ENERGY FUELS

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Div of Waste Management
and Radiation Control

AUG 19 2020

DRC-2020-015489

August 14, 2020

Sent VIA EXPEDITED DELIVERY

Mr. Ty L. Howard
Director
Division of Waste Management and Radiation Control
Utah Department of Environmental Quality
195 North 1950 West
P.O. Box 144880
Salt Lake City, UT 84114-4820

Re: Transmittal of 2nd Quarter 2020 Nitrate Monitoring Report
Stipulation and Consent Order Docket Number UGW12-04 White Mesa Uranium Mill

Dear Mr. Howard:

Enclosed are two copies of the White Mesa Uranium Mill Nitrate Monitoring Report for the 2nd Quarter of 2020 as required by the Stipulation and Consent Order Docket Number UGW12-04, as well as two CDs each containing a word searchable electronic copy of the report.

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

Yours very truly,

Kathy Weinel

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

cc: David Frydenlund
Logan Shumway
Terry Slade
Scott Bakken
Paul Goranson

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White Mesa Uranium Mill

Nitrate Monitoring Report

State of Utah
Stipulated Consent Agreement, December 2014
Docket No. UGW12-04

2nd Quarter
(April through June)
2020

Prepared by:

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

August 14, 2020

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ACRONYM LIST

AWAL	American West Analytical Laboratory
CA	Consent Agreement
CAP	Corrective Action Plan
CIR	Contamination Investigation Report
DIFB	Deionized Field Blanks
DWMRC	Utah Division of Waste Management and Radiation Control
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 Compound

1.0 INTRODUCTION

The Utah Department of Environmental Quality ("UDEQ") Division of Waste Management and Radiation Control ("DWMRC") 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, DWMRC signed the Stipulation and Consent Order ("SCO"), Docket Number UGW12-04, which approved the EFRI CAP, dated May 7, 2012. The SCO ordered EFRI to fully implement all elements of the May 7, 2012 CAP.

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

This is the Quarterly Nitrate Monitoring Report, as required under the SCO, State of Utah Docket No. UGW12-04 for the second quarter of 2020. 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 second quarter of 2020.

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

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.

** Piezometer 3 was abandoned and replaced with Piezometer 3A in March 2016.

The December 12, 2012 SCO approved the CAP, which specified the cessation of sampling in TWN-5, TWN-6, TWN-8, TWN-9, TWN-10, TWN-11, TWN-12, TWN-13, TWN-14, TWN-15, TWN-16, TWN-17, and TWN-19. The CAP and SCO also approved the abandonment of TWN-5, TWN-8, TWN-9, TWN-10, TWN-11, TWN-12, TWN-13, TWN-15, and TWN-17 within 1 year of the SCO approval. These wells were abandoned in accordance with the DWMRC-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 3A. 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 7.6, dated August 22, 2019 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"):

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

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

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

Weekly and monthly depth to groundwater measurements were taken in the chloroform pumping wells MW-4, MW-26, TW4-1, TW4-2, TW4-11, TW4-19, TW4-20, TW4-4, TW4-21, TW4-37, TW4-39, TW4-40, TW4-41, 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, 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.

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 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-detect) 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 3A, 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 DWMRC in 2011. Pursuant to the CA, the CAP was submitted to the Director of the Division Waste Management and 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 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, turbidity, and dissolved oxygen ("DO"). 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 was completed in compliance 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, DO, 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 field data collected during the quarter were in compliance with QAP requirements.

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%.

All duplicate results were within 20% RPD for the quarterly samples. The duplicate results are provided under 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.

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

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

3.4.7 Receipt Temperature Evaluation

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

3.4.8 Rinsate Check

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

4.0 INTERPRETATION OF DATA

4.1 Interpretation of Groundwater Levels, Gradients and Flow Directions.

4.1.1 Current Site Groundwater Contour Map

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

The water level contour maps indicate 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 south of the tailings management system. Perched water mounding associated with the wildlife ponds is still evident and locally changes the generally southerly perched water flow patterns. For example, northeast of the Mill site, mounding associated with formerly used wildlife ponds disrupts the generally southwesterly flow pattern, to the extent that locally north-northwesterly flow occurs near MW-19 and 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. The perched groundwater mound associated with the southern wildlife pond is also diminishing due to reduced recharge at that location.

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, resulted in changing conditions that were expected to impact constituent concentrations and migration rates within the plumes. Specifically, past recharge from the ponds helped limit many constituent concentrations within the plumes by dilution while the associated groundwater mounding increased hydraulic gradients and contributed to plume migration. Since use of the northern ponds was discontinued in March, 2012, increases in constituent concentrations in many wells, and decreases in hydraulic gradients within the plumes, are attributable to reduced recharge and the decay of the associated groundwater mound. EFRI and its consultants anticipated these changes and discussed these and other potential effects during discussions with DWMRC in March 2012 and May 2013.

The impacts associated with cessation of water delivery to the northern ponds were expected to propagate downgradient (south and southwest) over time. Wells close to the ponds were generally expected to be impacted sooner than wells farther downgradient of the ponds. Therefore, constituent concentrations were generally expected to increase in downgradient wells close to the ponds before increases were detected in wells farther downgradient of the ponds. Although such increases were anticipated to result from reduced dilution, the magnitude and timing of the increases were anticipated to be and have been 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. Because of these complicating factors, some wells completed in higher permeability materials were expected to be impacted sooner than other wells completed in lower permeability materials even though the wells completed in lower permeability materials were closer to the ponds.

In general, nitrate concentrations within and adjacent to the nitrate plume appear to have been impacted to a lesser extent than chloroform and nitrate concentrations within and in the vicinity of the chloroform plume. This behavior is reasonable considering that the chloroform plume is generally more directly downgradient of and more hydraulically connected (via higher permeability materials) to the wildlife ponds.

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

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

The combined impact of the above two mechanisms was anticipated to be more 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. Impacts were also expected to occur over time at wells subsequently added to the chloroform pumping network: TW4-1, TW4-2, TW4-11, TW4-21 and TW4-37 (added during 2015); TW4-39 (added during the fourth quarter of 2016); TW4-41 (added during the second quarter of 2018); and TW4-40 (added during the second quarter of 2019). The overall impact was expected to be generally higher constituent concentrations in these wells over time until mass reduction resulting from pumping and natural attenuation eventually reduces concentrations. Short-term changes in concentrations at pumping wells and wells adjacent to pumping wells are also expected to result from changes in pumping conditions.

In addition to changes in the flow regime caused by wildlife pond recharge, perched flow directions are locally influenced by operation of the chloroform and nitrate pumping wells. Well-defined cones of depression were typically evident in the vicinity of all chloroform pumping wells except TW4-4 and TW4-37, which began pumping in the first quarter of 2010 and the second quarter of 2015, respectively. The third quarter of 2018 was the first quarter that a well-defined cone of depression was associated with TW4-4, primarily the result of pumping at adjacent well TW4-41.

The lack of well-defined capture associated with chloroform pumping well TW4-4 was consistent prior to the third quarter of 2018, even though pumping since the first quarter of 2010 has depressed the water table in the vicinity of this well. The lack of a well-defined cone of depression near TW4-4 likely resulted from 1) variable permeability conditions in the vicinity of TW4-4, and 2) persistent relatively low water levels at adjacent well TW4-14.

Pumping of nitrate wells TW4-22, TW4-24, TW4-25, and TWN-2 began during the first quarter of 2013. Water level patterns near these wells are expected to be influenced by the presence of and the decay of the groundwater mound associated with the northern wildlife ponds, and by the historically relatively low water level elevation at TWN-7. Although positioned up- to cross-gradient of the nitrate pumping wells, TWN-7 is also typically downgradient of TWN-3 and the northern (upgradient) extremity of the nitrate plume. Since 2012, water levels in TWN-7 have risen while water levels in nearby wells have generally dropped due to pumping and the decay of the northern groundwater mound. These factors have reduced water level differences between TWN-7 and nearby wells.

Capture associated with nitrate pumping is expected to continue to increase over time as water levels decline due to pumping and to cessation of water delivery to the northern wildlife ponds. Interaction between nitrate and chloroform pumping is expected to enhance the capture of the nitrate pumping system. The long-term interaction between the nitrate and chloroform pumping systems is evolving, and changes will be reflected in data collected during routine monitoring.

As discussed above, variable permeability conditions are one likely reason for the prior lack of a well-defined cone of depression near chloroform pumping well TW4-4. Changes in water levels at wells immediately south and southeast (downgradient) of TW4-4 resulting from TW4-4 pumping were expected to be muted because TW4-4 is located at a transition from relatively high to relatively low permeability conditions south and southeast of TW4-4. As will be discussed below, the permeability of the perched zone at TW4-6, TW4-26, TW4-29, TW4-30, TW4-31, TW4-33, TW4-34, and TW4-35 is one to two orders of magnitude lower than at TW4-4, and the permeability at TW4-27 is approximately three orders of magnitude lower than at TW4-4.

Detecting water level drawdowns in wells immediately south and southeast of TW4-4 resulting from TW4-4 pumping has also been complicated by a general, long-term increase in water levels in this area that has been attributable to past wildlife pond recharge. Between the fourth quarter of 2007 and the fourth quarter of 2009 (just prior to the start of TW4-4 pumping), water levels at TW4-4 and TW4-6 increased by nearly 2.7 and 2.9 feet at rates of approximately 1.2 feet/year and 1.3 feet/year, respectively. However, between the start of pumping at TW4-4 (first quarter of 2010) and the fourth quarter of 2013, the rate of increase in water level at TW4-6 was reduced to less than 0.5 feet/year suggesting that TW4-6 is within the hydraulic influence of TW4-4.

Since the fourth quarter of 2013, water levels in all wells currently within the chloroform plume south of TW4-4 (TW4-26, TW4-29, TW4-33 and TW4-40 [installed in the first quarter of 2018]) have been trending generally downward, as has the water level in TW4-6 (located just outside the plume again this quarter). This downward trend is attributable to both reduced wildlife pond recharge and pumping. Although water levels at some of the wells marginal to the chloroform plume such as TW4-14, TW4-27, TW4-30 and TW4-31 were generally increasing until about the first quarter of 2018, these water levels now appear to be relatively stable.

These spatially variable water level trends likely result from pumping conditions, the permeability distribution, and distance from the wildlife ponds. Wells that are relatively hydraulically isolated (due to completion in lower permeability materials or due to intervening lower permeability materials) and that are more distant from pumping wells and the wildlife ponds, are expected to respond more slowly to pumping and reduced recharge than wells that are less hydraulically isolated and are closer to pumping wells and the wildlife ponds. Wells that are more hydraulically isolated will also respond more slowly to changes in pumping.

The previous lack of a well-defined cone of depression associated with TW4-4 was also influenced by the persistent, relatively low water level at non-pumping well TW4-14, located east of TW4-4 and TW4-6. Although water level differences among these three wells had diminished, the water level at TW4-14 was typically lower than the water level at TW4-6 and several feet lower than the water level at TW4-4 even though TW4-4 has been pumping since 2010. As during the previous quarter the water level at TW4-14 is higher than water levels at both TW4-4 and TW4-6: the water level at TW4-14 (approximately 5535.2 feet above mean sea level ["ft amsl"]) is 4.4 feet higher than the water level at TW4-6 (approximately 5530.8 ft amsl), and nearly 2 feet higher than the water level at TW4-4 (approximately 5533.2 ft. amsl). This pattern is attributable to the cone of depression induced by pumping TW4-4 and TW4-41.

The static water levels at wells TW4-14 and downgradient well TW4-27 (installed south of TW4-14 in the fourth quarter of 2011) were similar (within 1 to 2 feet) until the third quarter of 2014; both appeared anomalously low. Prior to the installation of TW4-27, the persistently low water level at TW4-14 was considered anomalous because it appeared to be downgradient of all three wells TW4-4, TW4-6, and TW4-26, yet chloroform had not been detected at TW4-14. Chloroform had apparently migrated from TW4-4 to TW4-6 and from TW4-6 to TW4-26. This 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 relatively low water level at TW4-14. The water level at TW4-26 (5529.1 feet amsl) is, however, lower than water levels at adjacent wells TW4-6 (5530.8 feet amsl) and TW4-23 (5532.8 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). Past similarity of water levels at TW4-14 and TW4-27, and the low permeability estimate at TW4-27, suggested that both wells were completed in materials having lower permeability than nearby wells. The low permeability condition likely reduced the rate of long-term water level increase at TW4-14 and TW4-27 compared to nearby wells, yielding water levels that appeared anomalously low. This behavior is consistent with hydraulic test data collected from more recently installed wells TW4-29, TW4-30, TW4-31, TW4-33, TW4-34 and TW4-35, which indicate that the permeability of these wells is one to two orders of magnitude higher than the permeability of TW4-27 (see: HGC, January 23, 2014, Contamination Investigation Report, TW4-12 and TW4-27 Areas, White Mesa Uranium Mill Near Blanding, Utah; and HGC, July 1, 2014, Installation and Hydraulic Testing of TW4-35 and TW4-36, White Mesa Uranium Mill Near Blanding, Utah [As-Built Report]). Hydraulic tests also indicate that the permeability at TW4-36 is slightly higher than but comparable to the low permeability at TW4-27, suggesting that TW4-36, TW4-14 and TW4-27 are completed in a continuous low permeability zone.

The current quarterly water level at TW4-27 (approximately 5528.9 ft. amsl) is more than 6 feet lower than the water level at TW4-14 (5535.2 ft. amsl). Increases in water level differences between TW4-14 and TW4-27 since 2013 are attributable to more rapid increases in water levels at TW4-14 compared to TW4-27. This behavior likely results primarily from: the relative positions of the wells; past water delivery to the northern wildlife ponds; and the permeability distribution. Past seepage from the ponds caused propagation of water level increases in all directions including downgradient to the south. The relative hydraulic isolation of TW4-14 and TW4-27 delayed responses at these locations. Until pumping started at TW4-41, water levels at both these wells were consistently lower than in surrounding higher permeability materials even though water levels in surrounding materials were generally decreasing due to reduced pond seepage and pumping. Although water levels at TW4-14 and TW4-27 appear to have stabilized, the previous rate of increase was higher at TW4-14 due to factors that include: closer proximity to the northern pond seepage source and a smaller thickness of low permeability materials separating TW4-14 from surrounding higher permeability materials. In addition, hydraulic gradients between TW4-14 and surrounding higher permeability materials were relatively large and were directed toward TW4-14 prior to TW4-41 pumping. Slowing of the rates of water level increase at TW4-14 (since 2015) and TW4-27 (since early 2014), and stabilization since about the first quarter of 2018, are attributable to changes in hydraulic gradients between these wells and surrounding higher permeability materials.

In addition, water levels in this area are affected by reduced recharge at the southern wildlife pond and the decay of the associated groundwater mound. The decay of the mound is expected to contribute to changes in hydraulic gradients between the low permeability materials penetrated by TW4-14 and TW4-27 and the surrounding higher permeability materials. Because TW4-27 is closer to the southern wildlife pond than TW4-14, changes in hydraulic gradients attributable to decay of the southern groundwater mound are expected to impact TW4-27 sooner and to a greater extent than TW4-14, consistent with the lower rate of increase in water levels at TW4-27, and the earlier reduction in the rate of increase (since early 2014) as discussed above).

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

The groundwater contour maps for the Mill site for the previous quarter, as submitted with the Nitrate Monitoring Report for the previous quarter, are attached under Tab D. A comparison of the water table contour maps for the current quarter (second quarter of 2020) to the water table contour maps for the previous quarter (first quarter of 2020) indicates the following: water level changes at the majority of site wells were small (< 1 foot); and water level contours have not changed significantly except in the vicinities of many of the nitrate and chloroform pumping wells. Overall, total capture is similar to last quarter.

The drawdown at chloroform pumping wells MW-4, TW4-20 and TW4-21 decreased by more than 2 feet this quarter. However drawdowns at chloroform pumping wells MW-26, TW4-2, TW4-37, TW4-39 and TW4-41; and nitrate pumping wells TW4-24 and TWN-2 increased by more than 2 feet this quarter. Water level changes at other nitrate and chloroform pumping wells were 2 feet or less, although both increases (decreases in drawdown) and decreases (increases in drawdown) occurred. 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.

The reported water levels for chloroform pumping wells TW4-1, TW4-2 and TW4-11 are below the depth of the Brushy Basin contact this quarter. Although both increases and decreases in drawdown occurred in pumping wells, the overall apparent capture area of the combined pumping system is similar to last quarter.

As discussed in Section 4.1.1, pumping at chloroform well TW4-4, which began in the first quarter of 2010, depressed the water table near TW4-4, but a well-defined cone of depression was not clearly evident until the third quarter of 2018, likely due to variable permeability conditions near TW4-4 and the historic persistently low water level at adjacent well TW4-14. The expanded cone of depression associated with TW4-4 and adjacent pumping well TW4-41 since the initiation of pumping at TW4-41 in the second quarter of 2018 has contributed to southerly expansion of total pumping system capture. Southerly expansion of capture was additionally enhanced in the second quarter of 2019 quarter by the initiation of pumping at TW4-40.

The reported water level decrease of 0.45 feet at Piezometer 3A may result from cessation of water delivery to the northern wildlife ponds as discussed in Section 4.1.1 and the consequent continuing decay of the associated perched water mound. Reported water level decreases of up to 0.53 feet at Piezometers 4 and 5 likely result primarily from reduced recharge at the southern wildlife pond. Reported water level decreases of approximately 0.3 and 0.35 feet, respectively, at TWN-1 and TWN-4 are consistent with continuing decay of the northern groundwater mound.

The reported water levels at MW-20 and MW-37 decreased by approximately 2.6 and 7.1 feet, respectively, compensating for increases last quarter. Water level variability at these wells likely results from low permeability and variable intervals between purging/sampling and water level measurement. The reported water level decrease of nearly 4.1 feet at MW-22 compensates for the reported increase last quarter that likely resulted from measurement error.

As noted above, the reported water level at TW4-20 increased (drawdown decreased) compared to last quarter. The reported drawdown decreased even though the pump control mechanism failed, causing continuous pump operation and eventual pump failure due to almost total dewatering of the well and exposure of the pump to air.

Measurable water was not reported at DR-22. Although DR-22 is typically dry, measurable water was reported in the bottom of its casing between the second quarter of 2015 and the third quarter of 2016.

4.1.3 Hydrographs

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

4.1.4 Depth to Groundwater Measured and Groundwater Elevation

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

4.2 Effectiveness of Hydraulic Containment and Capture

4.2.1 Hydraulic Containment and Control

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

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

The specific methodology for calculating the nitrate capture zones is substantially the same as that used since the fourth quarter of 2005 to calculate the capture zones for the chloroform program, as agreed to by the DWMRC and EFRI. 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^{TM}. Default kriging parameters are used that include a linear variogram, an isotropic data search, and all the available water level data for the quarter, including relevant seep and spring elevations.
2) Calculate the capture zones by hand from the kriged water level contours following the rules for flow nets:
   - From each pumping well, reverse track the stream tubes that bound the capture zone of each well,
   - maintain perpendicularity between each stream tube and the kriged water level contours.

Compared to last quarter, both increases and decreases in water levels occurred at nitrate and chloroform pumping wells, although changes in water levels in chloroform pumping wells TW4-1, TW4-4, TW4-11, TW4-19 and TW4-40; and nitrate pumping wells TW4-22 and TW4-25 were less than two feet. Water level decreases occurred in chloroform pumping wells MW-26 (nearly 12.6 feet); TW4-1 (approximately 0.7 feet); TW4-2 (approximately 2.1 feet); TW4-4 (approximately 1.2 feet); TW4-11 (approximately 0.6 foot); TW4-37 (nearly 2.5 feet); TW4-39 (approximately 3.9 feet); and TW4-41 (nearly 12 feet); and in nitrate pumping wells TW4-24 (approximately 5.3 feet); TW4-25 (approximately 0.3 feet); and TWN-2 (nearly 11 feet). Water level increases occurred in chloroform pumping wells MW-4 (approximately 7.8 feet); TW4-19 (approximately 1.5 feet); TW4-20 (approximately 9 feet); TW4-21 (approximately 6.2 feet); and TW4-40 (approximately 0.2 feet); and in nitrate pumping well TW4-22 (approximately 0.7 feet). The overall apparent combined capture area of the nitrate and chloroform pumping systems is similar to last quarter.

As noted in Section 4.1.2, the reported water level at TW4-20 increased (drawdown decreased) compared to last quarter. The reported drawdown decreased even though the pump control mechanism failed, causing continuous pump operation and eventual pump failure due to almost total dewatering of the well and exposure of the pump to air.

The capture associated with nitrate pumping wells and the eight chloroform pumping wells added since the first quarter of 2015 is expected to generally 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, although the perched groundwater mound has diminished, and water levels at TWN-7 have risen, the definition of capture associated with the nitrate pumping system continues to be influenced by the remaining perched groundwater mound and the historically relatively low water level at TWN-7.

That pumping is likely sufficient to eventually capture the entire plume upgradient of TW4-22 and TW4-24 can be demonstrated by comparing the combined average pumping rates of all nitrate pumping wells for the current quarter to estimates of pre-pumping flow through the nitrate plume near the locations of TW4-22 and TW4-24. The pre-pumping flow calculation presented from the fourth quarter of 2013 through the second quarter of 2015 was assumed to represent a steady state 'background' condition that included constant recharge, hydraulic gradients, and saturated thicknesses; the calculation did not account for reduced recharge and saturated thickness caused by cessation of water delivery to the northern wildlife ponds since March, 2012. Because significant water level declines have occurred in upgradient portions of the nitrate plume due to reduced recharge, hydraulic gradients within the plume have been reduced independent of pumping. Changes related to reduced wildlife pond recharge have also resulted in reduced well productivity. Generally reduced productivities of nitrate pumping well TW4-24 and chloroform pumping well TW4-19 since the third quarter of 2014 are at least partly the result of reduced recharge.

The pre-pumping flow through the nitrate plume near TW4-22 and TW4-24 that was presented from the fourth quarter of 2013 through the second quarter of 2015 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^{TM} (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 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.

As discussed above the hydraulic gradient and saturated thickness used in the pre-pumping calculations were assumed to represent a steady state 'background' condition that was 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 have declined since nitrate pumping began as a result of two factors: reduced recharge from the ponds, and the effects of pumping. A more representative 'background' flow condition that accounts for reduced wildlife pond recharge was presented in Attachment N (Tab N) of the third quarter 2015 Nitrate Monitoring report. The original pre-pumping 'background' flow range of 1.31 gpm to 2.79 gpm has been recalculated to range from 0.79 gpm to 1.67 gpm, as presented in Table 9. This calculation is still considered conservative because the high end of the range assumed an arithmetic average hydraulic conductivity of a subset of plume wells having the highest conductivities. In addition, since the 'background' flow was recalculated, saturated thicknesses and hydraulic gradients within the plume have decreased, further reducing the rate of flow through the plume.

The cumulative volume of water removed by nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2 during the current quarter was approximately 203,777 gallons. This equates to an average total extraction rate of approximately 1.6 gpm over the 90 day quarter. This average accounts for time periods when pumps were off due to insufficient water columns in the wells. The current quarter's pumping of 1.6 gpm, which is smaller than last quarter's average, is at the high end of the recalculated 'background' flow range of 0.79 gpm to 1.67 gpm.

Although TW4-22, TW4-24, TW4-25, and TWN-2 are designated nitrate pumping wells, some chloroform pumping wells are also located within the nitrate plume because the northwest portion of the chloroform plume commingles with the central portion of the nitrate plume. Chloroform pumping wells TW4-19 and TW4-20 are periodically within the nitrate plume; chloroform pumping well TW4-21, since pumping began in 2015, is typically within the nitrate plume; and TW4-37 is consistently within the nitrate plume. TW4-21 was outside the plume during the second quarter of 2017; the fourth quarter of 2018; the first quarter of 2019; the fourth quarter of 2019; and last quarter. TW4-19 and TW4-20 are both just outside the plume this quarter. Including TW4-21 and TW4-37, the volume of water removed by TW4-21, TW4-22, TW4-24, TW4-25, TW4-37, and TWN-2 this quarter is approximately 379,940 gallons or approximately 2.9 gpm, which exceeds the high end of the recalculated 'background' flow range by approximately 1.2 gpm, or a factor of approximately 1.7.

Because the arithmetic average hydraulic conductivity of a subset of plume wells having the highest conductivities was used to calculate the high end of the 'background' flow range, the high end is considered less representative of actual conditions than using the geometric average conductivity of all of the plume wells. Therefore, nitrate pumping likely exceeds the actual flow through the plume by more than a factor of 1.7 as calculated above. Nitrate pumping is therefore considered adequate at the present time even with reduced productivity at TW4-24.

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 nitrate concentrations in MW-30 and MW-31 remain stable or decline, and the nitrate concentrations 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 nitrate plume has not migrated downgradient to MW-5 or MW-11; nitrate at MW-11 was detected at a concentration of approximately 0.3 mg/L; and was detected at MW-5 at a concentration of approximately 0.14 mg/L. Between the previous and current quarters, nitrate concentrations increased at both MW-30 and MW-31. Nitrate in MW-30 increased from 16.4 mg/L to 18.1 mg/L and nitrate in MW-31 increased from 17.5 mg/L to 18.8 mg/L. Although short-term fluctuations have occurred, nitrate concentrations in MW-30 and MW-31 have been relatively stable, demonstrating that plume migration to the south is minimal or absent.

MW-30 and MW-31 are located at the toe of the nitrate plume which has associated elevated chloride. Chloride is increasing at MW-31, as well as at MW-30, but at a lower rate (see Tab J and Tab K, discussed in Section 4.2.4). These increases are consistent with continuing downgradient migration of the elevated chloride associated with the nitrate plume. The increases in chloride and relatively stable nitrate at both wells suggest 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. A more detailed discussion is presented in HGC, December 11, 2017; Nitrate Corrective Action Comprehensive Monitoring Evaluation (CACME) Report, White Mesa Uranium Mill Near 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 the plume has expanded in some areas and contracted in others, the area of the plume is smaller than last quarter, with some notable contraction of the boundary to the east away from MW-28. Recent expansion to the west has occurred due to increases in concentration at MW-28; however, MW-28 has remained outside the plume. In addition, TWN-7, which was incorporated within the plume for the first time during the second quarter of 2018, remains within the plume. TWN-7 has historically been located down- to cross-gradient of the northeastern (upgradient) extremity of the plume, but migration of the plume toward TWN-7 has been slow presumably due to the low permeability at TWN-7.

TW4-18 remained outside the plume with a concentration of approximately 3.6 mg/L. TW4-18 was encompassed by an eastward-extending 'spur' in the plume during the third quarter of 2015, similar to an occurrence during the third quarter of 2013. Changes in nitrate concentrations near TW4-18 are expected to result from changes in pumping and from the cessation of water delivery to the northern wildlife ponds. The reduction in low-nitrate recharge from the wildlife ponds appeared to be having the anticipated effect of generally increased nitrate concentrations in some wells downgradient of the ponds.

However, decreasing to relatively stable nitrate concentrations at most wells in the vicinity of TW4-18 between the first quarter of 2014 and the second quarter of 2015 after previous increases suggested that conditions in this area had stabilized. Since the second quarter of 2015, concentrations at TW4-18 exceeded 10 mg/L only once (third quarter of 2015). Over this same time period, concentrations at nearby wells TW4-3 and TW4-9 remained below 10 mg/L; concentrations at TW4-5 exceeded 10 mg/L only once (first quarter of 2016); and, until the first quarter of 2019, concentrations at TW4-10 remained above 10 mg/L. Since the first quarter of 2019, concentrations at TW4-10 have remained below 10 mg/L.

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

Nitrate concentrations at the downgradient edge of the plume (MW-30 and MW-31) have been relatively stable, demonstrating that nitrate plume migration to the south is minimal or absent. As discussed in Section 4.2.1, stable nitrate at MW-30 and MW-31 is consistent with a natural attenuation process affecting nitrate but not chloride, as elevated chloride associated with the nitrate plume continues to migrate downgradient.

With regard to chloroform, changes in the boundary of the chloroform plume are attributable in part to the initiation of nitrate pumping. Once nitrate pumping started, the boundary of the chloroform plume migrated to the west toward nitrate pumping well TW4-24, and then to the southwest to reincorporate chloroform monitoring wells TW4-6 and TW4-16. Concentration increases leading to the reincorporation of these wells occurred first at TW4-24, then at TW4-16 and TW4-6. Reduced recharge at the southern wildlife pond and decay of the associated groundwater mound are also expected to influence chloroform concentrations in the vicinity of TW4-6.

Subsequent contraction of the chloroform plume eastward away from TW4-24 and TW4-16 through the first quarter of 2016 is attributable in part to the start-up of additional chloroform pumping wells during the first half of 2015, and reduced productivity at TW4-24. TW4-16 is within and TW4-24 is outside the chloroform plume this quarter. In addition, due to contraction of the plume away from TW4-6, TW4-6 has been outside the plume since the third quarter of 2018. More details regarding the chloroform data and interpretation are included in the Quarterly Chloroform Monitoring Report submitted under separate cover.

4.2.4 Nitrate and Chloride Concentration Trend Data and Graphs

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

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

4.2.5 Interpretation of Analytical Data

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

a) Nitrate concentrations have increased by more than 20% in the following wells compared to last quarter: TW4-21, TW4-25, TW4-39 and TWN-3;

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

c) Nitrate concentrations have remained within 20% in the following wells compared to last quarter: MW-11, MW-26, MW-27, MW-30, MW-31, TW4-16, TW4-18, TW4-22, TW4-24, TW4-37, TWN-1, TWN-2, TWN-4, TWN-7 and TWN-18; and

d) MW-25, MW-29 and MW-32 remained non-detect

As indicated, nitrate concentrations for many of the wells with detected nitrate were within 20% of the values reported during the previous quarter, suggesting that variations are within the range typical for sampling and analytical error. The remaining wells had changes in concentration greater than 20%. The latter includes chloroform pumping wells TW4-19, TW4-20, TW4-21 and TW4-39; nitrate pumping well TW4-25; and non-pumping well TWN-3. TWN-3 is located within the upgradient (northern) extremity of the plume.

Fluctuations in concentrations at pumping wells and wells adjacent to pumping wells likely result in part from the effects of pumping as discussed in Section 4.1.1. Concentrations at TW4-25 are less than 1 mg/L.

MW-27, located west of TWN-2, and TWN-18, located north of TWN-3, bound the nitrate plume to the west and north; however, TWN-7 no longer bounds to plume to the northwest (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). The nitrate concentrations at MW-5 (0.14 mg/L) and MW-11 (0.3 mg/L) are consistent with the relative stability of the downgradient margin of the plume. MW-25, MW-26, MW-32, TW4-16, TW4-18, TW4-19, TW4-20, TW4-25, TW4-39, TWN-1 and TWN-4 bound the nitrate plume to the east.

Nitrate concentrations outside the nitrate plume are typically greater than 10 mg/L at a few locations: TW4-26 (11.1 mg/L); TW4-27 (21.5 mg/L); and TW4-28 (10.2 mg/L in the third quarter of 2019; 9.6 mg/L this quarter). In the past concentrations at TW4-10, TW4-12 and TW4-38 typically exceeded 10 mg/L. However TW4-10 dropped below 10 mg/L during the first quarter of 2019; TW4-12 dropped below 10 mg/L in the second quarter of 2019; and TW4-38 dropped below 10 mg/L during the first quarter of 2018. Concentrations at TW4-18 have also occasionally exceeded 10 mg/L. Each of these wells is located southeast of the nitrate plume as defined in the CAP and is separated from the plume by a well or wells where nitrate concentrations are either non-detect, or, if detected, are less than 10 mg/L. Except for TW4-12, which dropped more than 20%, the nitrate concentrations at all these wells are within 20% of last quarter's concentrations.

Since 2010, nitrate concentrations at TW4-10 and TW4-18 have been above and below 10 mg/L Concentrations were below 10 mg/L between the first quarter of 2011 and second quarter of 2013, and mostly close to or above 10 mg/L between the second quarter of 2013 and third quarter of 2015. However, concentrations at TW4-18 have been below 10 mg/L since the third quarter of 2015 and (as discussed above) the concentration at TW4-10 dropped below 10 mg/L during the first quarter of 2019. Concentrations at nearby well TW4-5 have exceeded 10 mg/L only twice since 2010, and concentrations at nearby wells TW4-3 and TW4-9 have remained below 10 mg/L. Nitrate at TW4-5, TW4-10, and TW4-18 is associated with the chloroform plume, and is within the capture zone of the chloroform pumping system. Elevated nitrate at TW4-12, TW4-26, TW4-27, TW4-28 and TW4-38 is likely related to former cattle ranching operations at the site. Elevated nitrate at recently installed well MW-38 and at MW-20 (far cross-gradient and far downgradient, respectively, of the tailings management system at the site) is also likely related to former cattle ranching operations.

Chloride concentrations are measured because elevated chloride (greater than 100 mg/L) is associated with the nitrate plume. Chloride concentrations at all sampled locations this quarter are within 20% of their respective concentrations during the previous quarter except at chloroform pumping wells MW-26, TW4-19, TW4-21 and TW4-37. Concentration fluctuations at pumping wells likely result in part from the effects of pumping as discussed in Section 4.1.1.

TWN-7 (located upgradient [north] of the tailings management system) was positioned historically cross- to downgradient of the upgradient (northeastern) extremities of the commingled nitrate and chloride plumes. Recent increases in both nitrate and chloride at TWN-7, which remains incorporated into both the nitrate and chloride plumes this quarter, likely result from northwesterly migration of the elevated nitrate and chloride contained within the upgradient extremities of these commingled plumes. Changes in both nitrate and chloride at TWN-7 since last quarter are less than 20%.

Piezometer PIEZ-3A was installed in the second quarter of 2016 as a replacement to piezometer PIEZ-3. The chloride concentration at piezometer PIEZ-3A (88.3 mg/L) is nearly three times higher this quarter than the pre-abandonment first quarter 2016 concentration at PIEZ-3 (approximately 33 mg/L). The nitrate concentration at PIEZ-3A (approximately 12.4 mg/L) is also higher this quarter than the pre-abandonment first quarter 2016 PIEZ-3 concentration (approximately 2.2 mg/L).

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

Nitrate mass removed by pumping as summarized in Table 2 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, since the third quarter of 2010, a total of approximately 3,293 lb. of nitrate has been removed directly from the perched zone by pumping. Prior to the first quarter of 2013, all direct nitrate mass removal resulted from operation of chloroform pumping wells MW-4, MW-26, TW4-4, TW4-19, and TW4-20. During the current quarter:

- A total of approximately 86 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 86 lb. removed during the current quarter, approximately 38 lb. (or 44 %) was removed by the nitrate pumping wells.

The calculated nitrate mass removed directly by pumping was about the same as last quarter's approximately 87 lbs.

As discussed in Section 4.3.1, achievable pumping rates are expected to diminish over time as saturated thicknesses are reduced by pumping and by cessation of water delivery to the northern wildlife ponds. Attachment N (Tab N) of the third quarter 2015 Nitrate Monitoring report provides an evaluation of reduced productivity at chloroform pumping well TW4-19 and nitrate pumping well TW4-24.

Baseline mass and current quarter mass estimates (nitrate + nitrite as N) for the nitrate plume are approximately 43,700 lb. and 30,467 lbs., respectively. Mass estimates were calculated within the plume boundaries as defined by the kriged 10 mg/L isocon by 1) gridding (kriging) the nitrate concentration data on 50-foot centers; 2) calculating the volume of water in each grid cell based on the saturated thickness and assuming a porosity of 0.18; 3) calculating the mass of nitrate+nitrite as N in each cell based on the concentration and volume of water for each cell; and 4) totaling the mass of all grid cells within the 10 mg/L plume boundary. Data used in these calculations included data from wells listed in Table 3 of the CAP.

The nitrate mass estimate for the current quarter (30,467 lb) is smaller than the mass estimate for the previous quarter (32,739 lb) by 2,272 lb. Since pumping began, calculated nitrate mass within the plume has generally decreased at a rate that is on average higher than would be expected based on direct mass removal by pumping. Changes in the quarterly mass estimates are expected to result from several factors, primarily 1) nitrate mass removed directly by pumping, 2) natural attenuation of nitrate, and 3) re-distribution of nitrate within the plume and changes in saturated thicknesses.

Nitrate mass removed by pumping and natural attenuation (expected to result primarily from pyrite oxidation/nitrate reduction) act to lower both nitrate mass and concentrations within the plume. Both mechanisms are expected to continuously reduce both nitrate mass and concentrations within the plume. Reductions in saturated thickness that are not accompanied by increases in concentration will also reduce nitrate mass within the plume.

However, redistribution of nitrate within the plume is 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. In addition, 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.

Furthermore, 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 increased nitrate concentrations in many wells.

Because of quarter to quarter variations in factors that impact the mass estimates, only longer-term analyses of the mass estimates that minimize the impacts of ‘noise’ can 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.

The decrease in the mass estimate this quarter is attributable primarily to the apparent contraction of the western plume boundary to the east and away from MW-28.

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

As the fourth quarter of 2014 constituted the eighth quarter as specified in the CAP, the mass estimates were plotted, and a regression line was fitted to the data and evaluated. The regression line has been updated each quarter since the fourth quarter of 2014 as shown in Figure M.1 of Tab M. The fitted line shows a decreasing trend in the mass estimates.

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

5.1 Introduction

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

In addition, as a part of the investigation of chloroform contamination at the Mill site, EFRI has been conducting a Long Term Pump Test on MW-4, TW4-19, MW-26, and TW4-20, and, since January 31, 2010, TW4-4. In anticipation of the final approval of the GCAP, beginning on January 14, 2015, EFRI began long term pumping of TW4-1, TW4-2, and TW4-11 and began long term pumping of TW4-21 and TW4-37 on June 9, 2015. In addition, EFRI is pumping TW4-39, TW4-40 and TW4-41. 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, TW4-20, TW4-01, TW4-02, TW4-11, TW4-21, TW4-37, TW4-39, TW4-40 and TW4-41 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,
- Measurement of water levels weekly at TW4-22, TW4-24, TW4-25, and TWN-02 commencing January 28, 2013,

- Measurement of water levels weekly at TW4-01, TW4-02, and TW4-11 commencing on January 14, 2015,
- Measurement of water levels weekly at TW4-21 and TW4-37 commencing on June 9, 2015, and on a monthly basis selected temporary wells and permanent monitoring well,
- Measurement of water levels weekly at TW4-39 commencing on December 7, 2016,
- Measurement of water levels weekly at TW4-41 commencing on April 3, 2018,
- Measurement of water levels weekly at TW4-40 commencing on May 13, 2019.
- 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

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. From the commencement of pumping in December 2016, water levels in TW4-39 have been measured; from the commencement of pumping in April 2018 water levels in TW4-41 have been measured and from the commencement of pumping in May 2019 water levels in TW4-40 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, TWN-02, TW4-01, TW4-02, TW4-11, TW4-21, TW4-37, TW4-39, TW4-40, and TW4-41 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, TWN-1, TWN-3, TWN-4, TWN-7, and TWN-18. Copies of the monthly depth to Water monitoring sheets are included under Tab C.

5.4 Pumping Rates and Volumes

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

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

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

5.4.1 TW4-19

During the routine check on May 4, 2020, the pump in TW4-19 malfunctioned. All ancillary systems and controllers were checked and it was determined that the pump was the cause of the issue. The pump was removed and replaced within 24 hours of discovery and as such no notifications were necessary.

6.0 CORRECTIVE ACTION REPORT

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

6.1 Assessment of Previous Quarter's Corrective Actions

There were no corrective actions required during the previous quarters' monitoring period.

7.0 CONCLUSIONS AND RECOMMENDATIONS

As per the CAP, the current quarter is the twenty seventh quarter that hydraulic capture associated with nitrate pumping wells TW4-22, TW4-24, TW4-25, and TWN-2 was evaluated. While the apparent combined capture of the nitrate and chloroform pumping systems has expanded slightly in some areas and contracted in others, the overall capture area this quarter is similar to last quarter's.

Capture associated with nitrate pumping wells is expected to increase over time as water levels decline due to pumping and to cessation of water delivery to the northern wildlife ponds. Furthermore, the evaluation of the long term interaction between nitrate and chloroform pumping systems requires 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. Although the perched groundwater mound has diminished, and water levels at TWN-7 have risen, definition of capture associated with the nitrate pumping system continues to be influenced by the remaining perched groundwater mound and the historically relatively low water level at TWN-7.

Nitrate pumping is likely sufficient to eventually capture the entire nitrate plume upgradient of TW4-22 and TW4-24 even with productivity at TW4-24 that has been reduced since the third quarter of 2014. Hydraulic gradients and saturated thicknesses within the plume have declined since nitrate pumping began as a result of two factors: reduced recharge from the ponds, and nitrate pumping. A more representative 'background' flow condition that accounts for reduced wildlife pond recharge was presented in Attachment N (Tab N) of the third quarter, 2015 Nitrate Monitoring report. The original pre-pumping 'background' flow range of 1.31 gpm to 2.79 gpm was recalculated to range from 0.79 gpm to 1.67 gpm. This calculation is still considered conservative because the high end of the calculated range assumed an arithmetic average hydraulic conductivity of a subset of plume wells having the highest conductivities. In addition, since the 'background' flow was recalculated, saturated thicknesses and hydraulic gradients within the plume have decreased, further reducing the rate of flow through the plume.

The current nitrate pumping of approximately 1.6 gpm, based on water removed by TW4-22, TW4-24, TW4-25, and TWN-2, is at the high end of the recalculated 'background' flow range of 0.79 gpm to 1.67 gpm.

If water removed from the nitrate plume by chloroform pumping wells TW4-21 and TW4-37 is included, the current nitrate pumping of approximately 2.9 gpm exceeds the high end of the recalculated 'background' range by approximately 1.2 gpm, or a factor of approximately 1.7. Including TW4-37 is appropriate because this well has been within the nitrate plume consistently since initiation of pumping in 2015. Including TW4-21 is appropriate because TW4-21 is once again within the plume this quarter.

In addition, because the arithmetic average hydraulic conductivity of a subset of plume wells having the highest conductivities was used in recalculating the high end of the 'background' flow range, the high end is considered less representative of actual conditions than using the geometric average conductivity of all of the plume wells. Therefore, nitrate pumping likely exceeds flow through the plume by a factor greater than 1.7 times the high end of the recalculated range. Nitrate pumping is considered adequate at the present time even with reduced productivity at TW4-24. Furthermore, as the groundwater mound associated with former water delivery to the northern wildlife ponds continues to decay, hydraulic gradients and saturated thicknesses will continue to decrease, and 'background' flow will be proportionally reduced, thereby reducing the amount of pumping needed.

First quarter, 2019 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 chloroform pumping wells TW4-19, TW4-20, TW4-21 and TW4-39; nitrate pumping well TW4-25; and non-pumping well TWN-3. TWN-3 is located within the upgradient (northern) extremity of the plume. Concentrations at TW4-25 are less than 1 mg/L.

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 nitrate concentrations in well MW-11 remained at approximately 0.3 mg/L while MW-25, MW-29 and MW-32 remained non-detect. As discussed in Section 4.2.3, the area of the nitrate plume is smaller than last quarter, with some notable contraction of the western plume boundary to the east away from MW-28.

MW-27, located west of TWN-2, and TWN-18, located north of TWN-3, bound the nitrate plume to the west and north; however, TWN-7 no longer bounds the plume to the west (see Figure I-1 under Tab I), as the concentration at TWN-7 exceeded 10 mg/L again this quarter. 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). The nitrate concentration at MW-11 of approximately 0.3 mg/L is consistent with the relative stability of the downgradient margin of the plume. MW-25, MW-26, MW-32, TW4-16, TW4-18, TW4-19, TW4-20, TW4-25, TW4-39, TWN-1 and TWN-4 bound the nitrate plume to the east.

Although short-term fluctuations have occurred, nitrate concentrations in MW-30 and MW-31 have been relatively stable, demonstrating that plume migration is minimal or absent. Nitrate in MW-30 increased from 16.4 mg/L to 18.1 mg/L and nitrate in MW-31 increased from 17.5 mg/L to 18.8 mg/L. Based on the concentration data at MW-5, MW-11, MW-30, and MW-31, the nitrate plume is under control.

Chloride is increasing at MW-31 and at MW-30, but at a lower rate. These increases are consistent with continuing downgradient migration of the elevated chloride associated with the nitrate plume. The increasing chloride and relatively stable nitrate at both wells 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. A more detailed discussion is presented in HGC, December 11, 2017; Nitrate Corrective Action Comprehensive Monitoring Evaluation (CACME) Report, White Mesa Uranium Mill Near Blanding, Utah.

Nitrate mass within the plume boundary has been calculated on a quarterly basis beginning with the first quarter of 2013. Mass within the plume is expected to be impacted by factors that include pumping, natural attenuation, redistribution of nitrate within the plume, and changes in saturated thickness.

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. Reductions in saturated thickness that are not accompanied by increases in concentration will also reduce nitrate mass within the plume.

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

As specified in the CAP, once eight quarters of data were collected (starting with the first quarter of 2013), a regression trend line was to be applied to the quarterly mass estimates and evaluated. The trend line was to be updated quarterly and reevaluated as additional quarters of data were collected. As the fourth quarter of 2014 constituted the eighth quarter as specified in the CAP, the mass estimates were plotted, and a regression line was fitted to the data and evaluated. The regression line was updated this quarter as shown in Figure M.1 of Tab M. The fitted line shows a decreasing trend in the mass estimates.

During the current quarter, a total of approximately 86 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 86 lb. removed during the current quarter, approximately 38 lb. (or 44 %) was removed by the nitrate pumping wells.

The baseline nitrate (nitrate+nitrite as N) plume mass calculated as specified in the CAP (based on second quarter, 2010 data) was approximately 43,700 lb. The mass estimate for the current quarter (30,467 lb) is smaller than the mass estimate for the previous quarter (32,739 lb) by 2,272 lb. or approximately 7 %. The current quarter's estimate is smaller than the baseline estimate by approximately 13,233 lb. The quarterly difference is attributable primarily to the apparent contraction of the western plume boundary eastward away from MW-28.

Nitrate concentrations outside the nitrate plume are typically greater than 10 mg/L at a few locations: TW4-26 (11.1 mg/L); TW4-27 (21.5 mg/L); and TW4-28 (10.2 mg/L in the third quarter of 2019; 9.6 mg/L this quarter) In the past concentrations at TW4-10, TW4-12 and TW4-38 typically exceeded 10 mg/L. However TW4-10 dropped below 10 mg/L during the first quarter of 2019; TW4-12 dropped below 10 mg/L in the second quarter of 2019; and TW4-38 dropped below 10 mg/L during the first quarter of 2018. Each of these wells is located southeast of the nitrate plume as defined in the CAP and is separated from the plume by a well or wells where nitrate concentrations are either non-detect, or, if detected, are less than 10 mg/L. Except for TW4-12, which dropped more than 20%, the nitrate concentrations at all these wells are within 20% of last quarter's concentrations.

Since 2010, nitrate concentrations at TW4-10 and TW4-18 have been above and below 10 mg/L. Concentrations were below 10 mg/L between the first quarter of 2011 and second quarter of 2013, and mostly close to or above 10 mg/L between the second quarter of 2013 and third quarter of 2015. However, concentrations at TW4-18 have been below 10 mg/L since the third quarter of 2015 and (as discussed above) the concentration at TW4-10 dropped below 10 mg/L during the first quarter of 2019. Concentrations at nearby well TW4-5 have exceeded 10 mg/L only twice since 2010, and concentrations at nearby wells TW4-3 and TW4-9 have remained below 10 mg/L. Nitrate at TW4-5, TW4-10, and TW4-18 is associated with the chloroform plume, and is within the capture zone of the chloroform pumping system. Elevated nitrate at TW4-12, TW4-26, TW4-27, TW4-28 and TW4-38 is likely related to former cattle ranching operations at the site. Elevated nitrate at recently installed well MW-38 and at MW-20 (far cross-gradient and far downgradient, respectively, of the tailings management system at the site) is also likely related to former cattle ranching operations.

Increases in both nitrate and chloride concentrations at wells near the northern wildlife ponds (for example TW4-18) were anticipated as a result of reduced dilution caused by cessation of water delivery to the northern wildlife ponds. However, decreasing nitrate concentrations at TW4-10 and TW4-18 from the first through third quarters of 2014 after previously increasing trends (interrupted in the first quarter of 2014) suggested that conditions in this area had stabilized. The temporary increase in nitrate concentration at TW4-18 in the third quarter of 2015 and the generally increased nitrate at TW4-5 and TW4-10 during the three quarters following the second quarter of 2015 suggested the continuing impact of reduced wildlife pond recharge on downgradient wells. However, since the first quarter of 2016, concentrations at TW4-5, TW4-10 and TW4-18 have been stable to decreasing.

EFRI and its consultants have raised the issues and potential effects associated with cessation of water delivery to the northern wildlife ponds in March, 2012 during discussions with DWMRC in March 2012 and May 2013. While past recharge from the northern ponds has helped limit many constituent concentrations within the chloroform and nitrate plumes by dilution, the associated groundwater mounding has increased hydraulic gradients and contributed to plume migration. Since use of the northern wildlife ponds ceased in March 2012, the reduction in recharge and decay of the associated groundwater mound was expected to increase many constituent concentrations within the plumes while reducing hydraulic gradients and rates of plume migration. Reduced recharge and decay of the groundwater mound associated with the southern wildlife pond may also have an impact on water levels and concentrations at wells within and marginal to the downgradient (southern) extremity of the chloroform plume.

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

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

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.

Energy Fuels Resources (USA) Inc.

By:

Scott Bakken Digitally signed by Scott Bakken
Date: 2020.08.14 17:37:35 -06'00'

Scott A. Bakken Date
Senior Director Regulatory Affairs

Certification:

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

Scott Bakken Digitally signed by Scott Bakken
Date: 2020.08.14 17:38:02 -06'00'

Scott Bakken
Senior Director Regulatory 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	5/20/2020	6/10/2020
Piezometer 02	5/20/2020	6/10/2020
Piezometer 03A	5/20/2020	6/10/2020
TWN-01	5/20/2020	6/10/2020
TWN-02	5/20/2020	6/10/2020
TWN-03	5/21/2020	6/10/2020
TWN-04	5/20/2020	6/10/2020
TWN-07	5/21/2020	6/10/2020
TWN-18	5/20/2020	6/10/2020
TWN-18R	5/20/2020	6/10/2020
TW4-22	5/27/2020	6/12/2020
TW4-24	5/27/2020	6/12/2020
TW4-25	5/27/2020	6/12/2020
TWN-60	5/20/2020	6/12/2020
TW4-60	5/27/2020	6/10/2020
TWN-65	5/20/2020	6/10/2020

Note: All wells were sampled for Nitrate and Chloride.

Multiple dates shown for a single laboratory depict resubmission dates for the data. Resubmissions were required to correct reporting errors.

Dates in *Italics* are the original laboratory submission dates.

TWN-60 is a DI Field Blank.

TWN-65 is a duplicate of TWN-04

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.)	TW4-01 (lbs.)	TW4-02 (lbs.)	TW4-11 (lbs.)	TW4-21 (lbs.)	TW4-37 (lbs.)	TW4-39 (lbs.)	TW4-40 (lbs.)	TW4-41 (lbs.)	Qtr. Totals (lbs.)
Q3 2010	3.20	0.3	5.8	1.7	4.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.69
Q4 2010	3.76	0.4	17.3	1.4	5.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.97
Q1 2011	2.93	0.2	64.5	1.4	4.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73.30
Q2 2011	3.51	0.1	15.9	2.7	4.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.01
Q3 2011	3.49	0.5	3.5	3.9	5.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.82
Q4 2011	3.82	0.8	6.2	2.5	6.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.71
Q1 2012	3.62	0.4	0.7	5.0	6.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.86
Q2 2012	3.72	0.6	3.4	2.1	5.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.03
Q3 2012	3.82	0.5	3.6	2.0	4.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.67
Q4 2012	3.16	0.4	5.4	1.8	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.92
Q1 2013	2.51	0.4	14.1	1.4	3.6	8.1	43.4	7.5	14.8	NA	NA	NA	NA	NA	NA	NA	NA	95.73
Q2 2013	2.51	0.4	5.6	1.6	3.4	10.7	37.1	6.4	23.9	NA	NA	NA	NA	NA	NA	NA	NA	91.71
Q3 2013	2.97	0.4	48.4	1.4	3.8	6.3	72.8	6.9	33.4	NA	NA	NA	NA	NA	NA	NA	NA	176.53
Q4 2013	3.08	0.3	15.8	1.6	3.9	9.4	75.2	6.4	46.3	NA	NA	NA	NA	NA	NA	NA	NA	162.07
Q1 2014	2.74	0.4	4.1	1.2	3.6	11.2	60.4	2.3	17.2	NA	NA	NA	NA	NA	NA	NA	NA	103.14
Q2 2014	2.45	0.3	3.3	0.9	3.0	9.5	63.4	1.3	17.8	NA	NA	NA	NA	NA	NA	NA	NA	101.87
Q3 2014	2.31	0.1	4.1	0.6	3.1	8.5	56.2	1.6	16.4	NA	NA	NA	NA	NA	NA	NA	NA	92.99
Q4 2014	2.67	0.2	7.8	1.0	3.8	11.0	53.2	0.9	28.0	NA	NA	NA	NA	NA	NA	NA	NA	108.57
Q1 2015	3.67	0.5	4.3	1.3	2.4	12.7	26.7	8.6	19.2	1.45	1.07	0.72	NA	NA	NA	NA	NA	82.61
Q2 2015	1.28	0.2	0.6	0.9	3.6	9.1	16.6	0.9	21.4	1.22	0.79	0.37	3.4	8.6	NA	NA	NA	68.86
Q3 2015	3.58	0.3	11.3	1.4	3.5	13.3	14.0	1.7	20.2	1.24	0.68	0.29	15.4	31.9	NA	NA	NA	118.63
Q4 2015	3.68	0.2	10.0	0.8	3.1	11.1	26.6	1.7	17.5	0.3	0.9	0.3	16.1	32.3	NA	NA	NA	124.50
Q1 2016	3.91	0.23	15.28	1.23	3.21	6.36	24.30	0.81	34.33	0.02	0.93	0.22	15.29	26.45	NA	NA	NA	132.55
Q2 2016	3.66	0.21	1.31	1.48	3.36	12.92	13.17	1.01	19.24	0.02	1.15	0.25	14.46	27.76	NA	NA	NA	99.98
Q3 2016	3.30	0.22	9.08	1.15	3.02	11.33	14.86	1.56	12.47	0.72	0.59	0.22	15.20	27.42	NA	NA	NA	101.12
Q4 2016	3.48	0.18	8.76	1.23	1.79	12.14	26.49	1.02	12.14	0.10	1.00	0.23	14.68	22.20	0.62	NA	NA	106.06
Q1 2017	3.19	0.17	10.23	1.36	1.35	14.02	34.16	0.02	10.35	0.63	0.79	0.20	8.02	26.16	5.54	NA	NA	116.19
Q2 2017	2.94	0.20	0.22	1.02	1.37	13.99	17.58	0.83	8.88	0.87	0.77	0.19	4.85	24.26	2.15	NA	NA	80.12
Q3 2017	3.65	0.36	1.05	1.31	1.29	13.56	18.55	1.27	9.31	0.73	0.82	0.18	18.24	20.81	2.23	NA	NA	93.37
Q4 2017	4.67	0.23	0.34	1.06	1.32	15.89	28.04	1.26	10.37	0.68	0.47	0.17	17.84	22.35	1.51	NA	NA	106.21
Q1 2018	3.92	0.35	7.89	1.13	1.18	12.47	36.31	2.18	7.09	0.51	0.40	0.17	15.54	21.22	1.65	NA	NA	111.99
Q2 2018	3.94	0.20	0.46	1.16	0.96	14.07	14.89	1.12	7.22	0.40	0.47	0.16	13.73	19.96	1.38	NA	4.02	84.14
Q3 2018	3.63	0.60	2.25	0.85	0.78	9.82	14.99	0.75	6.48	0.35	0.60	0.13	0.22	16.42	1.69	NA	2.30	61.86
Q4 2018	3.81	0.39	0.21	1.04	0.77	15.27	32.56	0.61	6.30	0.38	0.45	0.14	15.43	17.38	1.97	NA	1.78	98.49
Q1 2019	4.71	0.41	6.38	0.82	1.01	15.69	32.04	0.48	7.10	0.40	0.53	0.15	9.25	19.49	0.85	NA	1.79	101.08
Q2 2019	4.07	0.57	7.53	1.08	1.24	16.15	14.74	0.60	16.35	0.11	0.51	0.15	15.61	16.91	2.42	2.4	1.26	101.72
Q3 2019	3.74	0.62	0.28	1.17	0.77	14.95	16.54	0.40	8.01	0.13	0.56	0.12	13.26	14.55	0.54	3.3	1.25	80.19
Q4 2019	3.59	0.18	0.44	0.68	0.78	12.02	28.83	0.60	5.17	0.30	0.40	0.12	5.55	14.20	0.41	2.6	1.08	76.97
Q1 2020	5.33	0.24	8.16	0.78	0.55	11.91	26.73	0.43	4.44	0.38	0.67	0.11	7.95	15.48	0.29	2.5	0.88	86.86
Q2 2020	4.28	0.62	1.30	6.08	0.93	12.77	20.05	0.64	4.04	0.04	0.43	0.13	14.26	15.39	1.56	2.4	0.98	85.95
Well Totals (pounds)	**138.3**	**14.1**	**336.9**	**63.4**	**117.1**	**356.3**	**960.4**	**61.9**	**465.3**	**10.9**	**15.0**	**4.7**	**254.2**	**441.2**	**24.8**	**13.3**	**15.3**	**3293.02**

Table 3 Well Pumping Rates and Volumes

Pumping Well Name	Volume of Water Pumped During the Quarter (gals)	Average Pump Rate (gpm)
MW-4	101850.7	4.0
MW-26	25418.4	11.0
TW4-19	136619.7	17.2
TW4-20	100713.8	3.2
TW4-4	15347.0	14.7
TWN-2	30078.9	16.7
TW4-22	25295.3	18.0
TW4-24	57634.7	16.3
TW4-25	90767.9	11.6
TW4-01	9600.2	12.8
TW4-02	14155.6	16.1
TW4-11	2003.9	16.5
TW4-21	110999.1	16.7
TW4-37	65163.8	18.0
TW4-39	37352.7	18.0
TW4-40	100757.1	18.0

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)
Q3 2010	79859.1	4.80	4800	302266.7	1450880129	1450.9	3.20	63850.0	0.60	600	241672.3	145003350	145	0.32
Q4 2010	90042.2	5.00	5000	340809.7	1704048635	1704.0	3.76	60180.0	0.70	700	227781.3	159446910	159	0.35
Q1 2011	76247.6	4.60	4600	288597.2	1327546964	1327.5	2.93	55130.0	0.50	500	208667.1	104333525	104	0.23
Q2 2011	85849.3	4.90	4900	324939.6	1592204042	1592.2	3.51	55800.6	0.30	300	211205.3	6.34E+07	63	0.14
Q3 2011	85327.7	4.90	4900	322965.3	1582530188	1582.5	3.49	65618.0	0.90	900	248364.1	223527717	224	0.49
Q4 2011	89735.0	5.10	5100	339647.0	1732199573	1732.2	3.82	50191.3	2.00	2000	189974.1	379948141	380	0.84
Q1 2012	90376.4	4.80	4800	342074.7	1641958435	1642.0	3.62	31440.1	1.70	1700	119000.8	202301323.5	202	0.45
Q2 2012	90916.5	4.90	4900	344118.8	1686181940	1686.2	3.72	26701.2	2.50	2500	101064.1	252660294.3	253	0.56
Q3 2012	91607.0	5.00	5000	346732.5	1733662475	1733.7	3.82	25246.0	2.60	2600	95556.1	248445886	248	0.55
Q4 2012	78840.0	4.80	4800	298409.4	1432365120	1432.4	3.16	30797.0	1.46	1460	116566.6	170187301.7	170	0.38
Q1 2013	62943.7	4.78	4780	238241.9	1138796304	1138.8	2.51	22650.7	2.27	2270	85732.9	194613681.9	195	0.43
Q2 2013	71187.3	4.22	4220	269443.9	1137053387	1137.1	2.51	25343.4	2.11	2110	95924.8	202401262.6	202	0.45
Q3 2013	72898.8	4.89	4890	275922.0	1349258375	1349.3	2.97	25763.0	1.98	1980	97513.0	193075650.9	193	0.43
Q4 2013	70340.4	5.25	5250	266238.4	1397751674	1397.8	3.08	24207.6	1.38	1380	91625.8	126443557.1	126	0.28
Q1 2014	69833.8	4.70	4700	264320.9	1242308385	1242.3	2.74	23263.1	2.12	2120	88050.8	186667767	187	0.41
Q2 2014	71934.9	4.08	4080	272273.6	1110876274	1110.9	2.45	23757.5	1.42	1420	89922.1	127689435.3	128	0.28
Q3 2014	74788.2	3.70	3700	283073.3	1047371347	1047.4	2.31	24062.4	0.70	700	91076.2	63753328.8	64	0.14
Q4 2014	63093.0	5.07	5070	238807.0	1210751515	1210.8	2.67	21875.8	0.93	934	82799.9	77335109.4	77	0.17
Q1 2015	76454.3	5.75	5750	289379.5	1663932272	1663.9	3.67	24004.9	2.68	2680	90858.5	243500904.6	244	0.54
Q2 2015	60714.7	2.53	2530	229805.1	581407002.9	581.4	1.28	27804.6	0.85	845	105240.4	88928147.3	89	0.20
Q3 2015	89520.8	4.79	4790	338836.2	1623025532	1623.0	3.58	21042.0	1.75	1750	79644.0	139376947.5	139	0.31
Q4 2015	99633.4	4.43	4430	377112.4	1670608016	1670.6	3.68	19355.6	1.11	1110	73260.9	81319650.1	81	0.18
Q1 2016	90882.1	5.15	5150	343988.7	1771542055	1771.5	3.91	19150.8	1.45	1450	72485.8	105104378.1	105	0.23
Q2 2016	96540.5	4.54	4540	365405.8	1658942298	1658.9	3.66	22105.7	1.12	1120	83670.1	93710483.4	94	0.21
Q3 2016	79786.4	4.95	4950	301991.5	1494858044	1494.9	3.30	17149.5	1.57	1570	64910.9	101910046.3	102	0.22
Q4 2016	85414.0	4.88	4880	323292.0	1577664911	1577.7	3.48	18541.6	1.18	1180	70180.0	82812348.1	83	0.18
Q1 2017	76642.3	4.99	4990	290091.1	1447554616	1447.6	3.19	26107.0	0.768	768	98815.0	75889916.2	76	0.17
Q2 2017	72299.8	4.88	4880	273654.7	1335435146	1335.4	2.94	25921.8	0.922	922	98114.0	90461120.0	90	0.20
Q3 2017	95349.3	4.59	4590	360897.1	1656517691	1656.5	3.65	27489.9	1.56	1560	104049.3	162316863.5	162	0.36
Q4 2017	106679.8	5.25	5250	403783.0	2119860976	2119.9	4.67	26445.8	1.04	1040	100097.4	104101247.1	104	0.23
Q1 2018	105060.4	4.47	4470	397653.6	1777511655	1777.5	3.92	27004.7	1.57	1570	102212.8	160474079.5	160	0.35
Q2 2018	101786.2	4.64	4640	385260.8	1787609959	1787.6	3.94	26654.7	0.90	901	100888.0	90900123.6	91	0.20
Q3 2018	95480.5	4.55	4550	361393.8	1644341817.5	1644.3	3.63	25536.1	2.80	2800	96654.1	270631587.8	271	0.60
Q4 2018	102844.8	4.44	4440	389267.5	1728347833.9	1728.3	3.81	23791.3	1.96	1960	90050.1	176498138.2	176	0.39
Q1 2019	111746.9	5.05	5050	422961.9	2135957801.0	2136.0	4.71	26798.5	1.85	1850	101432.3	187649796.6	188	0.41
Q2 2019	94540.7	5.16	5160	357836.5	1846436595.4	1846.4	4.07	24050.2	2.83	2830	91030.0	257614919.8	258	0.57
Q3 2019	95517.8	4.69	4690	361534.9	1695598554.4	1695.6	3.74	24181.1	3.08	3080	91525.5	281898427.6	282	0.62
Q4 2019	99220.8	4.34	4340	375550.9	1629890816.6	1629.9	3.59	22384.8	0.977	977	84726.5	82777759.2	83	0.18
Q1 2020	102597.0	6.22	6220	388329.6	2415410391.9	2415.4	5.33	24107.0	1.17	1170	91245.0	106756644.2	107	0.24

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)
Q2 2020	101850.7	5.04	5040	385504.9	1942944502.7	1942.9	4.28	25418.4	2.930	2930	96208.6	281891326.9	282	0.62
Totals Since Q3 2010	3456384.08						138.3	1180923.72						14.1

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)
Q3 2010	116899.2	5.90	5900	442463.5	2610534485	2611	5.76	39098.3	5.30	5300	147987.1	784331447.2	784	1.73
Q4 2010	767970.5	2.70	2700	2906768.3	7848274525	7848	17.30	36752.5	4.60	4600	139108.2	639897777.5	640	1.41
Q1 2011	454607.9	17.00	17000	1720690.9	29251745326	29252	64.49	37187.5	4.40	4400	140754.7	619320625	619	1.37
Q2 2011	159238.9	12.00	12000	602719.2	7232630838	7233	15.95	67907.7	4.80	4800	257030.6	1233747094	1234	2.72
Q3 2011	141542.6	3.00	3000	535738.7	1607216223	1607	3.54	72311.2	6.50	6500	273697.9	1779036298	1779	3.92
Q4 2011	147647.2	5.00	5000	558844.7	2794223260	2794	6.16	72089.3	4.20	4200	272858.0	1146003602	1146	2.53
Q1 2012	148747.0	0.60	600	563007.4	337804437	338	0.74	76306.0	7.90	7900	288818.2	2281663859	2282	5.03
Q2 2012	172082.0	2.40	2400	651330.5	1563193161	1563	3.45	22956.4	11.00	11000	86890.1	955790963.1	956	2.11
Q3 2012	171345.0	2.50	2500	648540.8	1621352063	1621	3.57	22025.0	10.80	10800	83364.6	900337950	900	1.98
Q4 2012	156653.0	4.10	4100	592931.6	2431019581	2431	5.36	20114.0	11.00	11000	76131.5	837446390	837	1.85
Q1 2013	210908.0	7.99	7990	798286.8	6378311372	6378	14.06	18177.0	9.07	9070	68799.9	624015501.2	624	1.38
Q2 2013	226224.0	2.95	2950	856257.8	2525960628	2526	5.57	20252.4	9.76	9760	76655.3	748156059.8	748	1.65
Q3 2013	329460.1	17.60	17600	1247006.5	21947314022	21947	48.39	19731.0	8.65	8650	74681.8	645997872.8	646	1.42
Q4 2013	403974.0	4.70	4700	1529041.6	7186495473	7186	15.84	19280.2	9.64	9640	72975.6	703484369.5	703	1.55
Q1 2014	304851.0	1.62	1620	1153861.0	1869254877	1869	4.12	18781.6	7.56	7560	71088.4	537427971.4	537	1.18
Q2 2014	297660.0	1.34	1340	1126643.1	1509701754	1510	3.33	18462.4	5.95	5950	69880.2	415787094.8	416	0.92
Q3 2014	309742.0	1.60	1600	1172373.5	1875797552	1876	4.14	17237.9	4.30	4300	65245.5	280555441.5	281	0.62
Q4 2014	198331.0	4.72	4720	750682.8	3543222981	3543	7.81	16341.8	7.67	7670	61853.7	474417978.7	474	1.05
Q1 2015	60553.0	8.56	8560	229193.1	1961892979	1962	4.33	15744.7	9.80	9800	59593.7	584018157.1	584	1.29
Q2 2015	75102.8	0.92	916	284264.1	260385913.8	260	0.57	18754.1	5.76	5760	70984.3	408869386.6	409	0.90
Q3 2015	116503.9	11.60	11600	440967.3	5115220233	5115	11.28	17657.3	9.27	9270	66832.9	619540802.2	620	1.37
Q4 2015	112767.7	10.6	10600	426825.7	4524352892	4524	9.97	15547.4	6.23	6230	58846.9	366616243.1	367	0.81
Q1 2016	116597.0	15.7	15700	441319.6	6928718427	6929	15.28	14353.5	10.30	10300	54328.0	559578374.3	560	1.23
Q2 2016	123768.0	1.27	1270	468461.9	594946587.6	595	1.31	15818.3	11.20	11200	59872.3	670569373.6	671	1.48
Q3 2016	103609.0	10.5	10500	392160.1	4117680683	4118	9.08	12186.6	11.30	11300	46126.3	521226975.3	521	1.15
Q4 2016	104919.4	10.0	10000	397119.9	3971199290	3971	8.76	12879.6	11.40	11400	48749.3	555741860.4	556	1.23
Q1 2017	110416.7	11.1	11100	417927.2	4638992025	4639	10.23	13552.8	12.00	12000	51297.3	615568176	616	1.36
Q2 2017	109943.0	0.243	243	416134.3	101120624	101	0.22	12475.3	9.76	9760	47219.0	460857542.5	461	1.02
Q3 2017	112626.4	1.12	1120	426290.9	477445834.9	477	1.05	14556.8	10.80	10800	55097.5	595052870.4	595	1.31
Q4 2017	108891.2	0.38	377	412153.2	155381753.4	155	0.34	14271.0	8.91	8910	54015.7	481280198.9	481	1.06
Q1 2018	109856.3	8.61	8610	415806.1	3580090482	3580	7.89	14258.4	9.50	9500	53968.0	512696418	513	1.13
Q2 2018	111271.4	0.49	494	421162.2	208054151.0	208	0.46	13367.6	10.40	10400	50596.4	526202206.4	526	1.16
Q3 2018	105821.8	2.55	2550	400535.5	1021365558.2	1021	2.25	12443.6	8.14	8140	47099.0	383385763.5	383	0.85
Q4 2018	107197.4	0.233	233	405742.2	94537923.0	95	0.21	12841.1	9.72	9720	48603.6	472426637.2	472	1.04
Q1 2019	116132.8	6.58	6580	439562.6	2892322223.8	2892	6.38	14623.9	6.70	6700	55351.3	370853777.7	371	0.82
Q2 2019	100704.0	8.96	8960	381164.6	3415235174.4	3415	7.53	13439.2	9.59	9590	50867.4	487818097.5	488	1.08
Q3 2019	101026.8	0.332	332	382386.4	126952297.4	127	0.28	13787.0	10.20	10200	52183.8	532274709.0	532	1.17
Q4 2019	98806.8	0.535	535	373983.7	200081299.8	200	0.44	8317.7	9.75	9750	31482.5	306953952.3	307	0.68
Q1 2020	96857.9	10.1	10100	366607.2	3702732230.2	3703	8.16	9505.1	9.81	9810	35976.6	352930585.8	353	0.78

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)
Q2 2020	136619.7	1.1	1140	517105.6	589500343.5	590	1.30	100713.8	7.23	7230	381201.6	2756087708.6	2756	6.08
Totals Since Q3 2010	7057876.43						336.9	1006106.89						63.4

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)
Q3 2010	76916.8	7.30	7300	291130.1	2125249642.4	2125.25	4.69	NA	NA	NA	NA	NA	NA	NA
Q4 2010	86872.1	7.10	7100	328810.9	2334557379.4	2334.56	5.15	NA	NA	NA	NA	NA	NA	NA
Q1 2011	73360.0	7.00	7000	277667.6	1943673200.0	1943.67	4.29	NA	NA	NA	NA	NA	NA	NA
Q2 2011	80334.6	7.00	7000	304066.5	2128465227.0	2128.47	4.69	NA	NA	NA	NA	NA	NA	NA
Q3 2011	97535.0	6.60	6600	369170.0	2436521835.0	2436.52	5.37	NA	NA	NA	NA	NA	NA	NA
Q4 2011	109043.5	7.00	7000	412729.6	2889107532.5	2889.11	6.37	NA	NA	NA	NA	NA	NA	NA
Q1 2012	101616.8	7.10	7100	384619.6	2730799074.8	2730.80	6.02	NA	NA	NA	NA	NA	NA	NA
Q2 2012	87759.1	7.10	7100	332168.2	2358394173.9	2358.39	5.20	NA	NA	NA	NA	NA	NA	NA
Q3 2012	80006.0	7.10	7100	302822.7	2150041241.0	2150.04	4.74	NA	NA	NA	NA	NA	NA	NA
Q4 2012	71596.0	7.00	7000	270990.9	1896936020.0	1896.94	4.18	NA	NA	NA	NA	NA	NA	NA
Q1 2013	58716.8	7.36	7360	222243.1	1635709127.7	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	248308.9	1564345874.7	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	240405.8	1735729796.6	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	227984.2	1787395939.8	1787.40	3.94	24952.2	45.2	45200.0	94444.1	4268872280.4	4268.9	9.41
Q1 2014	58992.9	7.28	7280	223288.1	1625537560.9	1625.54	3.58	24532.0	54.6	54600.0	92853.6	5069807652.0	5069.8	11.18
Q2 2014	60235.3	5.91	5910	227990.6	1347424508.1	1347.42	2.97	24193.9	47.2	47200.0	91573.9	4322288622.8	4322.3	9.53
Q3 2014	69229.4	5.30	5300	262033.3	1388776378.7	1388.78	3.06	24610.9	41.5	41500.0	93152.3	3865818644.8	3865.8	8.52
Q4 2014	64422.6	7.02	7020	243839.5	1711753577.8	1711.75	3.77	23956.9	54.9	54900.0	90676.9	4978159970.9	4978.2	10.97
Q1 2015	36941.3	7.70	7700	139822.8	1076635717.9	1076.64	2.37	22046.9	69.2	69200.0	83447.5	5774568141.8	5774.6	12.73
Q2 2015	68162.8	6.33	6330	257996.2	1633115933.3	1633.12	3.60	23191.6	47.1	47100.0	87780.2	4134447702.6	4134.4	9.11
Q3 2015	64333.0	6.45	6450	243500.4	1570577612.3	1570.58	3.46	24619.9	64.7	64700.0	93186.3	6029155001.1	6029.2	13.29
Q4 2015	59235.1	6.27	6270	224204.9	1405764431.4	1405.76	3.10	23657.6	56.1	56100.0	89544.0	5023419297.6	5023.4	11.07
Q1 2016	57274.0	6.71	6710	216782.1	1454607823.9	1454.61	3.21	24517.8	31.1	31100.0	92799.9	2886076050.3	2886.1	6.36
Q2 2016	61378.0	6.56	6560	232315.7	1523991188.8	1523.99	3.36	26506.3	58.4	58400.0	100326.3	5859058577.2	5859.1	12.92
Q3 2016	50104.2	7.22	7220	189644.4	1369232546.3	1369.23	3.02	22144.1	61.3	61300.0	83815.4	5137885154.1	5137.9	11.33
Q4 2016	31656.0	6.77	6770	119818.0	811167589.2	811.17	1.79	23646.8	61.5	61500.0	89503.1	5504442987.0	5504.4	12.14
Q1 2017	23526.8	6.87	6870	89048.9	611766204.1	611.77	1.35	24066.2	69.8	69800.0	91090.6	6358121576.6	6358.1	14.02
Q2 2017	23244.9	7.06	7060	87981.9	621152542.3	621.15	1.37	23685.0	70.8	70800.0	89647.7	6347058930.0	6347.1	13.99
Q3 2017	23937.3	6.47	6470	90602.7	586199342.8	586.20	1.29	24583.2	66.1	66100.0	93047.4	6150433933.2	6150.4	13.56
Q4 2017	22900.6	6.90	6900	86678.8	598083519.9	598.08	1.32	23779.6	80.1	80100.0	90005.8	7209463458.6	7209.5	15.89
Q1 2018	23103.4	6.12	6120	87446.4	535171778.3	535.17	1.18	23982.8	62.3	62300.0	90774.9	5655276145.4	5655.3	12.47
Q2 2018	18137.0	6.34	6340	68648.5	435231775.3	435.23	0.96	23256.6	72.5	72500.0	88026.2	6381901747.5	6381.9	14.07
Q3 2018	15366.0	6.10	6100	58160.3	354777891.0	354.78	0.78	21248.7	55.4	55400.0	80426.3	4455618654.3	4455.6	9.82
Q4 2018	15420.2	6.02	6020	58365.5	351360051.1	351.36	0.77	24171.0	75.7	75700.0	91487.2	6925583689.5	6925.6	15.27
Q1 2019	16655.0	7.26	7260	63039.2	457664410.5	457.66	1.01	26149.9	71.9	71900.0	98977.4	7116473010.9	7116.5	15.69
Q2 2019	14311.9	10.4	10400	54170.5	563373631.6	563.37	1.24	23073.1	83.9	83900.0	87331.7	7327128245.7	7327.1	16.15
Q3 2019	14520.0	6.32	6320	54958.2	347335824.0	347.34	0.77	24711.7	72.5	72500.0	93533.8	6781199376.3	6781.2	14.95
Q4 2019	14399.8	6.52	6520	54503.2	355361144.4	355.36	0.78	24052.5	59.9	59900.0	91038.7	5453218878.8	5453.2	12.02
Q1 2020	14439.2	4.58	4580	54652.4	250307863.8	250.31	0.55	24746.1	57.7	57700.0	93664.0	5404412136.5	5404.4	11.91

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)
Q2 2020	15347.0	7.26	7260	58088.4	421721747.7	421.72	0.93	25295.3	60.5	60500.0	95742.7	5792433985.3	5792.4	12.77
Totals Since Q3 2010	2050382.80						117.1	717172.1						356.3

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)
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	548229.2	19681429751.9	19681.4	43.39	99369.9	9.00	9000	376115.1	3385035643.5	3385.0	7.46
Q2 2013	187509.3	23.7	23700	709722.7	16820428001.9	16820.4	37.08	147310.4	5.24	5240	557569.9	2921666087.4	2921.7	6.44
Q3 2013	267703.5	32.6	32600	1013257.7	33032202568.5	33032.2	72.82	145840.9	5.69	5690	552007.8	3140924419.0	3140.9	6.92
Q4 2013	260555.3	34.6	34600	986201.8	34122582643.3	34122.6	75.23	126576.5	6.10	6100	479092.1	2922461520.3	2922.5	6.44
Q1 2014	229063.9	31.6	31600	867006.9	27397416823.4	27397.4	60.40	129979.2	2.16	2160	491971.3	1062657947.5	1062.7	2.34
Q2 2014	216984.1	35.0	35000	821284.8	28744968647.5	28745.0	63.37	124829.8	1.21	1210	472480.8	571701759.5	571.7	1.26
Q3 2014	213652.5	31.5	31500	808674.7	25473253443.8	25473.3	56.16	119663.9	1.60	1600	452927.9	724684578.4	724.7	1.60
Q4 2014	178468.7	35.7	35700	675504.0	24115493853.2	24115.5	53.17	107416.1	1.03	1030	406569.9	418767036.7	418.8	0.92
Q1 2015	92449.3	34.6	34600	349920.6	12107252777.3	12107.3	26.69	71452.4	14.40	14400	270447.3	3894441609.6	3894.4	8.59
Q2 2015	62664.2	31.8	31800	237184.0	7542451104.6	7542.5	16.63	91985.3	1.14	1140	348164.4	396907371.0	396.9	0.88
Q3 2015	66313.2	25.3	25300	250995.5	6350185188.6	6350.2	14.00	124137.1	1.63	1630	469858.9	765870045.3	765.9	1.69
Q4 2015	107799.1	29.6	29600	408019.6	12077379967.6	12077.4	26.63	116420.1	1.78	1780	440650.1	784357139.7	784.4	1.73
Q1 2016	100063.2	29.1	29100	378739.2	11021311069.2	11021.3	24.30	115483.2	0.84	837	437103.9	365855974.3	365.9	0.81
Q2 2016	65233.6	24.2	24200	246909.2	5975202059.2	5975.2	13.17	125606.0	0.96	959	475418.7	455926542.9	455.9	1.01
Q3 2016	51765.8	34.4	34400	195933.6	6740114223.2	6740.1	14.86	104983.6	1.78	1780	397362.9	707306008.3	707.3	1.56
Q4 2016	99522.5	31.9	31900	376692.7	12016495933.8	12016.5	26.49	98681.2	1.24	1240	373508.3	463150344.1	463.2	1.02
Q1 2017	99117.4	41.3	41300	375159.4	15494081526.7	15494.1	34.16	161.2	17.0	17000	610.1	10372414.0	10.4	0.02
Q2 2017	52808.7	39.9	39900	199880.9	7975249087.1	7975.2	17.58	101617.2	0.976	976	384621.1	375390195.6	375.4	0.83
Q3 2017	55574.6	40.0	40000	210349.9	8413994440.0	8414.0	18.55	124138.4	1.23	1230	469863.8	577932528.1	577.9	1.27
Q4 2017	106021.4	31.7	31700	401291.0	12720924668.3	12720.9	28.04	116731.9	1.29	1290	441830.2	569961011.5	570.0	1.26
Q1 2018	96900.2	44.9	44900	366767.3	16467849839.3	16467.8	36.31	116991.7	2.23	2230	442813.6	987474293.4	987.5	2.18
Q2 2018	53117.9	33.6	33600	201051.3	6755322050.4	6755.3	14.89	117758.3	1.14	1140	445715.2	508115288.7	508.1	1.12
Q3 2018	53142.6	33.8	33800	201144.8	6798693525.1	6798.7	14.99	111657.5	0.810	810	422623.6	342325146.4	342.3	0.75
Q4 2018	101606.4	38.4	38400	384580.2	14767880601.6	14767.9	32.56	114458.2	0.634	634	433224.3	274664198.0	274.7	0.61
Q1 2019	97701.0	39.3	39300	369798.4	14533077063.0	14533.1	32.04	90789.5	0.639	639	343638.1	219584725.6	219.6	0.48
Q2 2019	53197.3	33.2	33200	201351.9	6684881625.8	6684.9	14.74	88302.0	0.821	821	334223.1	274397140.5	274.4	0.60
Q3 2019	54445.7	36.4	36400	206077.0	7501201871.8	7501.2	16.54	87609.5	0.548	548	331602.0	181717872.7	181.7	0.40
Q4 2019	102211.0	33.8	33800	386868.7	13076162421.7	13076.2	28.83	85928.5	0.841	841	325239.5	273526407.8	273.5	0.60
Q1 2020	86344.4	37.1	37100	326813.5	12124780044.9	12124.8	26.73	85049.5	0.607	607	321912.2	195400732.1	195.4	0.43

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)
Q2 2020	57634.7	41.7	41700	218147.3	9096744057.2	9096.7	20.05	90767.9	0.851	851	343556.6	292366679.4	292.4	0.64
Totals Since Q3 2010	3414414.2						960.4	3181696.88						61.9

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

	TWN-02							TW4-01						
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)
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	31009.4	57.3	57300	117370.6	6725334176.7	6725.3	14.83	NA	NA	NA	NA	NA	NA	NA
Q2 2013	49579.3	57.7	57700	187657.7	10827846433.9	10827.8	23.87	NA	NA	NA	NA	NA	NA	NA
Q3 2013	50036.5	80.0	80000	189388.2	15151052200.0	15151.1	33.40	NA	NA	NA	NA	NA	NA	NA
Q4 2013	49979.9	111.0	111000	189173.9	20998305286.5	20998.3	46.29	NA	NA	NA	NA	NA	NA	NA
Q1 2014	48320.4	42.6	42600	182892.7	7791229616.4	7791.2	17.18	NA	NA	NA	NA	NA	NA	NA
Q2 2014	47611.9	44.7	44700	180211.0	8055433555.1	8055.4	17.76	NA	NA	NA	NA	NA	NA	NA
Q3 2014	46927.2	42.0	42000	177619.5	7460016984.0	7460.0	16.45	NA	NA	NA	NA	NA	NA	NA
Q4 2014	47585.6	70.6	70600	180111.5	12715871617.6	12715.9	28.03	NA	NA	NA	NA	NA	NA	NA
Q1 2015	47262.2	48.6	48600	178887.4	8693928952.2	8693.9	19.17	24569.2	7.06	7060	92994.4	656540619.3	656.5	1.45
Q2 2015	48497.3	52.8	52800	183562.3	9692088410.4	9692.1	21.37	23989.9	6.07	6070	90801.8	551166753.0	551.2	1.22
Q3 2015	48617.4	49.7	49700	184016.9	9145637892.3	9145.6	20.16	23652.0	6.3	6280	89522.8	562203309.6	562.2	1.2
Q4 2015	46754.1	44.9	44900	176964.3	7945695655.7	7945.7	17.52	20764.3	1.55	1550	78592.9	121818957.0	121.8	0.27
Q1 2016	47670.2	86.3	86300	180431.7	15571256314.1	15571.3	34.33	19255.6	0.15	148	72882.4	10786602.0	10.8	0.02
Q2 2016	50783.0	45.4	45400	192213.7	8726499937.0	8726.5	19.24	19588.2	0.14	138	74141.3	10231504.5	10.2	0.02
Q3 2016	42329.6	35.3	35300	160217.5	5655679020.8	5655.7	12.47	15613.5	5.49	5490	59097.1	324443065.3	324.4	0.72
Q4 2016	44640.6	32.6	32600	168964.7	5508248274.6	5508.2	12.14	16756.8	0.75	746	63424.5	47314668.0	47.3	0.10
Q1 2017	45283.2	27.4	27400	171396.9	4696275388.8	4696.3	10.35	16931.8	4.44	4440	64086.9	284545671.7	284.5	0.63
Q2 2017	42550.6	25.0	25000	161054.0	4026350525.0	4026.4	8.88	18200.2	5.74	5740	68887.8	395415725.2	395.4	0.87
Q3 2017	46668.9	23.9	23900	176641.8	4221738697.4	4221.7	9.31	17413.6	5.04	5040	65910.5	332188799.0	332.2	0.73
Q4 2017	38964.7	31.9	31900	147481.4	4704656325.1	4704.7	10.37	14089.8	5.78	5780	53329.9	308246781.5	308.2	0.68
Q1 2018	43341.0	19.6	19600	164045.7	3215295426.0	3215.3	7.09	12505.7	4.84	4840	47334.1	229096920.6	229.1	0.51
Q2 2018	43697.0	19.8	19800	165393.1	3274784271.0	3274.8	7.22	10814.8	4.38	4380	40934.0	179290998.8	179.3	0.40
Q3 2018	41776.0	18.6	18600	158122.2	2941072176.0	2941.1	6.48	9727.3	4.30	4300	36817.8	158316671.2	158.3	0.35
Q4 2018	38545.8	19.6	19600	145895.9	2859558718.8	2859.6	6.30	9836.7	4.57	4570	37231.9	170149826.4	170.1	0.38
Q1 2019	44752.8	19.0	19000	169389.3	3218397612.0	3218.4	7.10	10603.6	4.51	4510	40134.6	181007163.3	181.0	0.40
Q2 2019	43432.2	45.1	45100	164390.9	7414028552.7	7414.0	16.35	9393.9	1.43	1430	35555.9	50844953.4	50.8	0.11
Q3 2019	41377.5	23.2	23200	156613.8	3633441030.0	3633.4	8.01	9734.1	1.65	1650	36843.6	60791888.0	60.8	0.13
Q4 2019	34011.4	18.2	18200	128733.1	2342943311.8	2342.9	5.17	9184.3	3.91	3910	34762.6	135921670.2	135.9	0.30
Q1 2020	32230.0	16.5	16500	121990.6	2012844075.0	2012.8	4.44	9796.7	4.67	4670	37080.5	173165979.4	173.2	0.38

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

	TWN-02							TW4-01						
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)
Q2 2020	30078.9	16.1	16100	113848.6	1832963047.7	1833.0	4.04	9600.2	0.443	443	36336.8	16097183.4	16.1	0.04
Totals Since Q3 2010	1314314.6						465.3	332022.20						10.9

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

	TW4-02							TW4-11						
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)
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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q3 2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q4 2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q1 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q3 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q4 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q1 2015	24156.7	5.32	5320	91433.1	486424142.5	486.4	1.07	9898.7	8.72	8720	37466.6	326708573.2	326.7	0.72
Q2 2015	22029.9	4.30	4300	83383.2	358547637.5	358.5	0.79	5243.3	8.48	8480	19845.9	168293151.4	168.3	0.37
Q3 2015	21586.9	3.8	3760	81706.4	307216126.0	307.2	0.7	3584.4	9.6	9610	13567.0	130378427.9	130.4	0.3
Q4 2015	21769.8	5.18	5180	82398.7	426825229.7	426.8	0.94	4110.3	7.50	7500	15557.5	116681141.3	116.7	0.26
Q1 2016	20944.6	5.30	5300	79275.3	420159148.3	420.2	0.93	3676.2	7.13	7130	13914.4	99209793.2	99.2	0.22
Q2 2016	20624.0	6.67	6670	78061.8	520672472.8	520.7	1.15	3760.4	7.81	7810	14233.1	111160620.3	111.2	0.25
Q3 2016	17487.4	4.07	4070	66189.8	269392522.6	269.4	0.59	2953.8	8.83	8830	11180.1	98720574.4	98.7	0.22
Q4 2016	19740.6	6.07	6070	74718.2	453539298.0	453.5	1.00	3050.2	8.92	8920	11545.0	102981462.4	103.0	0.23
Q1 2017	19869.7	4.74	4740	75206.8	356480300.7	356.5	0.79	2984.2	8.12	8120	11295.2	91716999.6	91.7	0.20
Q2 2017	18716.7	4.90	4900	70842.7	347129276.6	347.1	0.77	2845.9	7.92	7920	10771.7	85312113.5	85.3	0.19
Q3 2017	19338.8	5.08	5080	73197.4	371842578.6	371.8	0.82	2830.0	7.78	7780	10711.6	83335859.0	83.3	0.18
Q4 2017	17327.6	3.28	3280	65585.0	215118688.5	215.1	0.47	2612.7	7.79	7790	9889.1	77035851.4	77.0	0.17
Q1 2018	16232.3	2.94	2940	61439.3	180631411.2	180.6	0.40	2571.0	7.89	7890	9731.2	76779444.2	76.8	0.17
Q2 2018	16051.4	3.50	3500	60754.5	212640921.5	212.6	0.47	2513.5	7.51	7510	9513.6	71447117.2	71.4	0.16
Q3 2018	14927.2	4.83	4830	56499.5	272892353.2	272.9	0.60	2170.2	7.15	7150	8214.2	58731580.1	58.7	0.13
Q4 2018	15464.1	3.52	3520	58531.6	206031297.1	206.0	0.45	2379.5	6.85	6850	9006.4	61693891.4	61.7	0.14
Q1 2019	16169.9	3.92	3920	61203.1	239916040.3	239.9	0.53	2342.4	7.50	7500	8866.0	66494880.0	66.5	0.15
Q2 2019	13893.7	4.38	4380	52587.7	230333926.7	230.3	0.51	2195.1	8.30	8300	8308.5	68960164.1	69.0	0.15
Q3 2019	14106.9	4.79	4790	53394.6	255760213.0	255.8	0.56	2046.0	7.15	7150	7744.1	55370386.5	55.4	0.12
Q4 2019	14220.9	3.40	3400	53826.1	183008762.1	183.0	0.40	1983.9	7.14	7140	7509.1	53614699.1	53.6	0.12
Q1 2020	13162.1	6.07	6070	49818.5	302398589.4	302.4	0.67	1947.4	7.07	7070	7370.9	52112326.6	52.1	0.11

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

	TW4-02							TW4-11						
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)
Q2 2020	14155.6	3.62	3620	53578.9	193955784.5	194.0	0.43	2003.9	7.56	7560	7584.8	57340796.9	57.3	0.13
Totals Since Q3 2010	391976.80						15.0	69703.00						4.7

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

	TW4-21							TW4-37						
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)
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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q3 2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q4 2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q1 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q3 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q4 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q1 2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2015	30743.7	13.1	13100	116364.9	1524380249.0	1524.4	3.4	29206.0	35.2	35200	110544.7	3891173792.0	3891.2	8.6
Q3 2015	125285.4	14.7	14700	474205.2	6970817013.3	6970.8	15.4	118063.9	32.4	32400	446871.9	14478648312.6	14478.6	31.9
Q4 2015	134774.9	14.30	14300	510123.0	7294758850.0	7294.8	16.08	111737.5	34.60	34600	422926.4	14633254737.5	14633.3	32.26
Q1 2016	125513.3	14.60	14600	475067.8	6935990471.3	6936.0	15.29	111591.0	28.40	28400	422371.9	11995362954.0	11995.4	26.45
Q2 2016	132248.7	13.10	13100	500561.3	6557353416.5	6557.4	14.46	119241.2	27.90	27900	451327.9	12592049581.8	12592.0	27.76
Q3 2016	110381.9	16.50	16500	417795.5	6893625609.8	6893.6	15.20	98377.6	33.40	33400	372359.2	12436797814.4	12436.8	27.42
Q4 2016	130311.3	13.50	13500	493228.3	6658581651.8	6658.6	14.68	101949.1	26.10	26100	385877.3	10071398665.4	10071.4	22.20
Q1 2017	54333.5	17.70	17700	205652.3	3640045665.8	3640.0	8.02	97071.7	32.30	32300	367416.4	11867549219.4	11867.5	26.16
Q2 2017	60969.7	9.53	9530	230770.3	2199241097.2	2199.2	4.85	93191.3	31.20	31200	352729.1	11005146999.6	11005.1	24.26
Q3 2017	120116.2	18.2	18200	454639.8	8274444669.4	8274.4	18.24	81749.3	30.5	30500	309421.1	9437343565.3	9437.3	20.81
Q4 2017	126492.5	16.9	16900	478774.1	8091282501.3	8091.3	17.84	87529.6	30.6	30600	331299.5	10137765801.6	10137.8	22.35
Q1 2018	117832.0	15.8	15800	445994.1	7046707096.0	7046.7	15.54	84769.3	30.0	30000	320851.8	9625554015.0	9625.6	21.22
Q2 2018	116681.0	14.1	14100	441637.6	6227089948.5	6227.1	13.73	83653.1	28.6	28600	316627.0	9055531728.1	9055.5	19.96
Q3 2018	110001.4	0.236	236	416355.3	98259850.6	98.3	0.22	77457.8	25.4	25400	293177.8	7446715434.2	7446.7	16.42
Q4 2018	121686.3	15.2	15200	460582.6	7000856211.6	7000.9	15.43	76271.4	27.3	27300	288687.2	7881161897.7	7881.2	17.38
Q1 2019	123264.1	8.99	8990	466554.5	4194325339.8	4194.3	9.25	77591.4	30.1	30100	293683.4	8839871814.9	8839.9	19.49
Q2 2019	106893.6	17.5	17500	404592.3	7080364830.0	7080.4	15.61	64950.1	31.2	31200	245836.1	7670087209.2	7670.1	16.91
Q3 2019	108132.9	14.7	14700	409283.0	6016460489.6	6016.5	13.26	67572.0	25.8	25800	255760.0	6598608516.0	6598.6	14.55
Q4 2019	116167.6	5.73	5730	439694.2	2519447632.8	2519.4	5.55	66732.4	25.5	25500	252582.1	6440844417.0	6440.8	14.20
Q1 2020	106622.0	8.93	8930	403564.3	3603829269.1	3603.8	7.95	65554.2	28.3	28300	248122.6	7021870910.1	7021.9	15.48

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

	TW4-21							TW4-37						
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)
Q2 2020	110999.1	15.4	15400	420131.7	6470028288.6	6470.0	14.26	65163.8	28.3	28300	246645.0	6980053018.9	6980.1	15.39
Totals Since Q3 2010	2289451.1						254.2	1779423.7						441.2

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

	TW4-39							TW4-40						
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)
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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q3 2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q4 2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q1 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q3 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q4 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q1 2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q3 2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q4 2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q1 2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q3 2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q4 2016	3589.3	20.70	20700	13585.5	281219860.4	281.2	0.62	NA	NA	NA	NA	NA	NA	NA
Q1 2017	103117.8	6.44	6440	390300.9	2513537622.1	2513.5	5.54	NA	NA	NA	NA	NA	NA	NA
Q2 2017	41313.0	6.25	6250	156369.7	977310656.3	977.3	2.15	NA	NA	NA	NA	NA	NA	NA
Q3 2017	34546.3	7.74	7740	130757.7	1012064950.2	1012.1	2.23	NA	NA	NA	NA	NA	NA	NA
Q4 2017	68180.2	2.65	2650	258062.1	683864451.1	683.9	1.51	NA	NA	NA	NA	NA	NA	NA
Q1 2018	59262.2	3.33	3330	224307.4	746943731.9	746.9	1.65	NA	NA	NA	NA	NA	NA	NA
Q2 2018	34259.8	4.84	4840	129673.3	627618980.1	627.6	1.38	NA	NA	NA	NA	NA	NA	NA
Q3 2018	33473.4	6.05	6050	126696.8	766515755.0	766.5	1.69	NA	NA	NA	NA	NA	NA	NA
Q4 2018	37003.6	6.39	6390	140058.6	894974620.1	895.0	1.97	NA	NA	NA	NA	NA	NA	NA
Q1 2019	49116.9	2.08	2080	185907.5	386687530.3	386.7	0.85	NA	NA	NA	NA	NA	NA	NA
Q2 2019	34285.7	8.45	8450	129771.4	1096568114.5	1096.6	2.42	81762.8	3.55	3550.0	309472.2	1098626302.9	1098.6	2.4
Q3 2019	36976.2	1.75	1750	139954.9	244921104.8	244.9	0.54	116414.2	3.39	3390.0	440627.7	1493728062.3	1493.7	3.3
Q4 2019	51808.6	0.948	948	196095.6	185898582.3	185.9	0.41	108281.9	2.89	2890.0	409847.0	1184457696.0	1184.5	2.6
Q1 2020	43169.3	0.792	792	163395.8	129409474.0	129.4	0.29	102021.5	2.98	2980.0	386151.4	1150731217.7	1150.7	2.5

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

	TW4-39							TW4-40						
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)
Q2 2020	37352.7	5.010	5010	141380.0	708313647.2	708.3	1.56	100757.1	2.91	2910.0	381365.7	1109774294.8	1109.8	2.4
Totals Since Q3 2010	667455.00						24.8							13.3

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

	TW4-41							
Quarter	Total Pumped (gal)	Conc (mg/L)	Conc (ug/L)	Total Pumped (liters)	Total (ug)	Total (grams)	Total (pounds)	Removed by All Wells
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	NA	NA	NA	NA	NA	NA	NA	95.73
Q2 2013	NA	NA	NA	NA	NA	NA	NA	91.71
Q3 2013	NA	NA	NA	NA	NA	NA	NA	176.53
Q4 2013	NA	NA	NA	NA	NA	NA	NA	162.07
Q1 2014	NA	NA	NA	NA	NA	NA	NA	103.14
Q2 2014	NA	NA	NA	NA	NA	NA	NA	101.87
Q3 2014	NA	NA	NA	NA	NA	NA	NA	92.99
Q4 2014	NA	NA	NA	NA	NA	NA	NA	108.57
Q1 2015	NA	NA	NA	NA	NA	NA	NA	82.61
Q2 2015	NA	NA	NA	NA	NA	NA	NA	68.86
Q3 2015	NA	NA	NA	NA	NA	NA	NA	118.63
Q4 2015	NA	NA	NA	NA	NA	NA	NA	124.50
Q1 2016	NA	NA	NA	NA	NA	NA	NA	132.55
Q2 2016	NA	NA	NA	NA	NA	NA	NA	99.98
Q3 2016	NA	NA	NA	NA	NA	NA	NA	101.12
Q4 2016	NA	NA	NA	NA	NA	NA	NA	106.06
Q1 2017	NA	NA	NA	NA	NA	NA	NA	116.19
Q2 2017	NA	NA	NA	NA	NA	NA	NA	80.12
Q3 2017	NA	NA	NA	NA	NA	NA	NA	93.37
Q4 2017	NA	NA	NA	NA	NA	NA	NA	106.21
Q1 2018	NA	NA	NA	NA	NA	NA	NA	111.99
Q2 2018	73711.2	6.54	6540	278996.9	1824639673.7	1824.6	4.02	84.14
Q3 2018	44981.6	6.13	6130	170255.2	1043664404.2	1043.7	2.30	61.86
Q4 2018	35431.5	6.02	6020	134108.2	807331529.6	807.3	1.78	98.49
Q1 2019	31903.6	6.71	6710	120755.1	810266895.5	810.3	1.79	101.08
Q2 2019	25146.5	6.00	6000	95179.5	571077015.0	571.1	1.26	101.72
Q3 2019	24045.6	6.22	6220	91012.6	566098347.1	566.1	1.25	80.19
Q4 2019	21186.4	6.11	6110	80190.5	489964101.6	490.0	1.08	76.97
Q1 2020	17289.9	6.12	6120	65442.3	400506701.6	400.5	0.88	86.86

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

	TW4-41							
Quarter	Total Pumped (gal)	Conc (mg/L)	Conc (ug/L)	Total Pumped (liters)	Total (ug)	Total (grams)	Total (pounds)	Removed by All Wells
Q2 2020	17294.9	6.78	6780	65461.1	443826399.0	443.8	0.98	85.95
Totals Since Q3 2010	290991.14						15.3	3293.02

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

Date	MW-30	MW-31	MW-5	MW-11
Q2 2010	15.8	22.5	ND	ND
Q3 2010	15	21	NS	ND
Q4 2010	16	20	0.2	ND
Q1 2011	16	21	NS	ND
Q2 2011	17	22	0.2	ND
Q3 2011	16	21	NS	ND
Q4 2011	16	21	0.2	ND
Q1 2012	17	21	NS	ND
Q2 2012	16	20	0.1	ND
Q3 2012	17	21	NS	ND
Q4 2012	18.5	23.6	ND	ND
Q1 2013	21.4	19.3	NS	ND
Q2 2013	18.8	23.8	ND	ND
Q3 2013	17.6	21.7	NS	ND
Q4 2013	19.5	23.9	0.279	ND
Q1 2014	18.4	20.6	NS	ND
Q2 2014	19.4	23.1	ND	ND
Q3 2014	16.8	18.9	NS	ND
Q4 2014	16.2	20.9	0.21	ND
Q1 2015	14.9	18.7	NS	ND
Q2 2015	17.0	19.0	0.142	ND
Q3 2015	17.9	19.9	NS	ND
Q4 2015	16.3	18.4	0.118	ND
Q1 2016	20.0	18.8	NS	ND
Q2 2016	17.3	18.6	0.156	0.117
Q3 2016	18.0	19.7	NS	ND
Q4 2016	17.2	18.8	0.241	ND
Q1 2017	17.4	21.1	NS	ND
Q2 2017	17.5	18.3	0.133	ND
Q3 2017	19.2	19.5	NS	ND
Q4 2017	17.4	19.2	0.337	ND
Q1 2018	17.6	18.8	NS	ND
Q2 2018	17.3	19.0	0.216	ND
Q3 2018	18.0	20.1	NS	ND
Q4 2018	17.3	18.3	0.309	ND
Q1 2019	17.9	19.0	NS	ND
Q2 2019	18.5	19.7	0.260	ND
Q3 2019	19.3	19.8	NS	0.558
Q4 2019	18.2	19.8	0.235	0.160
Q1 2020	16.4	17.5	NS	0.308
Q2 2020	18.1	18.8	0.142	0.297

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

Table 9
*Recalculated Background Flow

	Background Flow (gpm)	*Recalculated Background Flow (gpm)
minimum	1.31	0.79
maximum	2.79	1.67

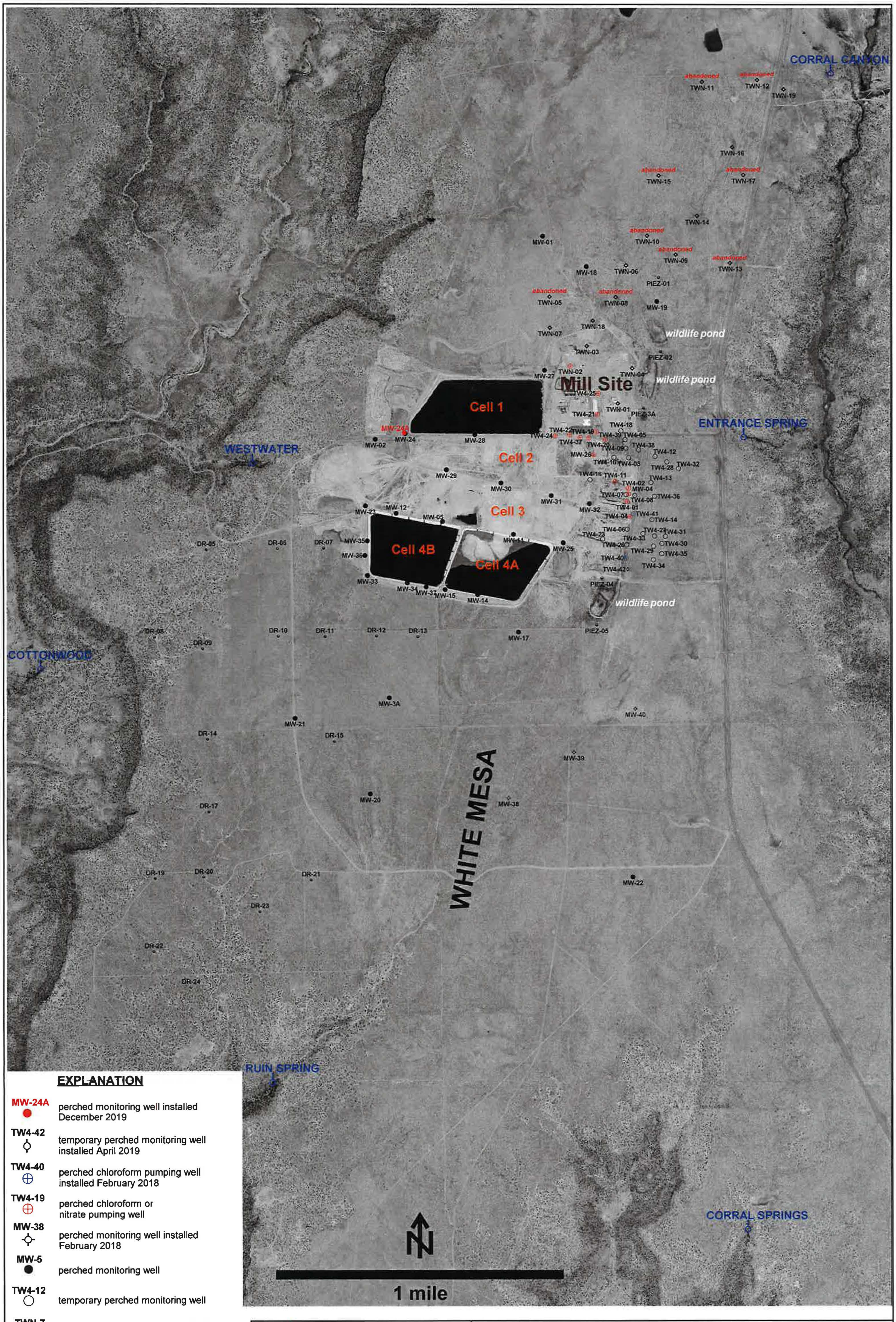
** recalculated based on reduced widlife pond recharge as presented in the third quarter, 2015 Nitrate Monitoring Report*

gpm = gallons per minute

INDEX OF TABS

Tab A

Site Plan and Perched Well Locations White Mesa Site



EXPLANATION

MW-24A ●	perched monitoring well installed December 2019
TW4-42 ○	temporary perched monitoring well installed April 2019
TW4-40 ⊕	perched chloroform pumping well installed February 2018
TW4-19 ⊕	perched chloroform or nitrate pumping well
MW-38 ◇	perched monitoring well installed February 2018
MW-5 ●	perched monitoring well
TW4-12 ○	temporary perched monitoring well
TWN-7 ◆	temporary perched nitrate monitoring well
PIEZ-1 ●	perched piezometer
RUIN SPRING	seep or spring

HYDRO
GEO
CHEM, INC.

WHITE MESA SITE PLAN SHOWING LOCATIONS OF PERCHED WELLS AND PIEZOMETERS

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/aug19/Uwelloc1219.srf	A-1

Tab B

Order of Sampling and Field Data Worksheets

Nitrate Order
2nd Quarter 2020

Nitrate Samples

Name	Nitrate Mg/L Previous Qrt.	Date/Purge	sample	Depth	Total Depth
TWN-18	0.224	5/20/20	0836		145
TWN-04	1.89	5/20/20	0914		125.7
TWN-01	2.24	5/20/20	0950		112.5
TWN-07	14.20	5/21/20	1015		105
TWN-02	16.5	5/20/20	1030		96
TWN-03	19.4	5/21/20	1035		96
Duplicate of TWN-04		5/20/20	0914		
Rinsate					
DI Sample TWN-60		5/20/20	1330		

Piez-01	7.12	5/20/20	1240		
Piez-0 2	0.74	5/20/20	1225		
Piez -03A	10.5	5/20/20	1305		

Rinsate Samples

Name	Date	Sample
TWN-18R	5/20/20	0814
TWN-4R		
TWN-1R		
TWN-7R		
TWN-3R		
TWN-2R		

Samplers: Tanner Holliday

Deen Lyman

ENERGY FUELS

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	PIEZ-01
Field Sample ID	PIEZ-01_05202020
Purge Date & Time	5/20/2020 12:35
Sample Date & Time	5/20/2020 12:40

Sampling Program	Nitrate Quarterly
Sampling Event	2020 Q2 Nitrate
Sampler	TH/DL

Purging Equipment	Bailer
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume (gal)	1.66
Calculated Casing Volumes Purge Duration ()	
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Sunny and windy
External Ambient Temperature (C)	19
Previous Well Sampled	PIEZ-02

Well Depth (ft)	107.50
Well Casing Diameter (in)	1
Depth to Water Before Purging (ft)	66.84

Date/Time	Gallons Purged	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/20/2020 12:39		2300	6.55	15.28	351	5.6	63.0	

Volume of water purged ()	

Final Depth to Water (feet)	67.85

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) ()	
Time to evacuate 2 Casing Volumes ()	
Number of casing Volumes	
Volume, if well evacuated to dryness ()	0

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container		Sample Filtered?	Preservative	
			Number	Type		Type	Added?
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived on site at 1233. Samples bailed and collected at 1240. Water was murky. Left site at 1246.

Signature of Field Technician

Tanner Holliday

ENERGY FUELS

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	PIEZ-02
Field Sample ID	PIEZ-02_05202020
Purge Date & Time	5/20/2020 12:20
Sample Date & Time	5/20/2020 12:25

Sampling Program	Nitrate Quarterly
Sampling Event	2020 Q2 Nitrate

Sampler	TH/DL

Purging Equipment	Bailer
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume (gal)	2.26
Calculated Casing Volumes Purge Duration ()	
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Sunny and windy
External Ambient Temperature (C)	18
Previous Well Sampled	TWN-03

Well Depth (ft)	100.00
Well Casing Diameter (in)	1
Depth to Water Before Purging (ft)	44.82

Date/Time	Gallons Purged	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/20/2020 12:22		853.1	6.74	15.35	335	0.8	23.5	

Volume of water purged ()	

Final Depth to Water (feet)	45.90

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) ()	
Time to evacuate 2 Casing Volumes ()	
Number of casing Volumes	
Volume, if well evacuated to dryness ()	0

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container Number	Container Type	Sample Filtered?	Preservative Type	Preservative Added?
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived on site at 1218. Bailing began at 1220. Samples collected at 1225. Water was mostly clear. Left site at 1229.

Signature of Field Technician

Tanner Holliday

Groundwater Discharge Permit
Groundwater Monitoring Quality Assurance Plan

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	PIEZ-03A
Field Sample ID	PIEZ-03A_05202020
Purge Date & Time	5/20/2020 13:00
Sample Date & Time	5/20/2020 13:05

Sampling Program	Nitrate Quarterly
Sampling Event	2020 Q2 Nitrate
Sampler	TH/DL

Purging Equipment	Bailer
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume (gal)	0.94
Calculated Casing Volumes Purge Duration ()	
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Sunny and windy
External Ambient Temperature (C)	20
Previous Well Sampled	PIEZ-01

Well Depth (ft)	79.00
Well Casing Diameter (in)	1
Depth to Water Before Purging (ft)	55.85

Date/Time	Gallons Purged	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/20/2020 13:02		1135	6.78	15.94	376	5.7	90.0	

Volume of water purged ()	

Final Depth to Water (feet)	56.65

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) ()	
Time to evacuate 2 Casing Volumes ()	
Number of casing Volumes	
Volume, if well evacuated to dryness ()	0

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container Number	Container Type	Sample Filtered?	Preservative Type	Preservative Added?
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived on site at 1259. Samples bailed and collected at 1305. Water was mostly clear. Left site at 1310.

Signature of Field Technician

Tanner Holliday

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TWN-01
Field Sample ID	TWN-01_05202020
Purge Date & Time	5/20/2020 9:44
Sample Date & Time	5/20/2020 9:50

Sampling Program	Nitrate Quarterly
Sampling Event	2020 Q2 Nitrate
Sampler	TH/DL

Purging Equipment	Pump
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume (gal)	24.97
Calculated Casing Volumes Purge Duration (min)	4.54
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Sunny and windy
External Ambient Temperature (C)	13
Previous Well Sampled	TWN-04

Well Depth (ft)	106.13
Well Casing Diameter (in)	4
Depth to Water Before Purging (ft)	67.88

Date/Time	Gallons Purged (gal)	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/20/2020 9:47	33.00	894.7	6.48	15.30	369	9.0	60.0	
5/20/2020 9:48	44.00	897.0	6.50	15.27	367	9.1	63.0	
5/20/2020 9:49	55.00	894.0	6.50	15.28	366	9.2	62.0	
5/20/2020 9:50	66.00	897.0	6.51	15.25	365	9.2	61.0	

Volume of water purged (gals)	66.00

Final Depth to Water (feet)	102.88

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) (gal/min)	11.00
Time to evacuate 2 Casing Volumes (min)	6.00
Number of casing Volumes	2.00
Volume, if well evacuated to dryness ()	0

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container Number	Container Type	Sample Filtered?	Preservative Type	Preservative Added?
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived on site at 0939. Purge began at 0944. Purged well for a total of 6 minutes. Purge ended and samples collected at 0950. Water water mostly clear. Left site at 0953.

Signature of Field Technician

Tanner Holliday

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TWN-02
Field Sample ID	TWN-02_05202020
Purge Date & Time	5/20/2020 10:28
Sample Date & Time	5/20/2020 10:30

Sampling Program	Nitrate Quarterly
Sampling Event	2020 Q2 Nitrate
Sampler	TH/DL

Purging Equipment	Pump
Pump Type	Continuous
Purging Method	2 Casings
Casing Volume (gal)	23.51
Calculated Casing Volumes Purge Duration ()	
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Sunny and windy
External Ambient Temperature (C)	14
Previous Well Sampled	TWN-07

Well Depth (ft)	95.90
Well Casing Diameter (in)	4
Depth to Water Before Purging (ft)	59.89

Date/Time	Gallons Purged	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/20/2020 10:29		2112	6.15	15.22	416	0	91.0	

Volume of water purged ()	

Final Depth to Water (feet)	68.95

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) (gal/min)	16.00
Time to evacuate 2 Casing Volumes ()	
Number of casing Volumes	
Volume, if well evacuated to dryness ()	0

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container		Sample Filtered?	Preservative	
			Number	Type		Type	Added?
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived on site at 1026. Samples collected at 1030.

Signature of Field Technician

Tanner Holliday

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TWN-03
Field Sample ID	TWN-03_05212020
Purge Date & Time	5/20/2020 10:51
Sample Date & Time	5/21/2020 10:35

Sampling Program	Nitrate Quarterly
Sampling Event	2020 Q2 Nitrate

Sampler	TH/DL

Purging Equipment	Pump
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume (gal)	34.83
Calculated Casing Volumes Purge Duration (min)	6.33
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Sunny and windy
External Ambient Temperature (C)	15
Previous Well Sampled	TWN-02

Well Depth (ft)	96.00
Well Casing Diameter (in)	4
Depth to Water Before Purging (ft)	42.65

Date/Time	Gallons Purged (gal)	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/20/2020 10:55	44.00	2291	6.71	15.00	303	33.00	44.0	
5/21/2020 10:34		2274	6.50	15.24				Before
5/21/2020 10:38		2280	6.53	15.20				After

Volume of water purged (gals)	44.00

Final Depth to Water (feet)	94.05

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) (gal/min)	11.00
Time to evacuate 2 Casing Volumes (min)	4.00
Number of casing Volumes	1.26
Volume, if well evacuated to dryness (gals)	44.00

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container		Sample Filtered?	Preservative	
			Number	Type		Type	Added?
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived on site at 1047. Purge began at 1051. Purged well for a total of 4 minutes. Purged well dry. Purge ended at 1055. Water was murky. Left site at 1100.
Arrived on site at 1031. Depth to water was 42.43. Samples bailed and collected at 1035. Left site at 1038.

Signature of Field Technician

Tanner Holliday

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TWN-04
Field Sample ID	TWN-04_05202020
Purge Date & Time	5/20/2020 9:04
Sample Date & Time	5/20/2020 9:14

Sampling Program	Nitrate Quarterly
Sampling Event	2020 Q2 Nitrate

Sampler	TH/DL

Purging Equipment	Pump
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume (gal)	42.80
Calculated Casing Volumes Purge Duration (min)	7.78
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Sunny and windy
External Ambient Temperature (C)	13
Previous Well Sampled	TWN-18

Well Depth (ft)	126.40
Well Casing Diameter (in)	4
Depth to Water Before Purging (ft)	60.85

Date/Time	Gallons Purged (gal)	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/20/2020 9:11	77.00	1039	6.55	14.83	381	1.3	67.0	
5/20/2020 9:12	88.00	1037	6.57	14.83	382	1.6	66.2	
5/20/2020 9:13	99.00	1036	6.57	14.85	383	1.6	65.9	
5/20/2020 9:14	110.00	1034	6.58	14.83	384	1.7	65.8	

Volume of water purged (gals)	110.00

Final Depth to Water (feet)	62.20

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) (gal/min)	11.00
Time to evacuate 2 Casing Volumes (min)	10.00
Number of casing Volumes	2.00
Volume, if well evacuated to dryness ()	0

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container Number	Container Type	Sample Filtered?	Preservative Type	Preservative Added?
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived on site at 0900. Purge began at 0904. Purged well for a total of 10 minutes. Purge ended and samples collected at 0914. Water was clear. Left site at 0918.

Signature of Field Technician

Tanner Holliday

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TWN-07
Field Sample ID	TWN-07_05212020
Purge Date & Time	5/20/2020 10:13
Sample Date & Time	5/21/2020 10:15

Sampling Program	Nitrate Quarterly
Sampling Event	2020 Q2 Nitrate

Sampler	TH/DL

Purging Equipment	Pump
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume (gal)	16.97
Calculated Casing Volumes Purge Duration (min)	3.08
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Sunny and windy
External Ambient Temperature (C)	14
Previous Well Sampled	TWN-01

Well Depth (ft)	107.20
Well Casing Diameter (in)	4
Depth to Water Before Purging (ft)	81.21

Date/Time	Gallons Purged (gal)	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/20/2020 10:14	16.50	1830	6.42	14.99	401	2.0	74.0	
5/21/2020 10:14		1784	5.90	16.00				Before
5/21/2020 10:16		1790	5.94	15.97				After

Volume of water purged (gals)	16.50

Final Depth to Water (feet)	106.02

Pumping Rate Calculations

Flow Rate (Q = S/60) (gal/min)	11.00
Time to evacuate 2 Casing Volumes (min)	1.50
Number of casing Volumes	0.97
Volume, if well evacuated to dryness (gals)	16.50

Name of Certified Analytical Laboratory
AWSL

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container Number	Container Type	Sample Filtered?	Preservative Type	Preservative Added?
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived on site at 1010. Purge began at 1013. Purged well for a total of 1 minute and 30 seconds. Purged well dry. Purge ended at 1014. Water was clear. Left site at 1017.
Arrived on site at 1011. Depth to water was 91.52. Samples bailed and collected at 1015. Left site at 1017.

Signature of Field Technician

Tanner Holliday

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TWN-18
Field Sample ID	TWN-18_05202020
Purge Date & Time	5/20/2020 8:24
Sample Date & Time	5/20/2020 8:36

Sampling Program	Nitrate Quarterly
Sampling Event	2020 Q2 Nitrate

Sampler	TH/DL

Purging Equipment	Pump
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume (gal)	55.49
Calculated Casing Volumes Purge Duration (min)	10.08
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Sunny and windy.
External Ambient Temperature (C)	11
Previous Well Sampled	TWN-18R

Well Depth (ft)	147.00
Well Casing Diameter (in)	4
Depth to Water Before Purging (ft)	62.02

Date/Time	Gallons Purged (gal)	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/20/2020 8:33	99.00	2667	6.17	14.55	350	1.0	1.2	
5/20/2020 8:34	110.00	2662	6.18	14.56	349	1.1	1.1	
5/20/2020 8:35	121.00	2659	6.19	14.55	347	1.2	1.1	
5/20/2020 8:36	132.00	2660	6.19	14.57	346	1.2	1.1	

Volume of water purged (gals)	132.00

Final Depth to Water (feet)	63.60

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) (gal/min)	11.00
Time to evacuate 2 Casing Volumes (min)	12.00
Number of casing Volumes	2.00
Volume, if well evacuated to dryness ()	0

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container		Sample Filtered?	Preservative	
			Number	Type		Type	Added?
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived on site at 0821. Purge began at 0824. Purged well for a total of 12 minutes. Purge ended and samples collected at 0836. Water was clear. Left site at 0839.

Signature of Field Technician

Tanner Holliday

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TWN-18R
Field Sample ID	TWN-18R_05202020
Purge Date & Time	
Sample Date & Time	5/20/2020 8:14

Sampling Program	
Sampling Event	2020 Q2 Nitrate

Sampler	TH/DL

Purging Equipment	
Pump Type	
Purging Method	
Casing Volume ()	
Calculated Casing Volumes Purge Duration ()	
pH Buffer 7.0	
pH Buffer 4.0	
Specific Conductance ()	

Weather Conditions	
External Ambient Temperature ()	
Previous Well Sampled	

Well Depth (ft)	
Well Casing Diameter ()	
Depth to Water Before Purging (ft)	

Date/Time	Gallons Purged (gal)	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/20/2020 8:13	132.00	15.2	6.65	17.32	392	3.0	95.0	

Volume of water purged ()	

Final Depth to Water (feet)	

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) ()	
Time to evacuate 2 Casing Volumes ()	
Number of casing Volumes	
Volume, if well evacuated to dryness ()	

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container		Sample Filtered?	Preservative	
			Number	Type		Type	Added?
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Signature of Field Technician

Tanner Holliday

ENERGY FUELS

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TW4-22
Field Sample ID	TW4-22_05272020
Purge Date & Time	5/27/2020 9:34
Sample Date & Time	5/27/2020 9:35

Sampling Program	Chloroform Monitoring
Sampling Event	2020 Q2 Chloroform
Sampler	TH/DL

Purging Equipment	Pump
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume (gal)	27.29
Calculated Casing Volumes Purge Duration ()	
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Partly cloudy
External Ambient Temperature (C)	22
Previous Well Sampled	TW4-24

Well Depth (ft)	114.70
Well Casing Diameter (in)	4
Depth to Water Before Purging (ft)	72.90

Date/Time	Gallons Purged	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/27/2020 9:34		5326	7.24	16.48	348	0	90.3	

Volume of water purged ()	

Final Depth to Water (feet)	105.64

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) (gal/min)	18.00
Time to evacuate 2 Casing Volumes ()	
Number of casing Volumes	
Volume, if well evacuated to dryness ()	0

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container		Sample Filtered?	Preservative	
			Number	Type		Type	Added?
VOCs-Chloroform	Y	WATER	3	40ml VOA	U	HCl (pH<2), 4 Deg C	Y
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived on site at 0931. Samples collected at 0935. Water was clear. Left site at 0937.

Signature of Field Technician

Tanner Holliday

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TW4-24
Field Sample ID	TW4-24_05272020
Purge Date & Time	5/27/2020 9:24
Sample Date & Time	5/27/2020 9:25

Sampling Program	Chloroform Monitoring
Sampling Event	2020 Q2 Chloroform
Sampler	TH/DL

Purging Equipment	Pump
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume (gal)	28.66
Calculated Casing Volumes Purge Duration ()	
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Partly cloudy
External Ambient Temperature (C)	20
Previous Well Sampled	TW4-25

Well Depth (ft)	114.80
Well Casing Diameter (in)	4
Depth to Water Before Purging (ft)	70.90

Date/Time	Gallons Purged	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/27/2020 9:24		7951	7.08	16.00	347	25.0	19.4	

Volume of water purged ()	

Final Depth to Water (feet)	78.23

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) (gal/min)	17.00
Time to evacuate 2 Casing Volumes ()	
Number of casing Volumes	
Volume, if well evacuated to dryness ()	0

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container		Sample Filtered?	Preservative	
			Number	Type		Type	Added?
VOCs-Chloroform	Y	WATER	3	40ml VOA	U	HCl (pH<2), 4 Deg C	Y
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived on site at 0920. Samples collected at 0925. Water was clear but had little bubbles surfacing. Left site at 0927.

Signature of Field Technician

Tanner Holliday

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TW4-25
Field Sample ID	TW4-25_05272020
Purge Date & Time	5/27/2020 9:13
Sample Date & Time	5/27/2020 9:15

Sampling Program	Chloroform Monitoring
Sampling Event	2020 Q2 Chloroform
Sampler	TH/DL

Purging Equipment	Pump
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume (gal)	43.62
Calculated Casing Volumes Purge Duration ()	
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Partly cloudy
External Ambient Temperature (C)	20
Previous Well Sampled	TW4-21

Well Depth (ft)	136.70
Well Casing Diameter (in)	4
Depth to Water Before Purging (ft)	69.89

Date/Time	Gallons Purged	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/27/2020 9:14		2514	7.12	16.05	311	0	42.0	

Volume of water purged ()	

Final Depth to Water (feet)	89.23

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) (gal/min)	12.6
Time to evacuate 2 Casing Volumes ()	
Number of casing Volumes	
Volume, if well evacuated to dryness ()	0

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container		Sample Filtered?	Preservative	
			Number	Type		Type	Added?
VOCs-Chloroform	Y	WATER	3	40ml VOA	U	HCl (pH<2), 4 Deg C	Y
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived on site at 0910. Samples collected at 0915. Water was clear. Left site at 0917.

Signature of Field Technician

Tanner Holliday

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TWN-60
Field Sample ID	TWN-60_05202020
Purge Date & Time	5/20/2020 13:26
Sample Date & Time	5/20/2020 13:30

Sampling Program	Nitrate Quarterly
Sampling Event	2020 Q2 Nitrate
Sampler	TH/DL

Purging Equipment	Pump
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume ()	
Calculated Casing Volumes Purge Duration ()	
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Sunny and windy
External Ambient Temperature (C)	20
Previous Well Sampled	PIEZ-03A

Well Depth (ft)	
Well Casing Diameter ()	
Depth to Water Before Purging (ft)	

Date/Time	Gallons Purged	Conductivity (umhos/cm)	pH (pH Units)	Temp (deg C)	Redox (mV)	Turbidity (NTU)	Dissolved Oxygen (%)	Before/After
5/20/2020 13:29		2.2	7.25	19.75	333	0	19.3	

Volume of water purged ()	

Final Depth to Water (feet)	

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) ()	
Time to evacuate 2 Casing Volumes ()	
Number of casing Volumes	
Volume, if well evacuated to dryness ()	0

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container		Sample Filtered?	Preservative	
			Number	Type		Type	Added?
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived in lab at 1325. DI sample was collected at 1330. Left site at 1333.

Signature of Field Technician

Tanner Holliday

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TW4-60
Field Sample ID	TW4-60_05272020
Purge Date & Time	5/27/2020 13:09
Sample Date & Time	5/27/2020 13:10

Sampling Program	Chloroform Monitoring
Sampling Event	2020 Q2 Chloroform
Sampler	TH/DL

Purging Equipment	Pump
Pump Type	Grundfos
Purging Method	2 Casings
Casing Volume ()	
Calculated Casing Volumes Purge Duration ()	
pH Buffer 7.0	7.0
pH Buffer 4.0	4.0
Specific Conductance (micromhos)	1000

Weather Conditions	Partly cloudy
External Ambient Temperature (C)	28
Previous Well Sampled	TW4-40

Well Depth (ft)	
Well Casing Diameter ()	
Depth to Water Before Purging (ft)	

Date/Time	**Gallons Purged**	**Conductivity (umhos/cm)**	**pH (pH Units)**	**Temp (deg C)**	**Redox (mV)**	**Turbidity (NTU)**	**Dissolved Oxygen (%)**	**Before/After**
5/27/2020 13:09		1.0	7.71	22.10	333	0	95.0	

Volume of water purged ()	

Final Depth to Water (feet)	

Name of Certified Analytical Laboratory
AWSL

Pumping Rate Calculations

Flow Rate (Q = S/60) ()	
Time to evacuate 2 Casing Volumes ()	
Number of casing Volumes	
Volume, if well evacuated to dryness ()	0

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container		Sample Filtered?	Preservative	
			Number	Type		Type	Added?
VOCs-Chloroform	Y	WATER	3	40ml VOA	U	HCl (pH<2), 4 Deg C	Y
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Arrived in lab at 1305. Samples collected at 1310. Left site at 1312.

Signature of Field Technician

White Mesa Mill
Field Data Worksheet For Groundwater

Location ID	TWN-65
Field Sample ID	TWN-65_05202020
Purge Date & Time	
Sample Date & Time	5/20/2020 9:14

Sampling Program	
Sampling Event	2020 Q2 Nitrate
Sampler	TH/DL

Purging Equipment	
Pump Type	
Purging Method	
Casing Volume ()	
Calculated Casing Volumes Purge Duration ()	
pH Buffer 7.0	
pH Buffer 4.0	
Specific Conductance ()	

Weather Conditions	
External Ambient Temperature ()	
Previous Well Sampled	

Well Depth (ft)	
Well Casing Diameter ()	
Depth to Water Before Purging (ft)	

Date/Time	Gallons Purged	Conductivity	pH	Temp	Redox	Turbidity	Dissolved Oxygen	Before/After

Volume of water purged ()	

Final Depth to Water (feet)	

Pumping Rate Calculations

Flow Rate (Q = S/60) ()	
Time to evacuate 2 Casing Volumes ()	
Number of casing Volumes	
Volume, if well evacuated to dryness ()	

Name of Certified Analytical Laboratory
AWSL

Analytical Samples Information

Type of Sample/Analysis	Sample Collected?	Matrix	Container		Sample Filtered?	Preservative	
			Number	Type		Type	Added?
Chloride	Y	WATER	1	500-mL Poly	U	None	N
Nitrate/nitrite as N	Y	WATER	1	250-mL HDPE	U	H2SO4 (pH<2), 4 Deg C	Y

Comments:

Duplicate of TWN-04

Signature of Field Technician

Tanner Holliday

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: Deen Lyman, Tanner Holliday

Date: 5/4/2020-5/5/2020

Date	Time	Well	Depth to Water (ft.)	Date	Time	Well	Depth to Water (ft.)	Date	Time	Well	Depth to Water (ft.)
5/5/2020	1224	MW-01	64.51	5/4/2020	921	MW-04	88.70	5/5/2020	1211	PIEZ-01	66.49
5/5/2020	1453	MW-02	109.77	5/4/2020	927	TW4-01	106.14	5/5/2020	1203	PIEZ-02	43.95
5/5/2020	1118	MW-03A	83.98	5/4/2020	916	TW4-02	110.21	5/5/2020	1429	PIEZ-03A	55.93
5/5/2020	958	MW-05	108.21	5/4/2020	1106	TW4-03	63.31	5/5/2020	1044	PIEZ-04	65.71
5/5/2020	1040	MW-11	85.25	5/4/2020	944	TW4-04	80.33	5/5/2020	1049	PIEZ-05	64.44
5/5/2020	1001	MW-12	107.15	5/4/2020	1115	TW4-05	70.55	5/5/2020	1445	TWN-01	67.85
5/5/2020	1030	MW-14	102.28	5/4/2020	1055	TW4-06	78.02	5/5/2020	815	TWN-02	59.80
5/5/2020	1026	MW-15	105.31	5/4/2020	1058	TW4-07	82.78	5/5/2020	1435	TWN-03	42.72
5/5/2020	1100	MW-17	71.59	5/4/2020	1102	TW4-08	86.15	5/5/2020	1418	TWN-04	60.88
5/5/2020	1219	MW-18	73.26	5/4/2020	1113	TW4-09	68.55	5/5/2020	1215	TWN-06	79.67
5/5/2020	1207	MW-19	64.63	5/4/2020	1119	TW4-10	67.97	5/5/2020	1228	TWN-07	82.12
5/5/2020	1310	MW-20	89.71	5/4/2020	910	TW4-11	90.60	5/5/2020	1240	TWN-14	59.36
5/5/2020	1305	MW-22	66.49	5/4/2020	1038	TW4-12	54.78	5/5/2020	1236	TWN-16	47.40
5/5/2020	1459	MW-23	117.15	5/4/2020	1035	TW4-13	56.12	5/5/2020	1414	TWN-18	62.11
5/5/2020	1405	MW-24A	112.03	5/4/2020	1028	TW4-14	77.65	5/5/2020	1300	TWN-19	53.79
5/5/2020	1405	MW-24	110.94	5/4/2020	1123	TW4-16	72.40	5/5/2020	1338	DR-05	82.77
5/5/2020	1035	MW-25	79.63	5/4/2020	1130	TW4-18	71.60	5/5/2020	1334	DR-06	94.23
5/5/2020	848	MW-26	85.63	5/4/2020	1010	TW4-19	68.18	5/5/2020	1005	DR-07	91.34
5/5/2020	1409	MW-27	57.17	5/4/2020	838	TW4-20	69.90	5/5/2020	1349	DR-08	51.52
5/5/2020	1352	MW-28	74.70	5/4/2020	804	TW4-21	72.12	5/5/2020	1345	DR-09	86.43
5/5/2020	1130	MW-29	107.75	5/4/2020	828	TW4-22	70.23	5/5/2020	1329	DR-10	78.25
5/5/2020	1524	MW-30	75.23	5/4/2020	1052	TW4-23	74.61	5/5/2020	1113	DR-11	98.41
5/5/2020	1519	MW-31	68.48	5/4/2020	821	TW4-24	69.51	5/5/2020	1109	DR-12	91.56
5/5/2020	1515	MW-32	80.25	5/4/2020	809	TW4-25	72.45	5/5/2020	1104	DR-13	69.20
5/5/2020	1011	MW-33	DRY	5/4/2020	1048	TW4-26	72.60	5/5/2020	1355	DR-14	75.75
5/5/2020	1017	MW-34	107.61	5/4/2020	900	TW4-27	78.97	5/5/2020	1324	DR-15	92.36
5/5/2020	1503	MW-35	112.38	5/4/2020	1041	TW4-28	47.99	5/5/2020	1359	DR-17	64.78
5/5/2020	1506	MW-36	110.60	5/4/2020	1025	TW4-29	77.53	5/5/2020	1403	DR-19	63.20
5/5/2020	1021	MW-37	113.55	5/4/2020	1015	TW4-30	75.08	5/5/2020	1420	DR-20	55.51
5/5/2020	1319	MW-38	70.03	5/4/2020	904	TW4-31	76.57	5/5/2020	1425	DR-21	100.16
5/5/2020	1315	MW-39	64.88	5/4/2020	1044	TW4-32	55.55	5/5/2020	1408	DR-22	DRY
5/5/2020	1055	MW-40	80.15	5/4/2020	857	TW4-33	77.05	5/5/2020	1430	DR-23	70.38
				5/4/2020	1022	TW4-34	75.72	5/5/2020	1412	DR-24	44.00
				5/4/2020	1018	TW4-35	75.07				
				5/4/2020	1032	TW4-36	57.65				
				5/4/2020	834	TW4-37	76.17				
				5/4/2020	1110	TW4-38	58.79				
				5/4/2020	843	TW4-39	85.05				
				5/4/2020	952	TW4-40	71.77				
				5/4/2020	937	TW4-41	88.02				
				5/4/2020	853	TW4-42	68.60				

MW-26 = TW4-15

Comments: MW-32 = TW4-17

Monthly Depth Check Form

Date 4/2/2020 **Name** Deen Lyman, Tanner Holliday

Time	**Well**	**Depth***	**Time**	**Well**	**Depth***
1010	MW-4	89.68	1229	TWN-1	67.55
1007	TW4-1	105.55	1219	TWN-2	78.10
1015	TW4-2	111.71	1209	TWN-3	42.29
1023	TW4-3	62.76	1212	TWN-4	60.45
1000	TW4-4	86.12	1206	TWN-7	81.31
1035	TW4-5	70.11	1215	TWN-18	61.75
0955	TW4-6	77.45	1203	MW-27	56.65
1012	TW4-7	82.72	1157	MW-30	74.74
1021	TW4-8	85.85	1153	MW-31	68.73
1031	TW4-9	68.08			
1038	TW4-10	67.45			
1018	TW4-11	90.74			
0921	TW4-12	54.23			
0918	TW4-13	55.53	0925	TW4-28	47.26
0911	TW4-14	77.42	0844	TW4-29	77.04
1046	TW4-15	79.15	0830	TW4-30	74.61
1042	TW4-16	77.88	0827	TW4-31	76.14
1150	TW4-17	80.65	0928	TW4-32	54.80
1226	TW4-18	71.15	0820	TW4-33	76.63
1245	TW4-19	70.11	0839	TW4-34	75.28
1057	TW4-20	79.77	0834	TW4-35	74.65
1224	TW4-21	73.02	0915	TW4-36	57.24
1147	TW4-22	64.65	1054	TW4-37	74.19
0950	TW4-23	74.06	1028	TW4-38	58.24
1145	TW4-24	66.86	1050	TW4-39	72.33
1221	TW4-25	107.78	0939	TW4-40	72.03
0945	TW4-26	71.97	1003	TW4-41	81.18
0823	TW4-27	78.55	0816	TW4-42	67.98

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

* Depth is measured to the nearest 0.01 feet

Weekly Inspection Form

Date 4-6-20

Name Deen Lyman, Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
0952	MW-4	92.88	Flow 3.8	[✓ Yes] No
			Meter 2498953.03	[✓ Yes] No
0933	MW-26	84.12	Flow 10.2	[✓ Yes] No
			Meter 464326.6	[✓ Yes] No
1045	TW4-19	69.73	Flow 18.0	[✓ Yes] No
			Meter 2109475.5	[✓ Yes] No
0923	TW4-20	68.05	Flow 4.0	[✓ Yes] No
			Meter 336043.55	[✓ Yes] No
1007	TW4-4	85.95	Flow 14.4	[✓ Yes] No
			Meter 694672.8	[✓ Yes] No
0900	TWN-2	68.20	Flow 17.6	[✓ Yes] No
			Meter 1286283.6	[✓ Yes] No
0913	TW4-22	72.08	Flow 16.4	[✓ Yes] No
			Meter 693003.7	[✓ Yes] No
0908	TW4-24	68.71	Flow 14.8	[✓ Yes] No
			Meter 1323218.52	[✓ Yes] No
0853	TW4-25	82.11	Flow 12.6	[✓ Yes] No
			Meter 443865.82	[✓ Yes] No
0957	TW4-1	103.03	Flow 14.0	[✓ Yes] No
			Meter 322903.1	[✓ Yes] No
0946	TW4-2	112.74	Flow 17.8	[✓ Yes] No
			Meter 378827.8	[✓ Yes] No
0939	TW4-11	90.61	Flow 16.8	[✓ Yes] No
			Meter 67849.3	[✓ Yes] No
0848	TW4-21	71.35	Flow 17.6	[✓ Yes] No
			Meter 2186561.23	[✓ Yes] No
0918	TW4-37	81.27	Flow 18.0	[✓ Yes] No
			Meter 1719264.8	[✓ Yes] No
0928	TW4-39	72.52	Flow 18.0	[✓ Yes] No
			Meter 633005.5	[✓ Yes] No
1014	TW4-40	71.64	Flow 18.0	[✓ Yes] No
			Meter 416163.74	[✓ Yes] No
1002	TW4-41	90.11	Flow 6.2	[✓ Yes] No
			Meter 274865.33	[✓ 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 4-13-20 **Name** Deen Lyman, Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
0844	MW-4	86.15	Flow 4.2	[✓ Yes] No
			Meter 2506539.98	[✓ Yes] No
0821	MW-26	82.62	Flow 11.8	[✓ Yes] No
			Meter 466201.7	[✓ Yes] No
1005	TW4-19	70.45	Flow 18.0	[✓ Yes] No
			Meter 2116864.0	[✓ Yes] No
0808	TW4-20	69.45	Flow 2.8	[✓ Yes] No
			Meter 336476.27	[✓ Yes] No
0909	TW4-4	78.44	Flow 14.6	[✓ Yes] No
			Meter 695761.3	[✓ Yes] No
0742	TWN-2	81.34	Flow 17.6	[✓ Yes] No
			Meter 1289259.0	[✓ Yes] No
0756	TW4-22	73.77	Flow 18.0	[✓ Yes] No
			Meter 694551.5	[✓ Yes] No
0750	TW4-24	69.12	Flow 15.7	[✓ Yes] No
			Meter 1327457.29	[✓ Yes] No
0736	TW4-25	71.41	Flow 11.8	[✓ Yes] No
			Meter 450211.88	[✓ Yes] No
0851	TW4-1	107.88	Flow 12.6	[✓ Yes] No
			Meter 322895.0	[✓ Yes] No
0835	TW4-2	113.22	Flow 12.8	[✓ Yes] No
			Meter 379832.6	[✓ Yes] No
0828	TW4-11	90.86	Flow 16.4	[✓ Yes] No
			Meter 67984.8	[✓ Yes] No
0730	TW4-21	70.03	Flow 16.4	[✓ Yes] No
			Meter 2194541.59	[✓ Yes] No
0802	TW4-37	74.65	Flow 18.0	[✓ Yes] No
			Meter 1722127.1	[✓ Yes] No
0815	TW4-39	72.50	Flow 18.0	[✓ Yes] No
			Meter 636995.7	[✓ Yes] No
0920	TW4-40	71.65	Flow 18.0	[✓ Yes] No
			Meter 423631.16	[✓ Yes] No
0900	TW4-41	86.90	Flow 4.0	[✓ Yes] No
			Meter 276129.03	[✓ 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 4-20-20 **Name** Deen G Lyman Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
0922	MW-4	88.95	Flow 3.5	~~Yes~~ No
			Meter 2513934.33	~~Yes~~ No
0901	MW-26	76.06	Flow 11.8	~~Yes~~ No
			Meter 468155.6	~~Yes~~ No
1045	TW4-19	72.28	Flow 18.0	~~Yes~~ No
			Meter 2124127.8	~~Yes~~ No
0851	TW4-20	81.10	Flow 3.0	~~Yes~~ No
			Meter 343616.76	~~Yes~~ No
0946	TW4-4	84.57	Flow 16.4	~~Yes~~ No
			Meter 696736.4	~~Yes~~ No
0751	TWN-2	62.66	Flow 16.0	~~Yes~~ No
			Meter 1291272.6	~~Yes~~ No
0841	TW4-22	73.32	Flow 18.0	~~Yes~~ No
			Meter 696799.9	~~Yes~~ No
0836	TW4-24	68.03	Flow 16.2	~~Yes~~ No
			Meter 1331222.14	~~Yes~~ No
0745	TW4-25	72.12	Flow 11.6	~~Yes~~ No
			Meter 456627.90	~~Yes~~ No
0927	TW4-1	106.15	Flow 12.6	~~Yes~~ No
			Meter 323454.4	~~Yes~~ No
0913	TW4-2	92.18	Flow 16.0	~~Yes~~ No
			Meter 360616.5	~~Yes~~ No
0908	TW4-11	91.11	Flow 16.2	~~Yes~~ No
			Meter 68134.3	~~Yes~~ No
0737	TW4-21	83.50	Flow 16.8	~~Yes~~ No
			Meter 2202588.73	~~Yes~~ No
0846	TW4-37	73.56	Flow 18.0	~~Yes~~ No
			Meter 1727193.3	~~Yes~~ No
0856	TW4-39	75.30	Flow 18.0	~~Yes~~ No
			Meter 639788.5	~~Yes~~ No
0953	TW4-40	72.73	Flow 18.0	~~Yes~~ No
			Meter 431088.18	~~Yes~~ No
0937	TW4-41	82.36	Flow 4.6	~~Yes~~ No
			Meter 277351.28	~~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 4-27-20 **Name** Deen Lyman, Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
0950	MW-4	88.93	Flow 3.50	[✓ Yes] No
			Meter 2521852.00	[✓ Yes] No
0930	MW-26	70.29	Flow 10.4	[✓ Yes] No
			Meter 469990.7	[✓ Yes] No
1037	TW4-19	69.20	Flow 18.0	[✓ Yes] No
			Meter 2129733.5	[✓ Yes] No
0845	TW4-20	80.14	Flow 4.0	[✓ Yes] No
			Meter 351315.57	[✓ Yes] No
1010	TW4-4	79.80	Flow 13.0	[✓ Yes] No
			Meter 697344.2	[✓ Yes] No
0811	TWN-2	57.81	Flow 18.0	[✓ Yes] No
			Meter 1293427.0	[✓ Yes] No
0833	TW4-22	72.77	Flow 18.0	[✓ Yes] No
			Meter 698244.9	[✓ Yes] No
0826	TW4-24	69.50	Flow 16.2	[✓ Yes] No
			Meter 1335505.10	[✓ Yes] No
0804	TW4-25	78.35	Flow 10.4	[✓ Yes] No
			Meter 463100.20	[✓ Yes] No
0955	TW4-1	105.70	Flow 12.8	[✓ Yes] No
			Meter 324127.1	[✓ Yes] No
0945	TW4-2	112.11	Flow 16.4	[✓ Yes] No
			Meter 381834.0	[✓ Yes] No
0938	TW4-11	89.85	Flow 16.8	[✓ Yes] No
			Meter 68277.4	[✓ Yes] No
0757	TW4-21	73.21	Flow 16.0	[✓ Yes] No
			Meter 2210755.22	[✓ Yes] No
0840	TW4-37	76.17	Flow 18.0	[✓ Yes] No
			Meter 1732179.2	[✓ Yes] No
0850	TW4-39	84.48	Flow 18.0	[✓ Yes] No
			Meter 641553.3	[✓ Yes] No
1019	TW4-40	71.77	Flow 18.0	[✓ Yes] No
			Meter 438385.18	[✓ Yes] No
1003	TW4-41	82.12	Flow 5.8	[✓ Yes] No
			Meter 278652.35	[✓ 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 5-4-20 **Name** Deen Lyman, Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
* 0921	MW-4	88.70	Flow 4.0	~~Yes~~ No
			Meter 25290038.1	~~Yes~~ No
0848	MW-26	85.63	Flow 11.2	~~Yes~~ No
			Meter 471796.3	~~Yes~~ No
1010	TW4-19	68.18	Flow —	Yes ~~No~~
			Meter 2129776.1	Yes ~~No~~
0838	TW4-20	69.90	Flow 2.5	~~Yes~~ No
			Meter 359306.60	~~Yes~~ No
0944	TW4-4	80.33	Flow 16.0	~~Yes~~ No
			Meter 698837.1	~~Yes~~ No
0815	TWN-2	59.80	Flow 16.4	~~Yes~~ No
			Meter 1296251.3	~~Yes~~ No
0828	TW4-22	70.23	Flow 18.0	~~Yes~~ No
			Meter 700490.8	~~Yes~~ No
0821	TW4-24	69.51	Flow 14.4	~~Yes~~ No
			Meter 1339786.08	~~Yes~~ No
0809	TW4-25	72.45	Flow 12.4	~~Yes~~ No
			Meter 469755.48	~~Yes~~ No
0927	TW4-1	106.14	Flow 13.0	~~Yes~~ No
			Meter 324828.7	~~Yes~~ No
* 0916	TW4-2	110.21	Flow 16.2	~~Yes~~ No
			Meter 382623.0	~~Yes~~ No
0910	TW4-11	90.60	Flow 16.8	~~Yes~~ No
			Meter 68421.5	~~Yes~~ No
0804	TW4-21	72.12	Flow 17.4	~~Yes~~ No
			Meter 2218727.07	~~Yes~~ No
0834	TW4-37	76.17	Flow 18.0	~~Yes~~ No
			Meter 1737011.4	~~Yes~~ No
0843	TW4-39	85.05	Flow 18.0	~~Yes~~ No
			Meter 644252.7	~~Yes~~ No
0952	TW4-40	71.77	Flow 18.0	~~Yes~~ No
			Meter 445722.25	~~Yes~~ No
0937	TW4-41	88.02	Flow 4.8	~~Yes~~ No
			Meter 279727.48	~~Yes~~ No

Operational Problems (Please list well number): TW4-19 - lost the pump

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

* Depth is measured to the nearest 0.01 feet.

Weekly Inspection Form

Date 5-11-20 **Name** Deen G Lyman

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1009	MW-4	88.17	Flow 4.0	[✓ Yes] No
			Meter 2536709.34	[✓ Yes] No
0951	MW-26	73.86	Flow 11.2	[✓ Yes] No
			Meter 473504.2	[✓ Yes] No
1045	TW4-19	71.43	Flow 16.0	[✓ Yes] No
			Meter 2138815.0	[✓ Yes] No
0940	TW4-20	69.50	Flow 2.4	[✓ Yes] No
			Meter 367993.44	[✓ Yes] No
1026	TW4-4	85.22	Flow 16.0	[✓ Yes] No
			Meter 700173.7	[✓ Yes] No
0918	TWN-2	59.18	Flow 16.8	[✓ Yes] No
			Meter 1298299.6	[✓ Yes] No
0929	TW4-22	78.25	Flow 18.0	[✓ Yes] No
			Meter 702246.1	[✓ Yes] No
0924	TW4-24	71.77	Flow 16.4	[✓ Yes] No
			Meter 1343804.05	[✓ Yes] No
0905	TW4-25	69.53	Flow 10.6	[✓ Yes] No
			Meter 476277.47	[✓ Yes] No
1015	TW4-1	106.30	Flow 12.2	[✓ Yes] No
			Meter 325517.5	[✓ Yes] No
1004	TW4-2	111.37	Flow 16.2	[✓ Yes] No
			Meter 383844.2	[✓ Yes] No
0958	TW4-11	91.03	Flow 16.8	[✓ Yes] No
			Meter 68563.4	[✓ Yes] No
0900	TW4-21	78.10	Flow 17.8	[✓ Yes] No
			Meter 2226871.10	[✓ Yes] No
0935	TW4-37	72.44	Flow 18.0	[✓ Yes] No
			Meter 1741843.8	[✓ Yes] No
0945	TW4-39	84.60	Flow 18.0	[✓ Yes] No
			Meter 64789.62	[✓ Yes] No
1032	TW4-40	84.88	Flow 18.0	[✓ Yes] No
			Meter 452944.43	[✓ Yes] No
1021	TW4-41	87.11	Flow 6.2	[✓ Yes] No
			Meter 280914.79	[✓ 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 5-18-20 **Name** Deen Lyman

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
0942	MW-4	90.02	Flow 4.0	[✓ Yes] No
			Meter 2544337.34	[✓ Yes] No
0917	MW-26	88.78	Flow 10.2	[✓ Yes] No
			Meter 475304.2	[✓ Yes] No
1350	TW4-19	72.08	Flow 16.0	[✓ Yes] No
			Meter 2151825.7	[✓ Yes] No
0905	TW4-20	68.62	Flow 4.0	[✓ Yes] No
			Meter 377343.47	[✓ Yes] No
1008	TW4-4	85.45	Flow 12.6	[✓ Yes] No
			Meter 701298.5	[✓ Yes] No
0830	TWN-2	58.70	Flow 18.0	[✓ Yes] No
			Meter 1300617.0	[✓ Yes] No
0854	TW4-22	71.38	Flow 18.0	[✓ Yes] No
			Meter 704186.8	[✓ Yes] No
0845	TW4-24	69.24	Flow 15.2	[✓ Yes] No
			Meter 1347610.84	[✓ Yes] No
0822	TW4-25	72.05	Flow 10.4	[✓ Yes] No
			Meter 482788.90	[✓ Yes] No
0948	TW4-1	102.20	Flow 14.0	[✓ Yes] No
			Meter 326290.4	[✓ Yes] No
0936	TW4-2	107.56	Flow 17.8	[✓ Yes] No
			Meter 384848.2	[✓ Yes] No
0930	TW4-11	90.41	Flow 17.0	[✓ Yes] No
			Meter 68710.3	[✓ Yes] No
0815	TW4-21	79.11	Flow 16.2	[✓ Yes] No
			Meter 2234884.37	[✓ Yes] No
0859	TW4-37	73.55	Flow 18.0	[✓ Yes] No
			Meter 1746796.7	[✓ Yes] No
0911	TW4-39	78.13	Flow 18.0	[✓ Yes] No
			Meter 649374.9	[✓ Yes] No
1014	TW4-40	71.80	Flow 18.0	[✓ Yes] No
			Meter 460301.96	[✓ Yes] No
0959	TW4-41	87.91	Flow 6.0	[✓ Yes] No
			Meter 282168.77	[✓ 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 5-26-20 **Name** Deen G Lyman

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
0952	MW-4	89.90	Flow 4.0	[✓ Yes] No
			Meter 2553027.05	[✓ Yes] No
0933	MW-26	80.18	Flow 10.2	[✓ Yes] No
			Meter 477379.9	[✓ Yes] No
1145	TW4-19	72.26	Flow 16.8	[✓ Yes] No
			Meter 2166340.3	[✓ Yes] No
0923	TW4-20	89.41	Flow 3.6	[✓ Yes] No
			Meter 387922.62	[✓ Yes] No
1015	TW4-4	86.63	Flow 14.4	[✓ Yes] No
			Meter 702441.1	[✓ Yes] No
0900	TWN-2	88.81	Flow 17.6	[✓ Yes] No
			Meter 1303228.2	[✓ Yes] No
0913	TW4-22	72.32	Flow 18.0	[✓ Yes] No
			Meter 706209.6	[✓ Yes] No
0906	TW4-24	70.50	Flow 16.8	[✓ Yes] No
			Meter 1352617.74	[✓ Yes] No
0853	TW4-25	69.27	Flow 12.6	[✓ Yes] No
			Meter 490167.75	[✓ Yes] No
1000	TW4-1	106.06	Flow 12.4	[✓ Yes] No
			Meter 327[illegible]77.7	[✓ Yes] No
0947	TW4-2	110.68	Flow 14.0	[✓ Yes] No
			Meter 386017.5	[✓ Yes] No
* 0942	TW4-11	90.75	Flow 15.8	[✓ Yes] No
			Meter 68852.3	[✓ Yes] No
0843	TW4-21	73.15	Flow 16.4	[✓ Yes] No
			Meter 2243852.56	[✓ Yes] No
0918	TW4-37	73.80	Flow 18.0	[✓ Yes] No
			Meter 1752226.8	[✓ Yes] No
0928	TW4-39	85.25	Flow 18.0	[✓ Yes] No
			Meter 652327.5	[✓ Yes] No
1022	TW4-40	71.88	Flow 18.0	[✓ Yes] No
			Meter 468691.76	[✓ Yes] No
1007	TW4-41	89.04	Flow 6.0	[✓ Yes] No
			Meter 2836622.6	[✓ 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 6-1-20

Name Deen Glyman, Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1028	MW-4	85.45	Flow 4.0	~~Yes~~ No
			Meter 2559528.33	~~Yes~~ No
0956	MW-26	71.58	Flow 10.8	~~Yes~~ No
			Meter 478711.8	~~Yes~~ No
1149	TW4-19	72.53	Flow 17.0	~~Yes~~ No
			Meter 21772984	~~Yes~~ No
0929	TW4-20	95.60	Flow ~~12.8~~ 4.0	~~Yes~~ No
			Meter 395618.71	~~Yes~~ No
1045	TW4-4	88.17	Flow ~~16.8~~ 12.8	~~Yes~~ No
			Meter 703409.5	~~Yes~~ No
0901	TWN-2	68.21	Flow 16.0	~~Yes~~ No
			Meter 1305585.1	~~Yes~~ No
0918	TW4-22	64.25	Flow 18.0	~~Yes~~ No
			Meter 707615.7	~~Yes~~ No
0912	TW4-24	64.43	Flow 16.0	~~Yes~~ No
			Meter 1356161.54	~~Yes~~ No
* 0855	TW4-25	68.05	Flow 11.2	~~Yes~~ No
			Meter 495888.92	~~Yes~~ No
1034	TW4-1	102.66	Flow 12.5	[✓ Yes] No
			Meter 327645.2	[✓ Yes] No
1012	TW4-2	106.80	Flow 16.2	~~Yes~~ No
			Meter 386861.7	~~Yes~~ No
* 1002	TW4-11	91.03	Flow 16.4	~~Yes~~ No
			Meter 68994.8	~~Yes~~ No
0827	TW4-21	74.89	Flow 16.4	~~Yes~~ No
			Meter 2250603.80	~~Yes~~ No
0923	TW4-37	66.56	Flow 18.0	~~Yes~~ No
			Meter 1756472.7	~~Yes~~ No
0950	TW4-39	69.45	Flow 18.0	~~Yes~~ No
			Meter 654672.1	~~Yes~~ No
1052	TW4-40	71.85	Flow 18.0	~~Yes~~ No
			Meter 474636.55	~~Yes~~ No
1039	TW4-41	85.15	Flow 5.2	~~Yes~~ No
			Meter 284672.60	~~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 6-4-20

Name Deen Lyman, Tanner Holliday

Time	Well	Depth*	Time	Well	Depth*
1332	MW-4	89.90	** 0700	TWN-1	67.82
1328	TW4-1	102.12	1459	TWN-2	56.44
1335	TW4-2	108.21	0705	TWN-3	42.28
* 1352	TW4-3	63.18	0709	TWN-4	60.86
1321	TW4-4	85.25	0724	TWN-7	81.92
** 1413	TW4-5	70.60	0714	TWN-18	62.06
0945	TW4-6	77.94	0719	MW-27	57.10
** 1341	TW4-7	82.70	0735	MW-30	75.03
** 1347	TW4-8	85.97	1430	MW-31	68.93
** 1409	TW4-9	68.60			
** 1417	TW4-10	68.03			
1338	TW4-11	90.11			
0923	TW4-12	54.71			
0920	TW4-13	55.99	0927	TW4-28	47.99
0913	TW4-14	77.55	0841	TW4-29	77.45
1420	TW4-15	80.35	* 0828	TW4-30	74.94
1423	TW4-16	72.36	0824	TW4-31	76.41
1426	TW4-17	80.97	0930	TW4-32	55.40
* 1515	TW4-18	71.71	0816	TW4-33	77.01
1522	TW4-19	73.50	0837	TW4-34	75.66
1440	TW4-20	70.06	0833	TW4-35	74.97
1510	TW4-21	72.61	0916	TW4-36	57.55
1448	TW4-22	69.27	1444	TW4-37	70.18
0942	TW4-23	74.55	1405	TW4-38	58.65
1453	TW4-24	69.95	1437	TW4-39	72.88
1505	TW4-25	76.13	0935	TW4-40	71.86
** 0938	TW4-26	72.55	1325	TW4-41	80.17
0820	TW4-27	78.87	0812	TW4-42	68.51

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

* Depth is measured to the nearest 0.01 feet

Weekly Inspection Form

Date 6-8-20 **Name** Deen G Lyman, Tanner Holliday

Time	**Well**	**Depth***	**Comments**	**System Operational (If no note any problems/corrective actions)**
* 0910	MW-4	88.78	Flow 4.0	[✓ Yes] No
			Meter 2566390.94	[✓ Yes] No
* 0840	MW-26	75.95	Flow 10.8	[✓ Yes] No
			Meter 480346.9	[✓ Yes] No
1145	TW4-19	75.99	Flow 17.0	[✓ Yes] No
			Meter 2189598.6	[✓ Yes] No
* 0820	TW4-20	71.50	Flow ~~18.0~~ 2.8	[✓ Yes] No
			Meter 404191.21	[✓ Yes] No
0933	TW4-4	88.70	Flow 14.0	[✓ Yes] No
			Meter 704413.4	[✓ Yes] No
0747	TWN-2	59.13	Flow 17.2	[✓ Yes] No
			Meter 1307688.5	[✓ Yes] No
0800	TW4-22	69.22	Flow 18.0	[✓ Yes] No
			Meter 709786.7	[✓ Yes] No
0755	TW4-24	76.66	Flow 16.4	[✓ Yes] No
			Meter 1360302.44	[✓ Yes] No
0741	TW4-25	72.96	Flow 11.6	[✓ Yes] No
			Meter 502246.81	[✓ Yes] No
* 0918	TW4-1	86.73	Flow 12.8	[✓ Yes] No
			Meter 328154.7	[✓ Yes] No
* 0855	TW4-2	82.14	Flow 16.6	[✓ Yes] No
			Meter 387759.8	[✓ Yes] No
* 0846	TW4-11	90.01	Flow 16.8	[✓ Yes] No
			Meter 69136.8	[✓ Yes] No
0735	TW4-21	80.39	Flow 16.6	[✓ Yes] No
			Meter 2258304.50	[✓ Yes] No
* 0815	TW4-37	72.81	Flow 18.0	[✓ Yes] No
			Meter 1760617.2	[✓ Yes] No
* 0825	TW4-39	71.77	Flow 18.0	[✓ Yes] No
			Meter 657973.4	[✓ Yes] No
0945	TW4-40	71.72	Flow 18.0	[✓ Yes] No
			Meter 480968.91	[✓ Yes] No
0925	TW4-41	88.18	Flow 6.0	[✓ Yes] No
			Meter 285783.52	[✓ 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 6-15-20 **Name** Deen Lyman

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
0945	MW-4	89.13	Flow 4.0	~~Yes~~ No
			Meter 2572863.36	~~Yes~~ No
0920	MW-26	85.19	Flow 10.6	~~Yes~~ No
			Meter 482844.4	~~Yes~~ No
1145	TW4-19	72.85	Flow 17.0	~~Yes~~ No
			Meter 2201910.7	~~Yes~~ No
0908	TW4-20	90.03	Flow 2.4	~~Yes~~ No
			Meter 413182.19	~~Yes~~ No
1008	TW4-4	88.75	Flow 14.8	~~Yes~~ No
			Meter 705521.2	~~Yes~~ No
0800	TWN-2	59.42	Flow 16.8	~~Yes~~ No
			Meter 1309268.8	~~Yes~~ No
0855	TW4-22	72.17	Flow 18.0	~~Yes~~ No
			Meter 711529.5	~~Yes~~ No
0847	TW4-24	69.62	Flow 17.2	~~Yes~~ No
			Meter 1364460.69	~~Yes~~ No
0753	TW4-25	78.80	Flow 11.4	~~Yes~~ No
			Meter 508880.44	~~Yes~~ No
0950	TW4-1	103.28	Flow 11.8	~~Yes~~ No
			Meter 328991.9	~~Yes~~ No
0938	TW4-2	105.30	Flow 17.0	~~Yes~~ No
			Meter 388801.3	~~Yes~~ No
0932	TW4-11	90.84	Flow 16.8	~~Yes~~ No
			Meter 69278.5	~~Yes~~ No
0747	TW4-21	70.11	Flow 16.4	~~Yes~~ No
			Meter 2266113.83	~~Yes~~ No
0902	TW4-37	73.93	Flow 18.0	~~Yes~~ No
			Meter 1765409.2	~~Yes~~ No
0914	TW4-39	69.25	Flow 18.0	~~Yes~~ No
			Meter 659543.9	~~Yes~~ No
1020	TW4-40	71.77	Flow 18.0	~~Yes~~ No
			Meter 487913.74	~~Yes~~ No
0959	TW4-41	84.15	Flow 4.8	~~Yes~~ No
			Meter 287046.94	~~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 6-22-20 **Name** Deen Glyman Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
0955	MW-4	85.06	Flow 4.4	[✓ Yes] No
		~~85.06~~	Meter 2579723.23	[✓ Yes] No
0932	MW-26	80.44	Flow 11.2	[✓ Yes] No
			Meter 483755.3	[✓ Yes] No
1145	TW4-19	72.83	Flow 17.0	[✓ Yes] No
			Meter 2214209.4	[✓ Yes] No
0920	TW4-20	68.17	Flow 2.8	[✓ Yes] No
			Meter 421172.44	[✓ Yes] No
1018	TW4-4	84.08	Flow 16.3	[✓ Yes] No
			Meter 706766.7	[✓ Yes] No
0818	TWN-2	59.80	Flow 16.4	[✓ Yes] No
			Meter 1310845.7	[✓ Yes] No
0908	TW4-22	76.14	Flow 18.0	[✓ Yes] No
			Meter 713478.5	[✓ Yes] No
0902	TW4-24	69.28	Flow 16.0	[✓ Yes] No
			Meter 1368666.98	[✓ Yes] No
0812	TW4-25	72.71	Flow 11.8	[✓ Yes] No
			Meter 515387.38	[✓ Yes] No
1005	TW4-1	106.36	Flow 12.0	[✓ Yes] No
			Meter 329618.6	[✓ Yes] No
0948	TW4-2	113.13	Flow 16.0	[✓ Yes] No
			Meter 389974.2	[✓ Yes] No
0940	TW4-11	90.82	Flow 16.5	[✓ Yes] No
			Meter 69420.2	[✓ Yes] No
0802	TW4-21	70.63	Flow 16.8	[✓ Yes] No
			Meter 2274072.04	[✓ Yes] No
0914	TW4-37	71.20	Flow 18.0	[✓ Yes] No
			Meter 1770097.5	[✓ Yes] No
0926	TW4-39	69.55	Flow 18.0	[✓ Yes] No
			Meter 662206.8	[✓ Yes] No
1026	TW4-40	71.85	Flow 18.0	[✓ Yes] No
			Meter 494926.60	[✓ Yes] No
1012	TW4-41	88.00	Flow 5.6	[✓ Yes] No
			Meter 288320.04	[✓ 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

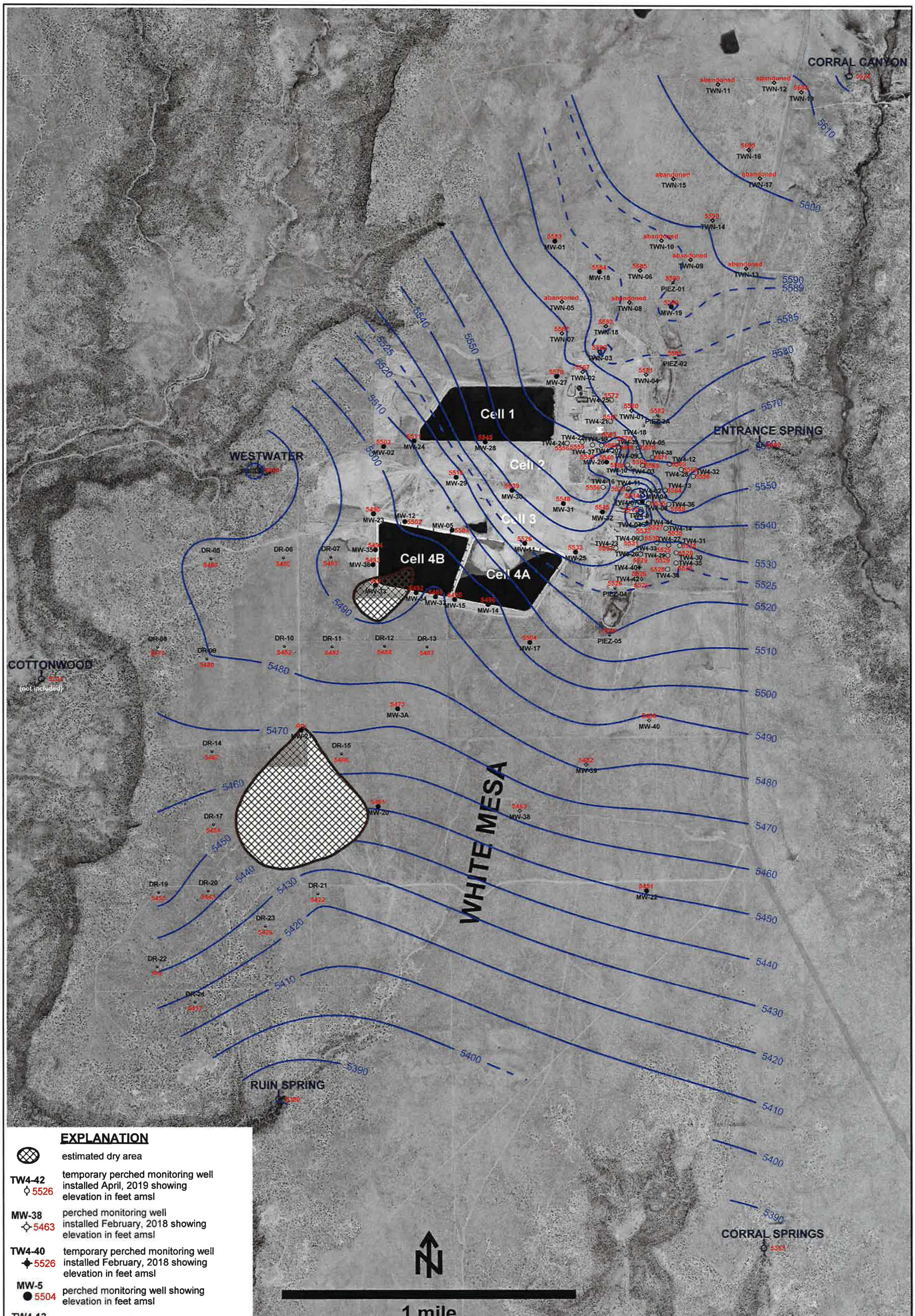
Date 6-29-20 **Name** Deen Lyman - Tanner Holliday

Time	Well	Depth*	Comments	System Operational (If no note any problems/corrective actions)
1025	MW-4	91.28	Flow 4.0	~~Yes~~ No
			Meter 2586428.35	~~Yes~~ No
0955	MW-26	86.50	Flow 10.2	~~Yes~~ No
			Meter 485458.8	~~Yes~~ No
1410	TW4-19	72.45	Flow 17.0	~~Yes~~ No
			Meter 2226606.1	~~Yes~~ No
0940	TW4-20	93.73	Flow 3.6	~~Yes~~ No
			Meter 428741.05	~~Yes~~ No
1345	TW4-4	87.54	Flow 16.4	~~Yes~~ No
			Meter 707803.9	~~Yes~~ No
0913	TWN-2	59.01	Flow 16.0	~~Yes~~ No
			Meter 1312600.5	~~Yes~~ No
0926	TW4-22	68.49	Flow 18.0	~~Yes~~ No
			Meter 715225.7	~~Yes~~ No
0920	TW4-24	69.85	Flow 18.0	~~Yes~~ No
			Meter 1372713.66	~~Yes~~ No
0906	TW4-25	82.20	Flow 10.4	~~Yes~~ No
			Meter 521277.29	~~Yes~~ No
1330	TW4-1	106.66	Flow 13.5	~~Yes~~ No
			Meter 330343.8	~~Yes~~ No
1013	TW4-2	111.40	Flow 16.0	~~Yes~~ No
			Meter 390925.0	~~Yes~~ No
1005	TW4-11	91.40	Flow 16.0	~~Yes~~ No
			Meter 695653	~~Yes~~ No
0900	TW4-21	72.31	Flow 16.2	~~Yes~~ No
			Meter 2281735.48	~~Yes~~ No
0934	TW4-37	71.86	Flow 18.0	~~Yes~~ No
			Meter 1774798.3	~~Yes~~ No
0948	TW4-39	69.99	Flow 18.0	~~Yes~~ No
			Meter 665833.5	~~Yes~~ No
1355	TW4-40	71.77	Flow 18.0	~~Yes~~ No
			Meter 502223.09	~~Yes~~ No
1336	TW4-41	88.05	Flow 5.5	~~Yes~~ No
			Meter 289636.19	~~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.



NOTES: MW-4, MW-26, TW4-1, TW4-2, TW4-4, TW4-11, TW4-19, TW4-20, TW4-21, TW4-37, TW4-39, TW4-40 and TW4-41 are chloroform pumping wells; TW4-22, TW4-24, TW4-25 and TWN-2 are nitrate pumping wells; TW4-1, TW4-2 and TW4-11 water levels are below the base of the Burro Canyon Formation

HYDRO
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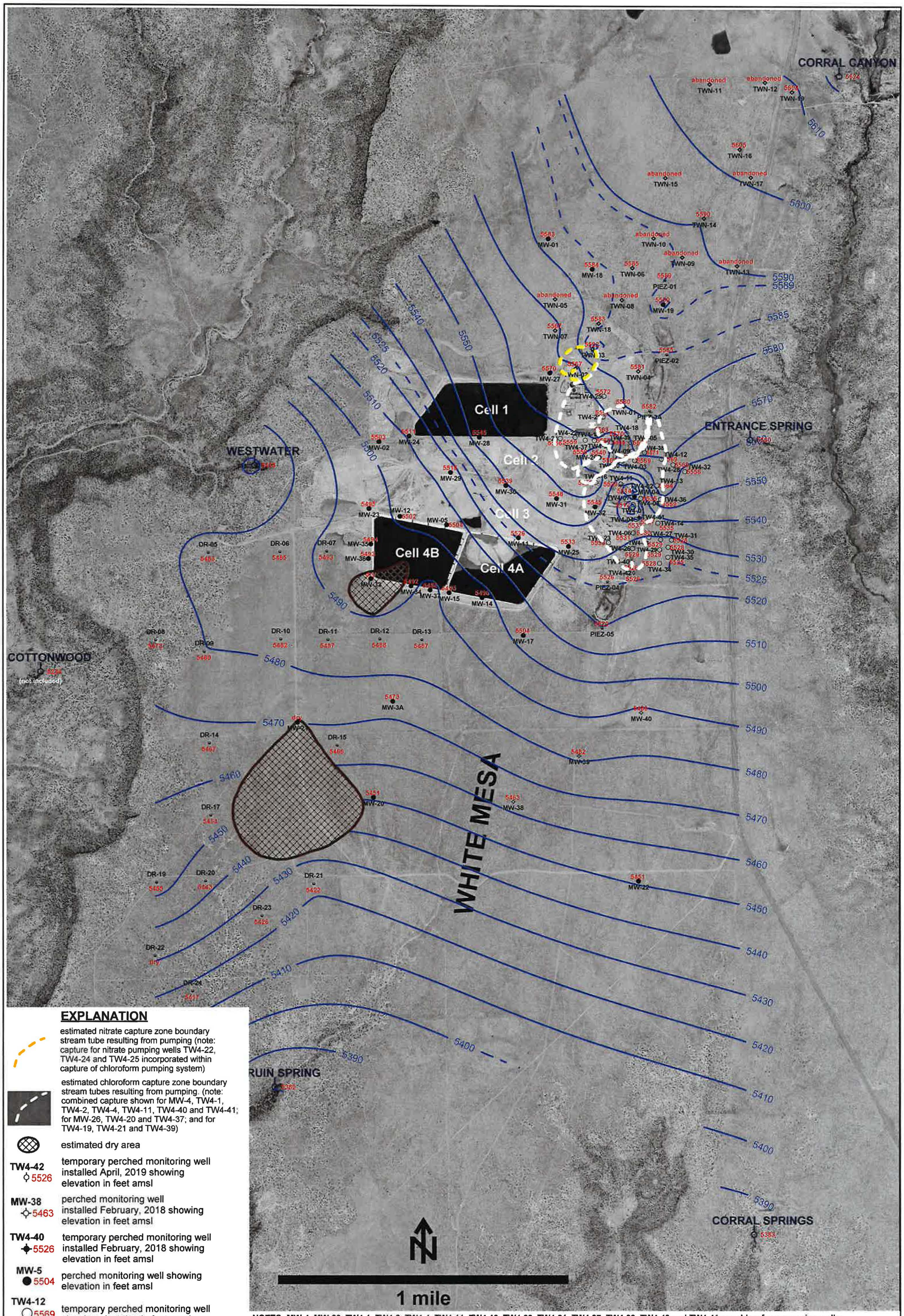
KRIGED 2nd QUARTER, 2020 WATER LEVELS
WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/aug20/WL/Uwl0620.srf	C-1



EXPLANATION

	estimated nitrate capture zone boundary stream tube resulting from pumping (note: capture for nitrate pumping wells TW4-22, TW4-24 and TW4-25 incorporated within capture of chloroform pumping system)
	estimated chloroform capture zone boundary stream tubes resulting from pumping. (note: combined capture shown for MW-4, TW4-1, TW4-2, TW4-4, TW4-11, TW4-40 and TW4-41; for MW-26, TW4-20 and TW4-37; and for TW4-19, TW4-21 and TW4-39)
▨	estimated dry area
TW4-42 5526	temporary perched monitoring well installed April, 2019 showing elevation in feet amsl
MW-38 5463	perched monitoring well installed February, 2018 showing elevation in feet amsl
TW4-40 ◆ 5526	temporary perched monitoring well installed February, 2018 showing elevation in feet amsl
MW-5 ● 5504	perched monitoring well showing elevation in feet amsl
TW4-12 ○ 5569	temporary perched monitoring well showing elevation in feet amsl
TWN-7 ◇ 5567	temporary perched nitrate monitoring well showing elevation in feet amsl
PIEZ-1 5589	perched piezometer showing elevation in feet amsl
RUIN SPRING 5380	seep or spring showing elevation in feet amsl

NOTES: MW-4, MW-26, TW4-1, TW4-2, TW4-4, TW4-11, TW4-19, TW4-20, TW4-21, TW4-37, TW4-39, TW4-40 and TW4-41 are chloroform pumping wells; TW4-22, TW4-24, TW4-25 and TWN-2 are nitrate pumping wells; TW4-1, TW4-2 and TW4-11 water levels are below the base of the Burro Canyon Formation

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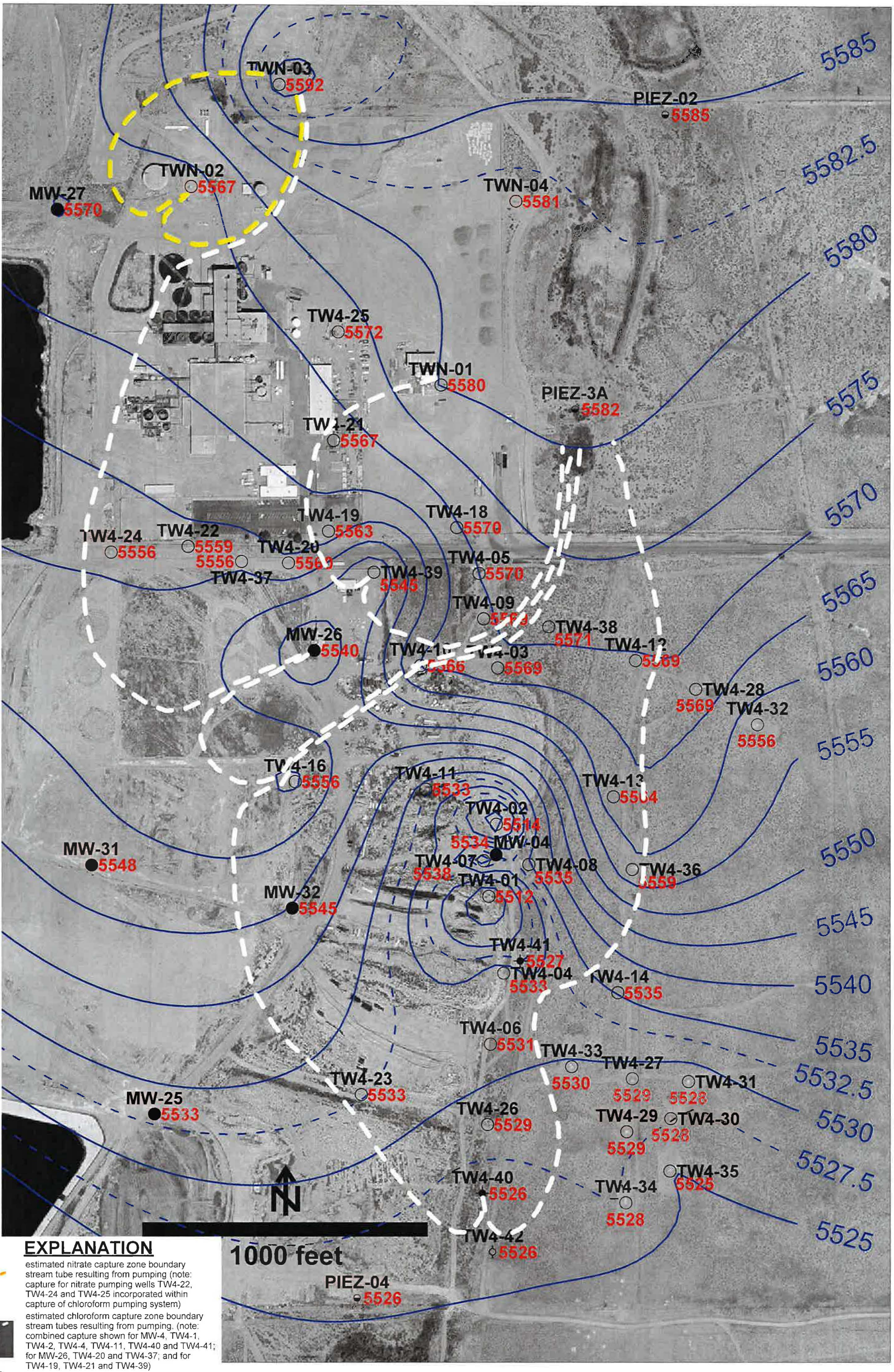
KRIGED 2nd QUARTER, 2020 WATER LEVELS AND ESTIMATED CAPTURE ZONES WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/aug20/WL/Uwl0620NTcz2.srf	C-2



EXPLANATION

estimated nitrate capture zone boundary stream tube resulting from pumping (note: capture for nitrate pumping wells TW4-22, TW4-24 and TW4-25 incorporated within capture of chloroform pumping system)

estimated chloroform capture zone boundary stream tubes resulting from pumping. (note: combined capture shown for MW-4, TW4-1, TW4-2, TW4-4, TW4-11, TW4-40 and TW4-41; for MW-26, TW4-20 and TW4-37; and for TW4-19, TW4-21 and TW4-39)

TW4-42 ϙ 5526 temporary perched monitoring well installed April, 2019 showing elevation in feet amsl

TW4-40 ✦ 5526 temporary perched monitoring well installed February, 2018 showing elevation in feet amsl

MW-25 ● 5533 perched monitoring well showing elevation in feet amsl

TW4-7 ○ 5538 temporary perched monitoring well showing elevation in feet amsl

PIEZ-2 ◓ 5585 perched piezometer showing elevation in feet amsl

NOTES: MW-4, MW-26, TW4-1, TW4-2, TW4-4, TW4-11, TW4-19, TW4-20, TW4-21, TW4-37, TW4-39, TW4-40 and TW4-41 are chloroform pumping wells; TW4-22, TW4-24, TW4-25 and TWN-2 are nitrate pumping wells; TW4-1, TW4-2 and TW4-11 water levels are below the base of the Burro Canyon Formation

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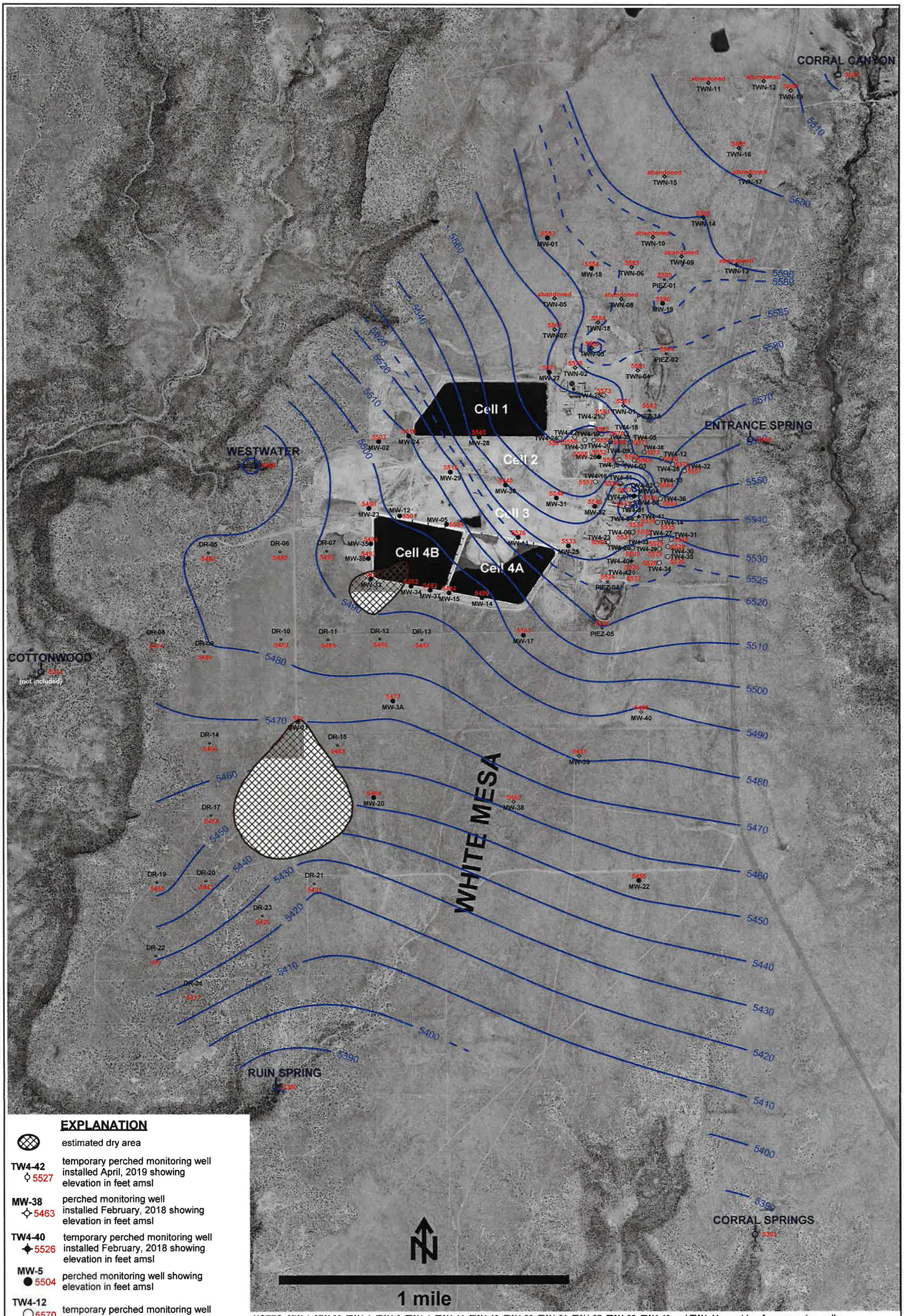
KRIGED 2nd QUARTER, 2020 WATER LEVELS AND ESTIMATED CAPTURE ZONES WHITE MESA SITE (detail map)

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/aug20/WL/Uwl0620NTcz.srf	C-3

Tab D

Kriged Previous Quarter Groundwater Contour Map



EXPLANATION

▨	estimated dry area
TW4-42 5527	temporary perched monitoring well installed April, 2019 showing elevation in feet amsl
MW-38 5463	perched monitoring well installed February, 2018 showing elevation in feet amsl
TW4-40 5526	temporary perched monitoring well installed February, 2018 showing elevation in feet amsl
MW-5 ● 5504	perched monitoring well showing elevation in feet amsl
TW4-12 ○ 5570	temporary perched monitoring well showing elevation in feet amsl
TWN-7 ◆ 5567	temporary perched nitrate monitoring well showing elevation in feet amsl
PIEZ-1 5589	perched piezometer showing elevation in feet amsl
RUIN SPRING 5380	seep or spring showing elevation in feet amsl

NOTES: MW-4, MW-26, TW4-1, TW4-2, TW4-4, TW4-11, TW4-19, TW4-20, TW4-21, TW4-37, TW4-39, TW4-40 and TW4-41 are chloroform pumping wells; TW4-22, TW4-24, TW4-25 and TWN-2 are nitrate pumping wells; TW4-1, TW4-2 and TW4-11 water levels are below the base of the Burro Canyon Formation

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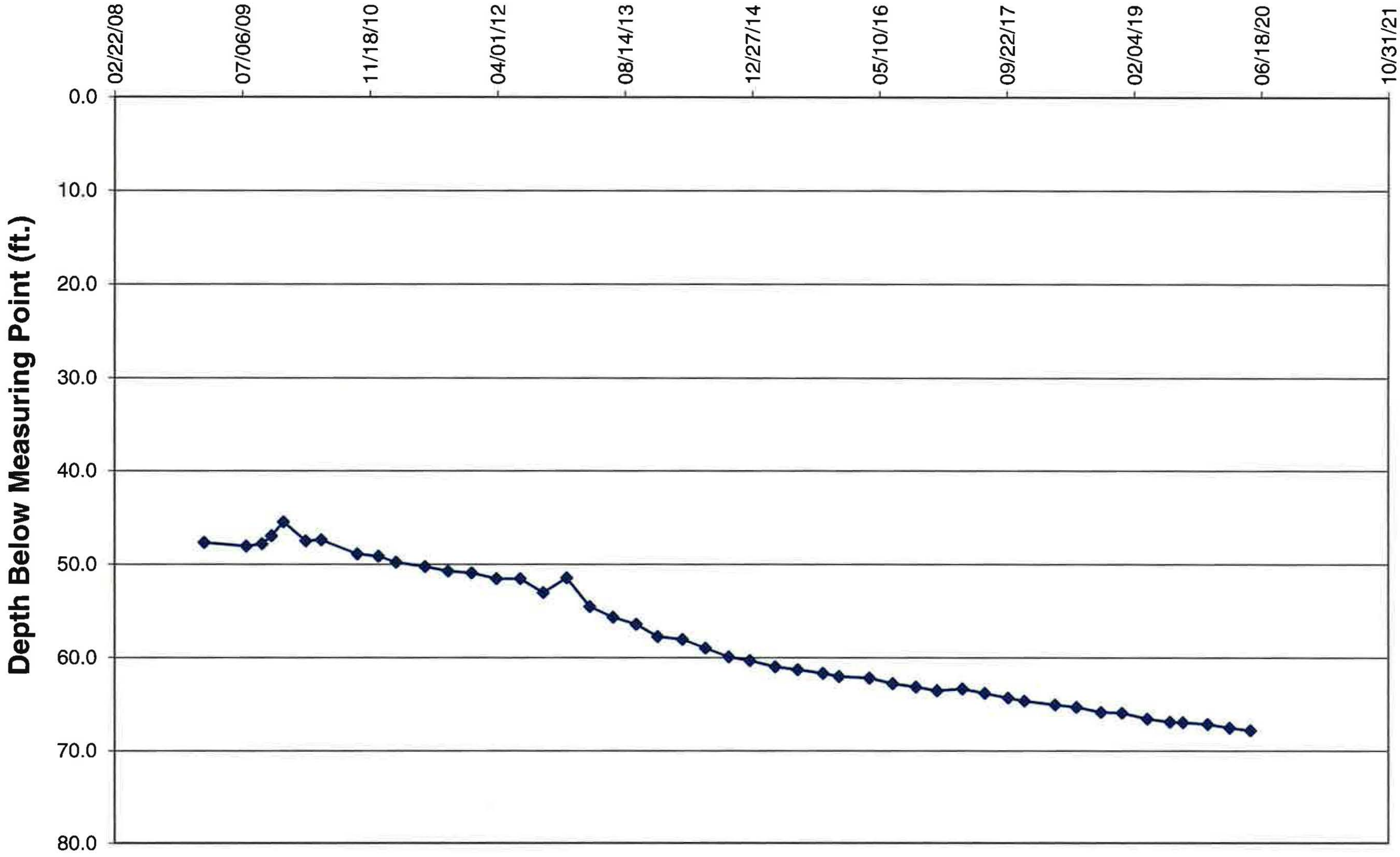
KRIGED 1st QUARTER, 2020 WATER LEVELS WHITE MESA SITE

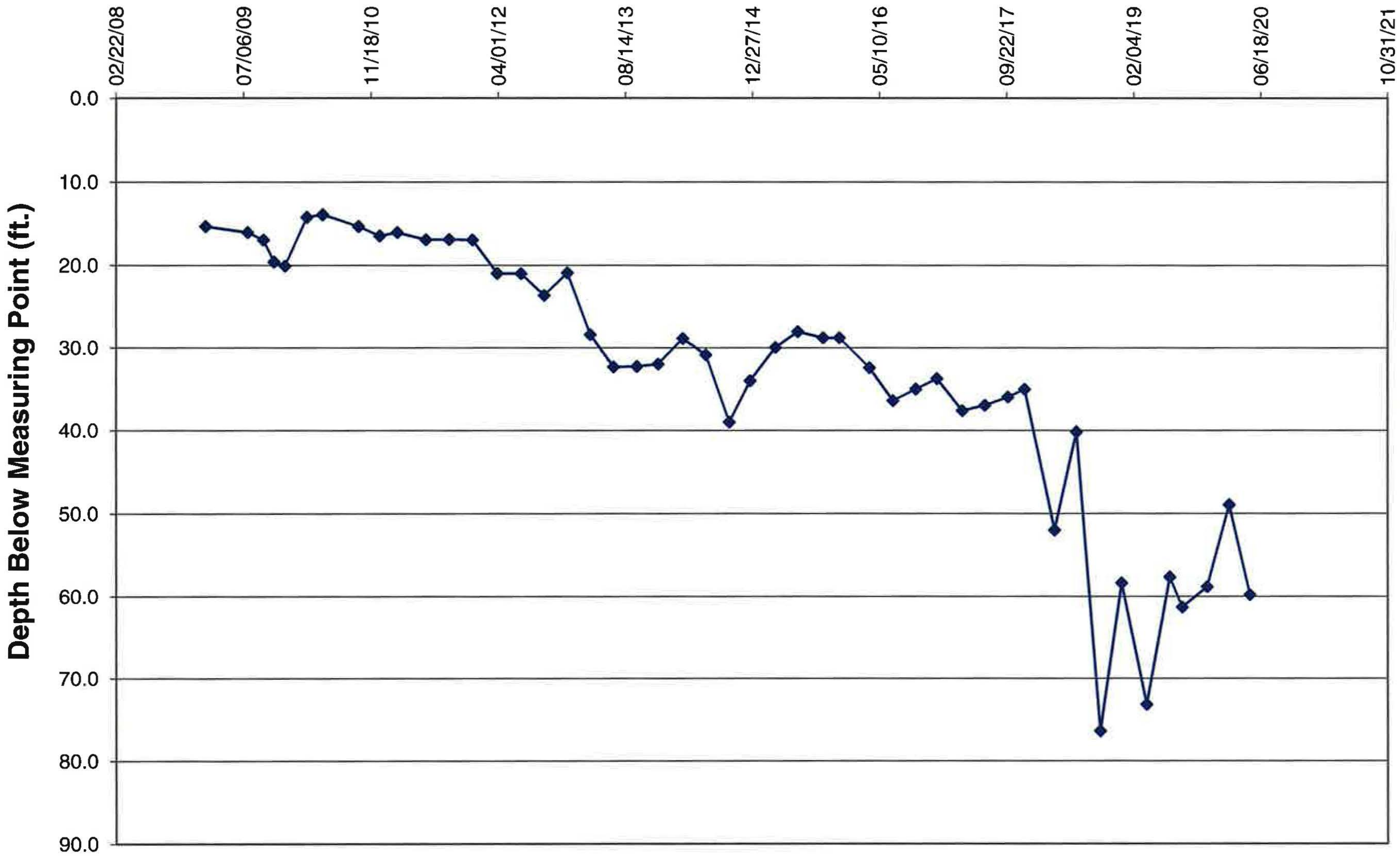
APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/may20/WL/Uwl0320.srf	D-1

Tab E

Hydrographs of Groundwater Elevations over Time for Nitrate Monitoring Wells

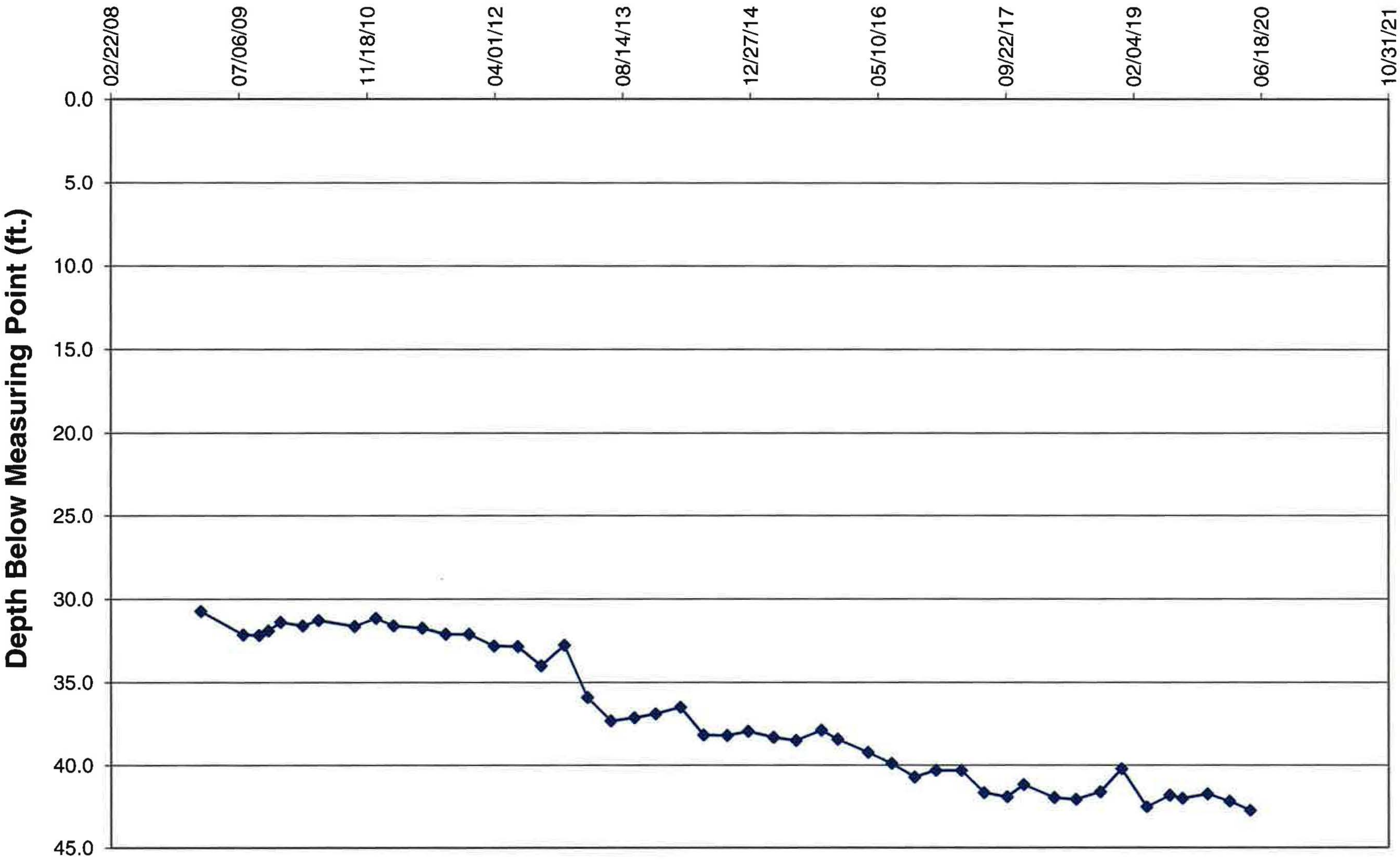
TWN-1 Water Level Over Time (ft. blmp)



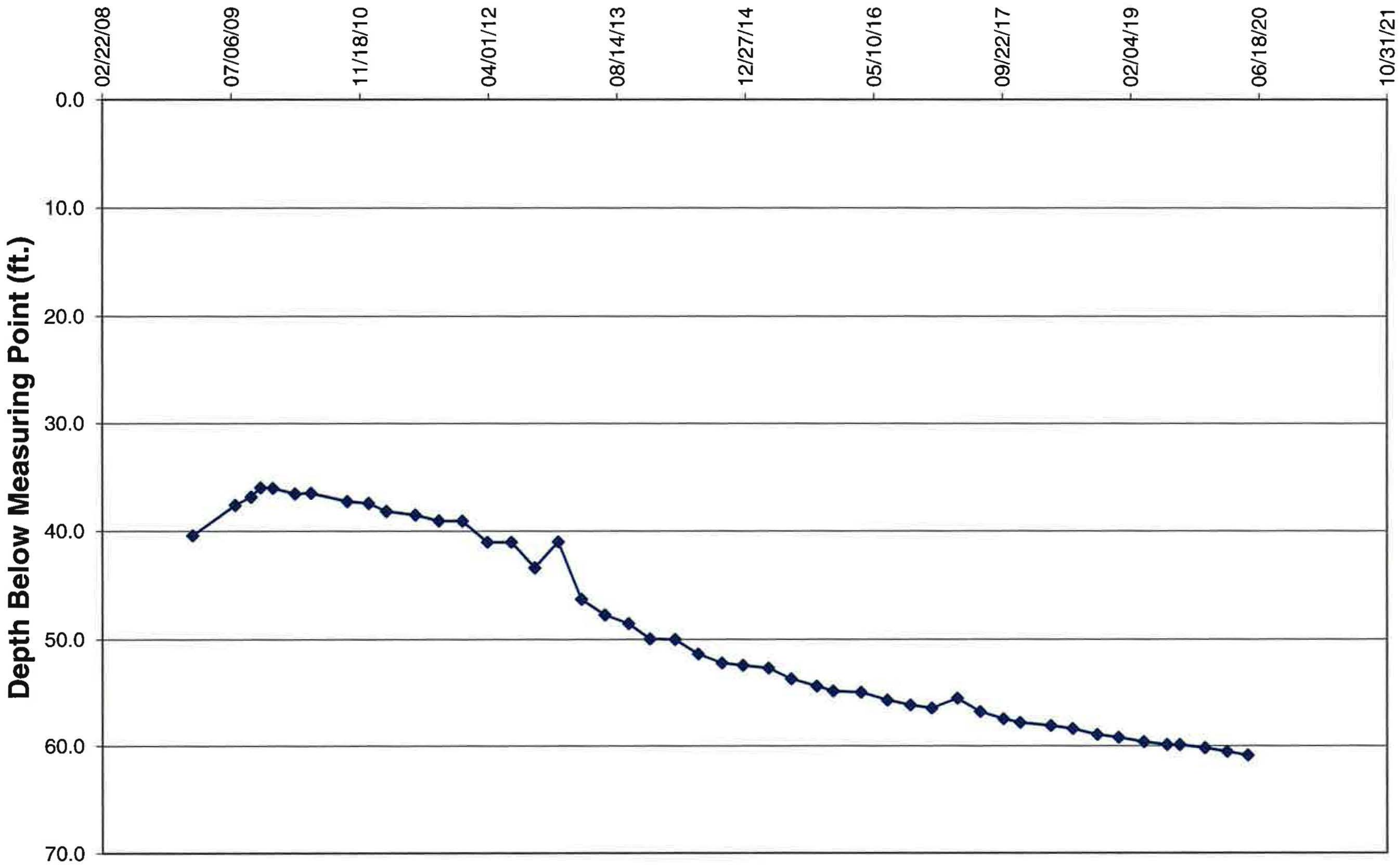


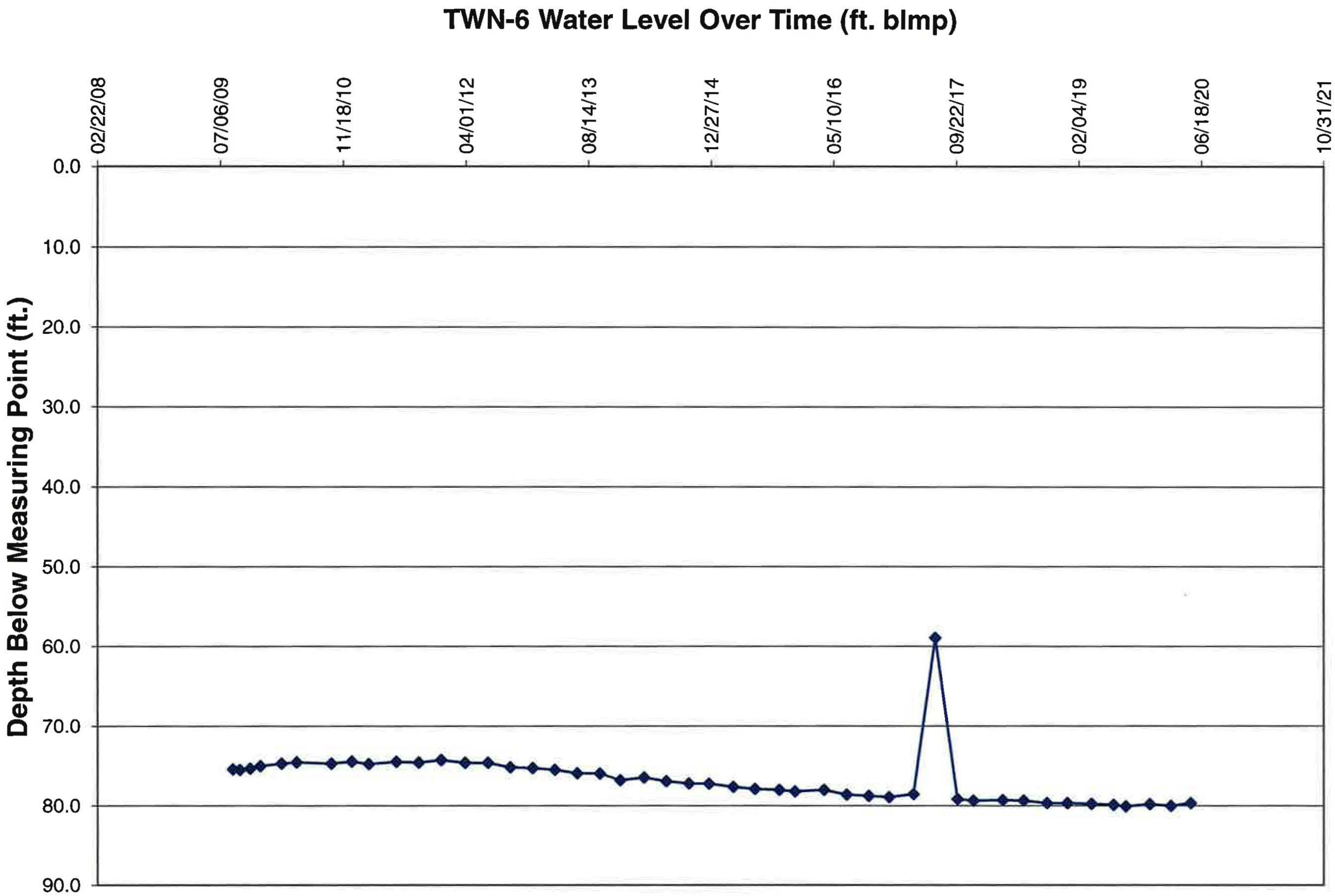
TWN-2 Water Level Over Time (ft. blmp)

TWN-3 Water Level Over Time (ft. blmp)

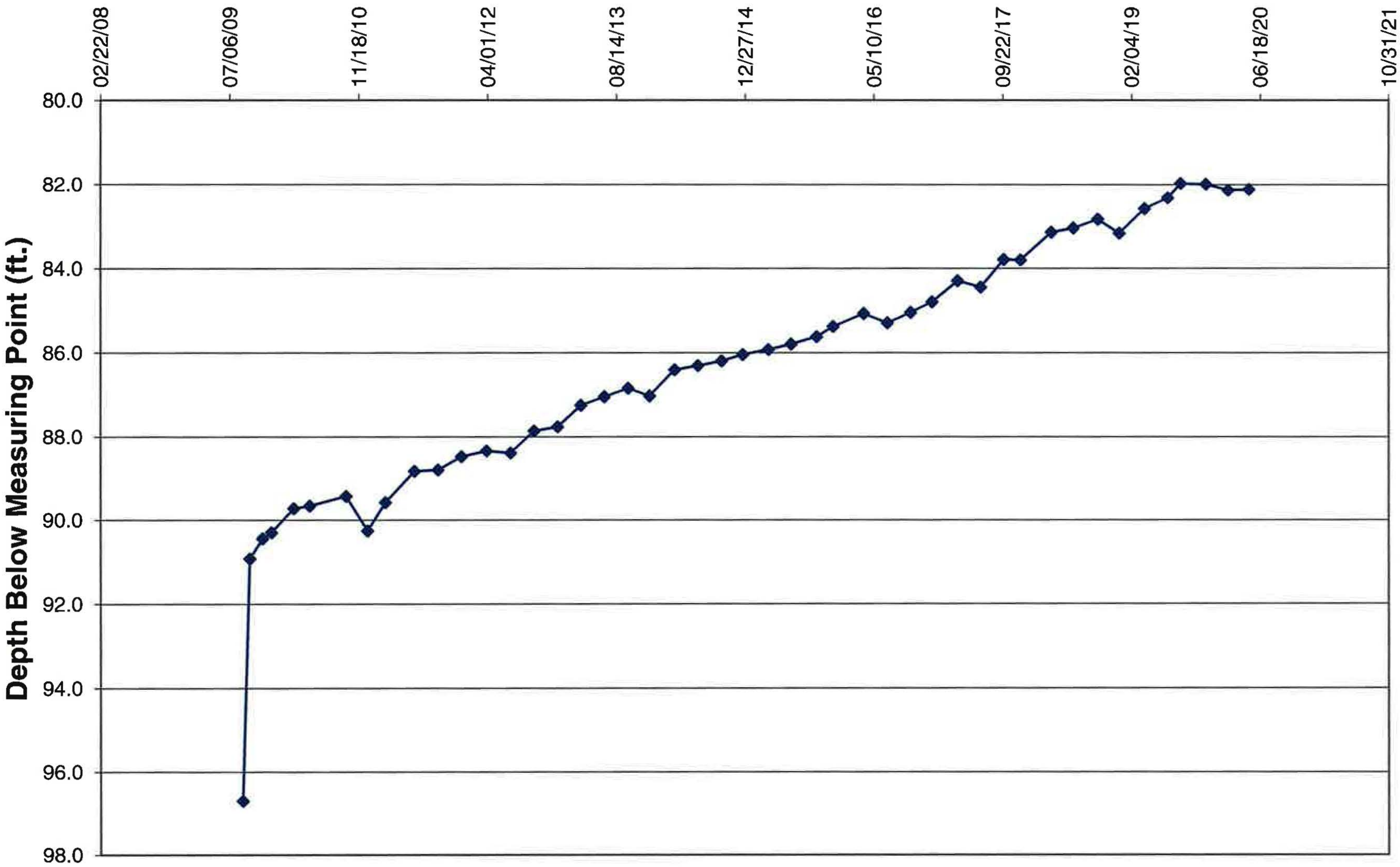


TWN-4 Water Level Over Time (ft. blmp)

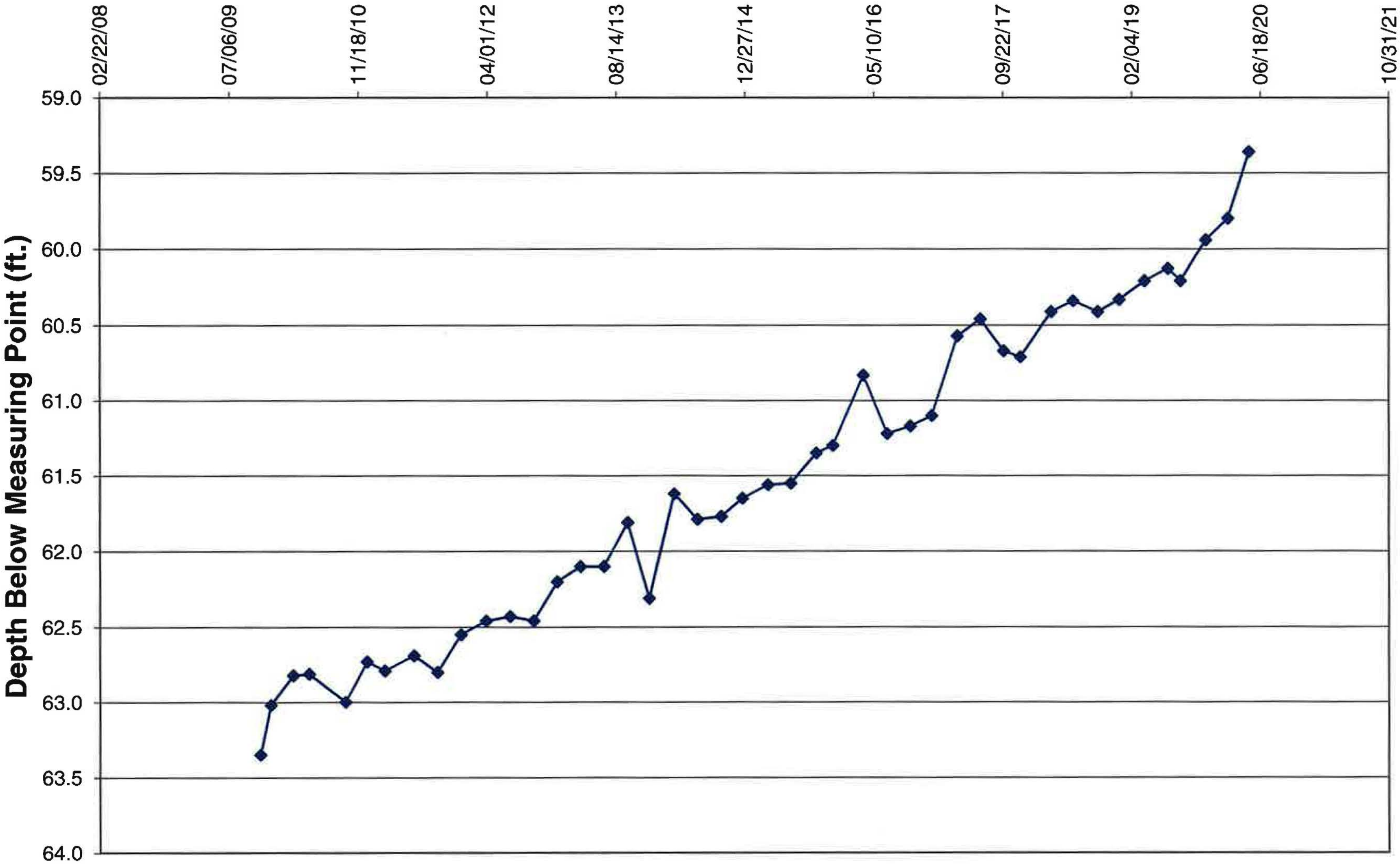


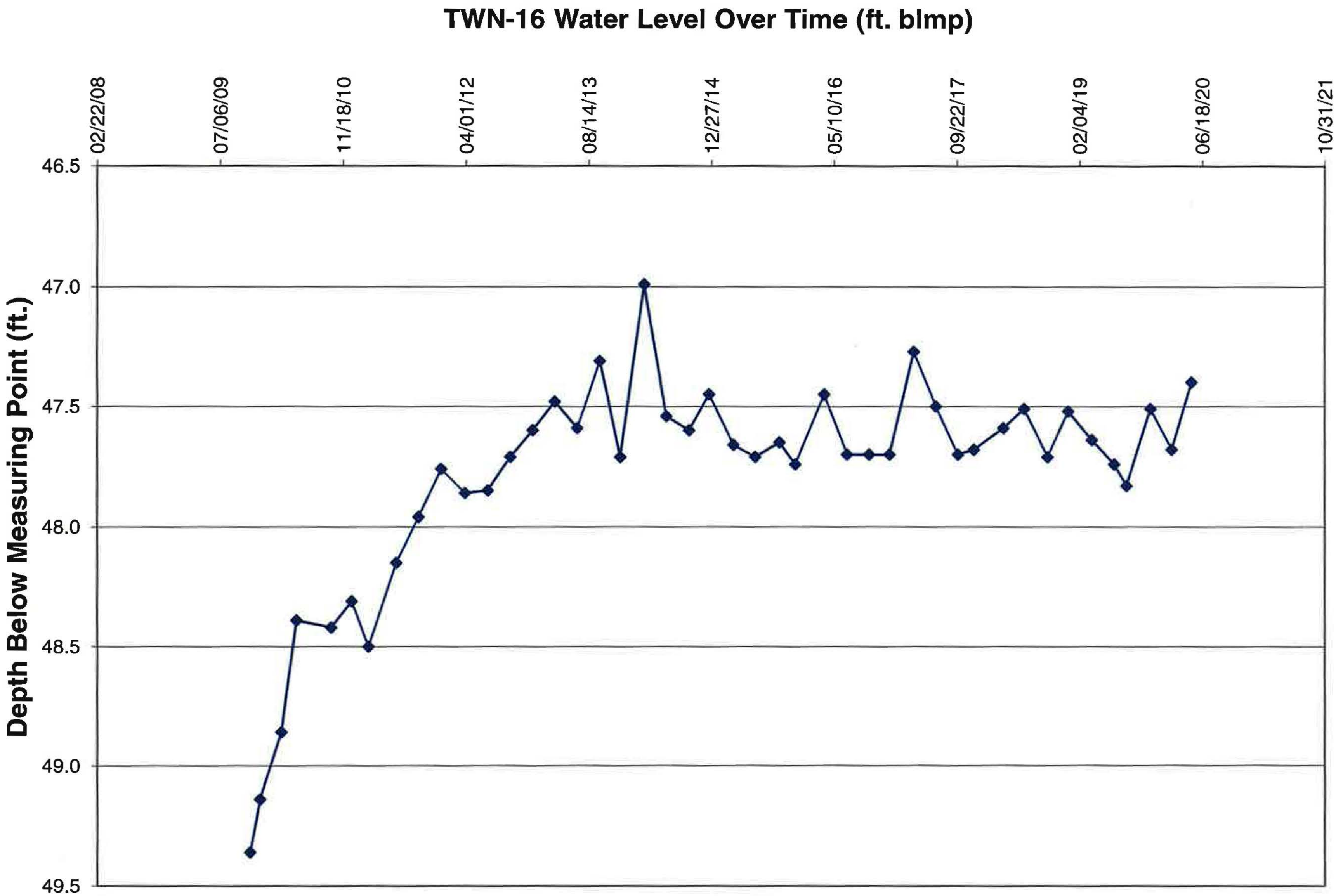

TWN-6 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
02/22/08
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16
09/22/17
02/04/19
06/18/20
10/31/21

TWN-7 Water Level Over Time (ft. blmp)

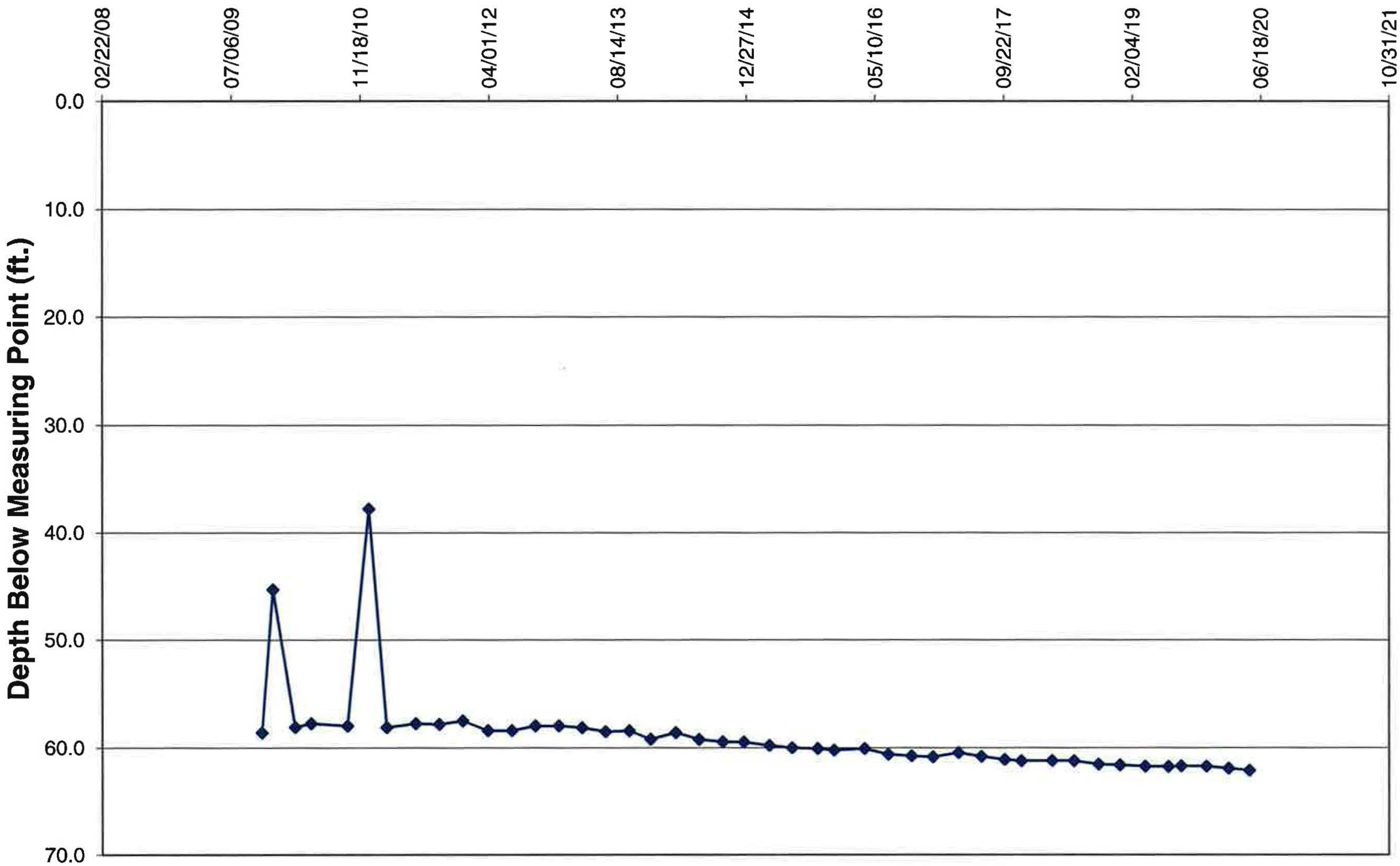


TWN-14 Water Level Over Time (ft. blmp)

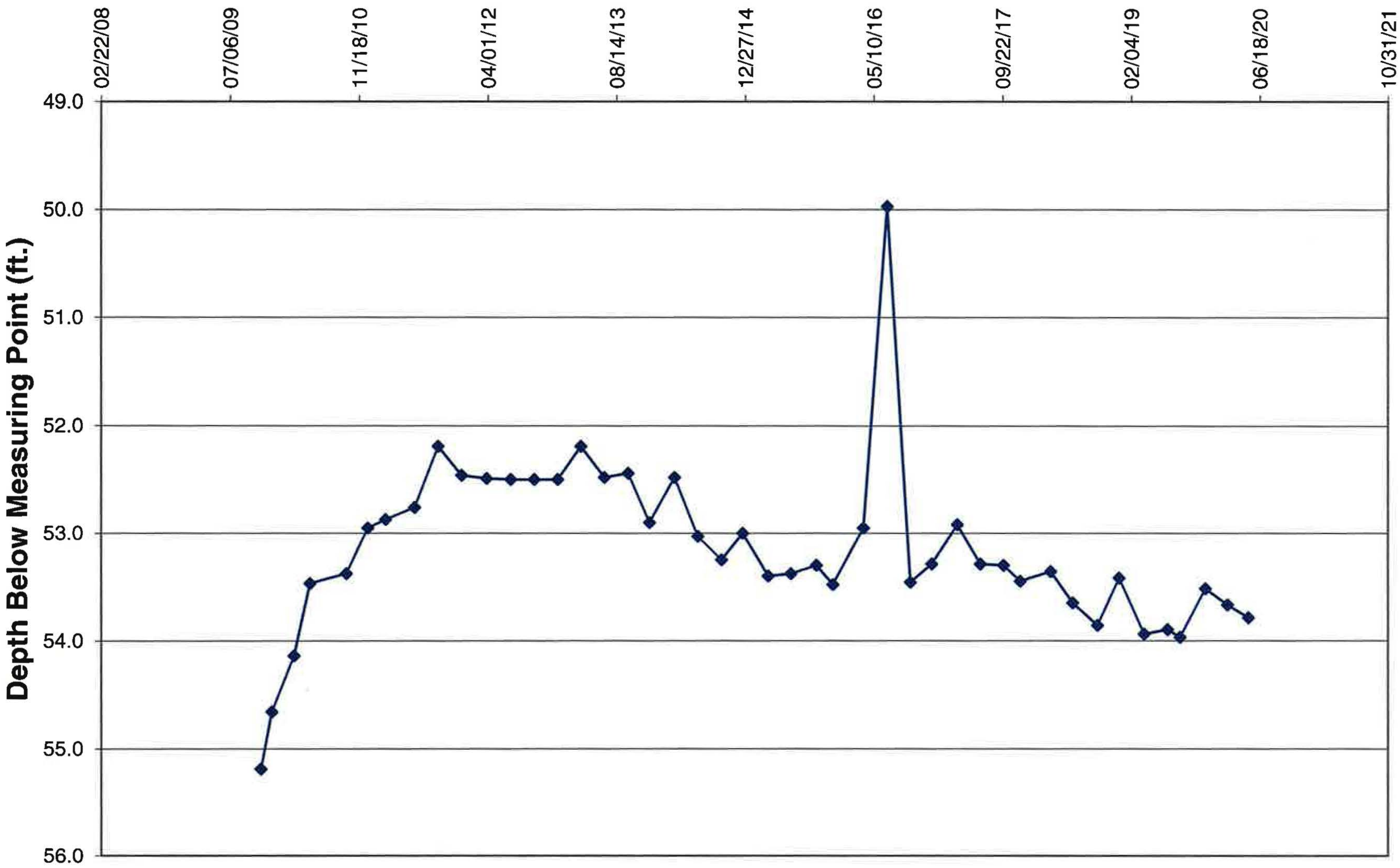



TWN-16 Water Level Over Time (ft. blmp)
Depth Below Measuring Point (ft.)
46.5
47.0
47.5
48.0
48.5
49.0
49.5
02/22/08
07/06/09
11/18/10
04/01/12
08/14/13
12/27/14
05/10/16
09/22/17
02/04/19
06/18/20
10/31/21

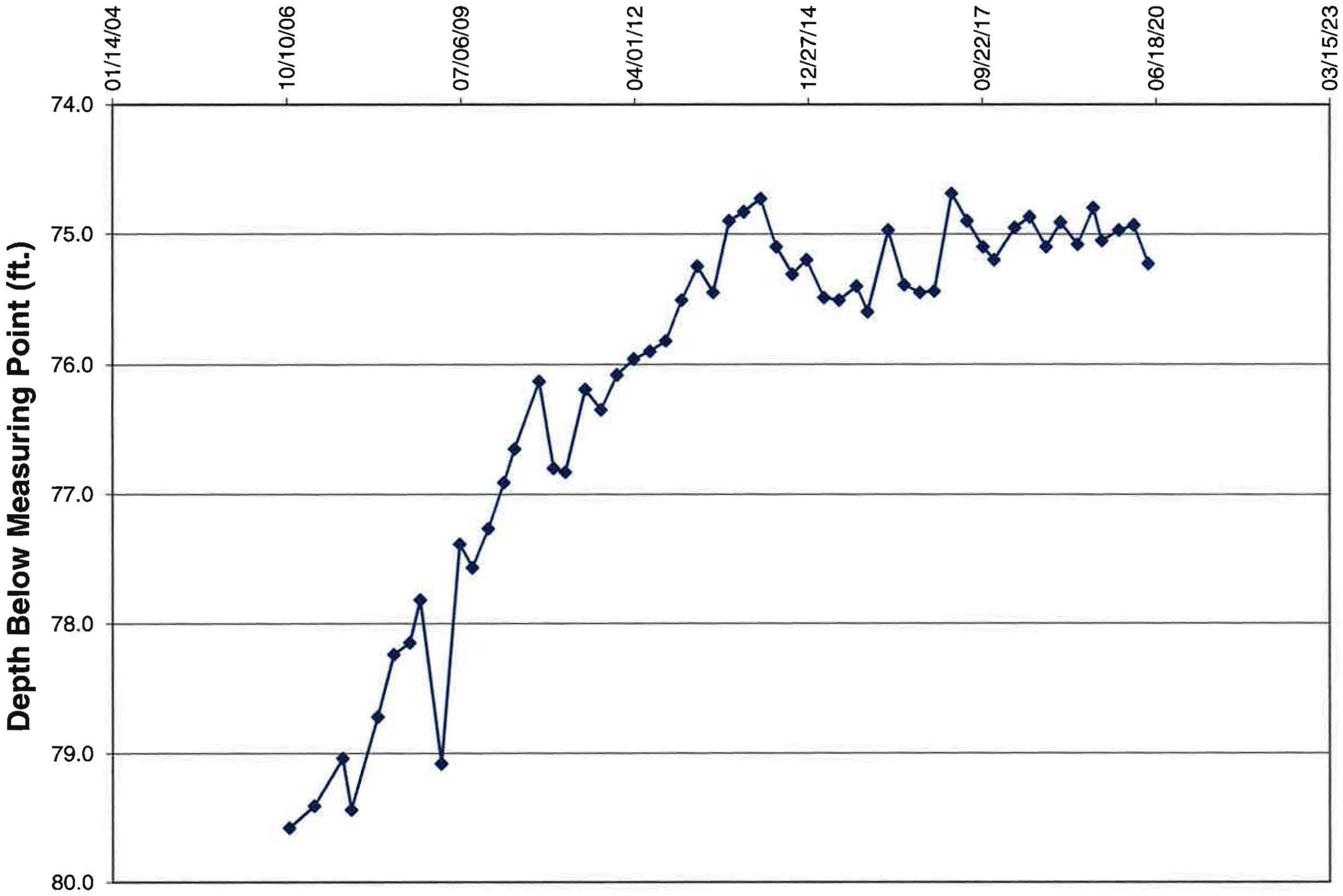
TWN-18 Water Level Over Time (ft. blmp)



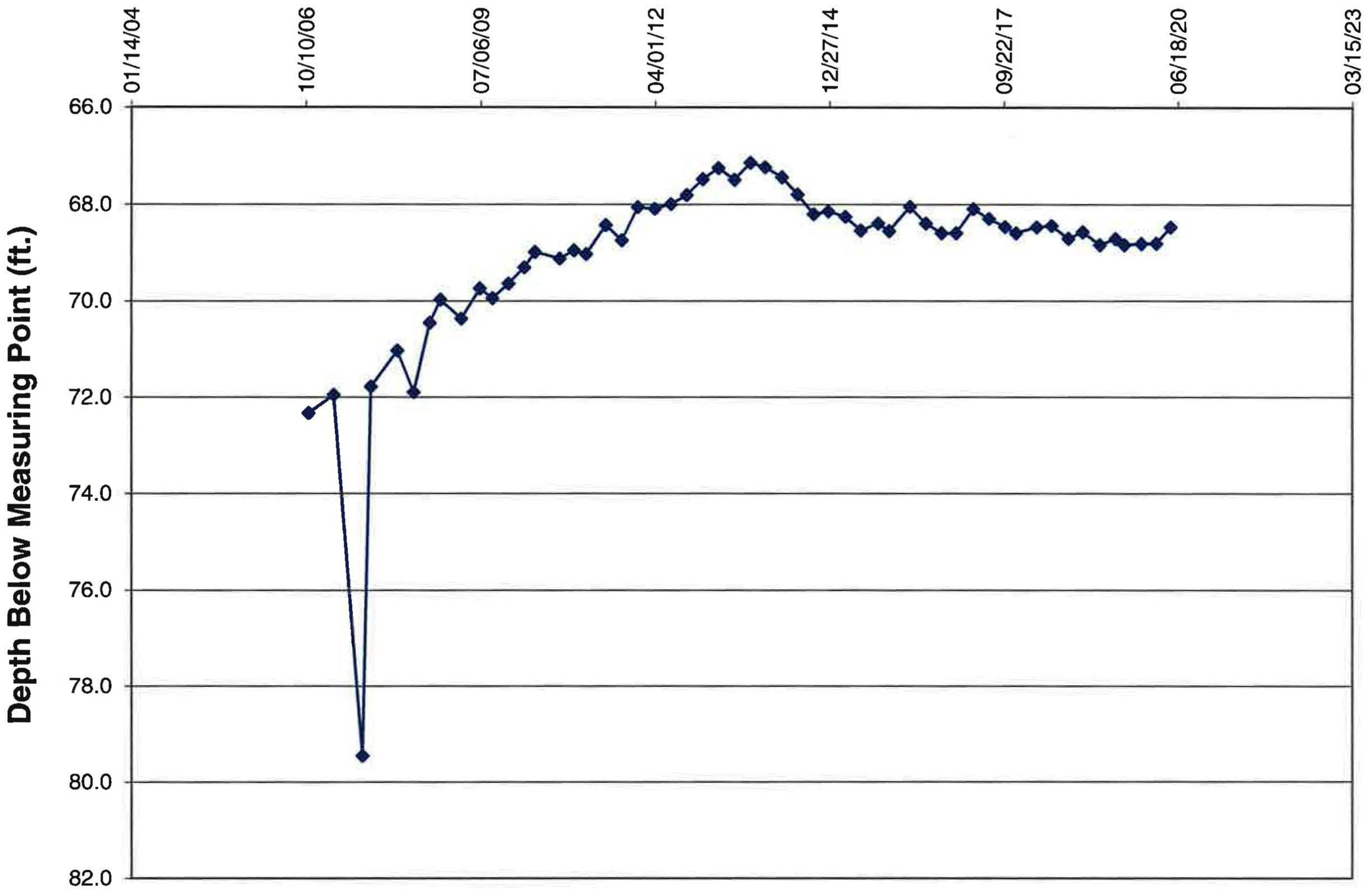
TWN-19 Water Level Over Time (ft. blmp)



MW-30 Water Level Over Time (ft. blmp)



MW-31 Water Level Over Time (ft. blmp)



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				106.13
5,600.38				02/06/09	47.71	46.58	
5,599.99				07/21/09	48.10	46.97	
5,600.26				09/21/09	47.83	46.70	
5,601.10				10/28/09	46.99	45.86	
5,602.59				12/14/09	45.50	44.37	
5,600.55				03/11/10	47.54	46.41	
5,600.66				05/11/10	47.43	46.30	
5,599.18				09/29/10	48.91	47.78	
5,598.92				12/21/10	49.17	48.04	
5,598.29				02/28/11	49.80	48.67	
5,597.80				06/21/11	50.29	49.16	
5,597.32				09/20/11	50.77	49.64	
5,597.15				12/21/11	50.94	49.81	
5,596.54				03/27/12	51.55	50.42	
5,596.52				06/28/12	51.57	50.44	
5,595.03				09/27/12	53.06	51.93	
5,596.62				12/28/12	51.47	50.34	
5,593.54				03/28/13	54.55	53.42	
5,592.38				06/27/13	55.71	54.58	
5,591.65				09/27/13	56.44	55.31	
5,590.34				12/20/13	57.75	56.62	
5,590.03				03/27/14	58.06	56.93	
5,589.09				06/25/14	59.00	57.87	
5,588.15				09/25/14	59.94	58.81	
5,587.74				12/17/14	60.35	59.22	
5,587.09				03/26/15	61.00	59.87	
5,586.79				06/22/15	61.30	60.17	
5,586.39				09/30/15	61.70	60.57	
5,586.05				12/02/15	62.04	60.91	
5,585.89				03/30/16	62.20	61.07	
5,585.30				06/30/16	62.79	61.66	
5,584.95				09/29/16	63.14	62.01	
5,584.55				12/21/16	63.54	62.41	
5,584.74				03/30/17	63.35	62.22	
5,584.29				06/27/17	63.80	62.67	
5,583.77				09/26/17	64.32	63.19	
5,583.44				11/29/17	64.65	63.52	
5,583.03				03/29/18	65.06	63.93	
5,582.79				06/22/18	65.30	64.17	
5,582.22				09/26/18	65.87	64.74	
5,582.14				12/17/18	65.95	64.82	
5,581.49				03/26/19	66.60	65.47	
5,581.18				06/24/19	66.91	65.78	
5,581.12				08/13/19	66.97	65.84	
5,580.93				11/19/19	67.16	66.03	
5,580.54				02/13/20	67.55	66.42	

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				95.9
5,611.37				2/6/09	15.32	14.38	
5,610.63				7/21/09	16.06	15.12	
5,609.73				9/21/09	16.96	16.02	
5,607.08				11/2/09	19.61	18.67	
5,606.57				12/14/09	20.12	19.18	
5,612.45				3/11/10	14.24	13.30	
5,612.78				5/11/10	13.91	12.97	
5,611.37				9/29/10	15.32	14.38	
5,610.24				12/21/10	16.45	15.51	
5,610.64				2/28/11	16.05	15.11	
5,609.78				6/21/11	16.91	15.97	
5609.79				9/20/11	16.90	15.96	
5609.72				12/21/11	16.97	16.03	
5,605.69				3/27/12	21.00	20.06	
5,605.67				6/28/12	21.02	20.08	
5,603.03				9/27/12	23.66	22.72	
5,605.76				12/28/12	20.93	19.99	
5,598.28				3/28/13	28.41	27.47	
5,594.32				6/27/13	32.37	31.43	
5,594.38				9/27/13	32.31	31.37	
5,594.68				12/20/13	32.01	31.07	
5,597.79				3/27/14	28.90	27.96	
5,595.80				6/25/14	30.89	29.95	
5,587.67				9/25/14	39.02	38.08	
5,592.66				12/17/14	34.03	33.09	
5,596.71				3/26/15	29.98	29.04	
5,598.64				6/22/15	28.05	27.11	
5,597.89				9/30/15	28.80	27.86	
5,597.89				12/2/15	28.80	27.86	
5,594.25				3/30/16	32.44	31.50	
5,590.26				6/30/16	36.43	35.49	
5,591.67				9/29/16	35.02	34.08	
5592.92				12/21/16	33.77	32.83	
5589.05				3/30/17	37.64	36.7	
5589.69				6/27/17	37.00	36.06	
5590.71				9/26/17	35.98	35.04	
5591.65				11/30/17	35.04	34.10	
5574.69				3/28/18	52.00	51.06	
5586.49				6/22/18	40.20	39.26	
5550.31				9/24/18	76.38	75.44	
5568.32				12/17/18	58.37	57.43	
5553.52				3/25/19	73.17	72.23	
5569.06				6/24/19	57.63	56.69	
5565.38				8/12/19	61.31	60.37	
5567.87				11/18/19	58.82	57.88	
5577.69				2/13/20	49.00	48.06	

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				95.9
5566.89				5/5/20	59.80	58.86	

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				96
5,603.77				2/6/09	30.73	29.87	
5,602.37				7/21/09	32.13	31.27	
5,602.34				9/21/09	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				3/11/10	31.60	30.74	
5,603.23				5/11/10	31.27	30.41	
5,602.86				9/29/10	31.64	30.78	
5,603.35				12/21/10	31.15	30.29	
5,602.89				2/28/11	31.61	30.75	
5,602.75				6/21/11	31.75	30.89	
5,602.40				9/20/11	32.10	31.24	
5,602.40				12/21/11	32.10	31.24	
5,601.70				3/27/12	32.80	31.94	
5,601.67				6/28/12	32.83	31.97	
5,600.50				9/27/12	34.00	33.14	
5,601.74				12/28/12	32.76	31.90	
5,598.60				3/28/13	35.90	35.04	
5,597.18				6/27/13	37.32	36.46	
5,597.36				9/27/13	37.14	36.28	
5,597.60				12/20/13	36.90	36.04	
5,598.00				3/27/14	36.50	35.64	
5,596.34				6/25/14	38.16	37.30	
5,596.30				9/25/14	38.20	37.34	
5,596.55				12/17/14	37.95	37.09	
5,596.20				3/26/15	38.30	37.44	
5,596.00				6/22/15	38.50	37.64	
5,596.61				9/30/15	37.89	37.03	
5,596.09				12/2/15	38.41	37.55	
5,595.29				3/30/16	39.21	38.35	
5,594.61				6/30/16	39.89	39.03	
5,593.79				9/29/16	40.71	39.85	
5,594.20				12/21/16	40.30	39.44	
5,594.20				3/30/17	40.30	39.44	
5,592.85				6/27/17	41.65	40.79	
5,592.60				9/26/17	41.90	41.04	
5,593.33				11/29/17	41.17	40.31	
5,592.55				3/29/18	41.95	41.09	
5,592.45				6/22/18	42.05	41.19	
5,592.90				9/26/18	41.60	40.74	
5,594.29				12/18/18	40.21	39.35	
5,591.99				3/26/19	42.51	41.65	
5,592.69				6/24/19	41.81	40.95	
5,592.50				8/13/19	42.00	41.14	
5,592.78				11/19/19	41.72	40.86	
5,592.33				2/13/20	42.17	41.31	

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
5,591.78				5/5/20	42.72	41.86	

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				126.4
5,601.47				2/6/09	40.40	39.57	
5,604.26				7/21/09	37.61	36.78	
5,605.02				9/21/09	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				3/11/10	36.56	35.73	
5,605.36				5/11/10	36.51	35.68	
5,604.59				9/29/10	37.28	36.45	
5,604.42				12/21/10	37.45	36.62	
5,603.69				2/28/11	38.18	37.35	
5,603.36				6/21/11	38.51	37.68	
5,602.82				9/20/11	39.05	38.22	
5,602.79				12/21/11	39.08	38.25	
5,600.82				3/27/12	41.05	40.22	
5,600.84				6/28/12	41.03	40.20	
5,598.47				9/27/12	43.40	42.57	
5,600.86				12/28/12	41.01	40.18	
5,595.57				3/28/13	46.30	45.47	
5,594.12				6/27/13	47.75	46.92	
5,593.33				9/27/13	48.54	47.71	
5,591.92				12/20/13	49.95	49.12	
5,591.85				3/27/14	50.02	49.19	
5,590.49				6/25/14	51.38	50.55	
5,589.64				9/25/14	52.23	51.40	
5,589.42				12/17/14	52.45	51.62	
5,589.17				3/26/15	52.70	51.87	
5,588.17				6/22/15	53.70	52.87	
5,587.48				9/30/15	54.39	53.56	
5,587.02				12/2/15	54.85	54.02	
5,586.90				3/20/16	54.97	54.14	
5,586.18				6/30/16	55.69	54.86	
5,585.72				9/29/16	56.15	55.32	
5585.42				12/21/16	56.45	55.62	
5586.35				3/30/17	55.52	54.69	
5585.09				6/27/17	56.78	55.95	
5584.41				9/26/17	57.46	56.63	
5584.07				11/29/17	57.80	56.97	
5583.76				3/29/18	58.11	57.28	
5583.47				6/22/18	58.40	57.57	
5582.92				9/26/18	58.95	58.12	
5582.66				12/18/18	59.21	58.38	
5582.23				3/26/19	59.64	58.81	
5581.97				6/24/19	59.90	59.07	
5581.96				8/13/19	59.91	59.08	
5581.68				11/19/19	60.19	59.36	
5581.34				2/13/20	60.53	59.70	

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				126.4
5580.99				5/5/20	60.88	60.05	

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				131.91
5,589.52				8/25/09	75.42	73.51	
5,589.46				9/22/09	75.48	73.57	
5,589.61				11/3/09	75.33	73.42	
5,589.92				12/14/09	75.02	73.11	
5,590.24				3/11/10	74.70	72.79	
5,590.40				5/11/10	74.54	72.63	
5,590.24				9/29/10	74.70	72.79	
5,590.49				12/21/10	74.45	72.54	
5,590.16				2/28/11	74.78	72.87	
5,590.44				6/21/11	74.50	72.59	
5,590.35				9/20/11	74.59	72.68	
5,590.67				12/21/11	74.27	72.36	
5,590.34				3/27/12	74.60	72.69	
5,590.32				6/28/12	74.62	72.71	
5,589.77				9/27/12	75.17	73.26	
5,589.67				12/28/12	75.27	73.36	
5,589.45				3/28/13	75.49	73.58	
5,589.01				6/27/13	75.93	74.02	
5,588.99				9/27/13	75.95	74.04	
5,588.15				12/20/13	76.79	74.88	
5,588.50				3/27/14	76.44	74.53	
5,588.03				6/25/14	76.91	75.00	
5,587.74				9/25/14	77.20	75.29	
5,587.69				12/17/14	77.25	75.34	
5,587.29				3/26/15	77.65	75.74	
5,587.04				6/22/15	77.90	75.99	
5,586.93				9/30/15	78.01	76.10	
5,586.72				12/2/15	78.22	76.31	
5,586.92				3/30/16	78.02	76.11	
5,586.32				6/30/16	78.62	76.71	
5,586.16				9/29/16	78.78	76.87	
5,586.03				12/21/16	78.91	77.00	
5,586.40				3/30/17	78.54	76.63	
5,605.99				6/27/17	58.95	57.04	
5585.76				9/26/17	79.18	77.27	
5585.59				11/29/17	79.35	77.44	
5585.63				3/29/18	79.31	77.4	
5585.59				6/22/18	79.35	77.44	
5585.26				9/26/18	79.68	77.77	
5585.27				12/18/18	79.67	77.76	
5585.16				3/26/19	79.78	77.87	
5585.05				6/24/19	79.89	77.98	
5584.86				8/13/19	80.08	78.17	
5585.14				11/19/19	79.80	77.89	
5584.92				2/13/20	80.02	78.11	
5585.27				5/5/20	79.67	77.76	

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				107.2
5,552.56				08/25/09	96.70	94.83	
5,558.34				09/21/09	90.92	89.05	
5,558.82				11/10/09	90.44	88.57	
5,558.96				12/14/09	90.30	88.43	
5,559.54				03/11/10	89.72	87.85	
5,559.60				05/11/10	89.66	87.79	
5,559.83				09/29/10	89.43	87.56	
5,559.00				12/21/10	90.26	88.39	
5,559.68				02/28/11	89.58	87.71	
5,560.43				06/21/11	88.83	86.96	
5,560.46				09/20/11	88.80	86.93	
5,560.78				12/21/11	88.48	86.61	
5,560.92				03/27/12	88.34	86.47	
5,560.87				06/28/12	88.39	86.52	
5,561.40				09/27/12	87.86	85.99	
5,561.50				12/28/12	87.76	85.89	
5,562.01				03/28/13	87.25	85.38	
5,562.21				06/27/13	87.05	85.18	
5,562.41				09/27/13	86.85	84.98	
5,562.23				12/20/13	87.03	85.16	
5,562.85				03/27/14	86.41	84.54	
5,562.95				06/25/14	86.31	84.44	
5,563.06				09/25/14	86.20	84.33	
5,563.21				12/17/14	86.05	84.18	
5,563.33				03/26/15	85.93	84.06	
5,563.46				06/22/15	85.80	83.93	
5,563.64				09/30/15	85.62	83.75	
5,563.88				12/02/15	85.38	83.51	
5,564.19				03/30/16	85.07	83.20	
5,563.97				06/30/16	85.29	83.42	
5,564.21				09/29/16	85.05	83.18	
5,564.46				12/21/16	84.80	82.93	
5,564.96				03/30/17	84.30	82.43	
5,564.81				06/27/17	84.45	82.58	
5,565.46				09/26/17	83.80	81.93	
5,565.45				11/29/17	83.81	81.94	
5,566.11				03/29/18	83.15	81.28	
5,566.21				06/22/18	83.05	81.18	
5,566.42				09/26/18	82.84	80.97	
5,566.09				12/18/18	83.17	81.30	
5,566.67				03/26/19	82.59	80.72	
5,566.93				06/24/19	82.33	80.46	
5,567.28				08/13/19	81.98	80.11	
5,567.26				11/19/19	82.00	80.13	
5,567.12				02/13/20	82.14	80.27	
5,567.14				05/05/20	82.12	80.25	

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				124.73
5,586.18				11/4/09	63.35	61.62	
5,586.51				12/14/09	63.02	61.29	
5,586.71				3/11/10	62.82	61.09	
5,586.72				5/11/10	62.81	61.08	
5,586.53				9/29/10	63.00	61.27	
5,586.80				12/21/10	62.73	61.00	
5,586.74				2/28/11	62.79	61.06	
5,586.84				6/21/11	62.69	60.96	
5,586.73				9/20/11	62.80	61.07	
5,586.98				12/21/11	62.55	60.82	
5,587.07				3/27/12	62.46	60.73	
5,587.10				6/28/12	62.43	60.70	
5,587.07				9/27/12	62.46	60.73	
5,587.33				12/28/12	62.20	60.47	
5,587.43				3/28/13	62.10	60.37	
5,587.43				6/27/13	62.10	60.37	
5,587.72				9/27/13	61.81	60.08	
5,587.22				12/20/13	62.31	60.58	
5,587.91				3/27/14	61.62	59.89	
5,587.74				6/25/14	61.79	60.06	
5,587.76				9/25/14	61.77	60.04	
5,587.88				12/17/14	61.65	59.92	
5,587.97				3/26/15	61.56	59.83	
5,587.98				6/22/15	61.55	59.82	
5,588.18				9/30/15	61.35	59.62	
5,588.23				12/2/15	61.30	59.57	
5,588.70				3/30/16	60.83	59.10	
5,588.31				6/30/16	61.22	59.49	
5,588.36				9/29/16	61.17	59.44	
5,588.43				12/21/16	61.10	59.37	
5,588.96				3/30/17	60.57	58.84	
5,589.07				6/27/17	60.46	58.73	
5588.86				9/26/17	60.67	58.94	
5588.82				11/29/17	60.71	58.98	
5589.12				3/29/18	60.41	58.68	
5589.19				6/22/18	60.34	58.61	
5589.12				9/26/18	60.41	58.68	
5589.20				12/18/18	60.33	58.60	
5589.32				3/26/19	60.21	58.48	
5589.40				6/25/19	60.13	58.40	
5589.32				8/13/19	60.21	58.48	
5589.59				11/19/19	59.94	58.21	
5589.73				2/13/20	59.80	58.07	
5590.17				5/5/20	59.36	57.63	

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				94.63
5,603.34				11/4/09	49.36	47.73	
5,603.56				12/14/09	49.14	47.51	
5,603.84				3/11/10	48.86	47.23	
5,604.31				5/11/10	48.39	46.76	
5,604.28				9/29/10	48.42	46.79	
5,604.39				12/21/10	48.31	46.68	
5,604.20				2/28/11	48.50	46.87	
5,604.55				6/21/11	48.15	46.52	
5,604.74				9/20/11	47.96	46.33	
5,604.94				12/21/11	47.76	46.13	
5,604.84				3/27/12	47.86	46.23	
5,604.85				6/28/12	47.85	46.22	
5,604.99				9/27/12	47.71	46.08	
5,605.10				12/28/12	47.60	45.97	
5,605.22				3/28/13	47.48	45.85	
5,605.11				6/27/13	47.59	45.96	
5,605.39				9/27/13	47.31	45.68	
5,604.99				12/20/13	47.71	46.08	
5,605.71				3/27/14	46.99	45.36	
5,605.16				6/25/14	47.54	45.91	
5,605.10				9/25/14	47.60	45.97	
5,605.25				12/17/14	47.45	45.82	
5,605.04				3/26/15	47.66	46.03	
5,604.99				6/22/15	47.71	46.08	
5,605.05				9/30/15	47.65	46.02	
5,604.96				12/2/15	47.74	46.11	
5,605.25				3/30/16	47.45	45.82	
5,605.00				6/30/16	47.70	46.07	
5,605.00				9/29/16	47.70	46.07	
5,605.00				12/21/16	47.70	46.07	
5,605.43				3/30/17	47.27	45.64	
5,605.20				6/27/17	47.50	45.87	
5605.00				9/26/17	47.70	46.07	
5605.02				11/29/17	47.68	46.05	
5605.11				3/29/18	47.59	45.96	
5605.19				6/22/18	47.51	45.88	
5604.99				9/26/18	47.71	46.08	
5605.18				12/19/18	47.52	45.89	
5605.06				3/26/19	47.64	46.01	
5604.96				6/24/19	47.74	46.11	
5604.87				8/13/19	47.83	46.20	
5605.19				11/19/19	47.51	45.88	
5605.02				2/13/20	47.68	46.05	
5605.3				5/5/20	47.40	45.77	

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				147
5,586.85				11/2/09	58.60	57.10	
5,600.14				12/14/09	45.31	43.81	
5,587.36				3/11/10	58.09	56.59	
5,587.71				5/11/10	57.74	56.24	
5,587.50				9/29/10	57.95	56.45	
5,607.66				12/21/10	37.79	36.29	
5,587.35				2/28/11	58.10	56.60	
5,587.71				6/21/11	57.74	56.24	
5,587.65				9/20/11	57.80	56.30	
5,587.95				12/21/11	57.50	56.00	
5,587.05				3/27/12	58.40	56.90	
5,587.05				6/28/12	58.40	56.90	
5,587.50				9/27/12	57.95	56.45	
5,587.50				12/28/12	57.95	56.45	
5,587.32				3/28/13	58.13	56.63	
5,586.95				6/27/13	58.50	57.00	
5,587.02				9/27/13	58.43	56.93	
5,586.26				12/20/13	59.19	57.69	
5,586.87				3/27/14	58.58	57.08	
5,586.23				6/25/14	59.22	57.72	
5,586.02				9/25/14	59.43	57.93	
5,585.99				12/17/14	59.46	57.96	
5,585.66				3/26/15	59.79	58.29	
5,585.45				6/22/15	60.00	58.50	
5,585.37				9/30/15	60.08	58.58	
5,585.24				12/2/15	60.21	58.71	
5,585.38				3/30/16	60.07	58.57	
5,584.85				6/30/16	60.60	59.10	
5,584.69				9/29/16	60.76	59.26	
5,584.60				12/21/16	60.85	59.35	
5,584.99				3/30/17	60.46	58.96	
5,584.65				6/27/17	60.80	59.30	
5584.36				9/26/17	61.09	59.59	
5584.24				11/29/17	61.21	59.71	
5584.25				3/29/18	61.20	59.70	
5584.23				6/22/18	61.22	59.72	
5583.92				9/26/18	61.53	60.03	
5583.85				12/18/18	61.60	60.10	
5583.72				3/26/19	61.73	60.23	
5583.69				6/24/19	61.76	60.26	
5583.76				8/13/19	61.69	60.19	
5583.72				11/19/19	61.73	60.23	
5583.54				2/13/20	61.91	60.41	
5583.34				5/5/20	62.11	60.61	

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				107.77
5,606.17				11/2/09	55.19	53.42	
5,606.70				12/14/09	54.66	52.89	
5,607.22				3/11/10	54.14	52.37	
5,607.89				5/11/10	53.47	51.70	
5,607.98				9/29/10	53.38	51.61	
5,608.41				12/21/10	52.95	51.18	
5,608.49				2/28/11	52.87	51.10	
5,608.60				6/21/11	52.76	50.99	
5,609.17				9/20/11	52.19	50.42	
5,608.90				12/21/11	52.46	50.69	
5,608.87				3/27/12	52.49	50.72	
5,608.86				6/28/12	52.50	50.73	
5,608.86				9/27/12	52.50	50.73	
5,608.86				12/28/12	52.50	50.73	
5,609.17				3/28/13	52.19	50.42	
5,608.88				6/27/13	52.48	50.71	
5,608.92				9/27/13	52.44	50.67	
5,608.46				12/20/13	52.90	51.13	
5,608.88				3/27/14	52.48	50.71	
5,608.33				6/25/14	53.03	51.26	
5,608.11				9/25/14	53.25	51.48	
5,608.36				12/17/14	53.00	51.23	
5,607.96				3/26/15	53.40	51.63	
5,607.98				6/22/15	53.38	51.61	
5,608.06				9/30/15	53.30	51.53	
5,607.88				12/2/15	53.48	51.71	
5,608.41				3/30/16	52.95	51.18	
5,611.39				6/30/16	49.97	48.20	
5,607.90				9/29/16	53.46	51.69	
5,608.07				12/21/16	53.29	51.52	
5,608.44				3/30/17	52.92	51.15	
5,608.07				6/27/17	53.29	51.52	
5608.06				9/26/17	53.30	51.53	
5607.91				11/29/17	53.45	51.68	
5608.00				3/28/18	53.36	51.59	
5607.71				6/21/18	53.65	51.88	
5607.50				9/26/18	53.86	52.09	
5607.94				12/19/18	53.42	51.65	
5607.42				3/26/19	53.94	52.17	
5607.46				6/25/19	53.90	52.13	
5607.39				8/13/19	53.97	52.20	
5607.84				11/19/19	53.52	51.75	
5607.69				2/13/20	53.67	51.90	
5607.57				5/5/20	53.79	52.02	

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				10/24/06	79.58	78.42	
5,535.09				3/16/07	79.41	78.25	
5,535.46				8/27/07	79.04	77.88	
5,535.06				10/15/07	79.44	78.28	
5,535.78				3/15/08	78.72	77.56	
5,536.26				6/15/08	78.24	77.08	
5,536.35				9/15/08	78.15	76.99	
5,536.68				11/15/08	77.82	76.66	
5,535.42				3/15/09	79.08	77.92	
5,537.11				6/30/09	77.39	76.23	
5,536.93				9/10/09	77.57	76.41	
5,537.23				12/11/09	77.27	76.11	
5,537.59				3/11/10	76.91	75.75	
5,537.85				5/11/10	76.65	75.49	
5,538.37				9/29/10	76.13	74.97	
5,537.70				12/21/10	76.8	75.64	
5,537.67				2/28/11	76.83	75.67	
5,538.31				6/21/11	76.19	75.03	
5,538.15				9/20/11	76.35	75.19	
5,538.42				12/21/11	76.08	74.92	
5,538.54				3/27/12	75.96	74.8	
5,538.60				6/28/12	75.9	74.74	
5,538.68				9/27/12	75.82	74.66	
5,538.99				12/28/12	75.51	74.35	
5,539.25				3/28/13	75.25	74.09	
5,539.05				6/27/13	75.45	74.29	
5,539.60				9/27/13	74.90	73.74	
5,539.67				12/20/13	74.83	73.67	
5,539.77				3/27/14	74.73	73.57	
5,539.40				6/25/14	75.10	73.94	
5,539.19				9/25/14	75.31	74.15	
5,539.30				12/17/14	75.20	74.04	
5,539.01				3/26/15	75.49	74.33	
5,538.99				6/22/15	75.51	74.35	
5,539.10				9/30/15	75.40	74.24	
5,538.90				12/2/15	75.60	74.44	
5,539.53				3/30/16	74.97	73.81	
5,539.11				6/30/16	75.39	74.23	
5,539.05				9/29/16	75.45	74.29	
5,539.06				12/21/16	75.44	74.28	
5,539.81				3/30/17	74.69	73.53	
5,539.60				6/27/17	74.90	73.74	
5539.40				9/27/17	75.10	73.94	
5539.30				11/30/17	75.20	74.04	
5539.55				3/29/18	74.95	73.79	
5539.63				6/22/18	74.87	73.71	
5539.40				9/26/18	75.10	73.94	
5539.59				12/17/18	74.91	73.75	
5539.42				3/26/19	75.08	73.92	
5539.70				6/24/19	74.80	73.64	
5539.45				8/13/19	75.05	73.89	
5539.53				11/19/19	74.97	73.81	
5539.57				2/13/20	74.93	73.77	

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				10/24/06	72.33	71.19	
5,544.45				3/16/07	71.95	70.81	
5,536.94				8/27/07	79.46	78.32	
5,544.62				10/15/07	71.78	70.64	
5,545.37				3/15/08	71.03	69.89	
5,544.50				6/15/08	71.90	70.76	
5,545.94				9/15/08	70.46	69.32	
5,546.42				11/15/08	69.98	68.84	
5,546.03				3/15/09	70.37	69.23	
5,546.65				6/30/09	69.75	68.61	
5,546.45				9/10/09	69.95	68.81	
5,546.75				12/11/09	69.65	68.51	
5,547.09				3/11/10	69.31	68.17	
5,547.41				5/11/10	68.99	67.85	
5,547.28				9/29/10	69.12	67.98	
5,547.45				12/21/10	68.95	67.81	
5,547.37				2/28/11	69.03	67.89	
5,547.96				6/21/11	68.44	67.3	
5,547.65				9/20/11	68.75	67.61	
5,548.34				12/21/11	68.06	66.92	
5,548.30				3/27/12	68.10	66.96	
5,548.40				6/28/12	68.00	66.86	
5,548.59				9/27/12	67.81	66.67	
5,548.91				12/28/12	67.49	66.35	
5,549.14				3/28/13	67.26	66.12	
5,548.90				6/27/13	67.50	66.36	
5,549.25				9/27/13	67.15	66.01	
5,549.16				12/20/13	67.24	66.10	
5,548.95				3/27/14	67.45	66.31	
5,548.60				6/25/14	67.80	66.66	
5,548.19				9/25/14	68.21	67.07	
5,548.25				12/17/14	68.15	67.01	
5,548.14				3/26/15	68.26	67.12	
5,547.85				6/22/15	68.55	67.41	
5,548.00				9/30/15	68.40	67.26	
5,547.84				12/2/15	68.56	67.42	
5,548.35				3/30/16	68.05	66.91	
5,548.00				6/30/16	68.40	67.26	
5,547.80				9/29/16	68.60	67.46	
5,547.80				12/21/16	68.60	67.46	
5,548.30				3/30/17	68.10	66.96	
5,548.10				6/27/17	68.30	67.16	
5,547.93				9/27/17	68.47	67.33	
5,547.80				11/30/17	68.60	67.46	
5,547.92				3/29/18	68.48	67.34	
5,547.95				6/22/18	68.45	67.31	
5,547.69				9/26/18	68.71	67.57	
5,547.82				12/17/18	68.58	67.44	
5,547.56				3/26/19	68.84	67.70	
5,547.68				6/24/19	68.72	67.58	
5,547.56				8/13/19	68.84	67.70	
5,547.58				11/19/19	68.82	67.68	
5,547.59				2/13/20	68.81	67.67	
5,547.92				5/5/20	68.48	67.34	

Tab G

Laboratory Analytical Reports

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Sample ID: 2005623-010
Client Sample ID: PIEZ-01_05202020
Collection Date: 5/20/2020 1240h
Received Date: 5/27/2020 1215h

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/5/2020 2044h	E300.0	1.00	**67.7**	
Nitrate/Nitrite (as N)	mg/L		5/29/2020 1358h	E353.2	0.100	**6.95**	

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc.
Contact: Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Sample ID: 2005623-011
Client Sample ID: PIEZ-02_05202020
Collection Date: 5/20/2020 1225h
Received Date: 5/27/2020 1215h

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Jose Rocha
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Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/5/2020 2101h	E300.0	1.00	**14.4**	
Nitrate/Nitrite (as N)	mg/L		5/29/2020 1359h	E353.2	0.100	**0.679**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Sample ID: 2005623-012
Client Sample ID: PIEZ-03A_05202020
Collection Date: 5/20/2020 1305h
Received Date: 5/27/2020 1215h

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Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/5/2020 2118h	E300.0	1.00	**88.3**	
Nitrate/Nitrite (as N)	mg/L		5/29/2020 1400h	E353.2	0.100	**12.4**	

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Sample ID: 2005623-004
Client Sample ID: TWN-01_05202020
Collection Date: 5/20/2020 950h
Received Date: 5/27/2020 1215h

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Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/5/2020 1813h	E300.0	1.00	**33.0**	
Nitrate/Nitrite (as N)	mg/L		5/29/2020 1338h	E353.2	0.100	**2.24**	

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Sample ID: 2005623-006
Client Sample ID: TWN-02_05202020
Collection Date: 5/20/2020 1030h
Received Date: 5/27/2020 1215h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/5/2020 1954h	E300.0	1.00	**59.6**	
Nitrate/Nitrite (as N)	mg/L		5/29/2020 1340h	E353.2	0.500	**16.1**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Sample ID: 2005623-007
Client Sample ID: TWN-03_05212020
Collection Date: 5/21/2020 1035h
Received Date: 5/27/2020 1215h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/5/2020 2011h	E300.0	2.00	**136**	
Nitrate/Nitrite (as N)	mg/L		5/29/2020 1342h	E353.2	0.200	**24.0**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Sample ID: 2005623-003
Client Sample ID: TWN-04_05202020
Collection Date: 5/20/2020 914h
Received Date: 5/27/2020 1215h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/5/2020 1723h	E300.0	1.00	**25.1**	
Nitrate/Nitrite (as N)	mg/L		5/29/2020 1337h	E353.2	0.100	**1.75**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Sample ID: 2005623-005
Client Sample ID: TWN-07_05212020
Collection Date: 5/21/2020 1015h
Received Date: 5/27/2020 1215h

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Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/5/2020 1937h	E300.0	1.00	**126**	
Nitrate/Nitrite (as N)	mg/L		5/29/2020 1339h	E353.2	0.100	**14.6**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Sample ID: 2005623-002
Client Sample ID: TWN-18_05202020
Collection Date: 5/20/2020 836h
Received Date: 5/27/2020 1215h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/5/2020 1706h	E300.0	1.00	**47.4**	
Nitrate/Nitrite (as N)	mg/L		5/29/2020 1323h	E353.2	0.100	**0.236**	

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Sample ID: 2005623-001
Client Sample ID: TWN-18R_05202020
Collection Date: 5/20/2020 814h
Received Date: 5/27/2020 1215h

American West
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e-mail: awal@awal-labs.com

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/5/2020 1650h	E300.0	1.00	< 1.00	
Nitrate/Nitrite (as N)	mg/L		5/29/2020 1320h	E353.2	0.100	< 0.100	

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Chloroform 2020
Lab Sample ID: 2005695-013
Client Sample ID: TW4-22_05272020
Collection Date: 5/27/2020 935h
Received Date: 5/29/2020 1050h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/9/2020 1956h	E300.0	5.00	**578**	
Nitrate/Nitrite (as N)	mg/L		6/1/2020 1434h	E353.2	0.500	**60.5**	

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Laboratory Director

Jose Rocha
QA Officer

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Chloroform 2020
Lab Sample ID: 2005695-002
Client Sample ID: TW4-24_05272020
Collection Date: 5/27/2020 925h
Received Date: 5/29/2020 1050h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/9/2020 1512h	E300.0	10.0	**1,060**	
Nitrate/Nitrite (as N)	mg/L		6/1/2020 1416h	E353.2	0.500	**41.7**	

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Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Chloroform 2020
Lab Sample ID: 2005695-001
Client Sample ID: TW4-25_05272020
Collection Date: 5/27/2020 915h
Received Date: 5/29/2020 1050h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/9/2020 1455h	E300.0	2.00	**76.8**	
Nitrate/Nitrite (as N)	mg/L		6/1/2020 1413h	E353.2	0.100	**0.851**	

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INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Sample ID: 2005623-009
Client Sample ID: TWN-60_05202020
Collection Date: 5/20/2020 1330h
Received Date: 5/27/2020 1215h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/5/2020 2134h	E300.0	1.00	< 1.00	
Nitrate/Nitrite (as N)	mg/L		5/29/2020 1344h	E353.2	0.100	< 0.100	

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Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Chloroform 2020
Lab Sample ID: 2005695-017
Client Sample ID: TW4-60_05272020
Collection Date: 5/27/2020 1310h
Received Date: 5/29/2020 1050h

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Laboratory Director

Jose Rocha
QA Officer

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/9/2020 2301h	E300.0	1.00	< 1.00	
Nitrate/Nitrite (as N)	mg/L		6/1/2020 1444h	E353.2	0.100	< 0.100	

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Sample ID: 2005623-008
Client Sample ID: TWN-65_05202020
Collection Date: 5/20/2020 914h
Received Date: 5/27/2020 1215h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Chloride	mg/L		6/5/2020 2027h	E300.0	1.00	**25.4**	
Nitrate/Nitrite (as N)	mg/L		5/29/2020 1343h	E353.2	0.100	**1.71**	

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Tanner Holliday
Energy Fuels Resources, Inc.
6425 South Hwy 191
Blanding, UT 84511
TEL: (435) 678-2221

RE: 2nd Quarter Nitrate 2020

Dear Tanner Holliday: Lab Set ID: 2005623

American West Analytical Laboratories received sample(s) on 5/27/2020 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, Wyoming, and Missouri.

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

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

Thank You,

Approved by: Jose G. Rocha Digitally signed by Jose G. Rocha Date: 2020.06.10 14:48:00 -06'00'

Laboratory Director or designee

American West
ANALYTICAL LABORATORIES

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

SAMPLE SUMMARY

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Set ID: 2005623
Date Received: 5/27/2020 1215h

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
2005623-001A	TWN-18R_05202020	5/20/2020 814h	Aqueous	Anions, E300.0
2005623-001B	TWN-18R_05202020	5/20/2020 814h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005623-002A	TWN-18_05202020	5/20/2020 836h	Aqueous	Anions, E300.0
2005623-002B	TWN-18_05202020	5/20/2020 836h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005623-003A	TWN-04_05202020	5/20/2020 914h	Aqueous	Anions, E300.0
2005623-003B	TWN-04_05202020	5/20/2020 914h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005623-004A	TWN-01_05202020	5/20/2020 950h	Aqueous	Anions, E300.0
2005623-004B	TWN-01_05202020	5/20/2020 950h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005623-005A	TWN-07_05212020	5/21/2020 1015h	Aqueous	Anions, E300.0
2005623-005B	TWN-07_05212020	5/21/2020 1015h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005623-006A	TWN-02_05202020	5/20/2020 1030h	Aqueous	Anions, E300.0
2005623-006B	TWN-02_05202020	5/20/2020 1030h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005623-007A	TWN-03_05212020	5/21/2020 1035h	Aqueous	Anions, E300.0
2005623-007B	TWN-03_05212020	5/21/2020 1035h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005623-008A	TWN-65_05202020	5/20/2020 914h	Aqueous	Anions, E300.0
2005623-008B	TWN-65_05202020	5/20/2020 914h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005623-009A	TWN-60_05202020	5/20/2020 1330h	Aqueous	Anions, E300.0
2005623-009B	TWN-60_05202020	5/20/2020 1330h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005623-010A	PIEZ-01_05202020	5/20/2020 1240h	Aqueous	Anions, E300.0
2005623-010B	PIEZ-01_05202020	5/20/2020 1240h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005623-011A	PIEZ-02_05202020	5/20/2020 1225h	Aqueous	Anions, E300.0
2005623-011B	PIEZ-02_05202020	5/20/2020 1225h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005623-012A	PIEZ-03A_05202020	5/20/2020 1305h	Aqueous	Anions, E300.0
2005623-012B	PIEZ-03A_05202020	5/20/2020 1305h	Aqueous	Nitrite/Nitrate (as N), E353.2

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Laboratory Director

Jose Rocha
QA Officer

Inorganic Case Narrative

Client: Energy Fuels Resources, Inc.
Contact: Tanner Holliday
Project: 2nd Quarter Nitrate 2020
Lab Set ID: 2005623

Sample Receipt Information:

Date of Receipt: 5/27/2020
Date(s) of Collection: 5/20-5/21/2020
Sample Condition: Intact
C-O-C Discrepancies: None

Holding Time and Preservation Requirements: The analysis and preparation of all samples were performed within the method holding times. All 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.

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

Corrective Action: None required.

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 2005623
Project: 2nd Quarter Nitrate 2020

Contact: Tanner Holliday
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-R139602**	Date Analyzed:	06/05/2020 1633h											
Test Code:	300.0-W													
Chloride		5.06	mg/L	E300.0	0.0565	0.100	5.000	0	101	90 - 110				
Lab Sample ID:	**LCS-R139282**	Date Analyzed:	05/29/2020 1302h											
Test Code:	NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)		1.06	mg/L	E353.2	0.00494	0.0100	1.000	0	106	90 - 110				
Lab Sample ID:	**LCS-R139283**	Date Analyzed:	05/29/2020 1336h											
Test Code:	NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)		1.07	mg/L	E353.2	0.00494	0.0100	1.000	0	107	90 - 110				

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 2005623
Project: 2nd Quarter Nitrate 2020

Contact: Tanner Holliday
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-R139602** Test Code: 300.0-W	Date Analyzed:	06/05/2020 1616h											
Chloride	< 0.100	mg/L	E300.0	0.0565	0.100								
Lab Sample ID: **MB-R139282** Test Code: NO2/NO3-W-353.2	Date Analyzed:	05/29/2020 1301h											
Nitrate/Nitrite (as N)	< 0.0100	mg/L	E353.2	0.00494	0.0100								
Lab Sample ID: **MB-R139283** Test Code: NO2/NO3-W-353.2	Date Analyzed:	05/29/2020 1334h											
Nitrate/Nitrite (as N)	< 0.0100	mg/L	E353.2	0.00494	0.0100								

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 2005623
Project: 2nd Quarter Nitrate 2020

Contact: Tanner Holliday
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: **2005623-003AMS**	Date Analyzed:	06/05/2020 1740h											
Test Code: 300.0-W													
Chloride	74.7	mg/L	E300.0	0.565	1.00	50.00	25.1	99.4	90 - 110				
Lab Sample ID: **2005623-004AMS**	Date Analyzed:	06/05/2020 1830h											
Test Code: 300.0-W													
Chloride	82.0	mg/L	E300.0	0.565	1.00	50.00	33	98.1	90 - 110				
Lab Sample ID: **2005623-001BMS**	Date Analyzed:	05/29/2020 1321h											
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.03	mg/L	E353.2	0.00494	0.0100	1.000	0.00801	102	90 - 110				
Lab Sample ID: **2005623-009BMS**	Date Analyzed:	05/29/2020 1345h											
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.997	mg/L	E353.2	0.00494	0.0100	1.000	0	99.7	90 - 110				

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 2005623
Project: 2nd Quarter Nitrate 2020

Contact: Tanner Holliday
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: 2005623-003AMSD Test Code: 300.0-W	Date Analyzed:	06/05/2020 1757h											
Chloride	75.2	mg/L	E300.0	0.565	1.00	50.00	25.1	100	90 - 110	74.7	0.574	20	
Lab Sample ID: 2005623-004AMSD Test Code: 300.0-W	Date Analyzed:	06/05/2020 1847h											
Chloride	81.9	mg/L	E300.0	0.565	1.00	50.00	33	97.8	90 - 110	82	0.197	20	
Lab Sample ID: 2005623-001BMSD Test Code: NO2/NO3-W-353.2	Date Analyzed:	05/29/2020 1322h											
Nitrate/Nitrite (as N)	1.04	mg/L	E353.2	0.00494	0.0100	1.000	0.00801	103	90 - 110	1.03	0.971	10	
Lab Sample ID: 2005623-009BMSD Test Code: NO2/NO3-W-353.2	Date Analyzed:	05/29/2020 1357h											
Nitrate/Nitrite (as N)	1.05	mg/L	E353.2	0.00494	0.0100	1.000	0	105	90 - 110	0.997	5.53	10	

American West Analytical Laboratories

Rpt Emailed:

UL
Denison

WORK ORDER Summary

Work Order: **2005623**

Page 1 of 2

Client: Energy Fuels Resources, Inc.

Due Date: 6/10/2020

Client ID: ENE300

Contact: Tanner Holliday

Project: **2nd Quarter Nitrate 2020**

QC Level: III

WO Type: Project

Comments: QC 3 (no chromatograms). EDD-Denison. CC KWeinel@energyfuels.com;

DB

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
2005623-001A	**TWN-18R_05202020**	5/20/2020 0814h	5/27/2020 1215h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - cl	1
2005623-001B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005623-002A	**TWN-18_05202020**	5/20/2020 0836h	5/27/2020 1215h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - cl	1
2005623-002B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005623-003A	**TWN-04_05202020**	5/20/2020 0914h	5/27/2020 1215h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - cl	1
2005623-003B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005623-004A	**TWN-01_05202020**	5/20/2020 0950h	5/27/2020 1215h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - cl	1
2005623-004B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005623-005A	**TWN-07_05212020**	5/21/2020 1015h	5/27/2020 1215h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - cl	1
2005623-005B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005623-006A	**TWN-02_05202020**	5/20/2020 1030h	5/27/2020 1215h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - cl	1
2005623-006B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005623-007A	**TWN-03_05212020**	5/21/2020 1035h	5/27/2020 1215h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - cl	1
2005623-007B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	

Printed: 05/28/20 12:14

LABORATORY CHECK: %M ☐ RT ☐ CN ☐ TAT ☐ QC ☐ LUO ☐ HOK_____ HOK_____ HOK_____ COC Emailed________

WORK ORDER Summary

Work Order: **2005623**

Client: Energy Fuels Resources, Inc.

Due Date: 6/10/2020

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
2005623-008A	**TWN-65_05202020**	5/20/2020 0914h	5/27/2020 1215h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - cl	1
2005623-008B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005623-009A	**TWN-60_05202020**	5/20/2020 1330h	5/27/2020 1215h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - cl	1
2005623-009B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005623-010A	**PIEZ-01_05202020**	5/20/2020 1240h	5/27/2020 1215h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - cl	1
2005623-010B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005623-011A	**PIEZ-02_05202020**	5/20/2020 1225h	5/27/2020 1215h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - cl	1
2005623-011B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005623-012A	**PIEZ-03A_05202020**	5/20/2020 1305h	5/27/2020 1215h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - cl	1
2005623-012B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	

Printed: 05/28/20 12:14

LABORATORY CHECK: %M ☐ RT ☐ CN ☐ TAT ☐ QC ☐ LUO ☐ HOK_____ HOK_____ HOK_____ COC Emailed__________

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

CHAIN OF CUSTODY

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

2005623
AWAL Lab Sample Set #
Page 1 of 1

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: 6/10/20

Client: **Energy Fuels Resources, Inc.**
Address: **6425 S. Hwy. 191**
Blanding, UT 84511
Contact: **Tanner Holliday**
Phone #: **(435) 678-2221** Cell #:
Email: **gpalmer@energyfuels.com; KWeinel@energyfuels.com; tholliday@energyfuels.com**
Project Name: **2nd Quarter Nitrate 2020**
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)	Known Hazards & Sample Comments
1	TWN-18R_05202020	5/20/2020	814	2	W	X	X	
2	TWN-18_05202020	5/20/2020	836	2	W	X	X	
3	TWN-04_05202020	5/20/2020	914	2	W	X	X	
4	TWN-01_05202020	5/20/2020	950	2	W	X	X	
5	TWN-07_05212020	5/21/2020	1015	2	W	X	X	
6	TWN-02_05202020	5/20/2020	1030	2	W	X	X	
7	TWN-03_05212020	5/21/2020	1035	2	W	X	X	
8	TWN-65_05202020	5/20/2020	914	2	W	X	X	
9	TWN-60_05202020	5/20/2020	1330	2	W	X	X	
10	PIEZ-01_05202020	5/20/2020	1240	2	W	X	X	
11	PIEZ-02_05202020	5/20/2020	1225	2	W	X	X	
12	PIEZ-03A_05202020	5/20/2020	1305	2	W	X	X	
13								

Laboratory Use Only

Samples Were: UPS
1 [✓ Shipped] or hand delivered
2 Ambient or [✓ Chilled]
3 Temperature 0.7 °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 Tanner Holliday
Date: 5/26/2020
Time: 1100
Print Name: Tanner Holliday
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:

Relinquished by: Signature
Print Name:
Date:
Time:
Received by: Signature Denise Bruun
Print Name: Denise Bruun
Date: 5/27/20
Time: 12:15

Special Instructions:

Lab Set ID: 2005623
pH Lot #: 6299

Preservation Check Sheet

Sample Set Extension and pH

Analysis	**Preservative**	-001	-002	-003	-004	-005	-006	-007	-008	-009	-010	-011	-012						
Ammonia	pH <2 H_2SO_4																		
COD	pH <2 H_2SO_4																		
Cyanide	pH >12 NaOH																		
Metals	pH <2 HNO_3																		
NO_2/NO_3	pH <2 H_2SO_4	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes						
O & G	pH <2 HCL																		
Phenols	pH <2 H_2SO_4																		
Sulfide	pH >9 NaOH, Zn Acetate																		
TKN	pH <2 H_2SO_4																		
T PO_4	pH <2 H_2SO_4																		
Cr VI+	pH >9 $(NH_4)_2SO_4$																		

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

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web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Tanner Holliday
Energy Fuels Resources, Inc.
6425 South Hwy 191
Blanding, UT 84511
TEL: (435) 678-2221

RE: 2nd Quarter Chloroform 2020

Dear Tanner Holliday: Lab Set ID: 2005695

American West Analytical Laboratories received sample(s) on 5/29/2020 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, Wyoming, and Missouri.

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

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

Thank You,

Kyle F. Gross
Digitally signed by Kyle F. Gross
Date: 2020.06.12 12:29:22 -06'00'

Approved by:

Laboratory Director or designee

American West
ANALYTICAL LABORATORIES

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

SAMPLE SUMMARY

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Chloroform 2020
Lab Set ID: 2005695
Date Received: 5/29/2020 1050h

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
2005695-001A	TW4-25_05272020	5/27/2020 915h	Aqueous	Anions, E300.0
2005695-001B	TW4-25_05272020	5/27/2020 915h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-001C	TW4-25_05272020	5/27/2020 915h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-002A	TW4-24_05272020	5/27/2020 925h	Aqueous	Anions, E300.0
2005695-002B	TW4-24_05272020	5/27/2020 925h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-002C	TW4-24_05272020	5/27/2020 925h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-003A	TW4-40_05272020	5/27/2020 1245h	Aqueous	Anions, E300.0
2005695-003B	TW4-40_05272020	5/27/2020 1245h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-003C	TW4-40_05272020	5/27/2020 1245h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-004A	TW4-39_05272020	5/27/2020 1002h	Aqueous	Anions, E300.0
2005695-004B	TW4-39_05272020	5/27/2020 1002h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-004C	TW4-39_05272020	5/27/2020 1002h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-005A	TW4-21_05272020	5/27/2020 905h	Aqueous	Anions, E300.0
2005695-005B	TW4-21_05272020	5/27/2020 905h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-005C	TW4-21_05272020	5/27/2020 905h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-006A	TW4-04_05272020	5/27/2020 1222h	Aqueous	Anions, E300.0
2005695-006B	TW4-04_05272020	5/27/2020 1222h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-006C	TW4-04_05272020	5/27/2020 1222h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-007A	MW-26_05272020	5/27/2020 1010h	Aqueous	Anions, E300.0
2005695-007B	MW-26_05272020	5/27/2020 1010h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-007C	MW-26_05272020	5/27/2020 1010h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-008A	TW4-01_05272020	5/27/2020 1205h	Aqueous	Anions, E300.0
2005695-008B	TW4-01_05272020	5/27/2020 1205h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-008C	TW4-01_05272020	5/27/2020 1205h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-009A	TW4-41_05272020	5/27/2020 1215h	Aqueous	Anions, E300.0
2005695-009B	TW4-41_05272020	5/27/2020 1215h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-009C	TW4-41_05272020	5/27/2020 1215h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-010A	MW-04_05272020	5/27/2020 1037h	Aqueous	Anions, E300.0

American West
ANALYTICAL LABORATORIES

Client: Energy Fuels Resources, Inc. **Contact:** Tanner Holliday
Project: 2nd Quarter Chloroform 2020
Lab Set ID: 2005695
Date Received: 5/29/2020 1050h

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
2005695-010B	MW-04_05272020	5/27/2020 1037h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-010C	MW-04_05272020	5/27/2020 1037h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-011A	TW4-02_05272020	5/27/2020 1028h	Aqueous	Anions, E300.0
2005695-011B	TW4-02_05272020	5/27/2020 1028h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-011C	TW4-02_05272020	5/27/2020 1028h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-012A	TW4-11_05272020	5/27/2020 1020h	Aqueous	Anions, E300.0
2005695-012B	TW4-11_05272020	5/27/2020 1020h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-012C	TW4-11_05272020	5/27/2020 1020h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-013A	TW4-22_05272020	5/27/2020 935h	Aqueous	Anions, E300.0
2005695-013B	TW4-22_05272020	5/27/2020 935h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-013C	TW4-22_05272020	5/27/2020 935h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-014A	TW4-19_05272020	5/27/2020 845h	Aqueous	Anions, E300.0
2005695-014B	TW4-19_05272020	5/27/2020 845h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-014C	TW4-19_05272020	5/27/2020 845h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-015A	TW4-37_05272020	5/27/2020 945h	Aqueous	Anions, E300.0
2005695-015B	TW4-37_05272020	5/27/2020 945h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-015C	TW4-37_05272020	5/27/2020 945h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-016A	TW4-20_05272020	5/27/2020 952h	Aqueous	Anions, E300.0
2005695-016B	TW4-20_05272020	5/27/2020 952h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-016C	TW4-20_05272020	5/27/2020 952h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-017A	TW4-60_05272020	5/27/2020 1310h	Aqueous	Anions, E300.0
2005695-017B	TW4-60_05272020	5/27/2020 1310h	Aqueous	Nitrite/Nitrate (as N), E353.2
2005695-017C	TW4-60_05272020	5/27/2020 1310h	Aqueous	VOA by GC/MS Method 8260D/5030C
2005695-018A	Trip Blank	5/27/2020 845h	Aqueous	VOA by GC/MS Method 8260D/5030C

American West
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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Inorganic Case Narrative

Client:	Energy Fuels Resources, Inc.
Contact:	Tanner Holliday
Project:	2nd Quarter Chloroform 2020
Lab Set ID:	2005695

Sample Receipt Information:

Date of Receipt:	5/29/2020
Date(s) of Collection:	5/27/2020
Sample Condition:	Intact
C-O-C Discrepancies:	None

Holding Time and Preservation Requirements: The analysis and preparation of all samples were performed within the method holding times. All 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.

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 2005695
Project: 2nd Quarter Chloroform 2020

Contact: Tanner Holliday
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-R139685**	Date Analyzed:	06/09/2020 1438h											
Test Code:	300.0-W													
Chloride		5.20	mg/L	E300.0	0.0565	0.100	5.000	0	104	90 - 110				
Lab Sample ID:	**LCS-R139343**	Date Analyzed:	06/01/2020 1401h											
Test Code:	NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)		1.05	mg/L	E353.2	0.00494	0.0100	1.000	0	105	90 - 110				

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 2005695
Project: 2nd Quarter Chloroform 2020

Contact: Tanner Holliday
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-R139685	Date Analyzed:	06/09/2020 1421h											
Test Code: 300.0-W													
Chloride	< 0.100	mg/L	E300.0	0.0565	0.100								
Lab Sample ID: MB-R139343	Date Analyzed:	06/01/2020 1400h											
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	< 0.0100	mg/L	E353.2	0.00494	0.0100								

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 2005695
Project: 2nd Quarter Chloroform 2020

Contact: Tanner Holliday
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: 2005695-003AMS Test Code: 300.0-W	Date Analyzed:	06/09/2020 1545h											
Chloride	86.9	mg/L	E300.0	0.565	1.00	50.00	36.5	101	90 - 110				
Lab Sample ID: 2005695-006AMS Test Code: 300.0-W	Date Analyzed:	06/09/2020 1759h											
Chloride	94.7	mg/L	E300.0	0.565	1.00	50.00	46.1	97.2	90 - 110				
Lab Sample ID: 2005695-001BMS Test Code: NO2/NO3-W-353.2	Date Analyzed:	06/01/2020 1414h											
Nitrate/Nitrite (as N)	1.82	mg/L	E353.2	0.00494	0.0100	1.000	0.851	97.2	90 - 110				

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 2005695
Project: 2nd Quarter Chloroform 2020

Contact: Tanner Holliday
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: 2005695-003AMSD Test Code: 300.0-W	Date Analyzed:	06/09/2020 1602h											
Chloride	86.9	mg/L	E300.0	0.565	1.00	50.00	36.5	101	90 - 110	86.9	0.0629	20	
Lab Sample ID: 2005695-006AMSD Test Code: 300.0-W	Date Analyzed:	06/09/2020 1816h											
Chloride	95.8	mg/L	E300.0	0.565	1.00	50.00	46.1	99.4	90 - 110	94.7	1.12	20	
Lab Sample ID: 2005695-001BMSD Test Code: NO2/NO3-W-353.2	Date Analyzed:	06/01/2020 1415h											
Nitrate/Nitrite (as N)	1.82	mg/L	E353.2	0.00494	0.0100	1.000	0.851	96.8	90 - 110	1.82	0.220	10	

American West Analytical Laboratories

Rpt Emailed:

UL
Denison

WORK ORDER Summary

Work Order: **2005695** Page 1 of 4

Due Date: 6/12/2020

Client: Energy Fuels Resources, Inc.

Client ID: ENE300

Contact: Tanner Holliday

Project: **2nd Quarter Chloroform 2020**

QC Level: III

WO Type: Project

Comments: QC 3 (no chromatograms). EDD-Denison. CC KWeinel@energyfuels.com; Do not use "*R_" samples as MS/MSD.;

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
2005695-001A	**TW4-25_05272020**	5/27/2020 0915h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-001B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-001C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-002A	**TW4-24_05272020**	5/27/2020 0925h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-002B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-002C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-003A	**TW4-40_05272020**	5/27/2020 1245h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-003B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-003C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-004A	**TW4-39_05272020**	5/27/2020 1002h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-004B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-004C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-005A	**TW4-21_05272020**	5/27/2020 0905h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-005B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-005C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3

Printed: 05/29/20 13:38

LABORATORY CHECK: %M ☐ RT ☐ CN ☐ TAT ☐ QC ☐ LUO ☐ HOK_____ HOK_____ HOK_____ COC Emailed________

WORK ORDER Summary

Work Order: **2005695**

Client: Energy Fuels Resources, Inc.

Due Date: 6/12/2020

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
2005695-006A	**TW4-04_05272020**	5/27/2020 1222h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-006B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-006C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-007A	**MW-26_05272020**	5/27/2020 1010h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-007B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-007C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-008A	**TW4-01_05272020**	5/27/2020 1205h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-008B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-008C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-009A	**TW4-41_05272020**	5/27/2020 1215h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-009B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-009C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-010A	**MW-04_05272020**	5/27/2020 1037h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-010B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-010C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-011A	**TW4-02_05272020**	5/27/2020 1028h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-011B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-011C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3

WORK ORDER Summary

Work Order: **2005695**

Client: Energy Fuels Resources, Inc.

Due Date: 6/12/2020

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
2005695-012A	**TW4-11_05272020**	5/27/2020 1020h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-012B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-012C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-013A	**TW4-22_05272020**	5/27/2020 0935h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-013B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-013C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-014A	**TW4-19_05272020**	5/27/2020 0845h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-014B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-014C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-015A	**TW4-37_05272020**	5/27/2020 0945h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-015B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-015C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-016A	**TW4-20_05272020**	5/27/2020 0952h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-016B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	
2005695-016C				**8260D-W-DEN100** *Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4*			VOCFridge	3
2005695-017A	**TW4-60_05272020**	5/27/2020 1310h	5/29/2020 1050h	**300.0-W** *1 SEL Analytes: CL*	Aqueous		df - wc	1
2005695-017B				**NO2/NO3-W-353.2** *1 SEL Analytes: NO3NO2N*			df - no2/no3	

Printed: 05/29/20 13:38

LABORATORY CHECK: %M ☐ RT ☐ CN ☐ TAT ☐ QC ☐ LUO ☐ HOK______ HOK______ HOK______ COC Emailed__________

WORK ORDER Summary

Work Order: **2005695** Page 4 of 4

Client: Energy Fuels Resources, Inc.

Due Date: 6/12/2020

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
2005695-017C	**TW4-60_05272020**	5/27/2020 1310h	5/29/2020 1050h	**8260D-W-DEN100**	Aqueous		VOCFridge	3
				Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4				
2005695-018A	**Trip Blank**	5/27/2020 0845h	5/29/2020 1050h	**8260D-W-DEN100**	Aqueous		VOCFridge	3
				Test Group: 8260D-W-DEN100; # of Analytes: 4 / # of Surr: 4				

Printed: 05/29/20 13:38 LABORATORY CHECK: %M ☐ RT ☐ CN ☐ TAT ☐ QC ☐ LUO ☐ HOK_____ HOK_____ HOK_____ COC Emailed_________

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

CHAIN OF CUSTODY

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

2005695
AWAL Lab Sample Set #
Page 1 of 2

QC Level: 3

Turn Around Time: Standard

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

Due Date:

Client: **Energy Fuels Resources, Inc.**
Address: **6425 S. Hwy. 191**
Blanding, UT 84511
Contact: **Tanner Holliday**
Phone #: **(435) 678-2221** Cell #:
Email: **gpalmer@energyfuels.com; KWeinel@energyfuels.com; tholliday@energyfuels.com**
Project Name: **2nd Quarter Chloroform 2020**
Project #:
PO #:
Sampler Name: **Tanner Holliday**

X Include EDD:
LOCUS UPLOAD
EXCEL
Field Filtered For:

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

	Sample ID:	Date Sampled	Time Sampled	# of Containers	Sample Matrix	**NO2/NO3** *(353.2)*	**Cl** *(4500 or 300.0)*	**VOCs** *(8260C)*	Known Hazards & Sample Comments
1	**TW4-25_05272020**	**5/27/2020**	**915**	5	W	X	X	X	
2	**TW4-24_05272020**	**5/27/2020**	**925**	5	W	X	X	X	
3	**TW4-40_05272020**	**5/27/2020**	**1245**	5	W	X	X	X	
4	**TW4-39_05272020**	**5/27/2020**	**1002**	5	W	X	X	X	
5	**TW4-21_05272020**	**5/27/2020**	**905**	5	W	X	X	X	
6	**TW4-04_05272020**	**5/27/2020**	**1222**	5	W	X	X	X	
7	**MW-26_05272020**	**5/27/2020**	**1010**	5	W	X	X	X	
8	**TW4-01_05272020**	**5/27/2020**	**1205**	5	W	X	X	X	
9	**TW4-41_05272020**	**5/27/2020**	**1215**	5	W	X	X	X	
10	**MW-04_05272020**	**5/27/2020**	**1037**	5	W	X	X	X	
11	**TW4-02_05272020**	**5/27/2020**	**1028**	5	W	X	X	X	
12	**TW4-11_05272020**	**5/27/2020**	**1020**	5	W	X	X	X	
13	**TW4-22_05272020**	**5/27/2020**	**935**	5	W	X	X	X	

Laboratory Use Only

Samples Were: UPS
1 [✓ Shipped] or hand delivered
2 Ambient or [✓ Chilled]
3 Temperature 1.0 °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 Tanner Holliday	Date: 5/28/2020	Received by: Signature	Date:
Print Name: Tanner Holliday	Time: 1100	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature Elona Hay	Date: 5/29/20
Print Name:	Time:	Print Name: Elona Hayley	Time: 1050
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.

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.

2005695
AWAL Lab Sample Set #
Page 2 of 2

QC Level: 3

Turn Around Time: Standard

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

Due Date:

Client: **Energy Fuels Resources, Inc.**
Address: **6425 S. Hwy. 191**
Blanding, UT 84511
Contact: **Tanner Holliday**
Phone #: **(435) 678-2221** Cell #:
Email: **gpalmer@energyfuels.com; KWeinel@energyfuels.com; tholliday@energyfuels.com**
Project Name: **2nd Quarter Chloroform 2020**
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
4	**TW4-19_05272020**	**5/27/2020**	**845**	5	W	X	X	X	
5	**TW4-37_05272020**	**5/27/2020**	**945**	5	W	X	X	X	
6	**TW4-20_05272020**	**5/27/2020**	**952**	5	W	X	X	X	
7	**TW4-60_05272020**	**5/27/2020**	**1310**	5	W	X	X	X	
8	**TRIP BLANK**	**5/27/2020**	**845**	3	W			X	
6									
7									
8									
9									
10									
11									
12									
13									

Laboratory Use Only

Samples Were: UPS
[✓ 1 Shipped or hand delivered]
2 Ambient or [✓ Chilled]
3 Temperature 1.0 °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 Tanner Holliday Date: 5/28/2020
Print Name: Tanner Holliday Time: 1100
Received by: Signature Date:
Print Name: Time:

Relinquished by: Signature Date:
Print Name: Time:
Received by: Signature Elma Hay Date: 5/29/20
Print Name: Elma Hayward Time: 1150

Relinquished by: Signature Date:
Print Name: Time:
Received by: Signature Date:
Print Name: Time:

Relinquished by: Signature Date:
Print Name: Time:
Received by: Signature Date:
Print Name: Time:

Special Instructions:

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

Lab Set ID: 2005695

pH Lot #: 6299

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	16	17	
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	Yes	Yes	
O & G	pH <2 HCL																		
Phenols	pH <2 H_2SO_4																		
Sulfide	pH >9 NaOH, Zn Acetate																		
TKN	pH <2 H_2SO_4																		
T PO_4	pH <2 H_2SO_4																		
Cr VI+	pH >9 $(NH_4)_2SO_4$																		

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 QA/QC Evaluation

Location	1x Casing Volume	Volume Pumped	2x Casing Volume	Volume Check	Conductivity		RPD	pH		RPD	Temperature		RPD	Redox		RPD	Turbidity		RPD	Dissolved Oxygen		RPD
PIEZ-01	1.66		3.32	okay	2300		NC	6.55		NC	15.28		NC	351		NC	5.6		NC	63.0		NC
PIEZ-02	2.26		4.52	okay	853.1		NC	6.74		NC	15.35		NC	335		NC	0.8		NC	23.5		NC
PIEZ-03A	0.94		1.88	okay	1135		NC	6.78		NC	15.94		NC	376		NC	5.7		NC	90.0		NC
TWN-01	24.97	66.00	49.94	okay	894.0	897.0	0.34	6.50	6.51	0.15	15.28	15.25	0.20	366	365	0.27	9.2	9.2	0.00	62.0	61.0	1.63
TWN-02	NA	Continuously Pumped well	--		2112		NC	6.15		NC	15.22		NC	416		NC	0		NC	91.0		NC
TWN-03	34.83	44.00	69.66	Pumped Dry	2274	2280	0.26	6.50	6.53	0.46	15.24	15.20	0.26	NM		NC	NM		NC	NM		NC
TWN-04	42.80	110.00	85.6	okay	1036	1034	0.19	6.57	6.58	0.15	14.85	14.83	0.13	383	384	0.26	1.6	1.7	6.06	65.9	65.8	0.15
TWN-07	16.97	16.50	33.94	Pumped Dry	1784	1790	0.34	5.90	5.94	0.68	16.00	15.97	0.19	NM		NC	NM		NC	NM		NC
TWN-18	55.49	132.00	110.98	okay	2659	2660	0.04	6.19	6.19	0.00	14.55	14.57	0.14	347	346	0.29	1.2	1.2	0.00	1.1	1.1	0.00
TW4-22	NA	Continuously Pumped well	--		5326		NC	7.24		NC	16.48		NC	348		NC	0		NC	90.3		NC
TW4-24	NA	Continuously Pumped well	--		7951		NC	7.08		NC	16.00		NC	347		NC	25.0		NC	19.4		NC
TW4-25	NA	Continuously Pumped well	--		2514		NC	7.12		NC	16.05		NC	311		NC	0		NC	42.0		NC

TW4-22, TW4-24, TW4-25, TWN-02 are continually pumped wells.

TWN-03, TWN-07 were pumped dry and sampled after recovery.

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

RPD = Relative Percent Difference

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 are included for information purposes only.

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	5/20/2020	6/5/2020	16	28	OK
PIEZ-01	Nitrate/Nitrite (as N)	5/20/2020	5/29/2020	9	28	OK
PIEZ-02	Chloride	5/20/2020	6/5/2020	16	28	OK
PIEZ-02	Nitrate/Nitrite (as N)	5/20/2020	5/29/2020	9	28	OK
PIEZ-03A	Chloride	5/20/2020	6/5/2020	16	28	OK
PIEZ-03A	Nitrate/Nitrite (as N)	5/20/2020	5/29/2020	9	28	OK
TWN-01	Chloride	5/20/2020	6/5/2020	16	28	OK
TWN-01	Nitrate/Nitrite (as N)	5/20/2020	5/29/2020	9	28	OK
TWN-02	Chloride	5/20/2020	6/5/2020	16	28	OK
TWN-02	Nitrate/Nitrite (as N)	5/20/2020	5/29/2020	9	28	OK
TWN-03	Chloride	5/21/2020	6/5/2020	15	28	OK
TWN-03	Nitrate/Nitrite (as N)	5/21/2020	5/29/2020	8	28	OK
TWN-04	Chloride	5/20/2020	6/5/2020	16	28	OK
TWN-04	Nitrate/Nitrite (as N)	5/20/2020	5/29/2020	9	28	OK
TWN-07	Chloride	5/21/2020	6/5/2020	15	28	OK
TWN-07	Nitrate/Nitrite (as N)	5/21/2020	5/29/2020	8	28	OK
TWN-18	Chloride	5/20/2020	6/5/2020	16	28	OK
TWN-18	Nitrate/Nitrite (as N)	5/20/2020	5/29/2020	9	28	OK
TWN-18R	Chloride	5/20/2020	6/5/2020	16	28	OK
TWN-18R	Nitrate/Nitrite (as N)	5/20/2020	5/29/2020	9	28	OK
TW4-22	Chloride	5/27/2020	6/9/2020	13	28	OK
TW4-22	Nitrate/Nitrite (as N)	5/27/2020	6/1/2020	5	28	OK
TW4-24	Chloride	5/27/2020	6/9/2020	13	28	OK
TW4-24	Nitrate/Nitrite (as N)	5/27/2020	6/1/2020	5	28	OK
TW4-25	Chloride	5/27/2020	6/9/2020	13	28	OK
TW4-25	Nitrate/Nitrite (as N)	5/27/2020	6/1/2020	5	28	OK
TW4-60	Chloride	5/27/2020	6/9/2020	13	28	OK
TW4-60	Nitrate/Nitrite (as N)	5/27/2020	6/1/2020	5	28	OK
TWN-60	Chloride	5/20/2020	6/5/2020	16	28	OK
TWN-60	Nitrate/Nitrite (as N)	5/20/2020	5/29/2020	9	28	OK
TWN-65	Chloride	5/20/2020	6/5/2020	16	28	OK
TWN-65	Nitrate/Nitrite (as N)	5/20/2020	5/29/2020	9	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	Dilution Factor	Required Reporting Limit	RL Check
PIEZ-01	Chloride	1	mg/L		10	1	OK
PIEZ-01	Nitrate/Nitrite (as N)	0.1	mg/L		10	0.1	OK
PIEZ-02	Chloride	1	mg/L		5	1	OK
PIEZ-02	Nitrate/Nitrite (as N)	0.1	mg/L		1	0.1	OK
PIEZ-03A	Chloride	1	mg/L		10	1	OK
PIEZ-03A	Nitrate/Nitrite (as N)	0.1	mg/L		10	0.1	OK
TWN-01	Chloride	1	mg/L		5	1	OK
TWN-01	Nitrate/Nitrite (as N)	0.1	mg/L		2	0.1	OK
TWN-02	Chloride	1	mg/L		10	1	OK
TWN-02	Nitrate/Nitrite (as N)	0.5	mg/L		50	0.1	OK
TWN-03	Chloride	2	mg/L		20	1	OK
TWN-03	Nitrate/Nitrite (as N)	0.2	mg/L		20	0.1	OK
TWN-04	Chloride	1	mg/L		5	1	OK
TWN-04	Nitrate/Nitrite (as N)	0.1	mg/L		2	0.1	OK
TWN-07	Chloride	1	mg/L		10	1	OK
TWN-07	Nitrate/Nitrite (as N)	0.1	mg/L		10	0.1	OK
TWN-18	Chloride	1	mg/L		10	1	OK
TWN-18	Nitrate/Nitrite (as N)	0.1	mg/L		1	0.1	OK
TWN-18R	Chloride	1	mg/L	U	1	1	OK
TWN-18R	Nitrate/Nitrite (as N)	0.1	mg/L	U	1	0.1	OK
TWN-60	Chloride	1	mg/L	U	1	1	OK
TWN-60	Nitrate/Nitrite (as N)	0.1	mg/L	U	1	0.1	OK
TW4-22	Chloride	5	mg/L		50	1	OK
TW4-22	Nitrate/Nitrite (as N)	0.5	mg/L		50	0.1	OK
TW4-24	Chloride	10	mg/L		100	1	OK
TW4-24	Nitrate/Nitrite (as N)	0.5	mg/L		50	0.1	OK
TW4-25	Chloride	2	mg/L		20	1	OK
TW4-25	Nitrate/Nitrite (as N)	0.1	mg/L		1	0.1	OK
TW4-60	Chloride	1	mg/L	U	1	1	OK
TW4-60	Nitrate/Nitrite (as N)	0.1	mg/L	U	1	0.1	OK
TWN-65	Chloride	1	mg/L		10	1	OK
TWN-65	Nitrate/Nitrite (as N)	0.1	mg/L		2	0.1	OK

H-5 QA/QC Evaluation for Sample Duplicates

Constituent	TWN-04	TWN-65	%RPD
Chloride	25.1	25.4	1.19
Nitrogen	1.75	1.71	2.31

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

All Matrix Spikes were within acceptance limits for the quarter.

Laboratory Control Sample

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

H-7 Receipt Temperature Evaluation

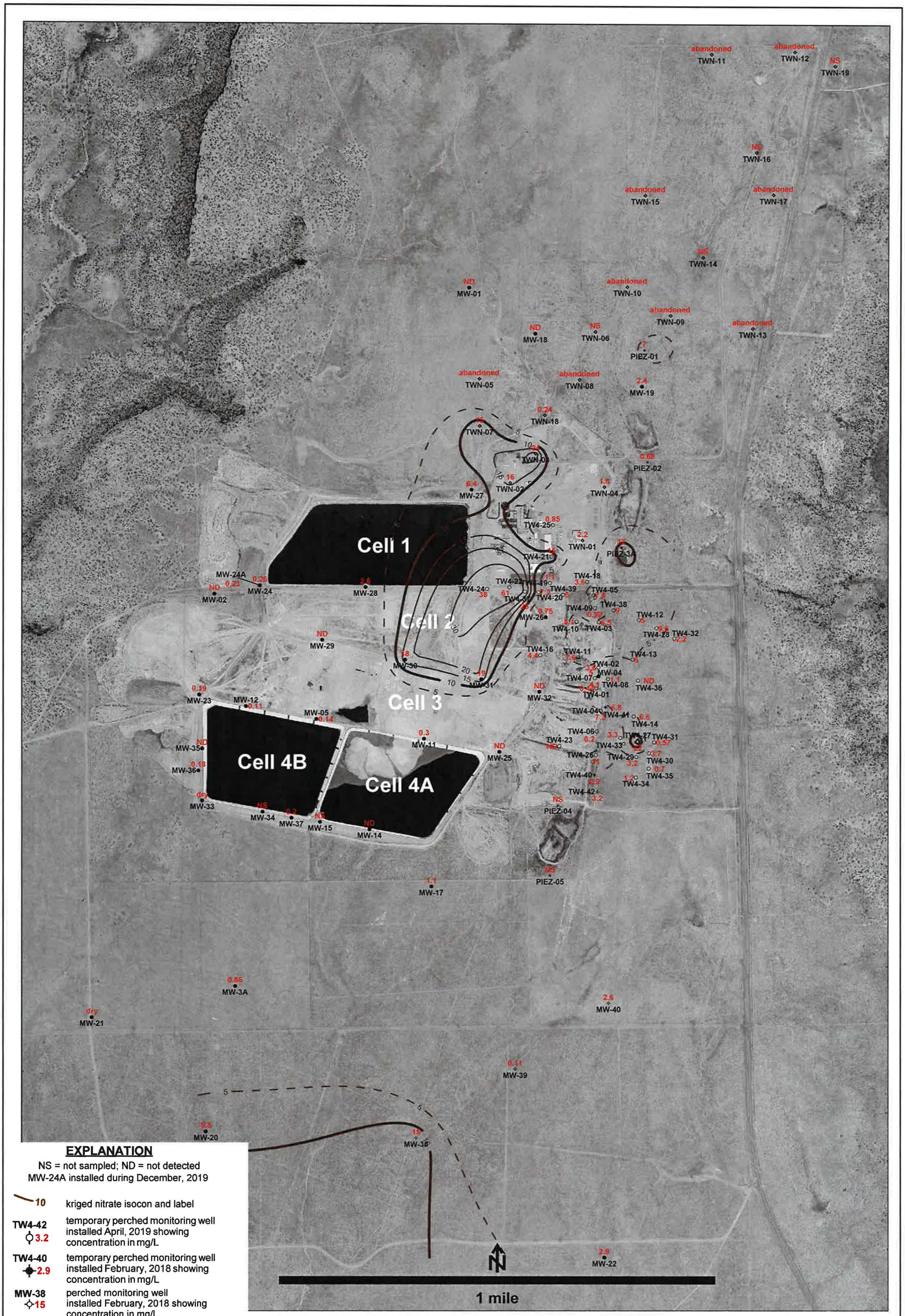
Sample Batch	Wells in Batch	Temperature
2005623	PIEZ-01, PIEZ-02, PIEZ-03A, TWN-1, TWN-2, TWN-3, TWN-4, TWN-7, TWN-18, TWN-18R, TWN-60, TWN-65	0.7 °C
2005695	TW4-22, TW4-24, TW4-25, TW4-60	1.0 °C

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

MW-24A installed during December, 2019

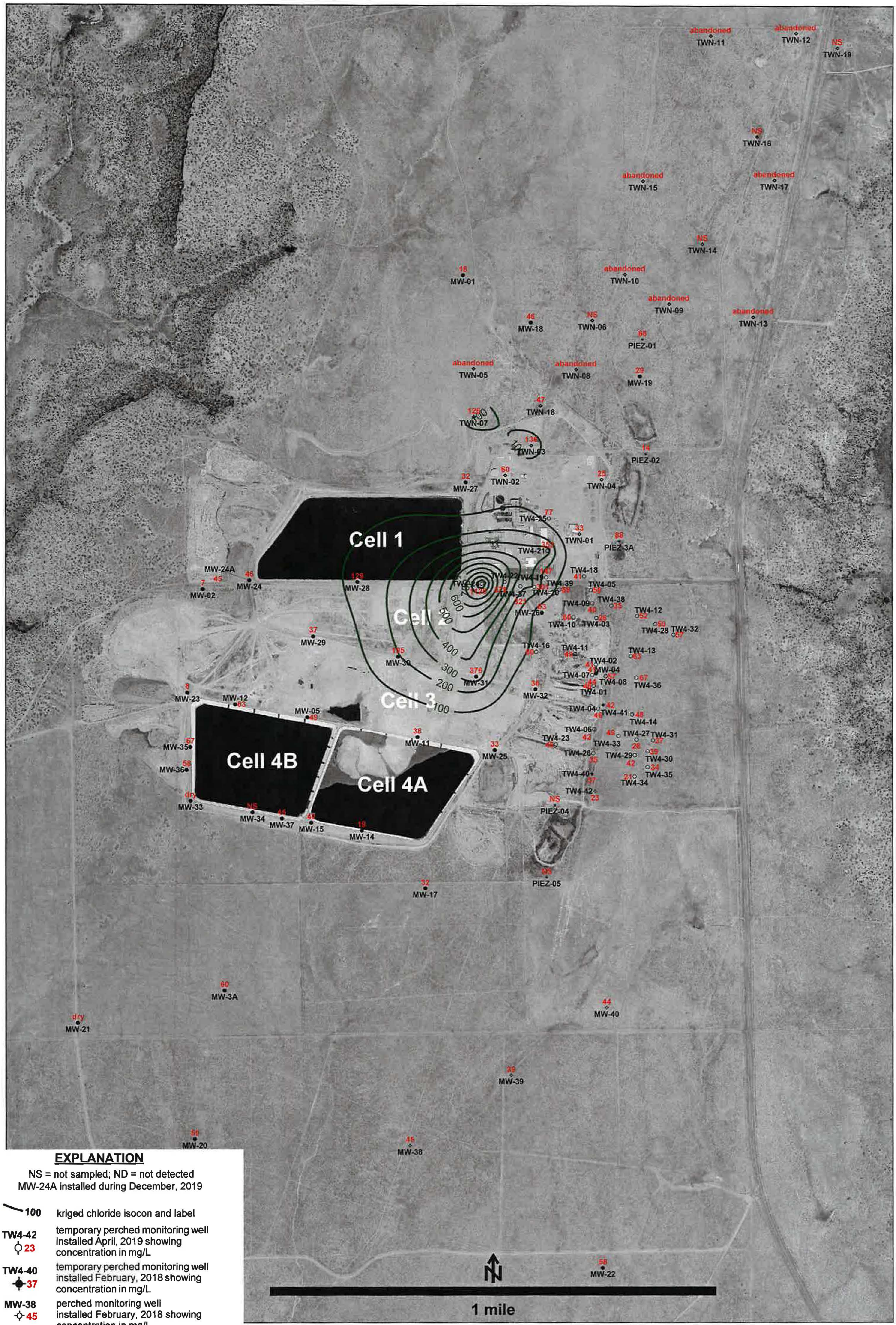
10	kriged nitrate isocon and label
TW4-42 3.2	temporary perched monitoring well installed April, 2019 showing concentration in mg/L
TW4-40 2.9	temporary perched monitoring well installed February, 2018 showing concentration in mg/L
MW-38 15	perched monitoring well installed February, 2018 showing concentration in mg/L
MW-32 ● ND	perched monitoring well showing concentration in mg/L
TW4-7 ○ 4.1	temporary perched monitoring well showing concentration in mg/L
TWN-1 ◆ 2.2	temporary perched nitrate monitoring well showing concentration in mg/L
PIEZ-1 ● 7	perched piezometer showing concentration in mg/L

NOTES: MW-4, MW-26, TW4-1, TW4-2, TW4-4, TW4-11, TW4-19, TW4-20, TW4-21, TW4-37, TW4-39, TW4-40 and TW4-41 are chloroform pumping wells; TW4-22, TW4-24, TW4-25 and TWN-2 are nitrate pumping wells.

HYDRO
GEO
CHEM, INC.

KRIGED 2nd QUARTER, 2020 NITRATE (mg/L) (NITRATE + NITRITE AS N) WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/aug20/nitrate/Unt0620.srf	I-1



EXPLANATION

NS = not sampled; ND = not detected
MW-24A installed during December, 2019

100	kriged chloride isocon and label
TW4-42 23	temporary perched monitoring well installed April, 2019 showing concentration in mg/L
TW4-40 37	temporary perched monitoring well installed February, 2018 showing concentration in mg/L
MW-38 45	perched monitoring well installed February, 2018 showing concentration in mg/L
MW-32 ● 36	perched monitoring well showing concentration in mg/L
TW4-7 ○ 44	temporary perched monitoring well showing concentration in mg/L
TWN-1 ◆ 33	temporary perched nitrate monitoring well showing concentration in mg/L
PIEZ-1 68	perched piezometer showing concentration in mg/L

NOTES: MW-4, MW-26, TW4-1, TW4-2, TW4-4, TW4-11, TW4-19, TW4-20, TW4-21, TW4-37, TW4-39, TW4-40 and TW4-41 are chloroform pumping wells; TW4-22, TW4-24, TW4-25 and TWN-2 are nitrate pumping wells.

HYDRO
GEO
CHEM, INC.

KRIGED 2nd QUARTER, 2020 CHLORIDE (mg/L)
WHITE MESA SITE

APPROVED	DATE	REFERENCE	FIGURE
		H:/718000/aug20/chloride/Ucl0620.srf	I-2

Tab J

Analyte Concentrations over Time

Piezometer 1

Date	Nitrate (mg/l)	Chloride (mg/l)
2/19/2009	6.8	NA
7/14/2009	6.8	60
9/22/2009	7.3	78
10/27/2009	7.4	61
6/2/2010	7.2	52
7/19/2010	6.8	52
12/10/2010	6.5	60
1/31/2011	7	60
4/25/2011	6.8	58
7/25/2011	7	53
10/19/2011	6.6	55
1/11/2012	7.1	78
4/20/2012	6.6	58
7/27/2012	7.2	56
10/17/2012	7.66	55
2/18/2013	8.11	56.7
4/24/2013	8.88	53.3
8/28/2013	7.83	55.1
10/16/2013	6.68	54.1
1/13/2014	6.79	56.2
5/7/2014	7.57	52.1
8/6/2014	5.1	55
10/8/2014	5.75	57.6
2/18/2015	6.41	55.9
5/12/2015	5.95	57.5
8/26/2015	4.96	64.2
10/14/2015	6.17	54.4
2/23/2016	8.31	56.5
5/17/2016	6.33	59.1
7/19/2016	6.78	53.9
10/11/2016	6.42	58.1
2/15/2017	6.75	54.5
6/1/2017	6.60	54.7
7/20/2017	6.80	58.0
10/4/2017	6.21	54.4
1/17/2018	6.35	55.3
5/9/2018	6.56	58.0
8/8/2018	6.66	63.5
11/20/2018	6.70	55.5
2/19/2019	6.72	56.8
5/30/2019	6.75	59.4
8/14/2019	6.81	61.1
10/16/2019	7.21	59.3
1/30/2020	7.12	68.9

Piezometer 1

Date	Nitrate (mg/l)	Chloride (mg/l)
5/20/2020	6.95	67.7

Piezometer 2

Date	Nitrate (mg/l)	Chloride (mg/l)
2/19/2009	0.500	NA
7/14/2009	0.500	7.0
9/22/2009	0.500	17.0
10/27/2009	0.600	7.0
6/2/2010	0.600	8.0
7/19/2010	0.600	8.0
12/10/2010	0.200	6.0
1/31/2011	0.300	9.0
4/25/2011	0.300	8.0
7/25/2011	0.100	9.0
10/19/2011	0.100	8.0
1/11/2012	0.100	9.0
4/20/2012	0.200	8.0
7/27/2012	0.200	9.0
10/17/2012	0.192	9.5
2/19/2013	0.218	9.7
4/24/2013	0.172	10.3
8/28/2013	0.198	9.7
10/16/2013	0.364	9.2
1/13/2014	0.169	11.4
5/7/2014	0.736	11.4
8/6/2014	0.800	12.0
10/8/2014	0.755	12.2
2/18/2015	0.749	12.6
5/12/2015	0.646	13.1
8/26/2015	0.662	15.5
10/14/2015	0.692	13.3
2/23/2016	0.615	13.4
5/17/2016	0.665	14.0
7/19/2016	0.669	12.4
10/11/2016	0.732	13.4
2/15/2017	0.696	12.4
6/1/2017	0.345	13.2
7/20/2017	0.555	13.4
10/4/2017	0.684	12.7
1/17/2018	0.716	13.0
5/9/2018	0.776	14.0
8/8/2018	0.818	15.1
11/20/2018	0.648	12.3
2/19/2019	0.599	12.9
5/30/2019	0.702	12.6
8/14/2019	0.606	13.2
10/16/2019	0.573	12.6
1/30/2020	0.740	14.2

Piezometer 2

Date	Nitrate (mg/l)	Chloride (mg/l)
5/20/2020	0.679	14.4

Piezometer 3A

Date	Nitrate (mg/l)	Chloride (mg/l)
5/17/2016	8.23	109
7/19/2016	8.83	93.8
10/11/2016	8.44	100
2/15/2017	10.00	111
6/1/2017	10.10	124
7/20/2017	9.31	105
10/4/2017	9.65	107
1/17/2018	8.61	94.3
5/9/2018	8.98	100
8/8/2018	12.1	122
11/20/2018	11.8	105
2/19/2019	11.8	102
5/30/2019	11.8	104
8/14/2019	10.7	96.2
10/16/2019	8.97	83.0
1/30/2020	10.5	99.5
5/20/2020	12.4	88.3

TWN-1

Date	Nitrate (mg/l)	Chloride (mg/l)
2/6/2009	0.7	19
7/21/2009	0.4	17
9/21/2009	0.4	19
10/28/2009	0.5	18
3/17/2010	0.5	17
5/26/2010	0.6	20
9/27/2010	0.6	19
12/7/2010	0.6	14
1/26/2011	0.5	17
4/20/2011	0.5	19
7/26/2011	0.5	14
10/17/2011	0.5	10
1/9/2012	0.6	15
4/18/2012	0.6	17
7/24/2012	0.6	17
10/15/2012	0.432	17.5
2/18/2013	0.681	17.6
4/23/2013	0.84	17.4
8/27/2013	1.24	24.1
10/16/2013	1.61	26.8
1/14/2014	1.47	29.2
5/6/2014	1.63	31.1
8/5/2014	1.7	28
10/8/2014	1.46	27.6
2/18/2015	1.37	27.8
5/13/2015	0.65	29.2
8/25/2015	0.324	33.2
10/13/2015	1.35	27.7
2/23/2016	1.51	30.3
5/17/2016	1.73	32.1
7/20/2016	1.76	29.6
10/6/2016	1.98	33.0
2/15/2017	2.06	31.2
6/1/2017	1.89	32.7
7/19/2017	2.07	31.2
10/4/2017	1.95	32.0
1/18/2018	1.86	30.4
5/8/2018	2.06	28.4
8/8/2018	1.97	34.2
11/20/2018	1.98	28.9
2/20/2019	2.10	31.4
5/29/2019	1.93	32.6
8/14/2019	2.15	30.3
10/16/2019	2.35	32.0
1/29/2020	2.24	33.8

TWN-1

Date	Nitrate (mg/l)	Chloride (mg/l)
5/20/2020	2.24	33.0

TWN-2

Date	Nitrate (mg/l)	Chloride (mg/l)
2/6/2009	25.4	29
7/21/2009	25	25
9/21/2009	22.6	17
11/2/2009	20.8	55
3/24/2010	62.1	85
6/2/2010	69	97
9/29/2010	69	104
12/9/2010	48	93
2/1/2011	43	93
4/28/2011	40	85
7/28/2011	33	74
10/20/2011	33	76
1/12/2012	31	86
4/20/2012	48	103
7/31/2012	54	93
10/17/2012	22.1	79
2/19/2013	57.3	80.5
4/24/2013	57.7	82.1
8/27/2013	80	75.9
10/16/2013	111	70.4
1/13/2014	42.6	72.4
5/7/2014	44.7	84.9
8/6/2014	42	80
10/8/2014	70.6	81
2/18/2015	48.6	84.8
5/12/2015	52.8	82.6
8/25/2015	49.7	87.8
10/14/2015	44.9	74.9
2/23/2016	86.3	73.9
5/17/2016	45.4	74.5
7/19/2016	35.3	68.8
10/11/2016	32.6	69.8
2/15/2017	27.4	65.8
6/1/2017	25.0	61.5
7/20/2017	23.9	64.2
10/4/2017	31.9	60.5
1/19/2018	19.6	57.1
5/9/2018	19.8	62.3
8/8/2018	18.6	61.5
11/20/2018	19.6	56.0
2/19/2019	19.0	50.7
5/29/2019	45.1	102
8/14/2019	23.2	50.7
10/16/2019	18.2	53.0
1/29/2020	16.5	66.1

TWN-2

Date	Nitrate (mg/l)	Chloride (mg/l)
5/20/2020	16.1	59.6

TWN-3

Date	Nitrate (mg/l)	Chloride (mg/l)
2/6/2009	23.6	96
7/21/2009	25.3	96
9/21/2009	27.1	99
11/2/2009	29	106
3/25/2010	25.3	111
6/3/2010	26	118
7/15/2010	27	106
12/10/2010	24	117
2/1/2011	24	138
4/28/2011	26	128
7/29/2011	25	134
10/20/2011	25	129
1/12/2012	25	143
4/20/2012	24	152
7/31/2012	27	158
10/17/2012	12.1	149
2/19/2013	22.2	157
4/24/2013	27.2	158
8/28/2013	20.9	171
10/17/2013	23.5	163
1/15/2014	19.6	160
5/7/2014	23.6	168
8/6/2014	19.5	174
10/9/2014	19.1	153
2/19/2015	19.4	164
5/14/2015	17.2	141
8/26/2015	16.2	156
10/14/2015	16.3	129
2/24/2016	16.8	128
5/18/2016	13.5	116
7/19/2016	16.8	110
10/7/2016	15.8	113
2/16/2017	17.4	113
6/2/2017	15.9	108
7/20/2017	15.9	106
10/5/2017	15.6	111
1/19/2018	14.4	107
5/9/2018	16.4	115
8/9/2018	19.4	149
11/21/2018	20.1	123
2/21/2019	20.7	140
5/30/2019	18.7	137
8/15/2019	19.8	133
10/17/2019	19.6	126
1/30/2020	19.4	156

TWN-3

Date	Nitrate (mg/l)	Chloride (mg/l)
5/21/2020	24.0	136

TWN-4

Date	Nitrate (mg/l)	Chloride (mg/l)
2/6/2009	1.00	13.0
7/21/2009	0.05	12.0
9/21/2009	0.40	13.0
10/28/2009	0.40	11.0
3/16/2010	0.90	22.0
5/27/2010	1.00	22.0
9/27/2010	0.90	19.0
12/8/2010	1.00	21.0
1/25/2011	0.90	21.0
4/20/2011	0.90	21.0
7/26/2011	1.10	35.0
10/18/2011	0.90	20.0
1/9/2012	0.90	20.0
4/18/2012	1.10	24.0
7/25/2012	1.40	25.0
10/15/2012	1.45	26.4
2/18/2013	1.51	25.3
4/23/2013	1.63	24.4
8/27/2013	1.58	27.2
10/16/2013	1.69	29.4
1/14/2014	1.41	28.4
5/6/2014	1.55	29.6
8/5/2014	2.00	28.0
10/8/2014	1.44	30.7
2/18/2015	1.48	31.5
5/13/2015	0.73	31.9
8/25/2015	0.97	35.2
10/13/2015	1.58	28.4
2/23/2016	2.02	30.7
5/17/2016	2.97	31.7
7/20/2016	3.14	28.0
10/6/2016	3.09	31.3
2/15/2017	2.63	31.2
6/1/2017	2.37	28.6
7/19/2017	2.35	28.0
10/4/2017	2.27	27.4
1/18/2018	1.77	26.3
5/8/2018	1.86	27.7
8/8/2018	1.54	28.0
11/20/2018	1.48	22.7
2/20/2019	1.53	25.3
5/29/2019	1.51	26.5
8/14/2019	1.81	23.7
10/16/2019	2.15	25.4
1/29/2020	1.89	27.2

TWN-4

Date	Nitrate (mg/l)	Chloride (mg/l)
5/20/2020	1.75	25.1

TWN-7

Date	Nitrate (mg/l)	Chloride (mg/l)
8/25/2009	ND	11.00
9/21/2009	ND	7.00
11/10/2009	0.10	7.00
3/17/2010	0.800	6.00
5/28/2010	1.200	6.00
7/14/2010	1.600	7.00
12/10/2010	1.000	4.00
1/27/2011	1.300	6.00
4/21/2011	1.700	6.00
7/29/2011	0.700	5.00
10/19/2011	2.200	6.00
1/11/2012	2.300	5.00
4/20/2012	1.200	6.00
7/26/2012	0.900	6.00
10/16/2012	0.641	5.67
2/19/2013	0.591	5.68
4/24/2013	1.160	5.88
8/28/2013	0.835	6.96
10/16/2013	0.986	5.70
1/15/2014	0.882	5.75
5/7/2014	0.564	5.26
8/6/2014	0.900	6.00
10/9/2014	0.968	5.93
2/19/2015	1.040	5.58
5/14/2015	0.779	6.18
8/26/2015	0.348	6.12
10/14/2015	0.672	5.84
2/24/2016	0.240	6.06
5/18/2016	0.732	6.26
7/21/2016	0.810	5.97
10/7/2016	0.698	6.17
2/16/2017	1.63	14.00
6/2/2017	3.74	29.70
7/20/2017	2.70	29.00
10/5/2017	3.58	41.40
1/19/2018	5.82	69.40
5/9/2018	10.2	94.70
8/9/2018	10.6	105
11/21/2018	11.5	104
2/21/2019	12.9	107
5/30/2019	13.5	122
8/15/2019	12.9	120
10/17/2019	14.2	119
1/30/2020	14.2	128
5/21/2020	14.6	126

TWN-18

Date	Nitrate (mg/l)	Chloride (mg/l)
11/2/2009	1.300	57.0
3/17/2010	1.600	42.0
6/1/2010	1.800	63.0
9/27/2010	1.800	64.0
12/9/2010	1.600	59.0
1/27/2011	1.400	61.0
4/26/2011	1.800	67.0
7/28/2011	1.800	65.0
10/18/2011	1.900	60.0
1/10/2012	1.900	64.0
4/19/2012	2.100	64.0
7/26/2012	2.300	67.0
10/16/2012	1.950	67.5
2/18/2013	2.270	68.7
4/23/2013	2.320	64.3
8/27/2013	2.040	70.4
10/16/2013	2.150	67.3
1/14/2014	2.330	68.4
5/6/2014	2.180	76.5
8/5/2014	1.800	70.0
10/8/2014	1.470	74.8
2/18/2015	1.000	73.3
5/13/2015	1.350	76.6
8/25/2015	0.350	81.3
10/13/2015	0.668	69.0
2/23/2016	0.648	67.6
5/17/2016	0.497	69.9
7/20/2016	0.100	52.7
10/6/2016	0.501	67.4
2/15/2017	0.470	62.1
6/1/2017	0.392	63.9
7/19/2017	0.419	59.0
10/4/2017	0.256	56.6
1/18/2018	0.332	53.1
5/8/2018	0.283	57.8
8/8/2018	0.348	59.7
11/20/2018	0.160	48.1
2/20/2019	0.155	46.4
5/29/2019	0.129	50.0
8/14/2019	0.181	46.9
10/16/2019	0.162	47.1
1/29/2020	0.224	51.9
5/20/2020	0.236	47.4

TW4-19

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
7/22/2002	42.80	12/7/2005	81
9/12/2002	47.60	3/9/2006	86
3/28/2003	61.40	7/20/2006	123
6/23/2003	11.40	11/9/2006	134
7/15/2003	6.80	2/28/2007	133
8/15/2003	4.00	8/15/2007	129
9/12/2003	5.70	10/10/2007	132
9/25/2003	9.20	3/26/2008	131
10/29/2003	7.70	6/25/2008	128
11/9/2003	4.80	9/10/2008	113
8/16/2004	9.91	10/15/2008	124
9/17/2004	4.50	3/4/2009	127
3/16/2005	5.30	6/23/2009	132
6/7/2005	5.70	9/14/2009	43
8/31/2005	4.60	12/14/2009	124
12/1/2005	0.10	2/17/2010	144
3/9/2006	4.00	6/9/2010	132
6/14/2006	5.20	8/16/2010	142
7/20/2006	4.30	10/11/2010	146
11/9/2006	4.60	2/17/2011	135
2/28/2007	4.00	6/7/2011	148
8/15/2007	4.10	8/17/2011	148
10/10/2007	4.00	11/17/2011	148
3/26/2008	2.20	1/23/2012	138
6/25/2008	2.81	6/6/2012	149
9/10/2008	36.20	9/5/2012	149
10/15/2008	47.80	10/3/2012	150
3/4/2009	3.20	2/11/2013	164
6/23/2009	2.40	6/5/2013	148
9/14/2009	0.10	9/3/2013	179
12/14/2009	26.70	10/29/2013	206
2/17/2010	2.00	1/27/2014	134
6/9/2010	4.40	5/19/2014	152
8/16/2010	5.90	8/11/2014	140
10/11/2010	2.70	10/21/2014	130
2/17/2011	17.00	3/9/2015	238
6/7/2011	12.00	6/8/2015	180
8/17/2011	3.00	8/31/2015	326
11/17/2011	5.00	10/19/2015	252
1/23/2012	0.60	3/9/2016	276
6/6/2012	2.40	5/23/2016	201
9/5/2012	2.50	7/25/2016	214
10/3/2012	4.10	10/13/2016	200
2/11/2013	7.99	3/8/2017	461
6/5/2013	2.95	6/13/2017	135

TW4-19

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
9/3/2013	17.60	7/26/2017	218
10/29/2013	4.70	10/11/2017	139
1/27/2014	1.62	3/12/2018	193
5/19/2014	1.34	6/8/2018	138
8/11/2014	1.60	8/22/2018	166
10/21/2014	4.72	11/28/2018	140
3/9/2015	8.56	3/8/2019	197
6/8/2015	0.92	6/5/2019	160
8/31/2015	11.60	9/4/2019	153
10/19/2015	10.60	12/10/2019	147
3/9/2016	15.70	2/19/2020	205
5/23/2016	1.27	5/27/2020	147
7/25/2016	10.50		
10/13/2016	10.00		
3/8/2017	11.10		
6/13/2017	0.243		
7/26/2017	1.12		
10/11/2017	0.377		
3/12/2018	8.61		
6/8/2018	0.494		
8/22/2018	2.55		
11/28/2018	0.233		
3/8/2019	6.58		
6/5/2019	8.96		
9/4/2019	0.332		
12/10/2019	0.535		
2/19/2020	10.10		
5/27/2020	1.14		

The sampling program for TW4-19 was updated in the fourth quarter of 2005 to include analysis for chloride as well as nitrate. This change accounts for the different number of data points represented above.

TW4-21

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
5/25/2005	14.6	12/7/2005	353
8/31/2005	10.1	3/9/2006	347
11/30/2005	9.6	7/20/2006	357
3/9/2006	8.5	11/8/2006	296
6/14/2006	10.2	2/28/2007	306
7/20/2006	8.9	6/27/2007	327
11/8/2006	8.7	8/15/2007	300
2/28/2007	8.7	10/10/2007	288
6/27/2007	8.6	3/26/2008	331
8/15/2007	8.6	6/25/2008	271
10/10/2007	8.3	9/10/2008	244
3/26/2008	14.3	10/15/2008	284
6/25/2008	8.8	3/11/2009	279
9/10/2008	7.6	6/24/2009	291
10/15/2008	8.0	9/15/2009	281
3/11/2009	8.3	12/22/2009	256
6/24/2009	8.1	2/25/2010	228
9/15/2009	9.2	6/10/2010	266
12/22/2009	8.4	8/12/2010	278
2/25/2010	8.4	10/13/2010	210
6/10/2010	12.0	2/22/2011	303
8/12/2010	14.0	6/1/2011	297
10/13/2010	7.0	8/17/2011	287
2/22/2011	9.0	11/16/2011	276
6/1/2011	13.0	1/19/2012	228
8/17/2011	14.0	6/13/2012	285
11/16/2011	13.0	9/13/2012	142
1/19/2012	15.0	10/4/2012	270
6/13/2012	11.0	2/13/2013	221
9/13/2012	13.0	6/18/2013	243
10/4/2012	14.0	9/12/2013	207
2/13/2013	11.8	11/13/2013	206
6/18/2013	13.8	2/5/2014	200
9/12/2013	10.3	5/22/2014	243
11/13/2013	9.0	8/27/2014	230
2/5/2014	11.4	10/29/2014	252
5/22/2014	11.5	3/12/2015	255
8/27/2014	7.1	6/8/2015	494
10/29/2014	10.0	8/31/2015	499

TW4-21

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
3/12/2015	10.9	10/19/2015	413
6/8/2015	13.1	3/9/2016	452
8/31/2015	14.7	5/23/2016	425
10/19/2015	14.3	7/25/2016	457
3/9/2016	14.6	10/12/2016	439
5/23/2016	13.1	3/8/2017	478
7/25/2016	16.5	6/13/2017	309
10/12/2016	13.5	7/26/2017	447
3/8/2017	17.7	10/11/2017	378
6/13/2017	9.5	3/12/2018	447
7/26/2017	18.2	6/8/2018	387
10/11/2017	16.9	8/22/2018	182
3/12/2018	15.8	10/22/2018	392
6/8/2018	14.1	3/8/2019	180
8/22/2018	0.236	6/5/2019	456
10/22/2018	15.2	9/4/2019	478
3/8/2019	8.99	12/10/2019	339
6/5/2019	17.5	2/19/2020	446
9/4/2019	14.7	5/27/2020	353
12/10/2019	5.73		
2/19/2020	8.93		
5/27/2020	15.4		

TW4-22

Date	Nitrate (mg/l)	Chloride (mg/l)
2/28/2007	20.9	347
6/27/2007	19.3	273
8/15/2007	19.3	259
10/10/2007	18.8	238
3/26/2008	39.1	519
6/25/2008	41.9	271
9/10/2008	38.7	524
10/15/2008	36.3	539
3/11/2009	20.7	177
6/24/2009	20.6	177
9/15/2009	40.3	391
12/29/2009	17.8	175
3/3/2010	36.6	427
6/15/2010	19	134
8/12/2010	18	127
8/24/2010	15	130
10/13/2010	16	134
2/23/2011	18	114
6/1/2011	17	138
8/17/2011	15	120
11/16/2011	19	174
1/19/2012	14	36
6/13/2012	12.8	35
9/12/2012	7	121
10/4/2012	14	130
2/11/2013	58	635
6/5/2013	50.2	586
9/3/2013	29.7	487
10/29/2013	45.2	501
1/27/2014	54.6	598
5/19/2014	47.2	614
8/11/2014	41.5	540
10/21/2014	54.9	596
3/9/2015	69.2	675
6/8/2015	47.1	390
8/31/2015	64.7	557
10/19/2015	56.1	567
3/9/2016	31.1	583
5/23/2016	58.4	598
7/25/2016	61.3	619
10/12/2016	61.5	588
3/8/2017	69.8	566
6/13/2017	70.8	572
7/26/2017	66.1	391
10/11/2017	80.1	600
3/12/2018	62.3	607
6/8/2018	72.5	580

TW4-22 Date	Nitrate (mg/l)	Chloride (mg/l)
8/22/2018	55.4	613
11/28/2018	75.7	567
3/8/2019	71.9	528
6/5/2019	83.9	662
9/4/2019	72.5	588
12/10/2019	59.9	608
2/19/2020	57.7	606
5/27/2020	60.5	578

TW4-24

Date	Nitrate (mg/l)	Chloride (mg/l)
6/27/2007	26.1	770
8/15/2007	29	791
10/10/2007	24.7	692
3/26/2008	24.4	740
6/25/2008	45.3	834
9/10/2008	38.4	1180
10/15/2008	44.6	1130
3/4/2009	30.5	1010
6/24/2009	30.4	759
9/15/2009	30.7	618
12/17/2009	28.3	1080
2/25/2010	33.1	896
6/9/2010	30	639
8/11/2010	32	556
8/24/2010	31	587
10/6/2010	31	522
2/17/2011	31	1100
5/26/2011	35	1110
8/17/2011	34	967
11/16/2011	35	608
1/18/2012	37	373
6/6/2012	37	355
8/30/2012	37	489
10/3/2012	38	405
2/11/2013	35.9	1260
6/5/2013	23.7	916
9/3/2013	32.6	998
10/29/2013	34.6	1030
1/27/2014	31.6	809
5/19/2014	35	1020
8/11/2014	31.5	1150
10/21/2014	35.7	1050
3/9/2015	34.6	944
6/8/2015	31.8	1290
8/31/2015	25.3	788
10/19/2015	29.6	909
3/9/2016	29.1	989
5/23/2016	24.2	771
7/25/2016	34.4	1,180
10/12/2016	31.9	1,010
3/8/2017	41.3	1,090
6/13/2017	39.9	1,080
7/26/2017	40.0	1,230
10/11/2017	31.7	895
3/12/2018	44.9	1,320
6/14/2018	33.6	792
8/22/2018	33.8	996
11/28/2018	38.4	1,100
3/8/2019	39.3	1,040
6/5/2019	33.2	1,020
9/4/2019	36.4	1,130
12/10/2019	33.8	1,090

TW4-24

Date	Nitrate (mg/l)	Chloride (mg/l)
2/19/2020	37.1	1,010
5/27/2020	41.7	1,060

TW4-25

Date	Nitrate (mg/l)	Chloride (mg/l)
6/27/2007	17.1	395
8/15/2007	16.7	382
10/10/2007	17	356
3/26/2008	18.7	374
6/25/2008	22.1	344
9/10/2008	18.8	333
10/15/2008	21.3	366
3/4/2009	15.3	332
6/24/2009	15.3	328
9/15/2009	3.3	328
12/16/2009	14.2	371
2/23/2010	14.4	296
6/8/2010	16	306
8/10/2010	14	250
10/5/2010	15	312
2/16/2011	15	315
5/25/2011	16	321
8/16/2011	16	276
11/15/2011	16	294
1/18/2012	16	304
5/31/2012	16	287
9/11/2012	17	334
10/3/2012	17	338
2/11/2013	9.04	190
6/5/2013	5.24	136
9/3/2013	5.69	119
10/29/2013	6.10	88.6
1/27/2014	2.16	85.7
5/19/2014	1.21	51.1
8/11/2014	1.6	67
10/21/2014	1.03	58.1
3/9/2015	14.4	310
6/8/2015	1.14	58.3
8/31/2015	1.63	69.2
10/21/2015	1.78	93.7
3/9/2016	0.837	62.7
5/23/2016	0.959	75.5
7/25/2016	1.78	74.1
10/12/2016	1.24	59.8
3/8/2017	17.0	285
6/13/2017	0.976	69.8
7/26/2017	1.23	70.1
10/11/2017	1.29	68.0
3/12/2018	2.23	70.5
6/14/2018	1.14	60.3

TW4-25

Date	Nitrate (mg/l)	Chloride (mg/l)
8/22/2018	0.810	69.1
11/28/2018	0.634	59.7
3/8/2019	0.639	65.0
6/5/2019	0.821	59.0
9/4/2019	0.548	58.1
12/10/2019	0.841	73.1
2/19/2020	0.607	86.0
5/27/2020	0.851	76.8

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

MW-30

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
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
6/18/2012	15.0	1/23/2013	128
7/10/2012	17.0	2/26/2013	129
8/7/2012	18.0	3/20/2013	126
9/19/2012	16.0	4/17/2013	117
10/23/2012	16.2	5/15/2013	119
11/13/2012	18.5	6/25/2013	127
12/26/2012	17.2	7/10/2013	130
1/23/2013	19.2	8/20/2013	126
2/26/2013	21.4	9/18/2013	131
3/20/2013	14.3	10/22/2013	128
4/17/2013	16.8	11/20/2013	124
5/15/2013	18.8	12/18/2013	134
6/25/2013	16.1	1/8/2014	131
7/10/2013	17.6	2/25/2014	135
8/20/2013	16.4	3/11/2014	144
9/18/2013	16.9	4/23/2014	154
10/22/2013	19.7	5/14/2014	128
11/20/2013	19.5	6/3/2014	128
12/18/2013	20.7	7/29/2014	140
1/8/2014	20.3	8/20/2014	139
2/25/2014	18.4	9/9/2014	136
3/11/2014	21.3	10/7/2014	136
4/23/2014	18.3	11/10/2014	154
5/14/2014	17.9	12/10/2014	138
6/3/2014	19.4	1/21/2015	144
7/29/2014	15.6	2/4/2015	136
8/20/2014	13.8	3/3/2015	132
9/9/2014	16.8	4/8/2015	142
10/7/2014	11.0	5/12/2015	145
11/10/2014	16.2	6/24/2015	142
12/10/2014	17.1	7/7/2015	145
1/21/2015	19.5	8/11/2015	165
2/4/2015	14.9	9/15/2015	165
3/3/2015	17.3	10/7/2015	137
4/8/2015	17.0	11/11/2015	140
5/12/2015	16.1	12/9/2015	144
6/24/2015	15.8	1/20/2016	143
7/7/2015	15.3	2/10/2016	145
8/11/2015	17.9	3/2/2016	142

MW-30

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
9/15/2015	17.3	4/13/2016	144
10/7/2015	19.1	5/4/2016	139
11/11/2015	16.3	6/14/2016	142
12/9/2015	18.2	7/13/2016	137
1/20/2016	14.6	8/18/2016	150
2/10/2016	20.0	9/14/2016	146
3/2/2016	17.8	10/5/2016	148
4/13/2016	18.0	11/3/2016	143
5/4/2016	17.3	12/6/2016	158
6/14/2016	18.5	1/18/2017	150
7/13/2016	16.1	2/2/2017	150
8/18/2016	18.0	3/6/2017	250
9/14/2016	17.0	4/5/2017	146
10/5/2016	17.2	5/2/2017	146
11/3/2016	18.0	6/5/2017	153
12/6/2016	18.2	7/11/2017	160
1/18/2017	19.0	8/14/2017	173
2/2/2017	17.4	9/12/2017	149
3/6/2017	20.4	10/5/2017	153
4/5/2017	18.3	11/1/2017	156
5/2/2017	17.5	12/6/2017	159
6/5/2017	18.8	1/23/2018	152
7/11/2017	16.2	2/22/2018	158
8/14/2017	19.2	3/8/2018	167
9/12/2017	18.7	4/12/2018	145
10/5/2017	18.8	5/15/2018	174
11/1/2017	17.4	6/19/2018	169
12/6/2017	18.3	7/24/2018	177
1/23/2018	15.2	8/10/2018	170
2/22/2018	17.6	9/11/2018	183
3/8/2018	17.0	10/22/2018	140
4/12/2018	17.3	11/14/2018	166
5/15/2018	17.7	12/11/2018	154
6/19/2018	16.9	1/16/2019	157
7/24/2018	17.4	2/13/2019	167
8/10/2018	18.7	3/6/2019	160
9/11/2018	18.0	4/9/2019	138
10/22/2018	17.3	5/7/2019	175
11/14/2018	16.9	6/3/2019	165
12/11/2018	17.2	7/16/2019	181
1/16/2019	17.9	8/6/2019	190
2/13/2019	18.2	9/24/2019	176

MW-30

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
3/6/2019	16.2	10/8/2019	170
4/9/2019	18.5	11/13/2019	180
5/7/2019	17.9	12/4/2019	185
6/3/2019	15.8	1/15/2020	182
7/16/2019	19.3	2/5/2020	187
8/6/2019	15.8	3/11/2020	182
9/24/2019	17.9	4/6/2020	195
10/8/2019	18.2	5/6/2020	177
11/13/2019	17.2	6/3/2020	180
12/4/2019	17.8		
1/15/2020	16.4		
2/5/2020	17.8		
3/11/2020	19.0		
4/6/2020	18.1		
5/6/2020	18.6		
6/3/2020	18.3		

Under the groundwater sampling program, accelerated monitoring for nitrate began in MW-30 prior to when the accelerated monitoring for chloride began. This difference accounts for the different number of data points represented above.

MW-31

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
6/22/2005	24.2	6/22/2005	139
9/22/2005	22.4	9/22/2005	136
12/14/2005	23.8	12/14/2005	135
3/22/2006	24.1	3/22/2006	133
6/21/2006	25.3	6/21/2006	138
9/13/2006	24.6	9/13/2006	131
10/25/2006	25.1	10/25/2006	127
3/15/2007	23.2	3/15/2007	132
3/15/2007	22.0	3/15/2007	132
8/27/2007	23.3	8/27/2007	136
10/24/2007	24.6	10/24/2007	122
3/19/2008	25.0	3/19/2008	124
6/3/2008	29.3	6/3/2008	128
8/4/2008	28.7	8/4/2008	124
11/11/2008	29.9	11/11/2008	119
2/3/2009	23.4	2/3/2009	115
5/13/2009	22.4	5/13/2009	124
8/24/2009	15.4	8/24/2009	122
10/14/2009	22.6	10/14/2009	138
2/9/2010	21.7	2/9/2010	128
4/20/2010	22.5	4/20/2010	128
5/21/2010	23.0	9/13/2010	139
6/15/2010	21.1	11/9/2010	138
8/24/2010	22.0	2/1/2011	145
9/13/2010	21.0	4/1/2011	143
10/19/2010	20.0	5/10/2011	143
11/9/2010	20.0	6/20/2011	145
12/14/2010	20.0	7/5/2011	148
1/10/2011	19.0	8/2/2011	148
2/1/2011	21.0	9/6/2011	148
3/14/2011	22.0	10/3/2011	145
4/1/2011	21.0	11/8/2011	145
5/10/2011	20.0	12/12/2011	148
6/20/2011	22.0	1/24/2012	155
7/5/2011	22.0	2/13/2012	150
8/2/2011	20.0	3/13/2012	152
9/6/2011	21.0	4/9/2012	160
10/3/2011	21.0	5/2/2012	151
11/8/2011	21.0	6/18/2012	138
12/12/2011	21.0	7/9/2012	161
1/24/2012	21.0	8/6/2012	175
2/13/2012	21.0	9/18/2012	172

MW-31

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
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
6/18/2012	21.6	1/22/2013	176
7/9/2012	21.0	2/19/2013	174
8/6/2012	21.0	3/19/2013	168
9/18/2012	21.0	4/16/2013	171
10/22/2012	18.0	5/13/2013	169
11/6/2012	23.6	6/24/2013	179
12/18/2012	22.2	7/9/2013	182
1/22/2013	22.8	8/19/2013	183
2/19/2013	19.3	9/17/2013	193
3/19/2013	19.1	10/23/2013	188
4/16/2013	18.8	11/18/2013	174
5/13/2013	23.8	12/17/2013	203
6/24/2013	20.0	1/7/2014	194
7/9/2013	21.7	2/17/2014	197
8/19/2013	16.0	3/10/2014	230
9/17/2013	21.2	4/28/2014	230
10/23/2013	21.2	5/13/2014	200
11/18/2013	23.9	6/2/2014	173
12/17/2013	24.2	7/28/2014	200
1/7/2014	24.0	8/18/2014	210
2/17/2014	20.6	9/3/2014	210
3/10/2014	26.2	10/6/2014	205
4/28/2014	19.1	11/4/2014	204
5/13/2014	23.3	12/9/2014	215
6/2/2014	23.1	1/20/2015	226
7/28/2014	19.0	2/2/2015	211
8/18/2014	15.2	3/3/2015	209
9/3/2014	18.9	4/7/2015	211
10/6/2014	15.9	5/11/2015	225
11/4/2014	20.9	6/23/2015	228
12/9/2014	17.0	7/6/2015	222
1/20/2015	20.9	8/10/2015	264
2/2/2015	18.7	9/15/2015	231
3/3/2015	19.8	10/6/2015	222
4/7/2015	19.0	11/9/2015	215
5/11/2015	18.4	12/8/2015	231
6/23/2015	18.0	1/19/2016	228
7/6/2015	18.8	2/15/2016	246
8/10/2015	19.9	3/2/2016	228

MW-31

Date	Nitrate (mg/l)	Date	Chloride (mg/l)
9/15/2015	18.9	4/12/2016	254
10/6/2015	22.0	5/3/2016	243
11/9/2015	18.4	6/15/2016	252
12/8/2015	19.5	7/12/2016	241
1/19/2016	18.9	8/16/2016	272
2/15/2016	18.8	9/13/2016	254
3/2/2016	18.0	10/4/2016	260
4/12/2016	22.8	11/1/2016	267
5/3/2016	18.6	12/5/2016	274
6/15/2016	19.2	1/17/2017	287
7/12/2016	17.4	2/7/2017	266
8/16/2016	19.7	3/6/2017	250
9/13/2016	18.6	4/4/2017	263
10/4/2016	18.8	5/1/2017	263
11/1/2016	19.8	6/5/2017	278
12/5/2016	18.5	7/11/2017	254
1/17/2017	20.9	8/14/2017	310
2/7/2017	21.1	9/11/2017	248
3/6/2017	20.4	10/2/2017	287
4/4/2017	19.5	11/1/2017	292
5/1/2017	18.3	12/4/2017	285
6/5/2017	20.8	1/24/2018	323
7/11/2017	18.0	2/20/2018	292
8/14/2017	19.5	3/5/2018	311
9/11/2017	20.2	4/17/2018	308
10/2/2017	21.0	5/14/2018	326
11/1/2017	19.2	6/18/2018	359
12/4/2017	19.2	7/23/2018	351
1/24/2018	17.0	8/10/2018	336
2/20/2018	18.8	9/10/2018	333
3/5/2018	19.0	10/24/2018	286
4/17/2018	19.0	11/13/2018	281
5/14/2018	18.8	12/10/2018	302
6/18/2018	18.0	1/15/2019	283
7/23/2018	18.0	2/12/2019	296
8/10/2018	18.3	3/5/2019	322
9/10/2018	20.1	4/10/2019	294
10/24/2018	18.3	5/7/2019	346
11/13/2018	17.9	6/3/2019	325
12/10/2018	18.3	7/15/2019	374
1/15/2019	19.0	8/5/2019	372
2/12/2019	18.6	9/23/2019	365

MW-31

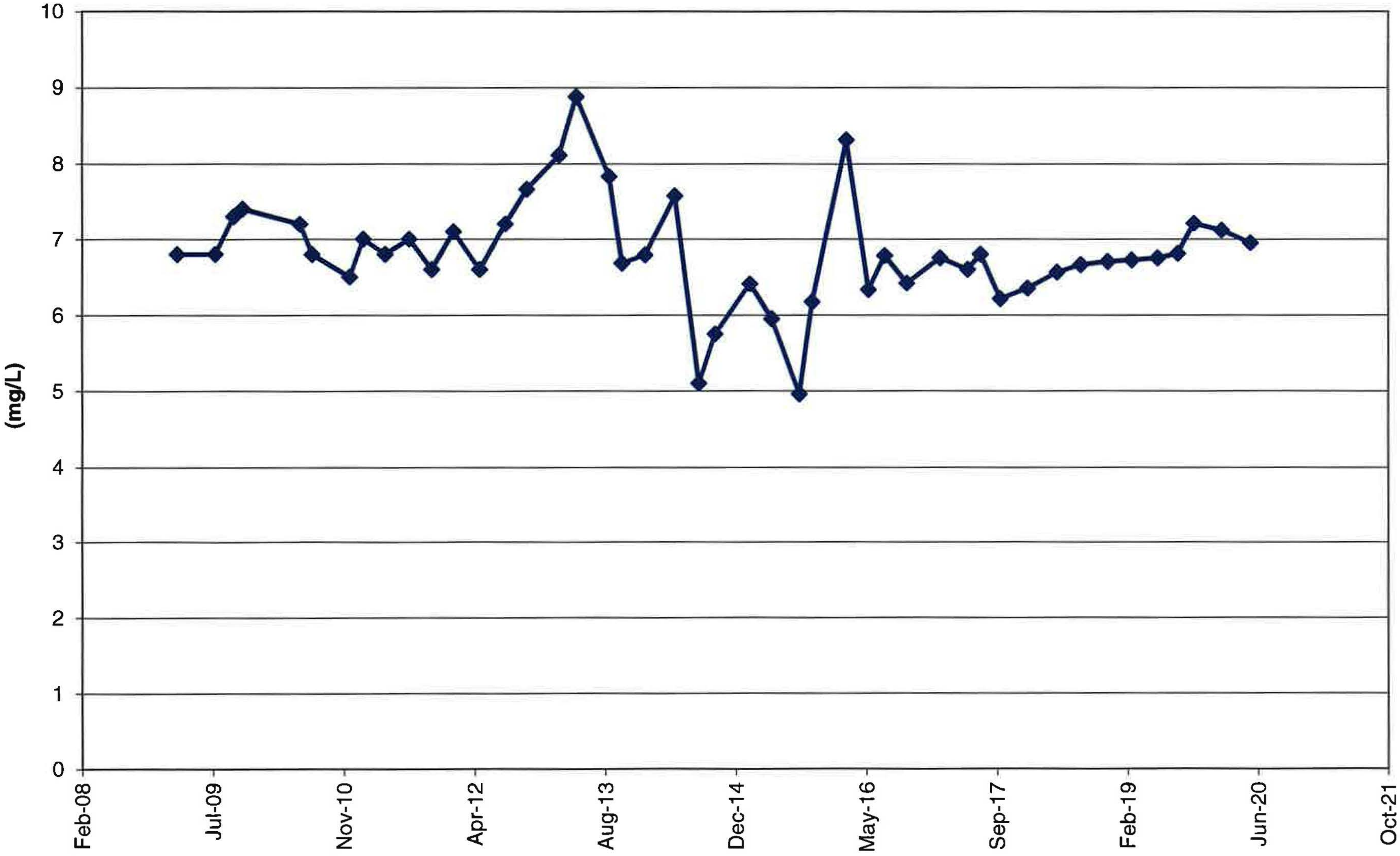
Date	Nitrate (mg/l)	Date	Chloride (mg/l)
3/5/2019	18.5	10/9/2019	318
4/10/2019	19.7	11/12/2019	338
5/7/2019	18.9	12/3/2019	343
6/3/2019	19.7	1/14/2020	381
7/15/2019	19.8	2/4/2020	370
8/5/2019	17.0	3/10/2020	368
9/23/2019	19.5	4/6/2020	376
10/9/2019	19.8	5/5/2020	361
11/12/2019	18.8	6/2/2020	377
12/3/2019	18.3		
1/14/2020	17.5		
2/4/2020	18.0		
3/10/2020	19.2		
4/6/2020	18.8		
5/5/2020	20.1		
6/2/2020	18.7		

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.

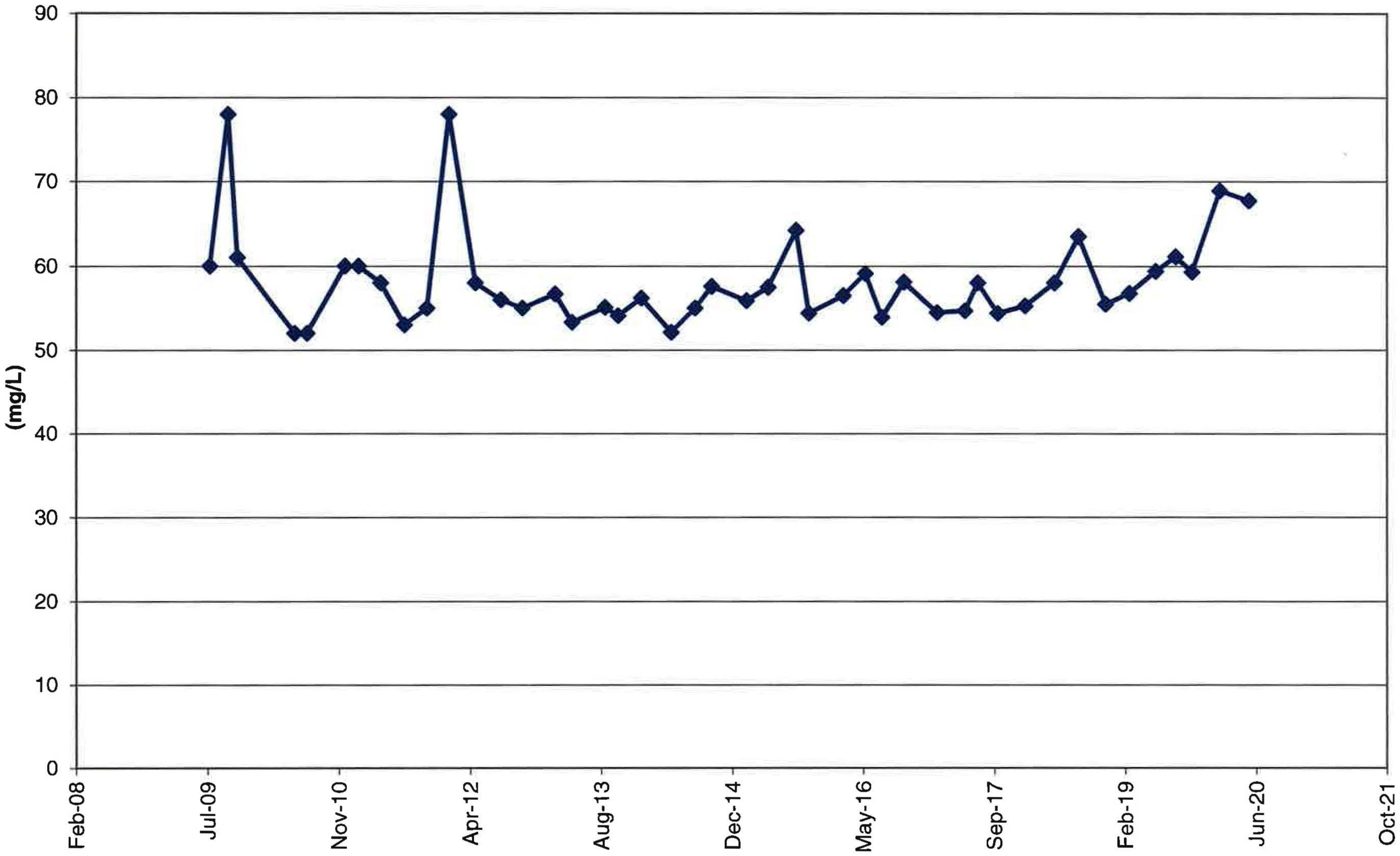
Tab K

Concentration Trend Graphs

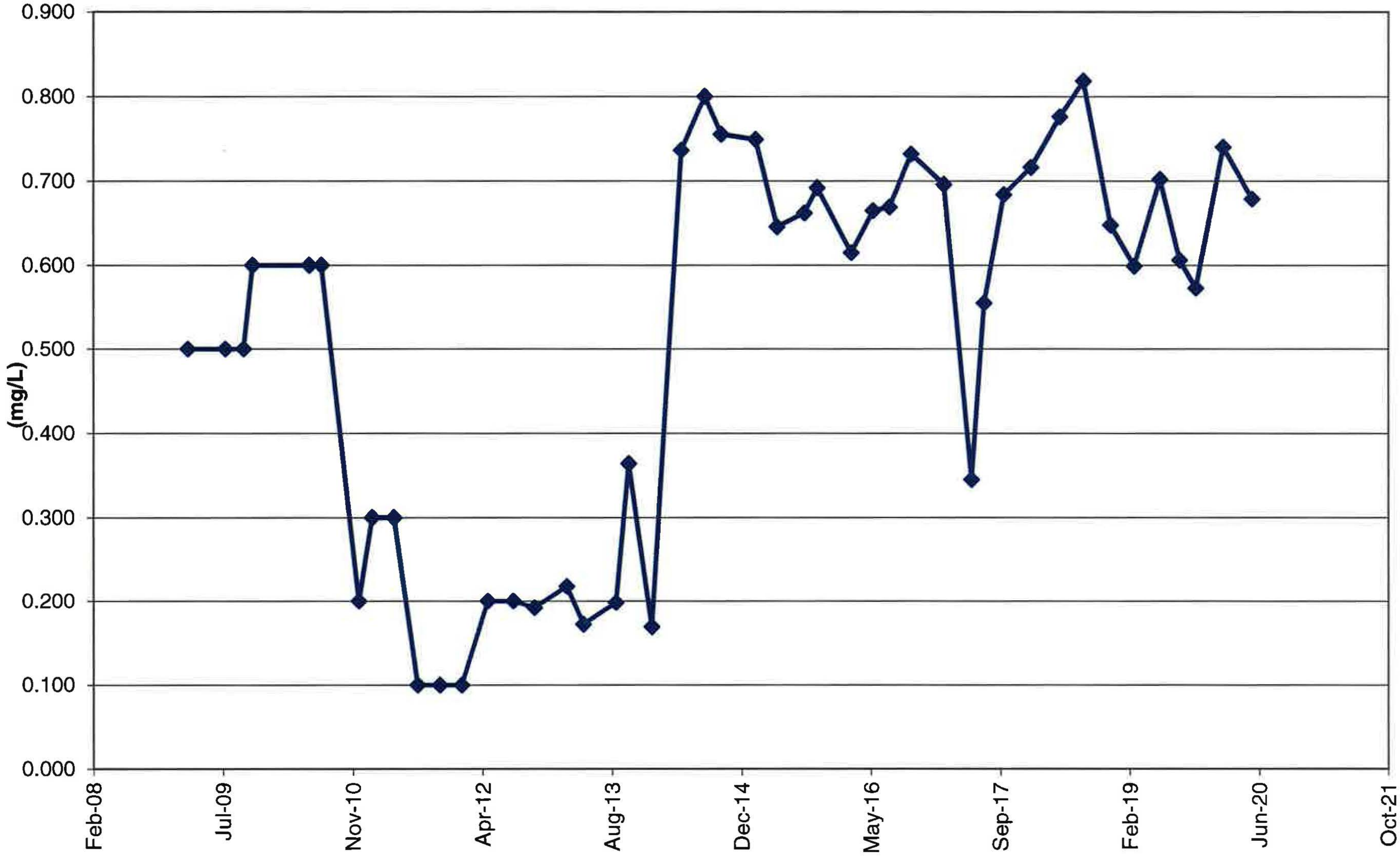
Piezometer 1 Nitrate Concentrations



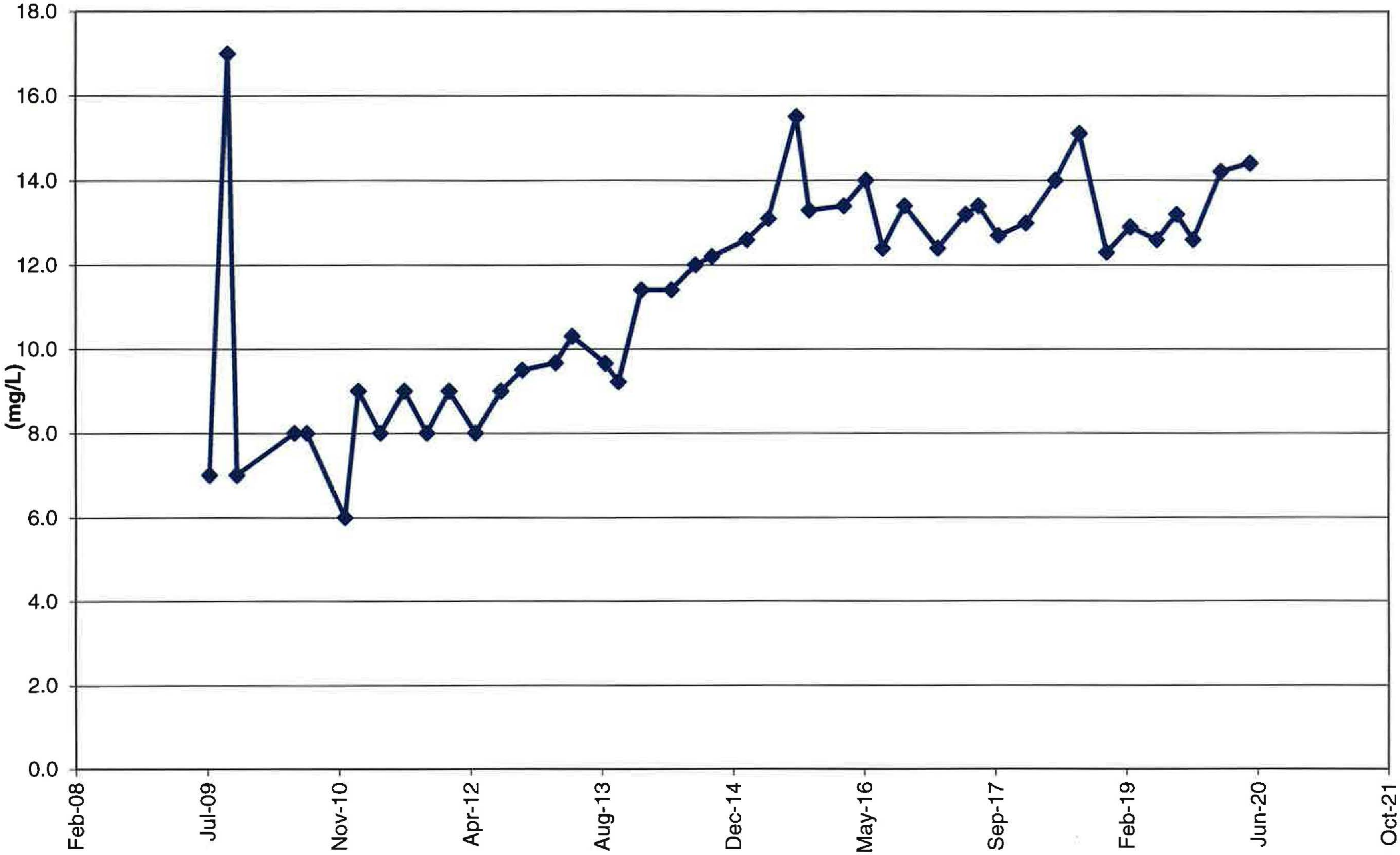
Piezometer 1 Chloride Concentrations



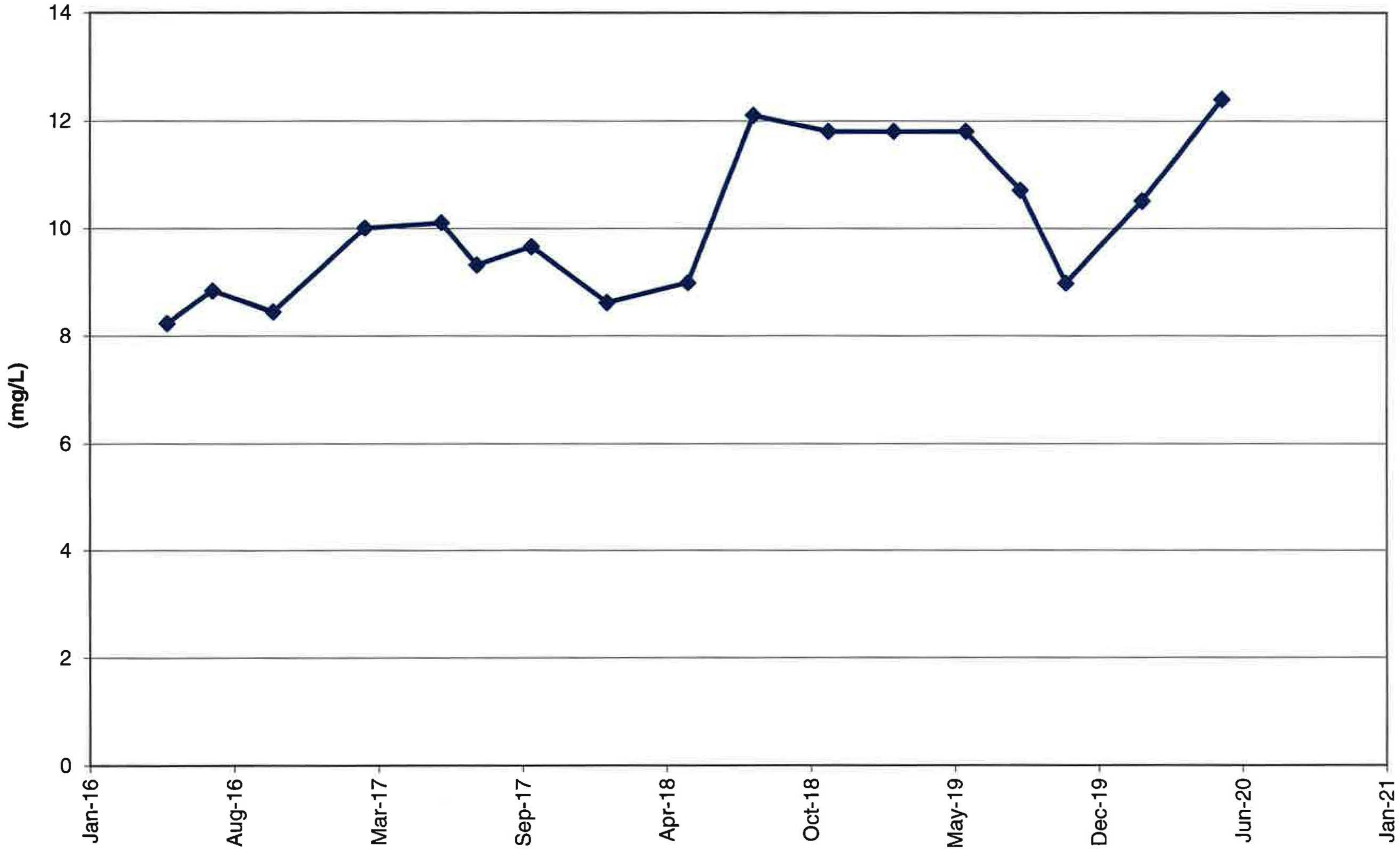
Piezometer 2 Nitrate Concentrations



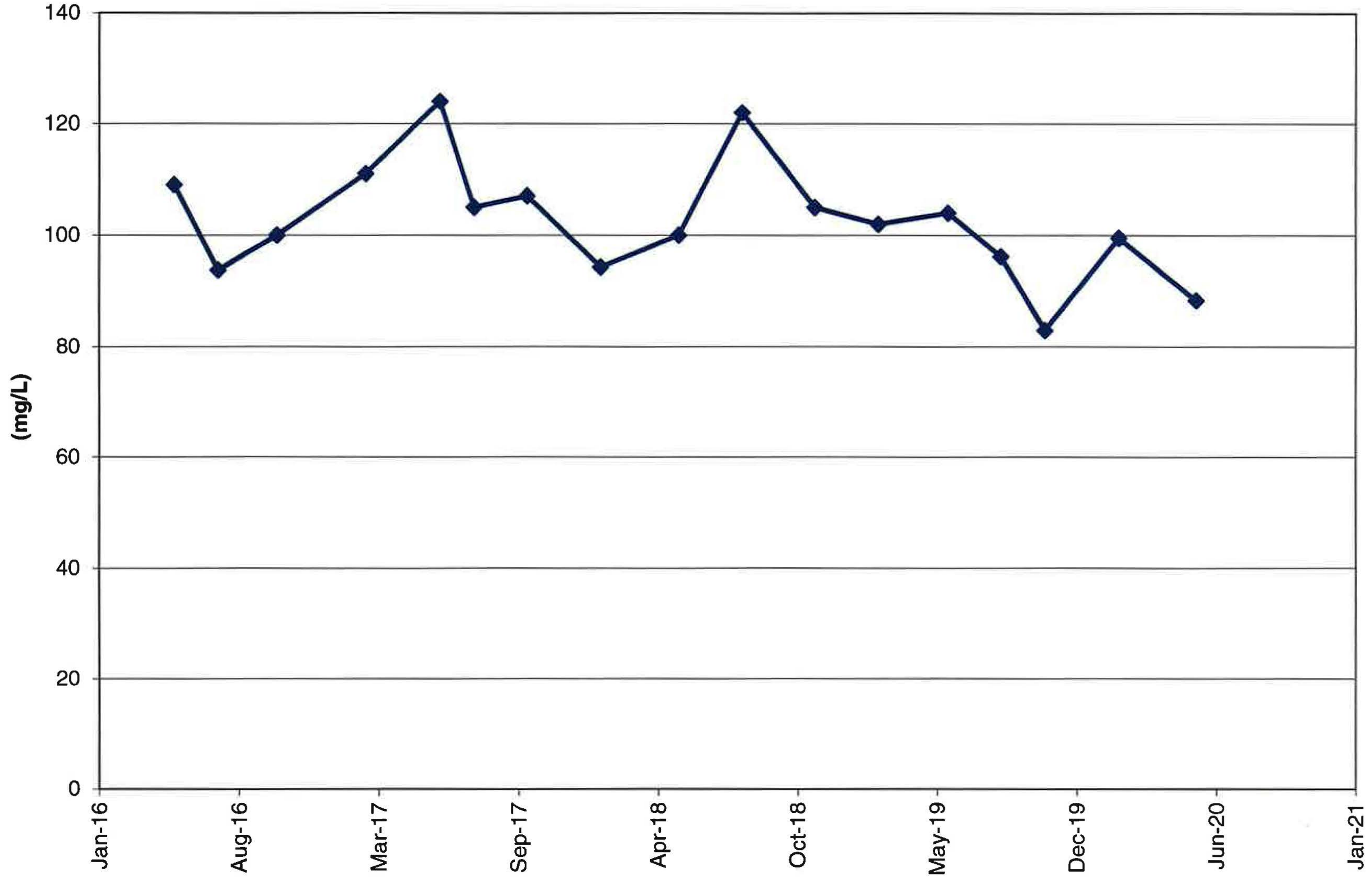
Piezometer 2 Chloride Concentrations



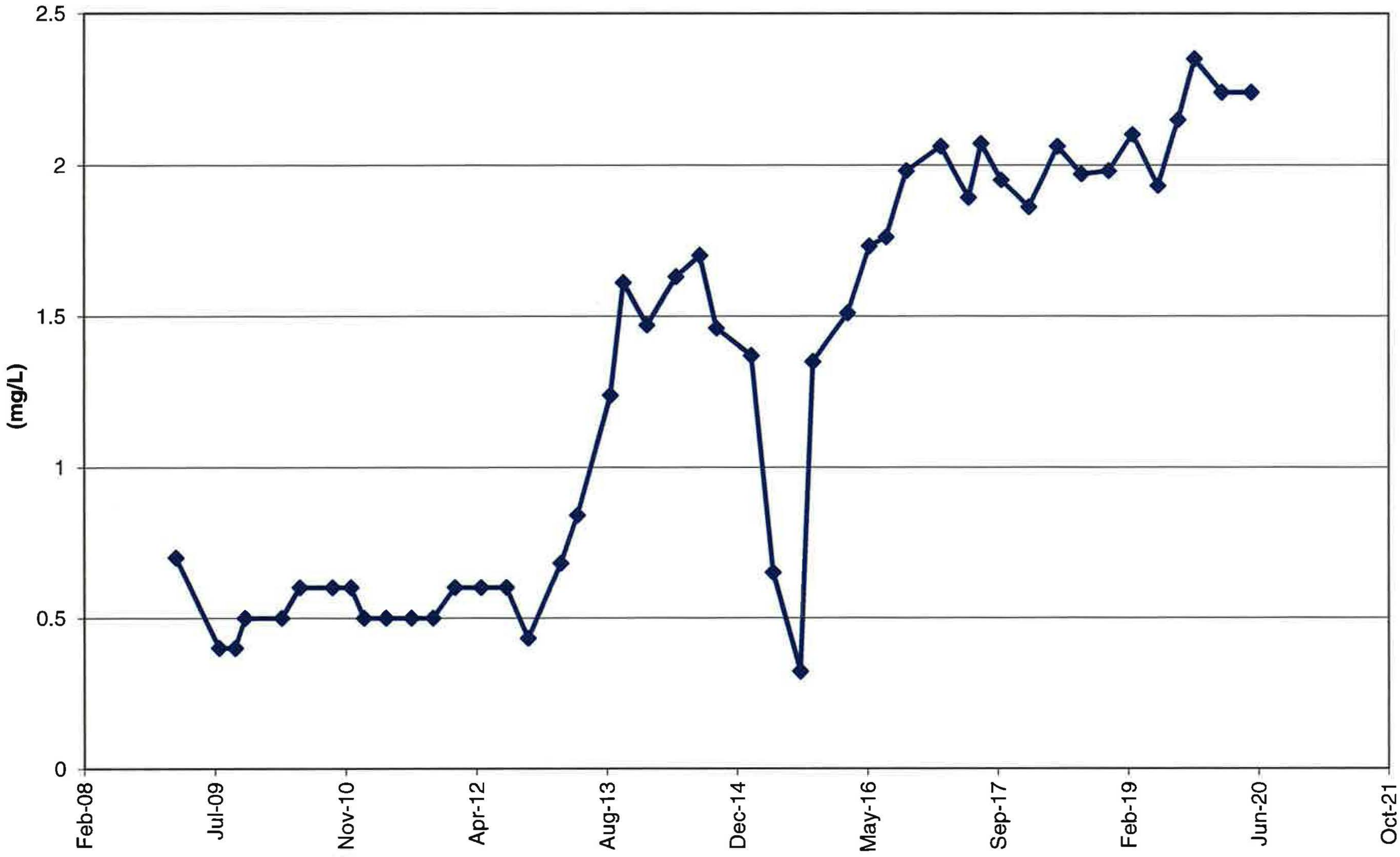
Piezometer 3A Nitrate Concentrations



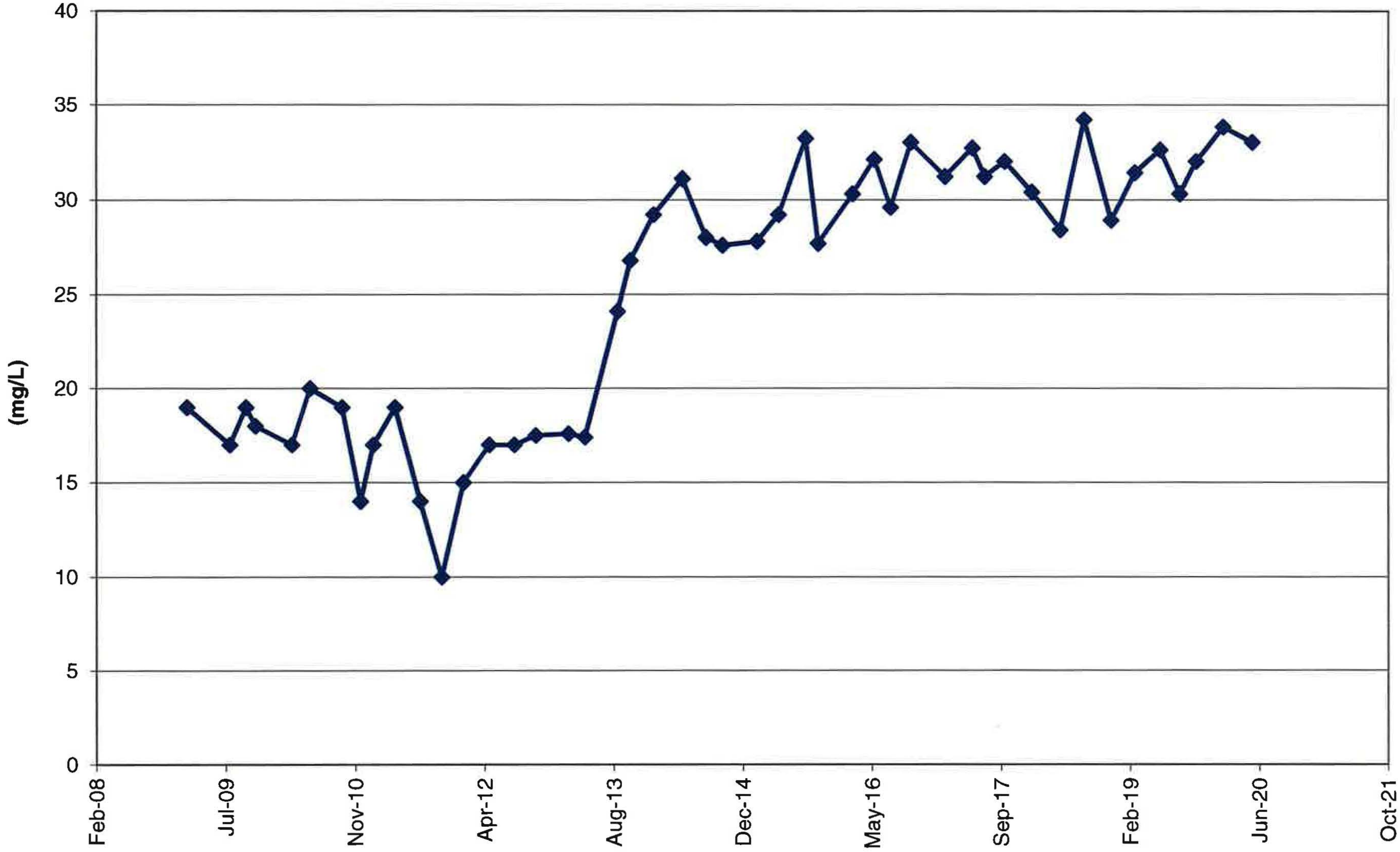
Piezometer 3A Chloride Concentrations



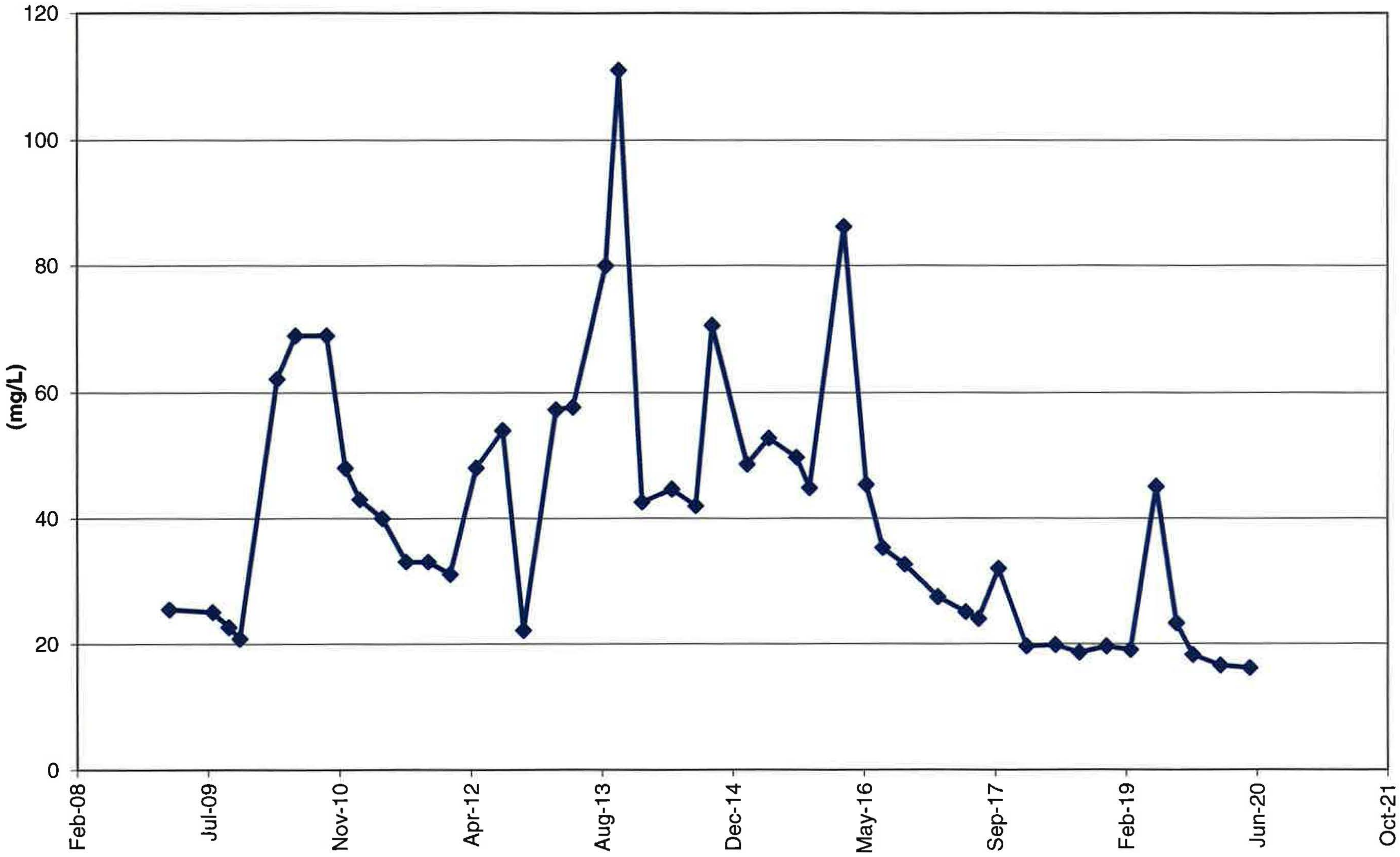
TWN-1 Nitrate Concentrations



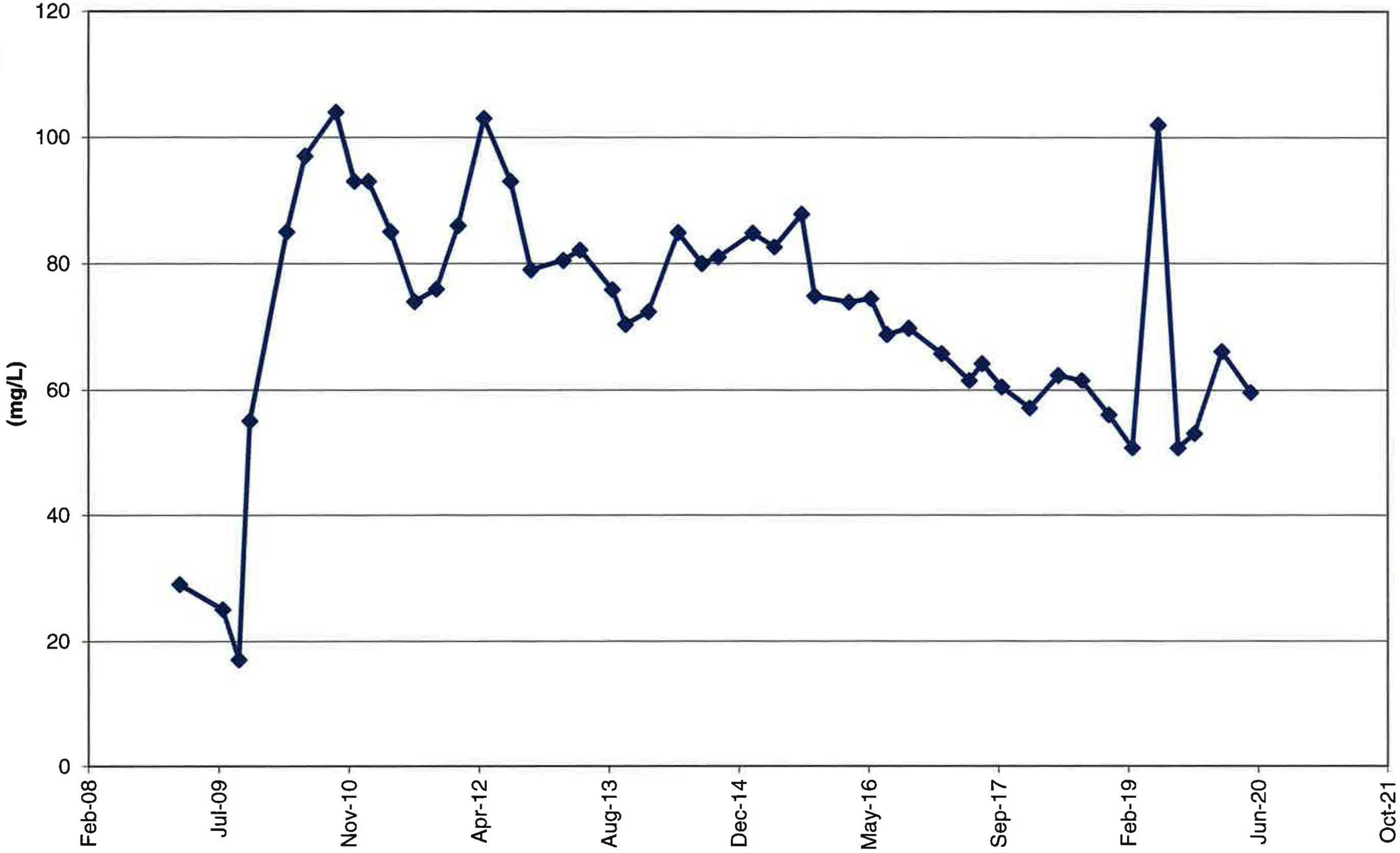
TWN-1 Chloride Concentrations



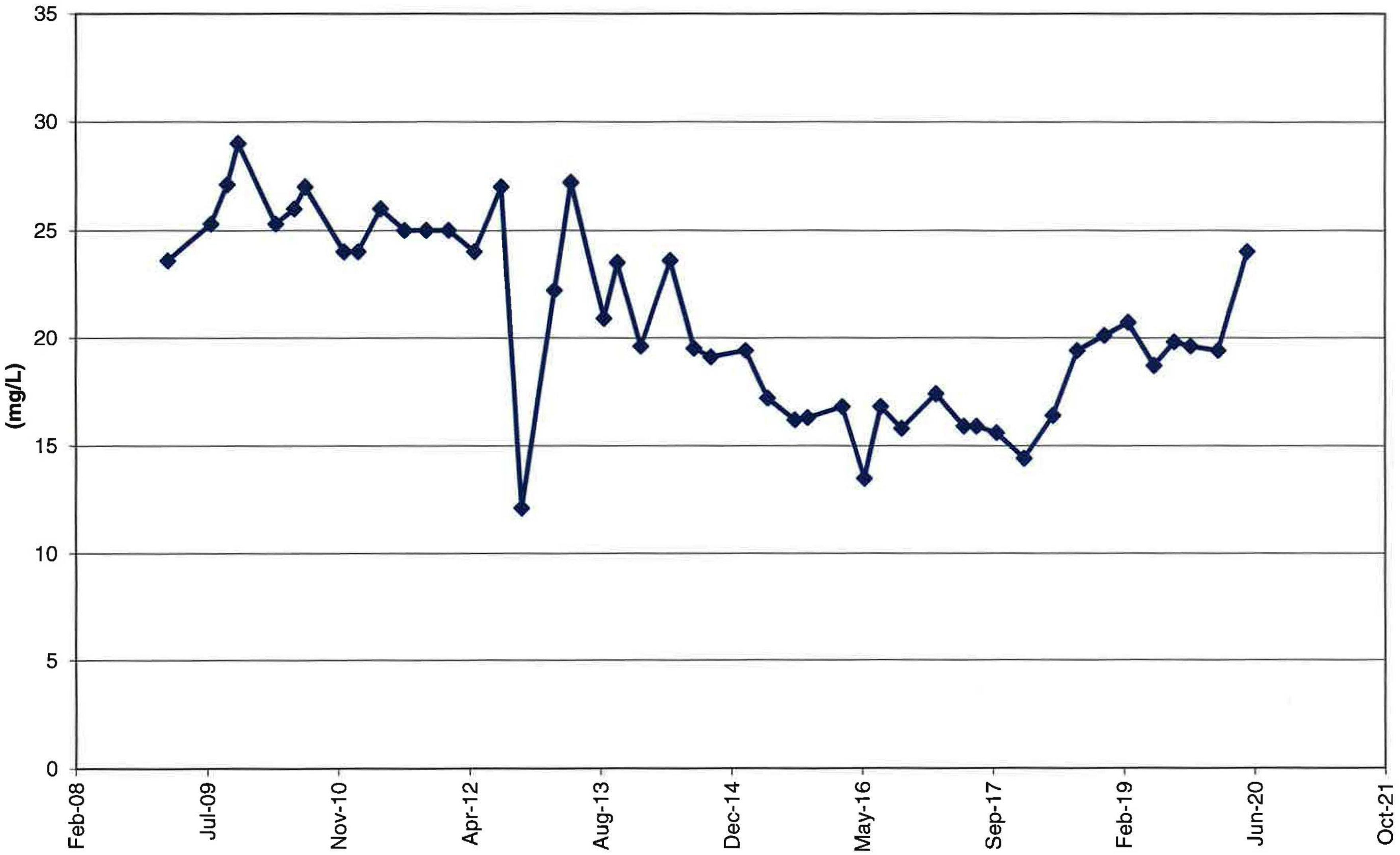
TWN-2 Nitrate Concentrations



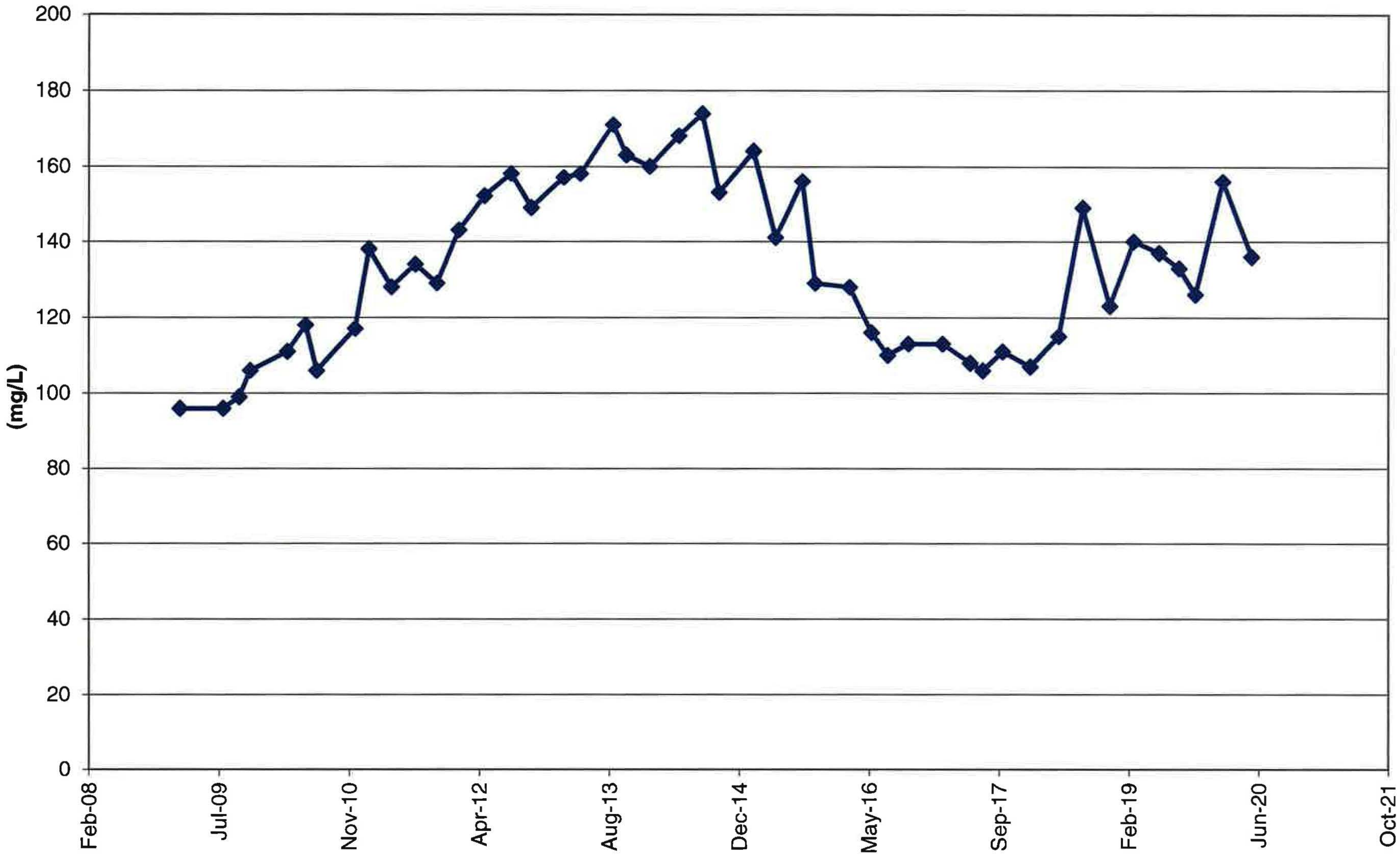
TWN-2 Chloride Concentrations



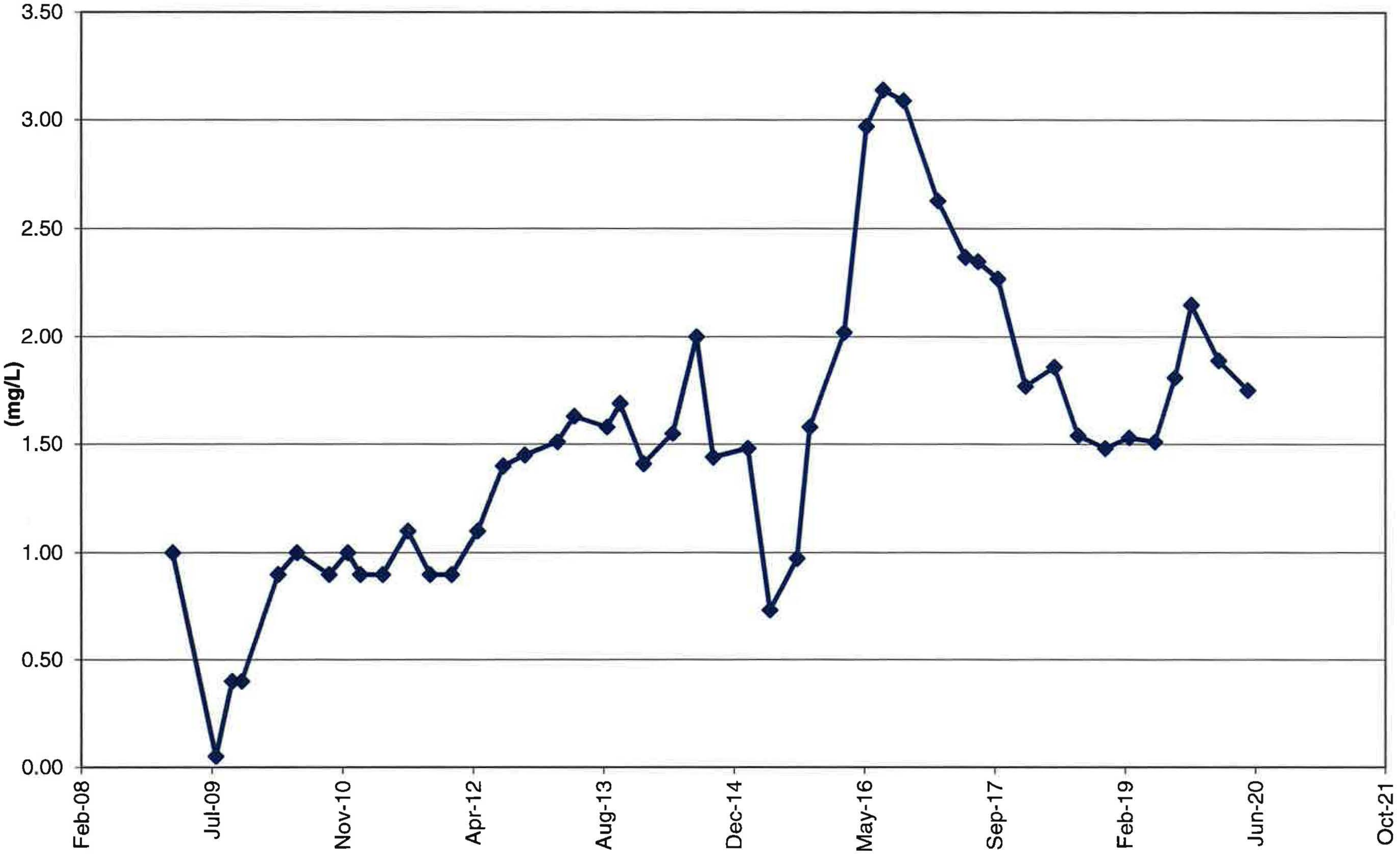
TWN-3 Nitrate Concentrations



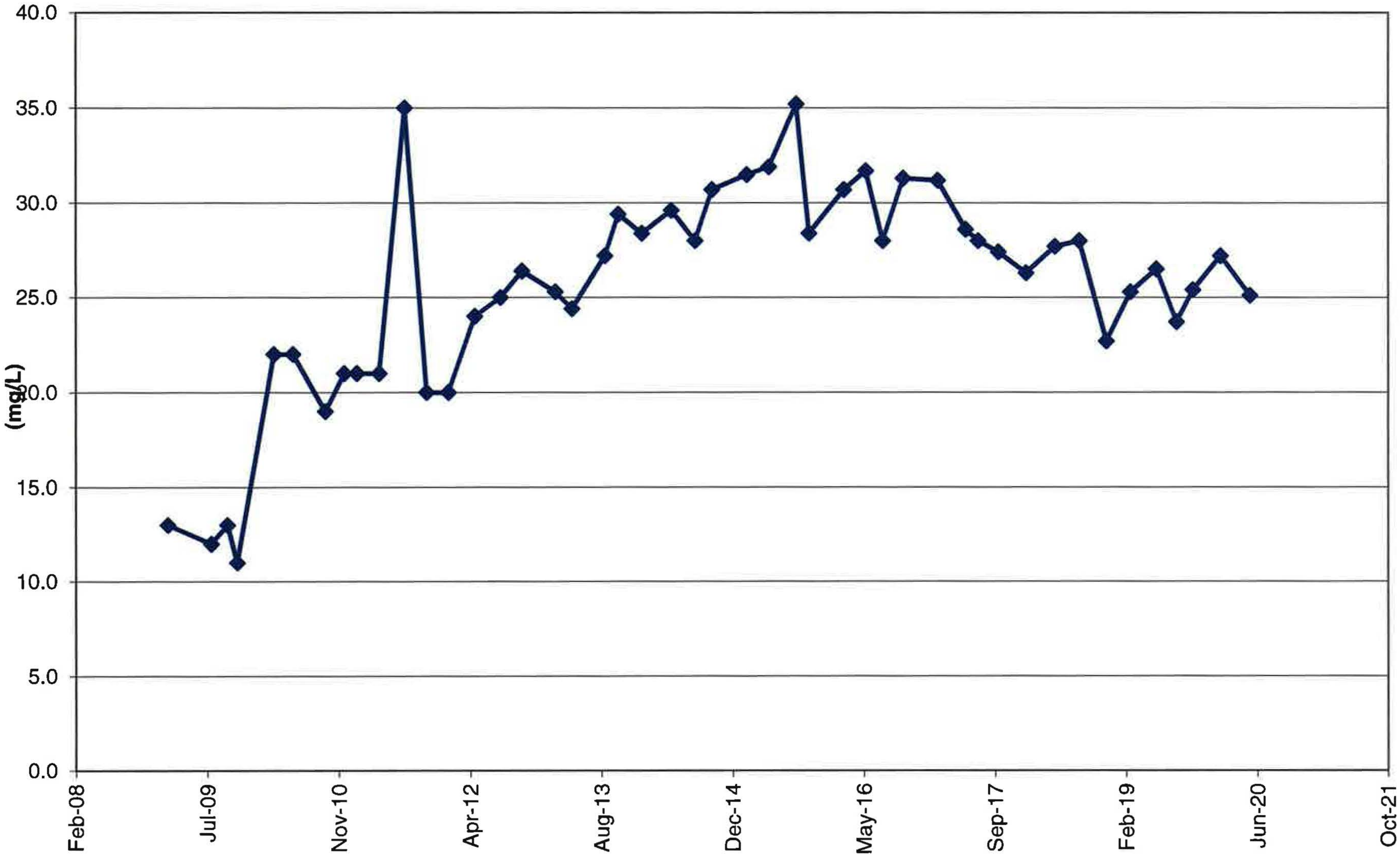
TWN-3 Chloride Concentrations



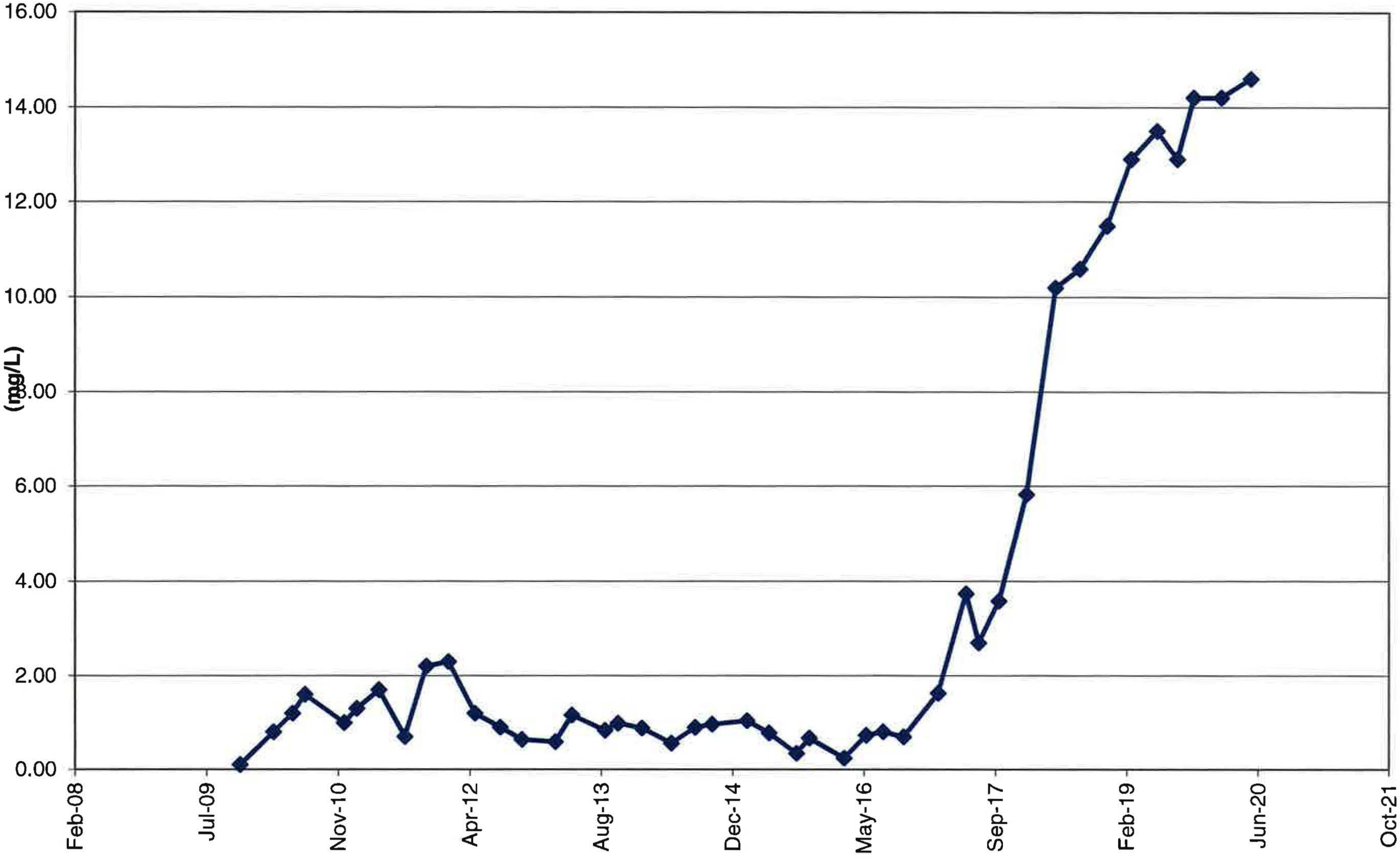
TWN-4 Nitrate Concentrations



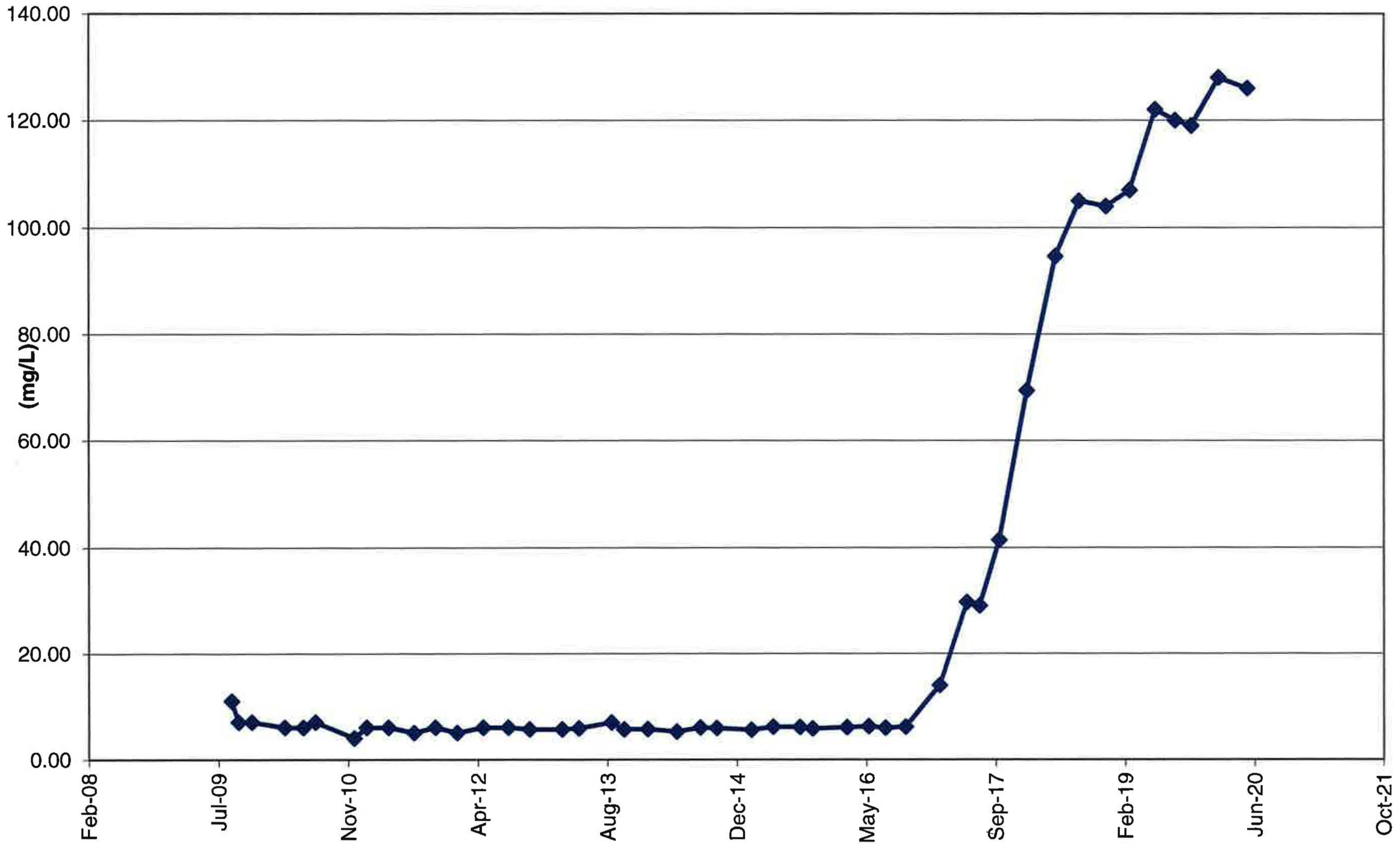
TWN-4 Chloride Concentrations



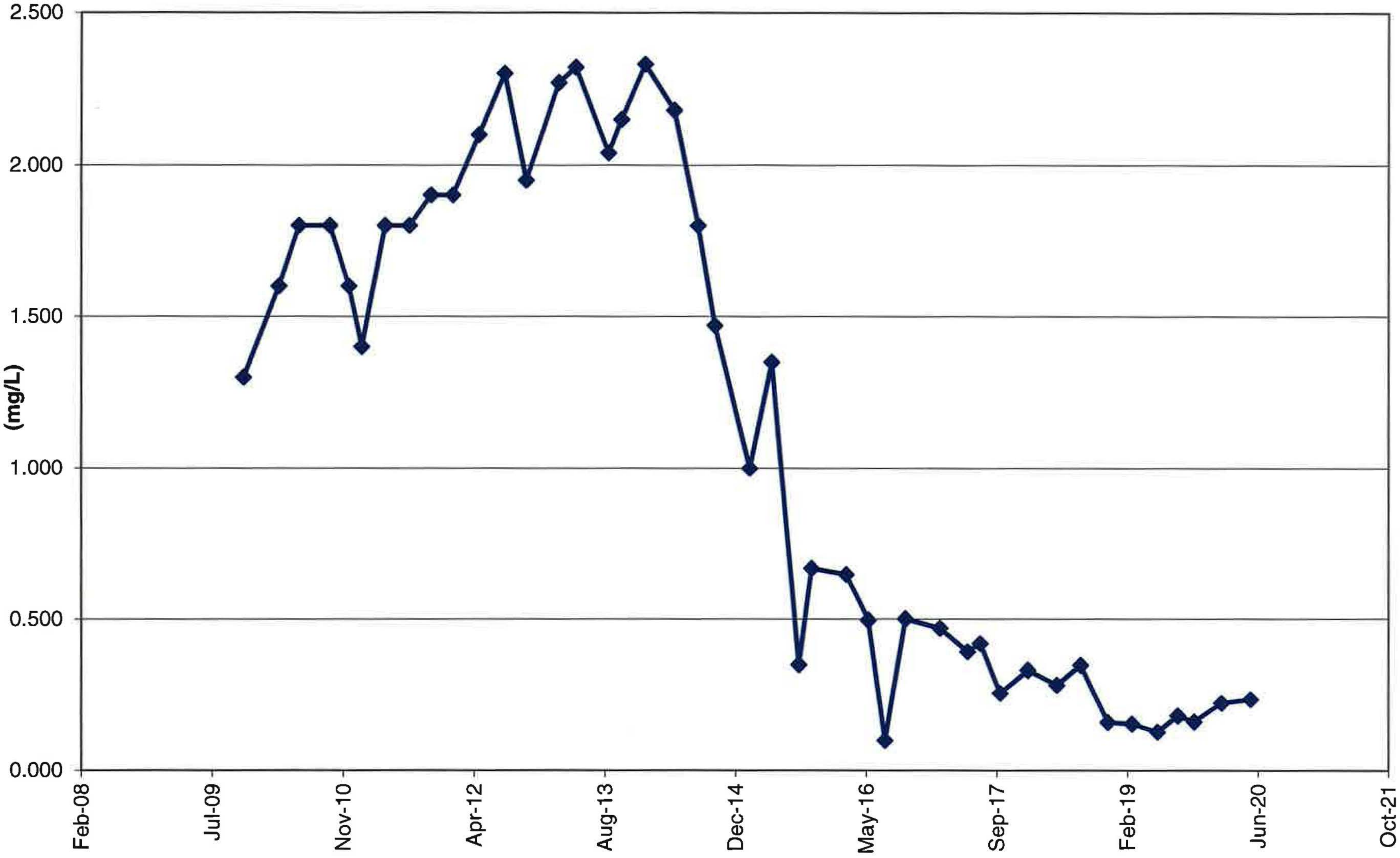
TWN-7 Nitrate Concentrations



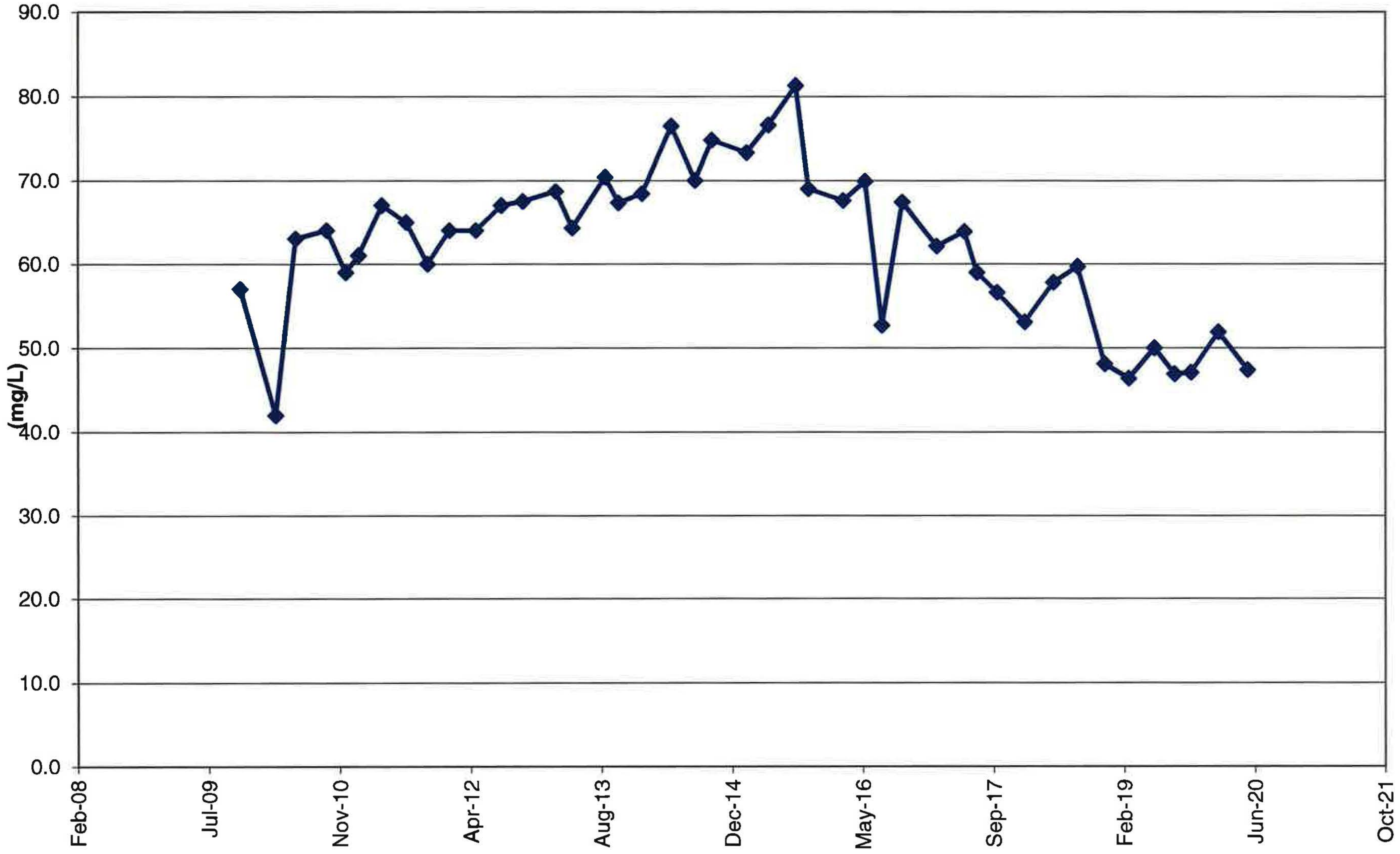
TWN-7 Chloride Concentrations

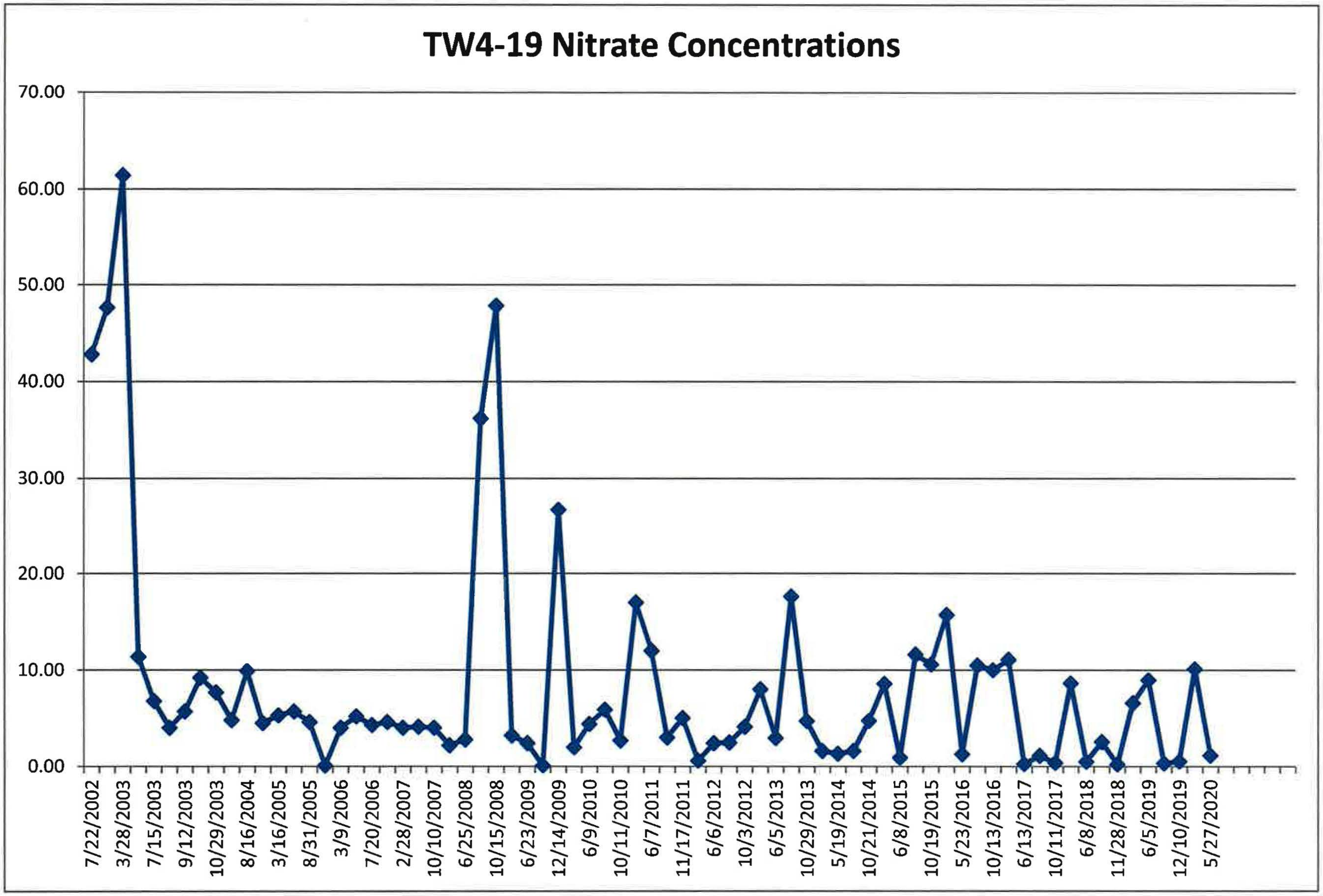


TWN-18 Nitrate Concentrations

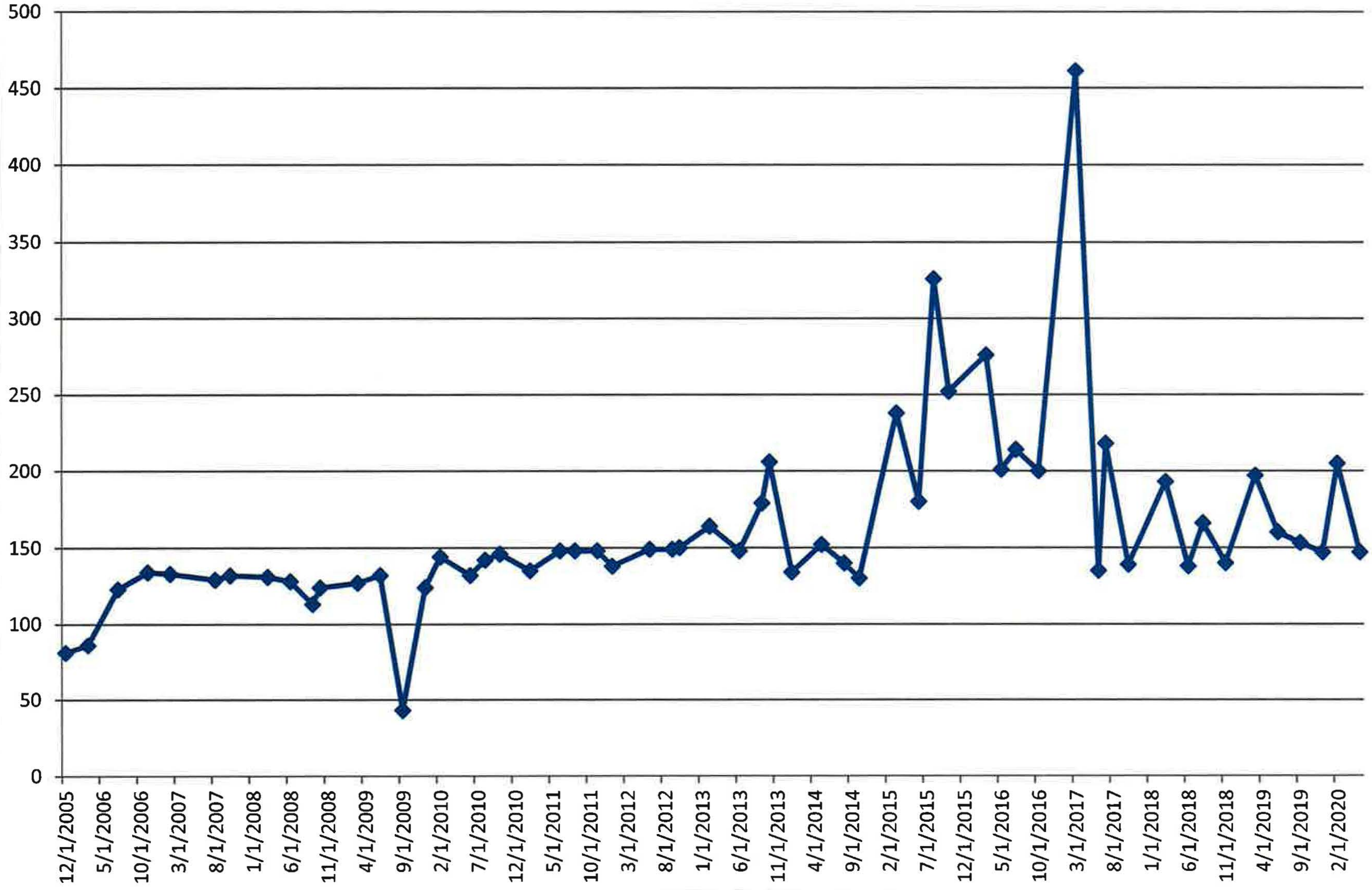


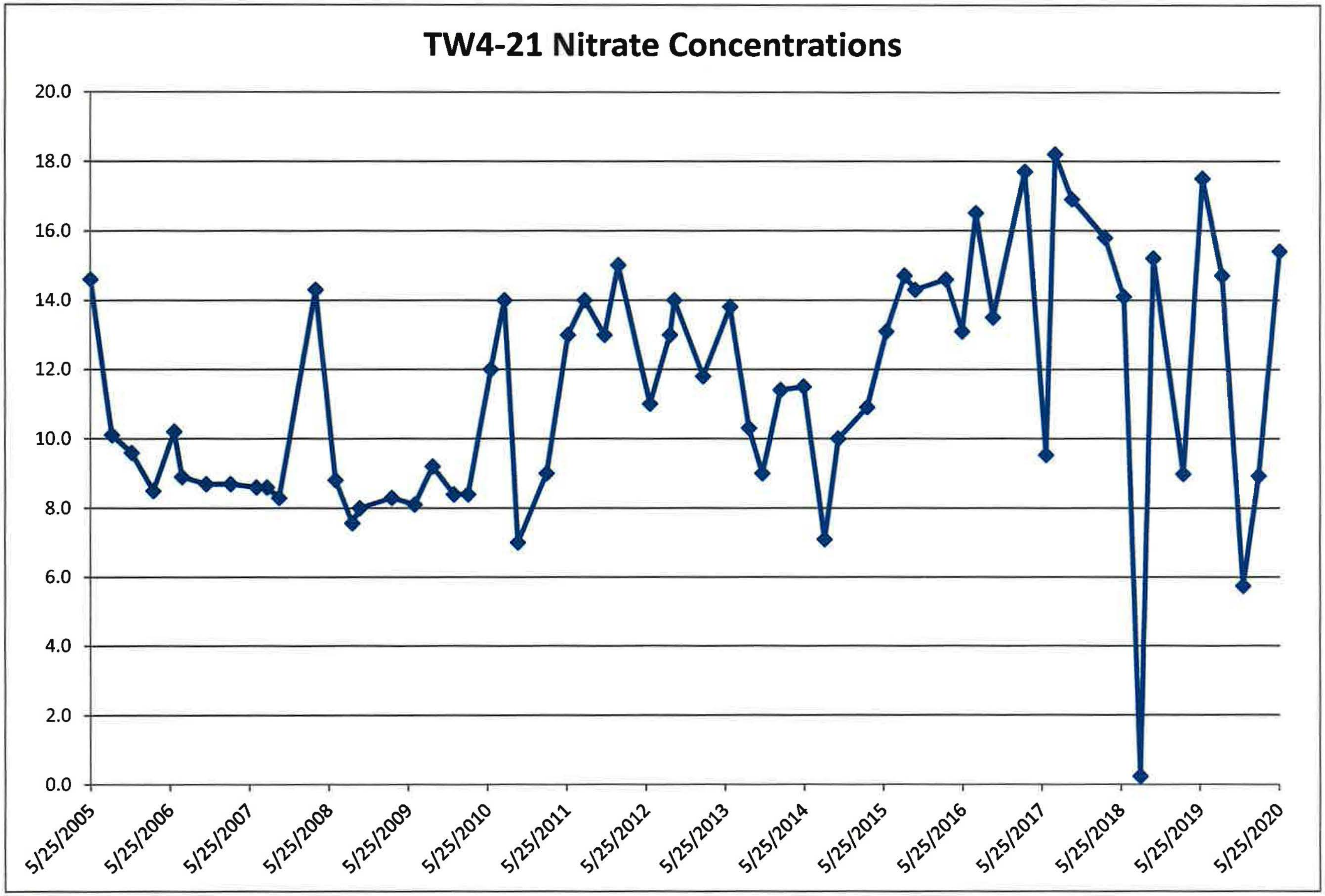
TWN-18 Chloride Concentrations




TW4-19 Nitrate Concentrations
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
7/22/2002
3/28/2003
7/15/2003
9/12/2003
10/29/2003
8/16/2004
3/16/2005
8/31/2005
3/9/2006
7/20/2006
2/28/2007
10/10/2007
6/25/2008
10/15/2008
6/23/2009
12/14/2009
6/9/2010
10/11/2010
6/7/2011
11/17/2011
6/6/2012
10/3/2012
6/5/2013
10/29/2013
5/19/2014
10/21/2014
6/8/2015
10/19/2015
5/23/2016
10/13/2016
6/13/2017
10/11/2017
6/8/2018
11/28/2018
6/5/2019
12/10/2019
5/27/2020

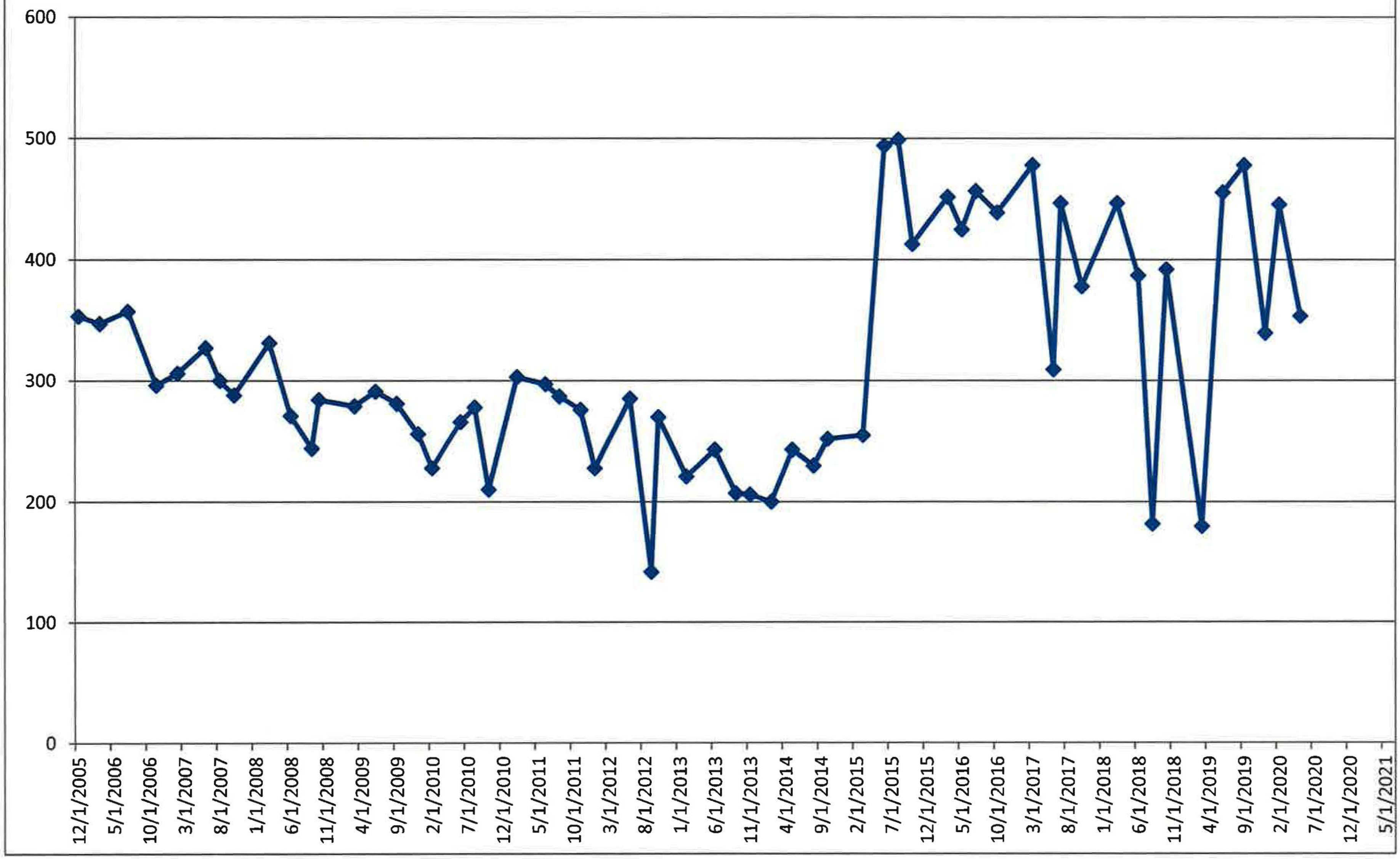
TW4-19 Chloride Concentrations



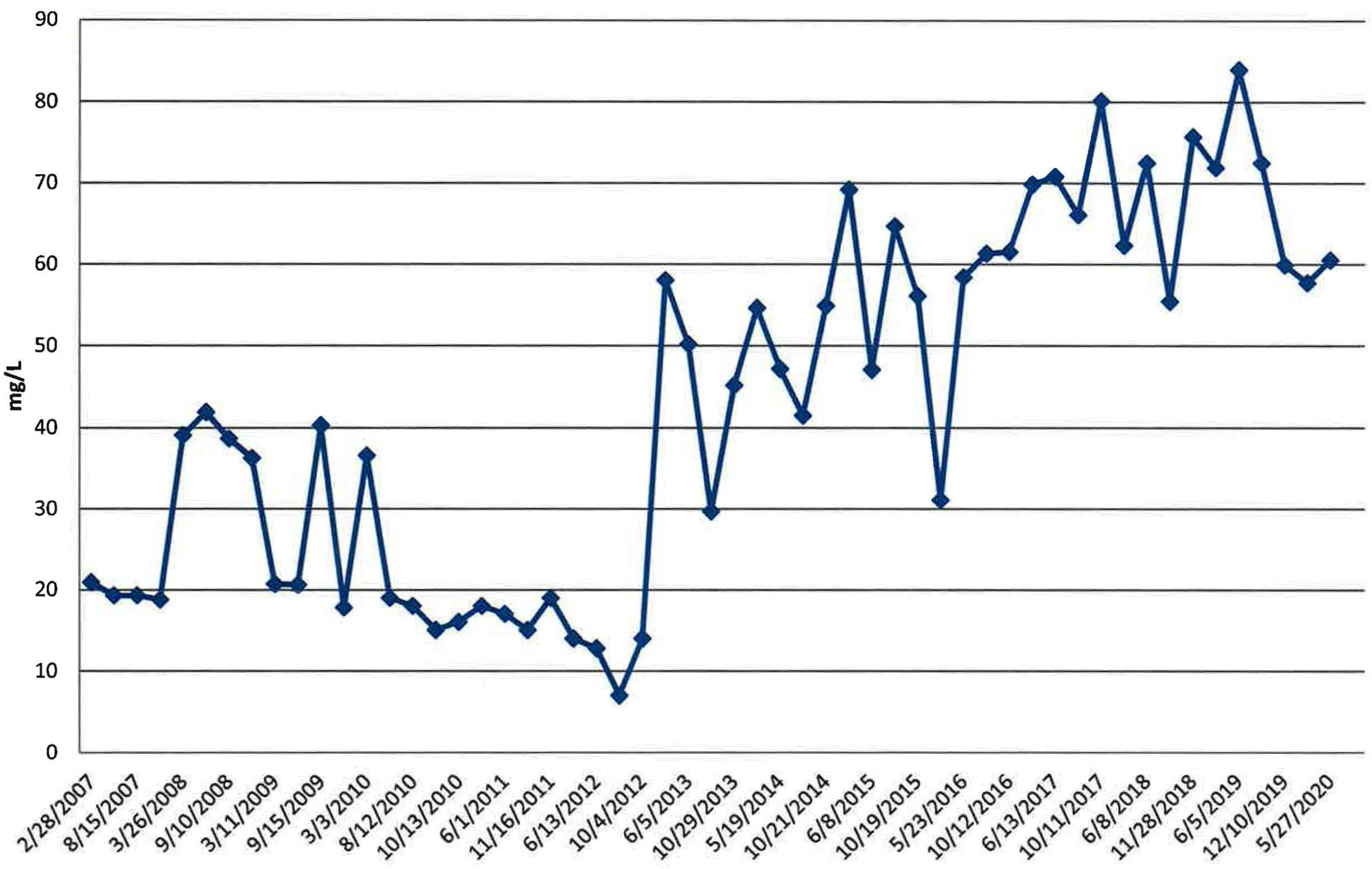


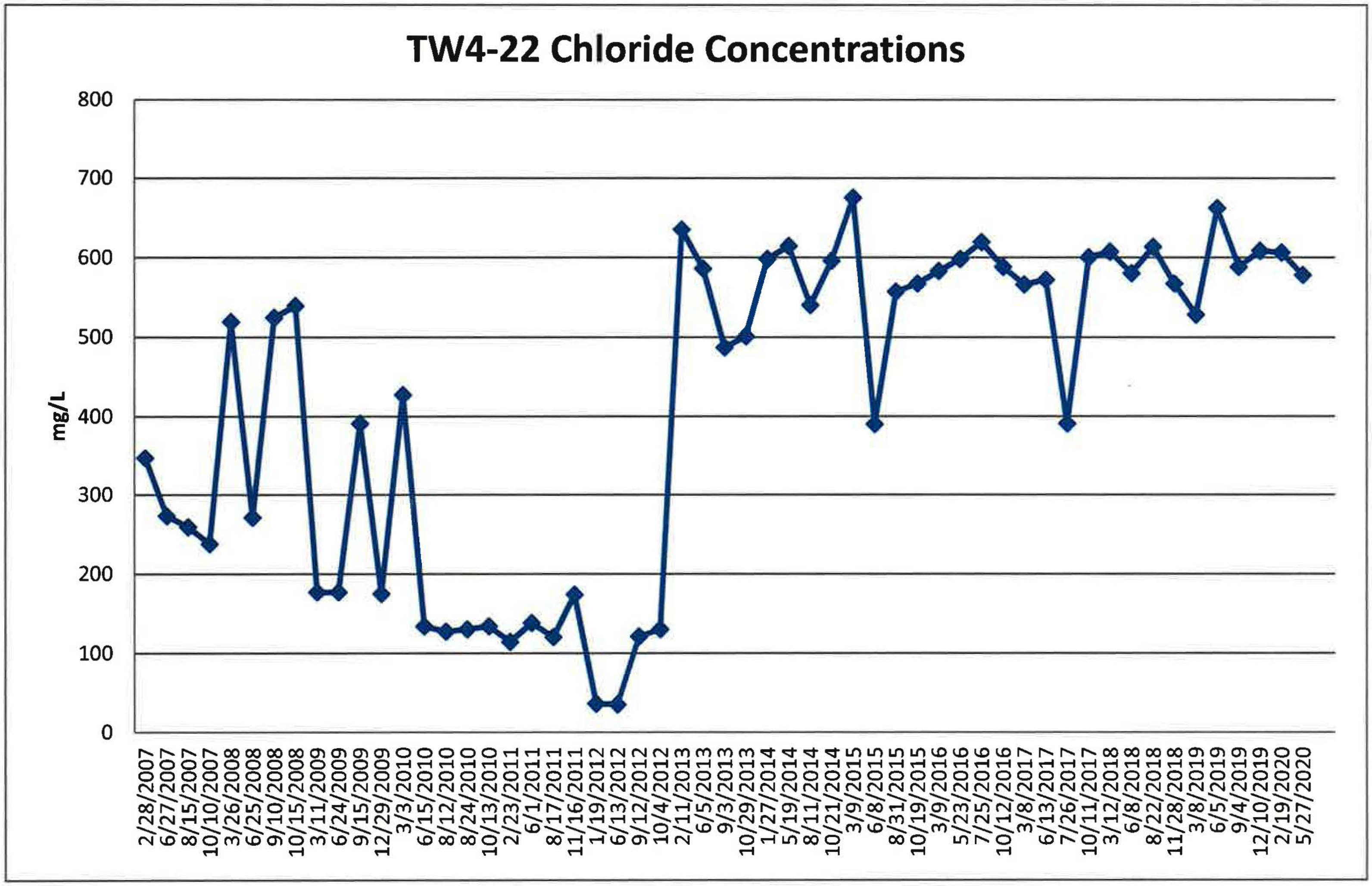
TW4-21 Nitrate Concentrations
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
5/25/2005
5/25/2006
5/25/2007
5/25/2008
5/25/2009
5/25/2010
5/25/2011
5/25/2012
5/25/2013
5/25/2014
5/25/2015
5/25/2016
5/25/2017
5/25/2018
5/25/2019
5/25/2020

TW4-21 Chloride Concentrations

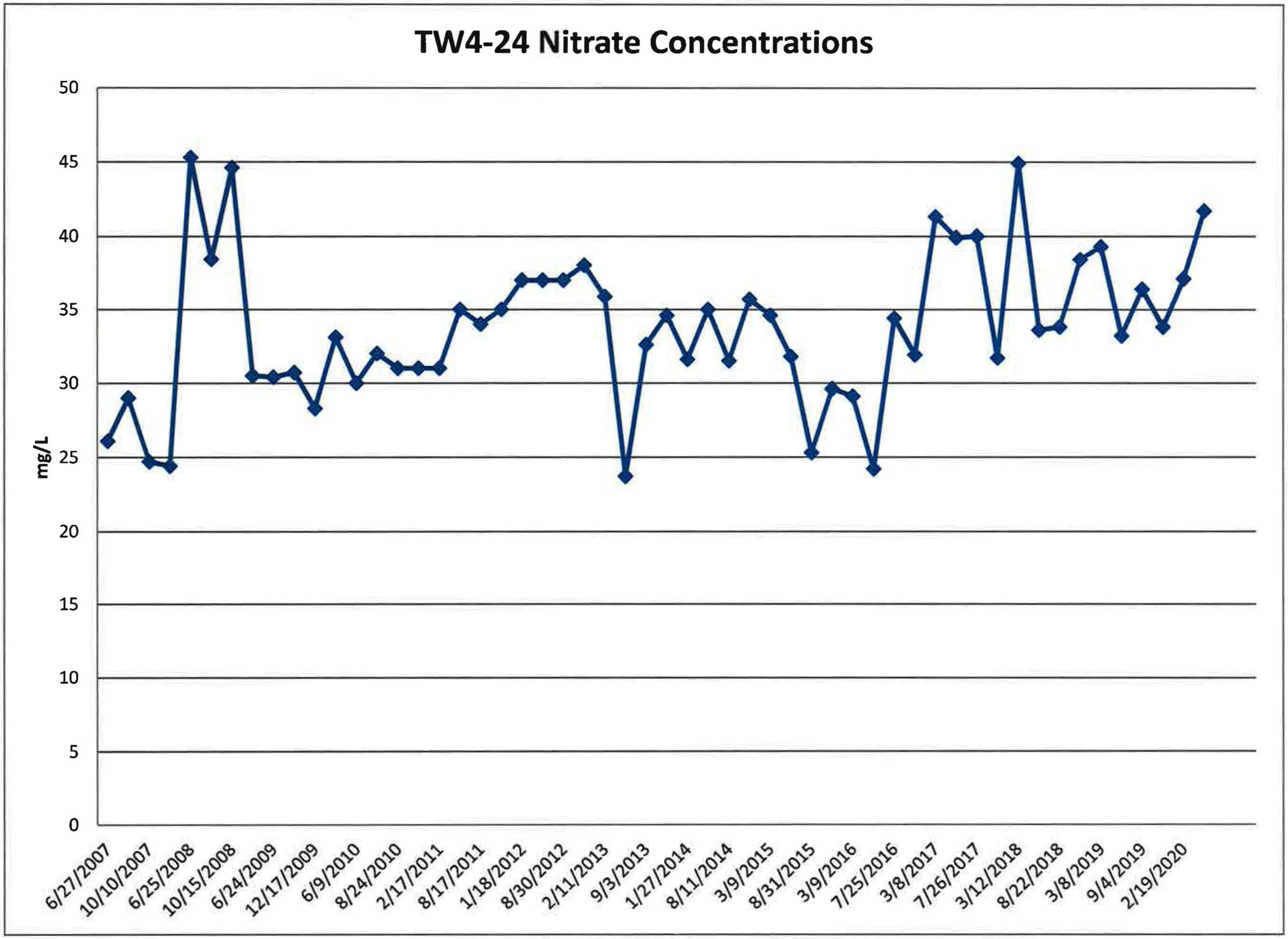


TW4-22 Nitrate Concentrations

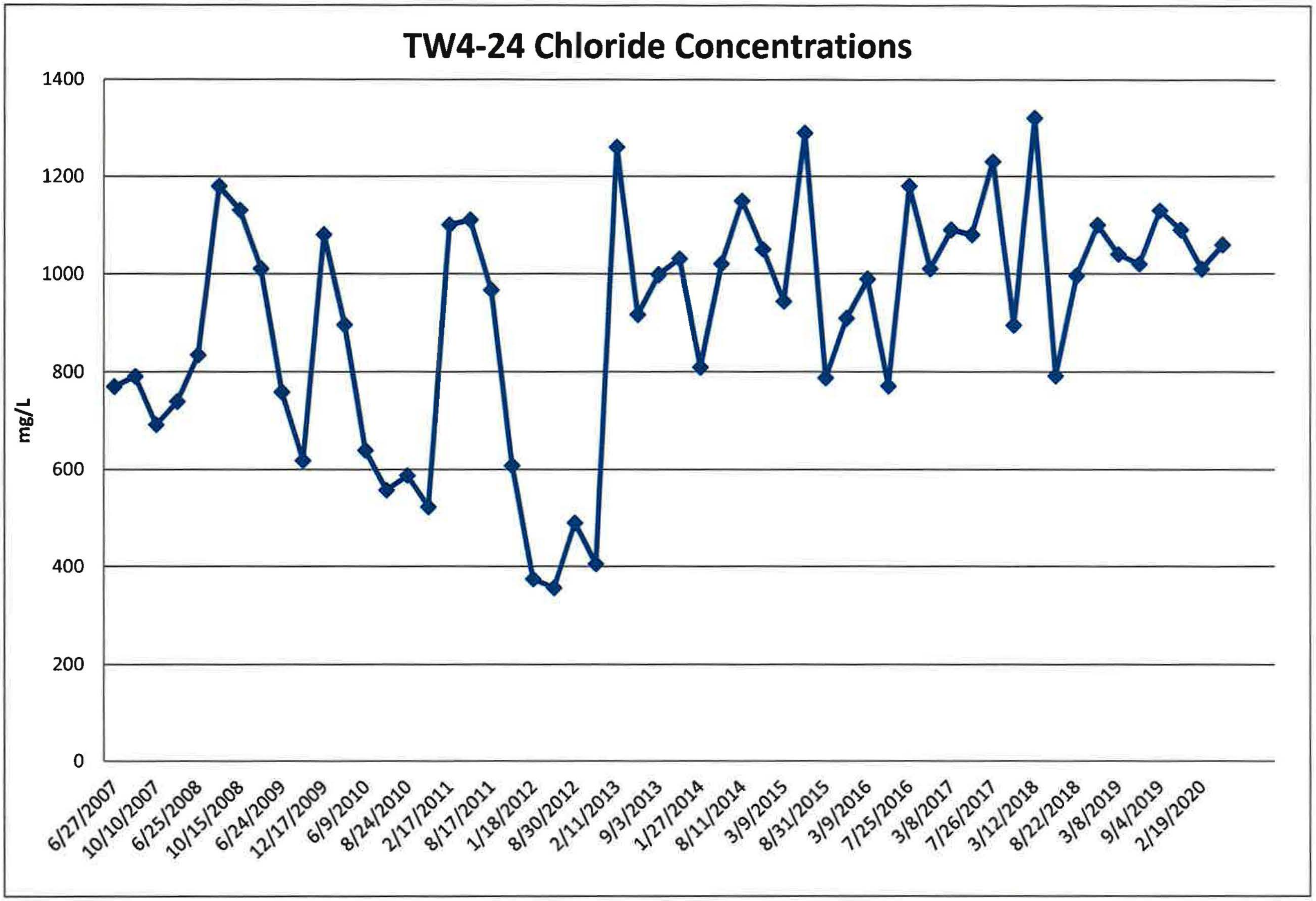


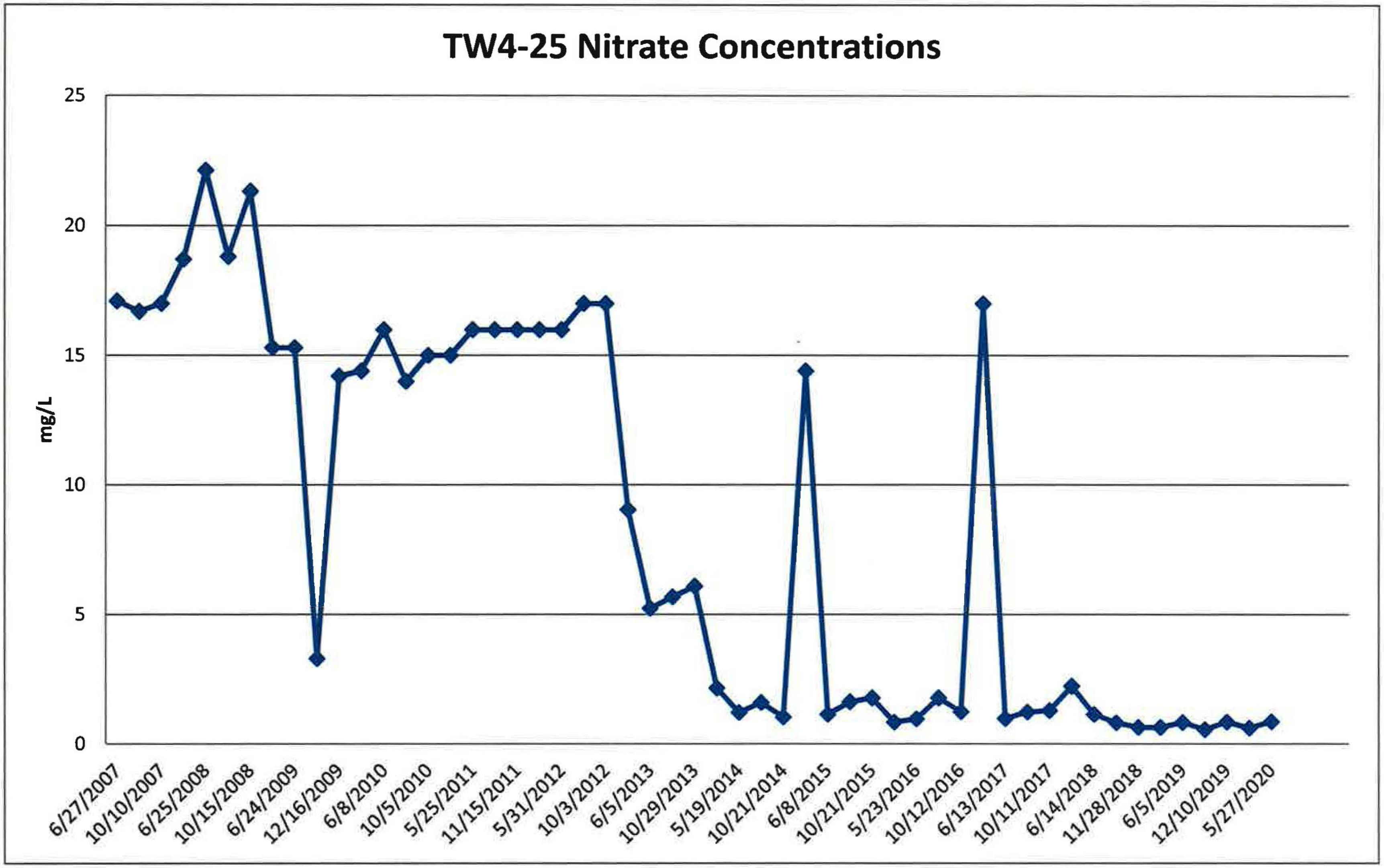


TW4-22 Chloride Concentrations



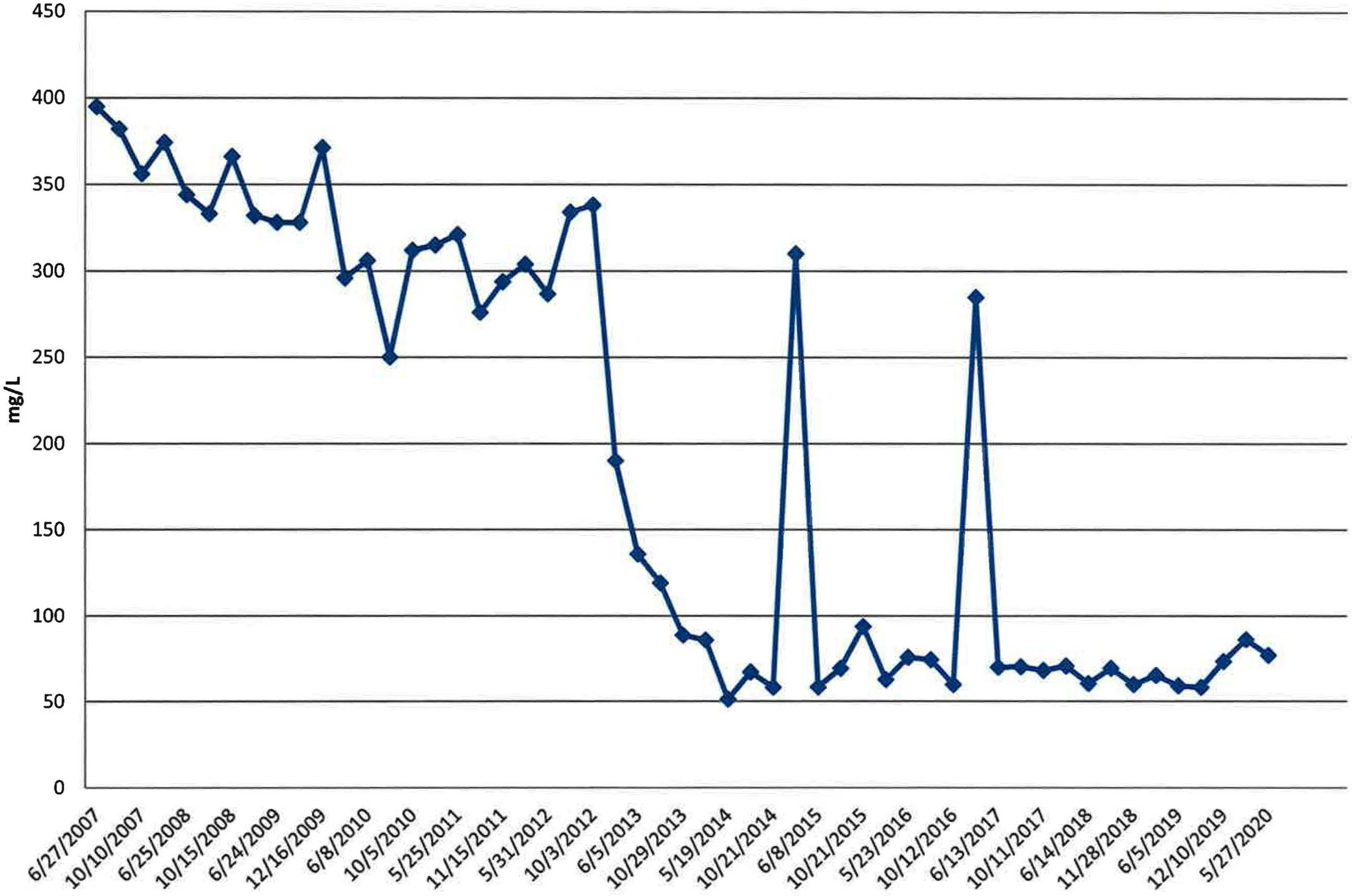
TW4-24 Nitrate Concentrations
mg/L
0
5
10
15
20
25
30
35
40
45
50
6/27/2007
10/10/2007
6/25/2008
10/15/2008
6/24/2009
12/17/2009
6/9/2010
8/24/2010
2/17/2011
8/17/2011
1/18/2012
8/30/2012
2/11/2013
9/3/2013
1/27/2014
8/11/2014
3/9/2015
8/31/2015
3/9/2016
7/25/2016
3/8/2017
7/26/2017
3/12/2018
8/22/2018
3/8/2019
9/4/2019
2/19/2020


TW4-24 Chloride Concentrations
mg/L
1400
1200
1000
800
600
400
200
0
6/27/2007
10/10/2007
6/25/2008
10/15/2008
6/24/2009
12/17/2009
6/9/2010
8/24/2010
2/17/2011
8/17/2011
1/18/2012
8/30/2012
2/11/2013
9/3/2013
1/27/2014
8/11/2014
3/9/2015
8/31/2015
3/9/2016
7/25/2016
3/8/2017
7/26/2017
3/12/2018
8/22/2018
3/8/2019
9/4/2019
2/19/2020

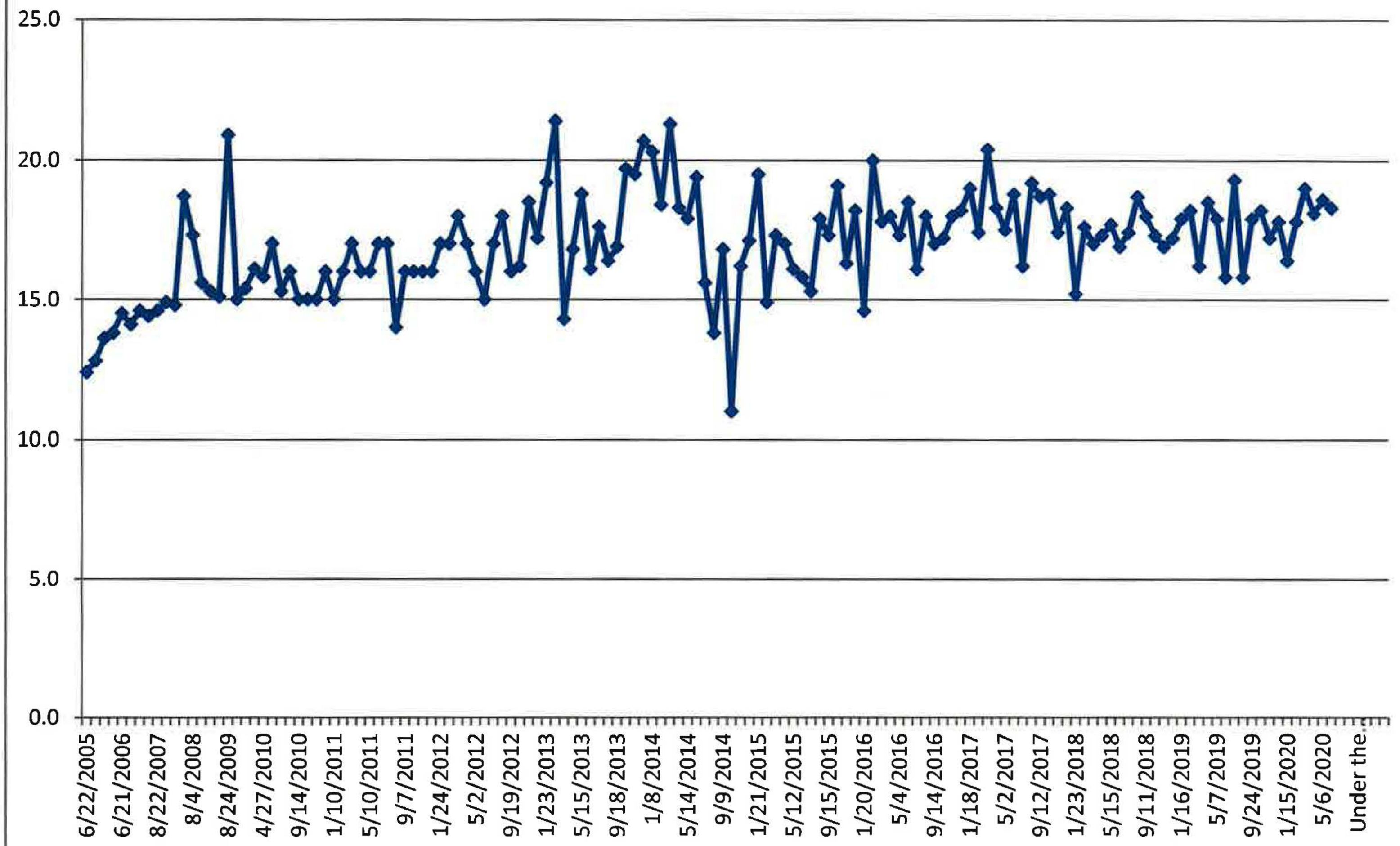


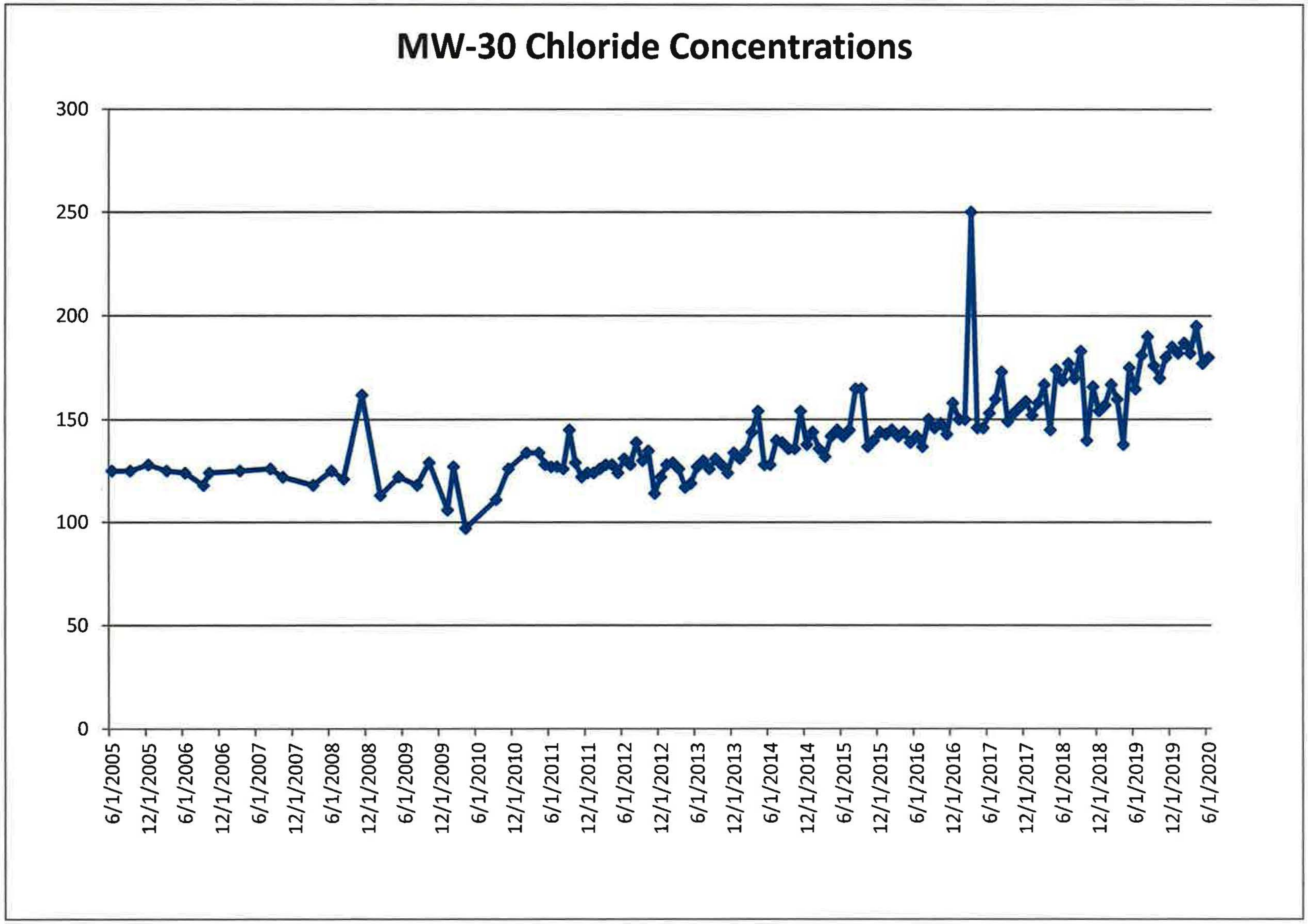
TW4-25 Nitrate Concentrations

TW4-25 Chloride Concentrations

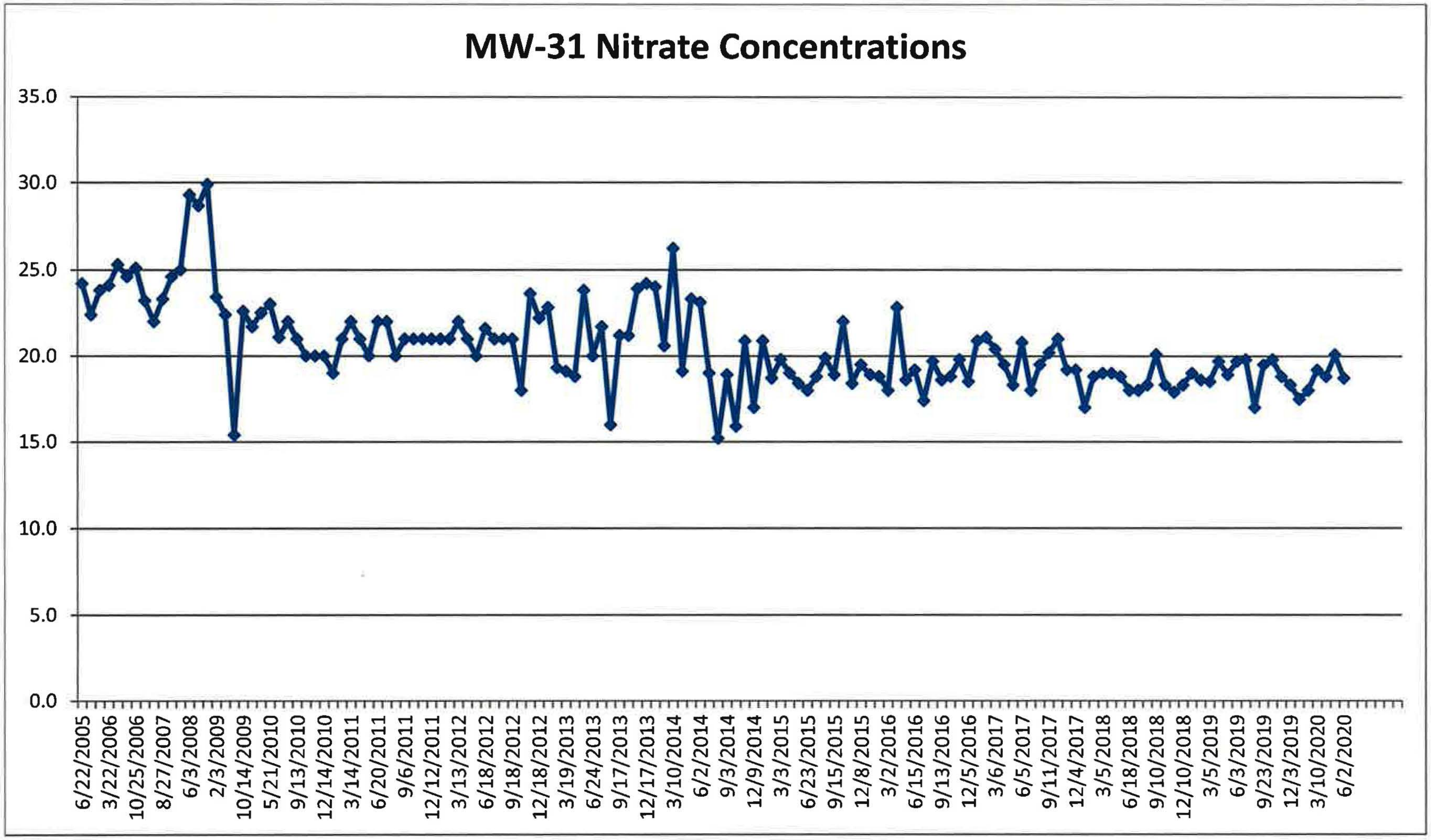


MW-30 Nitrate Concentrations

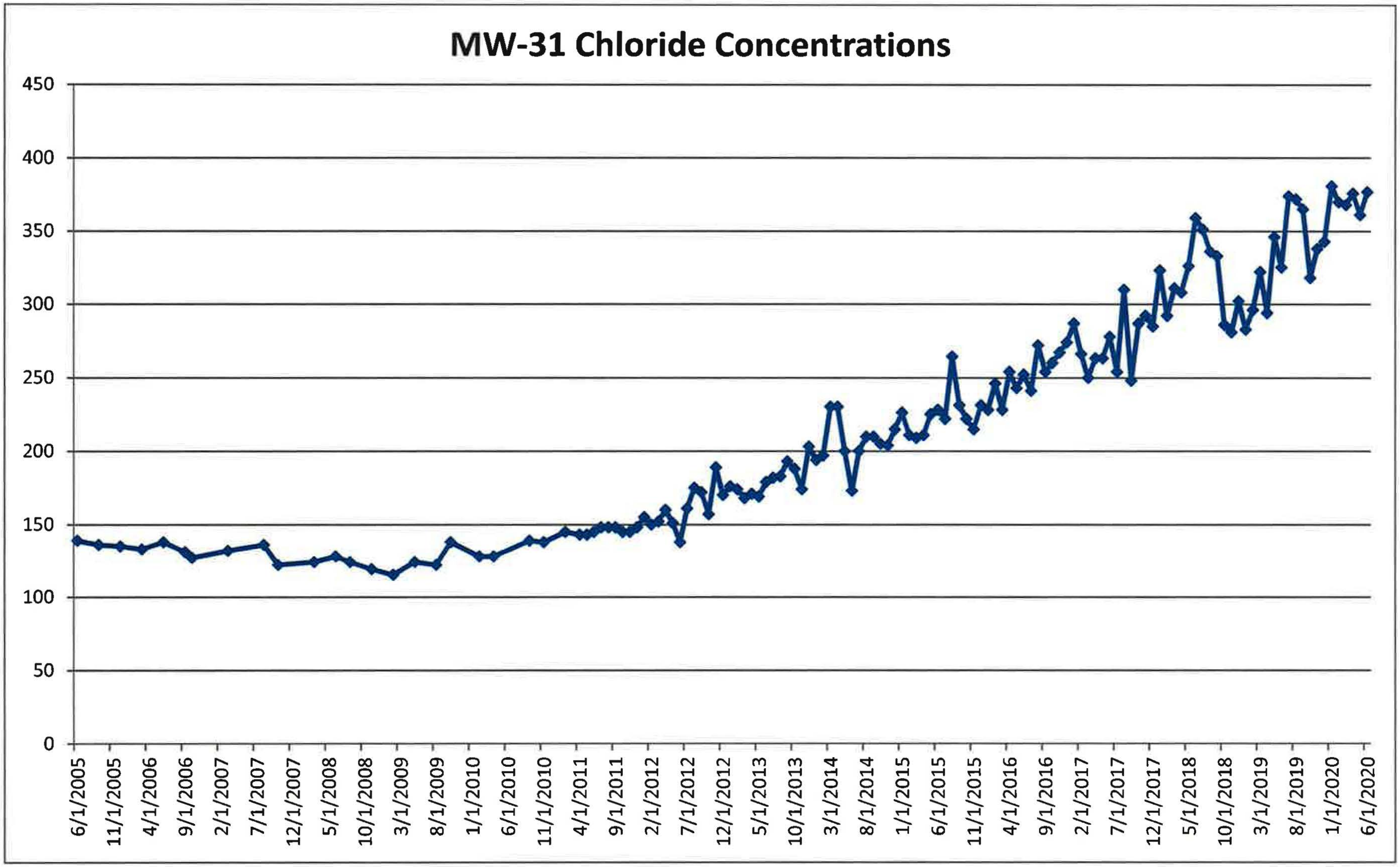




MW-30 Chloride Concentrations



MW-31 Nitrate Concentrations



MW-31 Chloride Concentrations

Tab L

CSV Transmittal Letter

Kathy Weinel

From: Kathy Weinel
Sent: Monday, August 17, 2020 8:21 AM
To: Phillip Goble
Cc: Dean Henderson; Terry Slade; Scott Bakken; Logan Shumway; David Frydenlund; Paul Goranson
Subject: Transmittal of CSV Files White Mesa Mill 2020 Q2 Nitrate Monitoring
Attachments: 2005623-report-EDD.csv; Q2 2020 DTW all programs.csv; Q2 2020 Field Data.csv

Mr. Goble,

Attached to this e-mail is an electronic copy of laboratory results for nitrate monitoring conducted at the White Mesa Mill during the second quarter of 2020, 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

ENERGY FUELS **Energy Fuels Resources (USA) Inc.**

Kathy Weinel
Quality Assurance Manager

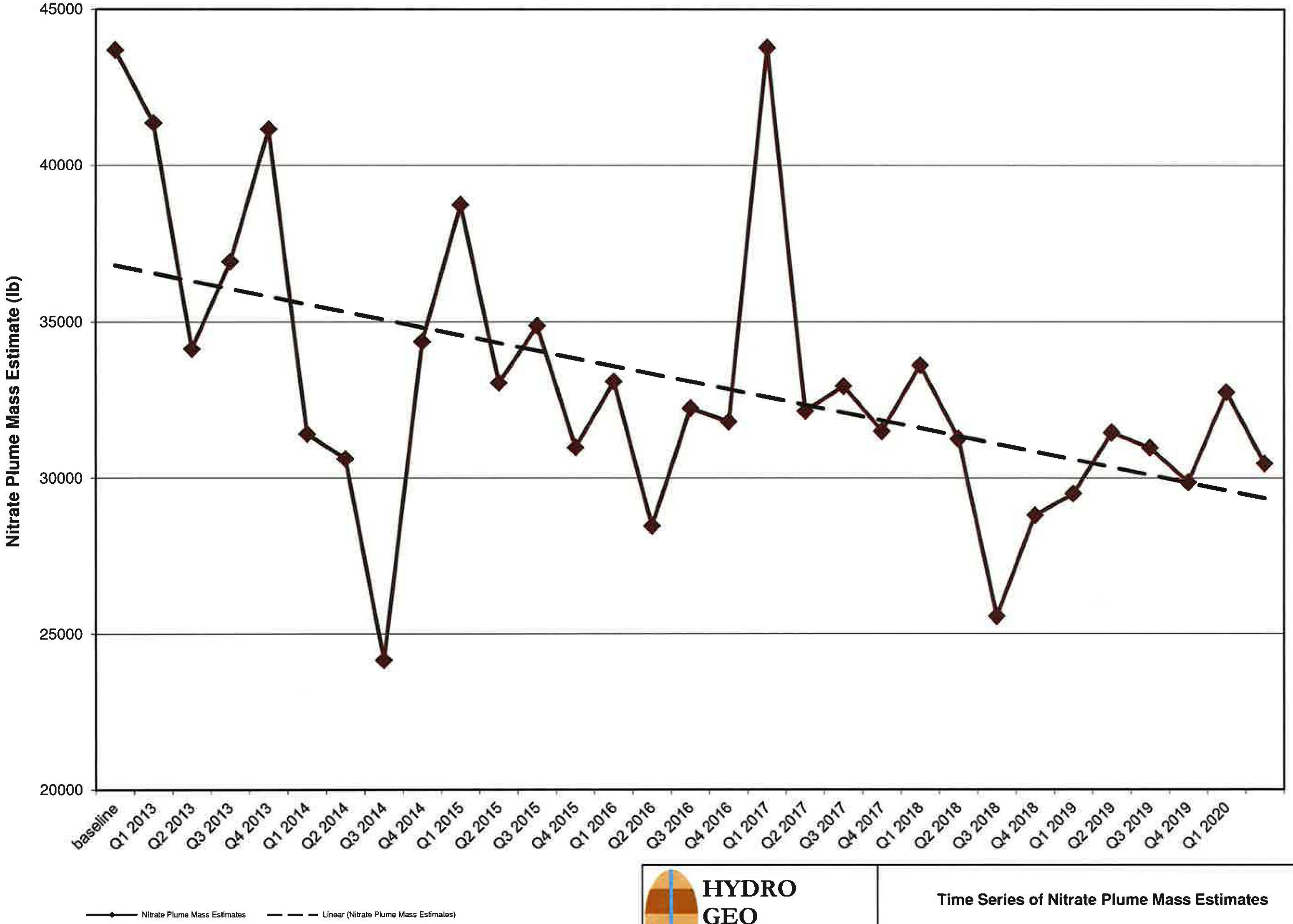
t: 303.389.4134 | f: 303.389.4125
225 Union Blvd., Suite 600
Lakewood, CO 80228

http://www.energyfuels.com

Tab M

Residual Mass Estimate Analysis Figure

Tab M – Figures



**HYDRO
GEO
CHEM, INC.**

Time Series of Nitrate Plume Mass Estimates

Approved **SJS**	Date	Author	Date	File Name **Nmtrend 4Q19.xls**	Figure **M.1**

H:\718000\aug20\nitrate\masscalc\Nmtrend2Q20.xls: Fig M.1

Tab M - Tables

The Residual Mass Estimate Analysis Tables

Table M.1
Residual Nitrate Plume Mass

quarter	residual plume mass (lb)
baseline	43700
Q1 2013	41350
Q2 2013	34140
Q3 2013	36930
Q4 2013	41150
Q1 2014	31410
Q2 2014	30620
Q3 2014	24140
Q4 2014	34370
Q1 2015	38740
Q2 2015	33042
Q3 2015	34880
Q4 2015	30980
Q1 2016	33083
Q2 2016	28465
Q3 2016	32230
Q4 2016	31798
Q1 2017	43787
Q2 2017	32145
Q3 2017	32939
Q4 2017	31501
Q1 2018	33616
Q2 2018	31257
Q3 2018	25568
Q4 2018	28805
Q1 2019	29509
Q2 2019	31455
Q3 2019	30976
Q4 2019	29870
Q1 2020	32740
Q2 2020	30467

Notes:
lbs = pounds