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February 21, 2014

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 2013 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 2013 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,

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

cc: David C. Frydenlund
Dan Hillsten
Harold R. Roberts
David E. Turk
Frank Filas

White Mesa Uranium Mill

Nitrate Monitoring Report

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

4th Quarter
(October through December)
2013

Prepared by:

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

February 21, 2014

TABLE OF CONTENTS

LIST OF TABLES

INDEX OF TABS

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, all 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 2013. 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 2013.

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. Per the CAP and SCO, these wells were not sampled during this quarter. Additionally, the CAP and SCO 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-01, TWN-02, TWN-03, TWN-04, TWN-06, TWN-07, 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:

Purging Two Casing Volumes with Stable Field Parameters (within 10% RPD)
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.

Purging a Well to Dryness and Stability of a Limited List of Field Parameters
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.

Continuously Pumped Wells
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 two data recoveries that are outside the laboratory established acceptance limits do not affect the quality or usability of the data because the recoveries are above the acceptance limits and 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. Al 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 (kriged) 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 layers receiving primarily low constituent concentration pond water will result in wells intercepting these layers 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.

As of the previous quarter, well-defined cones of depression were also not clearly evident near nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2, most likely because they had not had sufficient time to develop. Pumping of these wells 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. Although operation of the nitrate pumping system had not yet produced a well-defined impact on water levels, continued operation of the system was expected to produce a well-defined capture zone that would merge with and enhance the capture associated with the chloroform pumping system.

During the current quarter, a large decrease in water level at nitrate pumping well TW4-25 has resulted in an apparently large cone of depression near that well. The large decrease in water level at TW4-25 combined with decreases at nitrate pumping wells TW4-22 and TW4-24, and adjacent chloroform pumping wells TW4-19 and TW4-20, has resulted in an apparently large increase in the combined influence of the nitrate and chloroform pumping systems. The long term interaction between nitrate and chloroform pumping systems will, however, require more data to be collected as part of routine monitoring.

As discussed above, variable permeability conditions is 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, and recently installed wells TW4-29, TW4-30, TW4-31, TW4-33, and TW4-34, 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 increase in water level at TW4-6 has been reduced since the start of pumping at TW4-4 (first quarter of 2010) to approximately 0.5 feet/year suggesting that TW4-6 is within the hydraulic influence of TW4-4 (note: hydrographs for these wells are provided in the quarterly Chloroform Monitoring Report, EFRI 2013). Water level elevations at these wells are eventually expected to be influenced by cessation of water delivery to the northern wildlife ponds as discussed above. Recharge from the southern wildlife pond is expected to continue to have an effect on water

levels near TW4-4, but the effects related to recharge from the northern ponds is expected to diminish over time as water is no longer delivered to the northern 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 (approximately 5528.2 feet above mean sea level ["ft amsl"]) is approximately 12 feet lower than the water level at TW4-6 (approximately 5539.9 ft amsl) and 15 feet lower than at TW4-4 (approximately 5543.3 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 5527.1 ft amsl, similar to TW4-14 (approximately 5528.2 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 was not 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 (5538.97 feet amsl) is, however, lower than water levels at adjacent wells TW4-6 (5539.85 feet amsl), and TW4-23 (5542.96 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 reduces the rate of long-term water level increase at TW4-14 and TW4-27 compared to nearby wells, yielding water levels that appear 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).

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 (fourth quarter of 2013) to the water table contour maps for the previous quarter (third quarter of 2013) indicates more pronounced drawdowns related to operation of chloroform pumping wells TW4-19 and 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 not clearly evident as of the previous quarter. During the current quarter (as will be discussed below and in Section 4.2.1), a large decrease in water level at nitrate pumping well TW4-25 has resulted in an apparently large cone of depression near that well. The large decrease in water level at TW4-25 combined with decreases at nitrate pumping wells TW4-22 and TW4-24, and adjacent chloroform pumping wells TW4-19 and TW4-20, has resulted in apparently large cones of depression associated with these wells. Otherwise, water levels and water level contours for the site have not changed significantly since the last 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.

Reported decreases in water levels (increases in drawdown) of approximately 4 feet and 9 feet occurred in chloroform pumping wells TW4-19 and TW4-20, respectively. Furthermore, decreases of approximately 2 feet, 3 feet, and 25 feet occurred, respectively, in nitrate pumping wells TW4-22, TW4-24, and TW4-25. Changes in water levels at other pumping wells (chloroform pumping wells MW-4, MW-26 and TW4-4, and nitrate pumping well TWN-2) were less than 2 feet. 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. A water level decrease of approximately 3 feet was reported at TW4-21. This decrease is likely the result of its location between pumping wells TW4-19 and TW4-25. The quarterly Chloroform Monitoring Report provides additional details on water levels in chloroform pumping wells.

The decreases in water levels (increases in drawdown) at chloroform pumping wells TW4-19 and TW4-20 have increased the apparent capture of these wells relative to other pumping wells. The large cone of depression associated with nitrate pumping well TW4-25 has resulted in a relatively large zone of capture associated with this well. Furthermore, the apparent capture associated with TW4-25 has increased the apparent combined capture of chloroform pumping wells MW-26, TW4-19, and TW4-20 compared to last quarter.

Water level decreases ranging from approximately 0.55 to 1.4 feet at Piezometers 1 and 2, and TWN-4, likely 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. The water level decrease of approximately 1.3 feet reported for TWN-1 is likely related to both decay of the perched water mound and operation of nitrate pumping well TW4-25.

Water level decreases of nearly 5 feet at MW-3, of nearly 4 feet at MW-20, of approximately 6 feet at MW-23 and of approximately 5 feet at MW-37 were reported. These decreases are likely the result of purging and sampling these wells prior to measuring water levels. Because these wells have relatively low permeability, there was likely insufficient time for water levels to have fully recovered from purging prior to water level measurement. Although water was reported to be present at the bottom of piezometer DR-22 last quarter, DR-22 is reported to be dry this quarter.

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.

As noted in Section 2.1.1, nitrate wells TWN-05, TWN-08, TWN-09, TWN-10, TWN-11, TWN-12, TWN-13, TWN-15, and TWN-17 were abandoned in accordance with the DRC-approved Well Abandonment Procedure on July 31, 2013. The historic hydrographs will not be included in future quarterly reports unless requested by DRC.

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.

As noted in Section 2.1.1, nitrate wells TWN-05, TWN-08, TWN-09, TWN-10, TWN-11, TWN-12, TWN-13, TWN-15, and TWN-17 were abandoned in accordance with the DRC-approved Well Abandonment Procedure on July 31, 2013. The historic measured depth to groundwater and groundwater elevation data will not be included in future quarterly reports unless requested by DRC.

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 current quarter is the first quarter that hydraulic capture associated with nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2 will be evaluated Hydraulic containment and control based on water level data will be 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 perpedicularity between each stream tube and the kriged water level contours.

Cones of depression associated with the nitrate pumping wells were not clearly evident as of last quarter, indicating that hydraulic containment of the portion of the nitrate plume upgradient of TW4-22 and TW4-24 had not yet been achieved. During the current quarter, decreases in water levels at nitrate pumping wells TW4-22 and TW4-24, and adjacent chloroform pumping wells TW4-19 and TW4-20, combined with the large water level decrease at nitrate pumping well TW4-25, have created apparently significant cones of depression and detectable capture associated with many of the nitrate pumping wells, in particular TW4-25. The apparent cone of depression at TW4-25 has expanded the apparent capture of the chloroform pumping system to the west. The resulting combined capture of both systems appears to encompass nearly half of the nitrate plume upgradient of TW4-22 and TW4-24.

The actual proportion of the nitrate plume upgradient of TW4-22 and TW4-24 that is under hydraulic control at the present time is likely less than indicated by the capture zones displayed on the water level contour maps provided under Tab C. The apparent influence of TW4-25 is likely overestimated because of the large decline in water level measured in TW4-25 this quarter. The capture associated with nitrate pumping wells is, however, 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 as 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. Changes after pumping are assumed to result only from pumping. As will be discussed below, the average combined nitrate pumping rate for the quarter exceeds the calculated pre-pumping rate of perched water flow through the nitrate plume by a factor between approximately 1.25 and 2.7.

The cumulative volume of water removed by TW4-22, TW4-24, TW4-25, and TWN-2 during the current quarter was approximately 462,064 gallons. This equates to an average total

extraction rate of approximately 3.5 gpm over the 91 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 2.7, 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 nitrate was not detected at MW-11 and was detected at a concentration less than 1 mg/L at MW-5. Between the previous and current quarters, nitrate concentrations increased slightly in both MW-30 and MW-31. Nitrate in MW-30 increased from 17.6 mg/L to 19.5 mg/L and nitrate in MW-31 increased from 21.7 mg/L to 23.9 mg/L. Changes in both wells were less than 20% suggesting the changes are within the range typical for sampling and analytical error. 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 appears to be 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

Although changes in concentration have occurred in wells within the nitrate plume, the boundaries of the plume have not changed significantly since the last quarter, except that the kriged plume boundary does not encompass well TW4-18 as it did last quarter. The primary reason for this change is that the nitrate concentration at chloroform pumping well TW4-19, located between the plume and TW4-18, decreased from approximately 18 mg/L to less than 5 mg/L. Nitrate concentrations at TW4-18 have continued to increase, however, from

approximately 12 mg/L during the previous quarter to approximately 14 mg/L this quarter. Changes in this area 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 appears to be having the anticipated effect of generally increased nitrate concentrations in wells downgradient of the ponds (see Tab J and Tab K, discussed in Section 4.2.4), which is the expected consequence of reduced dilution as discussed in Section 4.1.1.

Although such increases in concentration 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. Regardless of the specific causes of the increase, nitrate at TW4-18 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 at TW4-18 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, the boundary of the northern portion of the chloroform plume has moved slightly to the west toward nitrate pumping well TW4-24 since pumping began. 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.

As noted in Section 2.1.1, nitrate wells TWN-05, TWN-08, TWN-09, TWN-10, TWN-11, TWN-12, TWN-13, TWN-15, and TWN-17 were abandoned in accordance with the DRC-approved Well Abandonment Procedure on July 31, 2013. The historic trend data will not be included in future quarterly reports unless requested by DRC.

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: TW4-10, TW4-22, TWN-1 and TWN-2;

b) Nitrate concentrations have decreased by more than 20% in the following wells compared to last quarter: MW-26 and TW4-19;

c) Nitrate concentrations have remained within 20% in the following wells compared to last quarter: MW-27, MW-30, MW-31, TW4-18, TW4-20, TW4-21, TW4-24, TW4-25, TWN-3, TWN-4, TWN-7, and TWN-18;

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

e) TW4-16 increased from non-detect to 1.37 mg/L.

As indicated, nitrate concentrations for 12 of the wells with detected nitrate were within 20% of the values reported for the wells during the previous quarter, suggesting that variations are within the range typical for sampling and analytical error. The remaining wells (MW-26, TW4-10, TW4-19, TW4-22, TWN-1, and TWN-2) had changes in concentration greater than 20%. Of the latter, MW-26 and TW4-19 are chloroform pumping wells, and TW4-22 and TWN-2 are nitrate pumping wells. TW4-10 is located adjacent to chloroform pumping well MW-26 and TWN-1 is located adjacent to nitrate pumping well TW4-25. 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. The change at TWN-1 from approximately 1.2 to 1.6 mg/L is also likely to result from 'noise' due to the low concentrations at this well.

Nitrate pumping well TWN-2 had the highest detected nitrate concentration. Since the last quarter, the nitrate concentration in pumping well TWN-2 increased from approximately 80 mg/L to 111 mg/L. The nitrate concentration in nitrate pumping well TW4-22 increased from approximately 30 to 45 mg/L and chloroform increased from 9,640 µg/L to 13,300 µg/L. Chloroform changes are likely in response to the start-up of nitrate pumping in the first quarter 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, TW4-5, TW4-25, TWN-1, and TWN-4 bound the nitrate plume to the east. As discussed above, TW4-18 is outside the kriged plume boundary this quarter (due to a decrease in concentration at TW4-19, located between the plume and TW4-18), although nitrate in well TW4-18 continues to increase (from approximately 12. to 14 mg/L between the previous and current quarters). The increases at TW4-18 (and other nearby wells) are likely the result of the cessation of water delivery to the northern wildlife ponds and the consequent decay of the associated groundwater mound. The reduction in low-nitrate recharge from the ponds appears to be having the anticipated effect of generally increasing nitrate concentrations in wells downgradient of the ponds as discussed in Section 4.1.1.

Nitrate concentrations outside the nitrate plume exceed 10 mg/L at a few locations: TW4-10 (16 mg/L), TW4-12 (16.4 mg/L), TW4-26 (15.9 mg/L), TW4-27 (29.8 mg/L), and TW4-28 (16.2 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 TW4-12 and TW4-27 are within 20% of their concentrations during the previous quarter. Increased nitrate at TW4-10 most likely results from the same factors that resulted in the increases at TW4-18, primarily reduced dilution from

the northern wildlife ponds as discussed above. As with TW4-18, nitrate at TW4-10 is associated with the chloroform plume and is within the capture zone of the chloroform pumping system.

Chloride concentrations are measured because elevated chloride (greater than 100 mg/L) is associated with the nitrate plume. Chloride concentrations at all measured locations are within 20% of their respective concentrations during the previous quarter except at the following locations: TW4-19 (decreased from 179 mg/L to 134 mg/L); and TW4-25 (decreased from 119 mg/L to 88.6 mg/L). TW4-19 is a chloroform pumping well; and TW4-25 is a nitrate pumping well. Fluctuations in concentrations at pumping wells and wells adjacent to pumping wells likely result in part from the effects of pumping. Future increases in concentrations at wells near 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 767 lb of nitrate has been removed from the perched zone since the third quarter of 2010. Prior to the current quarter, 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 162 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 162 lb removed during the current quarter, approximately 137 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 41,150 lb, 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 2,550 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 (41,150 lb) was larger than the mass estimate during the previous quarter (36,930 lb) by 4,220 lb, or approximately 11 %. The primary reason for this difference is higher nitrate concentrations measured in many wells within the plume this quarter compared to last quarter especially TWN-2, which increased from approximately 80 to 111 mg/L. Increases are likely to result primarily from the cessation of water delivery to the northern wildlife ponds and the consequent decay of the associated groundwater mound. The reduction in low-nitrate recharge from the ponds appears to be having the anticipated effect of increasing nitrate concentrations in wells downgradient of the ponds. The impact of reduced dilution, which increases both concentrations and the calculated mass is not completely offset by reductions in saturated thicknesses (resulting from pumping and groundwater mound decay), which reduce both the calculated plume volume and calculated mass.

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 will 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.

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.

No operational problems were observed with the wells or pumping equipment during the quarter.

6.0 CORRECTIVE ACTION REPORT

There are no corrective actions resulting from the 4th quarter 2013 nitrate sampling event.

6.1 Assessment of Previous Quarter's Corrective Actions

There were no corrective actions in the 3rd quarter 2013 nitrate sampling event.

7.0 CONCLUSIONS AND RECOMMENDATIONS

As per the CAP, the current quarter is the first quarter that hydraulic capture associated with nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2 was evaluated. Capture zones were based on water level contours calculated by kriging the current quarter's water level data. The nitrate capture zones are defined by the bounding stream tubes associated with nitrate pumping wells (as shown in maps under Tab C). 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.

Cones of depression associated with the nitrate pumping wells were not clearly evident as of last quarter, indicating that hydraulic containment of the portion of the nitrate plume upgradient of TW4-22 and TW4-24 had not yet been achieved. During the current quarter, decreases in water levels at nitrate pumping wells TW4-22 and TW4-24, and adjacent chloroform pumping wells TW4-19 and TW4-20, combined with a large water level decrease at nitrate pumping well TW4-25, have created apparently significant cones of depression and detectable capture associated with many of the nitrate pumping wells, in particular TW4-25. The apparent cone of depression

at TW4-25 has expanded the apparent capture of the chloroform pumping system to the west. The resulting combined capture of both systems appears to encompass nearly half of the nitrate plume upgradient of TW4-22 and TW4-24.

The actual proportion of the nitrate plume upgradient of TW4-22 and TW4-24 that is under hydraulic control at the present time is likely less than indicated by the capture zones displayed on the water level contour maps (provided under Tab C). The influence of TW4-25 is likely overestimated because of the large decline in water level measured in TW4-25 this quarter. The capture associated with nitrate pumping wells is, however, 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. 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 as demonstrated by comparing the combined average pumping rates of all the nitrate pumping wells for the current quarter (approximately 3.5 gpm) to estimates of pre-pumping ('background') flow through the nitrate plume near the locations of TW4-22 and TW4-24 (calculated to lie between 1.31 gpm and 2.79 gpm). Calculations indicate that pumping during the current quarter exceeds the estimated pre-pumping rate of perched water flow through the nitrate plume by a factor between approximately 1.25 and 2.7, depending on the method used to calculate the average hydraulic conductivity within the 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 2.7.

Fourth quarter, 2013 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 wells MW-26, TW4-10, TW4-19, TW4-22, TWN-1, and TWN-2. The concentrations in wells MW-11, MW-25 and MW-32 remained non-detect while the concentration in TW4-16 increased from non-detect to 1.37 mg/L.

Of the wells showing changes in concentration greater than 20%, MW-26 and TW4-19 are chloroform pumping wells, and TW4-22 and TWN-2 are nitrate pumping wells. TW4-10 is located adjacent to chloroform pumping well MW-26 and TWN-1 is located adjacent to nitrate pumping well TW4-25. Fluctuations in concentrations at pumping wells and wells adjacent to pumping wells likely result in part from the effects of pumping. The change at TWN-1 from approximately 1.2 to 1.6 mg/L likely results from 'noise' due to the low concentrations at this well.

The highest nitrate concentration (111 mg/L) was detected at nitrate pumping well TWN-2. Since the last quarter, the nitrate concentration in TWN-2 increased from approximately 80 mg/L

to 111 mg/L. The nitrate concentration in nitrate pumping well TW4-22 increased from approximately 30 to 45 mg/L and chloroform increased from 9,640 µg/L to 13,300 µg/L causing the boundary of the northern portion of the chloroform plume to move slightly to the west toward nitrate pumping well TW4-24. Chloroform changes are likely in response to the start-up of nitrate pumping in the first quarter and are affected by the presence of historically high chloroform concentrations at adjacent, cross-gradient well TW4-20.

As discussed in Section 4.2.5, TW4-18 is again outside the kriged plume boundary due to a decrease in concentration at TW4-19 (located between the plume and TW4-18) between the previous and current quarters. Nitrate at TW4-18 continues to increase (from approximately 12 to 14 mg/L between the previous and current quarters). The increases at TW4-18 (and other nearby wells) are likely due to the cessation of water delivery to the northern wildlife ponds and the consequent decay of the associated groundwater mound. The reduction in low-nitrate recharge from the ponds appears to be having the anticipated effect of generally increased nitrate concentrations in wells downgradient of the ponds.

Although such increases 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. Regardless of the specific causes of the increase, nitrate at TW4-18 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 at TW4-18 is to the southwest in the same approximate direction as the main body of the nitrate plume.

Except in the immediate vicinity of TW4-18, the boundaries of the nitrate plume have not changed significantly since the last quarter, even though the plume is influenced by reduced dilution, by nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2, and changes in concentrations in wells within the plume. Well MW-27, located west of TWN-2, and TWN-18, located north of TWN-3, bound the nitrate plume to the west and north. 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. Wells MW-25, MW-26, MW-32, TW4-16, TW4-5, TW4-25, TWN-1, and TWN-4 bound the nitrate plume to the east.

Nitrate concentrations at MW-30 and MW-31 continue to be relatively stable, suggesting that plume migration is minimal or absent. Nitrate in MW-30 increased from 17.6 mg/L to 19.5 mg/L and nitrate in MW-31 increased from 21.7 mg/L to 23.9 mg/L. Changes in both wells were less than 20% suggesting the changes are within the range typical for sampling and analytical error. 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 appears to be increasing at MW-31. 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.

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 nitrate plume mass estimate for the current quarter was calculated as 41,150 lb, which was higher than the previous quarter's estimate of 36,930 lb by 4,220 lb or 11 %. The primary reason for this difference is higher nitrate concentrations measured in many wells within the plume this quarter compared to last quarter, especially TWN-2, which increased from approximately 80 to 111 mg/L. Increases are likely due to the cessation of water delivery to the northern wildlife ponds and the consequent decay of the associated groundwater mound. The reduction in low-nitrate recharge from the ponds appears to be having the anticipated effect of increasing nitrate concentrations in wells downgradient of the ponds. The impact of reduced dilution, which increases both concentrations and the calculated mass is not completely offset by reductions in saturated thicknesses (resulting from pumping and groundwater mound decay), which reduce both the calculated plume volume and calculated mass.

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 impact 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 will 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.

During the current quarter, a total of approximately 162 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 162 lb removed during the current quarter, approximately 137 lb, (or 85 %), was removed by the nitrate pumping wells.

Nitrate concentrations outside the nitrate plume exceed 10 mg/L at a few locations: TW4-10 (16 mg/L), TW4-12 (16.4 mg/L), TW4-26 (15.9 mg/L), TW4-27 (29.8 mg/L), and TW4-28 (16.2 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 TW4-12 and TW4-27 are within 20% of their concentrations during the previous quarter. Increases at TW4-10 most likely result from the same factors that resulted in the increases at TW4-18, primarily reduced dilution from the northern wildlife ponds as discussed above. As with TW4-18, nitrate at TW4-10 is associated with the chloroform plume and is within the capture zone of the chloroform pumping system.

Chloride concentrations are measured because elevated chloride (greater than 100 mg/L) is associated with the nitrate plume. Chloride concentrations at all measured locations are within 20% of their respective concentrations during the previous quarter except at the following locations: TW4-19 (decreased from 179 mg/L to 134 mg/L); and TW4-25 (decreased from 119 mg/L to 88.6 mg/L). TW4-19 is a chloroform pumping well; and TW4-25 is a nitrate pumping well. Fluctuations in concentrations at pumping wells and wells adjacent to pumping wells likely result in part from the effects of pumping.

Nitrate mass removal from the perched zone increased substantially by the start-up of nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2 during the first quarter. 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. Concentration trends are affected by the cessation of water delivery to the northern wildlife ponds which appears to be having the anticipated impact of reduced dilution (which is increasing constituent concentrations at some wells) and reduced hydraulic gradients (which will act in concert with pumping to reduce hydraulic gradients and reduce plume migration).

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 is expected to increase many constituent concentrations within the plumes while reducing hydraulic gradients and 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 layers receiving primarily low constituent concentration pond water will result in wells intercepting these layers receiving a smaller proportion of the low constituent concentration water.

The combined impact of the above two mechanisms may be especially evident at chloroform and nitrate pumping wells and non-pumped wells adjacent to the pumped wells. The overall impact is expected to be generally higher constituent concentrations in these wells over time until mass reduction resulting from pumping and natural attenuation eventually reduce concentrations.

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 21, 2014.

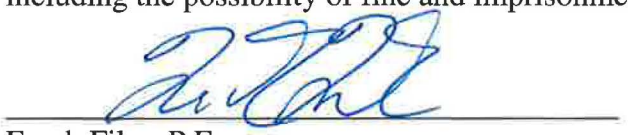
Energy Fuels Resources (USA) Inc.

By: 

Frank Filas, P.E
Vice President, Permitting and 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.



Frank Filas, P.E
Vice President, Permitting and 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	10/16/2013	10/30/2013
Piezometer 02	10/16/2013	10/30/2013
Piezometer 03	10/16/2013	10/30/2013
TWN-01	10/16/2013	10/30/2013
TWN-02	10/16/2013	10/30/2013
TWN-03	10/17/2013	10/30/2013
TWN-04	10/16/2013	10/30/2013
TWN-07	10/16/2013	10/30/2013
TWN-07R	10/15/2013	10/30/2013
TWN-18	10/16/2013	10/30/2013
TW4-22	10/29/2013	11/7/2013
TW4-24	10/29/2013	11/7/2013
TW4-25	10/29/2013	11/7/2013
TWN-60	10/17/2013	10/30/2013
TW4-60	11/14/2013	11/26/2013
TWN-65	10/16/2013	10/30/2013

Note: All wells were sampled for Nitrate and Chloride.

TWN-60 is a DI Field Blank.

TWN-65 is a duplicate of TWN-01.

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	0.5	5.6	1.7	3.5	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
Well Totals (pounds)	**46.1**	**5.9**	**210.2**	**30.6**	**65.5**	**34.5**	**228.5**	**27.3**	**118.4**	**767.0**

Table 3 Nitrate Well Pumping Rates and Volumes

Pumping Well Name	Volume of Water Pumped During the Quarter (gals)	Average Pump Rate (gpm)
MW-4	70,340.4	4.3
MW-26	24,207.6	10.3
TW4-4	60,233.6	7.8
TW4-19	403,974.0	14.0
TW4-20	19,280.2	9.9
TW4-22	24,952.2	18.2
TW4-24	260,555.3	17.8
TW4-25	126,576.5	18
TWN-2	49,979.9	18.3

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
Totals Since Q3 2010	1136170.95						46.09	562918.9						5.88

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
Totals Since Q3 2010	3607299.4						210.18	544188.5						30.64

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
Totals Since Q3 2010	1113109.1						65.51	92745.7						34.52

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**
Totals Since Q3 2010	860610.7						228.52	519097.7						27.27

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**
Totals Since Q3 2010	180605.1						118.39	767.01

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
MW-30	15.8	15	16	16	17	16	16	17	16	17	18.5	21.4	18.8	17.6	19.5
MW-31	22.5	21	20	21	22	21	21	21	20	21	23.6	19.3	23.8	21.7	23.9
MW-5	ND	NS	0.2	NS	0.2	NS	0.2	NS	0.1	NS	ND	NS	ND	NS	0.279
MW-11	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

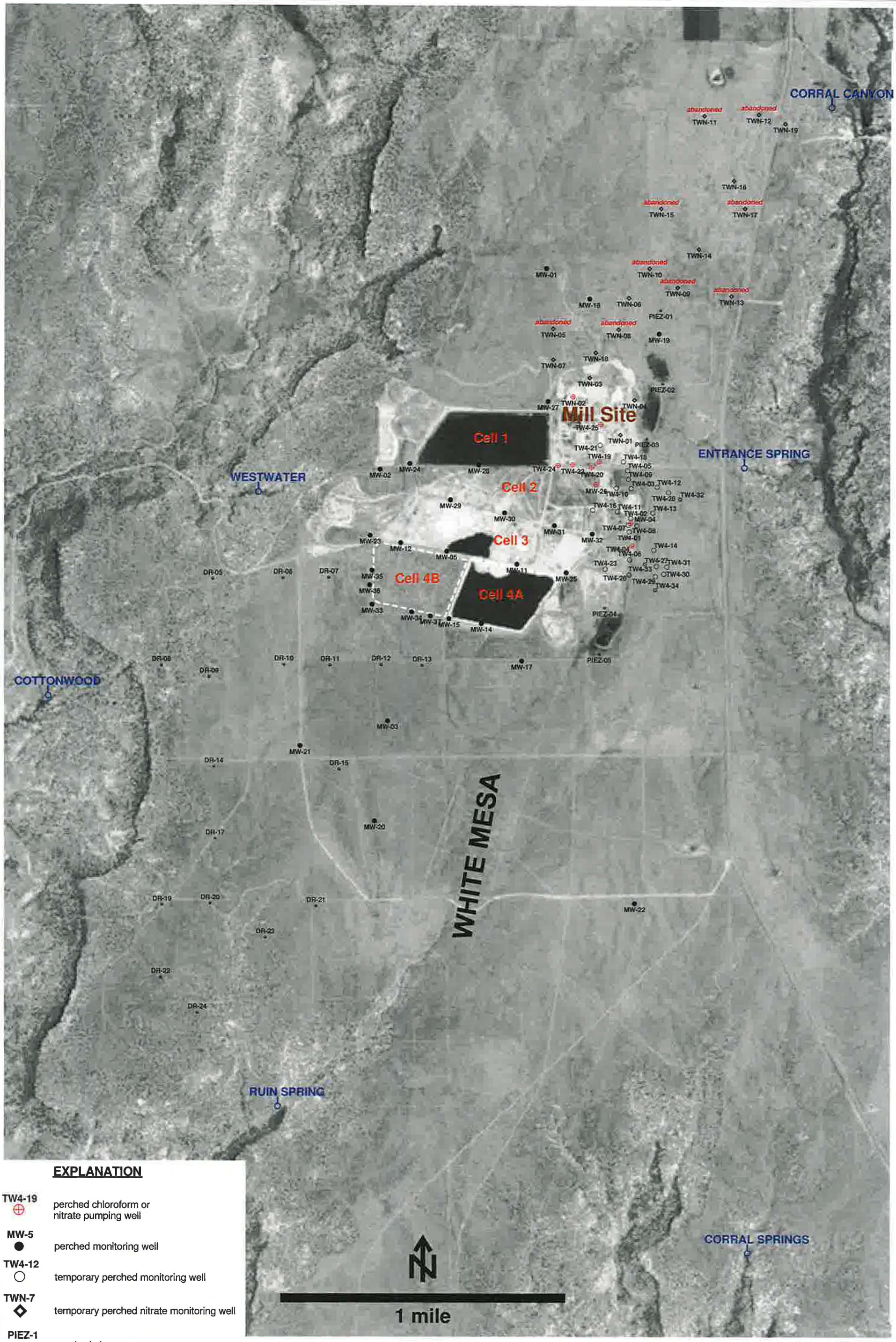
[1] assumes width = 1,200 ft; saturated thickness = 56 ft; K = 0.15 ft/day; and gradient = 0.025 ft/ft

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

INDEX OF TABS

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
- RUIN SPRING — seep or spring

HYDRO GEO CHEM, INC.

SITE PLAN SHOWING PERCHED WELL AND PIEZOMETER LOCATIONS WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/feb14/Uwelloc1213.srf	A-1

Tab B

Order of Sampling and Field Data Worksheets

Nitrate Order
4th Quarter 2013

Nitrate Samples						Rinsate Samples		
Name	Nitrate Mg/L Previous Qrt.	Date/Purge	sample	Depth	Total Depth	Name	Date	Sample
TWN-7	0.835	10/16/13	0625		105	TWN-7R	10/15/10	0724
TWN-1	1.24	10/16/13	0727	U	112.5	TWN-1R		
TWN-4	1.58	10/16/13	0814		125.7	TWN-4R		
TWN-18	2.04	10/16/13	0858		145	TWN-18R		
TWN-3	20.9	10/17/13	0627		96	TWN-3R		
TWN-2	80.0	10/16/13	0950		96	TWN-2R		
Duplicate of	TWN-01	10/16/13	0727					
Rinsate	TWN-7R	10/15/13	0724					
DI Sample	TWN-60	10/17/13	0845					
Piez 1	7.83	10/16/13	1105					
Piez 2	0.198	10/16/13	1010					
Piez 3	1.81	10/16/13	1035					

Samplers: Tanner Holliday

Garrin Palmer

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

See instruction

Description of Sampling Event: 4th Quarter Nitrate 2013

Location (well name): Piez-01

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: Piez-01_10162013

Date and Time for Purging: 10/16/2013 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: 999 µMHOS/ cm

Well Depth(0.01ft): 0

Depth to Water Before Purging: 62.80

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

Weather Cond.: Sunny

Ext'l Amb. Temp. °C (prior sampling event): 6°

Time	1104	Gal. Purged	0
Conductance	2175	pH	8.73
Temp. °C	13.40		
Redox Potential Eh (mV)	327		
Turbidity (NTU)	9.0		

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 [63.50] Sample Time [1105]

See instruction

Comment

Arrived on site at 1050. Tanner, Garrin, Deen all present to collect samples. Samples bailed and collected at 1105 water was mostly clear. Left site at 1112

Deen Henderson with the state of utah split samples

Piez-01 10-16-2013 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 2013

Location (well name): Piez-02

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: Piez-02_10162013

Date and Time for Purging: 10/16/2013 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: TWN-02

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 999 µMHOS/ cm

Well Depth(0.01ft): 0

Depth to Water Before Purging: 32.88

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

Weather Cond.: Sunny

Ext'l Amb. Temp. °C (prior sampling event): 6°

Time	1009	Gal. Purged	0
Conductance	701	pH	7.45
Temp. °C	13.47		
Redox Potential Eh (mV)	290		
Turbidity (NTU)	6.5		

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 = [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 [36.19] Sample Time [1010]

See instruction

Comment

Arrived on site at ~~1012~~ 1002. Tanner, Garrin, Deen all present to bail and collect samples. Samples collected at 1010. water was mostly clear.
Left site at 1019.
Deen Henderson with the state of Utah split samples

Piez-02 10-16-2013 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 2013

Location (well name): Piez-03

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: Piez-03_10162013

Date and Time for Purging: 10/16/2013 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: 999 µMHOS/ cm

Well Depth(0.01ft): 0

Depth to Water Before Purging: 45.95

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

Weather Cond.: Sunny

Ext'l Amb. Temp. °C (prior sampling event): 6°

Time	1034	Gal. Purged	0
Conductance	2943	pH	11.60
Temp. °C	13.51		
Redox Potential Eh (mV)	237		
Turbidity (NTU)	9.6		

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 [ ] 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 [57.72] Sample Time [1035]

See instruction

Comment

Arrived on site at 1025. Tanner, Garrin, Deen, all present to bail samples
Samples bailed at 1035. Water was mostly clear. Left site at 1044

Deen Henderson with the state of Utah split samples

Piez-03 10-16-2013 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 2013

Location (well name): TWN-01

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TWN-01_10162013

Date and Time for Purging: 10/16/2013 TWN-01_10162013

and Sampling (if different): N/A 10/16/2013

Well Purging Equip Used: [X] pump or [ ] bailer

Well Pump (if other than Bennet): Grundfos

Purging Method Used: [X] 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: 999 µMHOS/ cm

Well Depth(0.01ft): 112.50

Depth to Water Before Purging: 56.90

Casing Volume (V) 4" Well: 36.30 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Partly Cloudy

Ext'l Amb. Temp. °C (prior sampling event): 6°

Time	0724	Gal. Purged	55
Conductance	890	pH	6.99
Temp. °C	14.59		
Redox Potential Eh (mV)	364		
Turbidity (NTU)	200		

Time	0725	Gal. Purged	66
Conductance	881	pH	7.14
Temp. °C	14.61		
Redox Potential Eh (mV)	349		
Turbidity (NTU)	56.2		

Time	0726	Gal. Purged	77
Conductance	854	pH	7.20
Temp. °C	14.61		
Redox Potential Eh (mV)	335		
Turbidity (NTU)	56		

Time	0727	Gal. Purged	88
Conductance	856	pH	7.26
Temp. °C	14.68		
Redox Potential Eh (mV)	330		
Turbidity (NTU)	54		

Volume of Water Purged: 88 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = 11

Time to evacuate two casing volumes (2V)
T = 2V/Q = 6.60

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: 77.35 Sample Time: 0727

See instruction

Comment

Arrived on site at 0712 Tanner, Garrin, Deen Henderson all on site for purge and sampling event. Deen to split sampling event. Purge began at 0719. Purged well for a total of 8 minutes. Water was a little Murky. Purge ended at and samples collected at 0727. Left site at 0730 Deen Henderson with the state of Utah on site to split samples.

TWN-01 10-16-2013 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 2013

Location (well name): TWN-02

Sampler Name and initials: Tanner Holliday /TH

Field Sample ID: TWN-02_10162013

Date and Time for Purging: 10/16/2013 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: 999 µMHOS/ cm

Well Depth(0.01ft): 96.00

Depth to Water Before Purging: 27.64

Casing Volume (V) 4" Well: 44.63 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Sunny

Ext'l Amb. Temp. °C (prior sampling event): 6°

Time	0949	Gal. Purged	~~0~~ 0
Conductance	3578	pH	6.63
Temp. °C	13.51		
Redox Potential Eh (mV)	320		
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 = 18.0

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: 93.41

Sample Time: 0950

See instruction

Comment

Arrived on site at 0944. Tanner, Garrin, Deen all present to collect samples. Samples collected at 0950. Left site at 0954. water was clear.

Continuous Pumping Well

Deen Henderson with the state of utah split samples.

TWN-02 10-16-2013 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 2013

Location (well name): TWN-03

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TWN-03_10172013

Date and Time for Purging: 10/16/2013 and Sampling (if different): 10/17/2013

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: 999 µMHOS/ cm

Well Depth(0.01ft): 96.00

Depth to Water Before Purging: 37.20

Casing Volume (V) 4" Well: 38.39 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Sunny

Ext'l Amb. Temp. °C (prior sampling event): 5°

Time	0935	Gal. Purged	52	Time	Gal. Purged
Conductance	2438	pH	6.96	Conductance	pH
Temp. °C	14.24			Temp. °C	
Redox Potential Eh (mV)	288			Redox Potential Eh (mV)	
Turbidity (NTU)	61			Turbidity (NTU)	

Time	0627	Gal. Purged	0	Time	0628	Gal. Purged	0
Conductance	2485	pH	7.22	Conductance	2473	pH	7.19
Temp. °C	14.50			Temp. °C	14.47		
Redox Potential Eh (mV)				Redox Potential Eh (mV)			
Turbidity (NTU)				Turbidity (NTU)			

Before

After

Volume of Water Purged: 52 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = 11

Time to evacuate two casing volumes (2V)
T = 2V/Q = 6.98

Number of casing volumes evacuated (if other than two): 1.35

If well evacuated to dryness, number of gallons evacuated: 52

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: 93.20 Sample Time: 0627

See instruction

Comment

Arrived on site at 0927 Tanner, Garrin, Deon all present for purge. Purge began at 0931. Purged well for a total of 4 minutes and 45 seconds. Purged well dry! water was mostly clear. Purge ended at 0935. Left site at 0940

Arrived on site at 0623. Tanner and Garrin present to collect samples. Depth to water was 36.77. Samples bailed at 0627. Left site at 0630

TWN-03 10-16-2013 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 2013

Location (well name): TWN-04

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TWN-04_10162013

Date and Time for Purging: 10/16/2013 and Sampling (if different): N/A

Well Purging Equip Used: [X] pump or [ ] bailer

Well Pump (if other than Bennet): Grundfos

Purging Method Used: [X] 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: 999 µMHOS/ cm

Well Depth(0.01ft): 125.70

Depth to Water Before Purging: 49.02

Casing Volume (V) 4" Well: 50.07 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Clear

Ext'l Amb. Temp. °C (prior sampling event): 2°

Time	0811	Gal. Purged	88
Conductance	1059	pH	7.14
Temp. °C	14.45		
Redox Potential Eh (mV)	302		
Turbidity (NTU)	300		

Time	0812	Gal. Purged	99
Conductance	1060	pH	7.17
Temp. °C	14.45		
Redox Potential Eh (mV)	297		
Turbidity (NTU)	310		

Time	0813	Gal. Purged	110
Conductance	1056	pH	7.18
Temp. °C	14.44		
Redox Potential Eh (mV)	296		
Turbidity (NTU)	316		

Time	0814	Gal. Purged	121
Conductance	1057	pH	7.18
Temp. °C	14.49		
Redox Potential Eh (mV)	292		
Turbidity (NTU)	325		

Volume of Water Purged [12] gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = [11]

Time to evacuate two casing volumes (2V)
T = 2V/Q = [9.10]

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 [50.51] Sample Time [0814]

See instruction

Comment

Arrived on site at 0758 Tanner, Garrin, Deen all present for Purge and sampling event Purge began at 0803. Purged well for a total of 11 minutes. water was a milky white but was slowly clearing throughout the purge. Purge ended and samples collected at 0814. Left site at 0817.

Deen Henderson with the State of Utah on site to split samples.

[ ] 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 2013

Location (well name): TWN-07

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TWN-07_10162013

Date and Time for Purging: 10/15/2013 and Sampling (if different): 10/16/2013

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-37R

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 999 µMHOS/ cm

Well Depth(0.01ft): 105.00

Depth to Water Before Purging: 86.90

Casing Volume (V) 4" Well: 11.81 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Cloudy

Ext'l Amb. Temp. °C (prior sampling event): 5°

Time	0744	Gal. Purged	19
Conductance	1261	pH	6.85
Temp. °C	14.38		
Redox Potential Eh (mV)	348		
Turbidity (NTU)	108		

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

Time	0625	Gal. Purged	0
Conductance	1194	pH	7.14
Temp. °C	14.29		
Redox Potential Eh (mV)			
Turbidity (NTU)			

Before

Time	0626	Gal. Purged	0
Conductance	1200	pH	7.12
Temp. °C	14.31		
Redox Potential Eh (mV)			
Turbidity (NTU)			

After

Volume of Water Purged [19] gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = [11]

Time to evacuate two casing volumes (2V)
T = 2V/Q = [2.14]

Number of casing volumes evacuated (if other than two) [1.60]

If well evacuated to dryness, number of gallons evacuated [~~18~~ 19] 19

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 [113.38] Sample Time [0625]

See instruction

Comment

Arrived on site at 0738. Tanner and Garrin Present for purge. Purge began at 0743. Purged well for 1 minute 45 seconds. Purged well dry. water was a little turbid. Ivr ended at 0744. Left site at 0746
Arrived on site at 0620. Tanner and Garrin present to collect samples. Depth to water was 97.01
Samples bailed and collected at 0625. Left site at 0628

TWN-07 10-15-2013 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 Sampling 2013

Location (well name): TWN-07R

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TWN-07R_10152013

Date and Time for Purging: 10/15/2013 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: 999 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): 5°

Time	0723	Gal. Purged	130
Conductance	2.2	pH	6.03
Temp. °C	14.17		
Redox Potential Eh (mV)	379		
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: 150 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = 1]

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: 0724

See instruction

Comment

Arrived on site at 0710 Tanner and Garrin present for rinsate. Rinsate began at 0710 Pumped 50 Gallons of soap water and 100 Gallons of DI water. Samples collected at 0724 Left site at 0727

TWN-07R 10-15-2013 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 2013

Location (well name): TWN-18

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TWN-18_10162013

Date and Time for Purging: 10/16/2013 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-04

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 999 µMHOS/ cm

Well Depth(0.01ft): 145.00

Depth to Water Before Purging: 58.79

Casing Volume (V) 4" Well: 56.29 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Sunny

Ext'l Amb. Temp. °C (prior sampling event): 3°

Time	0855	Gal. Purged	99
Conductance	2205	pH	6.85
Temp. °C	14.35		
Redox Potential Eh (mV)	299		
Turbidity (NTU)	1035		

Time	0856	Gal. Purged	110
Conductance	2200	pH	6.87
Temp. °C	14.36		
Redox Potential Eh (mV)	299		
Turbidity (NTU)	1039		

Time	0857	Gal. Purged	121
Conductance	2210	pH	6.85
Temp. °C	14.36		
Redox Potential Eh (mV)	299		
Turbidity (NTU)	1048		

Time	0858	Gal. Purged	132
Conductance	2218	pH	6.85
Temp. °C	14.40		
Redox Potential Eh (mV)	299		
Turbidity (NTU)	1059		

Volume of Water Purged: 132 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = 11

Time to evacuate two casing volumes (2V)
T = 2V/Q = 10.23

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: 60.23 Sample Time: 0858.

See instruction

Comment

Arrived on site at 0843 Tanner, Garrin, Deen, all present for purge and sampling event. Purge began at 0846. Purged wells for a total of 12 minutes water was - milky white but was slowly clearing throughout the purge. Purge ended and samples collected at 0858 Left site at 0902

Deen Henderson with the state of Utah on site to split samples.

TWN-18 10-16-2013 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 Chloroform 2013

Location (well name): ~~TW4-20~~ TW4-22

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: ~~TW4-20_10292013~~ TW4-22_10292013

Date and Time for Purging: 10/29/2013 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: 999 µMHOS/ cm

Well Depth(0.01ft): ~~106.00~~ 113.50

Depth to Water Before Purging: ~~58.01~~ 62.68

Casing Volume (V) 4" Well: ~~31.33~~ (.653h) 33.18
3" Well: 0 (.367h)

Weather Cond.: Overcast

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

Time	1226	Gal. Purged	6
Conductance	6383	pH	6.93
Temp. °C	15.41		
Redox Potential Eh (mV)	242		
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 = ~~10.0~~ 18.0

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: 97.11 Sample Time: 1227

See instruction

Comment

Arrived on site at 1223. Tanner and Garrin present to collect samples. Samples collected at 1227. Water was clear. Left site at 1229

Continuous Pumping Well

TW4-22 10-29-2013 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 Chloroform 2013

Location (well name): TW4-24

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TW4-24_10292013

Date and Time for Purging: 10/29/2013 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: 999 µMHOS/ cm

Well Depth(0.01ft): 112.50

Depth to Water Before Purging: 66.20

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

Weather Cond.: Overcast

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

Time	1219	Gal. Purged	0
Conductance	8024	pH	6.85
Temp. °C	15.11		
Redox Potential Eh (mV)	250		
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 = 18.0

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: 73.24 Sample Time: 1220

See instruction

Comment

Arrived on site at 1215. Tanner and Garrin present to collect samples.
Samples collected at 1220. water was clear.
Left site at 1222

Continuous Pumping Well

TW4-24 10-29-2013 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 Chloroform 2013

Location (well name): TW4-25

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TW4-25_10292013

Date and Time for Purging: 10/29/2013 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: MW-32

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 999 µMHOS/ cm

Well Depth(0.01ft): 134.80

Depth to Water Before Purging: 58.00

Casing Volume (V) 4" Well: 50.15 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Cloudy

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

Time	1203	Gal. Purged	0
Conductance	2759	pH	7.09
Temp. °C	16.55		
Redox Potential Eh (mV)	269		
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 = 18.0

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: 76.49 Sample Time: 1204

See instruction

Comment

Arrived on site at 1159. Tanner and Garrin present to collect samples.
Samples collected at 1204 water was clear
Left site at 1207

Continuous Pumping Well

TW4-25 10-29-2013 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 Chloroform 2013

Location (well name): TW4-60

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TW4-60_11142013

Date and Time for Purging: 11/14/2013 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 Chloroform

Prev. Well Sampled in Sampling Event: TW4-34

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 999 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.: Cloudy

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

Time	0659	Gal. Purged	0
Conductance	0.8	pH	6.99
Temp. °C	19.03		
Redox Potential Eh (mV)	345		
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 = [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 [0700]

See instruction

Comment

D.I Sample

TW4-60 11-14-2013 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 2013

Location (well name): TWN-60

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TWN-60_10172013

Date and Time for Purging: 10/17/2013 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-01

pH Buffer 7.0: 7.0

pH Buffer 4.0: 4.0

Specific Conductance: 999 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.: Clear

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

Time	0844	Gal. Purged	0
Conductance	1.6	pH	8.30
Temp. °C	16.48		
Redox Potential Eh (mV)	269		
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 = 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: 0845

See instruction

Comment

D.I. Blank

TWN-60 10-17-2013 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 2013

Location (well name): TWN-65

Sampler Name and initials: Tanner Holliday/TH

Field Sample ID: TWN-65_10162013

Date and Time for Purging: 10/16/2013 and Sampling (if different): N/A

Well Purging Equip Used: [x] pump or [ ] bailer

Well Pump (if other than Bennet): Grundfos

Purging Method Used: [x] 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: 999 µMHOS/ cm

Well Depth(0.01ft): 112.50

Depth to Water Before Purging: 56.90

Casing Volume (V) 4" Well: 36.30 (.653h)
3" Well: 0 (.367h)

Weather Cond.: Partly Cloudy

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

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

Volume of Water Purged: 88 gallon(s)

Pumping Rate Calculation

Flow Rate (Q), in gpm.
S/60 = 11

Time to evacuate two casing volumes (2V)
T = 2V/Q = 6.60

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: 77.35 Sample Time: 0727

See instruction

Comment

Duplicate of TWN-01

TWN-65 10-16-2013 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, David Turk

DATE: 12/20/2013

TIME	WELL	Static level
1211	MW-1	64.60
951	MW-2	109.52
1304	MW-3	87.49
1303	MW-3A	85.93
935	MW-5	106.02
939	MW-11	86.51
933	MW-12	108.11
917	MW-14	103.25
917	MW-15	105.90
1308	MW-17	72.95
1209	MW-18	71.11
1152	MW-19	58.38
1226	MW-20	89.10
1153	MW-22	67.70
931	MW-23	120.72
1233	MW-24	114.15
942	MW-25	73.14
1240	MW-26	66.18
1230	MW-27	53.21
1236	MW-28	76.22
948	MW-29	101.11
944	MW-30	74.83
821	MW-31	67.24
819	MW-32	73.91
923	MW-33	DRY
920	MW-34	107.56
929	MW-35	111.88
927	MW-36	110.10
918	MW-37	114.22

TIME	WELL	Static Level
1238	MW-4	69.10
802	TW4-1	64.66
806	TW4-2	65.45
809	TW4-3	51.85
1226	TW4-4	70.16
812	TW4-5	60.18
801	TW4-6	68.93
805	TW4-7	65.27
808	TW4-8	64.84
811	TW4-9	57.86
813	TW4-10	58.02
815	TW4-11	57.99
731	TW4-12	42.11
735	TW4-13	46.48
737	TW4-14	84.58
1240	TW4-15	66.18
817	TW4-16	61.85
819	TW4-17	73.91
1225	TW4-18	61.57
1242	TW4-19	66.84
1229	TW4-20	70.09
1223	TW4-21	61.90
1224	TW4-22	59.07
759	TW4-23	64.41
1242	TW4-24	60.98
1221	TW4-25	83.91
757	TW4-26	62.71
739	TW4-27	80.80
732	TW4-28	36.75
742	TW4-29	71.61
746	TW4-30	77.00
748	TW4-31	82.77
734	TW4-32	48.10
749	TW4-33	70.11
743	TW4-34	69.20

TIME	WELL	Static Level
1156	PIEZ-1	63.16
1150	PIEZ-2	33.51
1146	PIEZ-3	44.93
755	PIEZ-4	50.35
752	PIEZ-5	47.68
1227	TWN-1	57.75
1134	TWN-2	32.01
1139	TWN-3	36.90
1144	TWN-4	49.95
NA	TWN-5	Abandon
1205	TWN-6	76.79
1214	TWN-7	87.03
NA	TWN-8	Abandon
NA	TWN-9	Abandon
NA	TWN-10	Abandon
NA	TWN-11	Abandon
NA	TWN-12	Abandon
NA	TWN-13	Abandon
1157	TWN-14	62.31
NA	TWN-15	Abandon
1201	TWN-16	47.71
NA	TWN-17	Abandon
1141	TWN-18	59.19
1012	TWN-19	52.90

TIME	WELL	Static Level
NA	DR-1	Abandon
NA	DR-2	Abandon
1246	DR-5	83.05
1248	DR-6	94.35
925	DR-7	91.86
1240	DR-8	51.11
1237	DR-9	86.47
1234	DR-10	78.15
1256	DR-11	98.25
1258	DR-12	89.90
1301	DR-13	69.79
1221	DR-14	76.33
1230	DR-15	92.91
NA	DR-16	Abandon
1217	DR-17	64.97
NA	DR-18	Abandon
1212	DR-19	63.00
1214	DR-20	55.50
1157	DR-21	101.29
1209	DR-22	DRY
1200	DR-23	70.62
1206	DR-24	43.80
NA	DR-25	Abandon

Some time may be the same because we split up to take measurments.

375801R

Weekly Inspection Form

Date 10/7/2013 **Name** Tanner Holliday, Garrin Palmer

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1401	MW-4	68.80	Flow 43	(Yes) No
			Meter 207434.25	(Yes) No
1358	MW-26	62.45	Flow 100	(Yes) No
~~1358~~			Meter 364471.02	(Yes) No
1430	TW4-19	63.89	Flow 14.0	(Yes) No
			Meter 1601250.06	(Yes) No
1353	TW4-20	81.40	Flow 9.8	(Yes) No
			Meter 593094.47	(Yes) No
1403	TW4-4	70.11	Flow 8.0	(Yes) No
			Meter 192184.7	(Yes) No
1343	TWN-2	60.01	Flow 18.5	(Yes) No
			Meter 134413.0	(Yes) No
1350	TW4-22	58.00	Flow 18.2	(Yes) No
			Meter 69692.4	(Yes) No
1347	TW4-24	75.61	Flow 18.2	(Yes) No
			Meter 619408.2	(Yes) No
1340	TW4-25	69.50	Flow 18.5	(Yes) No
			Meter 4027164	(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 10/14/13 **Name** Garrin Palmer, Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1244	MW-4	67.71	Flow 9.4 GPM	(Yes) No
			Meter 212721.88	(Yes) No
1240	MW-26	64.97	Flow 10.4 GPM	(Yes) No
			Meter 366068.27	(Yes) No
1147	TW4-19	60.74	Flow 14.0 GPM	(Yes) No
			Meter 1632475.05	(Yes) No
1237	TW4-20	62.13	Flow 9.6 GPM	(Yes) No
			Meter 594824.40	(Yes) No
1248	TW4-4	69.10	Flow 7.4 GPM	(Yes) No
			Meter 196602.60	(Yes) No
1225 ~~27.30~~	TWN-2	27.30	Flow 18.6 GPM	(Yes) No
			Meter 138368.70	(Yes) No
1233	TW4-22	58.05	Flow 18.0 GPM	(Yes) No
			Meter 71604.72	(Yes) No
1230	TW4-24	66.39	Flow 18.0 GPM	(Yes) No
			Meter 638297.10	(Yes) No
1220	TW4-25	85.60	Flow 18.4 GPM	(Yes) No
			Meter 411878.70	(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 10/23/13 **Name** Garrin Palmer, Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1446	MW-4	58.20	Flow 4.3 GPM	(Yes) No
			Meter 219761.27	(Yes) No
1439	MW-26	87.10	Flow 10.0 GPM	(Yes) No
			Meter 368478.67	(Yes) No
1504	TW4-19	60.26	Flow 14.0 GPM	(Yes) No
			Meter 1672777.60	(Yes) No
1435	TW4-20	65.30	Flow 10.1 GPM	(Yes) No
			Meter 596410.23	(Yes) No
1450	TW4-4	68.78	Flow 7.2 GPM	(Yes) No
			Meter 202682.80	(Yes) No
1424	TWN-2	28.02	Flow 18.1 GPM	(Yes) No
			Meter 143049.60	(Yes) No
1432	TW4-22	59.39	Flow 18.2 GPM	(Yes) No
			Meter 74080.60	(Yes) No
1428	TW4-24	66.60	Flow 18.0 GPM	(Yes) No
			Meter 662218.20	(Yes) No
1420	TW4-25	58.58	Flow 18.0 GPM	(Yes) No
			Meter 425067.40	(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 10/24/2013 **Name** Tanner Holliday, Garrin Palmer

Time	Well	Depth*	Time	Well	Depth*
1007	MW-4	73.85	0934	TWN-1	56.97
1008	TW4-1	64.19	0930	TWN-2	34.17
1010	TW4-2	65.74	0949	TWN-3	36.70
1017	TW4-3	52.10	0946	TWN-4	49.15
1018	TW4-4	69.98	0955	TWN-7	87.90
1021	TW4-5	60.06	0943	TWN-18	58.77
1004	TW4-6	69.32	0952	MW-27	52.80
1009	TW4-7	65.75	1000	MW-30	75.21
1012	TW4-8	65.12	1004	MW-31	67.51
1019	TW4-9	57.75	0938	TW4-28	37.03
1015	TW4-10	57.97	0947	TW4-29	72.10
1014	TW4-11	58.10	0951	TW4-30	77.65
0935	TW4-12	42.37	0953	TW4-31	83.57
0941	TW4-13	47.59	0939	TW4-32	48.20
0943	TW4-14	85.11	0955	TW4-33	70.50
1008	TW4-15	63.69	0949	TW4-34	69.70
1006	TW4-16	61.52			
1018	TW4-17	73.86			
0936	TW4-18	61.69			
1006	TW4-19	68.68			
1016	TW4-20	62.64			
0939	TW4-21	60.42			
1014	TW4-22	58.15			
1002	TW4-23	64.65			
1011	TW4-24	75.59			
0932	TW4-25	83.63			
0959	TW4-26	63.00			
0945	TW4-27	81.24			

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

* Depth is measured to the nearest 0.01 feet

Weekly Inspection Form

Date 10/28/13 **Name** Garrin Palmer, Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1011	MW-4	73.17	Flow 4.4 GPM	(Yes) No
			Meter 223723.40	(Yes) No
1007	MW-26	63.62	Flow 10.4 GPM	(Yes) No
			Meter 369728.54	(Yes) No
1026	TW4-19	74.40	Flow 14.00	(Yes) No
			Meter 1694238.00	(Yes) No
1004	TW4-20	62.51	Flow 10.0 GPM	(Yes) No
			Meter 597405.97	(Yes) No
1014	TW4-4	79.98	Flow 7.5 GPM	(Yes) No
			Meter 205880.10	(Yes) No
0949	TWN-2	26.50	Flow 18.0 GPM	(Yes) No
			Meter 146047.23	(Yes) No
0959	TW4-22	57.79	Flow 18.4 GPM	(Yes) No
			Meter 75399.70	(Yes) No
0955	TW4-24	66.15	Flow 18.1 GPM	(Yes) No
			Meter 674909.00	(Yes) No
0945	TW4-25	52.77	Flow 17.9 GPM	(Yes) No
			Meter 432171.80	(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 11/4/13 **Name** Garcia Palmer, Tanner Halliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1351	MW-4	68.87	Flow 4.4 GPM	(Yes) No
			Meter 229130.38	(Yes) No
1348	MW-26	63.34	Flow 10.1 GPM	(Yes) No
			Meter 371606.81	(Yes) No
1415	TW4-19	61.86	Flow 14.0 GPM	(Yes) No
			Meter 1720063.00	(Yes) No
1345	TW4-20	62.65	Flow 9.9 GPM	(Yes) No
			Meter 598920.15	(Yes) No
1355	TW4-4	69.10	Flow 8.1 GPM	(Yes) No
			Meter 210426.80	(Yes) No
1335	TWN-2	27.02	Flow 18.5 GPM	(Yes) No
			Meter 149817.40	(Yes) No
1242	TW4-22	57.98	Flow 18.2 GPM	(Yes) No
			Meter 77371.30	(Yes) No
1239	TW4-24	66.21	Flow 17.9 GPM	(Yes) No
			Meter 693905.20	(Yes) No
1330	TW4-25	69.21	Flow 18.0 GPM	(Yes) No
			Meter 442431.30	(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 11/11/13 **Name** Garrin Palmer, Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1000	MW-4	69.21	Flow 4.3 GPM	(Yes) No
			Meter 234401.25	(Yes) No
0957	MW-26	63.85	Flow 10.3 GPM	(Yes) No
			Meter 373565.17	(Yes) No
1120	TW4-19	60.48	Flow 14.0 GPM	(Yes) No
			Meter 1757280.00	(Yes) No
0954	TW4-20	63.30	Flow 9.9 GPM	(Yes) No
			Meter 600552.82	(Yes) No
1004	TW4-4	69.82	Flow 8.0 GPM	(Yes) No
			Meter 215068.40	(Yes) No
0938	TWN-2	27.81	Flow 18.8 GPM	(Yes) No
			Meter 153634.20	(Yes) No
0950	TW4-22	58.60	Flow 18.0 GPM	(Yes) No
			Meter 79136.40	(Yes) No
0946	TW4-24	63.72	Flow 18.0 GPM	(Yes) No
			Meter 714182.50	(Yes) No
0934	TW4-25	71.80	Flow 18.4 GPM	(Yes) No
			Meter 452372.80	(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 11/21/2013 **Name** Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1306	MW-4	69.43	Flow 4.3	(Yes) No
			Meter 242289.45	(Yes) No
1302	MW-26	64.18	Flow 10.4	(Yes) No
			Meter 3760896	(Yes) No
1330	TW4-19	62.50	Flow 14.0	(Yes) No
			Meter 1801918.07	(Yes) No
1259	TW4-20	63.42	Flow 10.0	(Yes) No
			Meter 602466.22	(Yes) No
1311	TW4-4	71.03	Flow 8.0	(Yes) No
			Meter 221647.0	(Yes) No
1246	TWN-2	34.07	Flow 18.6	(Yes) No
			Meter 158911.0	(Yes) No
1255	TW4-22	58.65	Flow 18.0	(Yes) No
			Meter 81977.5	(Yes) No
1252	TW4-24	63.71	Flow 18.0	(Yes) No
			Meter 743678.2	(Yes) No
1241	TW4-25	70.06	Flow 18.4	(Yes) No
			Meter 466982.5	(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 11/25/13 **Name** Garcia Palmer, Tanner Halliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1345	MW-4	68.55	Flow 4.4 gpm	(Yes) No
			Meter 245353.31	(Yes) No
1341	MW-26	82.38	Flow 10.7 gpm	(Yes) No
			Meter 377032.68	(Yes) No
1401	TW4-19	67.78	Flow 14.0 gpm	(Yes) No
			Meter ~~18187904.~~ 18187944.08	(Yes) No
1339	TW4-20	65.50	Flow ~~65.50~~ 10.2 gpm	(Yes) No
			Meter 603333.70	(Yes) No
1347	TW4-4	69.95	Flow 8.0 gpm	(Yes) No
			Meter 224384.40	(Yes) No
1328	TWN-2	27.21	Flow 18.5 GPM	(Yes) No
			Meter 161151.20	(Yes) No
1336	TW4-22	58.55	Flow 18.1 gpm	(Yes) No
			Meter 82060.60	(Yes) No
1333	TW4-24	71.77	Flow 18.0 GPM	(Yes) No
			Meter 755596.7	(Yes) No
1323	TW4-25	69.10	Flow 18.7 GPM	(Yes) No
			Meter 472022.70	(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 11/29/2013 **Name** Tanner Holliday

Time	Well	Depth*	Time	Well	Depth*
0655	MW-4	69.45	0606	TWN-1	56.95
~~0656~~ 0659	TW4-1	64.00	0617	TWN-2	34.15
0653	TW4-2	65.94	0621	TWN-3	36.70
0805	TW4-3	51 95	0624	TWN-4	49 13
0707	TW4-4	70.01	0634	TWN-7	87.91
0801	TW4-5	60.48	0840	TWN-18	58.78
0704	TW4-6	69.53	0630	MW-27	52.77
0657	TW4-7	65.66	0813	MW-30	75.20
0701	TW4-8	65.29	0817	MW-31	67..50
6803	TW4-9	58.04	0718	TW4-28	36.97
0758	TW4-10	58.25	0735	TW4-29	72.33
0650	TW4-11	58.39	0738	TW4-30	77.77
0715	TW4-12	42.32	0740	TW4-31	83.75
0724	TW4-13	47.19	0721	TW4-32	48.31
0726	TW4-14	84.99	0735	TW4-33	70.58
0647	TW4-15	63.98	0732	TW4-34	69.81
0754	TW4-16	61 89			
0750	TW4-17	73.85			
0603	TW4-18	61.17			
0830	TW4-19	64.15			
0644	TW4-20	58.03			
0610	TW4-21	61.41			
0642	TW4-22	62.73			
0707	TW4-23	64.85			
0640	TW4-24	~~64~~ 64.98			
0613	TW4-25	57.99			
0706	TW4-26	63.13			
0730	TW4-27	81.08			

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

* Depth is measured to the nearest 0.01 feet

Weekly Inspection Form

Date 12/2/13 **Name** Garrin Palmer, Tanner Halliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1319	MW-4	68.29	Flow 4.4 GPM	(Yes) No
			Meter 250611.54	(Yes) No
1315	MW-26	63.90	Flow 10.0 GPM	(Yes) No
			Meter 378609.58	(Yes) No
1515	TW4-19	69.44	Flow 14.00	(Yes) No
			Meter 1850060.40	(Yes) No
1312	TW4-20	72.95	Flow 9.7 GPM	(Yes) No
			Meter 6048114.60	(Yes) No
1323	TW4-4	69.60	Flow 8.0 GPM	(Yes) No
			Meter 228988.40	(Yes) No
1232	TWN-2	26.70	Flow 18.6 GPM	(Yes) No
			Meter 164049.60	(Yes) No
1309	TW4-22	58.46	Flow 18.0 GPM	(Yes) No
			Meter 84060.50	(Yes) No
1305	TW4-24	71.20	Flow 17.4 GPM	(Yes) No
			Meter 775631.40	(Yes) No
1225	TW4-25	80.00	Flow 17.8 GPM	(Yes) No
			Meter 482735.50	(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 12/9/2013 **Name** Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1320	MW-4	68.98	Flow 4.3	(Yes) No
			Meter 2560 81.23	(Yes) No
1317	MW-26	64.40	Flow 10.3	(Yes) No
			Meter 380614.56	(Yes) No
1400 ~~1323~~	TW4-19	68.19	Flow 14.0	(Yes) No
			Meter 18793 41.07	(Yes) No
1315	TW4-20	72.80	Flow 10.0	(Yes) No
			Meter 60626788	(Yes) No
1323	TW4-4	69.93	Flow 7.4	(Yes) No
			Meter 233591.4	(Yes) No
1305	TWN-2	26.00	Flow 18.0	(Yes) No
			Meter 168765.9	(Yes) No
1310	TW4-22	58.90	Flow 18.3	(Yes) No
			Meter 86778.0	(Yes) No
1307	TW4-24	90.03	Flow @ 16.9	(Yes) No
			Meter 796132.8	(Yes) No
1300	TW4-25	61.60	Flow 17.0	(Yes) No
			Meter 492788.0	(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 12/16/2013 **Name** Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1410	MW-4	69.03	Flow 4.3	(Yes) No
			Meter 261351.21	(Yes) No
1406	MW-26	66.49	Flow ~~[illegible]~~ 10.2	(Yes) No
			Meter 382451.83	(Yes) No
1421	TW4-19	67.15	Flow 14.0	(Yes) No
			Meter 1906740.04	(Yes) No
1403	TW4-20	71.39	Flow 10.0	(Yes) No
			Meter 607740.70	(Yes) No
1413	TW4-4	69.99	Flow 7.8	(Yes) No
			Meter 238184.6	(Yes) No
1353	TWN-2	30.08	Flow 18.0	(Yes) No
			Meter 172504.8	(Yes) No
1400	TW4-22	59.91	Flow 18.3	(Yes) No
			Meter 887973	(Yes) No
1357	TW4-24	64.17	Flow 17.4	(Yes) No
			Meter 816200.1	(Yes) No
1350	TW4-25	63.1	Flow 17.3	(Yes) No
			Meter 502614.0	(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 12/23/2013 **Name** Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1434	MW-4	69.85	Flow 4.3	Yes No
			Meter 266746.70	Yes No
1429	MW-26	67.33	Flow 10.3	Yes No
			Meter 38438880	Yes No
1~~09~~	TW4-19	68.10	Flow 14.0	Yes No
1450			Meter 1937554.06	Yes No
1425	TW4-20	72.44	Flow 10.0	Yes No
			Meter 609228.66	Yes No
1~~4~~6	TW4-4	69.95	Flow 7.8	Yes No
1437			Meter 242791.7	Yes No
1412	TWN-2	32.04	Flow ~~32.40~~ 18.0	Yes No
			Meter 176300.2	Yes No
1420	TW4-22	60.00	Flow 18.3	Yes No
			Meter 90680.7	Yes No
1417	TW4-24	64.73	Flow ~~10.5~~ 17.3	Yes No
			Meter 837389.9	Yes No
1408	TW4-25	63.01	Flow 17.5	Yes No
			Meter 506959.3	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.

4038774

4067726

Weekly Inspection Form

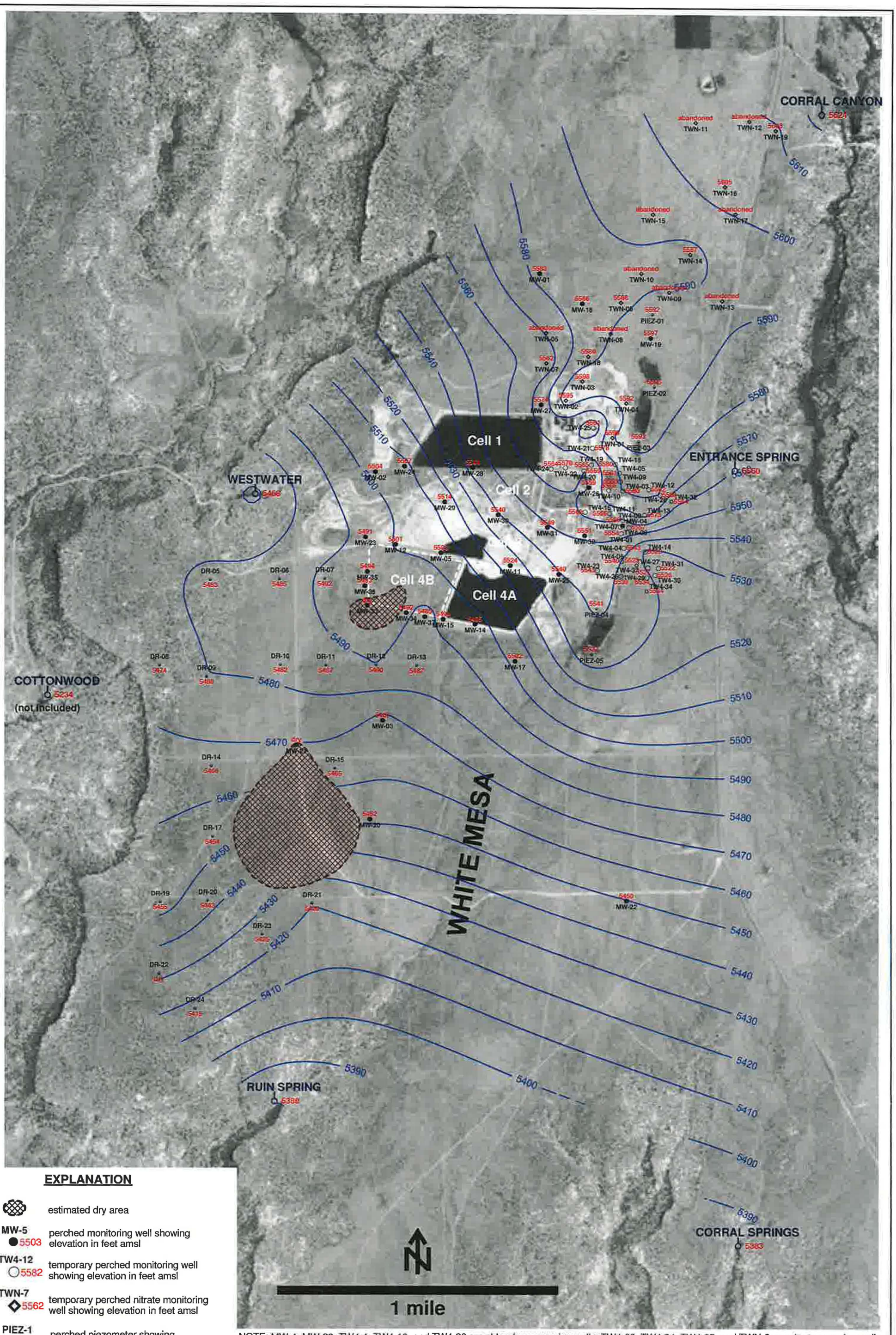
Date 12/31/13 **Name** Gerrin Palmer

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1247	MW-4	69.50	Flow 3.3 GPM	(Yes) No
			Meter 272932.58	(Yes) No
1251	MW-26	65.38	Flow 10.4 GPM	(Yes) No
			Meter 386531.80	(Yes) No
1350	TW4-19	67.88	Flow 14.0 GPM	(Yes) No
			Meter 1974298.00	(Yes) No
1300	TW4-20	79.53	Flow 10.0 GPM	(Yes) No
			Meter 610901.51	(Yes) No
1244	TW4-4	69.40	Flow 8.0 GPM	(Yes) No
			Meter 248069.20	(Yes) No
1320	TWN-2	31.74	Flow 18.3 GPM	(Yes) No
			Meter 180605.10	(Yes) No
1305	TW4-22	59.60	Flow 18.0 GPM	(Yes) No
			Meter 92745.70	(Yes) No
1309	TW4-24	80.0	Flow 18.0 GPM	(Yes) No
			Meter 860610.70	(Yes) No
1325	TW4-25	60.78	Flow 18.3 GPM	(Yes) No
			Meter 519097.70	(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.



EXPLANATION

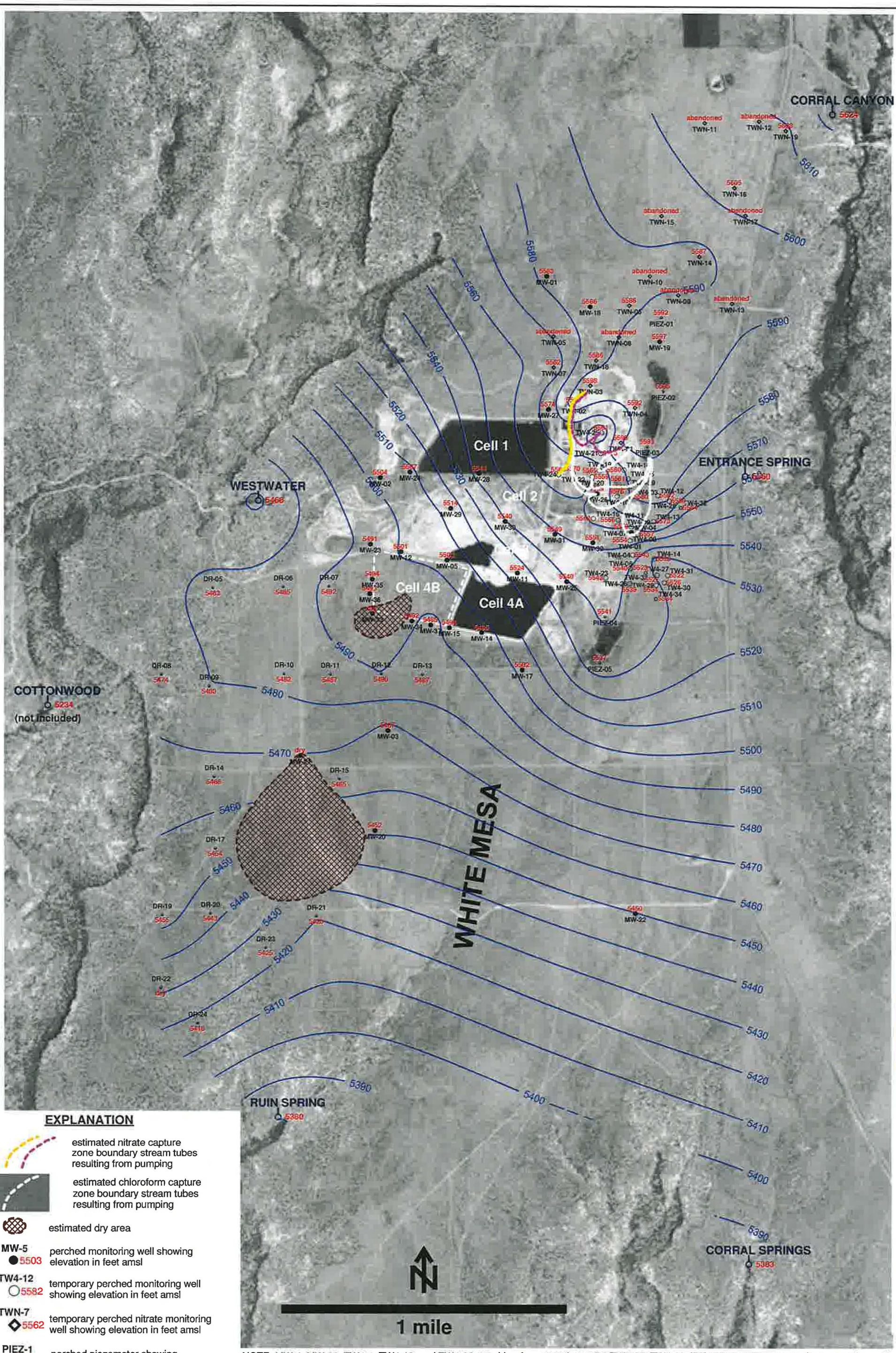
- estimated dry area
- **MW-5** ● 5503 — perched monitoring well showing elevation in feet amsl
- **TW4-12** ○ 5582 — temporary perched monitoring well showing elevation in feet amsl
- **TWN-7** ◇ 5562 — temporary perched nitrate monitoring well showing elevation in feet amsl
- **PIEZ-1** ◒ 5592 — perched piezometer showing elevation in feet amsl
- **TW4-32** ☼ 5564 — temporary perched monitoring well installed September, 2013 showing approximate 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, 2013 WATER LEVELS WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/feb14/Uwl1213.srf	C-1



EXPLANATION

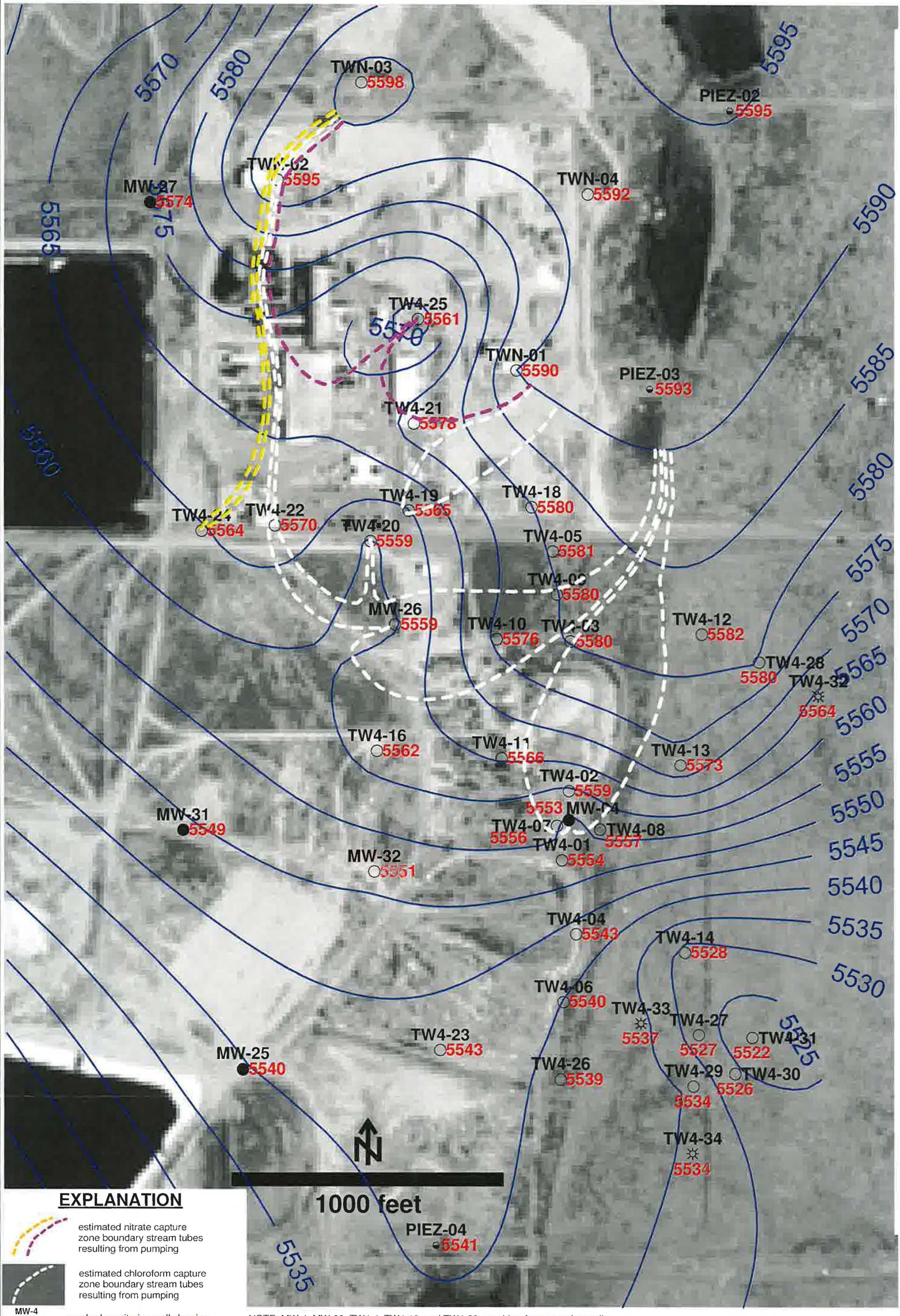
- estimated nitrate capture zone boundary stream tubes resulting from pumping
- estimated chloroform capture zone boundary stream tubes resulting from pumping
- estimated dry area
- **MW-5** ● 5503 — perched monitoring well showing elevation in feet amsl
- **TW4-12** ○ 5582 — temporary perched monitoring well showing elevation in feet amsl
- **TWN-7** ◇ 5562 — temporary perched nitrate monitoring well showing elevation in feet amsl
- **PIEZ-1** 5592 — perched piezometer showing elevation in feet amsl
- **TW4-32** ☼ 5564 — temporary perched monitoring well installed September, 2013 showing approximate 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, 2013 WATER LEVELS AND ESTIMATED CAPTURE ZONES WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/feb14/nitrate/Uwl1213cz2nt.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 ● 5553 — perched monitoring well showing elevation in feet amsl
- TW4-1 ○ 5554 — temporary perched monitoring well showing elevation in feet amsl
- PIEZ-2 ◒ 5595 — perched piezometer showing elevation in feet amsl
- TW4-32 ☼ 5564 — temporary perched monitoring well installed September, 2013 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

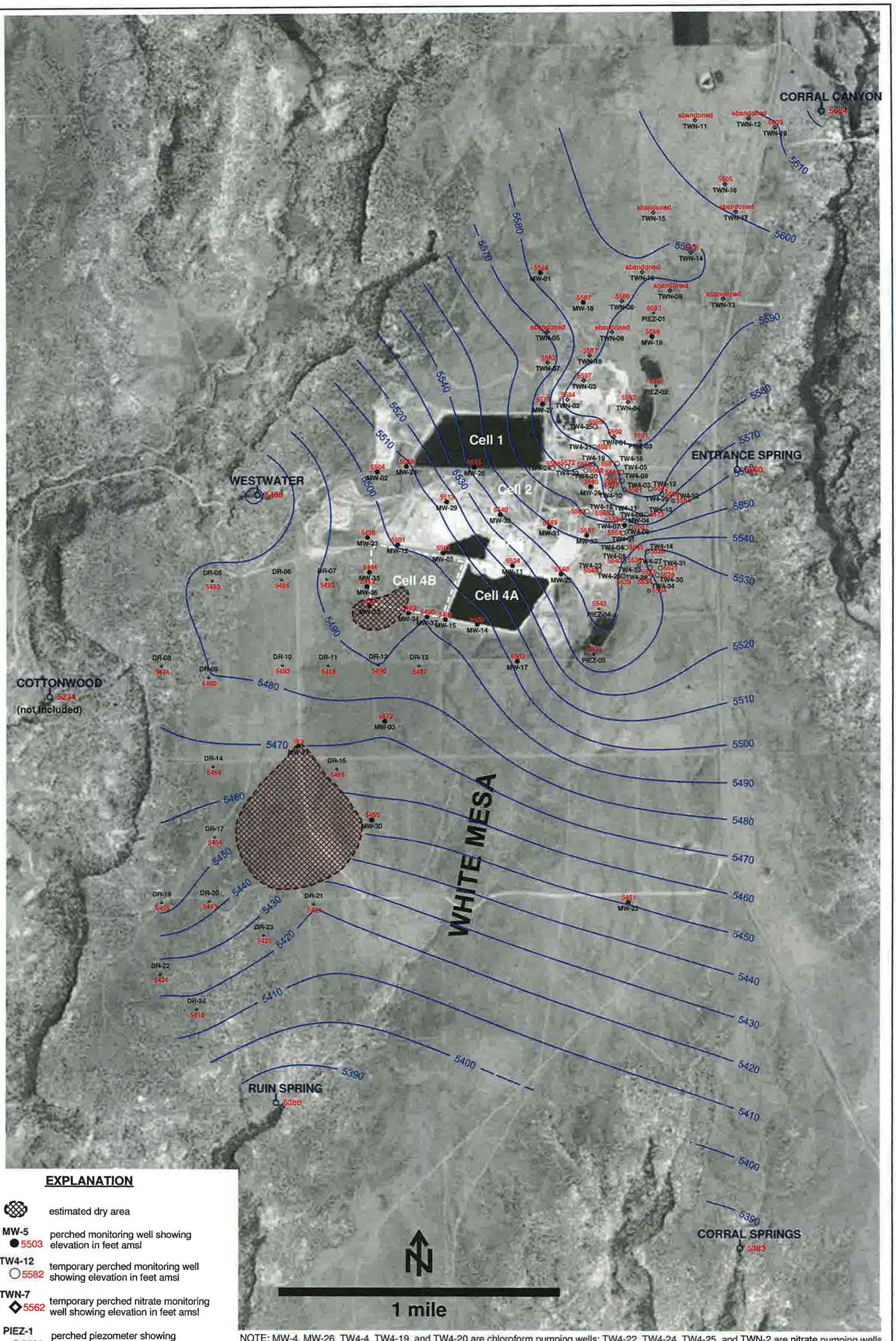
HYDRO GEO CHEM, INC.

KRIGED 4th QUARTER, 2013 WATER LEVELS AND ESTIMATED CAPTURE ZONES WHITE MESA SITE (detail map)

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/feb14/nitrate/U1213cznt.srf	C-3

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** ○ 5582 — temporary perched monitoring well showing elevation in feet amsl
- **TWN-7** ◇ 5562 — temporary perched nitrate monitoring well showing elevation in feet amsl
- **PIEZ-1** ◒ 5593 — perched piezometer showing elevation in feet amsl
- **TW4-32** ☼ 5564 — temporary perched monitoring well installed September, 2013 showing approximate 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

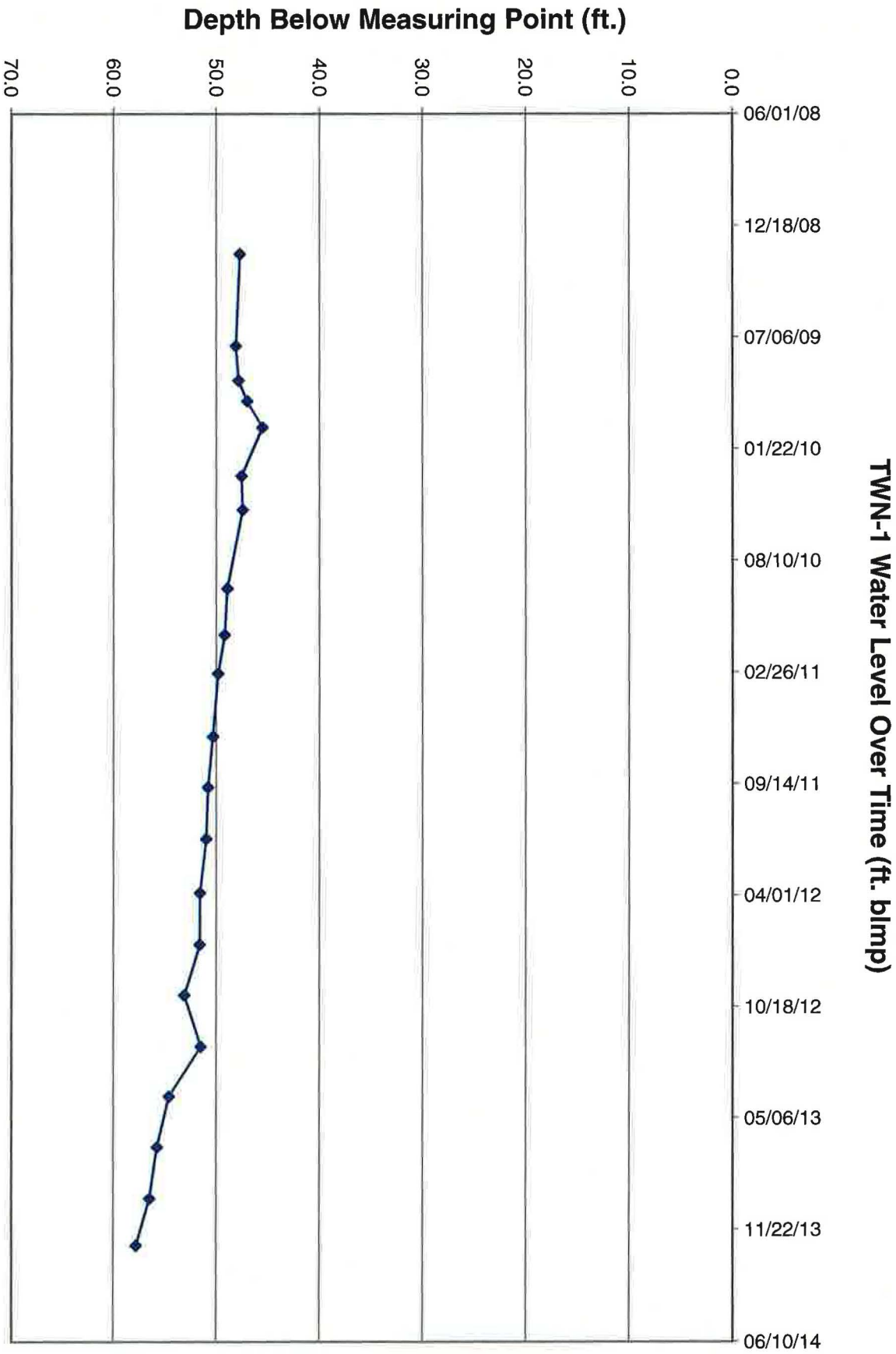
HYDRO GEO CHEM, INC.

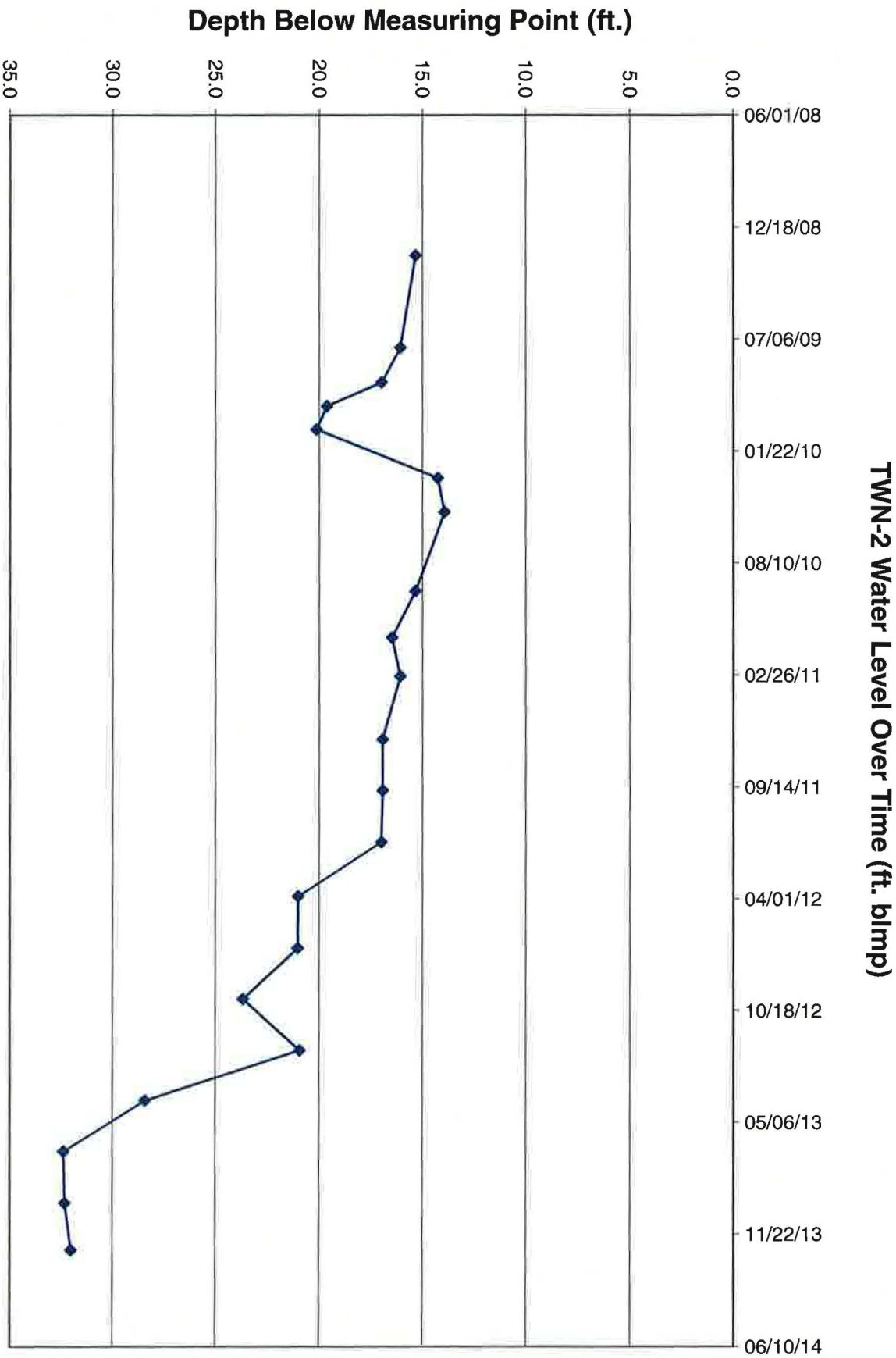
KRIGED 3rd QUARTER, 2013 WATER LEVELS WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/nov13/Uwl0913.srf	D-1

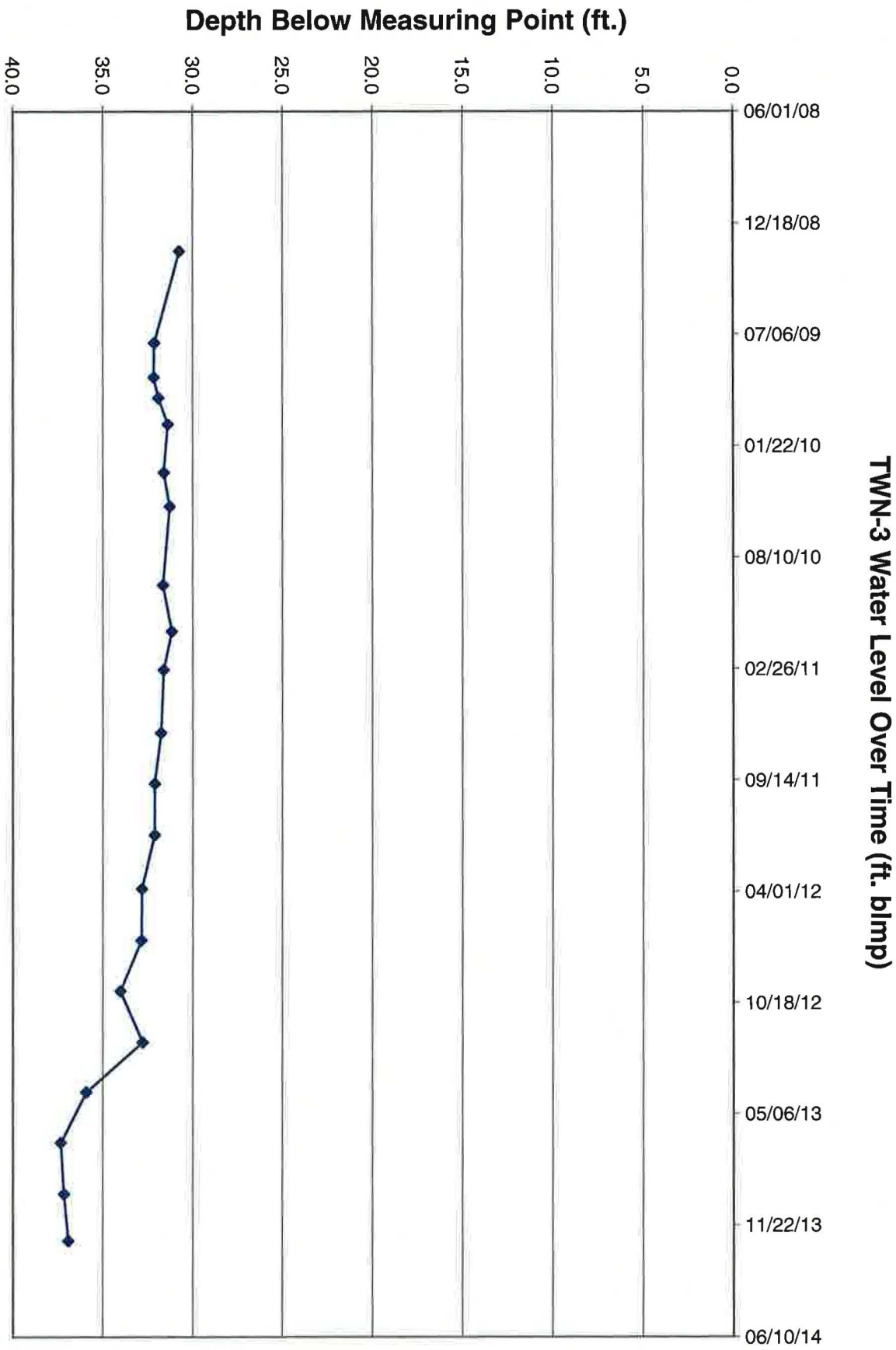
Tab E

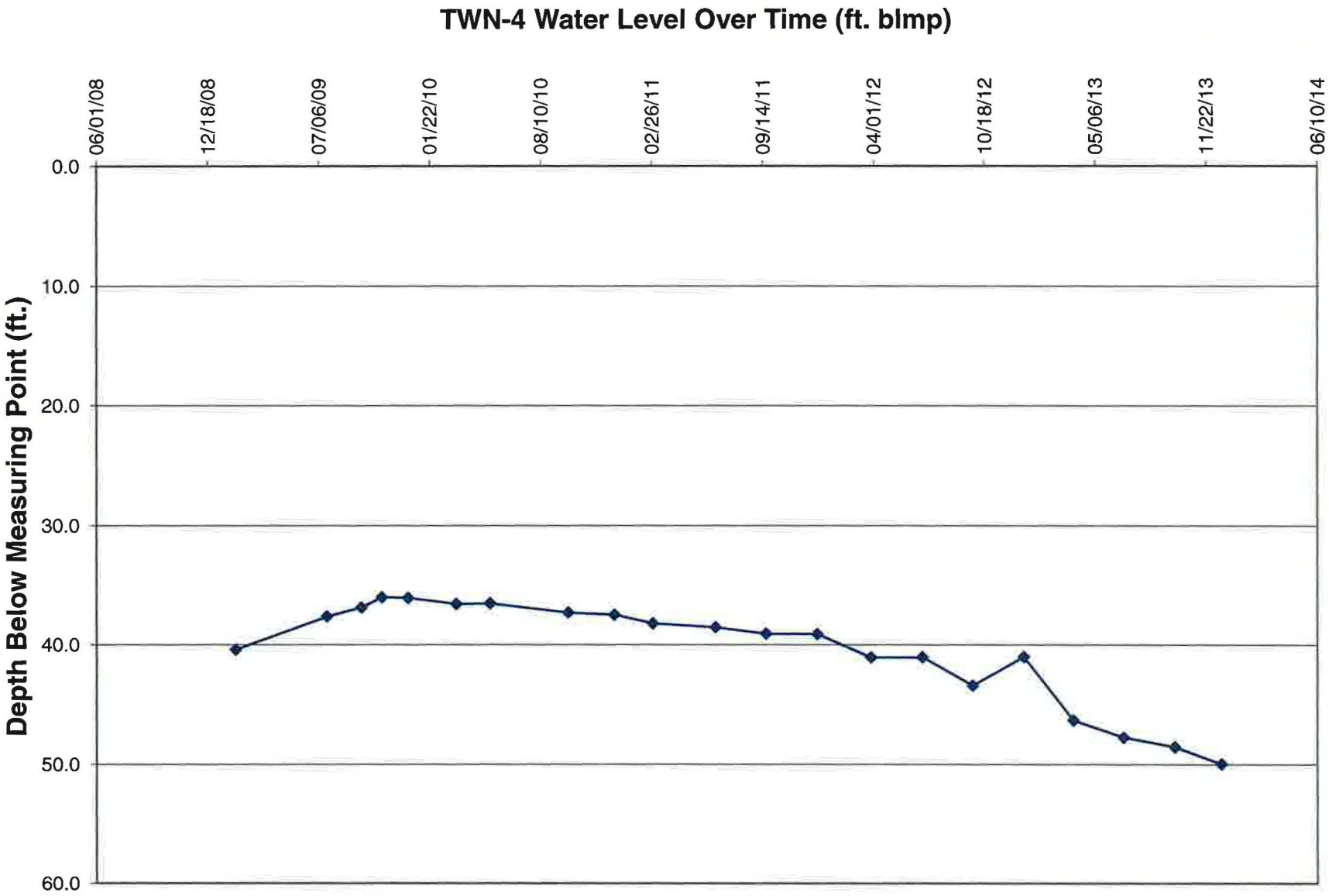
Hydrographs of Groundwater Elevations Over Time for Nitrate Monitoring Wells

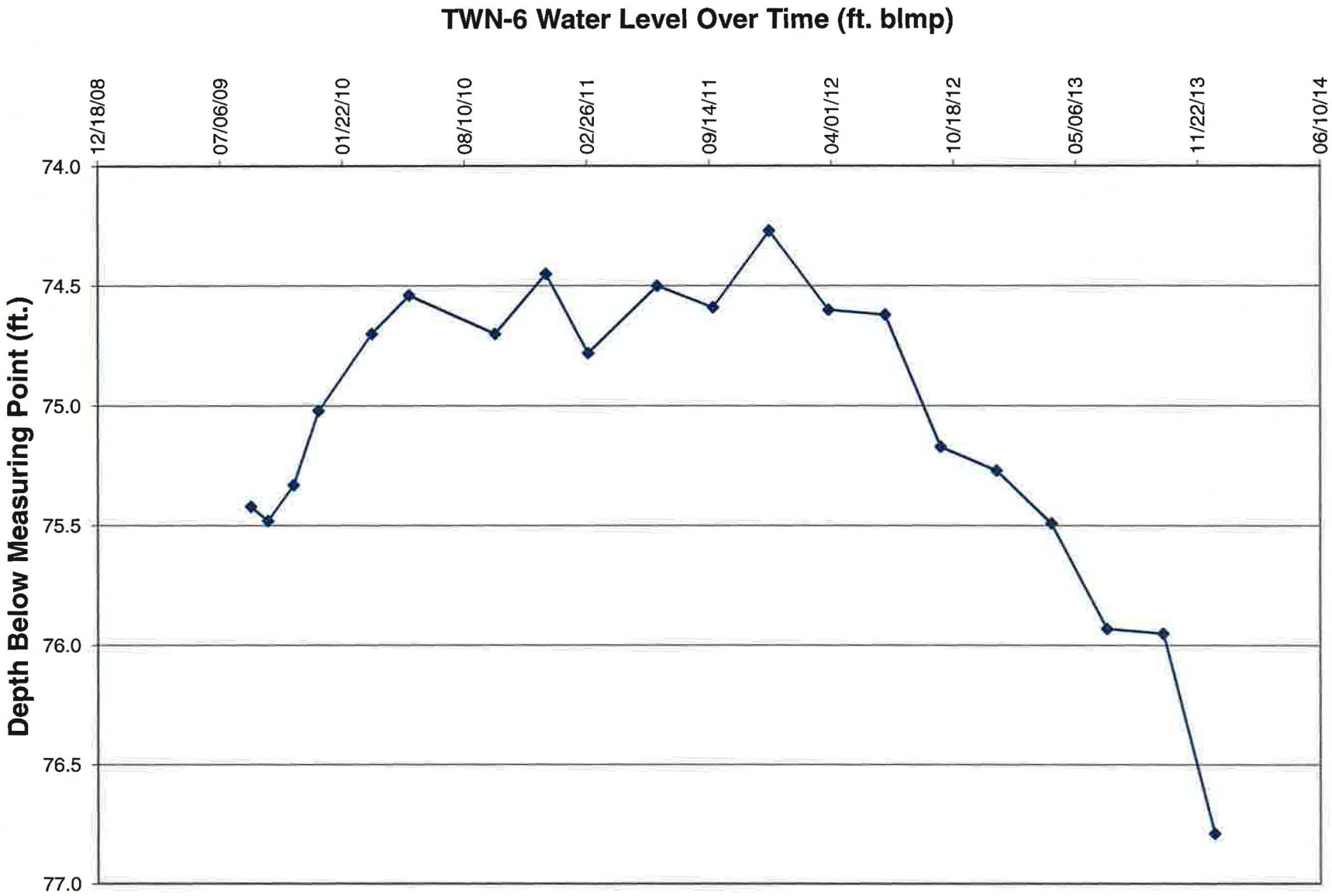

Depth Below Measuring Point (ft.)
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
06/01/08
12/18/08
07/06/09
01/22/10
08/10/10
02/26/11
09/14/11
04/01/12
10/18/12
05/06/13
11/22/13
06/10/14
TWN-1 Water Level Over Time (ft. blmp)

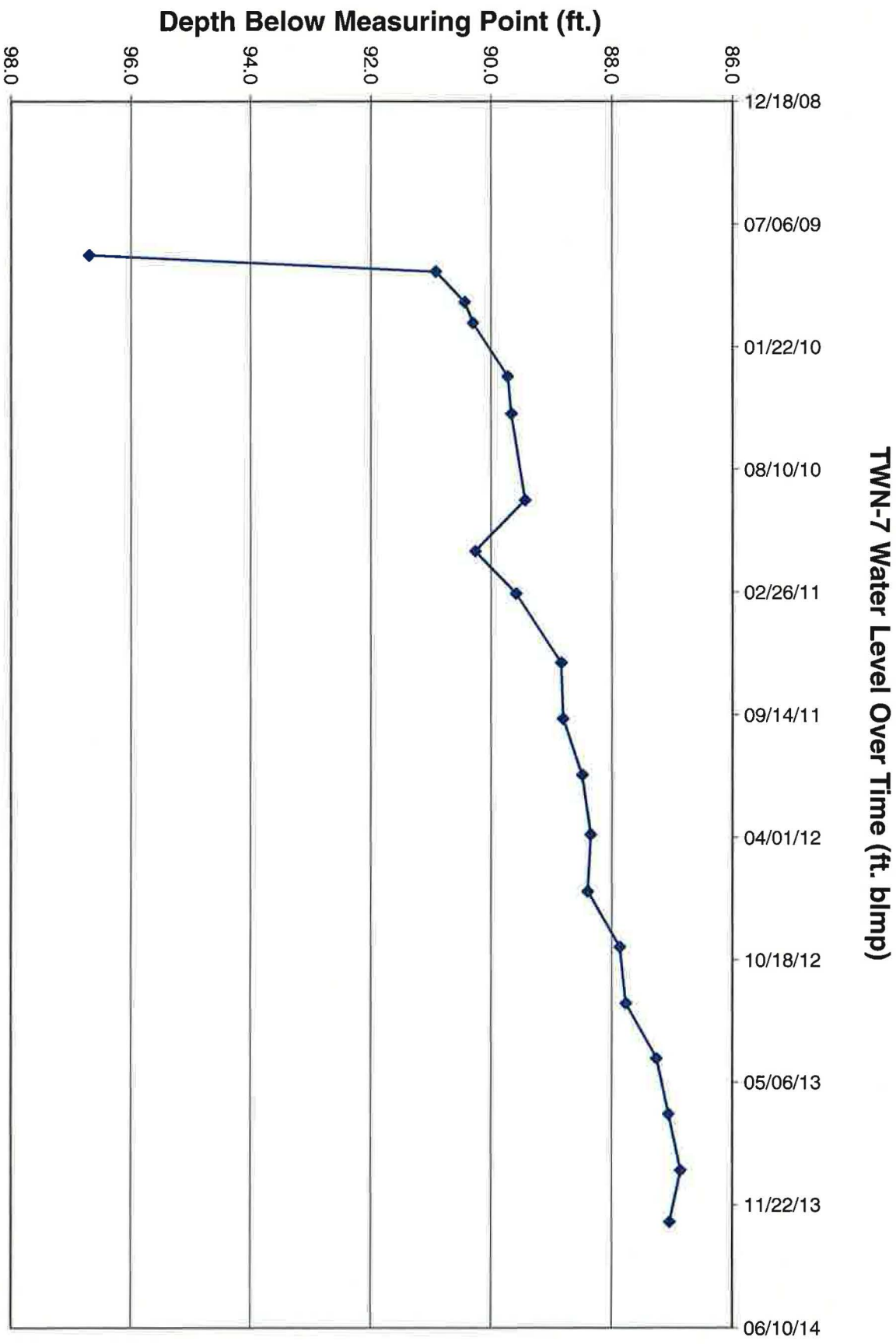


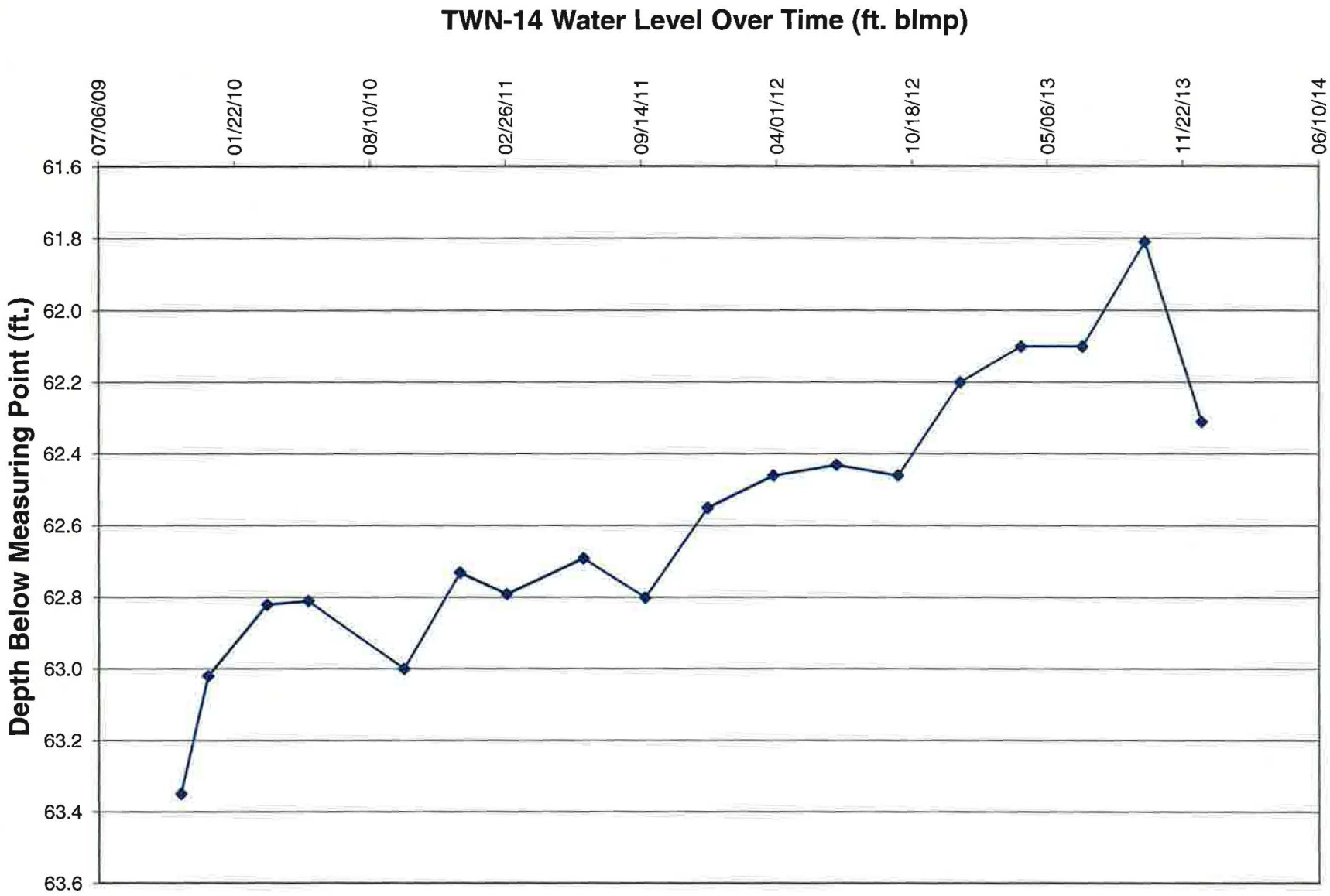
TWN-2 Water Level Over Time (ft. blmp)

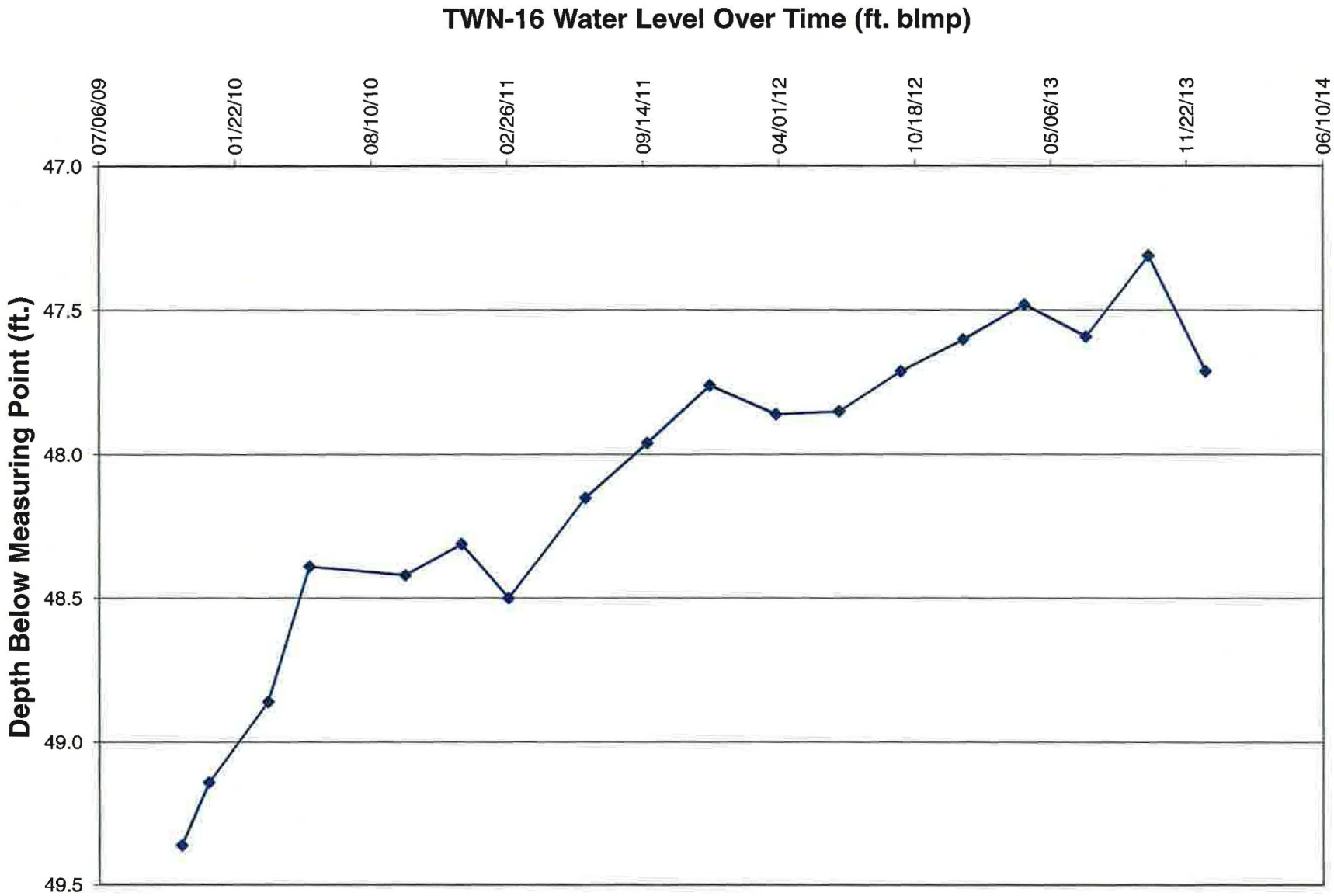

Depth Below Measuring Point (ft.)
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
06/01/08
12/18/08
07/06/09
01/22/10
08/10/10
02/26/11
09/14/11
04/01/12
10/18/12
05/06/13
11/22/13
06/10/14
TWN-3 Water Level Over Time (ft. blmp)

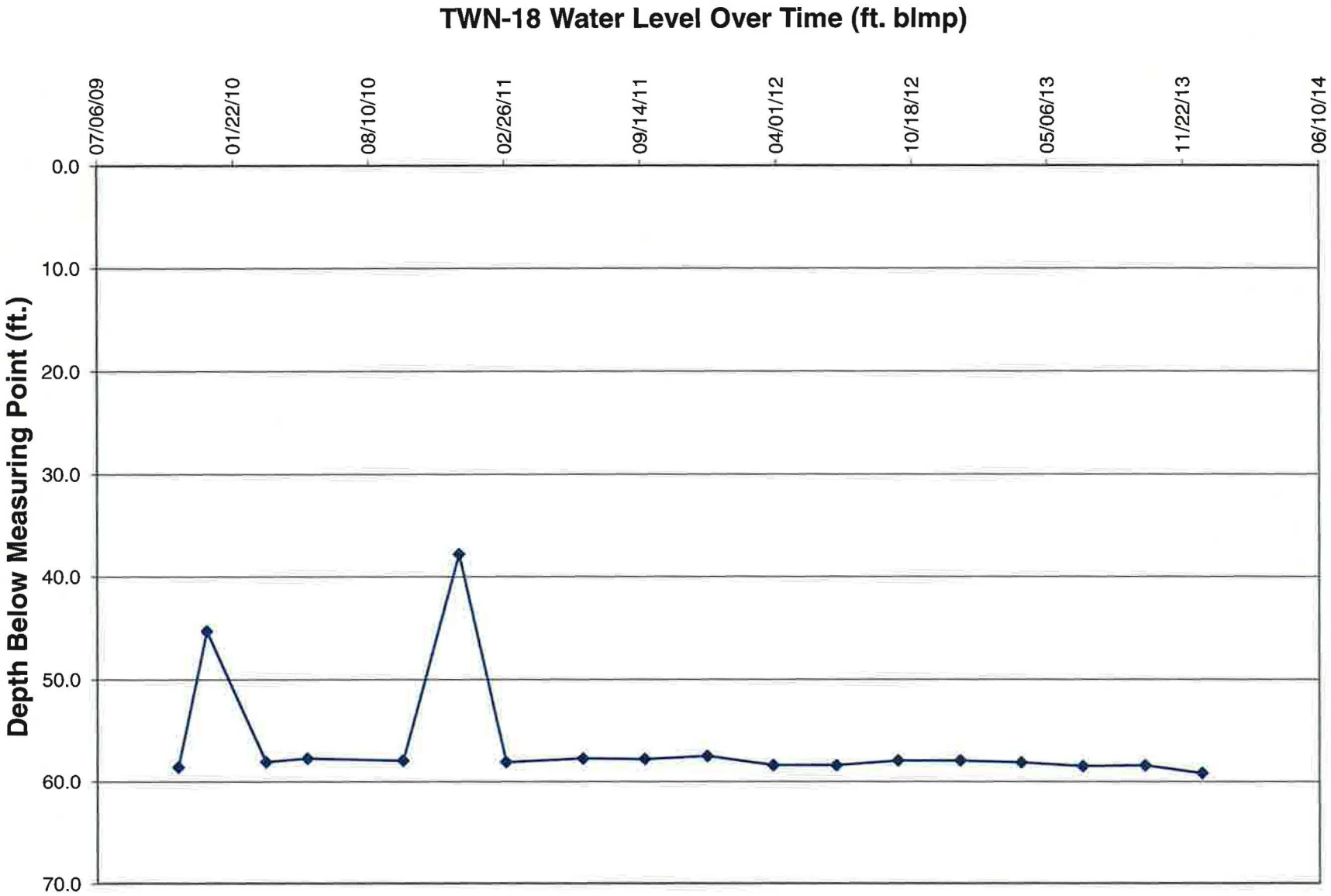

TWN-4 Water Level Over Time (ft. bImp)
06/01/08
12/18/08
07/06/09
01/22/10
08/10/10
02/26/11
09/14/11
04/01/12
10/18/12
05/06/13
11/22/13
06/10/14
Depth Below Measuring Point (ft.)
0.0
10.0
20.0
30.0
40.0
50.0
60.0

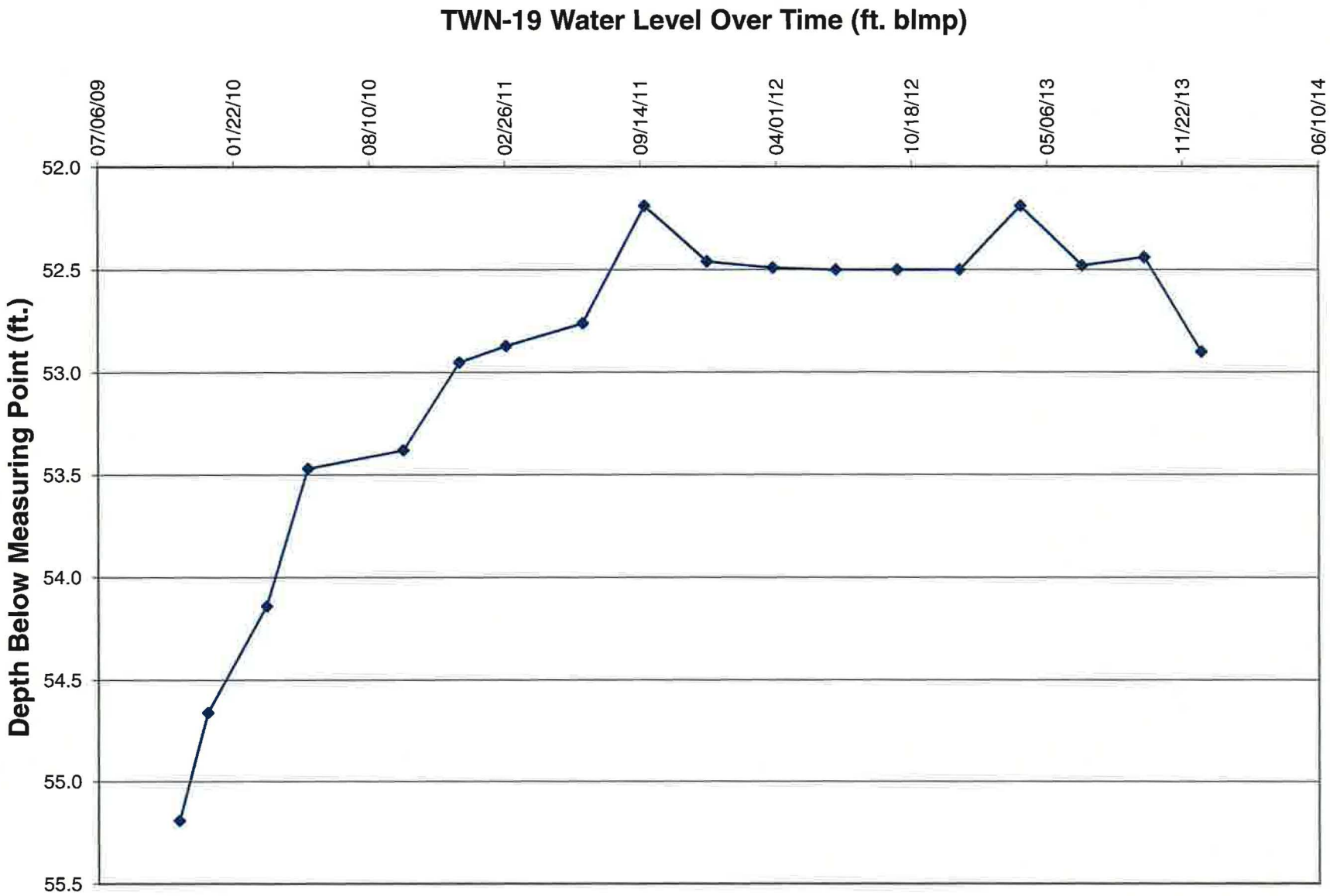

TWN-6 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
12/18/08
07/06/09
01/22/10
08/10/10
02/26/11
09/14/11
04/01/12
10/18/12
05/06/13
11/22/13
06/10/14
74.0
74.5
75.0
75.5
76.0
76.5
77.0

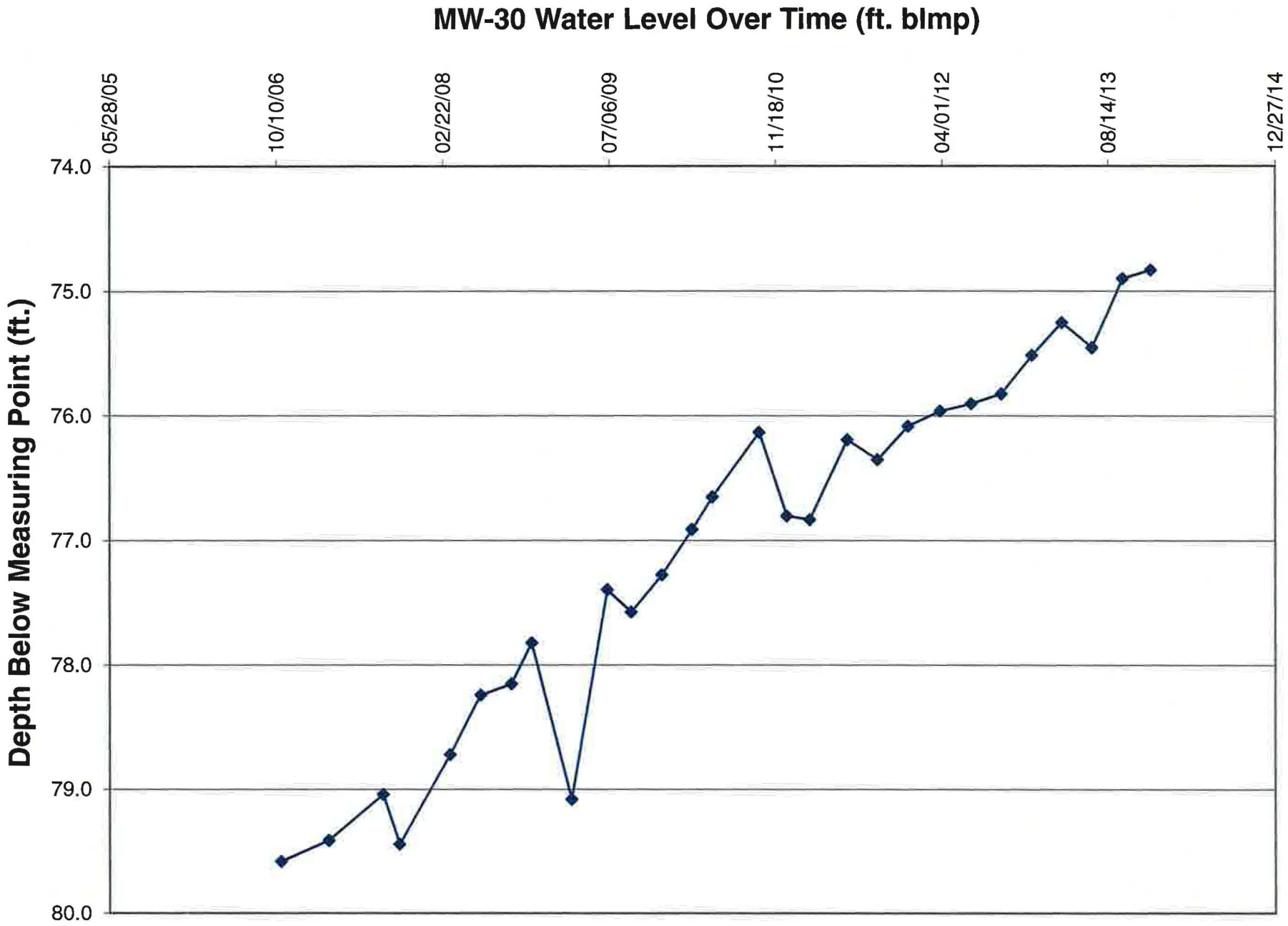

Depth Below Measuring Point (ft.)
98.0
96.0
94.0
92.0
90.0
88.0
86.0
12/18/08
07/06/09
01/22/10
08/10/10
02/26/11
09/14/11
04/01/12
10/18/12
05/06/13
11/22/13
06/10/14
TWN-7 Water Level Over Time (ft. blmp)

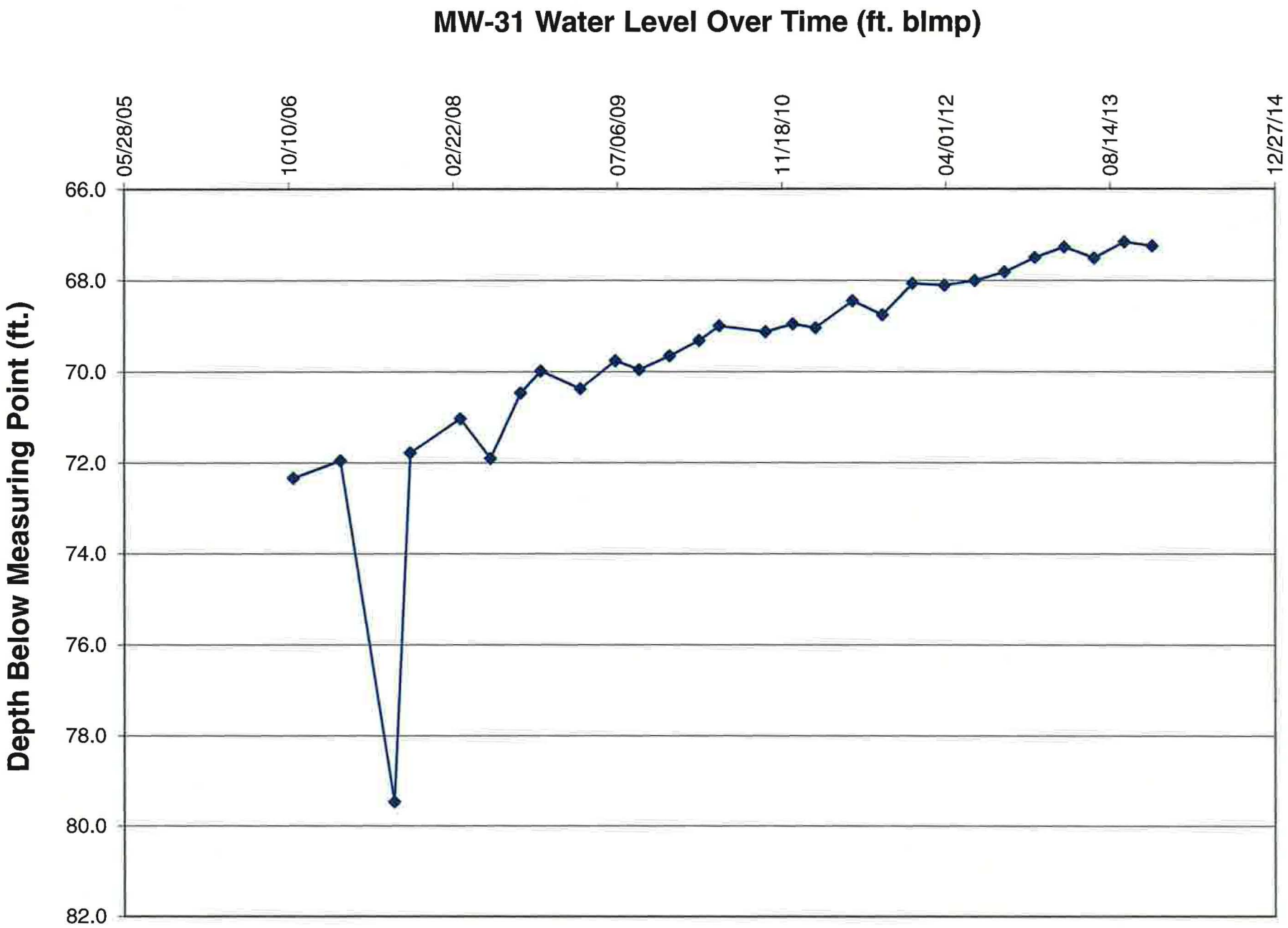

TWN-14 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
07/06/09
01/22/10
08/10/10
02/26/11
09/14/11
04/01/12
10/18/12
05/06/13
11/22/13
06/10/14
61.6
61.8
62.0
62.2
62.4
62.6
62.8
63.0
63.2
63.4
63.6


TWN-16 Water Level Over Time (ft. blmp)
07/06/09
01/22/10
08/10/10
02/26/11
09/14/11
04/01/12
10/18/12
05/06/13
11/22/13
06/10/14
47.0
47.5
48.0
48.5
49.0
49.5
Depth Below Measuring Point (ft.)


TWN-18 Water Level Over Time (ft. blmp)
07/06/09
01/22/10
08/10/10
02/26/11
09/14/11
04/01/12
10/18/12
05/06/13
11/22/13
06/10/14
Depth Below Measuring Point (ft.)
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0


TWN-19 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
07/06/09
01/22/10
08/10/10
02/26/11
09/14/11
04/01/12
10/18/12
05/06/13
11/22/13
06/10/14
52.0
52.5
53.0
53.5
54.0
54.5
55.0
55.5


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


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

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	

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	

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	

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	

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	

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	

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	

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	

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	

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	

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	

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	

Tab G

Laboratory Analytical Reports

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Sample ID: 1310396-010
Client Sample ID: Piez-01_10162013
Collection Date: 10/16/2013 1105h
Received Date: 10/18/2013 1000h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/21/2013 2351h	E300.0	10.0	**54.1**	
Nitrate/Nitrite (as N)	mg/L		10/22/2013 2059h	E353.2	1.00	**6.68**	

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Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Sample ID: 1310396-011
Client Sample ID: Piez-02_10162013
Collection Date: 10/16/2013 1010h
Received Date: 10/18/2013 1000h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/22/2013 0014h	E300.0	5.00	**9.22**	
Nitrate/Nitrite (as N)	mg/L		10/22/2013 2100h	E353.2	0.100	**0.364**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Sample ID: 1310396-012
Client Sample ID: Piez-03_10162013
Collection Date: 10/16/2013 1035h
Received Date: 10/18/2013 1000h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/22/2013 0037h	E300.0	5.00	**23.5**	
Nitrate/Nitrite (as N)	mg/L		10/22/2013 2101h	E353.2	0.100	**1.80**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Sample ID: 1310396-002
Client Sample ID: TWN-01_10162013
Collection Date: 10/16/2013 **0727h**
Received Date: 10/18/2013 **1000h**

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/21/2013 1606h	E300.0	5.00	**26.8**	
Nitrate/Nitrite (as N)	mg/L		10/22/2013 2103h	E353.2	0.500	**1.61**	

Reissue of a previously generated report. Information has been added, updated, or revised. Information herein supersedes that of the previously issued reports.

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Sample ID: 1310396-006
Client Sample ID: TWN-02_10162013
Collection Date: 10/16/2013 0950h
Received Date: 10/18/2013 1000h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/21/2013 2022h	E300.0	10.0	**70.4**	
Nitrate/Nitrite (as N)	mg/L		10/22/2013 2108h	E353.2	10.0	**111**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Sample ID: 1310396-005
Client Sample ID: TWN-03_10172013
Collection Date: 10/17/2013 0627h
Received Date: 10/18/2013 1000h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/21/2013 1958h	E300.0	50.0	**163**	
Nitrate/Nitrite (as N)	mg/L		10/22/2013 2107h	E353.2	2.00	**23.5**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Sample ID: 1310396-003
Client Sample ID: TWN-04_10162013
Collection Date: 10/16/2013 **0814h**
Received Date: 10/18/2013 **1000h**

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/21/2013 1629h	E300.0	5.00	**29.4**	
Nitrate/Nitrite (as N)	mg/L		10/22/2013 2104h	E353.2	0.500	**1.69**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Sample ID: 1310396-001
Client Sample ID: TWN-07_10162013
Collection Date: 10/16/2013 **0625h**
Received Date: 10/18/2013 **1000h**

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/21/2013 1543h	E300.0	1.00	**5.70**	
Nitrate/Nitrite (as N)	mg/L		10/22/2013 2042h	E353.2	0.100	**0.986**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Sample ID: 1310396-009
Client Sample ID: TWN-07R_10152013
Collection Date: 10/15/2013 0724h
Received Date: 10/18/2013 1000h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/21/2013 2328h	E300.0	1.00	< 1.00	
Nitrate/Nitrite (as N)	mg/L		10/22/2013 2057h	E353.2	0.100	< 0.100	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Sample ID: 1310396-004
Client Sample ID: TWN-18_10162013
Collection Date: 10/16/2013 **0858h**
Received Date: 10/18/2013 **1000h**

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/21/2013 1935h	E300.0	10.0	**67.3**	
Nitrate/Nitrite (as N)	mg/L		10/22/2013 2106h	E353.2	0.500	**2.15**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Chloroform 2013
Lab Sample ID: 1310621-008
Client Sample ID: TW4-22_10292013
Collection Date: 10/29/2013 1227h
Received Date: 10/31/2013 0935h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		11/3/2013 0936h	E300.0	100	**501**	
Nitrate/Nitrite (as N)	mg/L		11/5/2013 2049h	E353.2	10.0	**45.2**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Chloroform 2013
Lab Sample ID: 1310621-003
Client Sample ID: TW4-24_10292013
Collection Date: 10/29/2013 1220h
Received Date: 10/31/2013 0935h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		11/3/2013 0740h	E300.0	100	**1,030**	
Nitrate/Nitrite (as N)	mg/L		11/5/2013 2035h	E353.2	10.0	**34.6**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Chloroform 2013
Lab Sample ID: 1310621-002
Client Sample ID: TW4-25_10292013
Collection Date: 10/29/2013 1204h
Received Date: 10/31/2013 0935h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		11/3/2013 0716h	E300.0	50.0	**88.6**	
Nitrate/Nitrite (as N)	mg/L		11/5/2013 2033h	E353.2	1.00	**6.10**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Chloroform 2013
Lab Sample ID: 1311306-014
Client Sample ID: TW4-60_11142013
Collection Date: 11/14/2013 0700h
Received Date: 11/15/2013 0850h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		11/22/2013 1232h	E300.0	1.00	< 1.00	
Nitrate/Nitrite (as N)	mg/L		11/15/2013 1735h	E353.2	0.100	< 0.100	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Sample ID: 1310396-008
Client Sample ID: TWN-60_10172013
Collection Date: 10/17/2013 0845h
Received Date: 10/18/2013 1000h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/21/2013 2108h	E300.0	1.00	< 1.00	
Nitrate/Nitrite (as N)	mg/L		10/22/2013 2052h	E353.2	0.100	< 0.100	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Sample ID: 1310396-007
Client Sample ID: TWN-65_10162013
Collection Date: 10/16/2013 0727h
Received Date: 10/18/2013 1000h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		10/21/2013 2045h	E300.0	5.00	**27.1**	
Nitrate/Nitrite (as N)	mg/L		10/22/2013 2050h	E353.2	0.100	**1.48**	

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

RE: 4th Quarter Nitrate 2013

Dear Garrin Palmer: Lab Set ID: 1310396

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Jose Rocha
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American West Analytical Laboratories received 12 sample(s) on 10/18/2013 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.

This is a revision to a report originally issued 10/29/2013. Some Client Sample ID's have been updated. Pages 1, 2, 4, 5, 6, 8, and 9 have been revised.

Thank You,

Approved by: Kyle F. Gross

Digitally signed by Kyle F. Gross
DN: cn=Kyle F. Gross, o=AWAL, ou=AWAL-Laboratory Director, email=kyle@awal-labs.com, c=US
Date: 2013.10.30 13:34:26 -06'00'

Laboratory Director or designee

SAMPLE SUMMARY

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Nitrate 2013
Lab Set ID: 1310396
Date Received: 10/18/2013 1000h

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Jose Rocha
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Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1310396-001A	TWN-07_10162013	10/16/2013 0625h	Aqueous	Anions, E300.0
1310396-001B	TWN-07_10162013	10/16/2013 0625h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310396-002A	TWN-01_10162013	10/16/2013 0727h	Aqueous	Anions, E300.0
1310396-002B	TWN-01_10162013	10/16/2013 0727h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310396-003A	TWN-04_10162013	10/16/2013 0814h	Aqueous	Anions, E300.0
1310396-003B	TWN-04_10162013	10/16/2013 0814h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310396-004A	TWN-18_10162013	10/16/2013 0858h	Aqueous	Anions, E300.0
1310396-004B	TWN-18_10162013	10/16/2013 0858h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310396-005A	TWN-03_10172013	10/17/2013 0627h	Aqueous	Anions, E300.0
1310396-005B	TWN-03_10172013	10/17/2013 0627h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310396-006A	TWN-02_10162013	10/16/2013 0950h	Aqueous	Anions, E300.0
1310396-006B	TWN-02_10162013	10/16/2013 0950h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310396-007A	TWN-65_10162013	10/16/2013 0727h	Aqueous	Anions, E300.0
1310396-007B	TWN-65_10162013	10/16/2013 0727h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310396-008A	TWN-60_10172013	10/17/2013 0845h	Aqueous	Anions, E300.0
1310396-008B	TWN-60_10172013	10/17/2013 0845h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310396-009A	TWN-07R_10152013	10/15/2013 0724h	Aqueous	Anions, E300.0
1310396-009B	TWN-07R_10152013	10/15/2013 0724h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310396-010A	Piez-01_10162013	10/16/2013 1105h	Aqueous	Anions, E300.0
1310396-010B	Piez-01_10162013	10/16/2013 1105h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310396-011A	Piez-02_10162013	10/16/2013 1010h	Aqueous	Anions, E300.0
1310396-011B	Piez-02_10162013	10/16/2013 1010h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310396-012A	Piez-03_10162013	10/16/2013 1035h	Aqueous	Anions, E300.0
1310396-012B	Piez-03_10162013	10/16/2013 1035h	Aqueous	Nitrite/Nitrate (as N), E353.2

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Inorganic Case Narrative

Client:	Energy Fuels Resources, Inc.
Contact:	Garrin Palmer
Project:	4th Quarter Nitrate 2013
Lab Set ID:	1310396

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Kyle F. Gross
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QA Officer

Sample Receipt Information:

Date of Receipt:	10/18/2013
Date(s) of Collection:	10/15, 10/16 & 10/17/2013
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, DUP:

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, indicating no apparent matrix interferences.

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: 1310396
Project: 4th Quarter Nitrate 2013

Contact: Garrin Palmer
Dept: WC
QC Type: DUP

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1310396-006BDUP Date Analyzed: 10/25/2013 1856h Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	113	mg/L	E353.2	0.252	10.0					119	4.73	20	
Lab Sample ID: 1310396-011BDUP Date Analyzed: 10/25/2013 1859h Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.374	mg/L	E353.2	0.00252	0.100					0.371	0.671	20	

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1310396
Project: 4th Quarter Nitrate 2013

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-R60535 Date Analyzed: 10/21/2013 1410h													
Test Code: 300.0-W													
Chloride	4.79	mg/L	E300.0	0.0114	0.100	5.000	0	95.8	90 - 110				
Lab Sample ID: LCS-R60574 Date Analyzed: 10/22/2013 2041h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.01	mg/L	E353.2	0.00252	0.100	1.000	0	101	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: 1310396
Project: 4th Quarter Nitrate 2013

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: MB-R60535 Date Analyzed: 10/21/2013 1347h													
Test Code: 300.0-W													
Chloride	< 0.100	mg/L	E300.0	0.0114	0.100								
Lab Sample ID: MB-R60574 Date Analyzed: 10/22/2013 2039h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	< 0.100	mg/L	E353.2	0.00252	0.100								

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1310396
Project: 4th Quarter Nitrate 2013

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: 1310396-008AMS Date Analyzed: 10/21/2013 2131h													
Test Code: 300.0-W													
Chloride	4.97	mg/L	E300.0	0.0114	0.100	5.000	0	99.3	90 - 110				
Lab Sample ID: 1310396-011BMS Date Analyzed: 10/22/2013 2110h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.33	mg/L	E353.2	0.00252	0.100	1.000	0.364	96.3	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: 1310396
Project: 4th Quarter Nitrate 2013

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: 1310396-008AMSD Date Analyzed: 10/21/2013 2155h													
Test Code: 300.0-W													
Chloride	5.00	mg/L	E300.0	0.0114	0.100	5.000	0	100	90 - 110	4.97	0.762	20	
Lab Sample ID: 1310396-011BMSD Date Analyzed: 10/22/2013 2115h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.41	mg/L	E353.2	0.00252	0.100	1.000	0.364	104	90 - 110	1.33	5.76	10	

American West Analytical Laboratories

REVISED: 10-30-13
Sample ID's updated -RW

UL
Denison

WORK ORDER Summary

Work Order: **1310396**

Client: Energy Fuels Resources, Inc. Due Date: 10/29/2013

Client ID: DEN100 **Contact:** Garrin Palmer

Project: **4th Quarter Nitrate 2013** **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	
1310396-001A	**TWN-07_10162013**	10/16/2013 0625h	10/18/2013 1000h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - cl	1
1310396-001B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1310396-002A	**TWN-01_10162013**	10/16/2013 0727h	10/18/2013 1000h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - cl	1
1310396-002B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1310396-003A	**TWN-04_10162013**	10/16/2013 0814h	10/18/2013 1000h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - cl	1
1310396-003B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1310396-004A	**TWN-18_10162013**	10/16/2013 0858h	10/18/2013 1000h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - cl	1
1310396-004B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1310396-005A	**TWN-03_10172013**	10/17/2013 0627h	10/18/2013 1000h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - cl	1
1310396-005B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1310396-006A	**TWN-02_10162013**	10/16/2013 0950h	10/18/2013 1000h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - cl	1
1310396-006B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1310396-007A	**TWN-65_10162013**	10/16/2013 0727h	10/18/2013 1000h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - cl	1
1310396-007B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1310396-008A	**TWN-60_10172013**	10/17/2013 0845h	10/18/2013 1000h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - cl	1

WORK ORDER Summary

Work Order: **1310396**

Client: Energy Fuels Resources, Inc. Due Date: 10/29/2013

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1310396-008B	**TWN-60_10172013**	10/17/2013 0845h	10/18/2013 1000h	**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*	Aqueous	☑	df - no2/no3	1
1310396-009A	**TWN-07R_10152013**	10/15/2013 0724h	10/18/2013 1000h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	**df - cl**	1
1310396-009B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	**df - no2/no3**	
1310396-010A	**Piez-01_10162013**	10/16/2013 1105h	10/18/2013 1000h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	**df - cl**	1
1310396-010B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	**df - no2/no3**	
1310396-011A	**Piez-02_10162013**	10/16/2013 1010h	10/18/2013 1000h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	**df - cl**	1
1310396-011B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	**df - no2/no3**	
1310396-012A	**Piez-03_10162013**	10/16/2013 1035h	10/18/2013 1000h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	**df - cl**	1
1310396-012B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	**df - no2/no3**	

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CHAIN OF CUSTODY

1310396
AWAL Lab Sample Set #
Page 1 of 1

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.

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 Nitrate 2013
Project #:
PO #:
Sampler Name: Garrin Palmer, Tanner Holliday

X Include EDD:
LOCUS UPLOAD
EXCEL
Field Filtered For:

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

Laboratory Use Only

Samples Were: Fed-X
1 Shipped or hand delivered
2 Ambient or Chilled
3 Temperature 1.4 °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

	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-7_10162013~~ * TWN-07_10162013	10/16/2013	625	2	w	x	x	
2	~~TWN-1_10162013~~ * TWN-01_10162013	10/16/2013	727	2	w	x	x	
3	~~TWN-4_10162013~~ * TWN-04_10162013	10/16/2013	814	2	w	x	x	
4	TWN-18_10162013	10/16/2013	858	2	w	x	x	
5	~~TWN-3_10172013~~ * TWN-03_10162013	10/17/2013	627	2	w	x	x	
6	~~TWN-2_10162013~~ * TWN-02_10162013	10/16/2013	950	2	w	x	x	
7	TWN-65_10162013	10/16/2013	727	2	w	x	x	
8	TWN-60_10172013	10/17/2013	845	2	w	x	x	
9	TWN-07R_10152013	10/15/2013	724	2	w	x	x	
10	Piez-01_10162013	10/16/2013	1105	2	w	x	x	
11	Piez-02_10162013	10/16/2013	1010	2	w	x	x	
12	Piez_03_10162013	10/16/2013	1035	2	w	x	x	
	Temp Blank			1	W			

Relinquished by: Signature	Print Name	Date	Time	Received by: Signature	Print Name	Date	Time
Garrin Palmer	Garrin Palmer	10/17/13	1200				
				Elena Hyde	Elena Hyde	10/18/13	1500

Special Instructions:
* Sample ID's updated, per Kathy Weinel 10/30/13 -RW

Lab Set ID: 1310396

Preservation Check Sheet

Sample Set Extension and pH

Analysis	Preservative	1	2	3	4	5	6	7	8	9	10	11	12						
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

American West
ANALYTICAL LABORATORIES

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

RE: 4th Quarter Chloroform 2013

Dear Garrin Palmer: Lab Set ID: 1310621

463 West 3600 South
Salt Lake City, UT 84115

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

American West Analytical Laboratories received 11 sample(s) on 10/31/2013 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: Kyle F. Gross

Digitally signed by Kyle F. Gross
DN: cn=Kyle F. Gross, o=AWAL, ou=AWAL-Laboratory Director, email=kyle@awal-labs.com, c=US
Date: 2013.11.12 14:25:11 -07'00'

Laboratory Director or designee

SAMPLE SUMMARY

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Chloroform 2013
Lab Set ID: 1310621
Date Received: 10/31/2013 0935h

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Salt Lake City, UT 84115

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1310621-001A	MW-32_10292013	10/29/2013 1330h	Aqueous	Anions, E300.0
1310621-001B	MW-32_10292013	10/29/2013 1330h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310621-001C	MW-32_10292013	10/29/2013 1330h	Aqueous	VOA by GC/MS Method 8260C/5030C
1310621-002A	TW4-25_10292013	10/29/2013 1204h	Aqueous	Anions, E300.0
1310621-002B	TW4-25_10292013	10/29/2013 1204h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310621-002C	TW4-25_10292013	10/29/2013 1204h	Aqueous	VOA by GC/MS Method 8260C/5030C
1310621-003A	TW4-24_10292013	10/29/2013 1220h	Aqueous	Anions, E300.0
1310621-003B	TW4-24_10292013	10/29/2013 1220h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310621-003C	TW4-24_10292013	10/29/2013 1220h	Aqueous	VOA by GC/MS Method 8260C/5030C
1310621-004A	TW4-04_10292013	10/29/2013 1302h	Aqueous	Anions, E300.0
1310621-004B	TW4-04_10292013	10/29/2013 1302h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310621-004C	TW4-04_10292013	10/29/2013 1302h	Aqueous	VOA by GC/MS Method 8260C/5030C
1310621-005A	MW-04_10292013	10/29/2013 1255h	Aqueous	Anions, E300.0
1310621-005B	MW-04_10292013	10/29/2013 1255h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310621-005C	MW-04_10292013	10/29/2013 1255h	Aqueous	VOA by GC/MS Method 8260C/5030C
1310621-006A	MW-26_10292013	10/29/2013 1246h	Aqueous	Anions, E300.0
1310621-006B	MW-26_10292013	10/29/2013 1246h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310621-006C	MW-26_10292013	10/29/2013 1246h	Aqueous	VOA by GC/MS Method 8260C/5030C
1310621-007A	TW4-19_10292013	10/29/2013 1410h	Aqueous	Anions, E300.0
1310621-007B	TW4-19_10292013	10/29/2013 1410h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310621-007C	TW4-19_10292013	10/29/2013 1410h	Aqueous	VOA by GC/MS Method 8260C/5030C
1310621-008A	TW4-22_10292013	10/29/2013 1227h	Aqueous	Anions, E300.0
1310621-008B	TW4-22_10292013	10/29/2013 1227h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310621-008C	TW4-22_10292013	10/29/2013 1227h	Aqueous	VOA by GC/MS Method 8260C/5030C
1310621-009A	TW4-20_10292013	10/29/2013 1240h	Aqueous	Anions, E300.0
1310621-009B	TW4-20_10292013	10/29/2013 1240h	Aqueous	Nitrite/Nitrate (as N), E353.2
1310621-009C	TW4-20_10292013	10/29/2013 1240h	Aqueous	VOA by GC/MS Method 8260C/5030C
1310621-010A	TW4-65_10292013	10/29/2013 1330h	Aqueous	Anions, E300.0
1310621-010B	TW4-65_10292013	10/29/2013 1330h	Aqueous	Nitrite/Nitrate (as N), E353.2

American West
ANALYTICAL LABORATORIES

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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 2013
Lab Set ID: 1310621
Date Received: 10/31/2013 0935h

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1310621-010C	TW4-65_10292013	10/29/2013 1330h	Aqueous	VOA by GC/MS Method 8260C/5030C
1310621-011A	Trip Blank	10/29/2013	Aqueous	VOA by GC/MS Method 8260C/5030C

Inorganic Case Narrative

Client:	Energy Fuels Resources, Inc.
Contact:	Garrin Palmer
Project:	4th Quarter Chloroform 2013
Lab Set ID:	1310621

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Sample Receipt Information:

Date of Receipt:	10/31/2013
Date of Collection:	10/29/2013
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, indicating no apparent matrix interferences.

Corrective Action: None required.

Volatile Case Narrative

Client:	Energy Fuels Resources, Inc.
Contact:	Garrin Palmer
Project:	4th Quarter Chloroform 2013
Lab Set ID:	1310621

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Sample Receipt Information:

Date of Receipt:	10/31/2013
Date of Collection:	10/29/2013
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 (LCSs): All LCS recoveries were within control limits, indicating that the preparation and analysis were in control.

Matrix Spike / Matrix Spike Duplicate (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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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: 1310621
Project: 4th Quarter Chloroform 2013

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-R61122 Date Analyzed: 11/03/2013 0008h													
Test Code: 300.0-W													
Chloride	4.83	mg/L	E300.0	0.0114	0.100	5.000	0	96.7	90 - 110				
Lab Sample ID: LCS-R61202 Date Analyzed: 11/05/2013 1038h													
Test Code: 300.0-W													
Chloride	4.63	mg/L	E300.0	0.0114	0.100	5.000	0	92.6	90 - 110				
Lab Sample ID: LCS-R61213 Date Analyzed: 11/05/2013 2030h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.02	mg/L	E353.2	0.00252	0.100	1.000	0	102	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: 1310621
Project: 4th Quarter Chloroform 2013

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: MB-R61122 Date Analyzed: 11/02/2013 2345h													
Test Code: 300.0-W													
Chloride	< 0.100	mg/L	E300.0	0.0114	0.100								
Lab Sample ID: MB-R61202 Date Analyzed: 11/05/2013 1013h													
Test Code: 300.0-W													
Chloride	< 0.100	mg/L	E300.0	0.0114	0.100								
Lab Sample ID: MB-R61213 Date Analyzed: 11/05/2013 2029h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	< 0.100	mg/L	E353.2	0.00252	0.100								

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1310621
Project: 4th Quarter Chloroform 2013

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: 1310621-001AMS Date Analyzed: 11/03/2013 0630h													
Test Code: 300.0-W													
Chloride	270	mg/L	E300.0	0.570	5.00	250.0	35.7	93.5	90 - 110				
Lab Sample ID: 1310621-001BMS Date Analyzed: 11/05/2013 2040h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.966	mg/L	E353.2	0.00252	0.100	1.000	0	96.6	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: 1310621
Project: 4th Quarter Chloroform 2013

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: 1310621-001AMSD Date Analyzed: 11/03/2013 0653h													
Test Code: 300.0-W													
Chloride	281	mg/L	E300.0	0.570	5.00	250.0	35.7	97.9	90 - 110	270	4.00	20	
Lab Sample ID: 1310621-001BMSD Date Analyzed: 11/05/2013 2041h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.971	mg/L	E353.2	0.00252	0.100	1.000	0	97.1	90 - 110	0.966	0.527	10	

American West Analytical Laboratories

UL
Denison

WORK ORDER Summary

Work Order: **1310621**

Client: Energy Fuels Resources, Inc. Due Date: 11/11/2013

Client ID: DEN100 **Contact:** Garrin Palmer

Project: **4th Quarter Chloroform 2013** **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	
1310621-001A	**MW-32_10292013**	10/29/2013 1330h	10/31/2013 0935h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1310621-001B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1310621-001C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1310621-002A	**TW4-25_10292013**	10/29/2013 1204h	10/31/2013 0935h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1310621-002B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1310621-002C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1310621-003A	**TW4-24_10292013**	10/29/2013 1220h	10/31/2013 0935h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1310621-003B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1310621-003C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1310621-004A	**TW4-04_10292013**	10/29/2013 1302h	10/31/2013 0935h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1310621-004B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1310621-004C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1310621-005A	**MW-04_10292013**	10/29/2013 1255h	10/31/2013 0935h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1310621-005B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1310621-005C				**8260-W**		☑	VOCFridge	2
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1310621-006A	**MW-26_10292013**	10/29/2013 1246h	10/31/2013 0935h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				

Printed: 11/1/2013 FOR LABORATORY USE ONLY [fill out on page 1]: %M ☑ RT ☑ CN ☑ TAT ☑ QC ☑ HOK_____ HOK_____ HOK_____ COC Emailed_____

WORK ORDER Summary

Work Order: **1310621**

Client: Energy Fuels Resources, Inc. Due Date: 11/11/2013

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1310621-006B	**MW-26_10292013**	10/29/2013 1246h	10/31/2013 0935h	**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*	Aqueous	☑	df - no2/no3	1
1310621-006C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1310621-007A	**TW4-19_10292013**	10/29/2013 1410h	10/31/2013 0935h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1310621-007B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1310621-007C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1310621-008A	**TW4-22_10292013**	10/29/2013 1227h	10/31/2013 0935h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1310621-008B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1310621-008C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1310621-009A	**TW4-20_10292013**	10/29/2013 1240h	10/31/2013 0935h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1310621-009B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1310621-009C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1310621-010A	**TW4-65_10292013**	10/29/2013 1330h	10/31/2013 0935h	**300.0-W** *1 SEL Analytes: CL*	Aqueous	☑	df - wc	1
1310621-010B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*		☑	df - no2/no3	
1310621-010C				**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*		☑	VOCFridge	3
1310621-011A	**Trip Blank**	10/29/2013	10/31/2013 0935h	**8260-W** *Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4*	Aqueous	☑	VOCFridge	3

AMERICAN WEST ANALYTICAL LABORATORIES

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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.

1310621
AWAL LAB SAMPLE SET #
PAGE 1 OF 1

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 2013
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
MW-32_10292013	10/29/13	1330	5	W	X	X	X	
TW4-25_10292013	10/29/13	1204	5	W	X	X	X	
TW4-24_10292013	10/29/13	1220	5	W	X	X	X	
TW4-04_10292013	10/29/13	1302	5	W	X	X	X	
MW-04_10292013	10/29/13	1255	5	W	X	X	X	one VOC vial received broken
MW-26_10292013	10/29/13	1246	5	W	X	X	X	
TW4-19_10292013	10/29/13	1410	5	W	X	X	X	
TW4-22_10292013	10/29/13	1227	5	W	X	X	X	
TW4-20_10292013	10/29/13	1240	5	W	X	X	X	
TW4-65_10292013	10/29/13	1330	5	W	X	X	X	
Trip Blank	10/29/13		3	W			X	
Temp Blank			1	W				

LABORATORY USE ONLY

SAMPLES WERE: UPS
1 SHIPPED OR HAND DELIVERED
2 AMBIENT OR CHILLED
3 TEMPERATURE 0.9 °C
4 RECEIVED BROKEN/LEAKING (IMPROPERLY SEALED) Y N 10/31/13 #5 - one VOC vial broken
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:
PRINT NAME: Tanner Holliday	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 Brown	DATE: 10/31/13
PRINT NAME:	TIME:	PRINT NAME: Denise Brown	TIME: 9:35

SPECIAL INSTRUCTIONS:

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

Contaminant	Analytical Methods to be Used	Reporting Limit	Maximum Holding Times	Sample Preservation Requirements	Sample Temperature Requirements
General Inorganics					
Chloride	A4500-Cl B or A4500-Cl E or E300.0	1 mg/L	28 days	None	≤ 6°C
Sulfate	A4500-SO4 E or E300.0	1 mg/L	28 days	None	≤ 6°C
Carbonate as CO3	A2320 B	1 mg/L	14 days	None	≤ 6°C
Bicarbonate as HCO3	A2320 B	1 mg/L	14 days	None	
Volatile Organic Compounds – Chloroform Program					
Carbon Tetrachloride	SW8260B or SW8260C	1.0 µg/L	14 days	HCl to pH<2	≤ 6°C
Chloroform	SW8260B or SW8260C	1.0 µg/L	14 days	HCl to pH<2	≤ 6°C
Dichloromethane (Methylene Chloride)	SW8260B or SW8260C	1.0 µg/L	14 days	HCl to pH<2	≤ 6°C
Chloromethane	SW8260B or SW8260C	1.0 µg/L	14 days	HCl to pH<2	≤ 6°C
SVOCs – Tailings Impoundment Samples Only					
1,2,4-Trichlorobenzene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
1,2-Dichlorobenzene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
1,3-Dichlorobenzene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
1,4-Dichlorobenzene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
1-Methylnaphthalene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2,4,5-Trichlorophenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2,4,6-Trichlorophenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2,4-Dichlorophenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2,4-Dimethylphenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2,4-Dinitrophenol	SW8270D	<20 ug/L	7/40 days	None	≤ 6°C
2,4-Dinitrotoluene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2,6-Dinitrotoluene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2-Chloronaphthalene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2-Chlorophenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2-Methylnaphthalene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2-Methylphenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2-Nitrophenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
3&4-Methylphenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
3,3'-Dichlorobenzidine	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
4,6-Dinitro-2-methylphenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C

Lab Set ID: 1310621

Preservation Check Sheet

Sample Set Extension and pH

Analysis	Preservative	-001	-002	-003	-004	-005	-006	-007	-008	-009	-010								
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								
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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6425 S. Hwy 191
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TEL: (435) 678-2221

RE: 4th Quarter Chloroform 2013

Dear Garrin Palmer: Lab Set ID: 1311306

American West Analytical Laboratories received 16 sample(s) on 11/15/2013 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.

This is a revision to a report originally issued 11/26/2013. Pages 1-3, 20, and 35 have been updated.

Thank You,

Approved by: Kyle F. Gross
Digitally signed by Kyle F. Gross
DN: cn=Kyle F. Gross, o=AWAL, ou=AWAL-Laboratory Director, email=kyle@awal-labs.com, c=US
Date: 2013.12.04 15:10:27 -07'00'

Laboratory Director or designee

SAMPLE SUMMARY

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Chloroform 2013
Lab Set ID: 1311306
Date Received: 11/15/2013 0850h

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Salt Lake City, UT 84115

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1311306-001A	TW4-06_11132013	11/13/2013 0700h	Aqueous	Anions, E300.0
1311306-001B	TW4-06_11132013	11/13/2013 0700h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-001C	TW4-06_11132013	11/13/2013 0700h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-002A	TW4-05_11132013	11/13/2013 0708h	Aqueous	Anions, E300.0
1311306-002B	TW4-05_11132013	11/13/2013 0708h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-002C	TW4-05_11132013	11/13/2013 0708h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-003A	TW4-18_11132013	11/13/2013 0718h	Aqueous	Anions, E300.0
1311306-003B	TW4-18_11132013	11/13/2013 0718h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-003C	TW4-18_11132013	11/13/2013 0718h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-004A	TW4-21_11132013	11/13/2013 0723h	Aqueous	Anions, E300.0
1311306-004B	TW4-21_11132013	11/13/2013 0723h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-004C	TW4-21_11132013	11/13/2013 0723h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-005A	TW4-29_11132013	11/13/2013 0737h	Aqueous	Anions, E300.0
1311306-005B	TW4-29_11132013	11/13/2013 0737h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-005C	TW4-29_11132013	11/13/2013 0737h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-006A	TW4-11_11132013	11/13/2013 0745h	Aqueous	Anions, E300.0
1311306-006B	TW4-11_11132013	11/13/2013 0745h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-006C	TW4-11_11132013	11/13/2013 0745h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-007A	TW4-07_11142013	11/14/2013 0813h	Aqueous	Anions, E300.0
1311306-007B	TW4-07_11142013	11/14/2013 0813h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-007C	TW4-07_11142013	11/14/2013 0813h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-008A	TW4-10_11142013	11/14/2013 0820h	Aqueous	Anions, E300.0
1311306-008B	TW4-10_11142013	11/14/2013 0820h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-008C	TW4-10_11142013	11/14/2013 0820h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-009A	TW4-01_11142013	11/14/2013 0828h	Aqueous	Anions, E300.0
1311306-009B	TW4-01_11142013	11/14/2013 0828h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-009C	TW4-01_11142013	11/14/2013 0828h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-010A	TW4-02_11142013	11/14/2013 0833h	Aqueous	Anions, E300.0
1311306-010B	TW4-02_11142013	11/14/2013 0833h	Aqueous	Nitrite/Nitrate (as N), E353.2

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Jose Rocha
QA Officer

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: 4th Quarter Chloroform 2013
Lab Set ID: 1311306
Date Received: 11/15/2013 0850h

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1311306-010C	TW4-02_11142013	11/14/2013 0833h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-011A	TW4-32_11142013	11/14/2013 0842h	Aqueous	Anions, E300.0
1311306-011B	TW4-32_11142013	11/14/2013 0842h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-011C	TW4-32_11142013	11/14/2013 0842h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-012A	TW4-33_11142013	11/14/2013 0849h	Aqueous	Anions, E300.0
1311306-012B	TW4-33_11142013	11/14/2013 0849h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-012C	TW4-33_11142013	11/14/2013 0849h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-013A	TW4-34_11142013	11/14/2013 0856h	Aqueous	Anions, E300.0
1311306-013B	TW4-34_11142013	11/14/2013 0856h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-013C	TW4-34_11142013	11/14/2013 0856h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-014A	TW4-60_11142013	11/14/2013 0700h	Aqueous	Anions, E300.0
1311306-014B	TW4-60_11142013	11/14/2013 0700h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-014C	TW4-60_11142013	11/14/2013 0700h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-015A	TW4-18R_11122013 *	11/12/2013 0827h	Aqueous	Anions, E300.0
1311306-015B	TW4-18R_11122013 *	11/12/2013 0827h	Aqueous	Nitrite/Nitrate (as N), E353.2
1311306-015C	TW4-18R_11122013 *	11/12/2013 0827h	Aqueous	VOA by GC/MS Method 8260C/5030C
1311306-016A	Trip Blank	11/12/2013	Aqueous	VOA by GC/MS Method 8260C/5030C

** - Reissue of a previously generated report. The Client Sample ID has been updated. Information herein supersedes that of previously issued reports.*

Inorganic Case Narrative

Client:	Energy Fuels Resources, Inc.
Contact:	Garrin Palmer
Project:	4th Quarter Chloroform 2013
Lab Set ID:	1311306

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Jose Rocha
QA Officer

Sample Receipt Information:

Date of Receipt:	11/15/2013
Date(s) of Collection:	11/12, 11/13, & 11/14/2013
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, DUP:

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: The MS percent recoveries were outside of control limits on nitrate/nitrite for samples 1311306-001B and -007B due to sample matrix interference.

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

Corrective Action: None required.

Volatile Case Narrative

Client:	Energy Fuels Resources, Inc.
Contact:	Garrin Palmer
Project:	4th Quarter Chloroform 2013
Lab Set ID:	1311306

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Laboratory Director

Jose Rocha
QA Officer

Sample Receipt Information:

Date of Receipt:	11/15/2013
Date(s) of Collection:	11/12, 11/13, & 11/14/2013
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 (LCSs): All LCS recoveries were within control limits, indicating that the preparation and analysis were in control.

Matrix Spike / Matrix Spike Duplicate (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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Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1311306
Project: 4th Quarter Chloroform 2013

Contact: Garrin Palmer
Dept: WC
QC Type: DUP

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1311161-013BDUP Date Analyzed: 11/15/2013 1742h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.33	mg/L	E353.2	0.00252	0.100					1.3	1.94	20	

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QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1311306
Project: 4th Quarter Chloroform 2013

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-R61996 Date Analyzed: 11/22/2013 0137h													
Test Code: 300.0-W													
Chloride	4.58	mg/L	E300.0	0.0114	0.100	5.000	0	91.6	90 - 110				
Lab Sample ID: LCS-R61712 Date Analyzed: 11/15/2013 1708h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.978	mg/L	E353.2	0.00252	0.100	1.000	0	97.8	90 - 110				
Lab Sample ID: LCS-R61713 Date Analyzed: 11/15/2013 1851h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.03	mg/L	E353.2	0.00252	0.100	1.000	0	103	90 - 110				

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QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1311306
Project: 4th Quarter Chloroform 2013

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: MB-R61998 Date Analyzed: 11/22/2013 0113h													
Test Code: 300.0-W													
Chloride	< 0.100	mg/L	E300.0	0.0114	0.100								
Lab Sample ID: MB-R61712 Date Analyzed: 11/15/2013 1706h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	< 0.100	mg/L	E353.2	0.00252	0.100								
Lab Sample ID: MB-R61713 Date Analyzed: 11/15/2013 1849h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	< 0.100	mg/L	E353.2	0.00252	0.100								

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QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1311306
Project: 4th Quarter Chloroform 2013

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: 1311306-015AMS Date Analyzed: 11/22/2013 0403h													
Test Code: 300.0-W													
Chloride	4.76	mg/L	E300.0	0.0114	0.100	5.000	0	95.1	90 - 110				
Lab Sample ID: 1311306-001BMS Date Analyzed: 11/15/2013 1717h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	10.4	mg/L	E353.2	0.0252	1.00	10.00	1.52	89.2	90 - 110				1
Lab Sample ID: 1311306-007BMS Date Analyzed: 11/15/2013 1746h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	15.4	mg/L	E353.2	0.0252	1.00	10.00	4.13	113	90 - 110				1
Lab Sample ID: 1311306-015BMS Date Analyzed: 11/15/2013 1853h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.01	mg/L	E353.2	0.00252	0.100	1.000	0	101	90 - 110				

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

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QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1311306
Project: 4th Quarter Chloroform 2013

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: 1311306-015AMSD Date Analyzed: 11/22/2013 0427h Test Code: 300.0-W													
Chloride	4.81	mg/L	E300.0	0.0114	0.100	5.000	0	96.1	90 - 110	4.76	1.07	20	
Lab Sample ID: 1311306-001BMSD Date Analyzed: 11/15/2013 1719h Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	11.3	mg/L	E353.2	0.0252	1.00	10.00	1.52	97.6	90 - 110	10.4	7.77	10	
Lab Sample ID: 1311306-007BMSD Date Analyzed: 11/15/2013 1748h Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	15.1	mg/L	E353.2	0.0252	1.00	10.00	4.13	110	90 - 110	15.4	2.29	10	
Lab Sample ID: 1311306-015BMSD Date Analyzed: 11/15/2013 1855h Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.03	mg/L	E353.2	0.00252	0.100	1.000	0	103	90 - 110	1.01	1.42	10	

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REVISED: 12/3/2013

#15 Sample ID corrected -RW

UL
Denison

WORK ORDER Summary

Work Order: **1311306**

Client: Energy Fuels Resources, Inc. Due Date: 11/26/2013

Client ID: DEN100 **Contact:** Garrin Palmer

Project: **4th Quarter Chloroform 2013** **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	
1311306-001A	**TW4-06_11132013**	11/13/2013 0700h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-001B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-001C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-002A	**TW4-05_11132013**	11/13/2013 0708h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-002B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-002C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-003A	**TW4-18_11132013**	11/13/2013 0718h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-003B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-003C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-004A	**TW4-21_11132013**	11/13/2013 0723h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-004B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-004C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-005A	**TW4-29_11132013**	11/13/2013 0737h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-005B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-005C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				

WORK ORDER Summary

Work Order: **1311306**

Client: Energy Fuels Resources, Inc. Due Date: 11/26/2013

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1311306-006A	**TW4-11_11132013**	11/13/2013 0745h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-006B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-006C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-007A	**TW4-07_11142013**	11/14/2013 0813h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-007B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-007C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-008A	**TW4-10_11142013**	11/14/2013 0820h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-008B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-008C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-009A	**TW4-01_11142013**	11/14/2013 0828h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-009B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-009C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-010A	**TW4-02_11142013**	11/14/2013 0833h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-010B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-010C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-011A	**TW4-32_11142013**	11/14/2013 0842h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-011B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-011C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-012A	**TW4-33_11142013**	11/14/2013 0849h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-012B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				

WORK ORDER Summary

Work Order: **1311306**

Client: Energy Fuels Resources, Inc. Due Date: 11/26/2013

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1311306-012C	**TW4-33_11142013**	11/14/2013 0849h	11/15/2013 0850h	**8260-W**	Aqueous	☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-013A	**TW4-34_11142013**	11/14/2013 0856h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-013B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-013C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-014A	**TW4-60_11142013**	11/14/2013 0700h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-014B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-014C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-015A	**TW4-18R_11122013**	11/12/2013 0827h	11/15/2013 0850h	**300.0-W**	Aqueous	☑	df - wc	1
				1 SEL Analytes: CL				
1311306-015B				**NO2/NO3-W-353.2**		☑	df - no2/no3	
				1 SEL Analytes: NO3NO2N				
1311306-015C				**8260-W**		☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				
1311306-016A	**Trip Blank**	11/12/2013	11/15/2013 0850h	**8260-W**	Aqueous	☑	VOCFridge	3
				Test Group: 8260-W-Custom; # of Analytes: 4 / # of Surr: 4				

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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.

1311306
AWAL LAB SAMPLE SET #
PAGE 1 OF 2

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 2013
PROJECT #:	
PO #:	
SAMPLER NAME:	Tanner Holliday

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:

SAMPLE ID:	DATE SAMPLED	TIME SAMPLED	# OF CONTAINERS	SAMPLE MATRIX	NO2/NO3 (353.2)	Cl (4500 or 300.0)	VOCs (8260C)
TW4-06_11132013	11/13/13	700	5	W	X	X	X
TW4-05_11132013	11/13/13	708	5	W	X	X	X
TW4-18_11132013	11/13/13	718	5	W	X	X	X
TW4-21_11132013	11/13/13	723	5	W	X	X	X
TW4-29_11132013	11/13/13	737	5	W	X	X	X
TW4-11_11132013	11/13/13	745	5	W	X	X	X
TW4-07_11142013	11/14/13	813	5	W	X	X	X
TW4-10_11142013	11/14/13	820	5	W	X	X	X
TW4-01_11142013	11/14/13	828	5	W	X	X	X
TW4-02_11142013	11/14/13	833	5	W	X	X	X
TW4-32_11142013	11/14/13	842	5	W	X	X	X
TW4-33_11142013	11/14/13	849	5	W	X	X	X
TW4-34_11142013	11/14/13	856	5	W	X	X	X

X INCLUDE EDD:
LOCUS UPLOAD
EXCEL
FIELD FILTERED FOR:

FOR COMPLIANCE WITH:
- ☐ NELAP
- ☐ RCRA
- ☐ CWA
- ☐ SDWA
- ☐ ELAP / A2LA
- ☐ NLLAP
- ☐ NON-COMPLIANCE
- ☐ OTHER:

KNOWN HAZARDS & SAMPLE COMMENTS

LABORATORY USE ONLY

SAMPLES WERE:
1 SHIPPED OR HAND DELIVERED
2 AMBIENT OR CHILLED
3 TEMPERATURE 4.8 °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 / PRINT NAME: Tanner Holliday	DATE: 11/15/2013 TIME: 0850	RECEIVED BY: SIGNATURE / PRINT NAME: Erma Hayes	DATE: 11/15/13 TIME: 851	SPECIAL INSTRUCTIONS: See the Analytical Scope of Work for Reporting Limits and VOC analyte list.
RELINQUISHED BY: SIGNATURE / PRINT NAME:	DATE: TIME:	RECEIVED BY: SIGNATURE / PRINT NAME:	DATE: TIME:	
RELINQUISHED BY: SIGNATURE / PRINT NAME:	DATE: TIME:	RECEIVED BY: SIGNATURE / PRINT NAME:	DATE: TIME:	
RELINQUISHED BY: SIGNATURE / PRINT NAME:	DATE: TIME:	RECEIVED BY: SIGNATURE / PRINT NAME:	DATE: TIME:	

AMERICAN WEST ANALYTICAL LABORATORIES

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CHAIN OF CUSTODY

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1311306
AWAL LAB SAMPLE SET #
PAGE 2 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 2013
PROJECT #:
PO #:
SAMPLER NAME: Tanner Holliday

SAMPLE ID:	DATE SAMPLED	TIME SAMPLED	# OF CONTAINERS	SAMPLE MATRIX	NO2/NO3 (353.2)	Cl (4500 or 300.0)	VOCs (8260C)
TW4-60_11142013	11/14/13	700	5	W	X	X	X
TW4-18R_11122013	11/12/13	827	5	W	X	X	X
TRIP BLANK	11/12/13		3	W			X

X INCLUDE EDD:
LOCUS UPLOAD
EXCEL
FIELD FILTERED FOR:

FOR COMPLIANCE WITH:
☐ NELAP
☐ RCRA
☐ CWA
☐ SDWA
☐ ELAP / A2LA
☐ NLLAP
☐ NON-COMPLIANCE
☐ OTHER:

KNOWN HAZARDS & SAMPLE COMMENTS

LABORATORY USE ONLY

SAMPLES WERE:
1 SHIPPED OR HAND DELIVERED
2 AMBIENT OR CHILLED
3 TEMPERATURE 4.8 °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:
PRINT NAME: Tanner Holliday	TIME: 0850	PRINT NAME: Elena Hafis	TIME: 851
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	DATE:
PRINT NAME:	TIME:	PRINT NAME:	TIME:

SPECIAL INSTRUCTIONS:

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

Contaminant	Analytical Methods to be Used	Reporting Limit	Maximum Holding Times	Sample Preservation Requirements	Sample Temperature Requirements
General Inorganics					
Chloride	A4500-Cl B or A4500-Cl E or E300.0	1 mg/L	28 days	None	≤ 6°C
Sulfate	A4500-SO4 E or E300.0	1 mg/L	28 days	None	≤ 6°C
Carbonate as CO3	A2320 B	1 mg/L	14 days	None	≤ 6°C
Bicarbonate as HCO3	A2320 B	1 mg/L	14 days	None	
Volatile Organic Compounds – Chloroform Program					
Carbon Tetrachloride	SW8260B or SW8260C	1.0 µg/L	14 days	HCl to pH<2	≤ 6°C
Chloroform	SW8260B or SW8260C	1.0 µg/L	14 days	HCl to pH<2	≤ 6°C
Dichloromethane (Methylene Chloride)	SW8260B or SW8260C	1.0 µg/L	14 days	HCl to pH<2	≤ 6°C
Chloromethane	SW8260B or SW8260C	1.0 µg/L	14 days	HCl to pH<2	≤ 6°C
SVOCs – Tailings Impoundment Samples Only					
1,2,4-Trichlorobenzene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
1,2-Dichlorobenzene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
1,3-Dichlorobenzene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
1,4-Dichlorobenzene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
1-Methylnaphthalene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2,4,5-Trichlorophenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2,4,6-Trichlorophenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2,4-Dichlorophenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2,4-Dimethylphenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2,4-Dinitrophenol	SW8270D	<20 ug/L	7/40 days	None	≤ 6°C
2,4-Dinitrotoluene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2,6-Dinitrotoluene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2-Chloronaphthalene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2-Chlorophenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2-Methylnaphthalene	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2-Methylphenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
2-Nitrophenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
3&4-Methylphenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
3,3'-Dichlorobenzidine	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C
4,6-Dinitro-2-methylphenol	SW8270D	<10 ug/L	7/40 days	None	≤ 6°C

Lab Set ID: 13113O6

Preservation Check Sheet

Sample Set Extension and pH

Analysis	Preservative	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
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	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

Tab H

Quality Assurance and Data Validation Tables

H-1 Field Data QA/QC Evaluation

Location		2x Casing Volume	Volume Pumped	Volume Check	Conductivity		RPD	pH		RPD	Temp		RPD	Redox Potential		RPD	Turbidity		RPD
Piezometer 1		--			2175		NC	8.73		NC	13.40		NC	327		NC	9.0		NC
Piezometer 2		--			701		NC	7.45		NC	13.47		NC	290		NC	6.5		NC
Piezometer 3		--			2943		NC	11.60		NC	13.51		NC	237		NC	9.6		NC
TWN-1	36.30	72.60	88.00	OK	854.0	856.0	0.23	7.20	7.26	0.83	14.61	14.68	0.48	335	330	1.50	56	59	5.22
TWN-2	NA	Continuously Pumped Well			3578		NC	6.63		NC	13.51		NC	320		NC	0		NC
TWN-3	38.39	76.78	52.00	Pumped Dry	2485.0	2476.0	0.36	7.22	7.19	0.42	14.50	14.47	0.21	NM		NC	NM		NC
TWN-4	50.07	100.14	121.00	OK	1056.0	1057.0	0.09	7.18	7.18	0.00	14.44	14.44	0.00	296	292	1.36	316.0	325.0	2.81
TWN-7	11.81	23.62	19.00	Pumped Dry	1194.0	1200.0	0.50	7.14	7.12	0.28	14.29	14.31	0.14	NM		NC	NM		NC
TWN-18	56.29	112.58	132.00	OK	2210.0	2218.0	0.36	6.85	6.85	0.00	14.36	14.40	0.28	299	299	0.00	1048.0	1059.0	1.04
TW4-22	NA	Continuously pumped well			6383		NC	6.93		NC	15.41		NC	242		NC	0		NC
TW4-24	NA	Continuously pumped well			8024		NC	6.85		NC	15.11		NC	250		NC	0		NC
TW4-25	NA	Continuously pumped well			2759		NC	7.09		NC	16.55		NC	269		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	10/16/2013	10/21/2013	5	28	OK
PIEZ-01	Nitrate/Nitrite (as N)	10/16/2013	10/22/2013	6	28	OK
PIEZ-02	Chloride	10/16/2013	10/22/2013	6	28	OK
PIEZ-02	Nitrate/Nitrite (as N)	10/16/2013	10/22/2013	6	28	OK
PIEZ-03	Chloride	10/16/2013	10/22/2013	6	28	OK
PIEZ-03	Nitrate/Nitrite (as N)	10/16/2013	10/22/2013	6	28	OK
TWN-01	Chloride	10/16/2013	10/21/2013	5	28	OK
TWN-01	Nitrate/Nitrite (as N)	10/16/2013	10/22/2013	6	28	OK
TWN-02	Chloride	10/16/2013	10/21/2013	5	28	OK
TWN-02	Nitrate/Nitrite (as N)	10/16/2013	10/22/2013	6	28	OK
TWN-03	Chloride	10/17/2013	10/21/2013	4	28	OK
TWN-03	Nitrate/Nitrite (as N)	10/17/2013	10/22/2013	5	28	OK
TWN-04	Chloride	10/16/2013	10/21/2013	5	28	OK
TWN-04	Nitrate/Nitrite (as N)	10/16/2013	10/22/2013	6	28	OK
TWN-07	Chloride	10/16/2013	10/21/2013	5	28	OK
TWN-07	Nitrate/Nitrite (as N)	10/16/2013	10/22/2013	6	28	OK
TWN-07R	Chloride	10/15/2013	10/21/2013	6	28	OK
TWN-07R	Nitrate/Nitrite (as N)	10/15/2013	10/22/2013	7	28	OK
TWN-18	Chloride	10/16/2013	10/21/2013	5	28	OK
TWN-18	Nitrate/Nitrite (as N)	10/16/2013	10/22/2013	6	28	OK
TW4-22	Chloride	10/29/2013	11/3/2013	5	28	OK
TW4-22	Nitrate/Nitrite (as N)	10/29/2013	11/5/2013	7	28	OK
TW4-24	Chloride	10/29/2013	11/3/2013	5	28	OK
TW4-24	Nitrate/Nitrite (as N)	10/29/2013	11/5/2013	7	28	OK
TW4-25	Chloride	10/29/2013	11/3/2013	5	28	OK
TW4-25	Nitrate/Nitrite (as N)	10/29/2013	11/5/2013	7	28	OK
TW4-60	Chloride	11/14/2013	11/22/2013	8	28	OK
TW4-60	Nitrate/Nitrite (as N)	11/14/2013	11/15/2013	1	28	OK
TWN-60	Chloride	10/17/2013	10/21/2013	4	28	OK
TWN-60	Nitrate/Nitrite (as N)	10/17/2013	10/22/2013	5	28	OK
TWN-65	Chloride	10/16/2013	10/21/2013	5	28	OK
TWN-65	Nitrate/Nitrite (as N)	10/16/2013	10/22/2013	6	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	E300.0

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	Units	RL Check
PIEZ-01	Chloride	10	mg/L		1	mg/L	OK
PIEZ-01	Nitrate/Nitrite (as N)	1	mg/L		0.1	mg/L	OK
PIEZ-02	Chloride	5	mg/L		1	mg/L	OK
PIEZ-02	Nitrate/Nitrite (as N)	0.1	mg/L		0.1	mg/L	OK
PIEZ-03	Chloride	5	mg/L		1	mg/L	OK
PIEZ-03	Nitrate/Nitrite (as N)	0.1	mg/L		0.1	mg/L	OK
TWN-01	Chloride	5	mg/L		1	mg/L	OK
TWN-01	Nitrate/Nitrite (as N)	0.5	mg/L		0.1	mg/L	OK
TWN-02	Chloride	10	mg/L		1	mg/L	OK
TWN-02	Nitrate/Nitrite (as N)	10	mg/L		0.1	mg/L	OK
TWN-03	Chloride	50	mg/L		1	mg/L	OK
TWN-03	Nitrate/Nitrite (as N)	2	mg/L		0.1	mg/L	OK
TWN-04	Chloride	5	mg/L		1	mg/L	OK
TWN-04	Nitrate/Nitrite (as N)	0.5	mg/L		0.1	mg/L	OK
TWN-07	Chloride	1	mg/L		1	mg/L	OK
TWN-07	Nitrate/Nitrite (as N)	0.1	mg/L		0.1	mg/L	OK
TWN-07R	Chloride	1	mg/L	U	1	mg/L	OK
TWN-07R	Nitrate/Nitrite (as N)	0.1	mg/L	U	0.1	mg/L	OK
TWN-18	Chloride	10	mg/L		1	mg/L	OK
TWN-18	Nitrate/Nitrite (as N)	0.5	mg/L		0.1	mg/L	OK
TW4-22	Chloride	100	mg/L		1	mg/L	OK
TW4-22	Nitrate/Nitrite (as N)	10	mg/L		0.1	mg/L	OK
TW4-24	Chloride	100	mg/L		1	mg/L	OK
TW4-24	Nitrate/Nitrite (as N)	10	mg/L		0.1	mg/L	OK
TW4-25	Chloride	50	mg/L		1	mg/L	OK
TW4-25	Nitrate/Nitrite (as N)	1	mg/L		0.1	mg/L	OK
TW4-60	Chloride	1	mg/L	U	1	mg/L	OK
TW4-60	Nitrate/Nitrite (as N)	0.1	mg/L	U	0.1	mg/L	OK
TWN-60	Chloride	1	mg/L	U	1	mg/L	OK
TWN-60	Nitrate/Nitrite (as N)	0.1	mg/L	U	0.1	mg/L	OK
TWN-65	Chloride	5	mg/L		1	mg/L	OK
TWN-65	Nitrate/Nitrite (as N)	0.1	mg/L		0.1	mg/L	OK

U = Value was reported by the laboratory as nondetect.

H-5 QA/QC Evaluation for Sample Duplicates

Constituent	TWN-01	TWN-65	%RPD
Chloride	28.6	27.1	5.39
Nitrogen	1.61	1.48	8.41

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
1311306	1311306-001BMS	TW4-06	Nitrate	89.2	97.6	90-110	10.4
1311306	1311306-007BMS	TW4-07	Nitrate	113	110	90 - 110	15.4

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

H-7 Receipt Temperature Evaluation

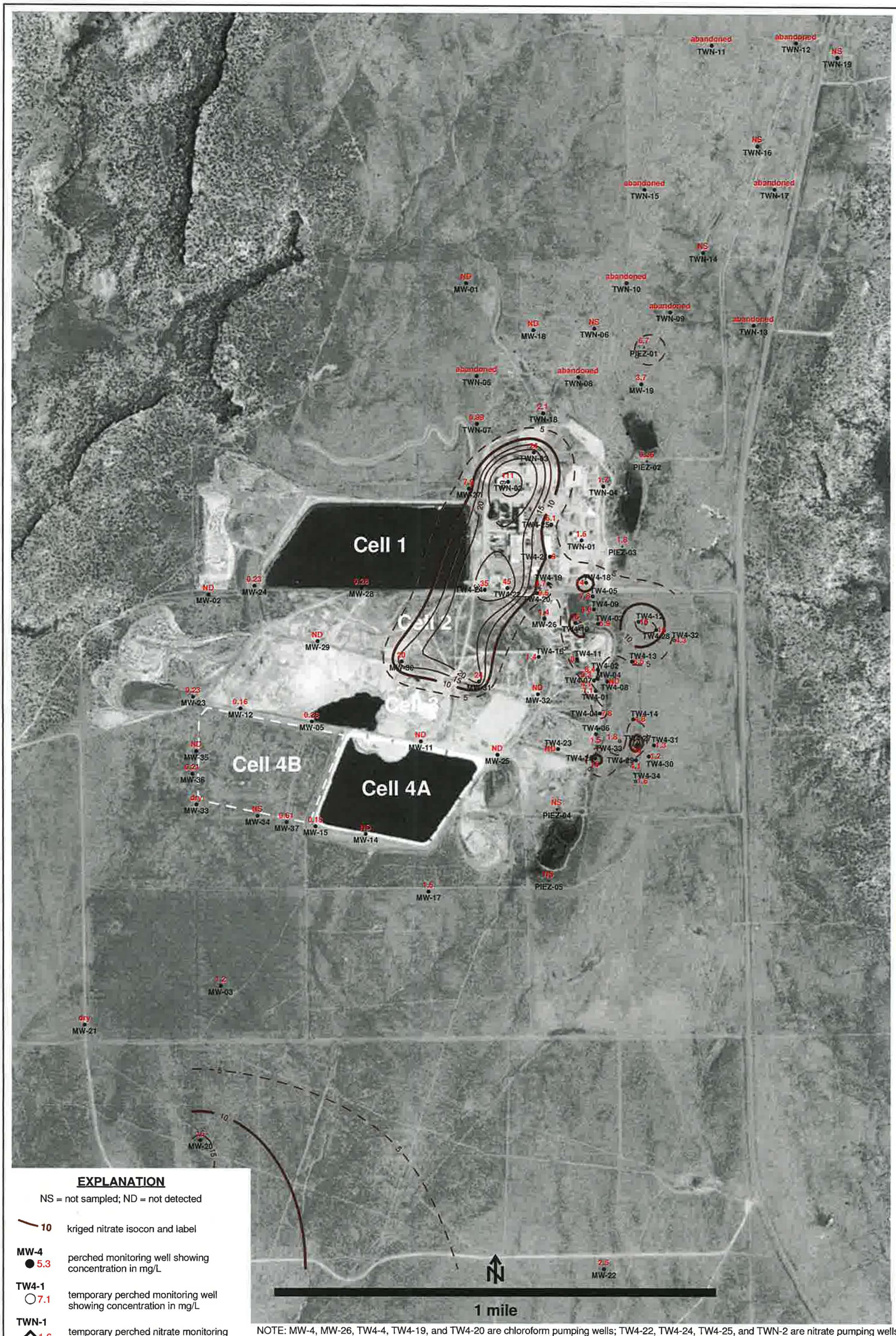
Sample Batch	Wells in Batch	Temperature
1310396	Piezometer 1, Piezometer 2, Piezometer 3, TWN-1, TWN-2, TWN-3, TWN-4, TWN-7, TWN-18, TWN-60, TWN-65	1.4 °C
1310621	TW4-22, TW4-24, TW4-25	0.9 °C
1311306	TW4-60	4.8 °C

H-8 Rinsate Evaluation

All Rinsate and DI Blank samples were non-detect for the quarter.

Tab I

Kriged Current Quarter Isoconcentration Maps



EXPLANATION

NS = not sampled; ND = not detected

- 10 — kriged nitrate isocon and label
- MW-4 ● 5.3 — perched monitoring well showing concentration in mg/L
- TW4-1 ○ 7.1 — temporary perched monitoring well showing concentration in mg/L
- TWN-1 ◇ 1.6 — temporary perched nitrate monitoring well showing concentration in mg/L
- PIEZ-1 ◒ 6.7 — perched piezometer showing concentration in mg/L
- TW4-32 ☼ 4.3 — temporary perched monitoring well installed September, 2013 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, 2013 NITRATE (mg/L) (NITRATE + NITRITE AS N) WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/feb14/nitrate/Unt1213.srf	I-1

Cell 1
Cell 2
Cell 3
Cell 4B
Cell 4A
100
200
400
500
1 mile
N

EXPLANATION

NS = not sampled; ND = not detected

- 100 — kriged chloride isocon and label
- MW-4 ● 40 — perched monitoring well showing concentration in mg/L
- TW4-1 ○ 37 — temporary perched monitoring well showing concentration in mg/L
- TWN-1 ◆ 27 — temporary perched nitrate monitoring well showing concentration in mg/L
- PIEZ-1 ◒ 54 — perched piezometer showing concentration in mg/L
- TW4-32 ☼ 52 — temporary perched monitoring well installed September, 2013 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, 2013 CHLORIDE (mg/L) WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/feb14/chloride/Ucl1213.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

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

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

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

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

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

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

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

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

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		
6/9/2010	4.40		
8/16/2010	5.90		
10/11/2010	2.70		
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		

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		
9/12/2013	10.3		
11/13/2013	9.0		

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

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

TW4-25

Date	Nitrate (mg/l)	Chloride (mg/l)	Notes
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	

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		
7/10/2013	17.6		
8/20/2013	16.4		
9/18/2013	16.9		
10/22/2013	19.7		
11/20/2013	19.5		
12/18/2013	20.7		

Under the groundwater sampling progran, 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

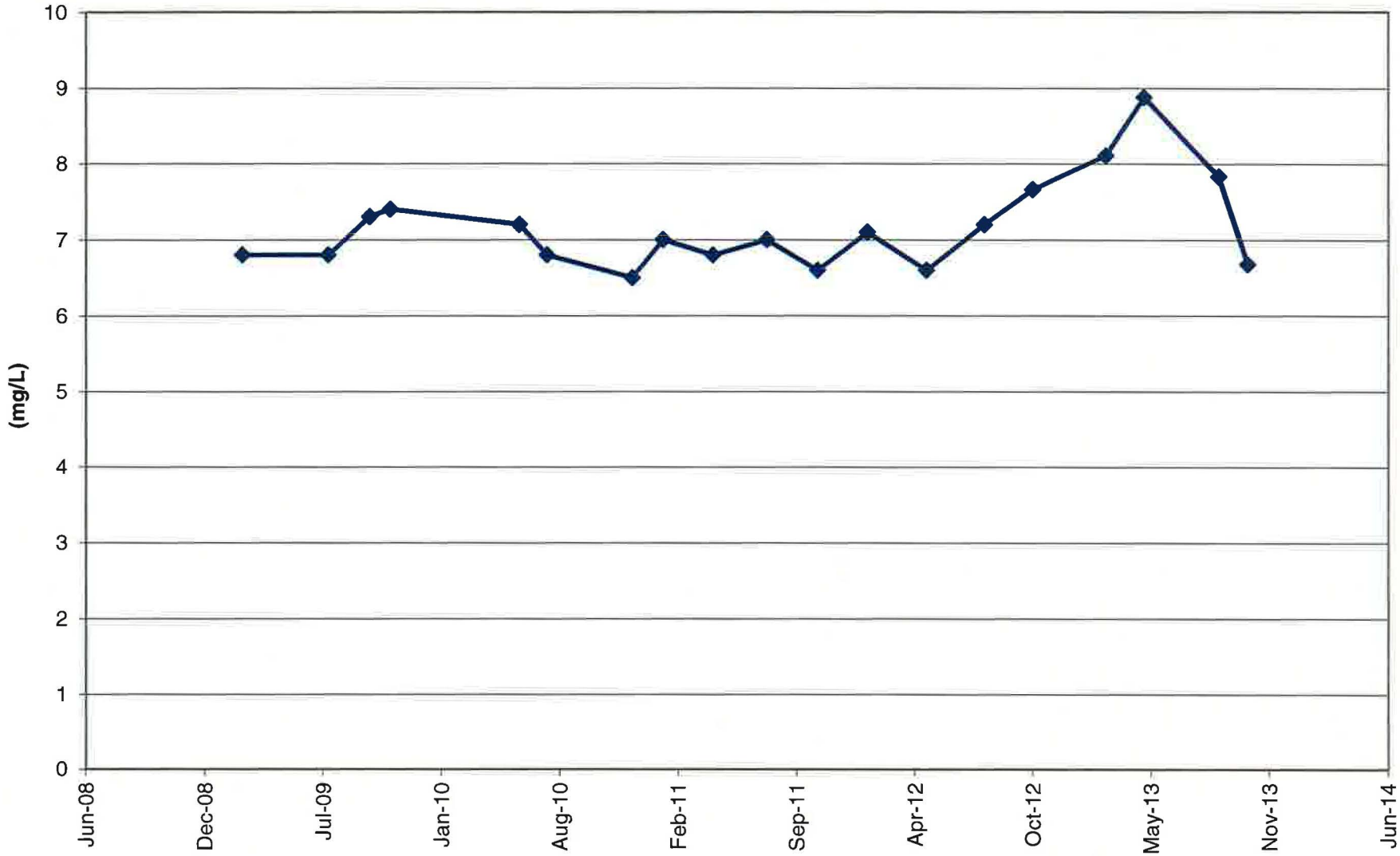
Date	Nitrate (mg/l)	Date	Chloride (mg/l)
6/18/2012	21.6	1/22/2013	176
7/9/2012	21.0	2/19/2013	174
8/6/2012	21.0	3/19/2013	168
9/18/2012	21.0	4/16/2013	171
10/22/2012	18.0	5/13/2013	169
11/6/2012	23.6	6/24/2013	179
12/18/2012	22.2	7/9/2013	182
1/22/2013	22.8	8/19/2013	183
2/19/2013	19.3	9/17/2013	193
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		
7/9/2013	21.7		
8/19/2013	16.0		
9/17/2013	21.2		
10/23/2013	21.2		
11/18/2013	23.9		
12/17/2013	24.2		

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.

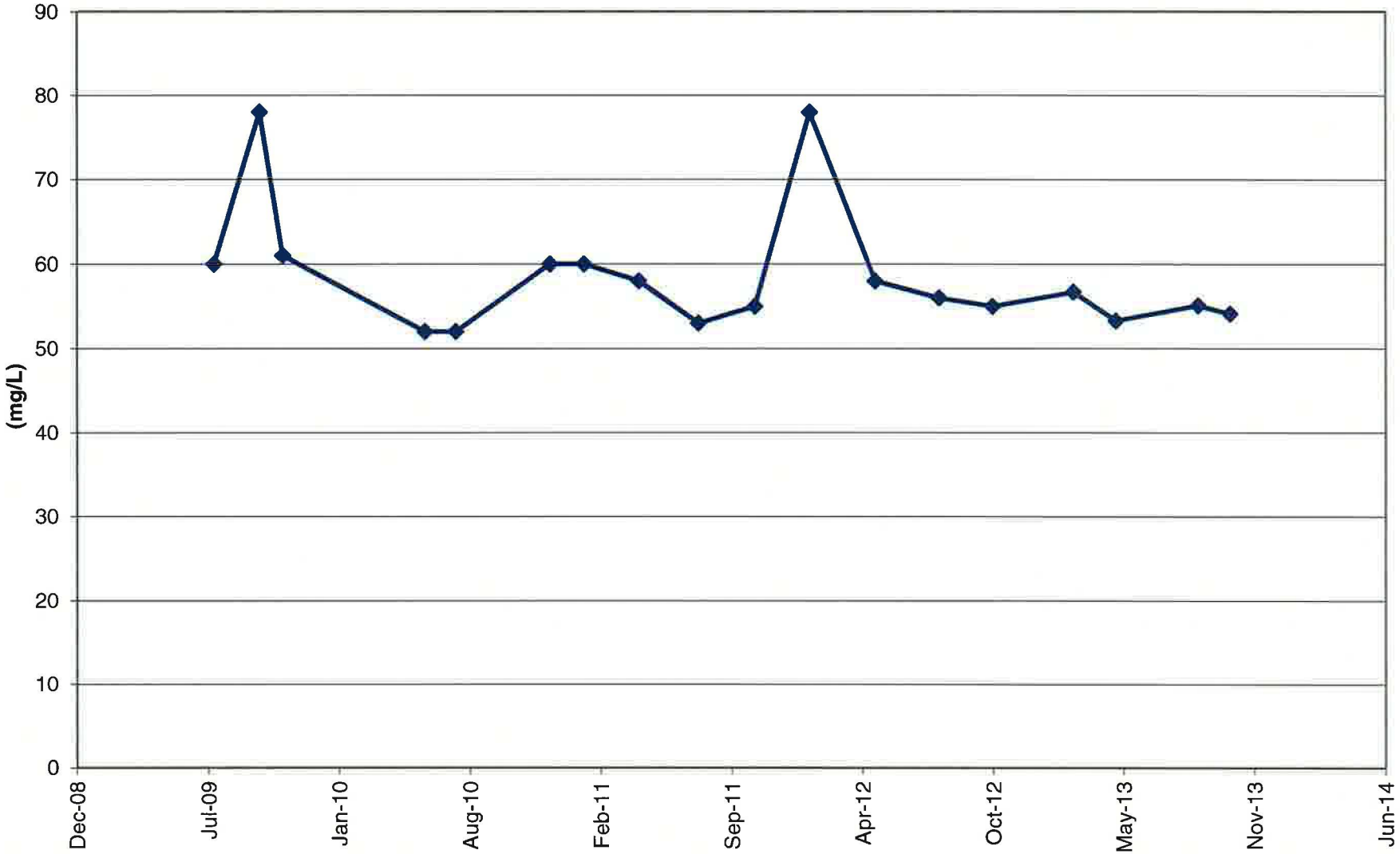
Tab K

Concentration Trend Graphs

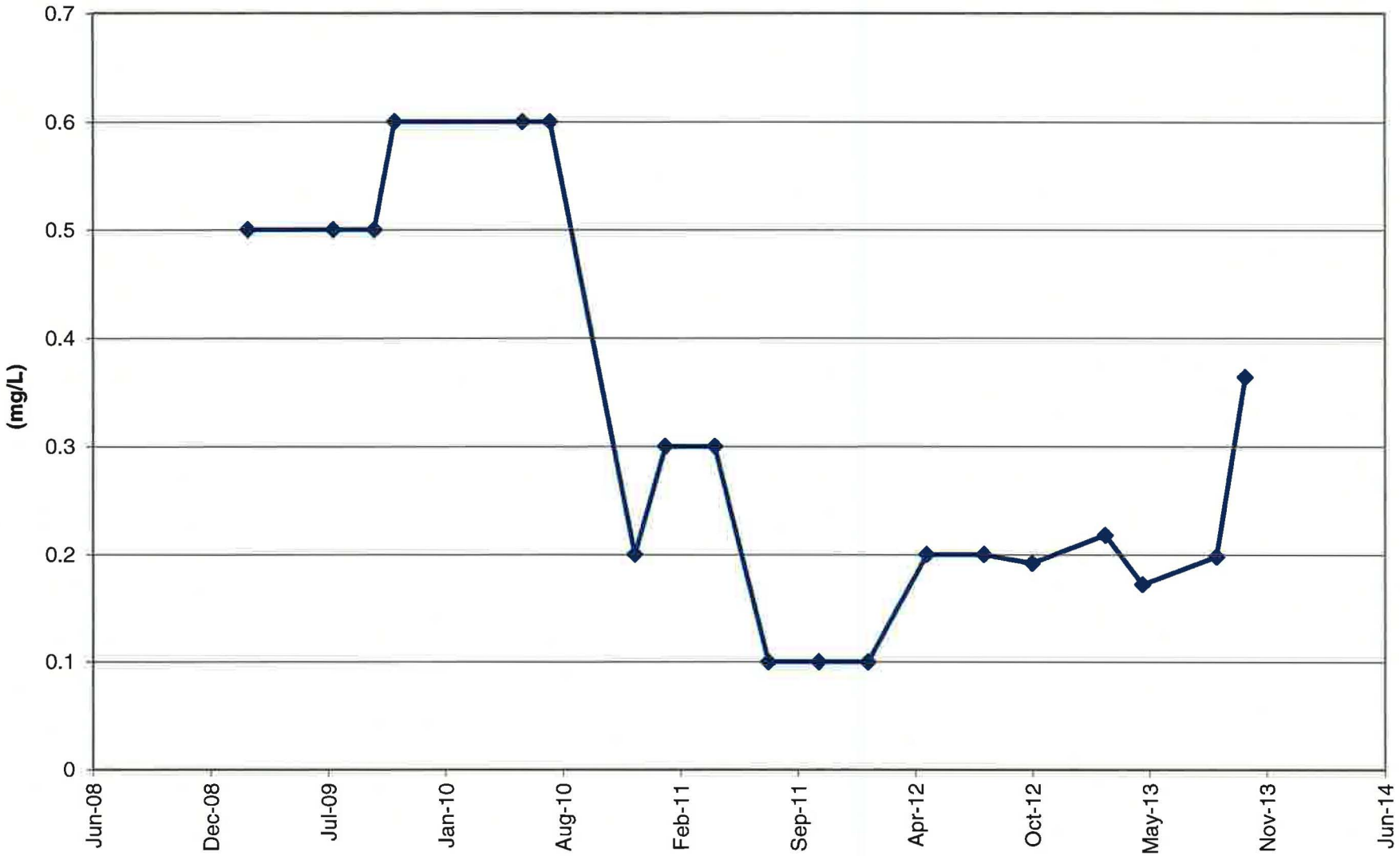
Piezometer 1 Nitrate Concentrations



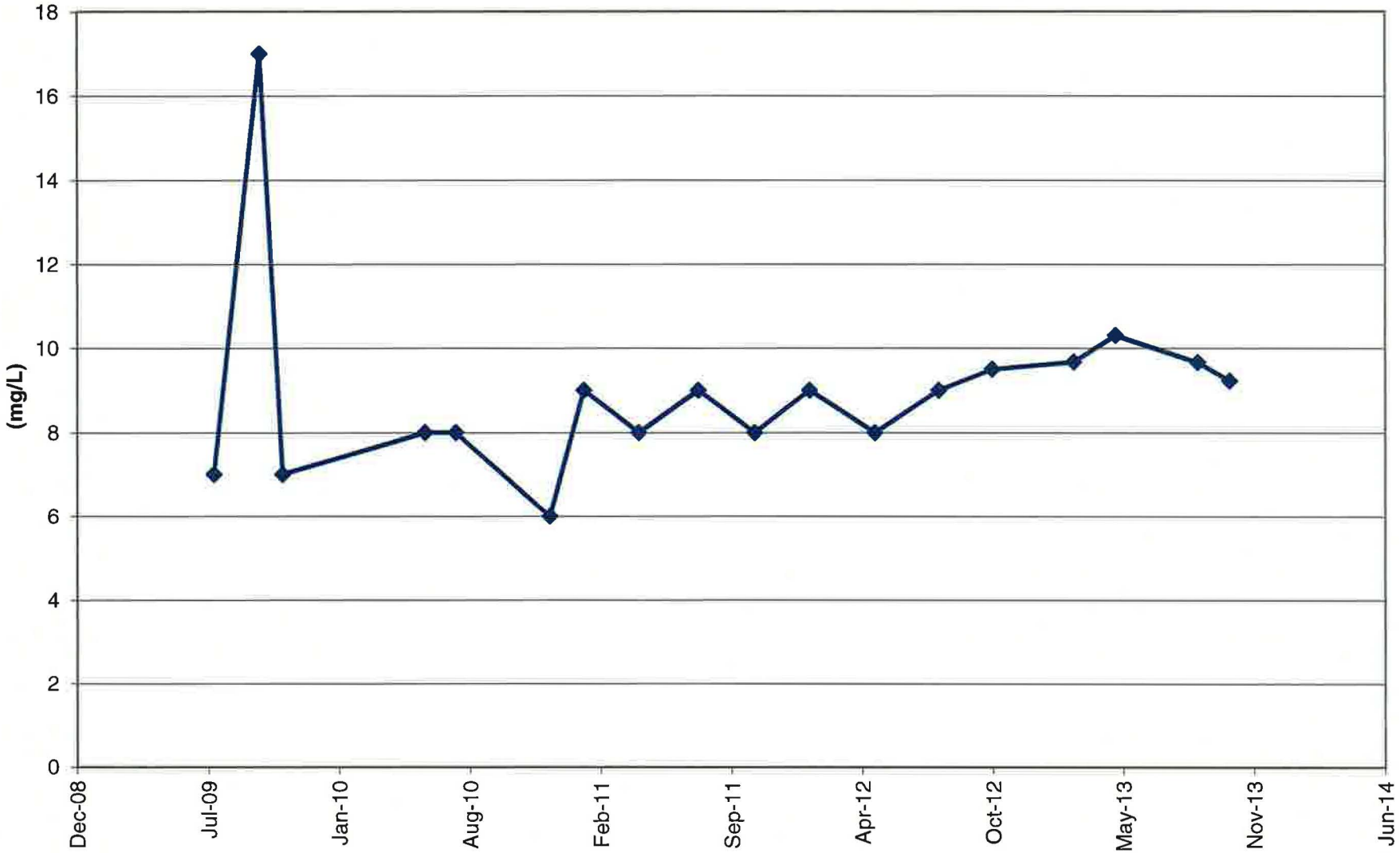
Piezometer 1 Chloride Concentrations



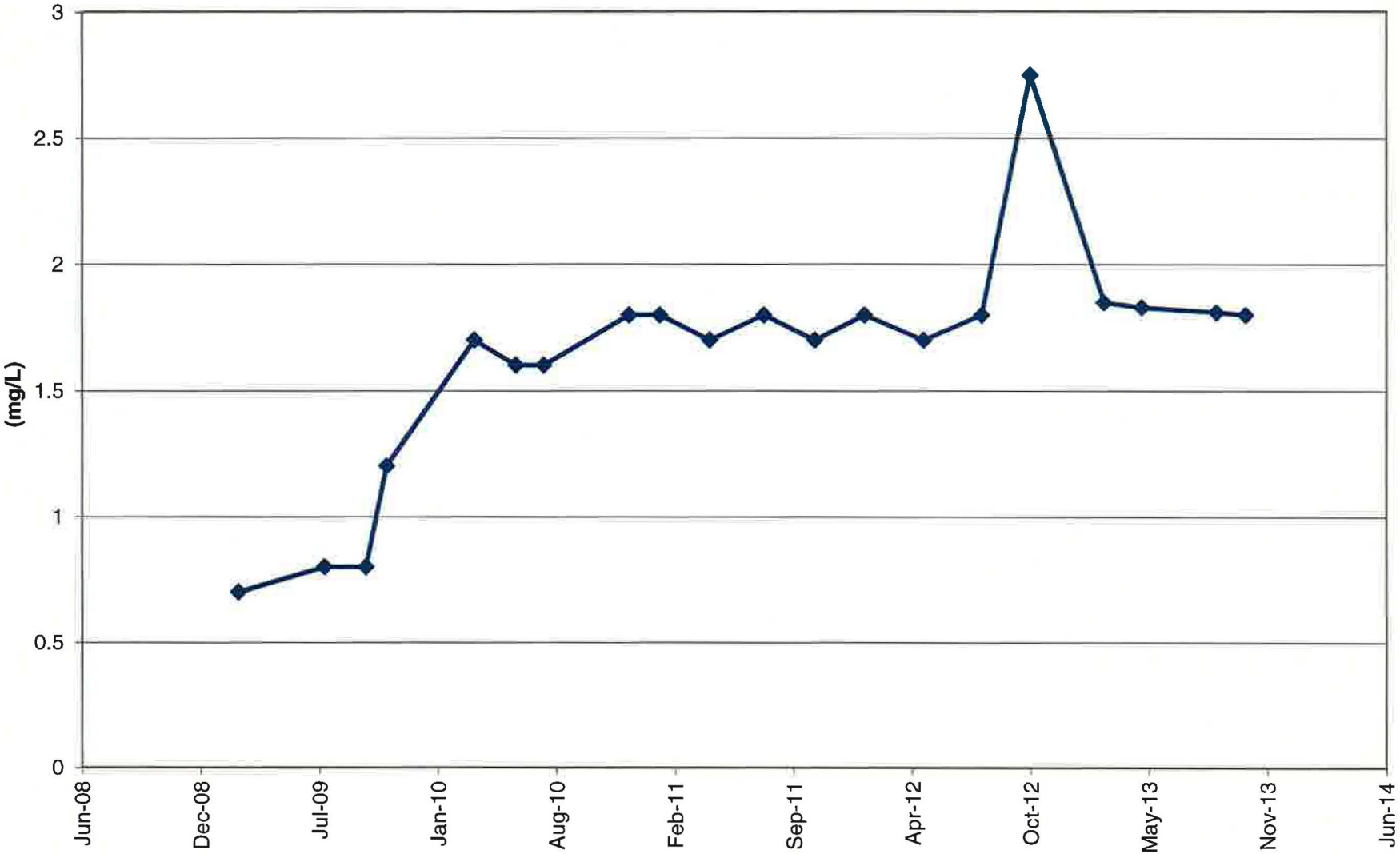
Piezometer 2 Nitrate Concentrations



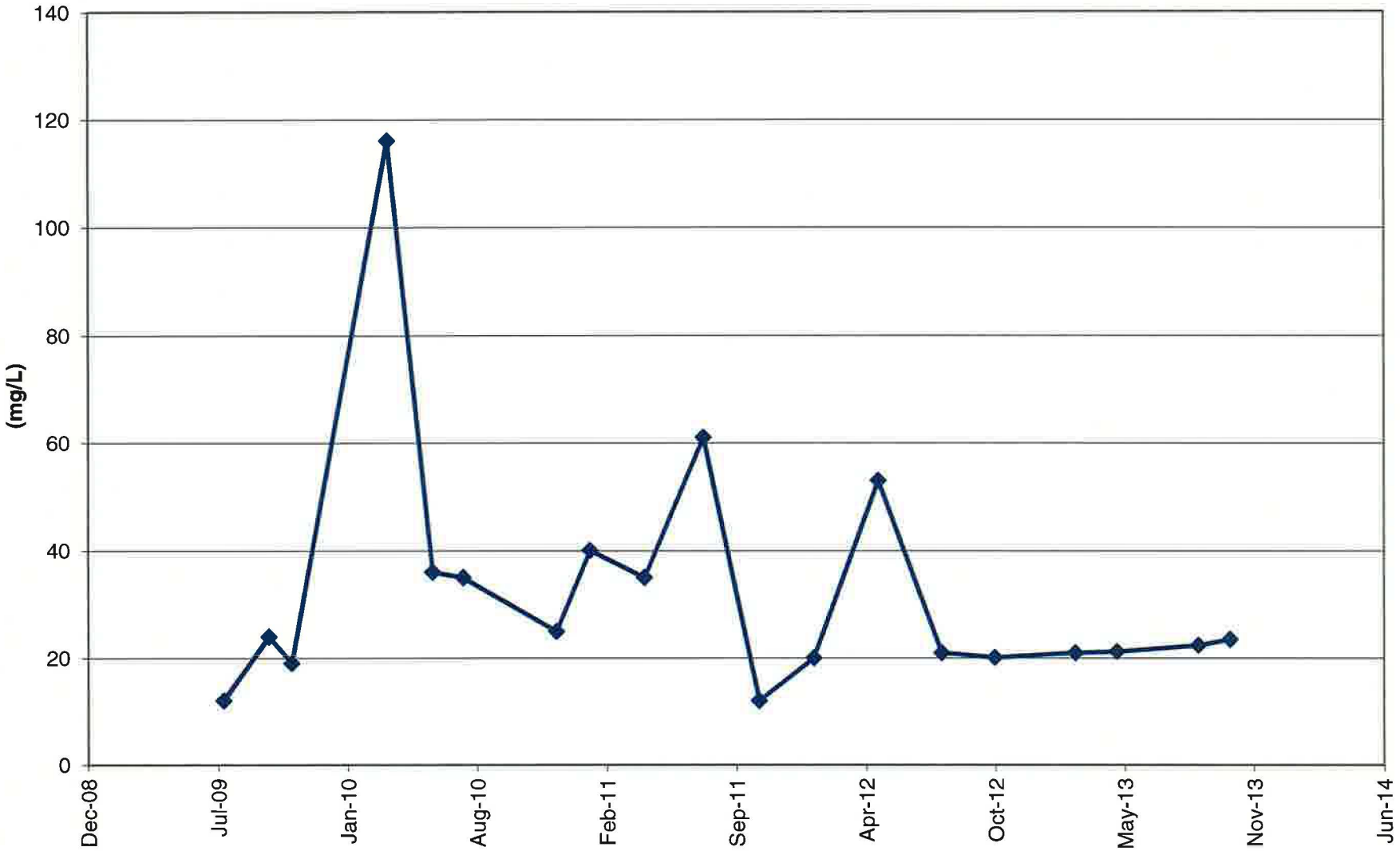
Piezometer 2 Chloride Concentrations

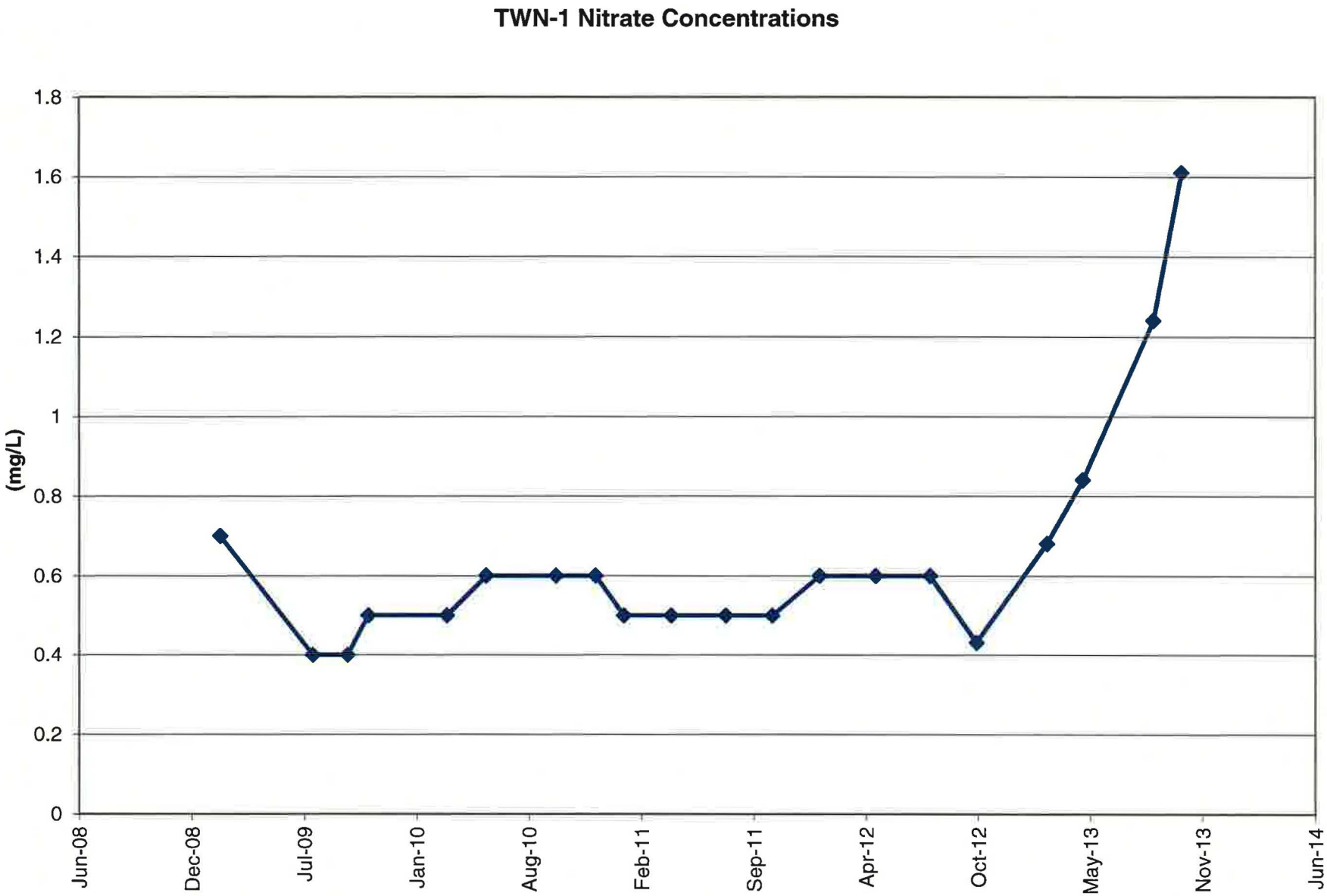


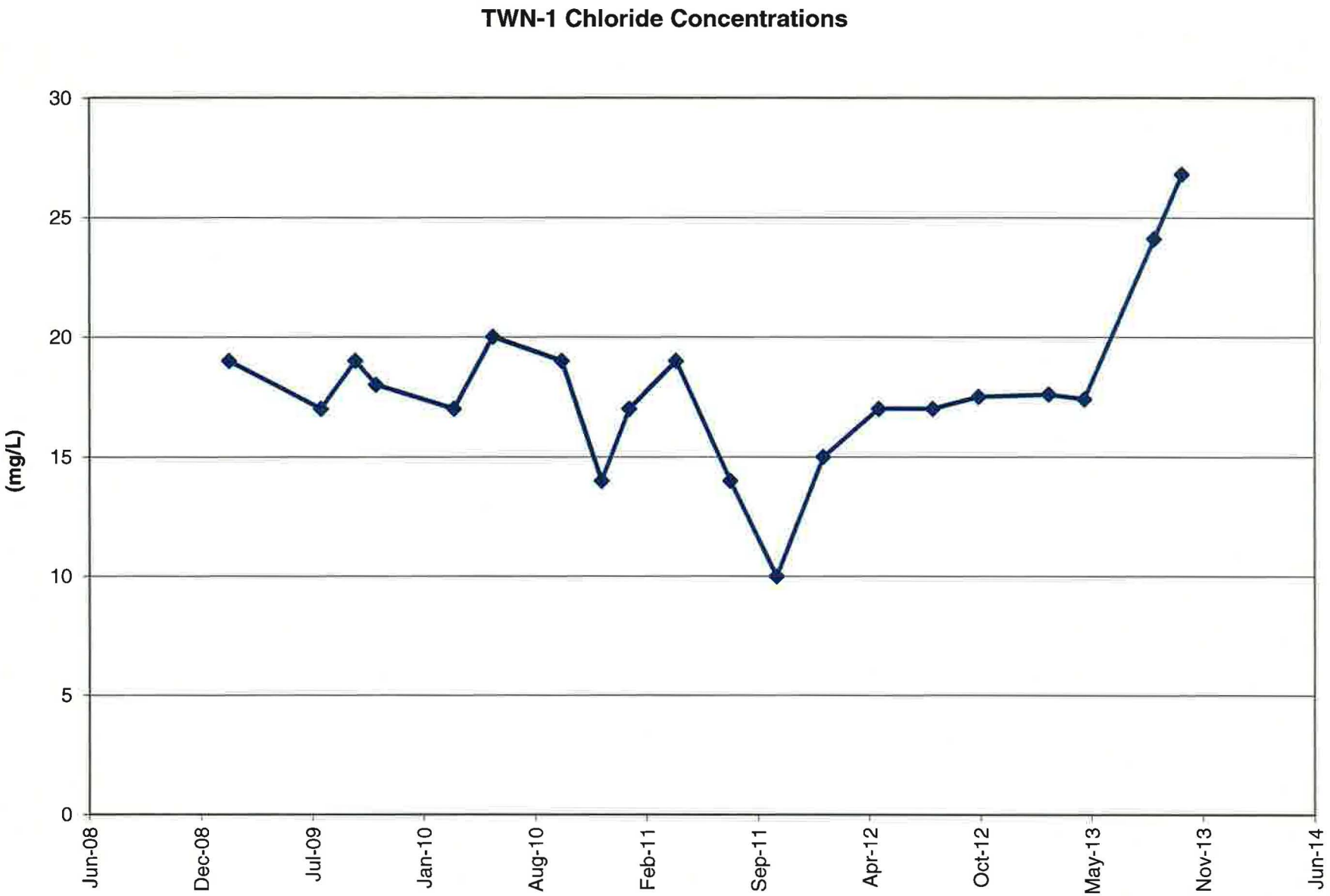
Piezometer 3 Nitrate Concentrations



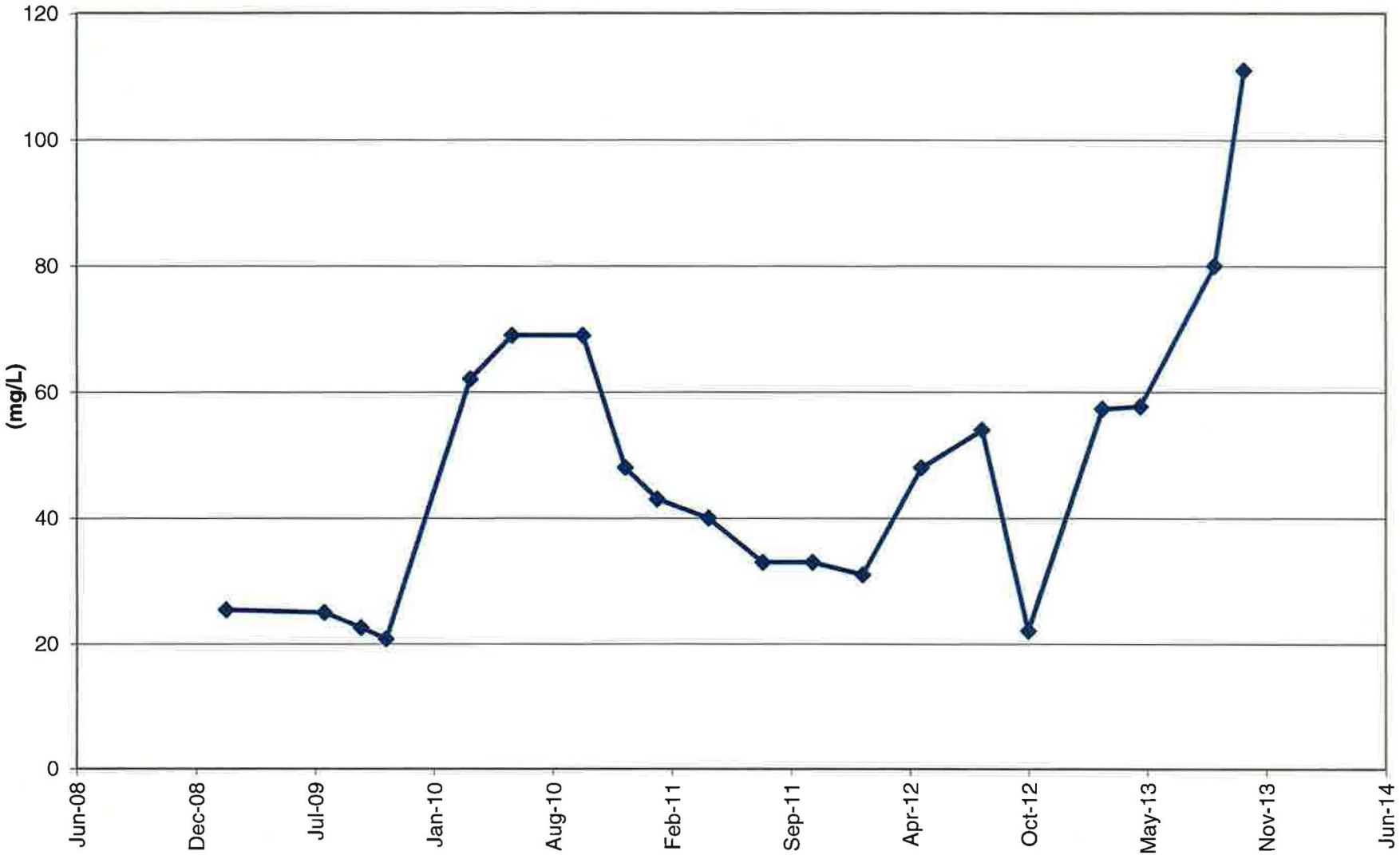
Piezometer 3 Chloride Concentrations

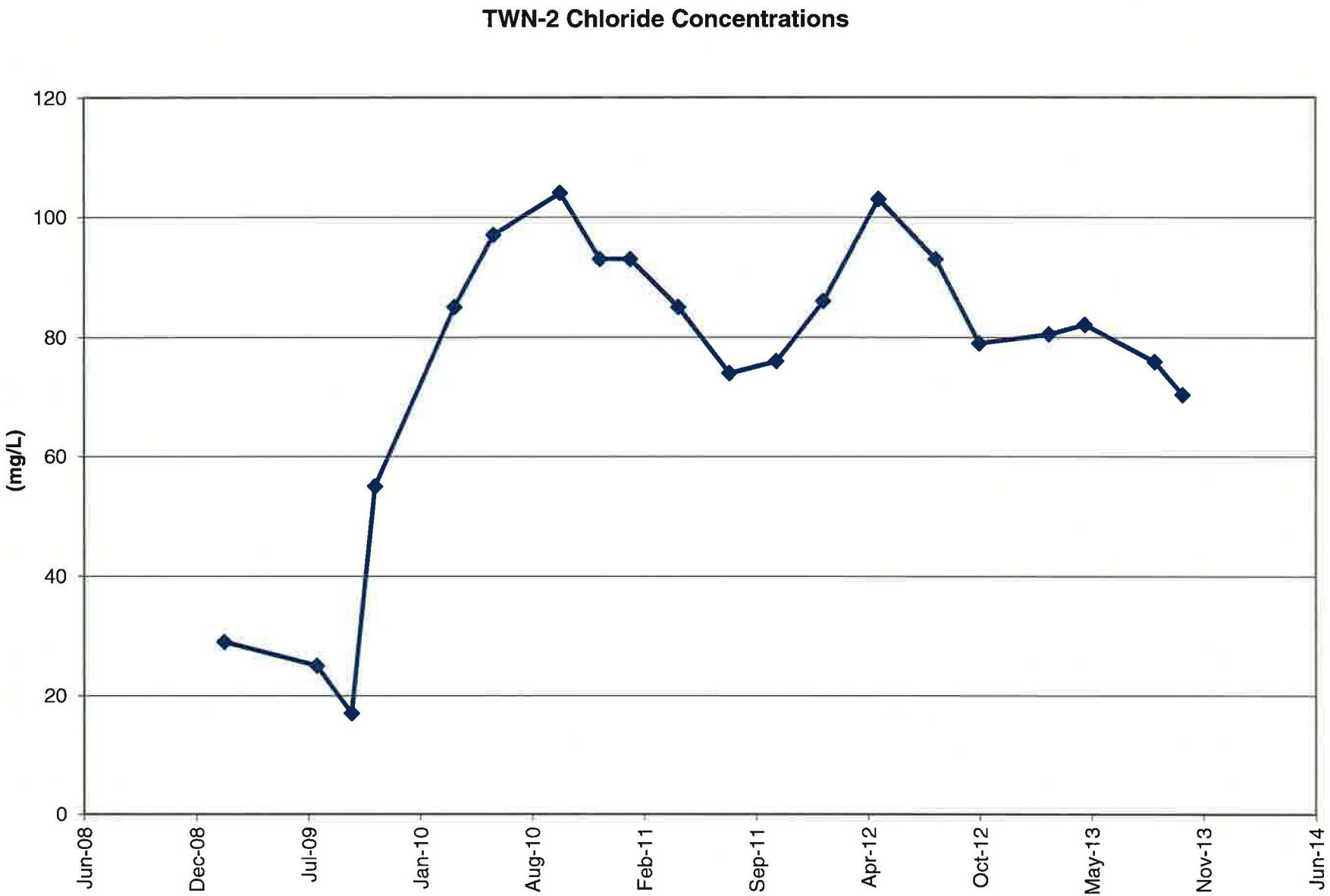



TWN-1 Nitrate Concentrations
(mg/L)
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Jun-08
Dec-08
Jul-09
Jan-10
Aug-10
Feb-11
Sep-11
Apr-12
Oct-12
May-13
Nov-13
Jun-14

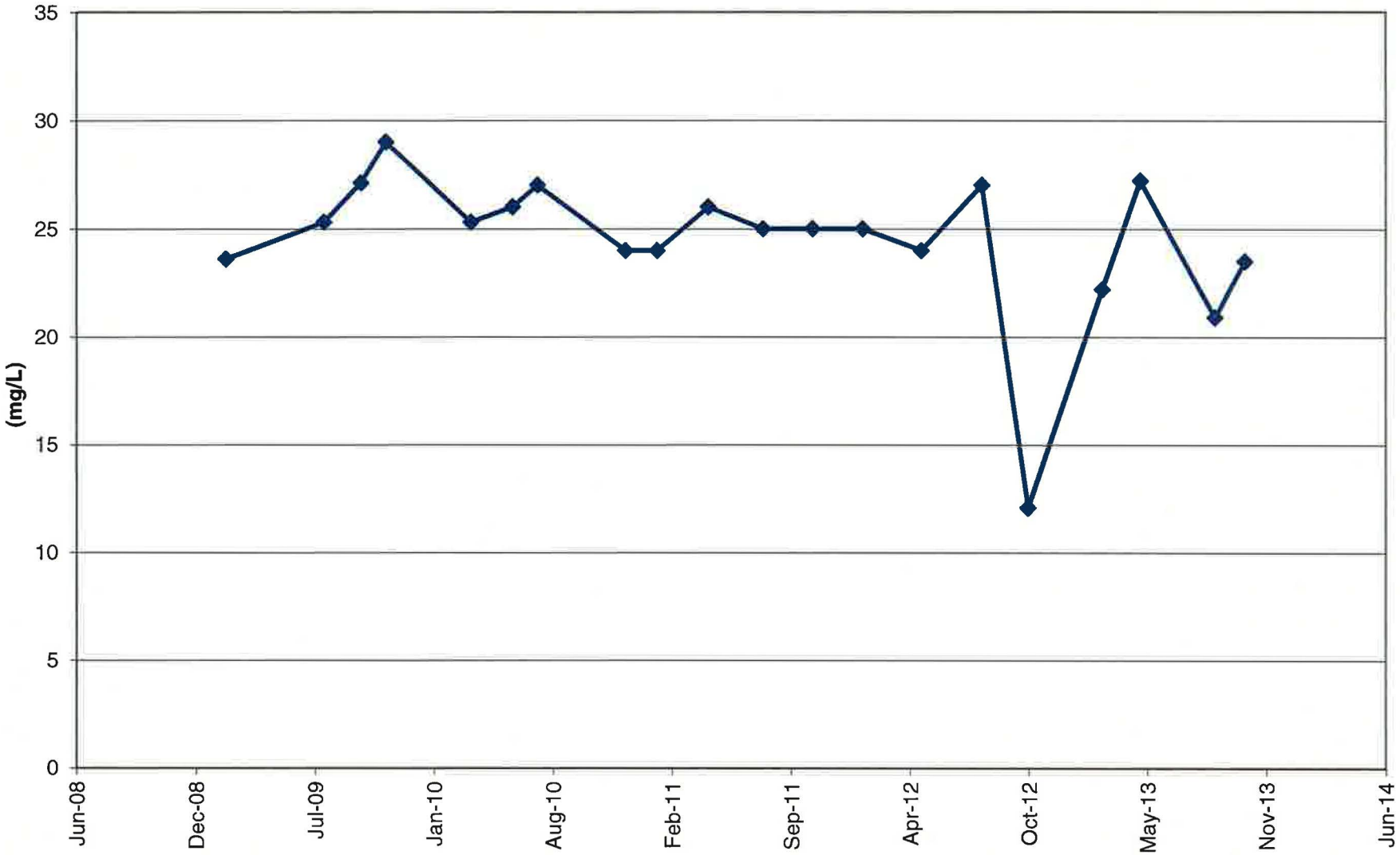

TWN-1 Chloride Concentrations
(mg/L)
30
25
20
15
10
5
0
Jun-08
Dec-08
Jul-09
Jan-10
Aug-10
Feb-11
Sep-11
Apr-12
Oct-12
May-13
Nov-13
Jun-14

TWN-2 Nitrate Concentrations

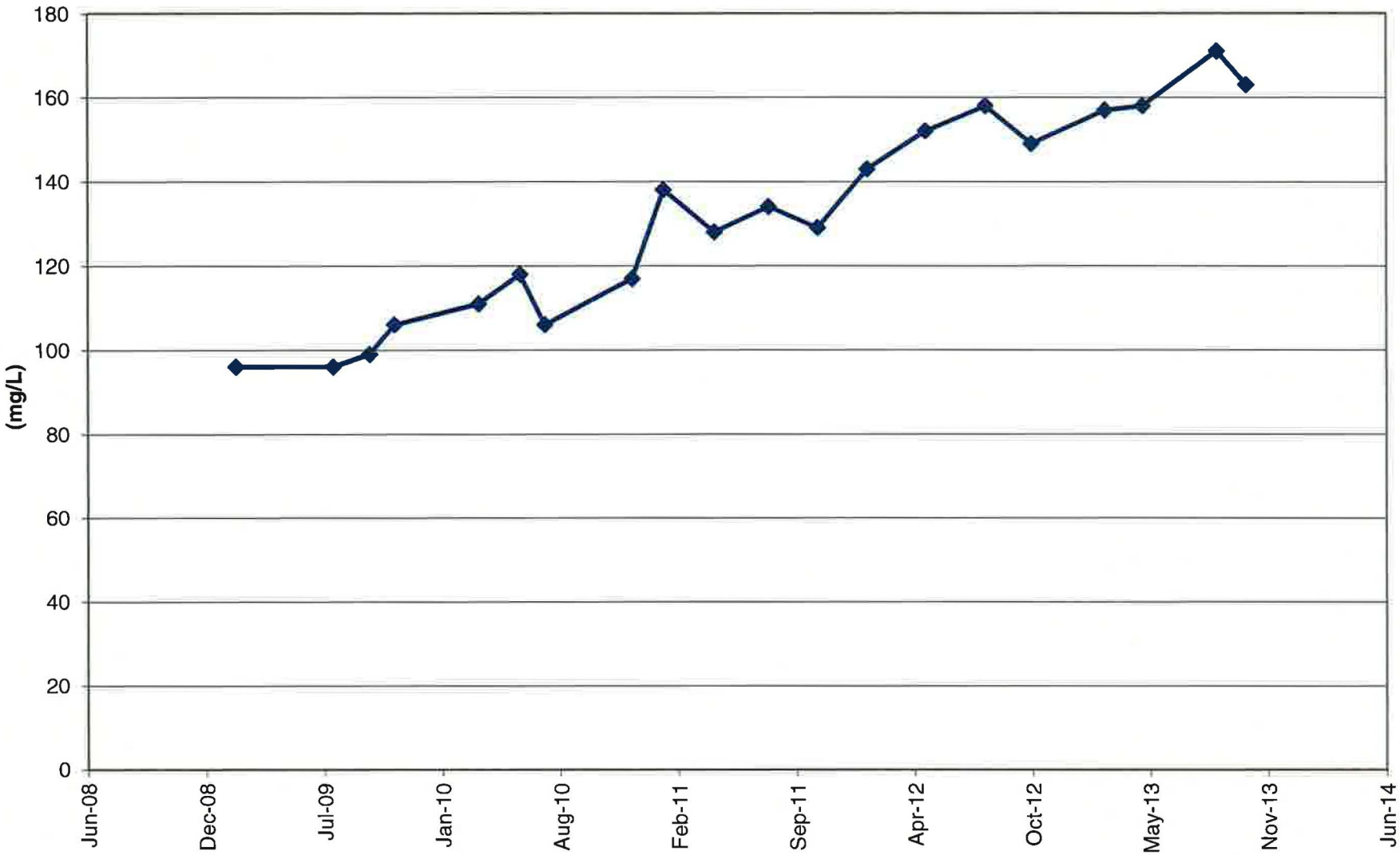



TWN-2 Chloride Concentrations
120
100
80
60
40
20
0
(mg/L)
Jun-08
Dec-08
Jul-09
Jan-10
Aug-10
Feb-11
Sep-11
Apr-12
Oct-12
May-13
Nov-13
Jun-14

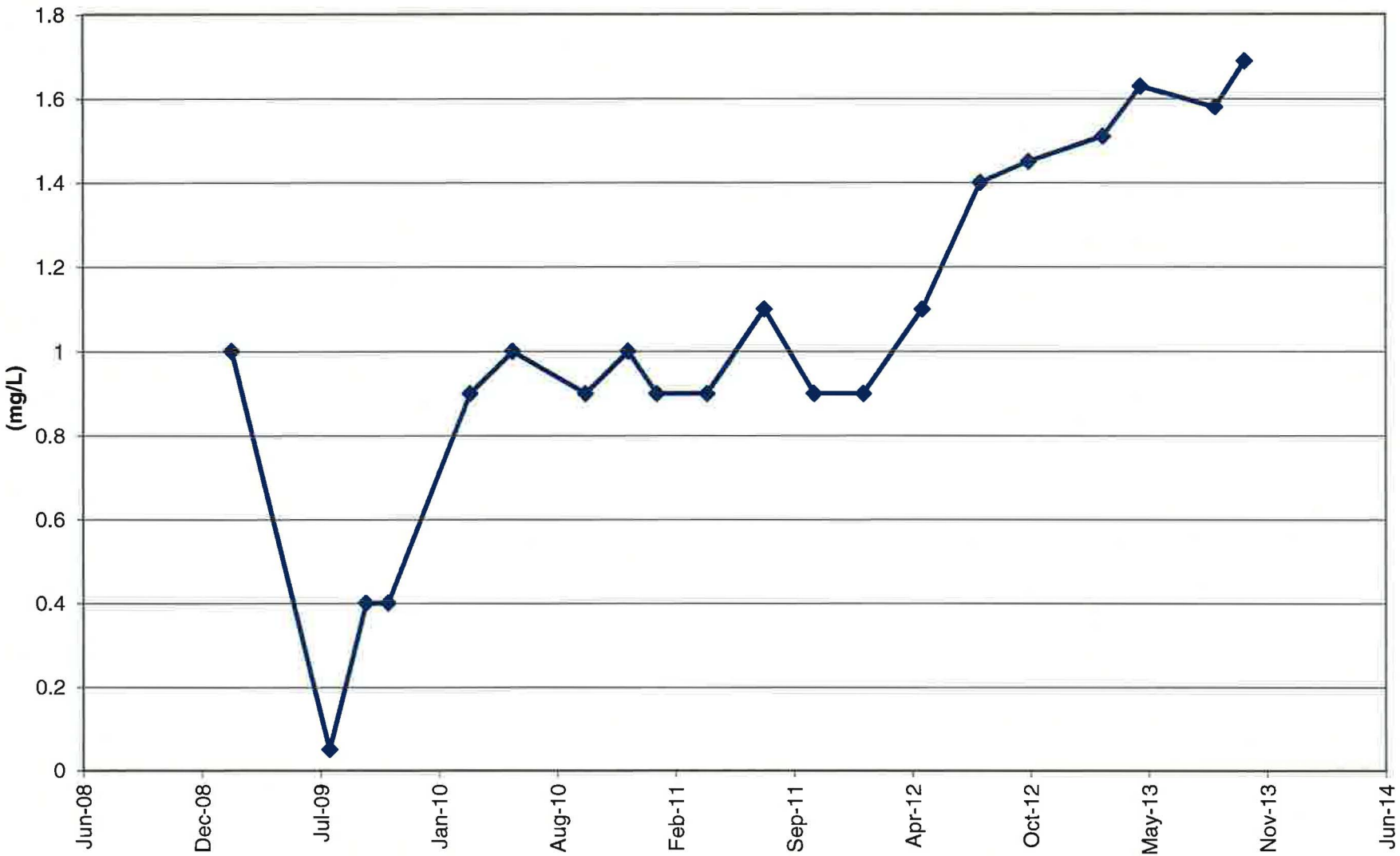
TWN-3 Nitrate Concentrations



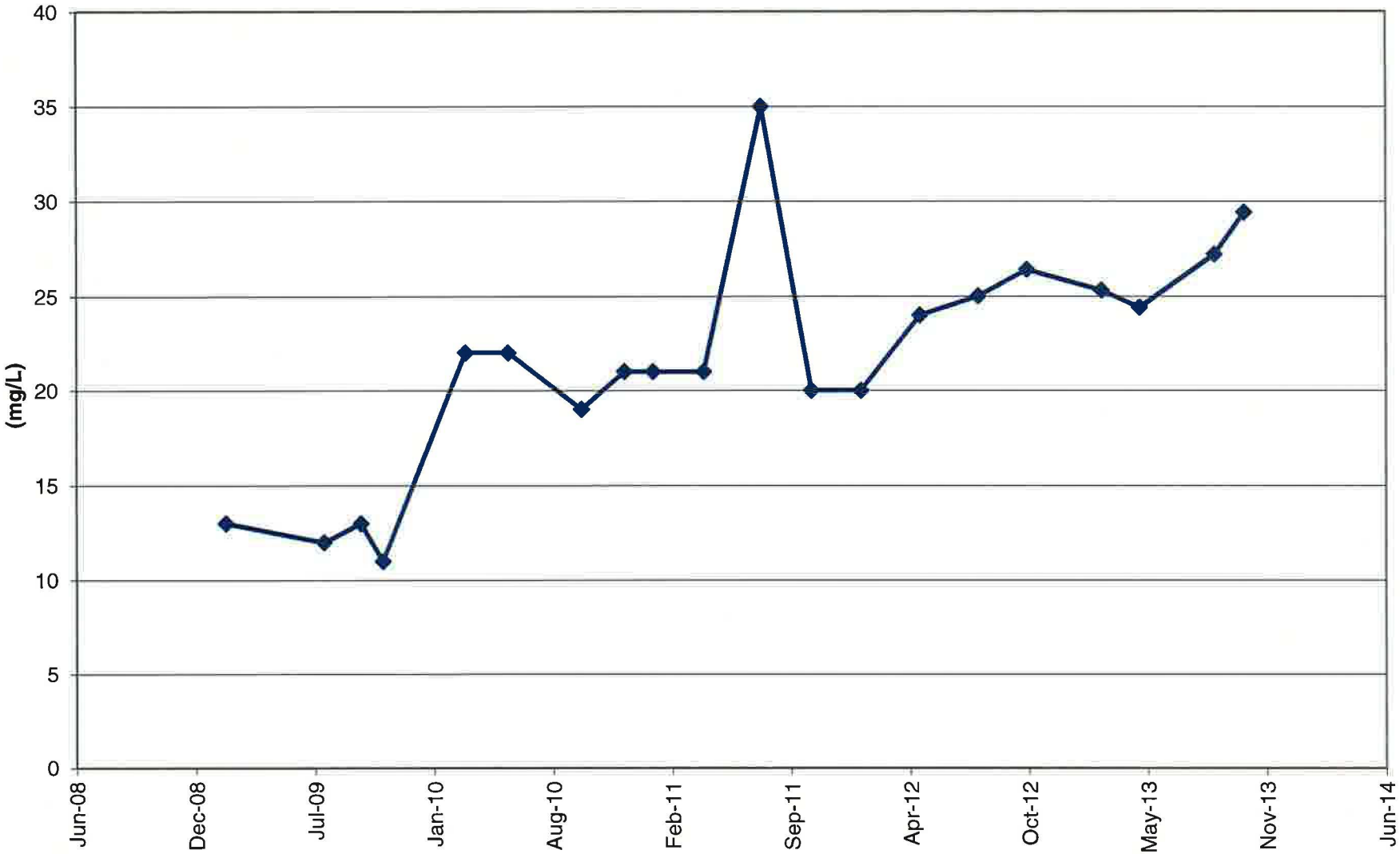
TWN-3 Chloride Concentrations



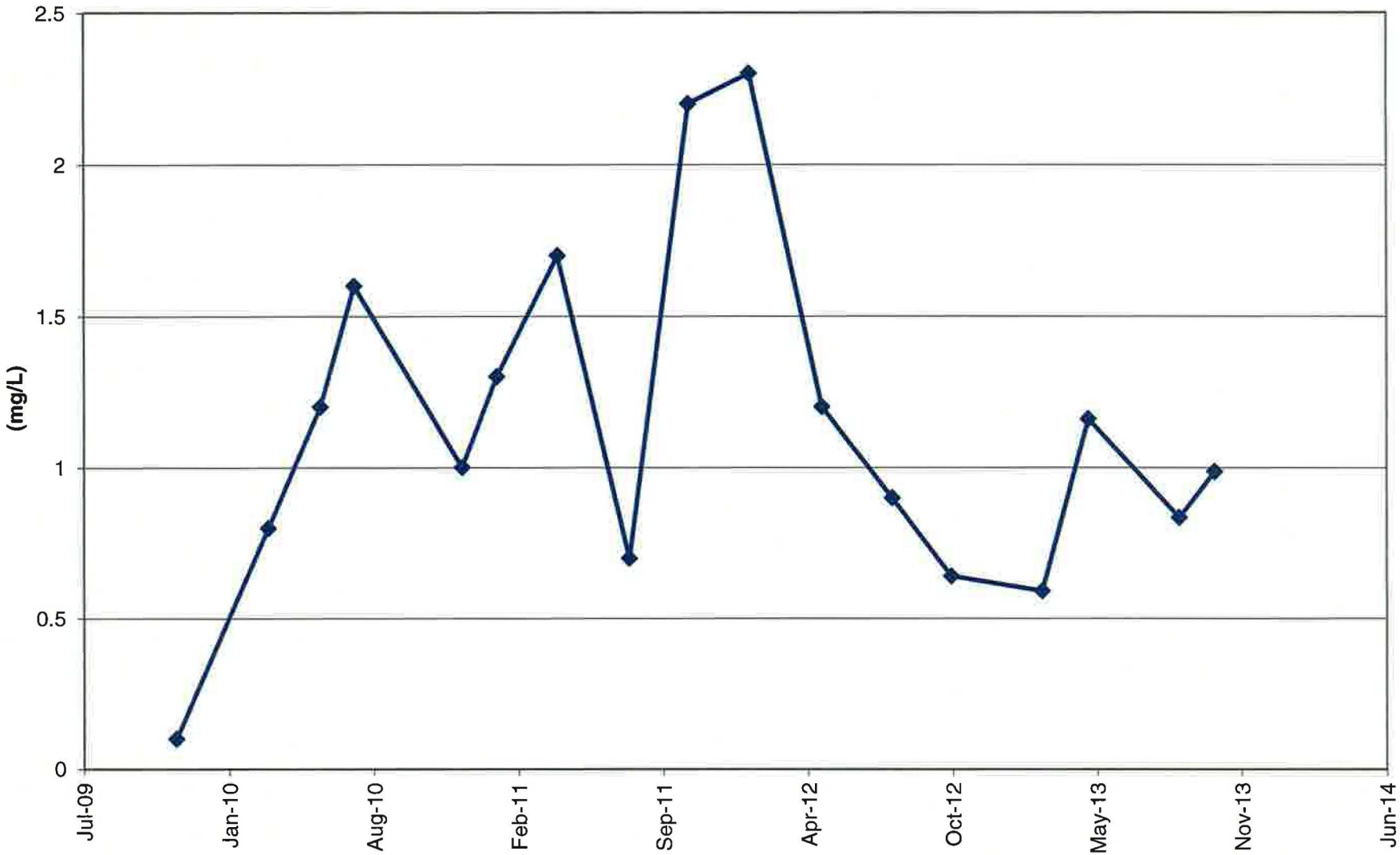
TWN-4 Nitrate Concentrations



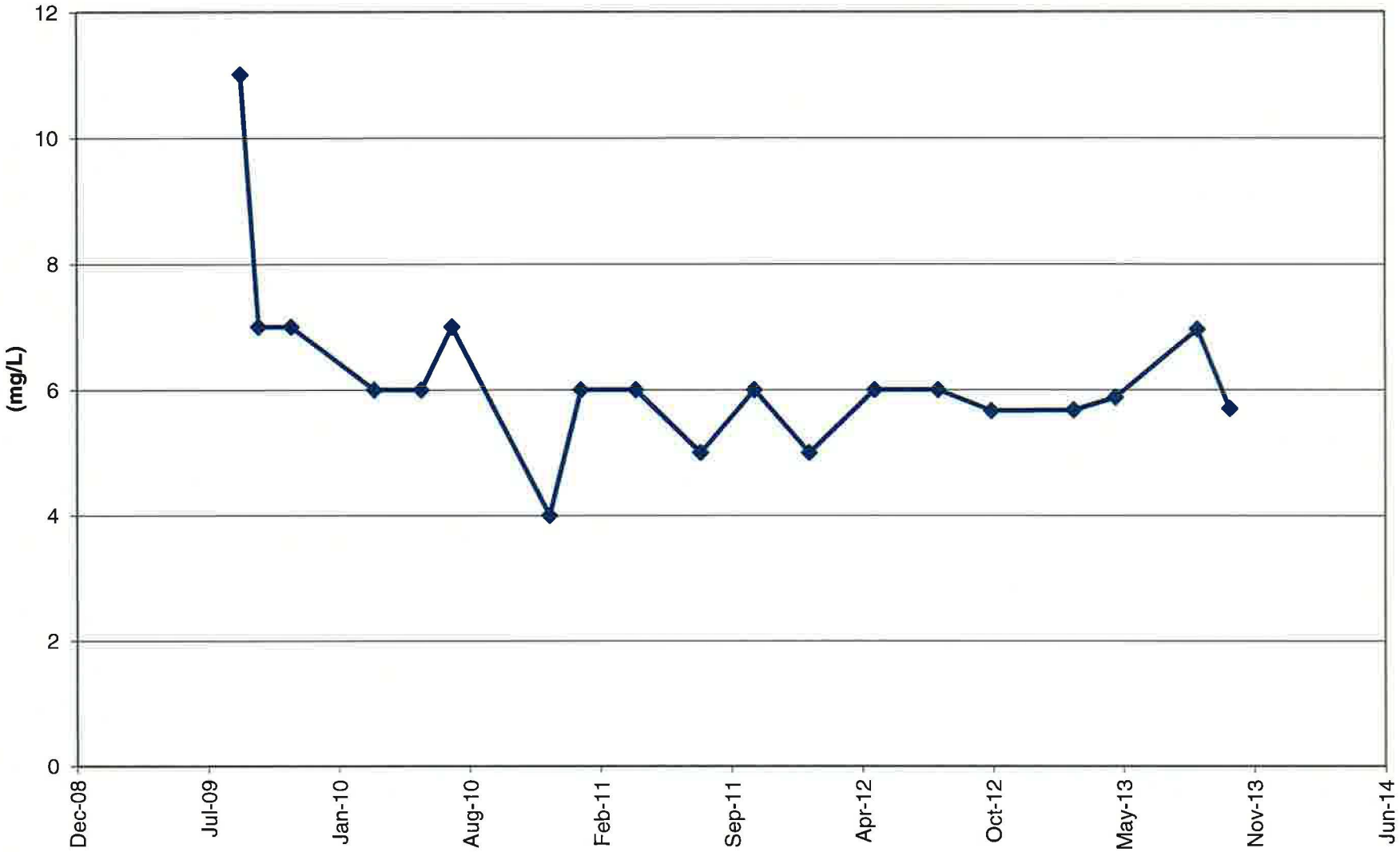
TWN-4 Chloride Concentrations



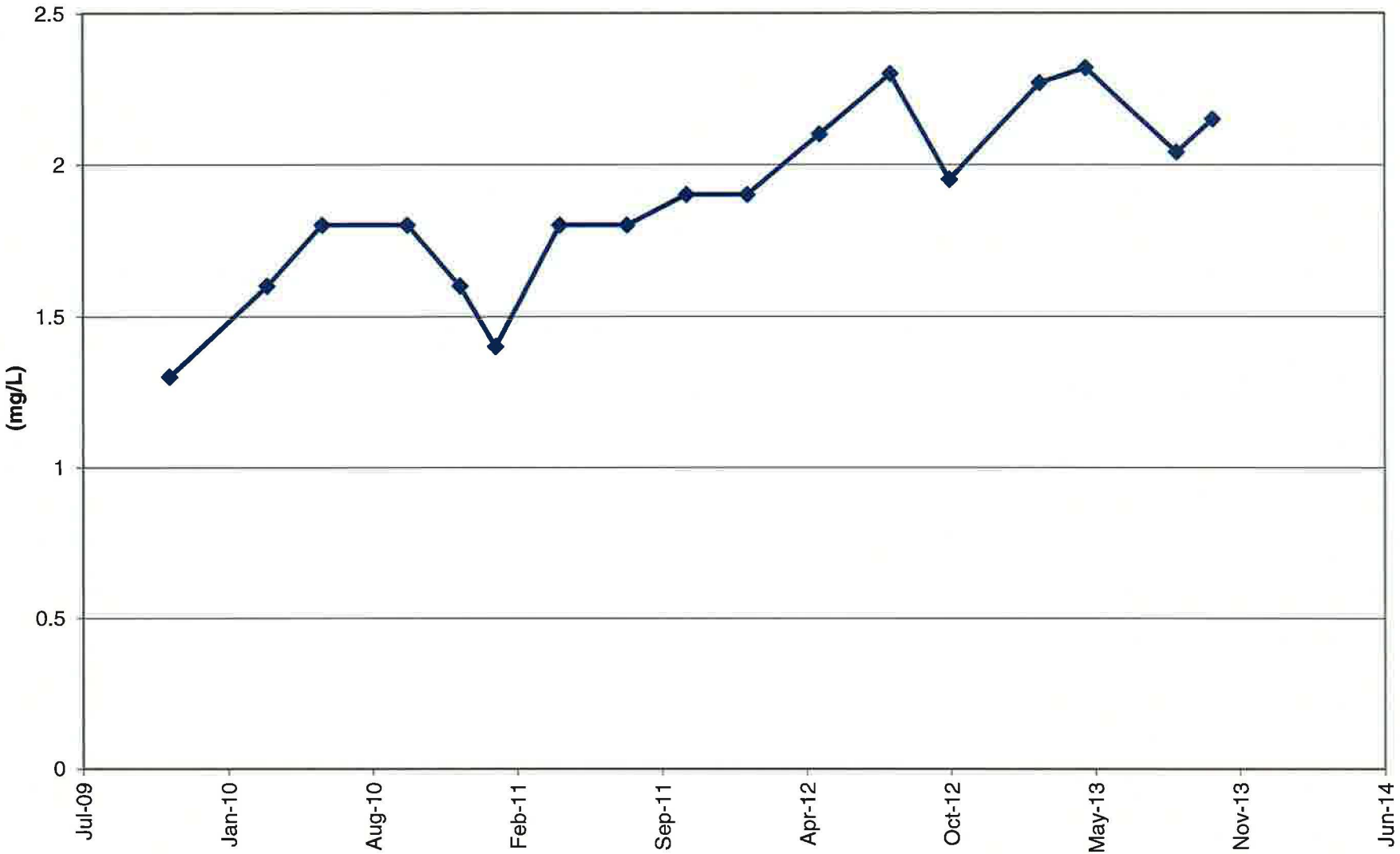
TWN-7 Nitrate Concentrations



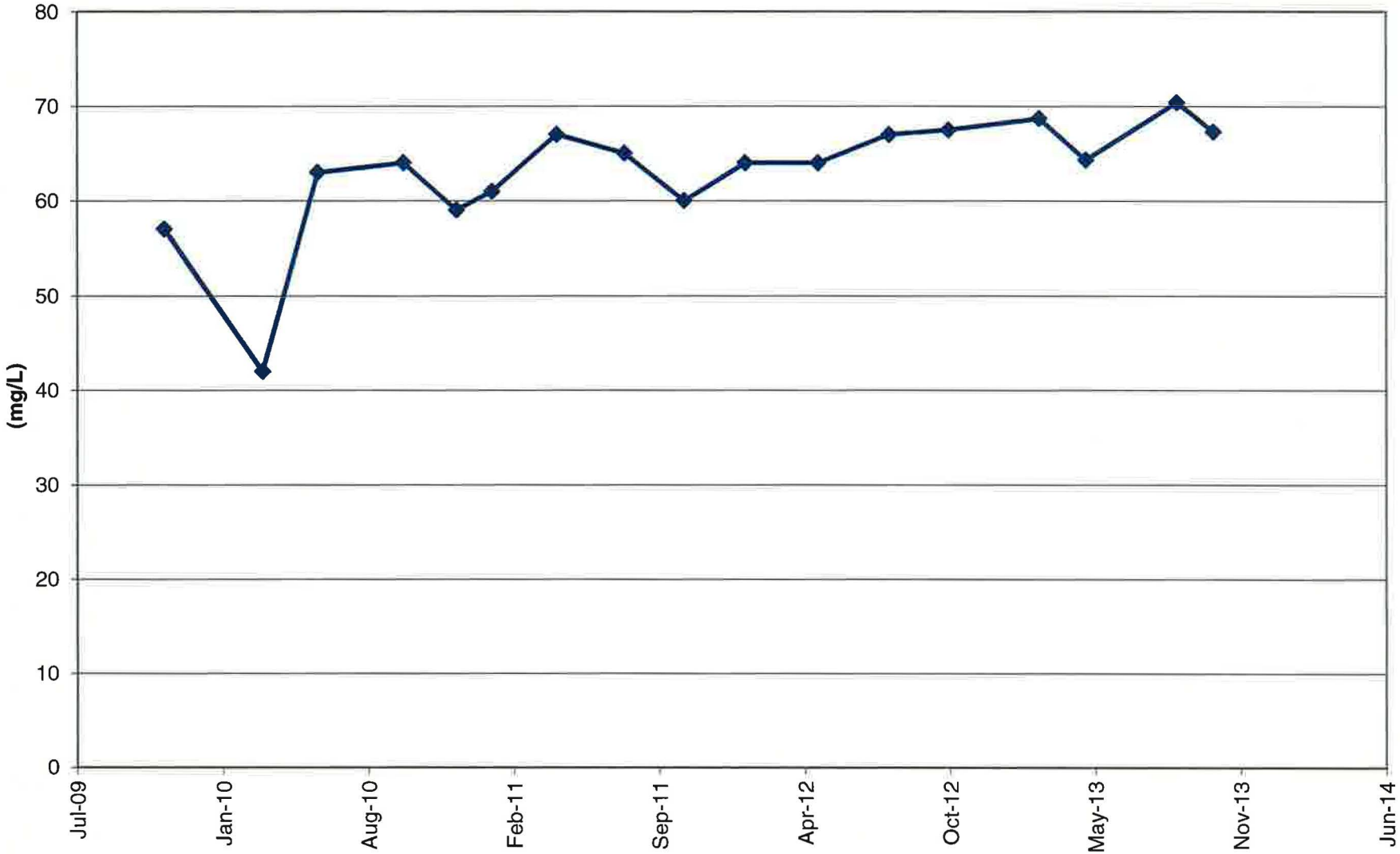
TWN-7 Chloride Concentrations

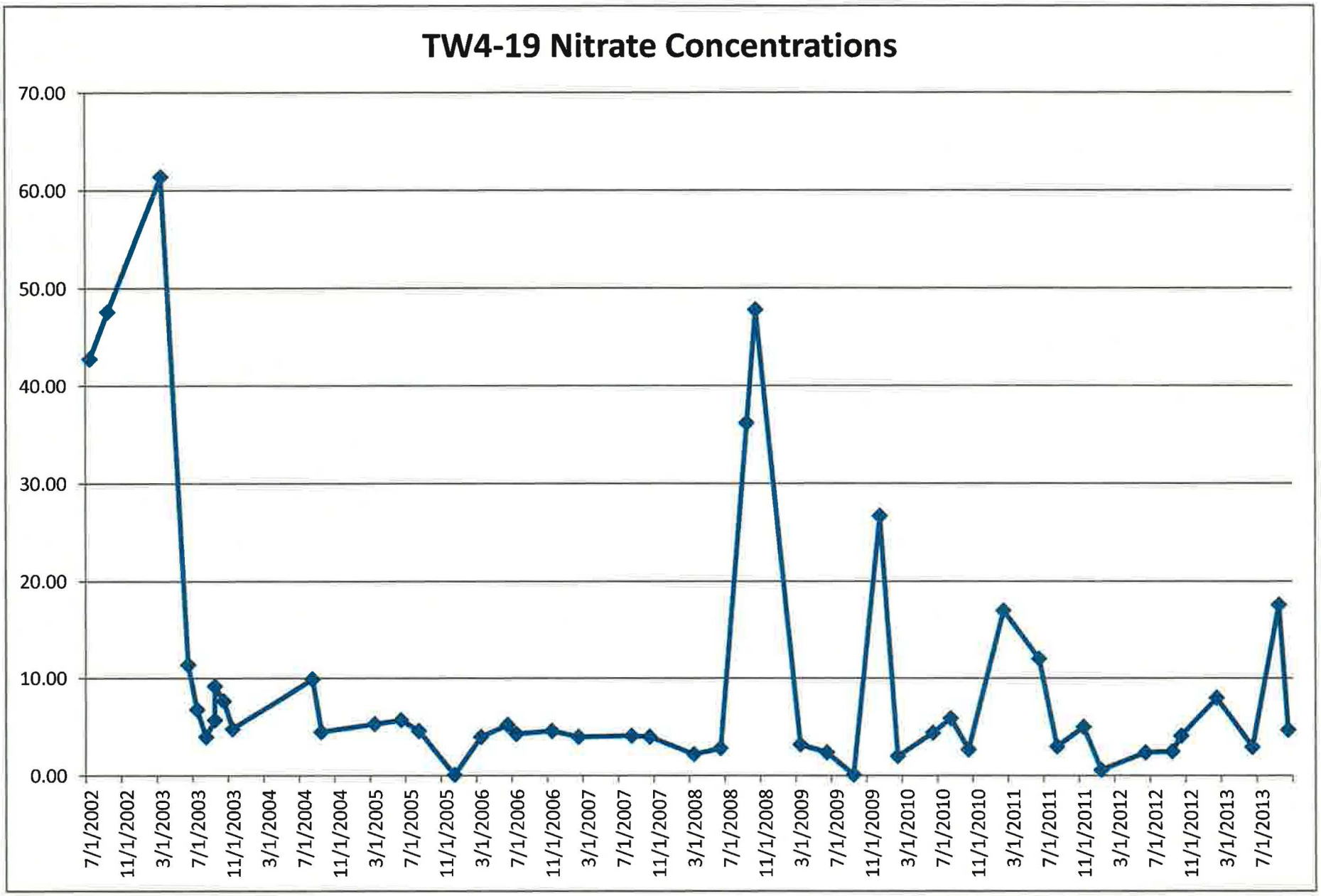


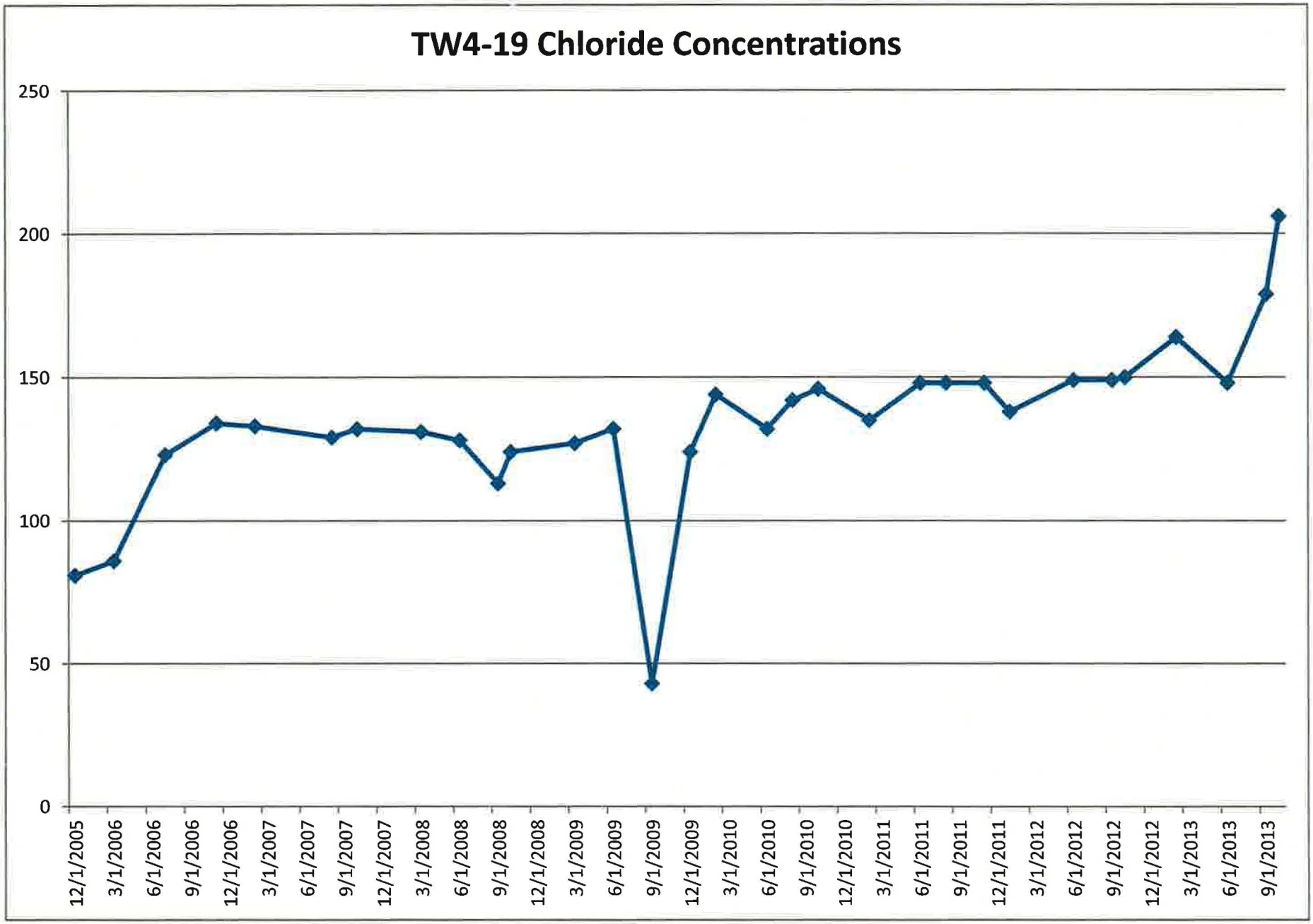
TWN-18 Nitrate Concentrations

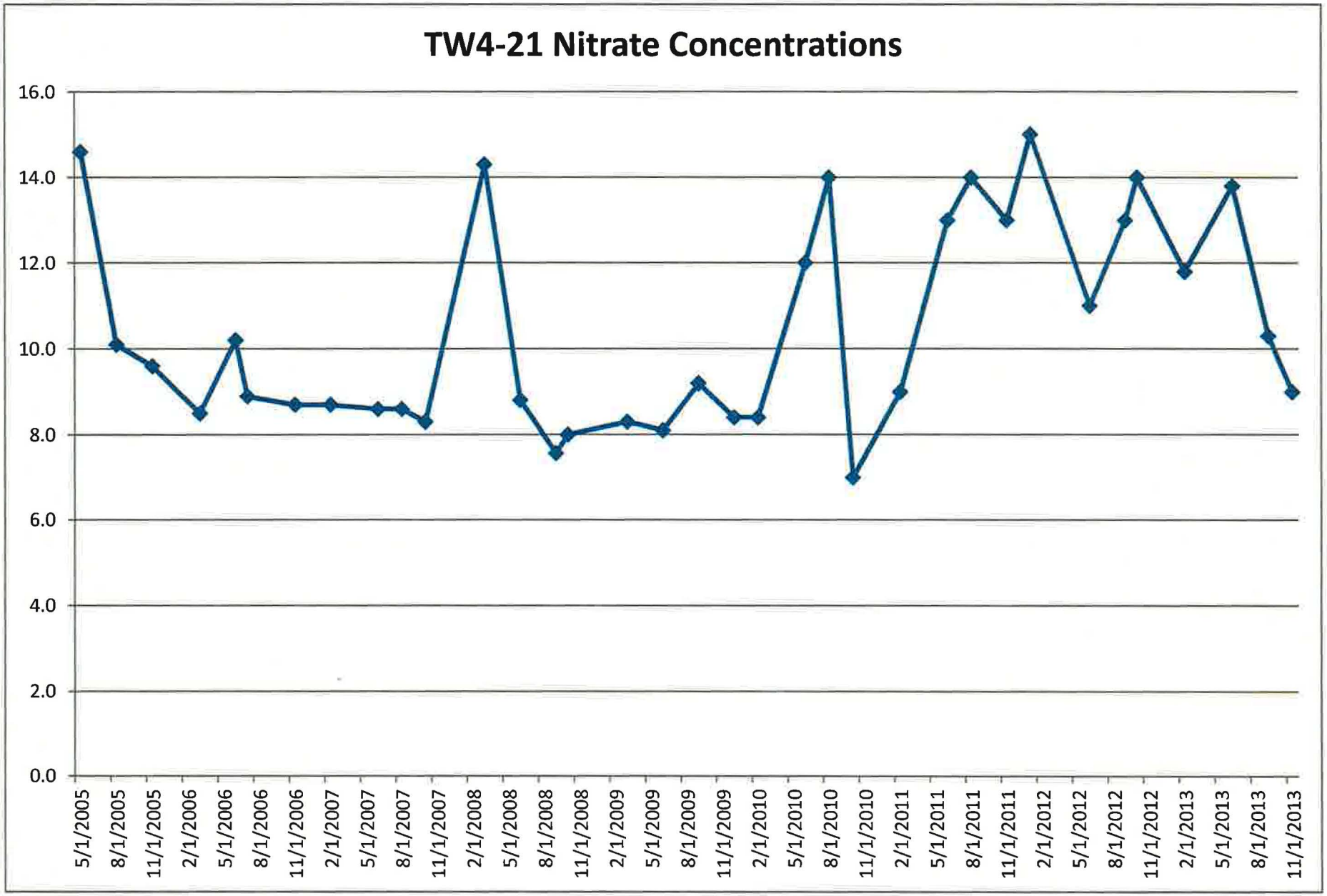


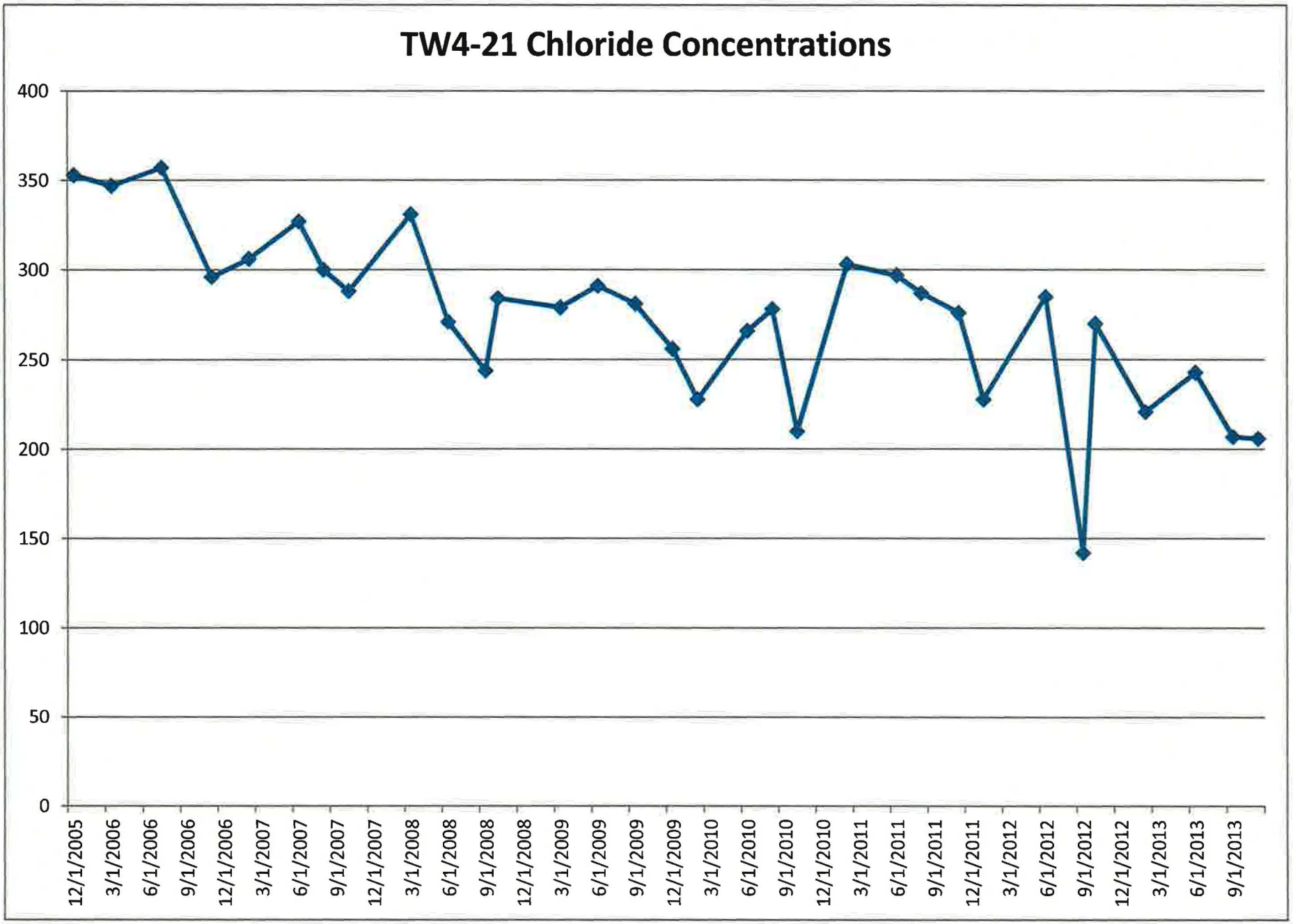
TWN-18 Chloride Concentrations

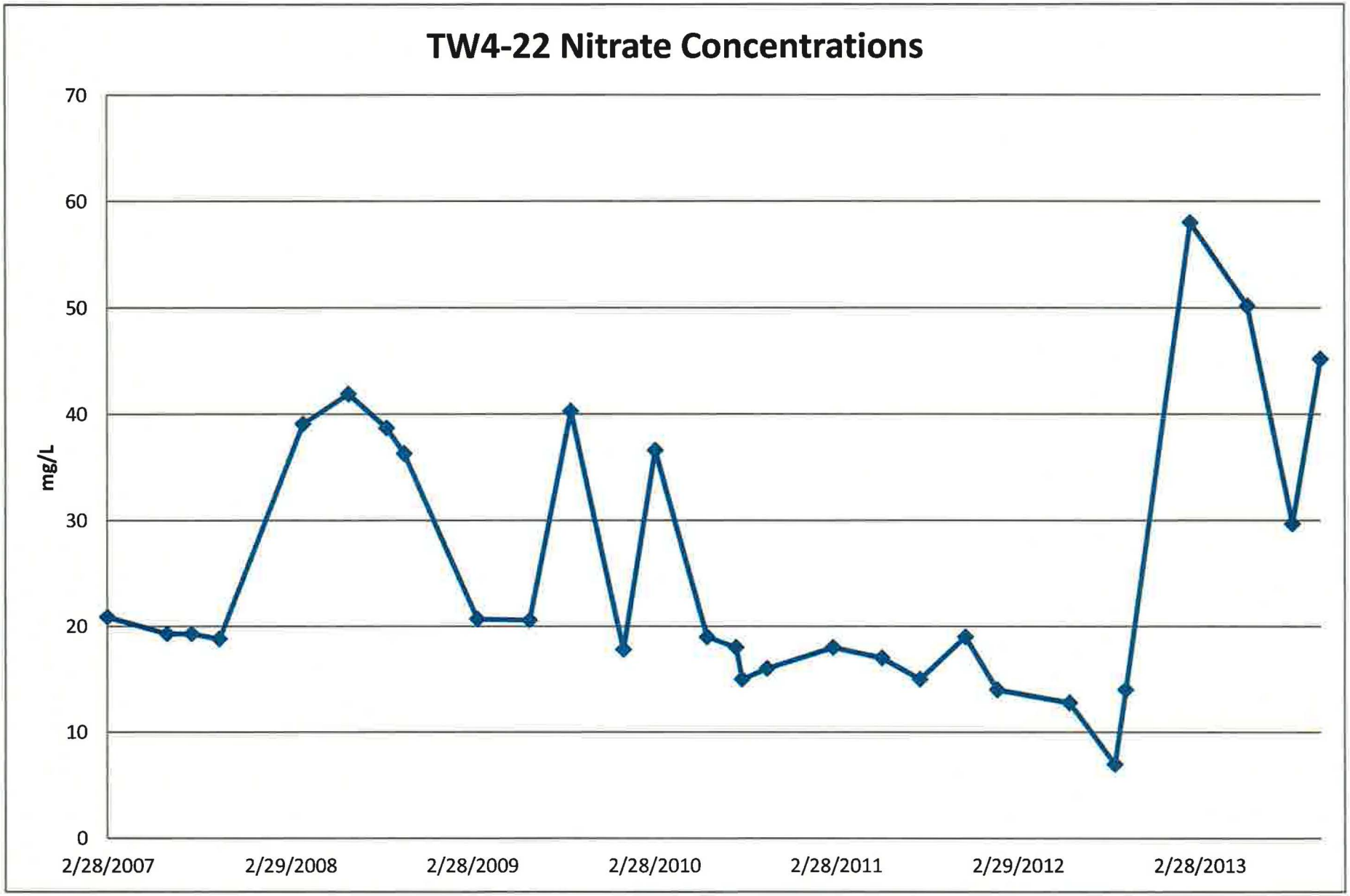


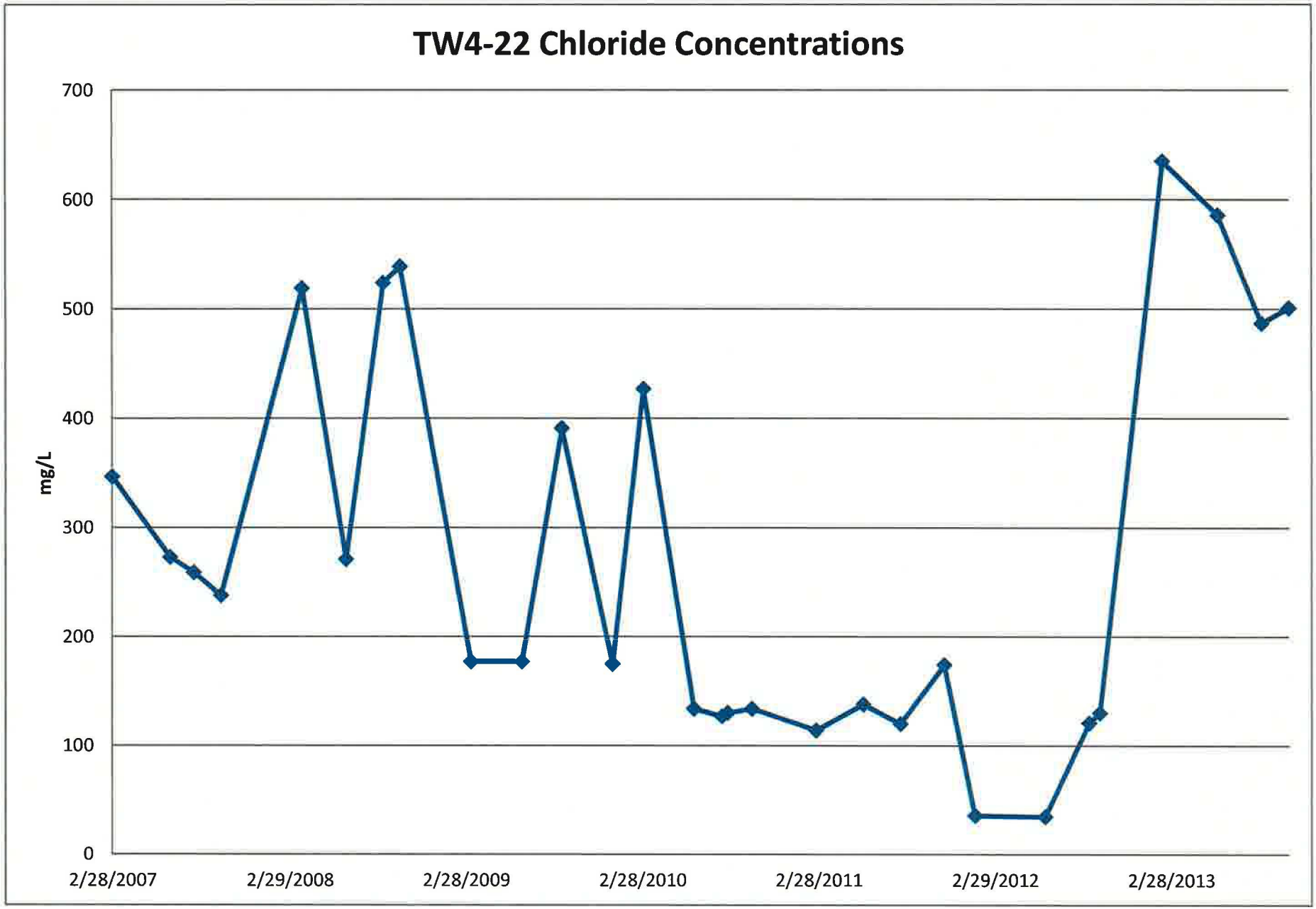

TW4-19 Nitrate Concentrations
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
7/1/2002
11/1/2002
3/1/2003
7/1/2003
11/1/2003
3/1/2004
7/1/2004
11/1/2004
3/1/2005
7/1/2005
11/1/2005
3/1/2006
7/1/2006
11/1/2006
3/1/2007
7/1/2007
11/1/2007
3/1/2008
7/1/2008
11/1/2008
3/1/2009
7/1/2009
11/1/2009
3/1/2010
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

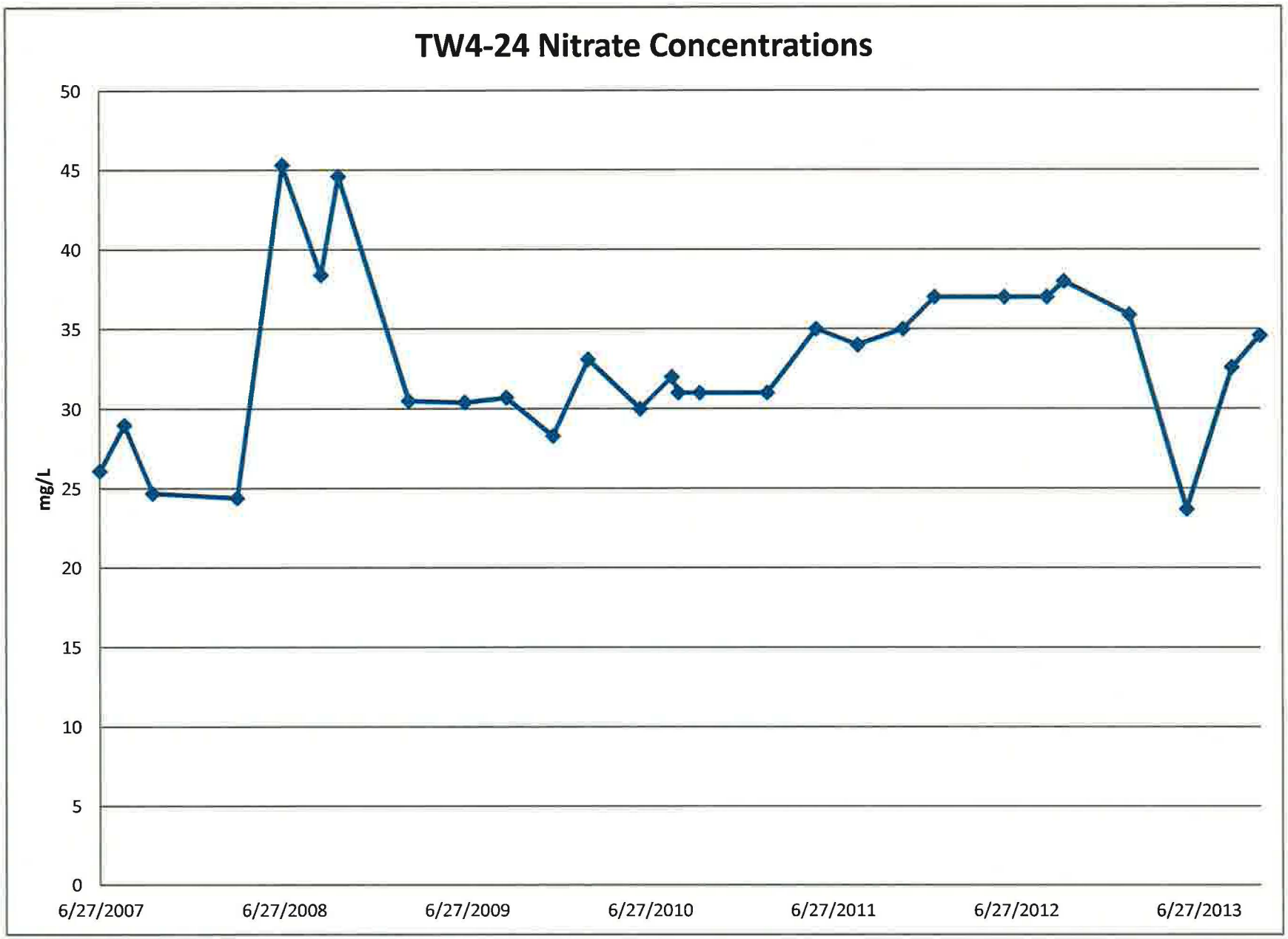

TW4-19 Chloride Concentrations
250
200
150
100
50
0
12/1/2005
3/1/2006
6/1/2006
9/1/2006
12/1/2006
3/1/2007
6/1/2007
9/1/2007
12/1/2007
3/1/2008
6/1/2008
9/1/2008
12/1/2008
3/1/2009
6/1/2009
9/1/2009
12/1/2009
3/1/2010
6/1/2010
9/1/2010
12/1/2010
3/1/2011
6/1/2011
9/1/2011
12/1/2011
3/1/2012
6/1/2012
9/1/2012
12/1/2012
3/1/2013
6/1/2013
9/1/2013

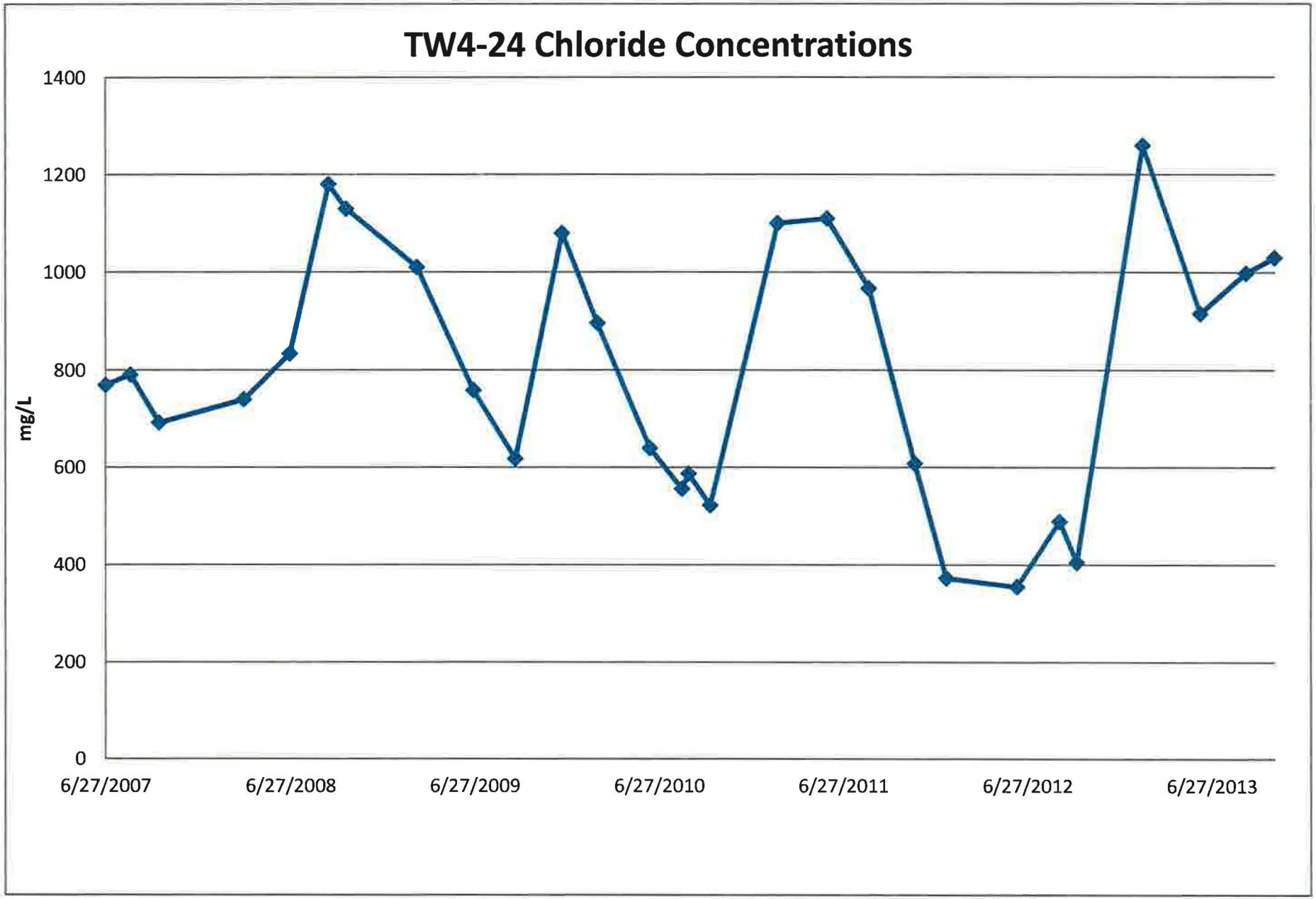

TW4-21 Nitrate Concentrations
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
5/1/2005
8/1/2005
11/1/2005
2/1/2006
5/1/2006
8/1/2006
11/1/2006
2/1/2007
5/1/2007
8/1/2007
11/1/2007
2/1/2008
5/1/2008
8/1/2008
11/1/2008
2/1/2009
5/1/2009
8/1/2009
11/1/2009
2/1/2010
5/1/2010
8/1/2010
11/1/2010
2/1/2011
5/1/2011
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

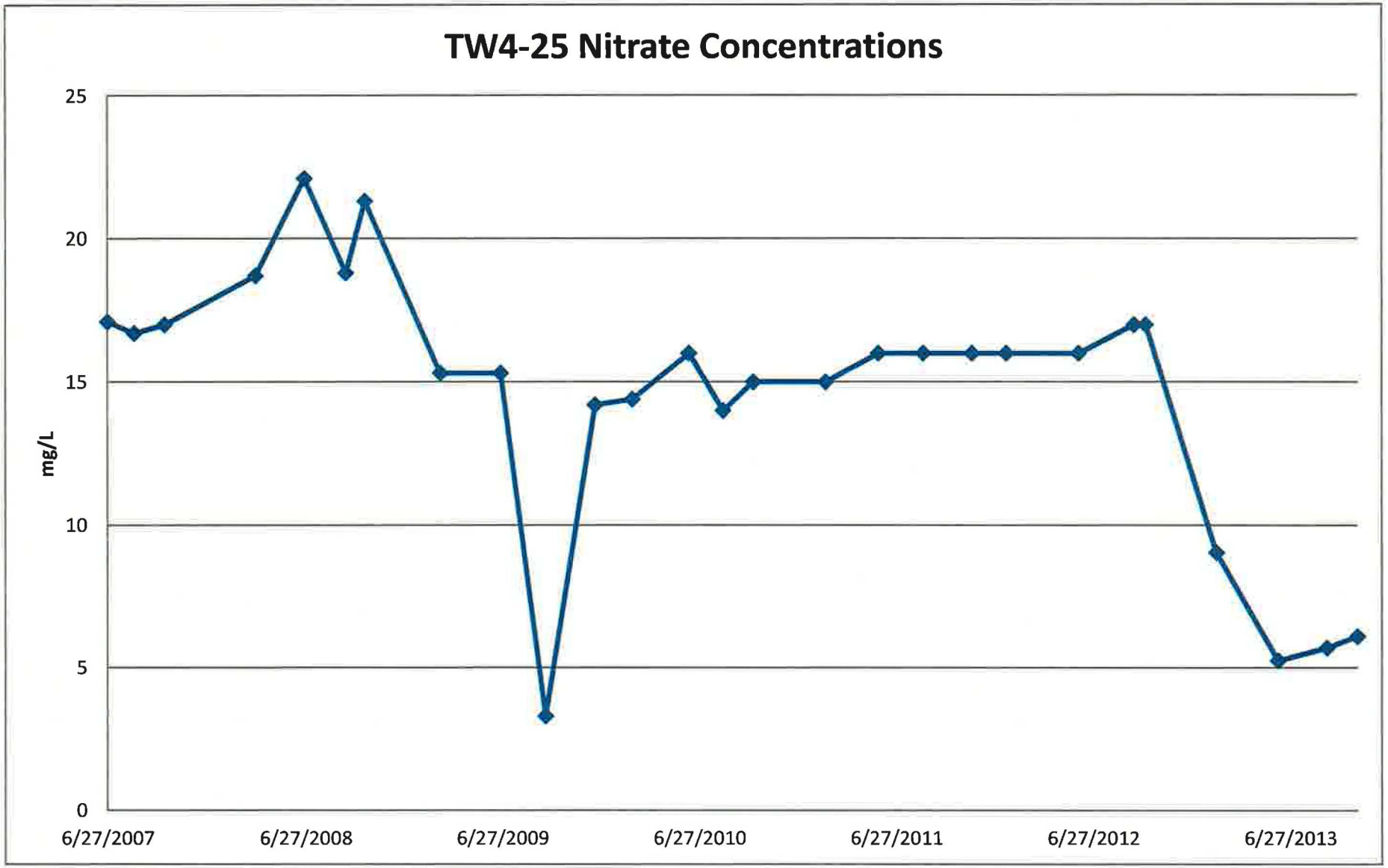

TW4-21 Chloride Concentrations
400
350
300
250
200
150
100
50
0
12/1/2005
3/1/2006
6/1/2006
9/1/2006
12/1/2006
3/1/2007
6/1/2007
9/1/2007
12/1/2007
3/1/2008
6/1/2008
9/1/2008
12/1/2008
3/1/2009
6/1/2009
9/1/2009
12/1/2009
3/1/2010
6/1/2010
9/1/2010
12/1/2010
3/1/2011
6/1/2011
9/1/2011
12/1/2011
3/1/2012
6/1/2012
9/1/2012
12/1/2012
3/1/2013
6/1/2013
9/1/2013

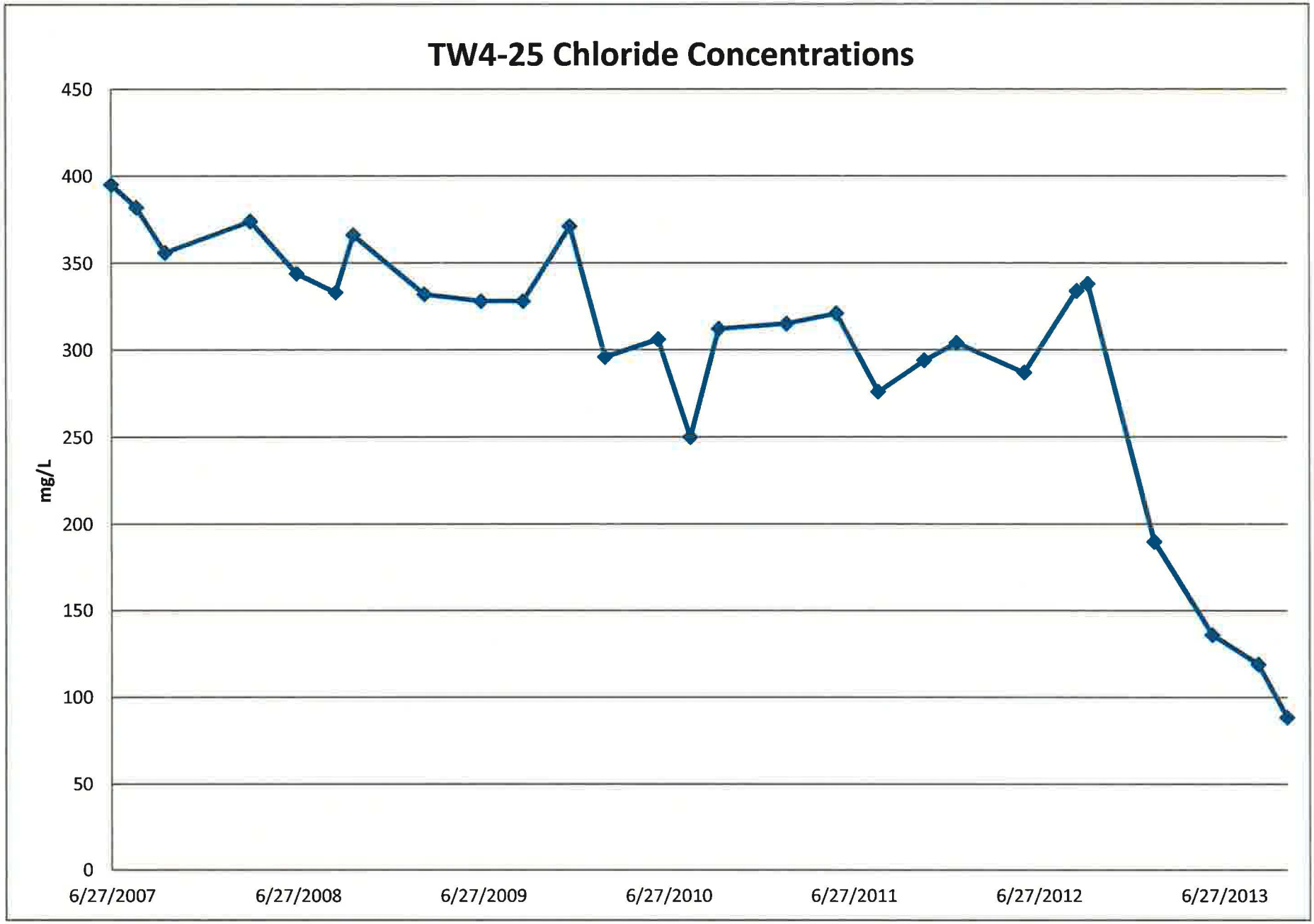

TW4-22 Nitrate Concentrations
70
60
50
40
30
20
10
0
mg/L
2/28/2007
2/29/2008
2/28/2009
2/28/2010
2/28/2011
2/29/2012
2/28/2013

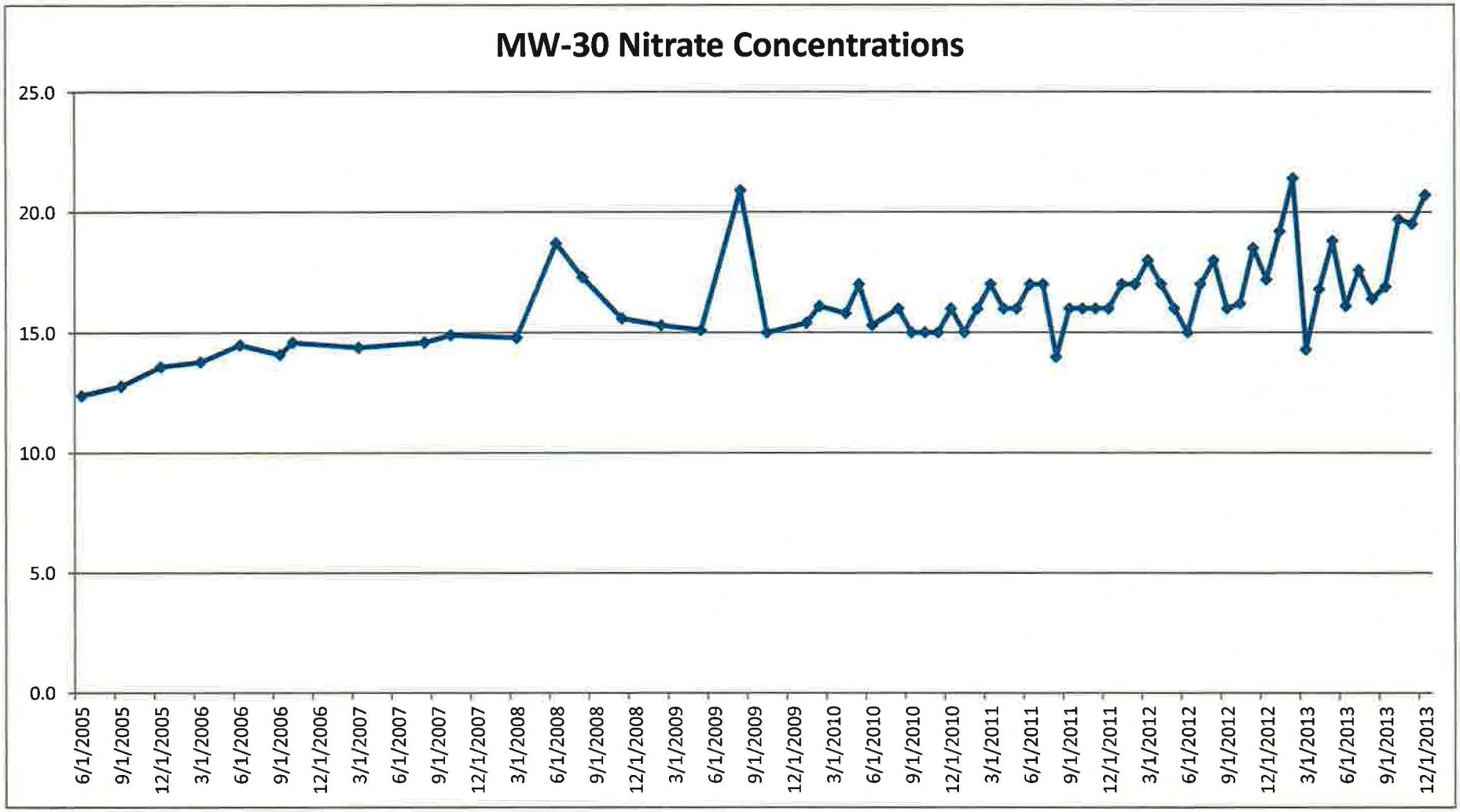

TW4-22 Chloride Concentrations
700
600
500
400
300
200
100
0
mg/L
2/28/2007
2/29/2008
2/28/2009
2/28/2010
2/28/2011
2/29/2012
2/28/2013

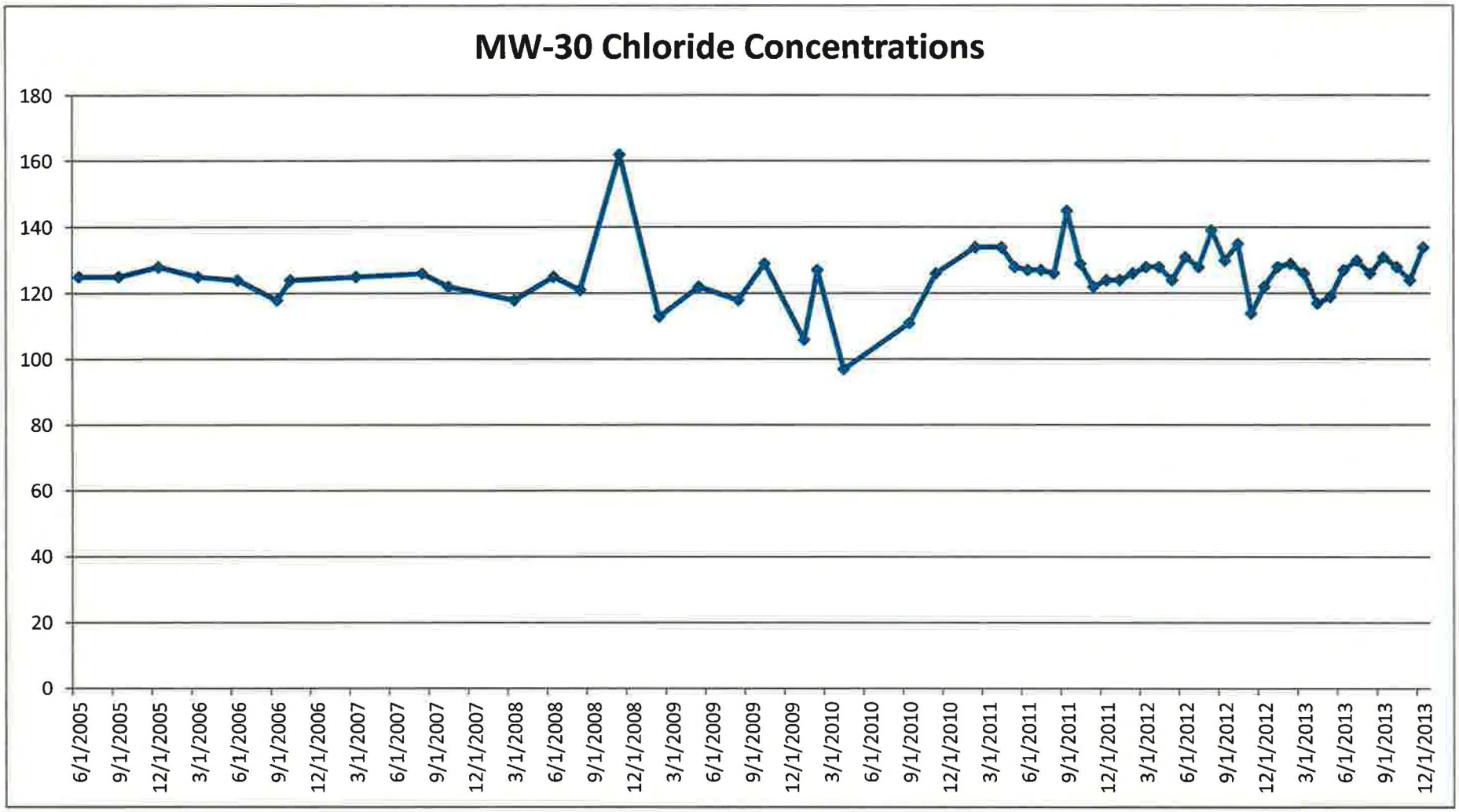

TW4-24 Nitrate Concentrations
mg/L
50
45
40
35
30
25
20
15
10
5
0
6/27/2007
6/27/2008
6/27/2009
6/27/2010
6/27/2011
6/27/2012
6/27/2013

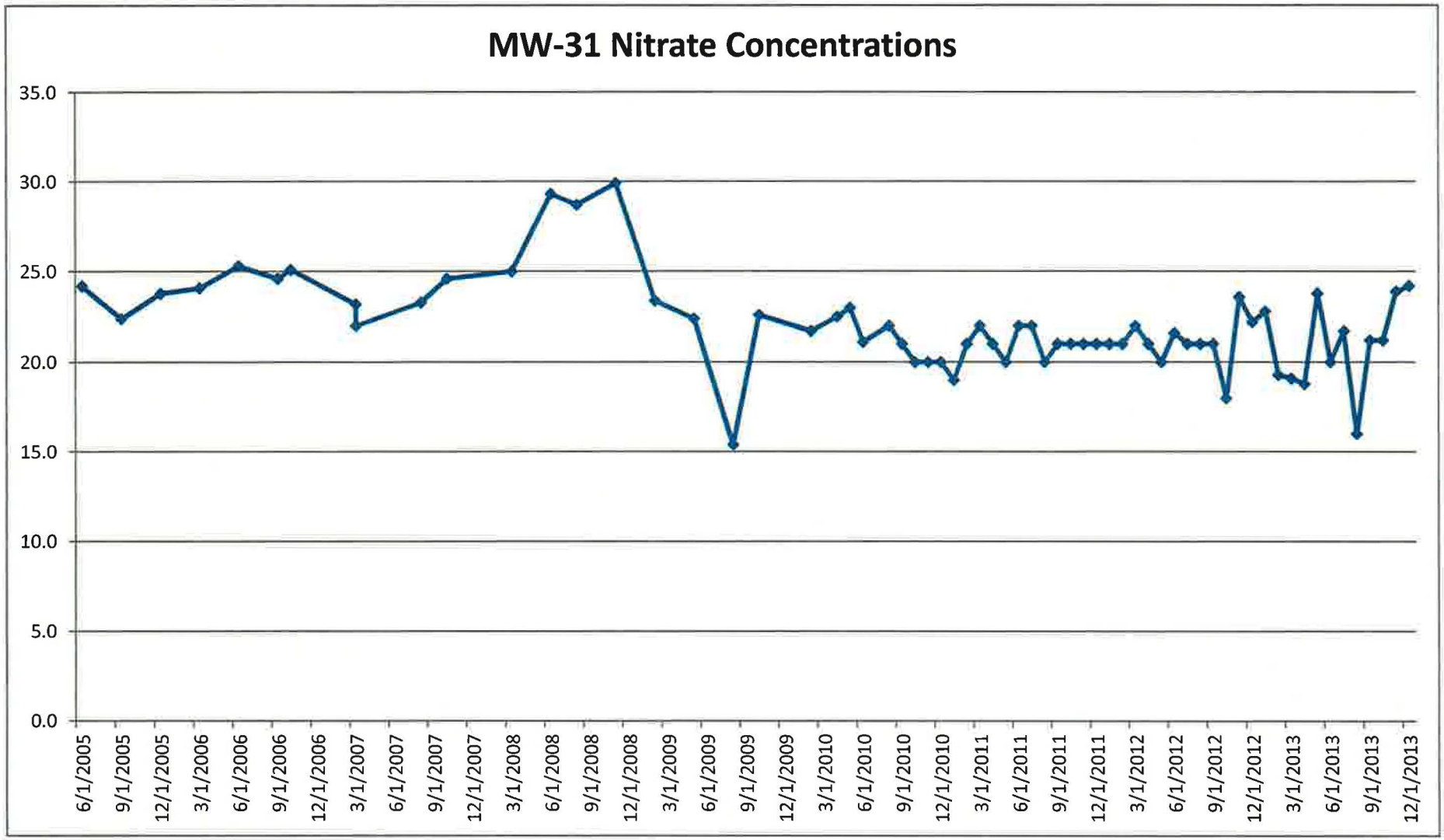

TW4-24 Chloride Concentrations
1400
1200
1000
800
600
400
200
0
mg/L
6/27/2007
6/27/2008
6/27/2009
6/27/2010
6/27/2011
6/27/2012
6/27/2013

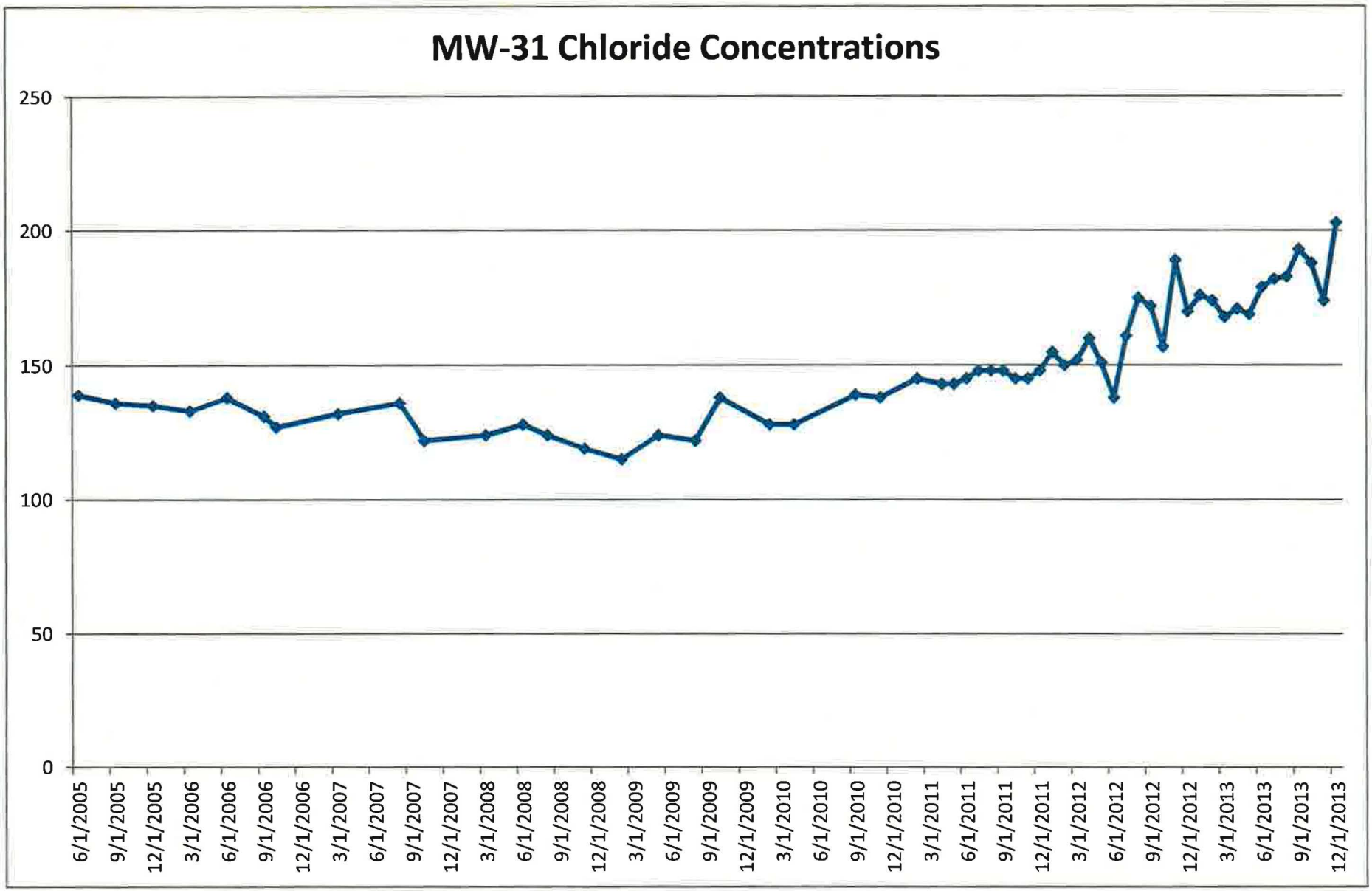

TW4-25 Nitrate Concentrations
25
20
15
10
5
0
mg/L
6/27/2007
6/27/2008
6/27/2009
6/27/2010
6/27/2011
6/27/2012
6/27/2013


TW4-25 Chloride Concentrations
450
400
350
300
250
200
150
100
50
0
mg/L
6/27/2007
6/27/2008
6/27/2009
6/27/2010
6/27/2011
6/27/2012
6/27/2013


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
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


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
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


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
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


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
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

Tab L

CSV Transmittal Letter

Kathy Weinel

From: Kathy Weinel
Sent: Friday, February 21, 2014 9:08 AM
To: 'Rusty Lundberg'
Cc: 'Phillip Goble'; 'Dean Henderson'; Harold Roberts; Frank Filas, P.E; David Frydenlund; Dan Hillsten; David Turk; Jaime Massey
Subject: Transmittal of CSV Files White Mesa Mill 2013 Q4 Nitrate Monitoring
Attachments: 1310396-EDD-rev1.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 2013, 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