method 1	Method 2	Method 3	Method 4	Method 5	Method 6	Method 7	Method 8	Method 9	Method 10
1	TWN-2	TW4-25	TWN-2	TWN-2	TW4-24	TW4-24	TW4-24	TW4-24	TW4-24	TWN-2
2	TW4-22	TWN-2	TW4-22	MW-31	TWN-2	TWN-2	TWN-2	TWN-2	TWN-2	TW4-22
3	TW4-24	MW-31	TW4-24	MW-30	MW-31	MW-31	MW-31	TW4-22	MW-31	TW4-24
4	TWN-3	TW4-21	MW-31	TW4-22	TW4-22	TW4-22	TW4-22	MW-31	TW4-22	MW-31
5	MW-31	TWN-3	TWN-3	TWN-3	MW-30	MW-30	TW4-25	MW-30	MW-30	TWN-3
6	MW-30	TW4-22	TW4-21	TW4-25	TW4-25	TW4-25	TWN-3	TWN-3	TWN-3	TW4-25
7	TW4-21	TW4-24	MW-30	TW4-21	TWN-3	TWN-3	MW-30	TW4-25	TW4-25	TW4-21
8	TW4-25	MW-30	TW4-25	TW4-24	TW4-21	TW4-21	TW4-21	TW4-21	TW4-21	MW-30

Method

1 *Average [NO3-N]*
2 *Average well saturated thickness*
3 *Average lbs NO3-N/ft2*
4 *Remove well from mass estimate (plume boundary not fixed)*
5 *Increase [NO3-N] by 20% (plume boundary not fixed)*
6 *Decrease [NO3-N] by 20% (plume boundary not fixed)*
7 *Decrease saturated thickness by 20% (plume boundary not fixed)*
8 *Mass NO3-N per well based on polygonal estimator (plume boundary fixed).*
9 *Volume per well based on polygonal estimator (plume boundary fixed).*
10 *Average [NO3-N] per well based on polygonal estimator (plume boundary fixed).*

Table M.2
Scoring of Results: Methods 1 through 3

well ID	score	combined rank
TWN-2	4	1
TW4-22	10	2
MW-31	12	3
TW4-24	13	4
TWN-3	14	5
TW4-21, TW4-25	17	6
MW-30	21	7

Table M.3
Scoring of Results: Methods 4 through 7

well ID	score	combined rank
TWN-2	7	1
TW4-24, MW-31	11	2
TW4-22	16	3
MW-30	19	4
TW4-25	23	5
TWN-3	25	6
TW4-21	31	7

Table M.4
Scoring of Results: Methods 8 through 10

well ID	score	combined rank
TWN-2	4	1
TW4-22	10	2
MW-31	12	3
TW4-24	13	4
TWN-3	14	5
TW4-21, TW4-25	17	6
MW-30	21	7

Table M.5
Scoring of Results: Methods 3 and 8

well ID	score	combined rank
TWN-2	3	1
TW4-24	4	2
TW4-22	5	3
MW-31	8	4
TWN-3	11	5
MW-30	12	6
TW4-21	14	7
TW4-25	15	8

Note: scores are sums of ranks from Table M.1

Table M.6
Scoring of Results: Methods 1 through 10

well ID	score	combined rank
TWN-2	16	1
TW4-24	29	2
MW-31	34	3
TW4-22	35	4
TWN-3	56	5
MW-30	58	6
TW4-25	60	7
TW4-21	71	8

Note: scores are sums of ranks from Table M.1