

**MITIGATION PERFORMANCE REVIEW FOR 2018**

**MITIGATION ORDER ON CONSENT DOCKET NO. P-121-07**



*Prepared for:*

**FREEPORT MINERALS CORPORATION**  
**COPPER QUEEN BRANCH**  
36 West Highway 92  
Bisbee, Arizona 85603

*Prepared by:*

**CLEAR CREEK ASSOCIATES, L.L.C.**  
221 North Court Avenue, Suite 101  
Tucson, Arizona 85701

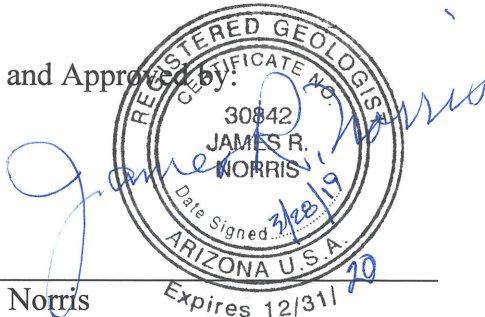
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Prepared for:

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COPPER QUEEN BRANCH  
36 West Highway 92  
Bisbee, Arizona 85603**

Prepared and Approved by:



James R. Norris  
Arizona Registered Geologist No. 30842

Reviewed by:



Ben Daigneau  
Arizona Registered Geologist No. 57975

March 28, 2019

## TABLE OF CONTENTS

1.0	INTRODUCTION .....	1
1.1	Background .....	2
1.2	Mitigation Action Objective .....	3
1.3	Role and Scope of the Mitigation Performance Review .....	3
2.0	REVIEW OF MITIGATION PLAN ACTIONS IN 2018 .....	5
2.1	Expanded Groundwater Monitoring .....	5
2.2	Long Term Plume Monitoring .....	7
2.3	Implementation Schedule for an Alternate Water Supply .....	7
2.4	Annual ADWR Well Registry Records Review .....	8
2.5	Contingent Mitigation of Drinking Water Supplies .....	9
3.0	ANALYSIS OF GROUNDWATER MONITORING DATA .....	10
3.1	Hydrogeologic Setting .....	10
3.2	Sulfate Concentration Data .....	11
3.2.1	Contour Map of Sulfate Concentrations .....	11
3.2.2	Time Series Graphs of Sulfate Concentration at Public Drinking Water Supply Wells .....	12
3.2.3	Time Series Graphs of Sulfate Concentration at Monitoring Wells .....	12
3.2.3.1	Lateral Plume Edge Monitoring Wells .....	13
3.2.3.2	Plume Edge Monitoring Wells Below the Plume .....	14
3.2.3.3	Regional Monitoring Wells in the Plume .....	14
3.3	Groundwater Elevation Data .....	14
3.3.1	Contour Map of Groundwater Elevations .....	15
3.3.2	Hydrographs for Basin Fill Wells .....	15
3.3.3	Hydrographs for Bedrock Wells .....	16
3.4	Assessment of Plume Migration .....	17
4.0	ASSESSMENT OF MITIGATION ACTION PERFORMANCE .....	19
4.1	Mitigation Action Objective .....	19
4.2	Groundwater Monitoring Programs .....	19
4.2.1	Expanded Groundwater Monitoring .....	19
4.2.2	Long Term Plume Monitoring .....	20
4.3	Implementation Schedule for an Alternate Water Supply .....	20
4.4	Assessment of Mitigation Performance .....	21
5.0	REFERENCES .....	22

## TABLES

- 1 Groundwater Monitoring Schedule

## FIGURES

- 1 Project Location Map
- 2 Groundwater Monitoring Locations
- 3 Naco Area Well Sites
- 4 Long Term Plume Monitoring Locations
- 5 Geologic Map with Monitoring Locations
- 6 Sulfate Concentrations in Site-Wide Groundwater Samples for Third Quarter 2018
- 7 Sulfate Concentrations at the West Edge of the Plume for Third Quarter 2018
- 8 Sulfate Concentrations in Site-Wide Groundwater Samples for Third Quarter 2008
- 9 Sulfate Concentration in Public Drinking Water Supply Wells
- 10 Sulfate Concentration in Lateral Plume Edge Wells North, South, and East of the Plume
- 11 Sulfate Concentration in Lateral Plume Edge Wells West of the Plume
- 12 Sulfate Concentration in Expanded Groundwater Monitoring Program Wells West of the Plume
- 13 Sulfate Concentration in Plume Edge Wells Below the Plume
- 14 Sulfate Concentration in Regional Monitor Wells in the Plume
- 15 Site-Wide Groundwater Elevations for Third Quarter 2018
- 16 Site-Wide Groundwater Elevations for Third Quarter 2008
- 17 Basin Fill Groundwater Elevations at the West Edge of the Plume for Third Quarter 2018
- 18 Hydrographs for Selected BMO Monitor Wells in Basin Fill
- 19 Hydrographs for Expanded Groundwater Monitoring Program Wells
- 20 Hydrographs for BMO Monitor Wells in Bedrock
- 21 Hydrographs for Select BMO Monitor Wells in Bedrock

## APPENDICES

- A Sulfate Data
- B Water Elevation Data

## 1.0 INTRODUCTION

This mitigation performance review for 2018 evaluates the effectiveness of the mitigation action conducted by Freeport Minerals Corporation Copper Queen Branch (CQB) to address the potential for sulfate to affect drinking water supplies in the vicinity of the Concentrator Tailing Storage Area (CTSA) near Naco, south of Bisbee, Arizona. Figure 1 shows the sulfate plume, CTSA, and local features.

The performance review is a stipulation of the Mitigation Plan (Clear Creek Associates, 2015a) submitted to Arizona Department of Environmental Quality (ADEQ) in March 2015. The Mitigation Plan, which describes the mitigation action for sulfate in drinking water supplies, was submitted to ADEQ pursuant to the Mitigation Order on Consent Docket No. P-121-07 (ADEQ, 2007) between ADEQ and CQB. CQB has implemented certain elements of the Mitigation Plan, although the plan is not yet approved by ADEQ.

The objective of the mitigation action is to prevent the average sulfate concentration of a drinking water supply from exceeding 250 milligrams per liter (mg/L) at the point of use, if the sulfate originated at the CTSA. The mitigation action consists of groundwater monitoring and contingency mitigation action planning. Groundwater monitoring tracks the location of the plume and documents sulfate concentrations in drinking water supply wells in the vicinity of the plume. Contingency mitigation action planning consists of work to anticipate and design actions that could be used to mitigate public drinking water supplies near Naco, if needed. Contingency mitigation action planning conducted to date has installed and monitored wells for the expanded groundwater monitoring program, identified a potential alternate drinking water supply, developed a preliminary design and implementation schedule for an alternate water supply, and acquired property on which to develop an alternate water supply, if needed.

This mitigation performance review evaluates the effectiveness of the mitigation action based on the results of groundwater monitoring data collected during 2018 and the progress of its component actions. ADEQ agreed to a conditional approval of the annual groundwater monitoring reporting and groundwater monitoring provisions of the Mitigation Plan while the plan is in review (ADEQ, 2015).

## 1.1 Background

The Mitigation Plan describes the process to be followed to implement the mitigation action<sup>1</sup> for sulfate in groundwater that may affect<sup>2</sup> existing drinking water supplies. Drinking water supplies in the vicinity of the CTSA do not exceed the sulfate action level of 250 mg/L at this time because CQB mitigated previously affected supplies (CQB, 2013) under a separate plan (Clear Creek Associates, 2012) approved by ADEQ (ADEQ, 2012).

The mitigation action being implemented by CQB for drinking water supplies that may be affected by sulfate in the future is Alternative 1C, which was the recommended alternative of the Feasibility Study (Clear Creek Associates, 2014) submitted to and approved by ADEQ (ADEQ, 2014). The mitigation action contains the following components:

- expanded groundwater monitoring to track plume migration in the vicinity of the Arizona Water Company (AWC) and Naco Water Company (NWC) public water supplies near Naco for the purposes of establishing sentinel wells with action levels that, if exceeded, would trigger a contingent mitigation action at a public supply, if needed,
- long term plume monitoring to document sulfate concentrations at public and private drinking water supplies, and to describe the groundwater flow system and large scale geometry of the plume over time,
- a water supply study to identify a potential alternate groundwater source for mitigation of a public water supply, if needed,
- annual review of Arizona Department of Water Resources (ADWR) well registry records for wells within a mile of the plume edge to identify new drinking water supply wells for sampling, and
- implementation of contingent mitigation actions, if needed.

A review of the status of mitigation action components in 2018 is in Section 2.

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<sup>1</sup> The term mitigation action encompasses all actions implemented under the Mitigation Plan. If a contingent mitigation measure is implemented or implemented measures are changed due to adaptive management, then the term mitigation action encompasses the contingency or change.

<sup>2</sup> The terms “affect” and “affected”, with reference to a drinking water supply, are defined for the purpose of the Mitigation Plan as indicating a water supply with an average sulfate concentration exceeding 250 milligrams per liter due to sulfate originating from the Concentrator Tailing Storage Area.

## 1.2 Mitigation Action Objective

The mitigation action objective defined in the Mitigation Order and described in the Feasibility Study is to “practically and cost effectively provide a drinking water supply that meets applicable standards and with sulfate concentrations less than 250 mg/L to the owner(s)/operator(s) of existing drinking water supplies determined...to have an average sulfate concentration in excess of 250 mg/L...as a result of the sulfate plume originating from the PDCTSA”.<sup>3</sup>

## 1.3 Role and Scope of the Mitigation Performance Review

The Mitigation Plan specifies that mitigation performance reviews will assess whether the Mitigation Plan actions are performing as expected with respect to the mitigation action objective. The performance review also evaluates whether the Mitigation Plan actions need modification to meet the mitigation action objective or can be terminated.

The mitigation performance review analyzes the data CQB collects under the expanded groundwater monitoring and long term plume monitoring programs. The sulfate data are used to evaluate sulfate concentration trends at monitoring and drinking water supply wells. Water level data are used to interpret the apparent groundwater flow direction in the vicinity of the plume.

The performance review may recommend modifications to the expanded groundwater monitoring and long term groundwater monitoring programs, if warranted based on prevailing conditions. As described in the Mitigation Plan, adaptive management would be used to evaluate and modify the mitigation actions in the event that conditions assumed for the Mitigation Plan change or the performance review analysis determines that the plume is migrating in a way that is significantly different from previous predictions.

Per the Mitigation Plan, mitigation performance reviews are to be conducted and submitted to ADEQ annually for the first five years of the Mitigation Plan actions and every five years thereafter. This mitigation performance review for 2018 is the fifth annual performance review submitted under the Mitigation Plan<sup>4</sup>. The next performance review report required under the Mitigation Plan will be the performance review for 2023 due in April 2024.

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<sup>3</sup> PDCTSA stands for Phelps Dodge Concentrator Tailing Storage Area. Phelps Dodge Corporation operated the Copper Queen Branch when the Mitigation Order was issued.

<sup>4</sup> Performance review reports were submitted for 2014, 2015, 2016, and 2017 (Clear Creek Associates, 2015b, 2016c, 2017b, and 2018b).

Per the Mitigation Plan, the frequency of mitigation performance reviews would revert back to annual if an action level established pursuant to the expanded groundwater monitoring program is exceeded at a time when mitigation performance reviews are submitted every five years. The annual reporting frequency would continue until a contingency action is taken or sulfate consistently drops below the action level, after which the frequency for mitigation performance reviews would return to every five years.



## 2.0 REVIEW OF MITIGATION PLAN ACTIONS IN 2018

Mitigation Plan actions conducted in 2018 include expanded groundwater monitoring, long term plume monitoring, the ADWR well registry review, and interim mitigation actions for two private drinking water supply wells. The expanded groundwater monitoring and long term groundwater monitoring programs gather information on sulfate concentrations and groundwater levels using a network of groundwater monitoring and private wells in the vicinity of the plume. Figures 2 and 3 show the locations of wells monitored under the Mitigation Plan and discussed in this report.

### 2.1 Expanded Groundwater Monitoring

The expanded groundwater monitoring program monitors the position of the westward migrating plume in the immediate vicinity of the existing AWC and NWC public water supplies near Naco. An objective of the expanded groundwater monitoring program is to collect information on the rate of plume movement for use in contingency mitigation action planning.

CQB completed the installation of wells for the expanded groundwater monitoring program in 2015. Figure 3 shows that the monitoring wells installed for the expanded groundwater monitoring program are positioned at the western front, or leading edge, of the plume. The results of well installation, hydraulic testing, water level measurement, and water quality analyses of sulfate through the second quarter of 2015 were reported to ADEQ in August 2015 (Clear Creek Associates, 2015c). Subsequent sulfate and water level data for these wells are reported in annual groundwater monitoring reports submitted to ADEQ (Clear Creek Associates, 2016b, 2017a, 2018a, and 2019).

The groundwater monitoring data collected at new and existing wells are used to track plume movement and sulfate concentration trends at the front of the plume for assessment of the potential for sulfate to affect a public drinking water supply. The data will be also used to determine the velocity of the plume, which would be used to make sentinel well location and sulfate action level recommendations. The Mitigation Plan identified the following schedule of activities for the expanded groundwater monitoring program:

- install and test new monitoring wells by October 1, 2015, and complete eight quarters of sampling and analysis for sulfate by October 1, 2017,
- in consultation with AWC, develop a conceptual design and critical path analysis to identify the implementation timeframe for an alternate water supply by July 1, 2017. If

an alternate supply is determined to be infeasible, the conceptual design and critical path analysis will be developed for a large scale RO treatment system by July 1, 2017, and

- submit an action level report to ADEQ describing sentinel well and action level recommendations by April 1, 2018.

In February 2018, CQB requested that the action level report be postponed to allow time for additional groundwater monitoring (CQB, 2018a). The additional monitoring is needed to document the in-situ plume velocity as discussed in Section 4.2.1. ADEQ approved the request to postpone submittal of the action level report indicating it would meet with CQB to identify a due date for the report (ADEQ, 2018).

The status of the contingency mitigation action planning activities for the expanded groundwater monitoring program is summarized in the following table and described below.

<b>CONTINGENCY MITIGATION ACTION PLANNING</b>	<b>DUE DATE</b>	<b>DATE SUBMITTED TO ADEQ</b>
Expanded Groundwater Monitoring Program	October 1, 2015	August 19, 2015
Water Supply Study	July 1, 2016	February 5, 2016
Implementation Schedule for an Alternate Water Supply	July 1, 2017	June 22, 2017
Sentinel Well and Action Level Recommendations	To Be Determined	To Be Determined

Well installation and testing of the expanded groundwater monitoring program wells were completed in March 2015 (Clear Creek Associates, 2015a) and eight (8) quarters of baseline monitoring at the new wells were completed ahead of schedule in the fourth quarter of 2016. On completion of the baseline monitoring, the expanded groundwater monitoring program wells were added to the long term groundwater monitoring schedule (Table 1) for sampling twice per year in the first and third quarters per the recommendation in the performance review for 2016 (Clear Creek Associates, 2017b).

The water supply study was necessary for developing an implementation schedule and was submitted to ADEQ in February 2016 (Clear Creek Associates, 2016a). The water supply study identified a feasible alternate water supply in the basin fill aquifer south of the AWC wellfield. In 2017, given the feasibility of a potential alternate water supply, CQB prepared and submitted to ADEQ a preliminary design and implementation schedule for development of an alternate water supply (Clear Creek Associates and WestLand Resources, Inc., 2017). The implementation schedule is reviewed in Section 2.3. Additionally, in 2017, CQB purchased property south of the AWC wellfield that could be used as the location of an alternate water supply, if needed.

As discussed in Section 4.2.1, an action level report containing sentinel well and sulfate action level recommendations will be developed when the results of the expanded groundwater monitoring program are sufficient to allow calculation of the velocity of the plume front. The due date for the action level report will be determined pending further discussions between CQB and ADEQ (ADEQ, 2018).

## **2.2 Long Term Plume Monitoring**

The long term plume monitoring program collects information on the distribution of sulfate and water level conditions in and around the plume. Public and private drinking water supplies are monitored to determine their sulfate concentration with respect to the 250 mg/L mitigation action objective. Water level and sulfate measurements are collected at monitoring wells throughout the plume to track the large scale geometry and concentration of the plume over time. The objectives of long term plume monitoring are:

- determination of the sulfate concentration in drinking water supplies within a one-mile radius of the outer edge of the sulfate plume (i.e., the 250 mg/L sulfate concentration contour),
- identification of the plume margin for ongoing delineation of the plume extent and assessment of plume migration (plume edge monitoring),
- documentation of the sulfate concentrations in the plume and areas distal to the plume to monitor long term concentration trends (regional monitoring), and
- measurement of water levels in the vicinity of the plume to document potentiometric conditions.

Long term plume monitoring pursuant to the Mitigation Plan was implemented in 2015. Figure 4 shows well locations and sampling frequencies for long term plume monitoring. The results of groundwater monitoring in 2018 were reported to ADEQ in the annual groundwater monitoring report (Clear Creek Associates, 2019). The long term plume monitoring program is conducted in conjunction with the expanded groundwater monitoring program (Section 2.1), which has similar objectives but focuses on public water supplies near Naco.

## **2.3 Implementation Schedule for an Alternate Water Supply**

Although there was no work needed for the implementation schedule in 2018, this work component is reviewed because it is a critical part of contingency planning. The water supply study concluded that the basin fill aquifer south of the AWC wellfield has good potential as an alternate water supply based on the hydraulic and water quality testing results (Clear Creek

Associates, 2016a). In 2017, CQB developed a preliminary design and implementation schedule for development of an alternate supply, if needed (Clear Creek Associates and WestLand Resources, Inc., 2017). The implementation schedule was submitted to ADEQ June 2017 in accordance with the deliverable date in the Mitigation Plan.

The design and implementation schedule assumed that groundwater extraction wells would be installed on property approximately 1 mile south of the existing AWC wellfield and that a pipeline would be constructed to connect the extraction wells to the existing AWC wellfield infrastructure. In 2017, CQB proactively acquired land contiguous with and south of the existing AWC wellfield that could be used for extraction wells and a pipeline corridor for a potential alternate water supply, if needed. The land acquisition was not a requirement of the Mitigation Plan.

The implementation schedule estimates the time needed to develop an alternate drinking water supply on the CQB property and connect it to the existing AWC facilities. The implementation schedule considers activities such as the right of way development, permitting, well drilling, engineering design, contractor selection, construction of infrastructure, and post-construction approvals and commissioning that would be needed to develop the alternate drinking water supply and connect it to the existing AWC system. The implementation schedule indicates 48 months would be required to permit, build, and start the alternate water supply, if needed.

## **2.4 Annual ADWR Well Registry Records Review**

Groundwater wells installed in Arizona are required to be registered with ADWR. Under the Mitigation Plan, the ADWR well registry records are reviewed annually to identify new existing wells installed within one mile of the plume. The water use at new wells is determined from the ADWR registry record and by inquiry with the well owner. CQB offers to sample a new drinking water supply well within a mile of the plume and adds the well to the long term plume monitoring schedule. The ability to sample any new wells is dependent on permission from the well owner to access the well.

The results of the well registry review for 2018 are reported in the annual groundwater monitoring report for 2018 (Clear Creek Associates, 2019). The well registry review determined that there were two new registrations for potential drinking water supply wells within a mile of the plume in 2018. One potential drinking water supply well is related to a drilling permit issued by ADWR in September 2018 for a property near Naco. Attempts to contact the owner have been unsuccessful to date, but will be continued in 2019. If a drinking water supply well was installed, CQB will ask the owner for permission to sample the well and it will be added to the

long term groundwater monitoring program. A second potential drinking water supply is related to a late well registration filed with ADWR after an apparent transition in property ownership. The property has an existing well that was previously unregistered and already sampled by the long term groundwater monitoring program. The owner verbally confirmed that the late registration was for the previously unregistered well. Thus, there is no new well associated with the well registration.

## **2.5 Contingent Mitigation of Drinking Water Supplies**

Section III.E of the Mitigation Order indicates that drinking water supply mitigation applies to existing drinking water supplies that are determined to be affected based on the results of water sampling and analysis. Contingent mitigation of drinking water supplies, if needed, is used to provide a drinking water supply meeting the mitigation action objective of 250 mg/L sulfate. As described in the FS and the Mitigation Plan, the term “contingent” is used because it is uncertain whether a drinking water supply will be affected in the future. CQB monitors public and private drinking water supplies under the long term plume monitoring program (Section 2.2) and would mitigate a drinking water supply that monitoring data indicate has an average concentration of sulfate greater than 250 mg/L.

In 2018 interim mitigation action reports were submitted to ADEQ for two wells: ROGERS 596 (CQB, 2018b) and BMO-2008-5B (CQB, 2018c). The ROGERS 596 well is a private water supply well which was determined in 2018 to exceed an average sulfate concentration of 250 mg/L. In March 2018 CQB began an interim mitigation action of supplying bottled drinking water to the property serviced by ROGERS 596. BMO-2008-5B is a monitoring well installed on private property and used by the property owner as a drinking water supply. The average concentration of sulfate in BMO-2008-5B was determined to exceed 250 mg/L in 2018. Inasmuch as CQB was already providing bottled drinking water to the property owner at the time the sulfate concentration began exceeding 250 mg/L, bottled water was selected as the interim mitigation action for BMO-2008-5B.

### 3.0 ANALYSIS OF GROUNDWATER MONITORING DATA

The results of groundwater monitoring in 2018 are evaluated to characterize the extent and migration of the plume, including results from the expanded groundwater monitoring program.

#### 3.1 Hydrogeologic Setting

The hydrogeology in the vicinity of the plume is described in detail in the Aquifer Characterization Report (ACR) (Clear Creek Associates, 2010) prepared for the Mitigation Order. The following summary is provided to describe the general hydrogeologic framework in which the mitigation actions are conducted.

The CTSA is in the northeastern portion of the Bisbee-Naco physiographic basin south of the Mule Mountains (Figure 1). The Mule Mountains, Cerro La Muela, and Sierra San Jose form the northern, eastern, and southern margins of the basin, respectively. Approximately one-half of the physiographic basin lies in Mexico. The mountains surrounding the basin are composed of bedrock materials, and the basin area consists of clastic sediment, called basin fill, which is underlain by bedrock. Surface runoff from the Bisbee-Naco watershed drains into Greenbush Draw, which flows west to the Upper San Pedro River.

Groundwater occurs in two hydrostratigraphic units in the vicinity of the sulfate plume: basin fill and bedrock of the Bisbee Group. Figure 5 is a map of the surface geology of the area in the vicinity of the sulfate plume based on Hayes and Landis (1964). Basin fill is relatively permeable and consists of poorly to moderately cemented sand and gravel deposits formed by alluvial fans emanating from the mountains. The basin fill thickness increases from zero at the mountain fronts to approximately 635 feet in the central portion of the basin north of Naco. The basin fill aquifer provides the majority of the water pumped for the public water supplies near Naco. Bedrock of the Bisbee Group underlies the basin fill and consists of (from younger to older) the Cintura Formation, Mural Limestone, Morita Formation, and Glance Conglomerate. The bedrock has a low to moderate permeability compared to the basin fill, although massively bedded portions of the Mural Limestone may be relatively impermeable.

The sulfate plume extends southwest and south from the former evaporation pond to the vicinity of Naco and Bisbee Junction (Figure 1). West of the Black Gap fault (Figure 5), the sulfate plume is contained primarily within the basin fill, although elevated sulfate concentrations do extend into the underlying undifferentiated Bisbee Group in the central and northern portions of the plume. East of the Black Gap fault the sulfate plume is entirely within bedrock as the basin

fill is unsaturated. On an area-wide basis, approximately half of the plume is contained in bedrock.

### **3.2 Sulfate Concentration Data**

The sulfate data through 2018 were used to create concentration contour maps and time series graphs for evaluation of the plume extent and sulfate concentration trends over time. The sulfate data are collected for both the monitoring of drinking water supplies and for plume characterization. The determination of sulfate concentrations at public and private drinking water supplies measures attainment of the mitigation action objective.

Sulfate data for plume characterization are collected at wells differentiated according to three monitoring purposes: lateral plume edge monitoring, plume edge monitoring beneath the plume, and regional monitoring, as identified in Table 1. Plume edge monitoring tracks the migration of the plume. Regional monitoring provides data for describing the long term evolution of the plume. The sulfate data used for this performance review are reported in the annual groundwater monitoring report for 2018 (Clear Creek Associates, 2019).

#### **3.2.1 Contour Map of Sulfate Concentrations**

Figures 6 and 7 are maps of inferred sulfate concentration contours for the third quarter of 2018. Figure 6 shows the site-wide distribution of sulfate, whereas Figure 7 focuses on the western, downgradient edge of the plume. The third quarter data are used to describe the distribution of sulfate because it is the quarter with the largest number and geographic coverage of sulfate measurements. Sulfate concentration contour maps for the site-wide distribution of sulfate in the first quarter of 2018 and of the west edge of the plume in the first quarter of 2018 are provided in the annual groundwater monitoring report (Clear Creek Associates, 2019).

The extent of the sulfate plume is defined to be the 250 mg/L sulfate concentration contour based on previous reporting for the Mitigation Order (e.g., Clear Creek Associates, 2010 and 2014). Figure 8 shows the sulfate concentration contour map reported for the third quarter of 2008 for comparison with the map for the third quarter of 2018. The overall extent of the plume in 2018 is similar to that in 2008. Sulfate concentration data collected from the close-spaced expanded groundwater monitoring program wells installed in 2014 and 2015 provide data for a better definition of the 250 mg/L sulfate concentration contour at the leading edge of the plume than was available prior to their installation. The expanded groundwater monitoring program data show the west edge of the plume to be irregularly shaped.

As discussed in the ACR (Clear Creek Associates, 2010) the plume has a vertical dimension. The vertical extent of the plume is determined from monitoring wells beneath the footprint of the plume. These wells are evident on Figures 6, 7, and 8, as wells within the 250 mg/L sulfate concentration contour that have sulfate concentrations less than 250 mg/L.

### 3.2.2 Time Series Graphs of Sulfate Concentration at Public Drinking Water Supply Wells

Time series graphs of sulfate concentrations were prepared for public drinking water supply wells to compare concentrations to the mitigation action objective. Time series plots for sulfate were not made for private drinking water supply wells because they are assessed individually on a sample-by-sample basis each time they are sampled.

Figure 9 shows sulfate concentrations from 2008 through 2018 at public drinking water supply wells. The sulfate data indicate that concentrations are less than 250 mg/L in all public drinking water supply wells and that the mitigation action objective is being met. The sulfate concentration at the AWC wells were all less than 77 mg/L in 2018, and less than the 150 mg/L temporary sulfate action level set in the Mitigation Plan for the AWC wellfield. The NWC wells, NWC-02 and NWC-06, near Naco had sulfate concentrations less than 10 mg/L in 2018. Sulfate concentrations at NWC-04, near Bisbee Junction, which is believed to be at the receding edge of the plume, ranged between 181 mg/L and 210 mg/L in 2018.

Sulfate concentrations have been relatively stable over time at AWC-02, AWC-04, AWC-05, NWC-02, and NWC-06. The sulfate concentration at AWC-03 increased from 41 mg/L to 77.1 mg/L between 2008 and January 2015, decreased to between 44 and 56 mg/L in late 2015 and 2016, and ranged from 57 mg/L to 77 mg/L in 2017 and 2018. The sulfate concentration at NWC-04 has varied between 162 and 240 mg/L between 2008 and 2018, but has no discernable long term trend.

### 3.2.3 Time Series Graphs of Sulfate Concentration at Monitoring Wells

The monitoring purpose of wells sampled for the Mitigation Plan is listed on Table 1. Time series graphs for plume edge monitoring wells illustrate sulfate trends in wells outside of and proximal to the plume, whereas plots for selected regional monitoring wells illustrate sulfate trends at locations within the plume.



### 3.2.3.1 Lateral Plume Edge Monitoring Wells

Sulfate concentrations over time for lateral plume edge monitoring wells on the north, south, and east of the plume are shown on Figure 10. Lateral plume edge monitoring wells on the west side of the plume, excluding wells installed for the expanded groundwater monitoring program, are shown on Figure 11. The lateral plume edge wells in Figures 10 and 11 are screened in both the basin fill and the bedrock aquifers. Figure 12 is a graph of sulfate concentrations over time in lateral plume edge monitoring wells of the expanded groundwater monitoring program installed in basin fill on the west edge of the plume.

The data from lateral plume edge wells north, south, and east of the plume demonstrate that sulfate concentrations have remained at relatively steady levels over the period of record, although concentrations in BMO-2008-3B and COB WL have declined since 2013 and concentrations in TM-07 vary over a range of about 100 mg/L over time (Figure 10). Sulfate concentrations are not expected to increase in these wells because the plume is migrating primarily to the west based on groundwater flow directions inferred from measured hydraulic gradients (Section 3.3).

Wells BMO-2008-5B, BMO-2008-5M, and BMO-2008-6M are the only lateral plume edge wells west of the plume that display increasing concentrations over the period of record (Figure 11). Linear trend lines through the sulfate data for BMO-2008-5B, BMO-2008-5M, and BMO-2008-6M indicate average rates of increase of 7.6 mg/L per year, 4.9 mg/L per year, and 6 mg/L per year, respectively. In 2018 the concentration of sulfate in some samples of BMO-2008-5B exceeded 250 mg/L for the first time. The west edge of the plume is the advancing front of the plume so an increasing trend in the sulfate concentrations of some wells on the west edge of the plume is expected. The purpose of the expanded groundwater monitoring program is to document concentration trends and plume migration in detail at the west edge of the plume near the AWC wellfield.

Sulfate concentrations were steady in wells installed in basin fill west of the plume for the expanded groundwater monitoring program (Figure 12). Figure 12 omits the results of initial samples collected in 2014 because the sulfate concentrations were inconsistent with the subsequent baseline sampling data, possibly due to incomplete well development prior to the initial sampling. The expanded groundwater monitoring program wells straddle the front of the plume as evidenced by wells with concentrations greater than 250 mg/L sulfate and wells with concentrations less than 250 mg/L. The lack of increasing trends in the expanded groundwater monitoring wells with sulfate less than 250 mg/L indicates there was no measurable movement of the plume front in this area from 2015 to 2018.

### *3.2.3.2 Plume Edge Monitoring Wells Below the Plume*

Sulfate concentrations over time for plume edge monitoring wells below the plume are shown on Figure 13. Five BMO monitoring wells are used to monitor sulfate concentrations below the plume. Sulfate concentrations in BMO-2008-4B, BMO-2008-7M, and BMO-2008-8M, west of the Black Gap fault, have been steady or decreasing over time. Sulfate concentrations in samples from BMO-2008-9M and BMO-2010-1M, east of the Black Gap fault, increased from 2008 to 2018. The sulfate concentrations in BMO-2008-9M and BMO-2010-1M in 2018 were 97.2 mg/L and 169 mg/L, respectively. Linear trend lines through the sulfate data for BMO-2008-9M and BMO-2010-1M indicate rates of increase of 5.0 mg/L per year and 5.9 mg/L per year, respectively.

### *3.2.3.3 Regional Monitoring Wells in the Plume*

Sulfate concentrations over time for selected regional monitor wells in the plume are shown on Figure 14. Most of the regional monitoring wells in the plume are sampled biennially in odd numbered years. Therefore there are few new data for 2018. The regional monitoring wells in the plume that were sampled in 2018 are COOPER C, HOBAN, and TVI 875 which are at the southwest end of the plume near Naco Highway and Purdy Lane.

Sulfate concentrations in COOPER C declined from 2008 to 2014 and have been steady at approximately 650 mg/L since 2015. The sulfate concentrations in HOBAN increased from 2008 to 2012 and has been relatively steady since 2012 with an average concentration of 1,044 mg/L between 2013 and 2018. TVI 875 is the farthest downgradient regional monitoring well in the plume from which a sample was collected in 2018. The sulfate concentration in TVI 875 varied between 226 and 355 mg/L between 2008 and 2018 and averaged 274 mg/L. Thus, TVI 875 is at the edge of the plume. A linear trendline through the data for TVI 875 indicates an increasing trend at about 5 mg/L per year.

## **3.3 Groundwater Elevation Data**

Groundwater elevation data are calculated using measurements of depth to water from surveyed measuring points at wells. The measurements of depth to water are made under static (non-pumping) conditions whenever possible. Water levels measured at wells that have been pumping, such as drinking water supply wells, may have a component of residual drawdown even though they were inactive when the water level was measured. Residual drawdown occurs when the water level in a well has not yet returned to its static level after pumping stops. In practice, the water level recovery in a well after pumping is a site-specific characteristic depending on the hydraulic properties of the aquifer and the well. Some degree of residual drawdown may be

possible in measurements made at both the public and private drinking water supply wells. Appendix B contains a compilation of the water elevation data.

### 3.3.1 Contour Map of Groundwater Elevations

A site-wide water elevation contour map for the third quarter of 2018 is shown by Figure 15. Figure 16 is the water elevation map for the third quarter of 2008 for comparison with the 2018 map. The overall pattern of water elevation contours in the third quarter of 2018 is similar to the pattern exhibited by groundwater monitoring data since 2008. In general, the groundwater elevation decreases from east to west, indicating groundwater flow to the west. The lateral hydraulic gradient, or change in water elevation per unit distance, is higher east of the Black Gap fault where the basin fill is unsaturated and groundwater is in bedrock. The lateral hydraulic gradient decreases west of the Black Gap fault where saturated basin fill overlies the bedrock.

Figure 17 shows water elevations in basin fill at the west edge of the plume in the third quarter 2018. The groundwater flow direction is westerly at the west edge of the plume, except at the AWC wellfield where a cone of depression occurs around the AWC extraction wells. Groundwater flow within the cone of depression is radially inward to the extraction wells. The migration of the front of the plume in the basin fill is being studied by the expanded groundwater monitoring program. Maps of site-wide groundwater elevations in the first quarter of 2018 and elevations at the west edge of the plume in the first quarter of 2018 are in the annual groundwater monitoring report (Clear Creek Associates, 2019).

### 3.3.2 Hydrographs for Basin Fill Wells

Figure 18 shows hydrographs for selected BMO monitoring wells in basin fill. These wells are distributed over the western portion of the plume. Groundwater elevations in basin fill monitoring wells decreased from approximately 2008 to 2013, were relatively steady from 2013 to 2016, and from late 2016 through 2018 appear to show a resumption of the water level decline. A seasonal pattern characterized by summer low and winter high water levels is evident at some of the basin fill wells. The magnitude of the water elevation difference between hydrographs for the basin fill wells is relatively uniform over time, indicating that the hydraulic gradient between the wells remains the same over time.

The cause of the decline in water elevations in the basin fill wells from 2008 to 2013 is interpreted to be a long term drought condition that reduced the amount of natural recharge to the aquifer in combination with groundwater pumping. The decline in water elevations stopped in

2013 due to increased groundwater recharge from the relatively high annual precipitation from 2013 to 2015. Annual precipitation from 2016 to 2018 was less than it was between 2013 and 2015, possibly accounting for the apparent resumption of water table declines in some wells.

Hydrographs for wells installed in basin fill at the west edge of the plume for the expanded groundwater monitoring program are shown on Figure 19. Water elevation data for late 2016 through 2018 for the expanded groundwater monitoring wells show the declining trend of other basin fill wells. The magnitude of the water elevation changes are consistent between the wells at the front of the plume indicating that groundwater flow directions and hydraulic gradients are not changing over time.

### 3.3.3 Hydrographs for Bedrock Wells

Hydrographs for BMO series monitoring wells in bedrock are shown on Figure 20. Although the scale of the groundwater elevation axis of Figure 20 obscures small scale patterns, the graph does show that large water level increases occurred at BMO-2008-10GU and BMO-2008-10GL since 2013. These co-located wells are at the south end of the CTSA. Figure 20 also shows a long term decreasing trend at BMO-2008-1G and a long term increasing trend at BMO-2008-11G. As explained in the ACR, BMO-2008-11G is interpreted to be completed in a different aquifer unit than the other bedrock wells.

Figure 21 shows groundwater elevations for the group of bedrock wells with water elevations between 4,420 feet and 4,510 feet, excluding BMO-2008-10GU and BMO-2010-10GL. The graph illustrates two water elevation patterns that can be associated with the hydrostratigraphy on the east and west sides of the Black Gap fault. Wells BMO-2008-9M, BMO-2010-1M, BMO-2010-2M, and BMO-2012-1M had decreasing elevations until 2013 and then increased between 10 feet and 20 feet until 2016. These wells are east of the Black Gap fault where the basin fill is unsaturated. In contrast to the wells east of the Black Gap fault, water elevations in wells BMO-2008-5M, BMO-2008-6M, BMO-2008-7M, BMO-2008-8M, BMO-2008-9M, BMO-2008-13M, and BMO-2010-3M, west of the Black Gap fault, declined until 2013 were relatively steady from 2013 to 2016, and declined slightly from 2016 to 2018.

The groundwater surface in bedrock wells east of the Black Gap fault is in bedrock overlain by unsaturated basin fill. Thus, recharge occurs directly to the bedrock, with the water level increase per unit of recharge being a function of the hydraulic properties of the bedrock. Bedrock wells west of the Black Gap fault are overlain by saturated basin fill which provides continuous source of recharge to the bedrock such that the amount of water level increase in the bedrock per

unit recharge is a function of the hydraulic properties of the basin fill. The water level changes in bedrock wells west of the Black Gap fault since 2013 are on the order of several feet, rather than 10 to 20 feet like bedrock wells east of the fault, and exhibit patterns similar to water levels in the basin fill monitoring wells (Figure 20). The differing water level patterns between bedrock wells east and west of the Black Gap fault result from the difference in the saturation of the basin fill overlying bedrock and the difference in hydraulic properties for bedrock and basin fill.

### 3.4 Assessment of Plume Migration

Sulfate concentration maps for 2018 and 2008 do not show significant differences in the site-wide extent of the 250 mg/L sulfate concentration contour (Figures 6 and 8), indicating that the extent of the plume has not changed significantly since the start of comprehensive monitoring under the Mitigation Order. However, sulfate data collected from the additional wells installed for the expanded groundwater monitoring program indicate a more irregular front than was evident prior to their installation (Figures 6 and 7).

Sulfate concentrations at western plume edge wells BMO-2008-5B, BMO-2008-5M, BMO-2008-6M, and TVI 875 show rates of increase ranging from approximately 4.9 mg/L per year to 7.6 mg/L per year (Figure 11). However, sulfate concentrations have not increased at the expanded groundwater monitoring program wells. The lack of sulfate concentration changes in the expanded groundwater monitoring program wells is evidence that there has been no plume migration at these wells since they were installed in 2014 and 2015 (Figure 12). These data indicate that sulfate increases at the front of the plume are gradual, suggesting a diffuse plume front rather than a sharp concentration front which would be associated with a more rapid rate of concentration increase than has been observed.

Water level data indicate that groundwater flow directions and the site-wide hydraulic gradient have not changed significantly between 2008 and 2018 (Figure 15 and 16). The implication of the steady flow directions and hydraulic gradient is that the direction and rate of plume migration have been steady over time and remain consistent with the conceptual site model described in the ACR.

The direction and rate of movement of the plume are important factors for contingency mitigation planning. The sulfate plume is expected to migrate to the west at the average groundwater flow velocity because sulfate behaves as a soluble salt that does not adsorb or precipitate in the aquifer. However, because the plume has been in its current approximate position since the 2008 when environmental monitoring for the Mitigation Order began, there are

no in-situ measurements of the plume velocity as the plume has not been observed migrating between two locations. For this reason, prior estimates of the plume velocity are based solely on calculations using average hydraulic properties. Previously, the migration rate of the plume front was estimated to be approximately 50 to 100 feet per year based on hydraulic gradients in 2010 and 2011, an average hydraulic conductivity of 28.1 feet per day for basin fill at the front of the plume, and a porosity of 25% (Clear Creek Associates, 2014).

The expanded groundwater monitoring program (Section 2.1) installed wells at the front of the plume to document the rate at which the plume moves between the wells and to examine the rate of change of sulfate concentrations in the wells as concentrations approach and exceed 250 mg/L. To date, the sulfate concentration data for the expanded groundwater monitoring program wells do not show increasing concentrations nor evidence of plume migration (Figure 12). Therefore, the data are insufficient for measuring the in-situ plume velocity and additional monitoring is needed. Monitoring and data analysis are ongoing to evaluate the in-situ plume velocity and concentration trends.

The in-situ plume velocity and concentration trend data are to be used to develop sentinel well and sulfate action level recommendations. The sentinel well and action level recommendations will identify the groundwater monitoring locations and associated average sulfate concentration levels which, if exceeded, would trigger implementation of the contingent mitigation action for the AWC wellfield. The action level for a sentinel well would be an average concentration, to be verified by repeated samplings, set with the objective of providing sufficient lead time to allow the design, permitting, construction, and startup of the mitigation action prior to sulfate exceeding 250 mg/L at a public supply.

The intent of the Mitigation Plan was that sentinel wells and action levels would be selected based on the in-situ velocity and direction of plume migration, the rate of change of sulfate concentration at the front of the plume, and the duration of the implementation schedule for the mitigation action. For example, multiplying the 48-month implementation schedule by the plume velocity provides a preliminary estimate of the distance from the AWC water supply that a sentinel well with a 250 mg/L action level could be located to allow the time needed to implement the mitigation action, assuming the plume velocity is uniform. The rate of change of sulfate concentrations at a well as the 250 mg/L action level is approached and exceeded should also be considered in the setting of an action level. However, the plume velocity and rate of change of sulfate concentrations at the front of the plume are not yet quantified because there has been no discernable migration of the plume or change in sulfate concentrations since the completion of the expanded groundwater monitoring program wells in 2015.

## 4.0 ASSESSMENT OF MITIGATION ACTION PERFORMANCE

The performance of the mitigation action is assessed based on the attainment of the mitigation action objective (Section 1.2), and the progress of the groundwater monitoring and contingency mitigation action planning activities implemented under the Mitigation Plan.

### 4.1 Mitigation Action Objective

The mitigation action objective was met at public and private drinking water supply wells in 2018 (Figure 9). As discussed in Section 2.5, two private wells were identified as exceeding 250 mg/L and were provided bottled drinking water as interim mitigation actions.

The groundwater monitoring programs needed to assess attainment of the mitigation action objective at drinking water supplies are in place and ongoing. Groundwater monitoring data do not show evidence of plume migration that would present a near-term risk to either public or private drinking water supplies.

In 2017, a preliminary design and implementation schedule for an alternate water supply were completed, and land was acquired for the alternate supply, should a contingent mitigation be needed for the AWC water supply (Clear Creek Associates and WestLand Resources, 2017). The alternate water supply would be used to meet the mitigation action objective, if needed.

### 4.2 Groundwater Monitoring Programs

The groundwater monitoring programs collect and report the sulfate concentration and water level data. These data are used to evaluate the sulfate concentrations of drinking water supplies, and to understand and predict plume migration.

#### 4.2.1 Expanded Groundwater Monitoring

The expanded groundwater monitoring program is an ongoing study that tests monitor wells at the leading edge of the plume to quantify the rate of plume migration, sulfate concentration trends, and hydrogeologic conditions in the vicinity of Naco area public water supplies. The data developed by the expanded groundwater monitoring program will be used along with the implementation schedule for an alternate water supply to identify sentinel well locations and set action levels for sulfate that could trigger mitigation actions for the Naco area public water supplies.

The intent of the expanded groundwater monitoring program is to use the in-situ plume velocity and the rate of change of sulfate, as determined from groundwater monitoring data, to estimate

how far from the AWC wellfield sentinel wells should be placed to allow implementation of an alternate supply within the duration of the implementation schedule.

Determination of the in-situ plume velocity based on monitoring data is taking longer than was considered in the Mitigation Plan, which scheduled a submittal date of April 2018 for sentinel well and action level recommendations. For example, it could take 3.5 to 10 years to observe the front arrival at BMO-2014-1 and BMO-2014-4 wells assuming previously calculated groundwater flow velocities of 50 to 100 feet per day and travel distances of 350 to 500 feet as shown on Figure 7.

Consequently, in February 2018 CQB asked ADEQ to postpone submittal of the action level report because groundwater monitoring results were insufficient for calculation of the plume velocity (CQB, 2018a). ADEQ approved CQB's request to postpone submittal of the action level report in April 2018 and will work with CQB to revise the schedule (ADEQ, 2018).

#### 4.2.2 Long Term Plume Monitoring

The groundwater monitoring program collects and reports sulfate concentrations in drinking water supplies, and sulfate concentration and water level data for plume evaluation. The groundwater monitoring program in 2018 met its objectives (Section 2.2) of documenting sulfate concentrations in drinking water supply wells and providing the data used to evaluate sulfate concentration and water elevations for the mitigation action (Sections 3.2 and 3.3). The ADWR well registry review identified one potential new drinking water supply well that will be verified and sampled, if appropriate (Section 2.4). The well registry review is meeting the objective of identifying new drinking water supplies within a mile of the plume for sampling.

There is no need to revise the groundwater monitoring program, although a minor change was made to the groundwater monitoring schedule (Table 1). Semiannual water level measurement at monitoring well COB MW-1B was eliminated for practical reasons and biennial sampling retained. Water level measurement is infeasible at COB MW-1B because of a lack of a sounding tube to prevent the water level sounder from getting stuck in the well.

### **4.3 Implementation Schedule for an Alternate Water Supply**

The preliminary design and implementation schedule for an alternate water supply was completed and reported to ADEQ in June 2017 (Clear Creek Associates and WestLand Resources, 2017). The results indicate that an alternate supply can be permitted, constructed, and commissioned in 48 months, if needed. CQB has acquired land south of the AWC wellfield as a



contingency in the event it would be needed for the wells and infrastructure of an alternate supply.

#### **4.4 Assessment of Mitigation Performance**

The mitigation action is meeting the mitigation action objective and is judged to be performing as expected based on the results of groundwater monitoring and the progress of contingency mitigation action planning. The contingency planning components of the Mitigation Plan have been implemented on schedule with the exception of the sentinel well and action level recommendations, which will be completed when adequate data are available as discussed above. Based on the currently available information, there is no need to modify the mitigation action at this time.

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## TABLE

**TABLE 1**  
**Groundwater Monitoring Schedule**

Well Name	ADWR 55 Registry Number	Well Use	Monitoring Purpose	Semiannual Sampling First Quarter	Annual Sampling Third Quarter	Biennial Sampling Third Quarter of Odd Numbered Years
ANDERSON 396	613396	PNDW	RM	WLO	WLO	✓
ANDERSON 458	221458	PDWS	DWS (Mit)		✓	
ASLD 435	616435	STOCK	RM	WLO	WLO	
AWC-02	616586	PWS	DWS (>2000)	✓	✓	
AWC-03	616585	PWS	DWS (>2000)	✓	✓	
AWC-04	616584	PWS	DWS (>2000)	✓	✓	
AWC-05	590620	PWS	DWS (>2000)	✓	✓	
BANKS 986	647986	PDWS	DWS (>2000)		✓	
BANKS 987	647987	PNDW	RM	WLO	WLO	
BARTON 919	644919	PNDW	RM	WLO	WLO	
BIMA	577927	PNDW	RM			✓
BMO-2008-1G	909474	MW	PE (Lateral)	✓	✓	
BMO-2008-3B	909147	MW	PE (Lateral)	✓	✓	
BMO-2008-4B	910096	IRR	PE (Below)	WLO	✓	
BMO-2008-5B <sup>1</sup>	909653	PDWS	PE (Lateral)	✓	✓	
BMO-2008-5M	909552	MW	PE (Lateral)	✓	✓	
BMO-2008-6B	909146	MW	PE (Lateral)	✓	✓	
BMO-2008-6M	909019	MW	PE (Lateral)	✓	✓	
BMO-2008-7M	908794	MW	PE (Below)	WLO	✓	
BMO-2008-8B	910097	MW	RM	WLO	WLO	✓
BMO-2008-8M	909711	MW	PE (Below)	WLO	✓	
BMO-2008-9M	909255	MW	PE (Below)	WLO	✓	
BMO-2008-10GL	909435	MW	RM	WLO	WLO	✓
BMO-2008-10GU	909272	MW	RM	WLO	WLO	✓
BMO-2008-11G	909434	MW	PE (Lateral)	✓	✓	
BMO-2008-13B	909551	MW	RM	WLO	WLO	✓
BMO-2008-13M	909760	MW	RM	WLO	WLO	✓
BMO-2010-1M	219957	MW	PE (Below)	WLO	✓	
BMO-2010-2M	219958	MW	RM	WLO	WLO	✓
BMO-2010-3B	219970	MW	PE (Lateral)	✓	✓	
BMO-2010-3M	219969	MW	PE (Lateral)	✓	✓	
BMO-2012-1M	221388	MW	PE (Lateral)	✓	✓	
BMO-2014-1BL	917393	MW	PE (Lateral)	✓	✓	
BMO-2014-1BU	917394	MW	PE (Lateral)	✓	✓	
BMO-2014-2BL	917452	MW	PE (Lateral)	✓	✓	
BMO-2014-2BU	917453	MW	PE (Lateral)	✓	✓	
BMO-2014-3BL	917527	MW	PE (Lateral)	✓	✓	
BMO-2014-3BU	917494	MW	PE (Lateral)	✓	✓	
BMO-2014-4B	917620	MW	PE (Lateral)	✓	✓	
BMO-2014-4BL	917619	MW	PE (Lateral)	✓	✓	
BMO-2015-1B	917622	MW	PE (Lateral)	✓	✓	
BMO-2015-1BL	917621	MW	PE (Lateral)	✓	✓	
BMO-2015-2B	917827	MW	PE (Lateral)	✓	✓	
BMO-2015-2BL	917828	MW	PE (Lateral)	✓	✓	
BOOTH	914931	PDWS	DWS (<2000)	✓	✓	
BURKE	212268	PDWS	DWS (>2000)		✓	
CHAMBERS	629807	PDWS	DWS (>2000)		✓	
COB MW-1B	225906	MW	RM			✓
COB MW-2	903984	MW	PE (Lateral)	✓	✓	
COB MW-3	906823	MW	RM	WLO	✓	
COB WL	593116	MW	PE (Lateral)	✓	✓	

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Well Name	ADWR 55 Registry Number	Well Use	Monitoring Purpose	Semiannual Sampling First Quarter	Annual Sampling Third Quarter	Biennial Sampling Third Quarter of Odd Numbered Years
COOPER	623564	PDWS	DWS (<2000)	✓	✓	
COOPER C	637069	MW	RM		✓	
DODSON	644927	PDWS	DWS (<2000)	✓	✓	
DOUGLASS 791	592791	PNDW	RM		WLO	
DOUGLASS 792	592792	PNDW	RM		WLO	
EAST	599796	PDWS	DWS (>2000)		✓	
ECHAVE	219449	PDWS	DWS (>2000)	WLO	✓	
EPPELE 641	805641	PDWS	DWS (>2000)		✓	
FRANCO 383	221383	PDWS	DWS (Mit)		✓	
FULTZ	212447	PDWS	RM		✓	
GARNER 557	558557	PNDW	RM	WLO	WLO	
GARNER 635	587635	PDWS	DWS (Mit)		✓	
GOAR RANCH	610695	PNDW	RM	WLO	WLO	
HOBAN	805290	MW	RM	WLO	✓	
HOWARD NR	NR	PNDW	RM	WLO	WLO	✓
HOWARD 312	221312	PDWS	DWS (Mit)		✓	
KEEFER	209744	PDWS	DWS (<2000)	✓	✓	
LADD 251	520251	PNDW	RM	WLO	WLO	
LADD 538	505538	PNDW	RM	WLO	WLO	
LADD 635	224635	STOCK	RM	WLO	WLO	
LADD 837	519837	PNDW	RM	WLO	WLO	
LADD 977	642977	STOCK	RM	WLO	WLO	
MARCELL	NR	PNDW	RM			✓
MCCONNELL 265	539265	PNDW	RM	WLO	WLO	✓
MCCONNELL 459	221459	PDWS	DWS (Mit)		✓	
METZLER	35-71891	PNDW	RM	WLO	WLO	
MOORE	538847	PDWS	DWS (>2000)		✓	
NESS	509127	PDWS	DWS (>2000)		✓	
NOTEMAN	212483	PNDW	RM			✓
NSD-02	527587	MW	RM	WLO	WLO	
NSD-03	527586	MW	RM	WLO	WLO	
NWC-02	562944	PWS	DWS (>2000)	✓	✓	
NWC-03 CAP	627684	PNDW	RM	WLO	WLO	
NWC-04	551849	PWS	DWS (<2000)		Quarterly	
NWC-06	575700	PWS	DWS (>2000)	✓	✓	
OLMOS	224745	PDWS	DWS	WLO	✓	
OSBORN	643436	PDWS	DWS (>2000)		✓	
PALMER	578819	PDWS	DWS (>2000)		✓	
PANAGAKOS	35-76413	PDWS	PE (Lateral)	✓	✓	
PARRA	576415	PNDW	RM			✓
PIONKE 395	613395	PNDW	RM	WLO	WLO	✓
PIONKE 517	221517	PDWS	DWS (Mit)		✓	
POOL	509518	PDWS	DWS (>2000)		✓	
POWER 639	222639	PDWS	DWS (<2000)	✓	✓	
RAMIREZ	216425	PDWS	DWS (>2000)	WLO	✓	
RAY	803772	PDWS	DWS (>2000)		✓	
ROGERS 596	573596	PNDW	RM	WLO	WLO	
ROGERS 803	641803	PDWS	DWS (<2000)	✓	✓	
ROGERS E	216018	PDWS	DWS (<2000)	✓	✓	
RUIZ	531770	PDWS	DWS (<2000)	✓	✓	
SCHWARTZ	210865	PDWS	DWS (<2000)	✓	✓	

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Well Name	ADWR 55 Registry Number	Well Use	Monitoring Purpose	Semiannual Sampling First Quarter	Annual Sampling Third Quarter	Biennial Sampling Third Quarter of Odd Numbered Years
STEPHENS	808560	PNDW	RM	WLO	WLO	
SWAN	810034	PDWS	DWS (>2000)		✓	
THOMPSON 151	612151	PNDW	RM	WLO	WLO	
THOMPSON 341	218341	PDWS	DWS (>2000)		✓	
TM-02A	522574	MW	RM	WLO	WLO	✓
TM-06 MILLER	522695	MW	RM	WLO	WLO	✓
TM-07	522576	MW	PE (Lateral)	✓	✓	
TM-10 USBP	522696	MW	RM	✓	✓	
TM-15 MILLER	522699	MW	RM		✓	
TM-16	522578	MW	RM	WLO	WLO	✓
TM-19A	522580	MW	RM		✓	
TM-42	562554	MW	RM	WLO	WLO	✓
TVI 236	802236	IRR	PE (Lateral)	✓	✓	
TVI 713	567713	PNDW	RM	WLO	WLO	
TVI 875	568875	IRR	RM		✓	
WEED	544535	PDWS	DWS (<2000)	✓	✓	
WEISKOPF 802	641802	PNDW	RM	WLO	WLO	✓
WEISKOPF 897	220897	PDWS	DWS (Mit)		✓	
ZANDER	205126	PDWS	DWS	WLO	✓	

Notes:

1 In September 2018 BMO-2008-5B was verified as not being used for drinking water supply based on discussion with the property owner.

35-71891 ADWR Arizona Department of Water Resources  
NR No Record

Well Use

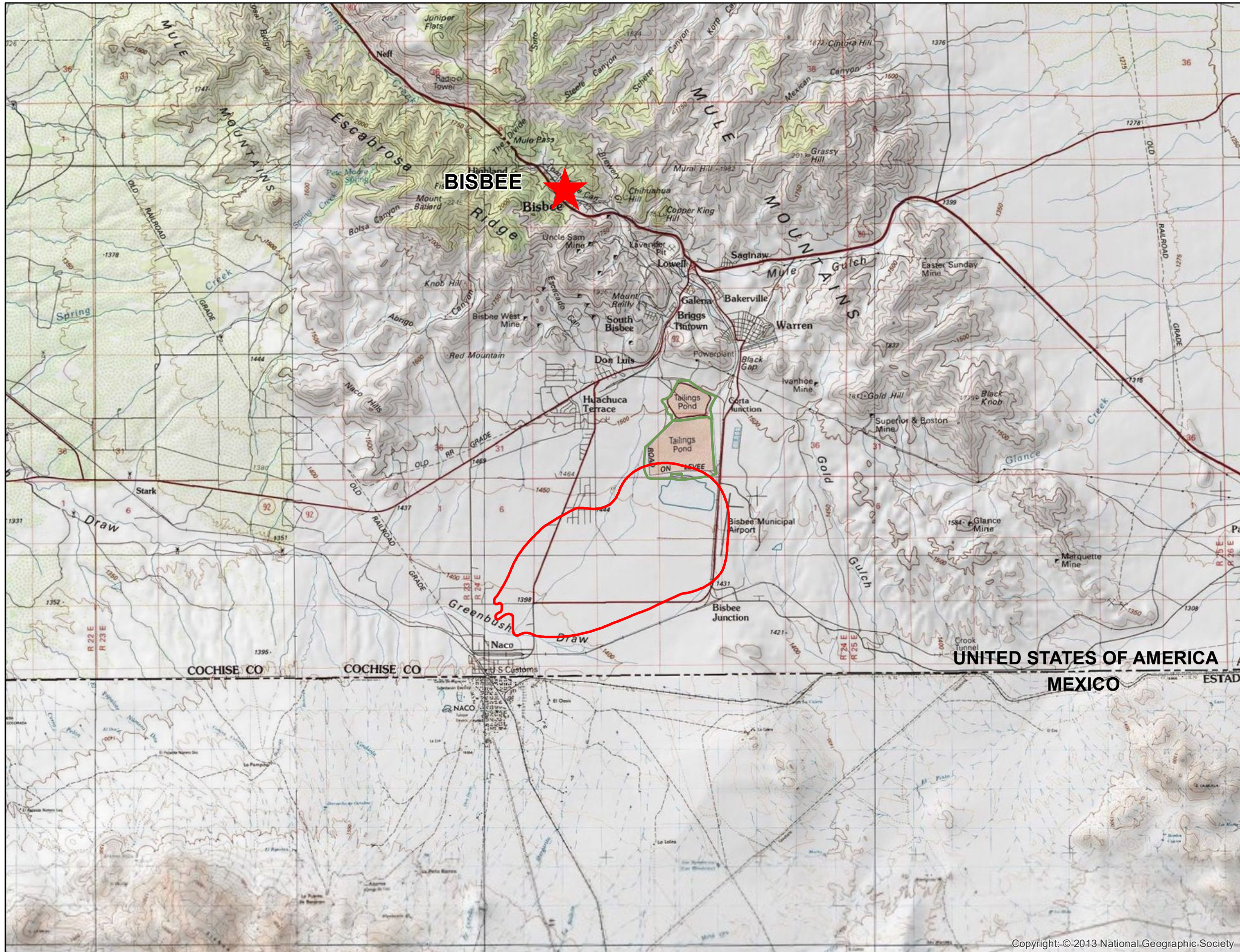
PWS Public Water Supply  
PDWS Private Drinking Water Supply  
PNDW Private Non-Drinking Water  
IRR Irrigation  
MW Monitoring Well  
STOCK Stock-Wildlife Watering

Monitoring Purpose



DWS (<2000) Drinking Water Supply, Greater than 2000 feet from the plume  
DWS (>2000) Drinking Water Supply, Less than 2000 feet from the plume  
DWS (Mit) Drinking Water Supply, Mitigation well installed below plume  
PE (Lateral) Plume Edge Monitoring, Lateral to plume  
PE (Below) Plume Edge Monitoring, Below plume  
RM Regional Monitoring  
WLO Water Level Only

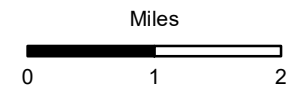


## FIGURES





**Legend**

-  CTSA Facility
-  Estimated 250 mg/L Sulfate Concentration Contour for Third Quarter 2018

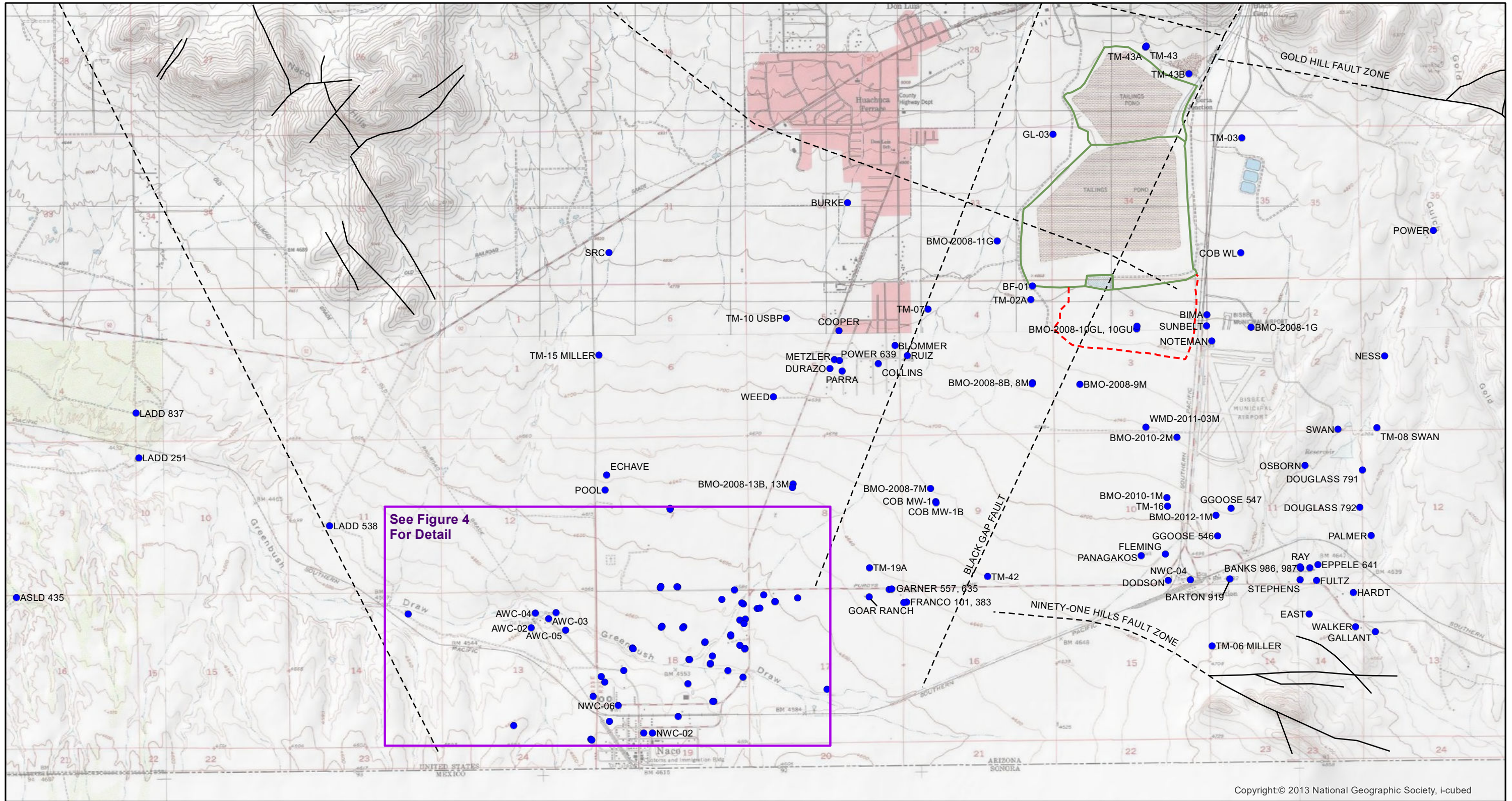


**Notes:**  
Projection: UTM Zone 12N NAD83

Date	3/27/19	File ID	055038-527
			

**FIGURE 1**  
**PROJECT LOCATION MAP**

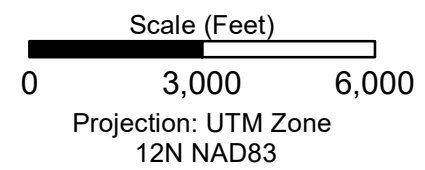
Copyright: © 2013 National Geographic Society





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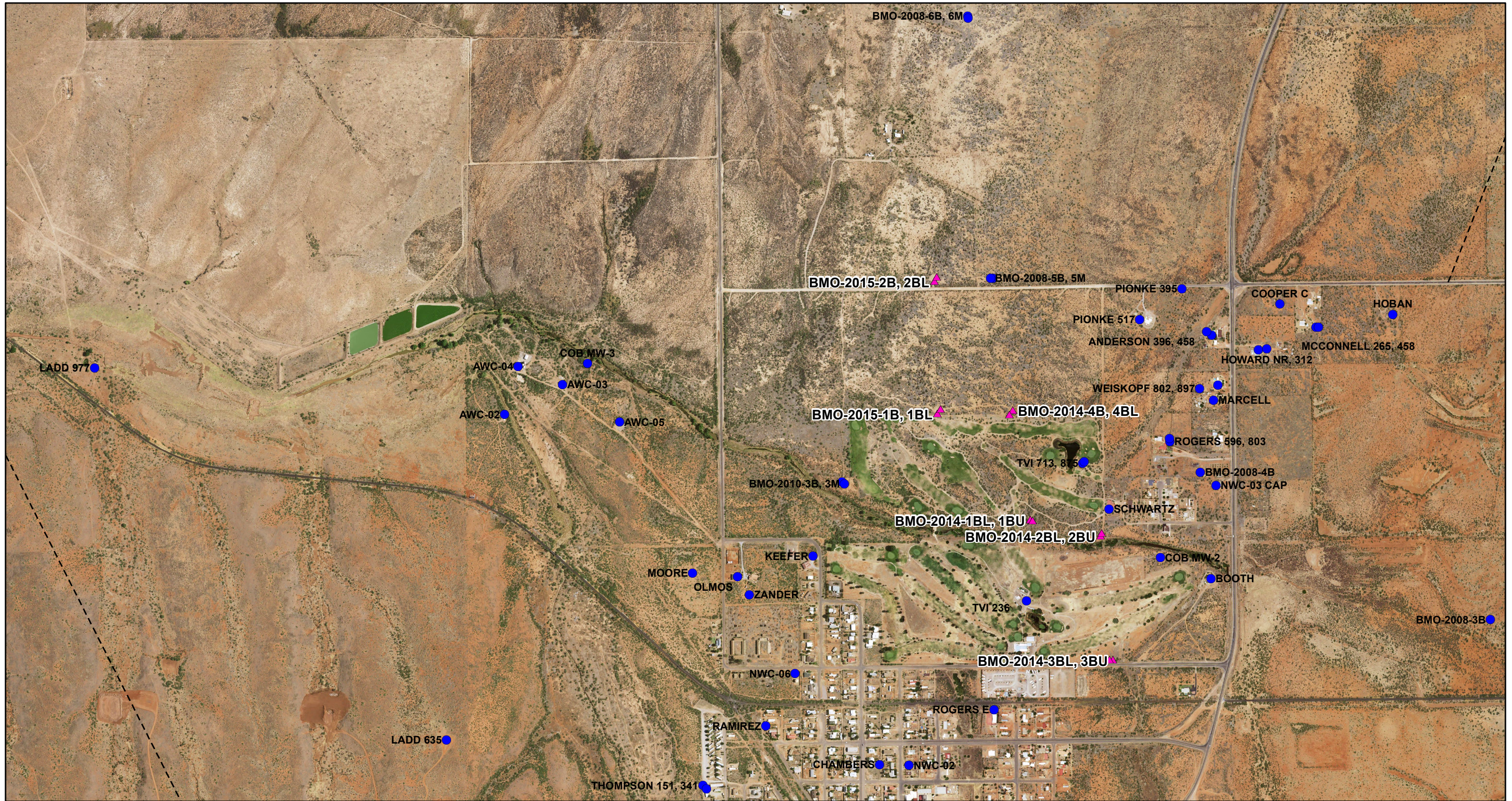
**Legend**

- Monitoring Location
- ▭ Former Evaporation Ponds
- ▭ CTSA Facility
- Fault (dashed where inferred)



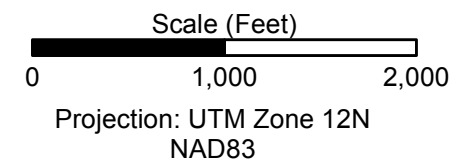
Date	3/27/19	File ID	055038-357
			

**FIGURE 2**  
GROUNDWATER  
MONITORING LOCATIONS



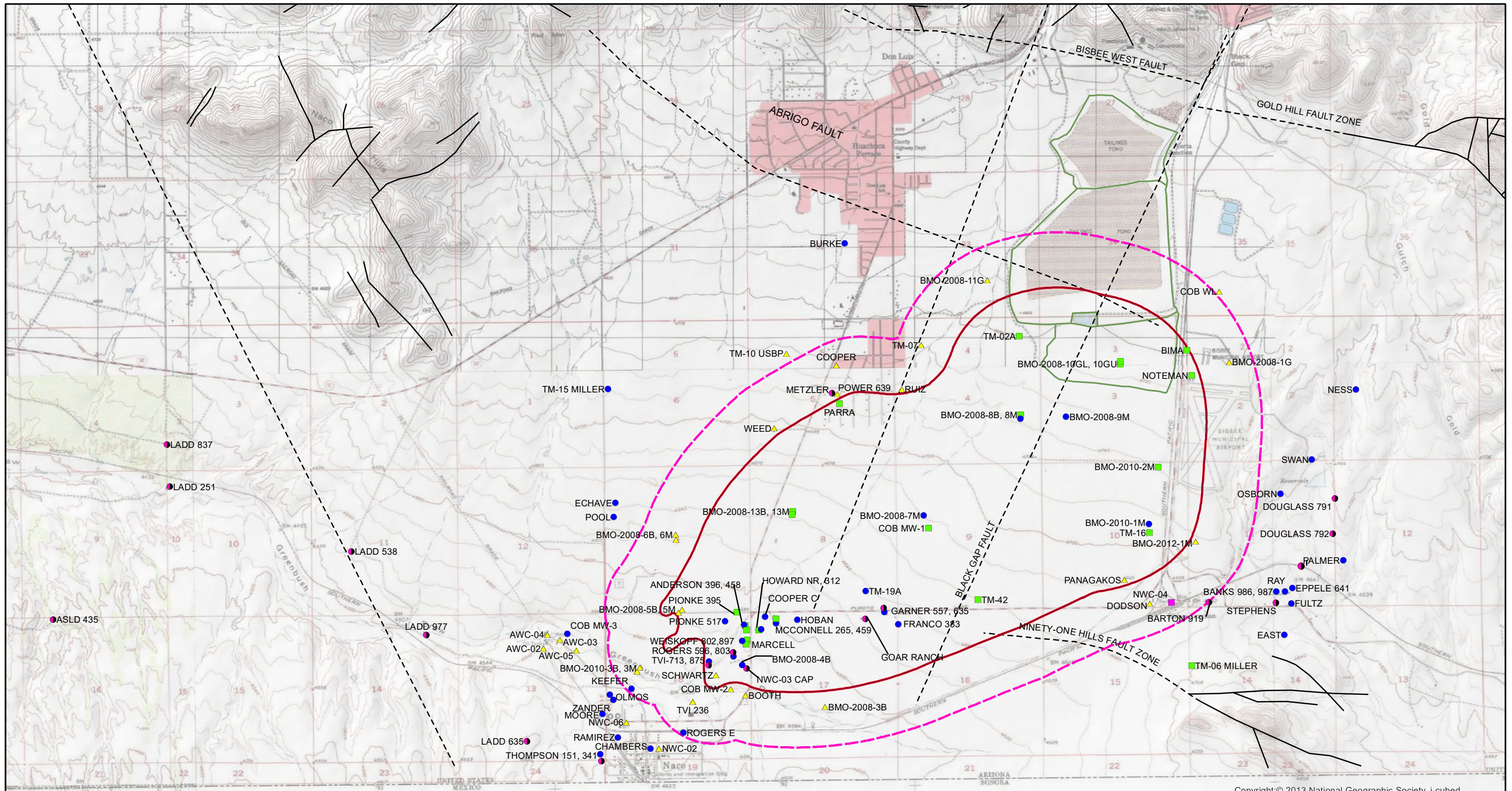
**Legend**

- ▲ Expanded Goundwater Monitoring Program Well
- Existing Well Location



Date	1/26/18	File ID	055038-461

FIGURE 3  
NACO AREA  
WELL SITES



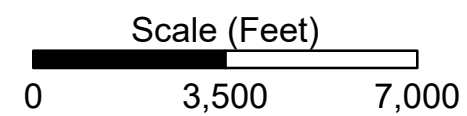
Copyright:© 2013 National Geographic Society, i-cubed

**Legend**

**Monitoring Frequency**

- Quarterly Sampling (NWC-04 Only)
- ▲ Semiannual Sampling (First and Third Quarter)
- Annual Sampling (Third Quarter)
- Biennial Sampling (Third Quarter)
- Water Level Only (Semiannual, Annual, or Biennial)

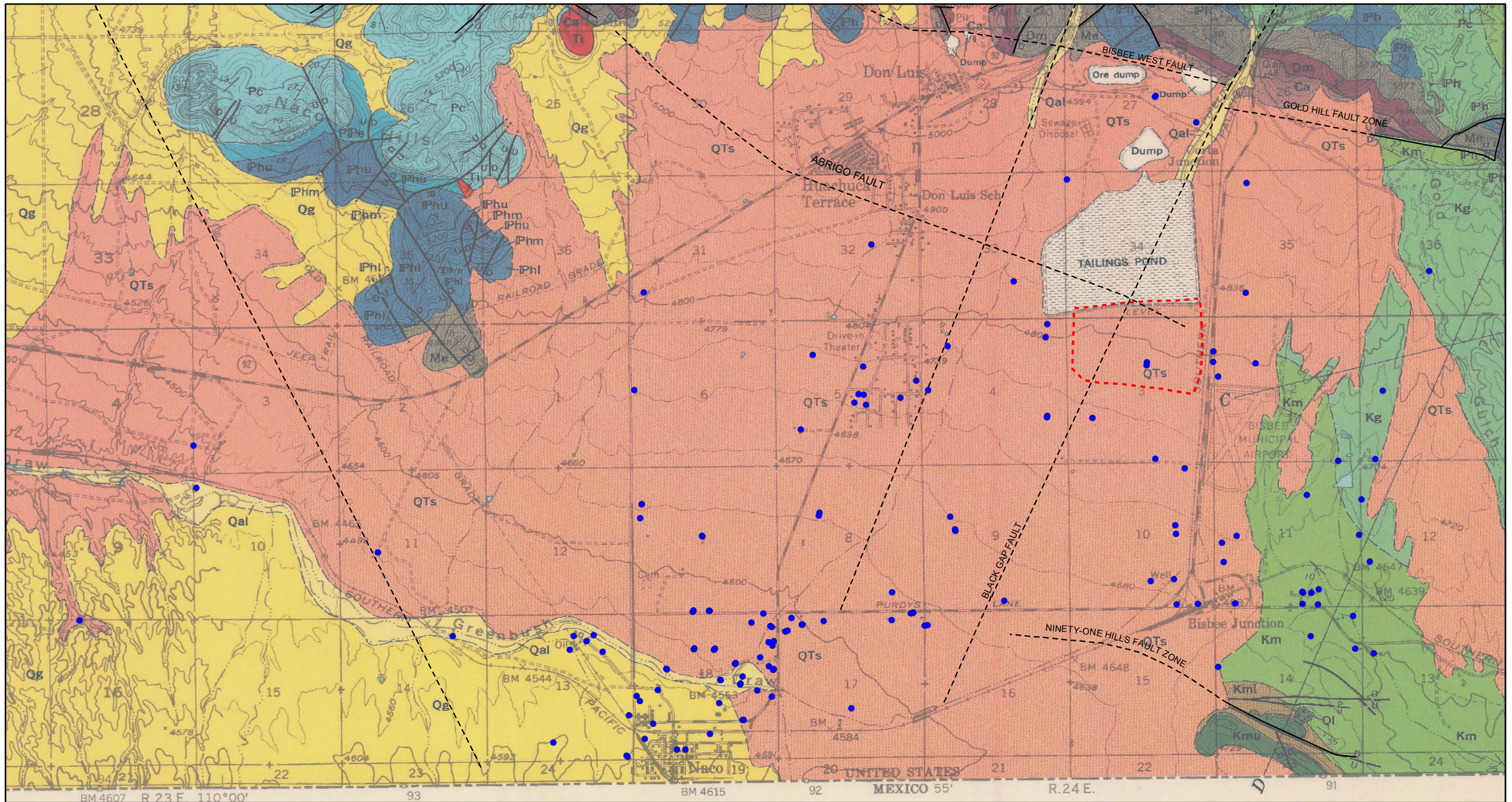
- 2000 Feet From Q3 2018 Estimated 250 mg/L Sulfate Contour
- - - Faults (dashed where inferred)
- CTSA Facility
- 3Q18 250 mg/L SO4 Contour



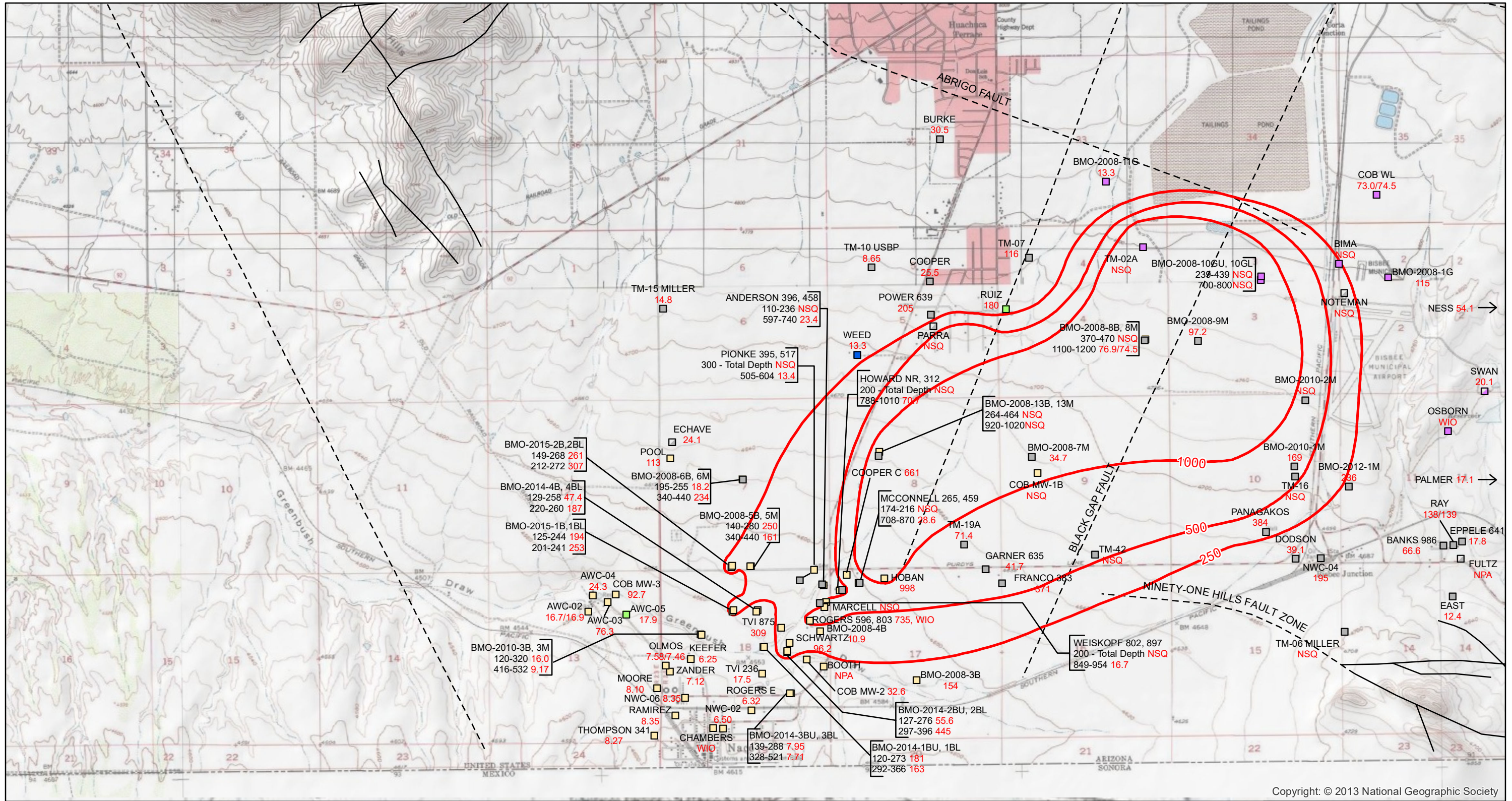
Projection: UTM Zone 12N NAD83

Date	1/3/19	File ID	055038-528

**FIGURE 4**  
LONG TERM PLUME  
MONITORING LOCATIONS



<b>Legend</b> <ul style="list-style-type: none"> <li><span style="color: blue;">●</span> Monitoring Location</li> <li>— Fault (dashed where inferred)</li> <li><span style="border: 1px dashed red; display: inline-block; width: 10px; height: 10px;"></span> Former Evaporation Ponds</li> </ul>	<b>Basin Fill</b> <ul style="list-style-type: none"> <li><span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Qal - Quaternary Alluvium</li> <li><span style="background-color: lightyellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Qg - Quaternary Gravel</li> <li><span style="background-color: lightcoral; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> QTs - Quaternary Tertiary sediment</li> <li><span style="background-color: orange; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Ti - Tertiary Intrusive</li> </ul>	<b>Bisbee Group</b> <ul style="list-style-type: none"> <li><span style="background-color: #c8e6c9; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Kc - Cintura Formation (not shown)</li> <li><span style="background-color: #e0e0e0; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Kmu - Upper Mural Limestone</li> <li><span style="background-color: #bdbdbd; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Kml - Lower Mural Limestone</li> <li><span style="background-color: #a5d6a7; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Km - Morita Formation</li> <li><span style="background-color: #81c784; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Kg - Glance Conglomerate</li> </ul>	<b>Geologic Unit - Hayes and Landis (1964)</b> <ul style="list-style-type: none"> <li><span style="background-color: #a2c4c9; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Pc - Colina Limestone</li> <li><span style="background-color: #7db8c2; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> PPe - Earp Formation</li> <li><span style="background-color: #4db6ac; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Phu, Phm, Phl - Horquilla Limestone</li> <li><span style="background-color: #c5e1a5; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Me - Escabrosa Limestone</li> <li><span style="background-color: #e0e0e0; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Dm - Martin Limestone</li> <li><span style="background-color: #bdbdbd; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Ca - Abrigo Limestone</li> </ul>	<b>Paleozoic Sedimentary Formations</b> <ul style="list-style-type: none"> <li><span style="background-color: #c5e1a5; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Me - Escabrosa Limestone</li> <li><span style="background-color: #e0e0e0; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Dm - Martin Limestone</li> <li><span style="background-color: #bdbdbd; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Ca - Abrigo Limestone</li> </ul>	<b>Scale (Feet)</b>  Projection: UTM Zone 12N NAD83 Geology reprinted from Hayes and Landis (1964) USGS Miscellaneous Geologic Investigations I-418	Date: 1/7/19 File ID: 055038-402B  <b>CLEAR CREEK ASSOCIATES</b>
	<b>See Figures 2 and 3 for Monitoring Location Names</b>					<b>FIGURE 5 GEOLOGIC MAP WITH MONITORING LOCATIONS</b>



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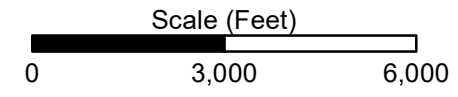
**Legend**

- NWC-02 Well ID
- 6.50 SO4 Concentration (mg/L)
- Duplicate results separated by "/"
- SO4 Concentration Contour
- Fault (dashed where inferred)
- Co-located Wells
  - Well ID
  - Screen (ft bls): Sulfate Levels (mg/L)

**Screened Formation**

- Basin Fill
- Basin Fill and Undifferentiated Bisbee Group
- Undifferentiated Bisbee Group
- Undifferentiated Bisbee Group - Estimated
- Undifferentiated Bisbee Group and Glance Conglomerate
- Glance Conglomerate
- Glance Conglomerate - Estimated
- Undifferentiated Bisbee Group: Cintura, Mural Limestone, and Morita Formations

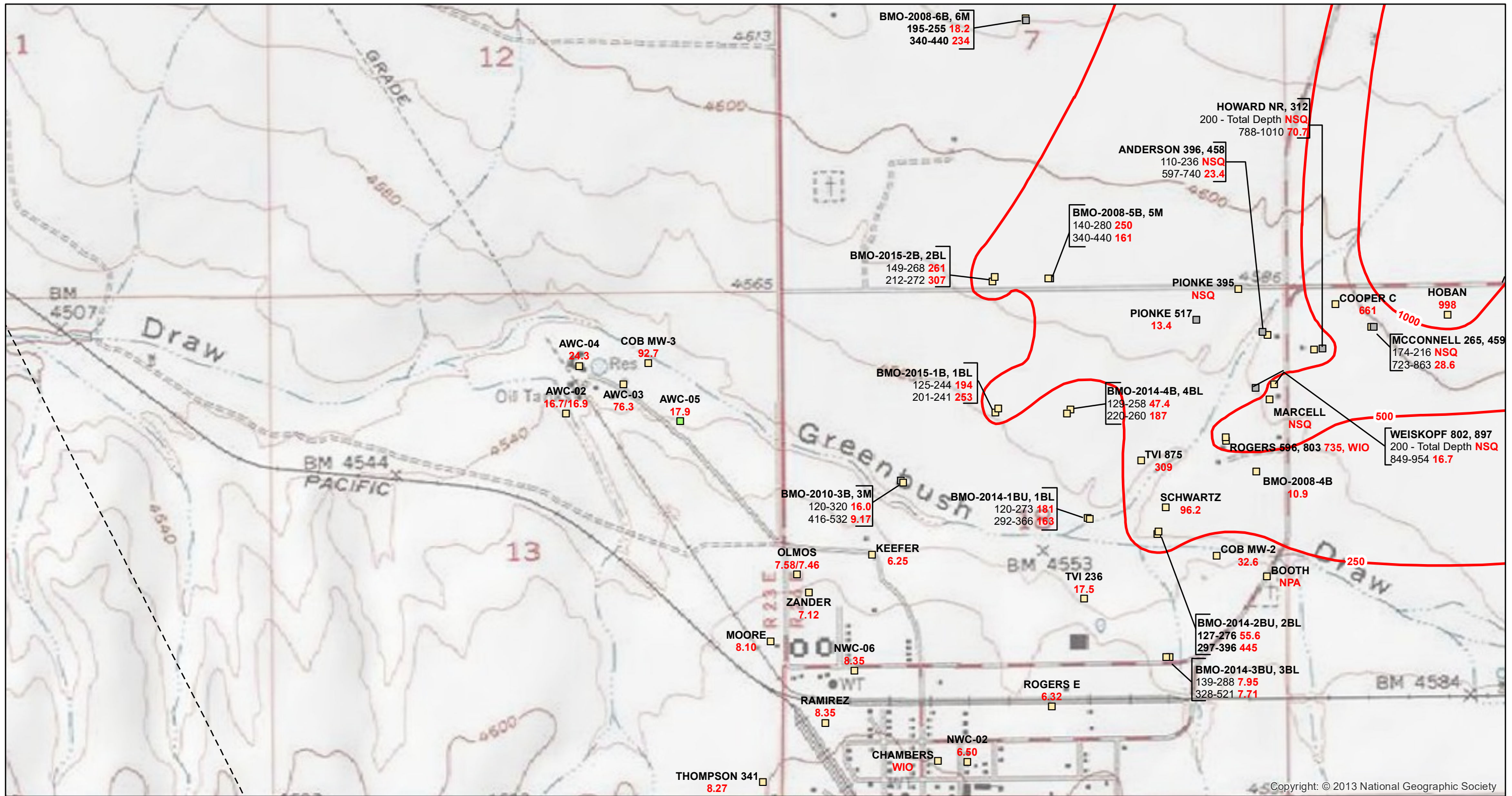
NPA = No Property Access  
 NSQ = Not Scheduled for Quarter  
 WIO = Well Inoperable  
 mg/L = milligrams per liter  
 ft bls = feet below land surface  
 Sulfate contours are based on represented and historical data.



Date	1/3/19	File ID	055038-518

Projection: UTM Zone 12N NAD83

**FIGURE 6**  
 SULFATE CONCENTRATIONS IN SITE-WIDE GROUNDWATER SAMPLES FOR THIRD QUARTER 2018



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**Legend**

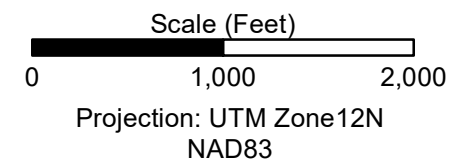
- NWC-02 Well ID
- 6.50 Sulfate Concentration (mg/L)
- Duplicate results separated by "/"
- Sulfate Concentration Contour
- - - Fault (Inferred)
- Co-located Wells
- Well ID
- Screen (ft bls): Sulfate Levels (mg/L)

**Screened Formation**

- Basin Fill
- Basin Fill and Undifferentiated Bisbee Group
- Undifferentiated Bisbee Group
- Undifferentiated Bisbee Group - Estimated
- Undifferentiated Bisbee Group and Gance Conglomerate
- Gance Conglomerate
- Gance Conglomerate - Estimated

Undifferentiated Bisbee Group: Cintura, Mural Limestone, and Morita Formations

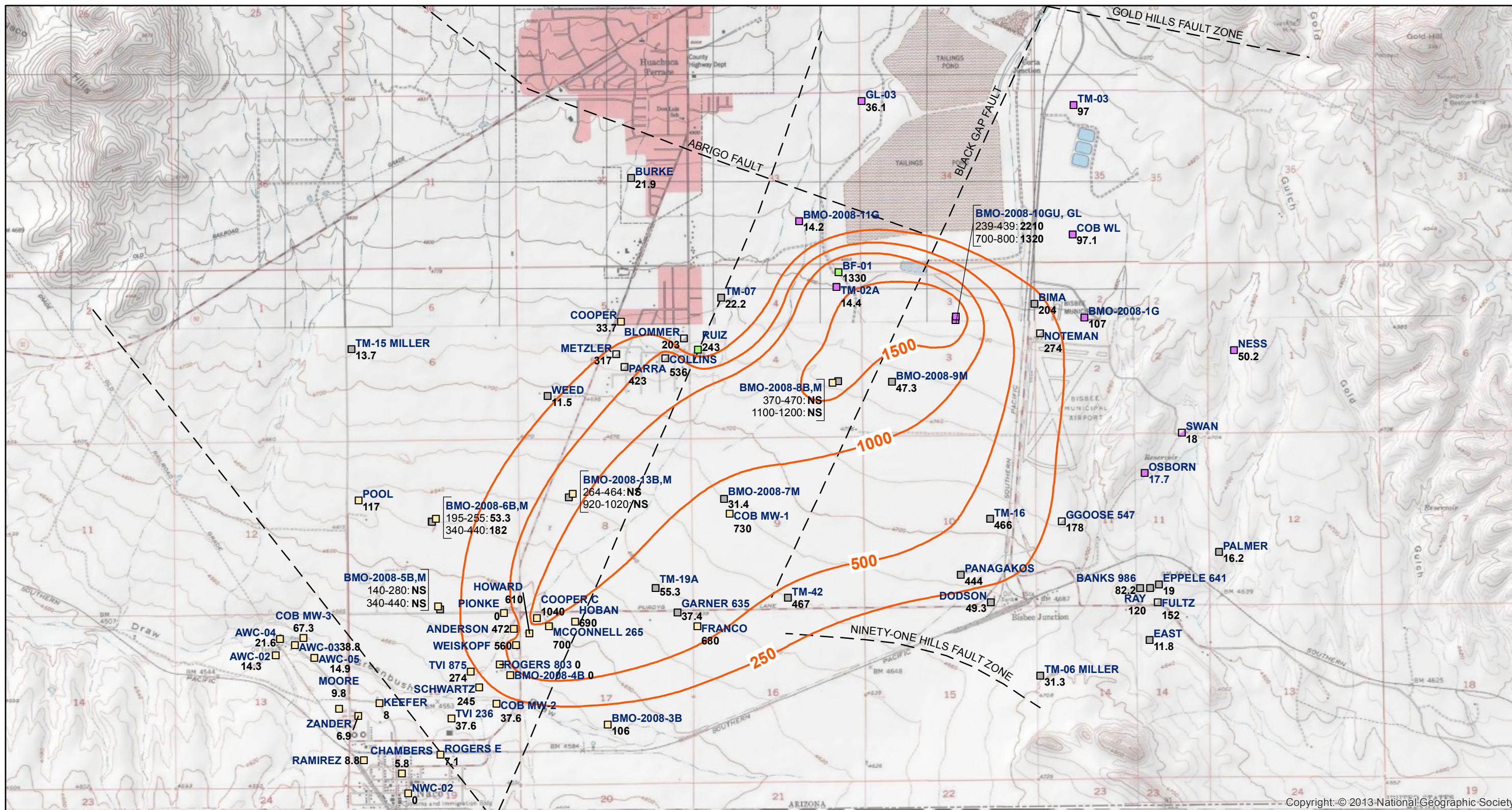
NPA = No Property Access  
 NSQ = Not Scheduled for Quarter  
 WIO = Well Inoperable  
 mg/L = milligrams per liter  
 ft bls = feet below land surface  
 Sulfate contours are based on represented and historical data.



Date	1/3/19	File ID	055038-521

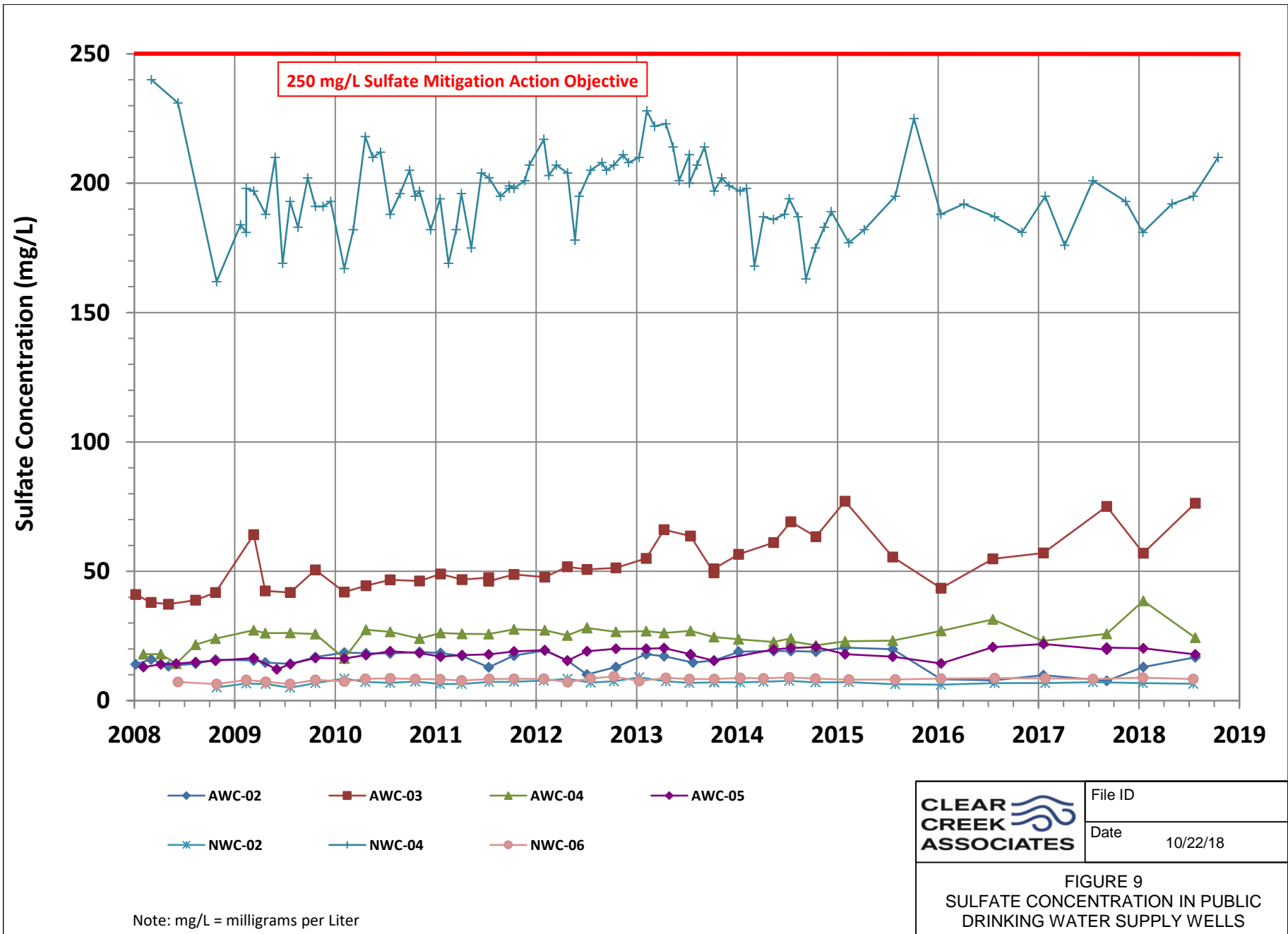
FIGURE 7  
 SULFATE CONCENTRATIONS AT THE WEST EDGE OF THE PLUME FOR THIRD QUARTER 2018





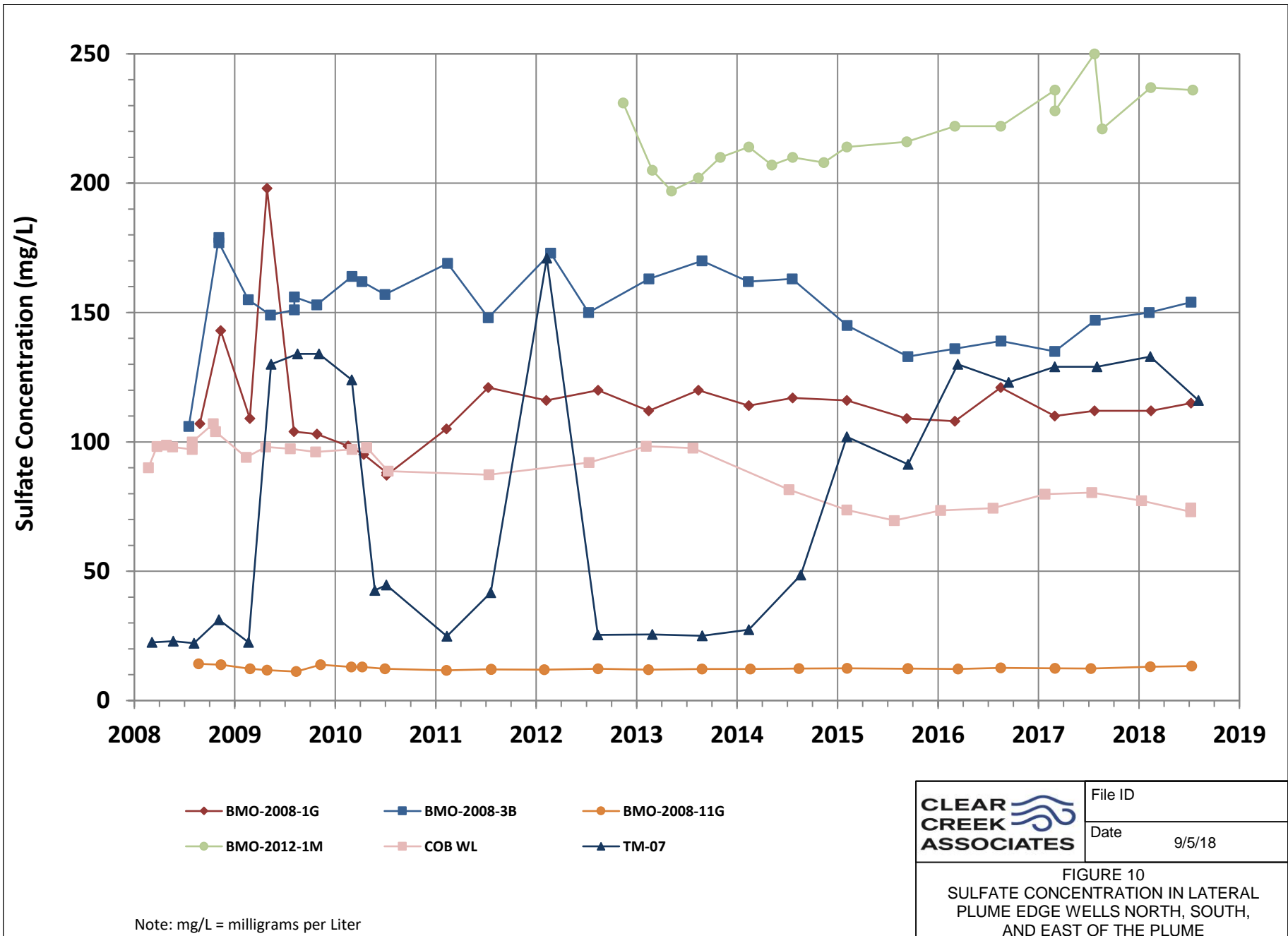
Copyright: © 2013 National Geographic Society

<b>Legend</b> <ul style="list-style-type: none"> <li><span style="color: blue;">□</span> <b>TM-19A</b> Well ID</li> <li><span style="color: blue;">55.3</span> Sulfate Concentration (mg/L)</li> <li><span style="color: orange;">—250—</span> Sulfate Isoline (mg/L)</li> <li><span style="color: black;">- - -</span> Faults (inferred)</li> <li>Co-located Wells           <ul style="list-style-type: none"> <li><span style="color: blue;">□</span> Well ID</li> <li><span style="color: blue;">[</span> Screen (ft bgs): SO4 Concentration (mg/L)</li> <li>(Duplicate results separated by "/")</li> </ul> </li> </ul>		<b>Screened Formation</b> <ul style="list-style-type: none"> <li><span style="color: yellow;">□</span> Basin Fill</li> <li><span style="color: green;">□</span> Basin Fill and Undifferentiated Bisbee Group</li> <li><span style="color: grey;">□</span> Undifferentiated Bisbee Group</li> <li><span style="color: grey;">□</span> Undifferentiated Bisbee Group - Estimated</li> <li><span style="color: purple;">□</span> Glance Conglomerate</li> <li><span style="color: purple;">□</span> Glance Conglomerate-Estimated</li> </ul> Undifferentiated Bisbee Group: Cintura, Mural Limestone, and Morita Formations		Scale  PROJECTION: UTM Zone 12N NAD83  Source: HydroGeoChem, 2009		Date 1/26/17   File ID 055038-085A  	
<b>FIGURE 8</b> <b>SULFATE CONCENTRATIONS</b> <b>IN SITE-WIDE</b> <b>GROUNDWATER SAMPLES</b> <b>FOR THIRD QUARTER 2008</b>							



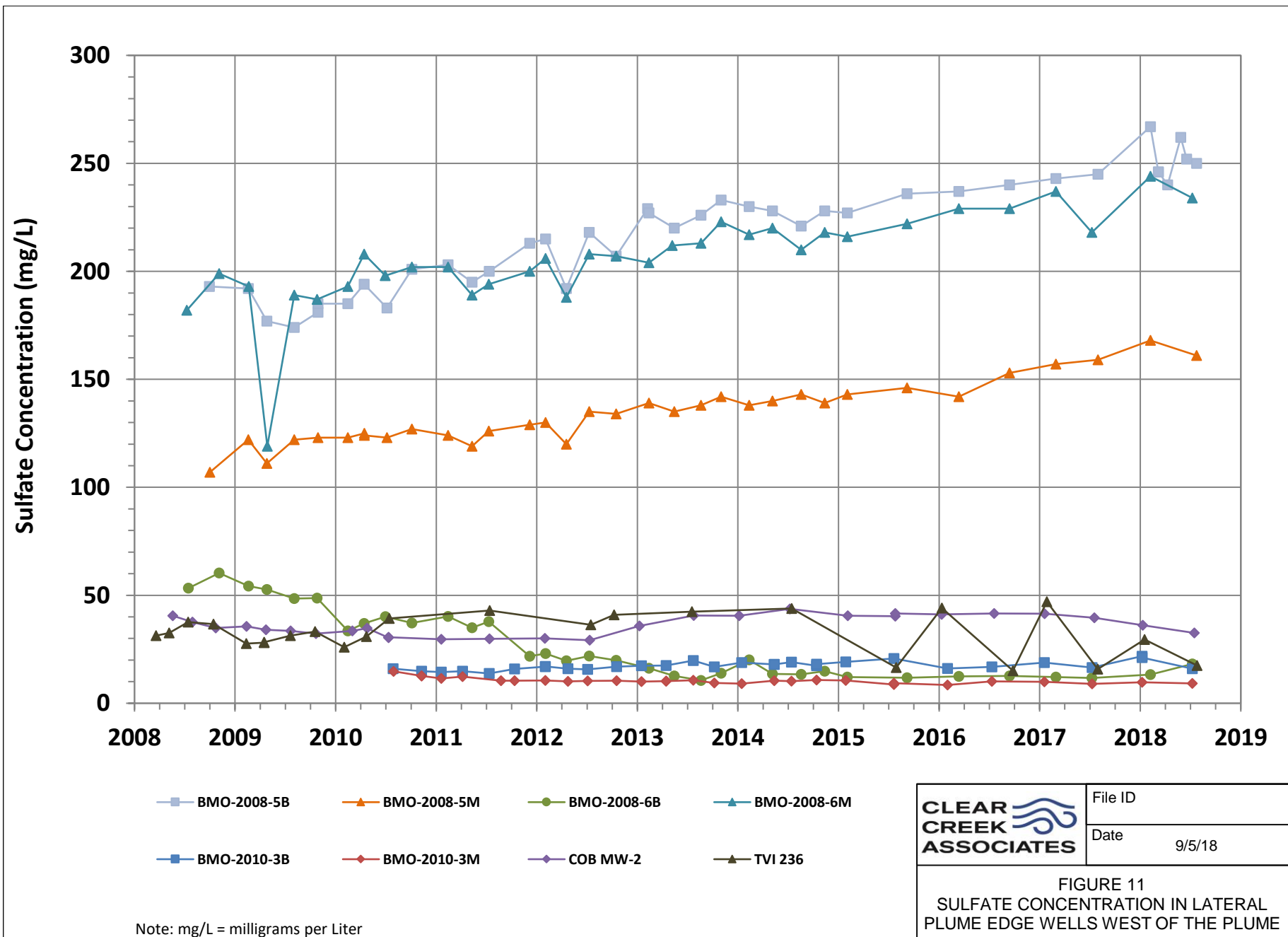
File ID	
Date	10/22/18

FIGURE 9  
SULFATE CONCENTRATION IN PUBLIC DRINKING WATER SUPPLY WELLS

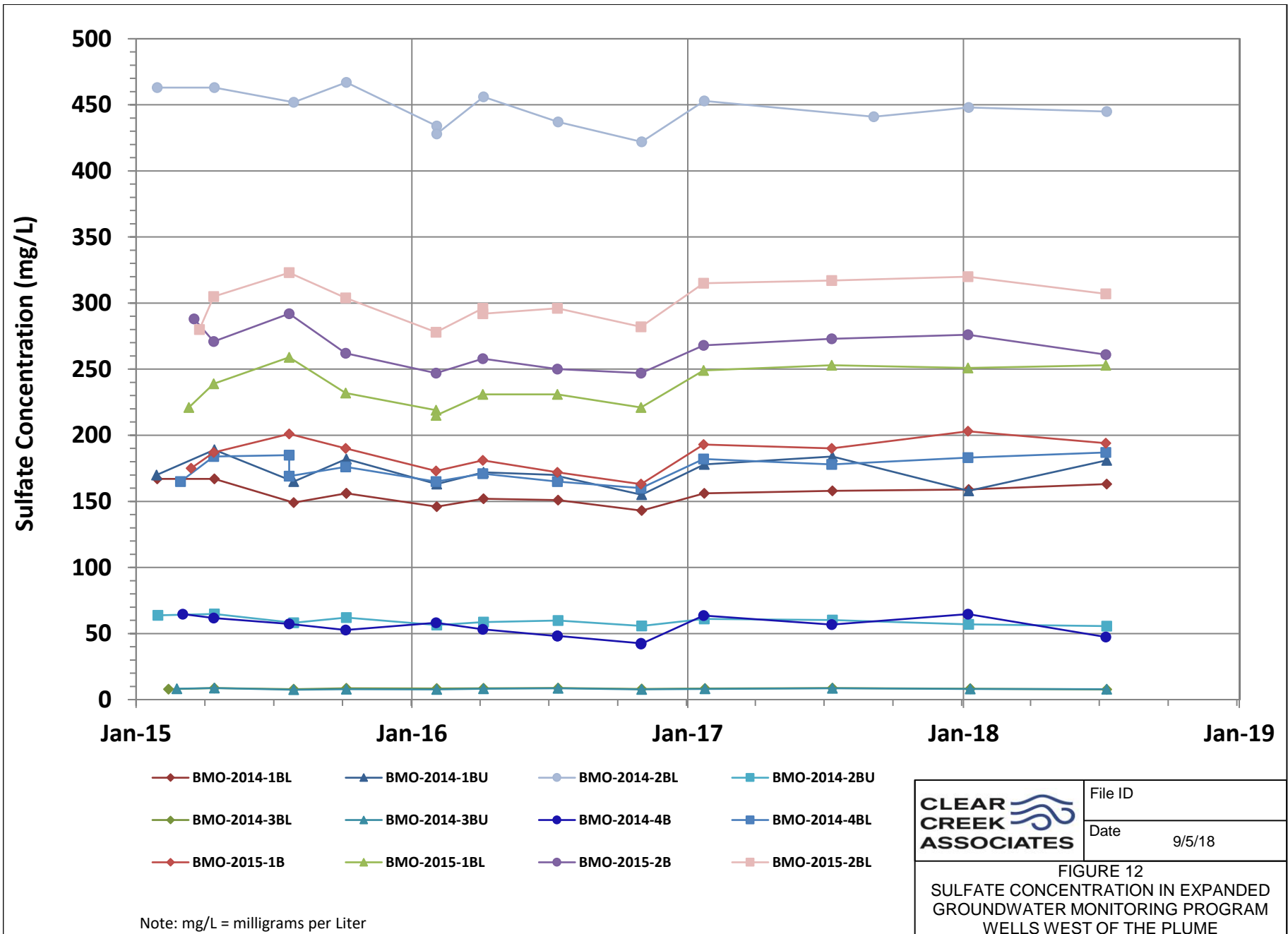


	File ID
	Date 9/5/18

FIGURE 10  
SULFATE CONCENTRATION IN LATERAL  
PLUME EDGE WELLS NORTH, SOUTH,  
AND EAST OF THE PLUME

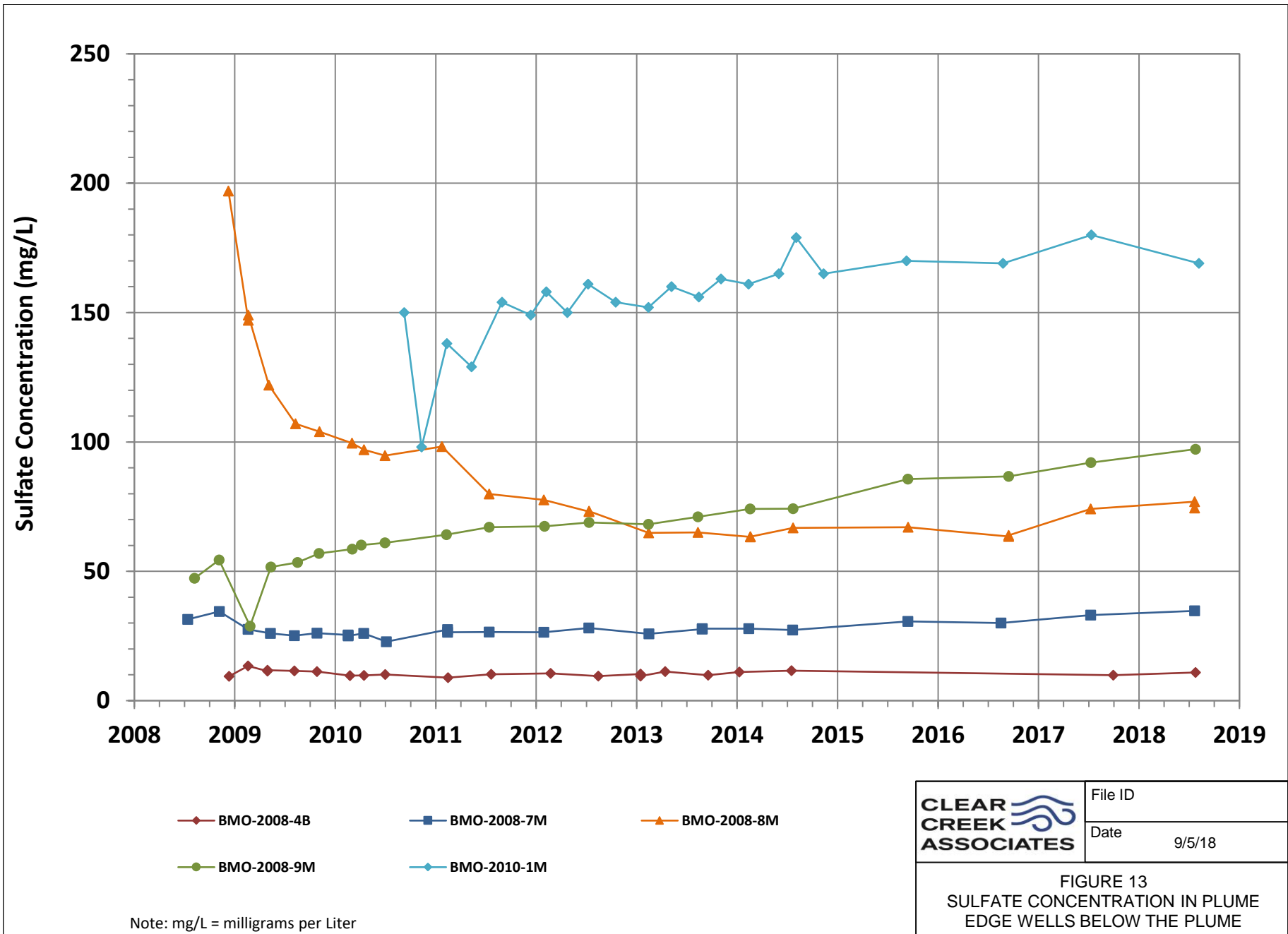


	File ID
	Date 9/5/18
<b>FIGURE 11</b> <b>SULFATE CONCENTRATION IN LATERAL PLUME EDGE WELLS WEST OF THE PLUME</b>	



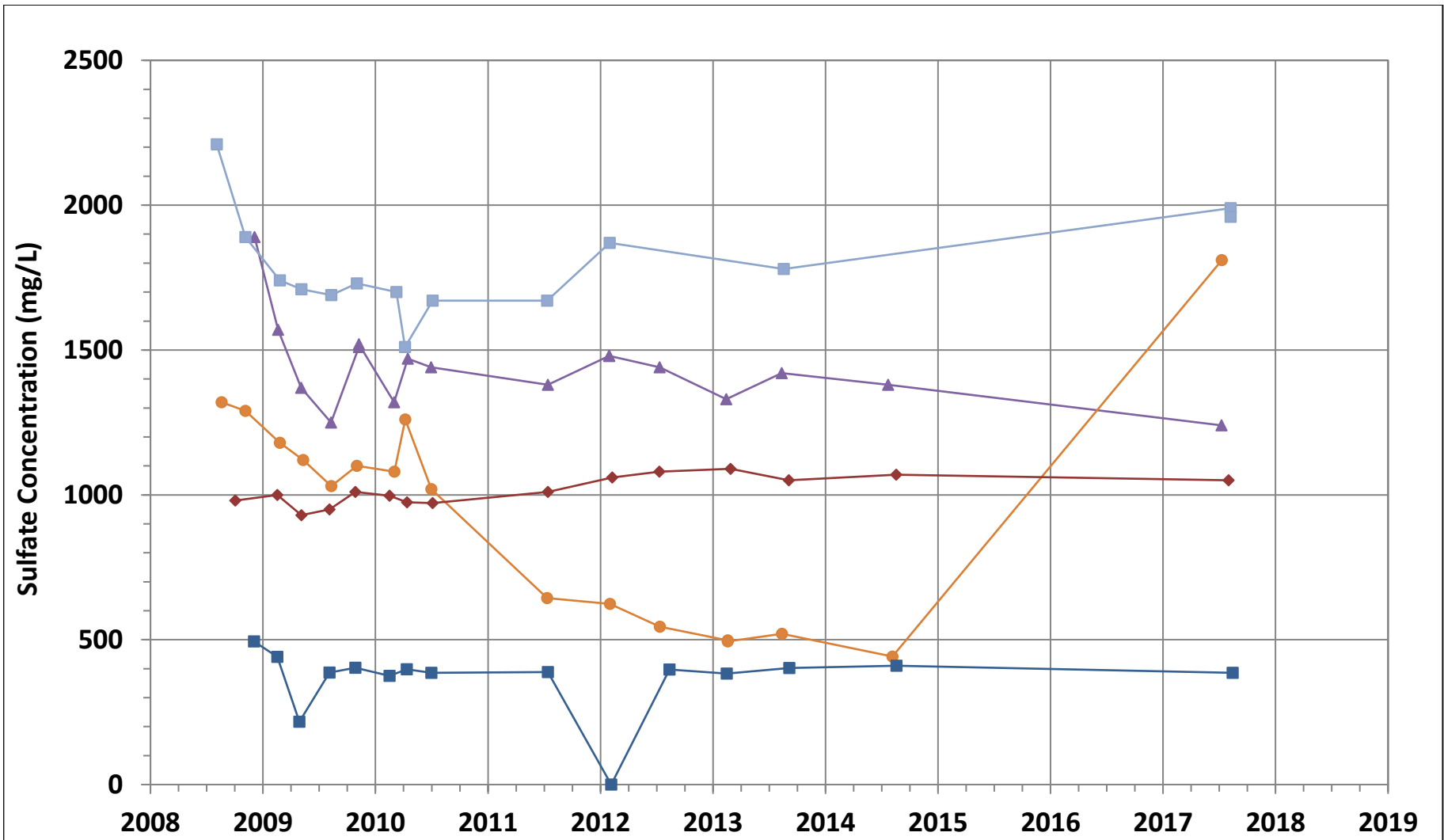
File ID	
Date	9/5/18

FIGURE 12  
 SULFATE CONCENTRATION IN EXPANDED  
 GROUNDWATER MONITORING PROGRAM  
 WELLS WEST OF THE PLUME




	File ID
	Date 9/5/18

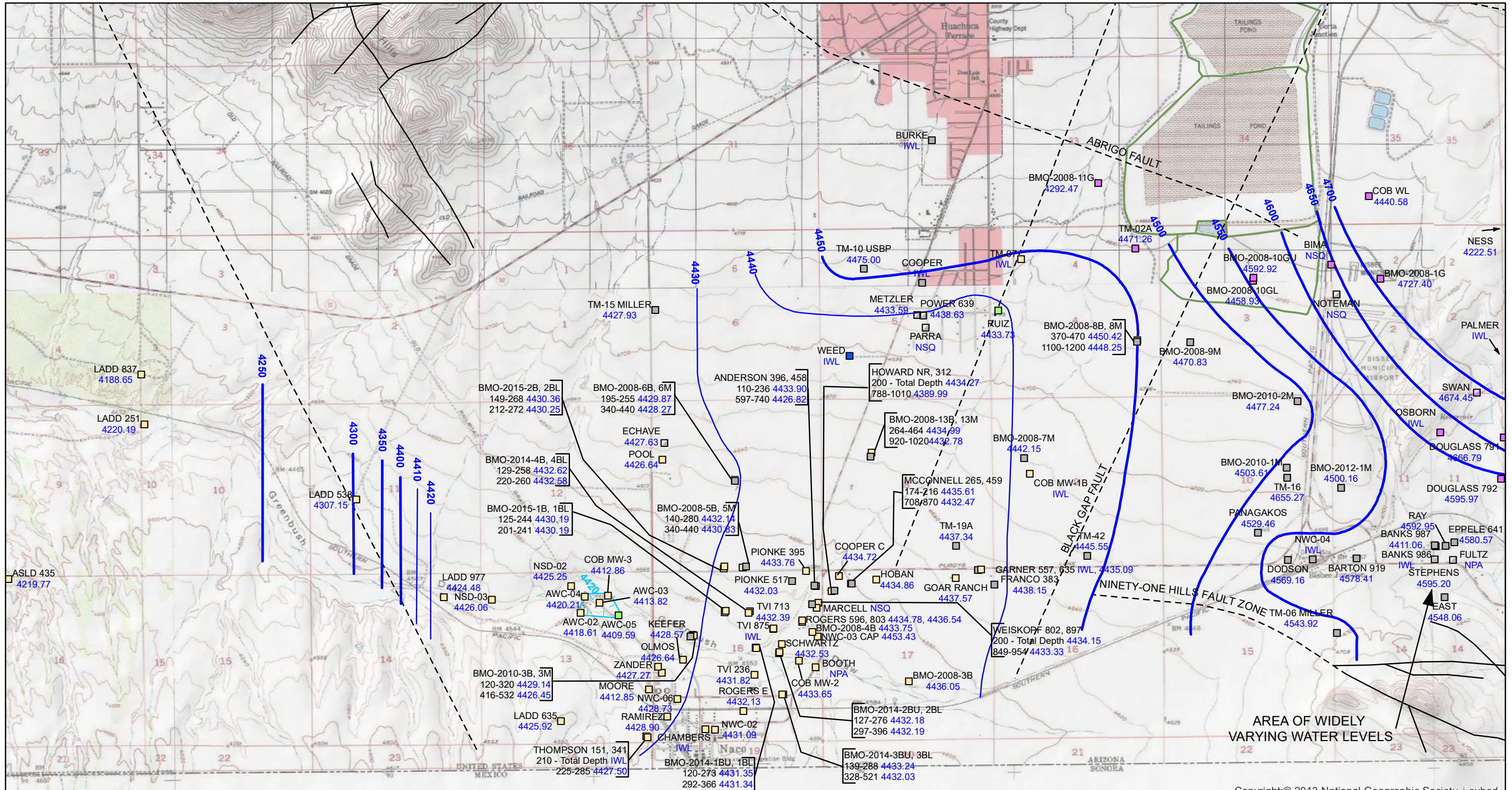
FIGURE 13  
SULFATE CONCENTRATION IN PLUME  
EDGE WELLS BELOW THE PLUME



Note: mg/L = milligrams per Liter

- ▲ BMO-2008-8B
- BMO-2008-10GL
- BMO-2008-10GU
- ◆ BMO-2008-13B
- BMO-2008-13M
- WEISKOPF 802

	File ID
	Date 9/5/18
<b>FIGURE 14</b> <b>SULFATE CONCENTRATION IN</b> <b>REGIONAL MONITOR WELLS IN THE PLUME</b>	

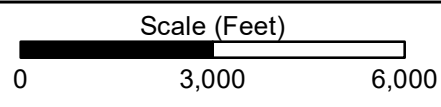


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**Legend**

- AWC-05 Well ID
- 4409.59 Groundwater Elevation (ft amsl)
- Groundwater Elevation Contours (10 ft)
- - - Groundwater Elevation Contours (50 ft) (dashed where inferred)
- ⌌ Groundwater Depression
- - - Faults (dashed where inferred)
- C TSA Facility
- Co-located Wells
  - Well ID
  - Screen (ft bls): Water Elevation (ft amsl)
- Screened Formation
  - Basin Fill
  - Basin Fill and Undifferentiated
  - Bisbee Group
  - Undifferentiated Bisbee Group
  - Undifferentiated Bisbee Group - Estimated
  - Undifferentiated Bisbee Group and Glance Conglomerate
  - Glance Conglomerate
  - Glance Conglomerate-Estimated

IWL = Inaccessible for Water Level  
 NPA = No Property Access  
 NSQ = Not Scheduled for Quarter  
 ft amsl = feet above mean sea level  
 ft bls = feet below land surface  
 NWC-03 CAP was not used for contouring.

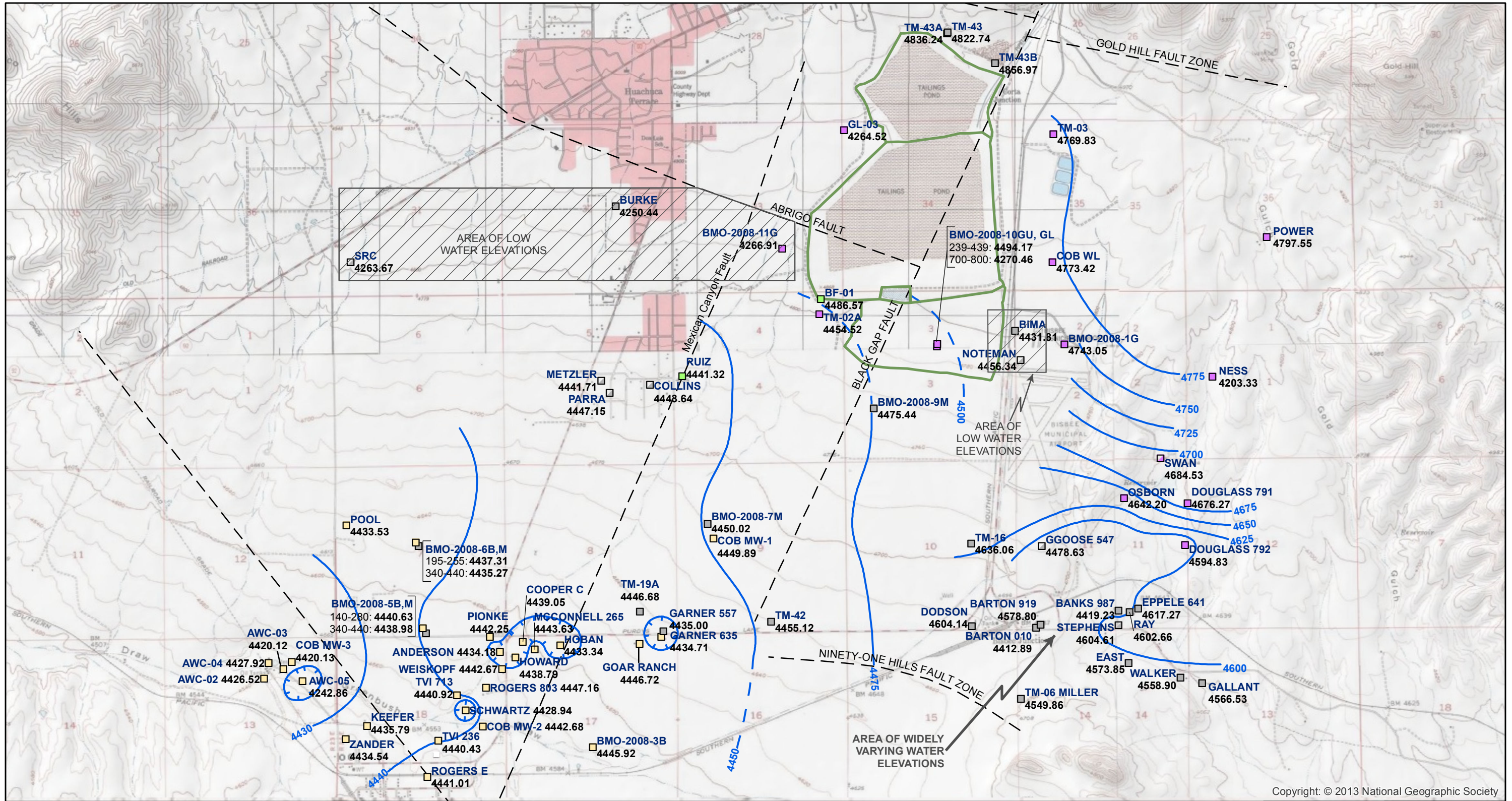


Date	9/27/18	File ID	055038-519

Projection: UTM Zone 12N NAD83

**FIGURE 15**  
 SITE-WIDE  
 GROUNDWATER ELEVATIONS  
 FOR THIRD QUARTER 2018



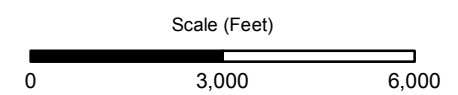


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- Legend**
- TVI-713 Well ID
  - 4440.92 Groundwater Elevation (ft amsl)
  - Co-located Wells
  - Well ID
  - Screen (ft bls): Water Elevation (ft amsl)
  - Groundwater Elevation Contours (dashed where inferred)
  - Groundwater Depression
  - - - Faults (inferred)
  - CTSA Facility

- Screened Formation**
- Basin Fill
  - Basin Fill and Undifferentiated Bisbee Group
  - Undifferentiated Bisbee Group
  - Undifferentiated Bisbee Group - Estimated
  - Glance Conglomerate
  - Glance Conglomerate-Estimated
  - Undifferentiated Bisbee Group: Cintura, Mural Limestone, and Morita Formations

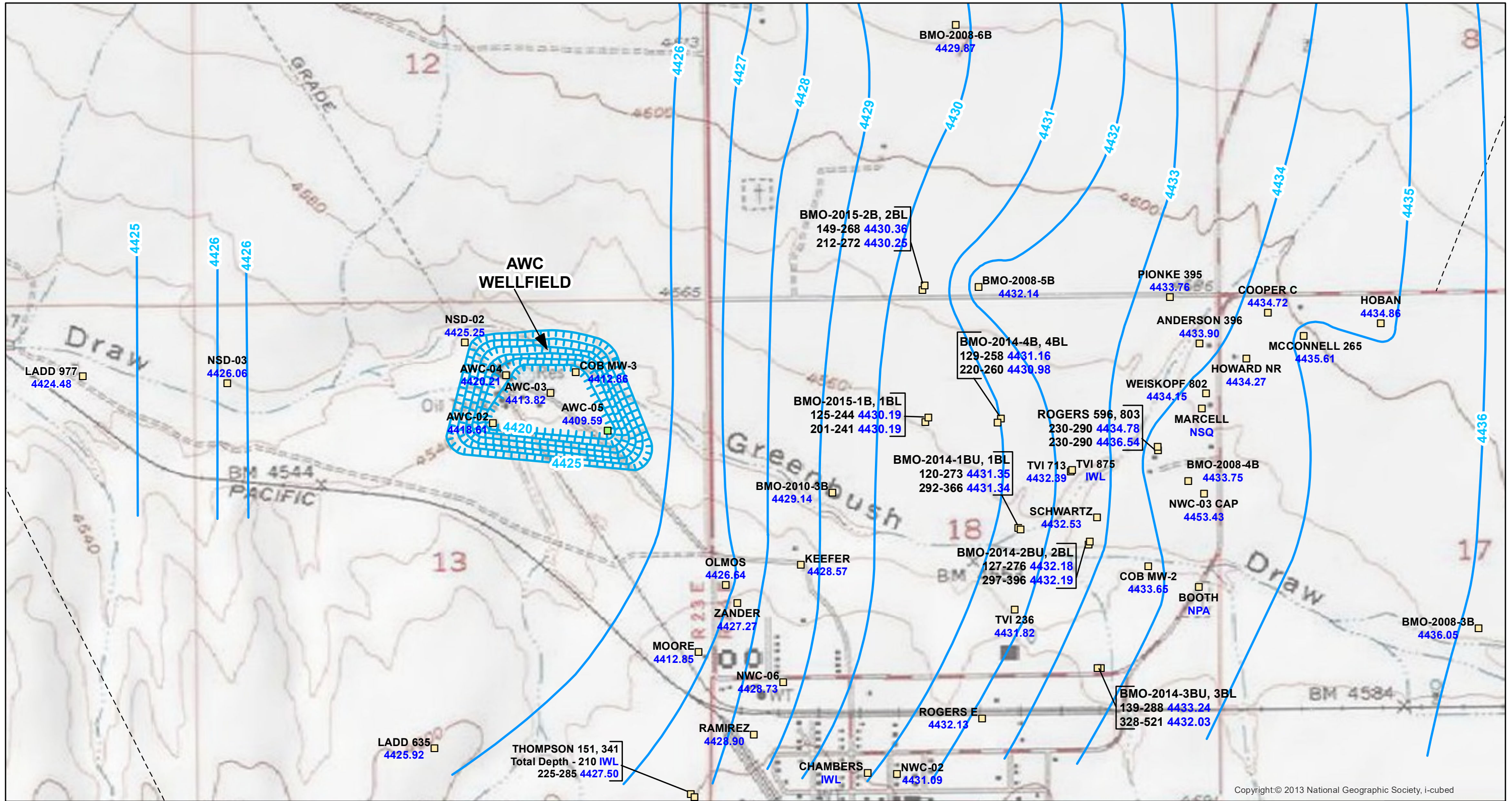
ft bls = feet below land surface  
ft amsl = feet above mean sea level



Projection: UTM Zone  
12N NAD83  
Source: HydroGeoChem, 2009

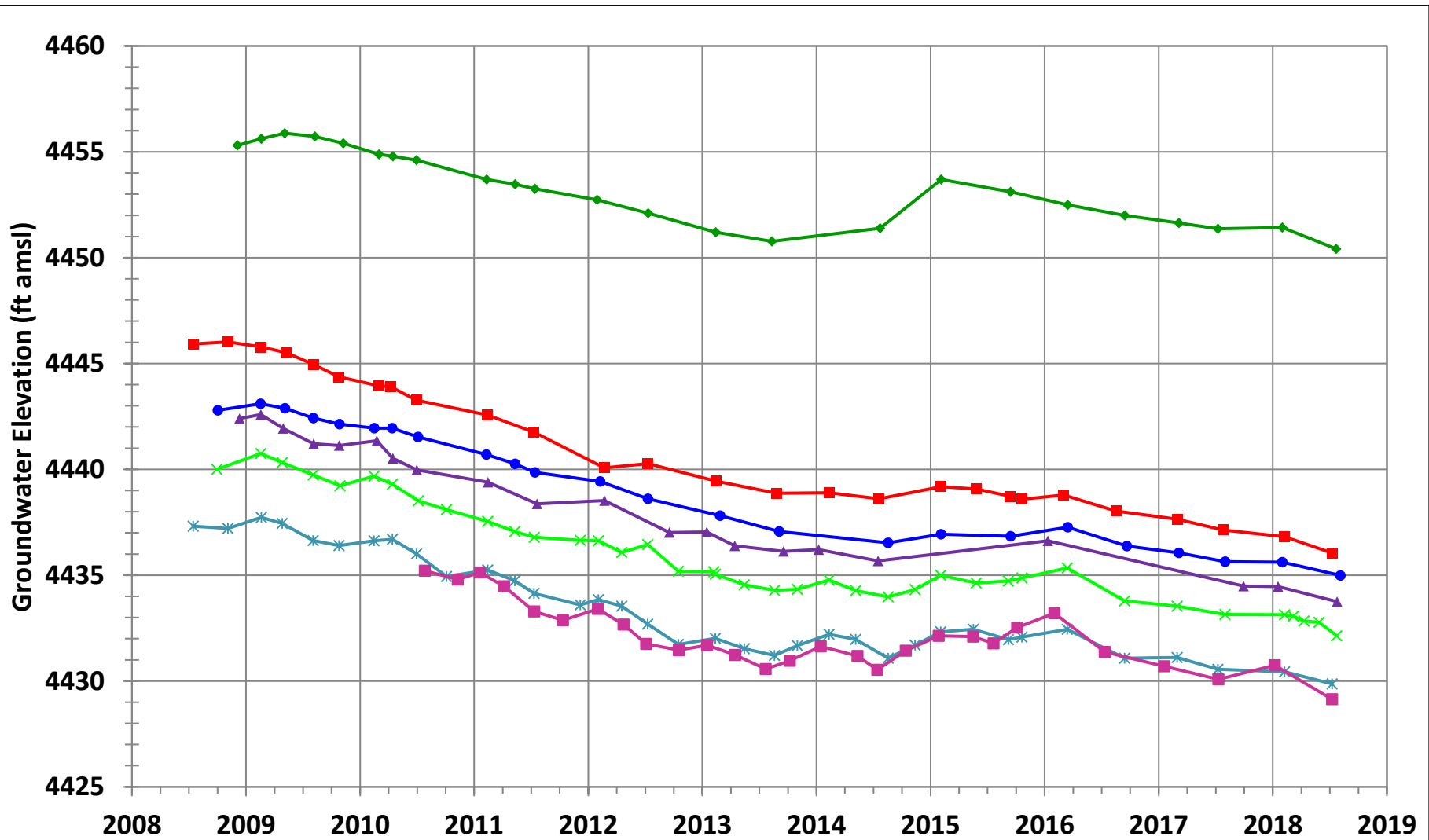
Date	3/9/16	File ID	055038-059A

**FIGURE 16**  
SITE-WIDE  
GROUNDWATER ELEVATIONS  
FOR THIRD QUARTER 2008




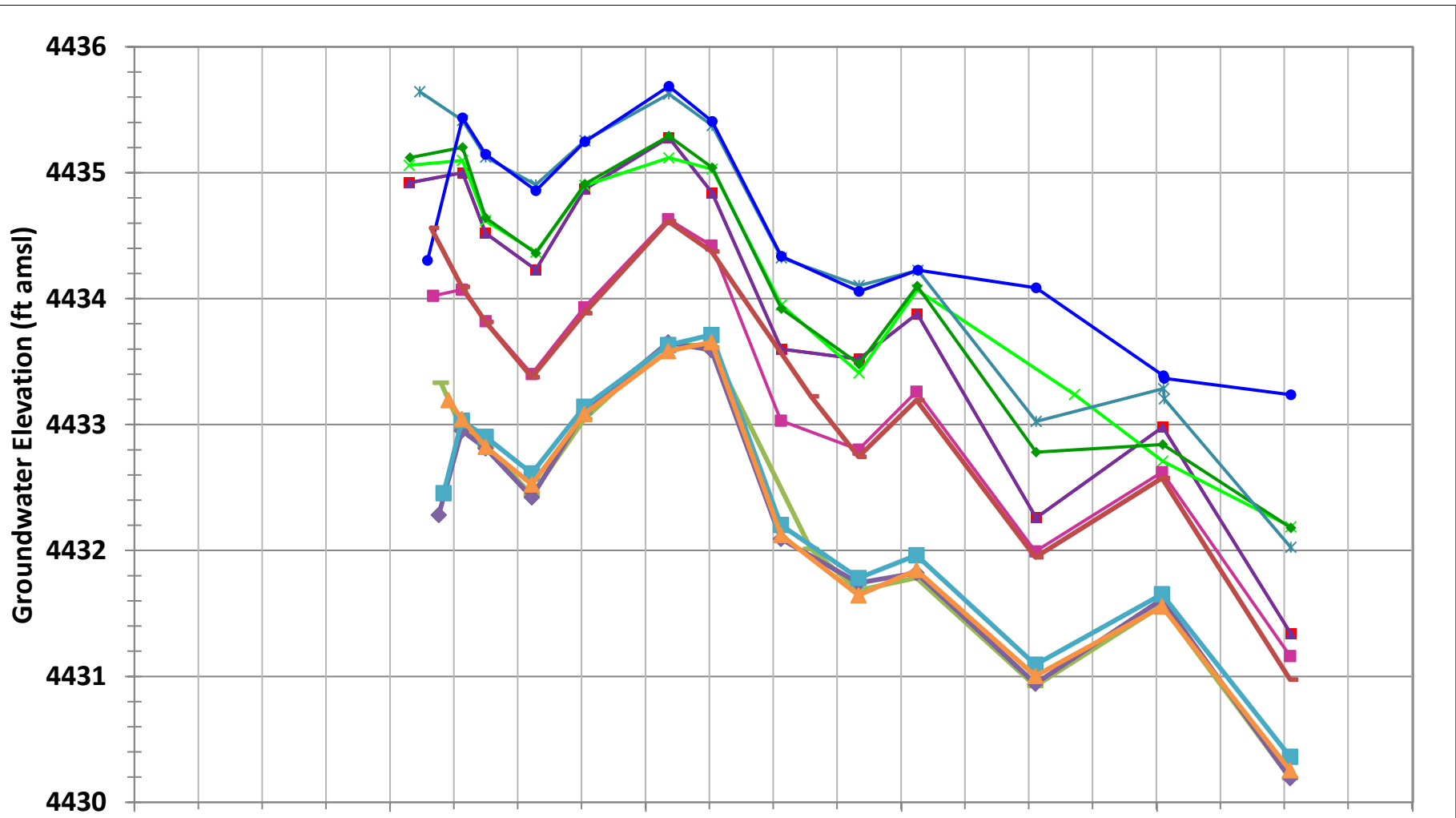
Copyright:© 2013 National Geographic Society, i-cubed

<p><b>Legend</b></p> <ul style="list-style-type: none"> <li>□ AWC-02 Well ID</li> <li>4418.61 Groundwater Elevation (ft amsl)</li> <li>— Groundwater Elevation Contour (ft amsl)</li> <li>— Groundwater Elevation Depression Contour (ft amsl)</li> <li>- - - Faults (dashed where inferred)</li> <li>Co-located Wells <ul style="list-style-type: none"> <li>□ Well ID</li> <li>□ Screen (ft bls): Water Elevation (ft amsl)</li> </ul> </li> </ul>		<p>Screened Formation</p> <ul style="list-style-type: none"> <li>□ Basin Fill</li> <li>■ Basin Fill and Undifferentiated Bisbee Group</li> <li>■ Undifferentiated Bisbee Group</li> <li>■ Undifferentiated Bisbee Group - Estimated</li> <li>■ Undifferentiated Bisbee Group and Glance Conglomerate</li> <li>■ Glance Conglomerate</li> <li>■ Glance Conglomerate-Estimated</li> </ul>		<p>IWL = Inaccessible for Water Level  NPA = No Property Access  NSQ = Not Scheduled for Quarter  ft amsl = feet above mean sea level  ft bls = feet below land surface</p>		<p>Scale (Feet)</p> <p>0 1,000 2,000</p> <p>Projection: UTM Zone 12N NAD83</p>		<p>Date: 12/26/18</p> <p>File ID: 055038-520</p>	
						<p><b>CLEAR CREEK ASSOCIATES</b></p>			
<p><b>FIGURE 17</b>  BASIN FILL  GROUNDWATER ELEVATIONS  AT THE WEST EDGE OF THE PLUME  FOR THIRD QUARTER 2018</p>									



Note: ft amsl = feet above mean sea level

	File ID
	Date 9/5/18
<b>FIGURE 18</b> HYDROGRAPHS FOR SELECTED BMO MONITOR WELLS IN BASIN FILL	

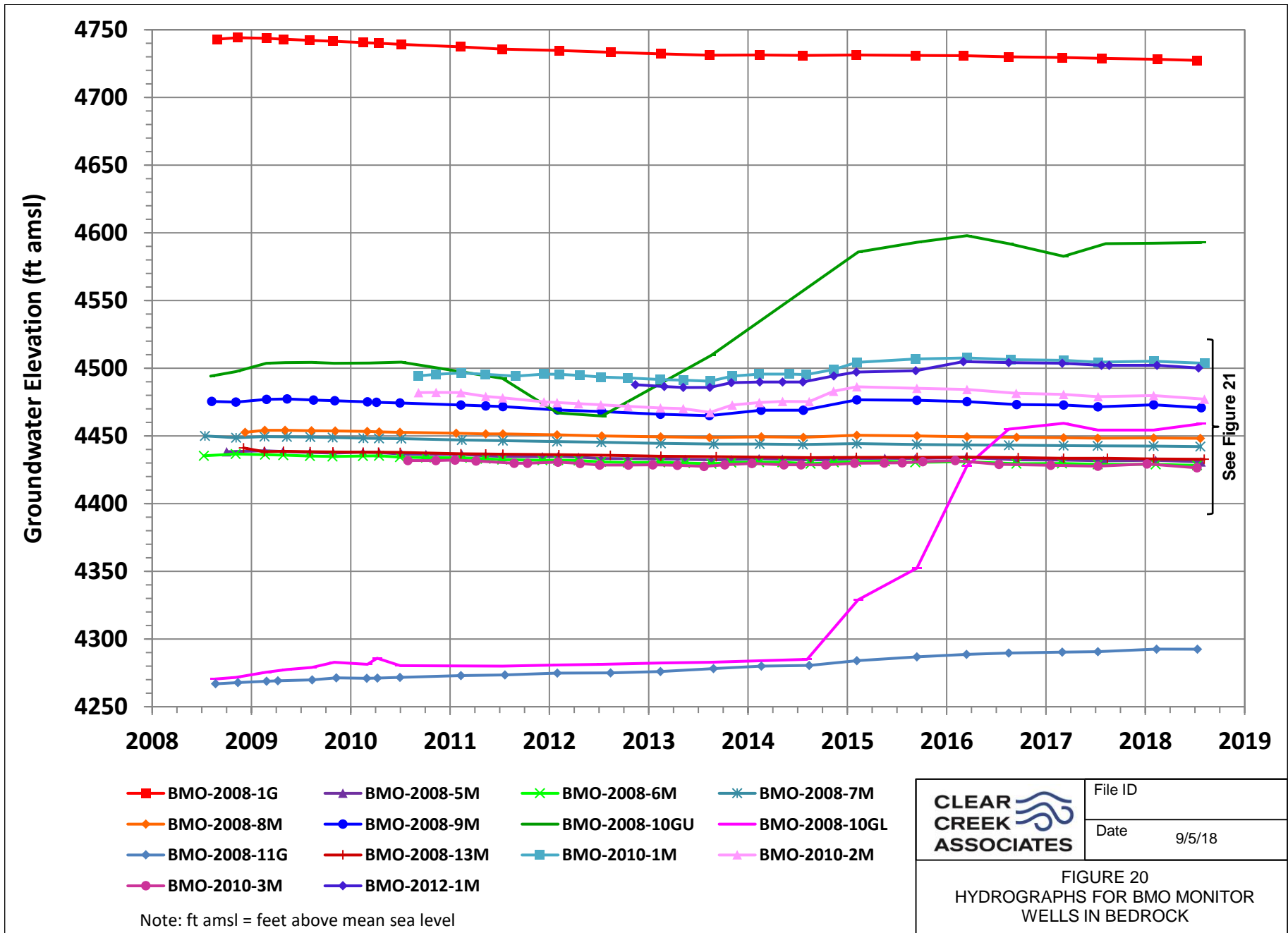


2014	2015	2016	2017	2018	2019
BMO-2014-1BL	BMO-2014-1BU	BMO-2014-2BL	BMO-2014-2BU	BMO-2014-3BL	BMO-2014-3BU
BMO-2014-4B	BMO-2014-4BL	BMO-2015-1B	BMO-2015-1BL	BMO-2015-2B	BMO-2015-2BL

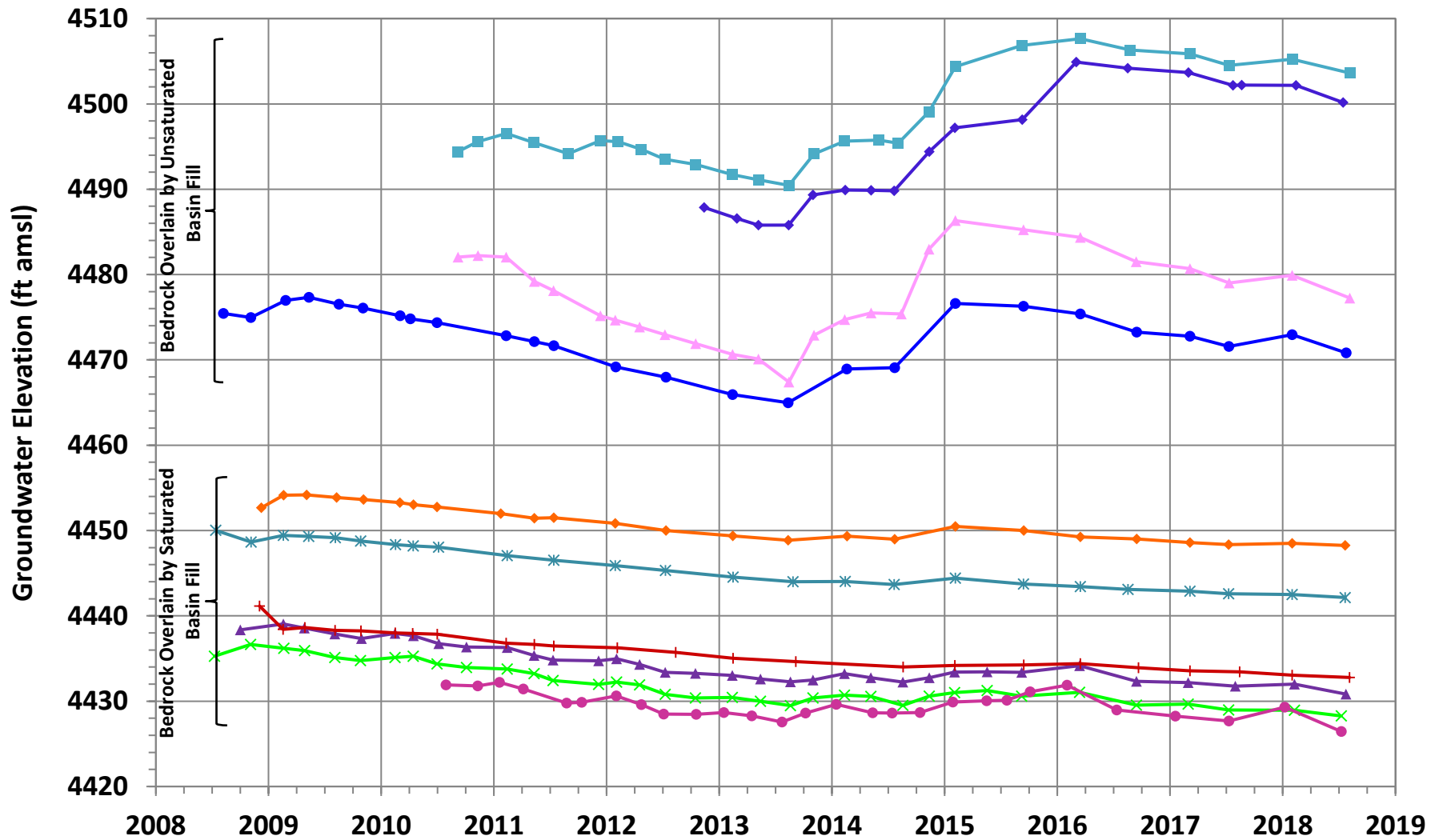
Note: ft amsl = feet above mean sea level

	File ID
	Date 9/5/18

FIGURE 19  
HYDROGRAPHS FOR EXPANDED  
GROUNDWATER  
MONITORING PROGRAM WELLS




	File ID
	Date 9/5/18
FIGURE 20 HYDROGRAPHS FOR BMO MONITOR WELLS IN BEDROCK	



- ▲ BMO-2008-5M      ✕ BMO-2008-6M      \* BMO-2008-7M      ◆ BMO-2008-8M
- BMO-2008-9M      + BMO-2008-13M      ■ BMO-2010-1M      ▲ BMO-2010-2M
- BMO-2010-3M      ◆ BMO-2012-1M

Note: ft amsl = feet above mean sea level

	File ID
	Date 9/5/18
<b>FIGURE 21</b> HYDROGRAPHS FOR SELECT BMO MONITOR WELLS IN BEDROCK	

**APPENDIX A**  
**SULFATE DATA**

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
ANDERSON 396	613396	3/20/08	7.25	21.1	1176	431
		5/5/08	7.03	21.8	1231	452
		7/14/08	7.11	21.6	1260	472
		10/15/08	7.10	21.3	1252	475
		1/27/09	7.27	21.0	965	488
		4/14/09	7.12	21.8	1229	534
		7/14/09	7.03	22.2	1372	550
		10/12/09	6.98	21.5	1375	510
		1/27/10	7.93	20.1	1449	523
		4/21/10	7.40	20.7	1439	627
		7/19/10	6.93	24.1	1420	648
		10/19/10	7.03	20.6	1229	416
		1/17/11	7.02	20.6	1334	562
		4/11/11	6.92	15.1	1485	609
		7/14/11	7.23	24.4	1451	678
		10/11/11	6.65	21.2	1230	543
		2/1/12	7.28	11.8	1360	551
		4/25/12	7.10	23.9	1380	657
		7/12/12	6.89	24.9	1520	667
		10/10/12	7.40	24.0	1414	574
4/7/14	7.06	17.4	1057	175		
7/11/14	7.35	21.4	1033	272		
10/6/14	7.13	27.5	974	99.0		
10/6/14 DUP	7.13	27.5	974	102.0		
ANDERSON 458	221458	9/9/12	8.34	25.9	406.3	31
		10/10/12	8.13	23.8	412.3	30.3
		1/17/13	8.06	23.7	416.0	30.9
		4/15/13	8.19	23.5	402.7	32.3
		7/18/13	8.18	24.3	401.9	23
		10/16/13	8.10	23.8	400.1	25.2
		1/9/14	8.15	22.9	399.3	26.2
		1/9/14 DUP	8.15	22.9	399.3	26.2
		4/7/14	8.16	24.0	401.6	27.5
		7/11/14	8.13	24.5	396.7	25.3
		10/6/14	8.06	25.6	384.0	26.0
		7/22/15	8.17	25.2	397.3	25.3
		7/19/16	8.14	23.8	395.2	24.2
		7/18/17	8.01	23.9	395.5	26.8
		7/18/18	7.88	24.2	397.1	23.4
AWC-02	616586	1/7/08	ND	ND	ND	14
		3/3/08	ND	ND	ND	16
		5/5/08	ND	ND	ND	13.3
		8/12/08	7.01	22.3	630	14.3
		10/23/08	7.31	23.1	464	15.9
		3/11/09	7.19	21.8	420	15.5
		4/22/09	7.17	22.6	430	14.7
		7/22/09	7.24	22.7	444	14.2
		10/21/09	7.19	21.3	468	16.8
		2/3/10	7.44	19.7	449	18.6
		4/23/10	7.56	19.7	526	18.3
		7/20/10	7.27	23.9	450	18.2
		11/4/10	7.72	21.3	465.9	18.8
		1/19/11	7.84	19.0	500	18.4
		4/7/11	7.27	20.3	488.5	17.3
		7/13/11	5.93	23.9	431.5	12.9
		10/13/11	6.72	25.1	464.6	17.4
		10/13/11 DUP	6.72	25.1	464.6	17.4
		2/2/12	7.20	20.8	479.5	19.4
		4/24/12	7.23	23.0	430	15.5
		7/5/12	7.25	22.1	437.1	10.1
		10/18/12	7.48	21.6	473.6	13.0
		2/5/13	7.54	19.3	448.9	18.0
		4/11/13	7.53	22.1	471.3	17.2
		7/25/13	7.35	22.1	460.5	14.7
		10/9/13	7.53	21.2	476.4	15.5
		1/7/14	7.45	20.3	503.7	18.8
		1/7/14 DUP	7.45	20.3	503.7	18.9
		5/14/14	7.34	21.0	508.4	19.2
		7/16/14	7.54	21.8	499.5	19.2
		10/15/14	7.26	23.2	520	18.9
		1/29/15	7.44	21.4	511	20.5
		7/21/15	7.62	22.5	506.7	19.9
1/13/16	7.63	20.6	411.2	8.27		
7/19/16	7.40	22.1	418.7	7.80		
1/19/17	7.33	20.5	428.7	9.87		
9/6/17	7.4	20.7	423.3	7.65		
1/17/18	7.26	20.5	442.6	13.0		
7/25/18	7.33	20.5	489.9	16.7		
7/25/18 DUP	7.33	20.5	489.9	16.9		



## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
AWC-03	616585	1/7/08	ND	ND	ND	41
		3/3/08	ND	ND	ND	38
		5/5/08	ND	ND	ND	37.3
		8/12/08	7.28	22.4	469	38.8
		10/23/08	7.48	21.0	462	41.8
		3/11/09	7.25	21.2	445	64.2
		4/22/09	7.30	21.4	452	42.4
		7/22/09	7.39	22.6	456	41.8
		10/21/09	7.48	21.3	540	50.5
		2/3/10	7.44	19.7	449	42.0
		4/23/10	7.57	19.7	468	44.4
		7/20/10	7.29	23.8	460	46.7
		11/4/10	7.80	20.8	452.3	46.3
		1/19/11	7.07	19.6	560	49
		4/7/11	7.28	19.9	469.8	46.8
		7/13/11	6.33	23.1	458.8	47.6
		7/13/11 DUP	6.33	23.1	458.8	46.2
		10/13/11	6.69	23.8	463.6	48.8
		2/2/12	7.39	20.7	504.8	47.7
		4/24/12	7.28	22.1	450	51.8
		7/5/12	7.32	21.7	474.3	50.7
		10/18/12	7.44	21.3	477.4	51.3
		2/5/13	7.73	19.2	481.2	55
		4/11/13	7.51	22.2	486.4	66.1
		7/16/13	7.61	21.5	489.6	63.6
		10/9/13	7.57	20.5	485.8	49.4
		10/9/13 DUP	7.57	20.5	485.8	51
		1/7/14	7.62	20.4	486.3	56.6
		5/14/14	7.64	20.5	493.0	61.1
		7/16/14	7.68	21.4	506.9	69.1
		10/15/14	7.38	22.2	506.0	63.4
1/29/15	7.59	21.2	495	77.1		
7/21/15	7.63	21.6	494	55.5		
1/13/16	7.62	19.9	474.1	43.5		
7/19/16	7.47	20.9	493.2	54.8		
1/19/17	7.41	20.0	480.4	57.1		
9/6/17	7.41	20.3	525.5	75.1		
1/17/18	7.25	19.9	487.6	57.0		
7/25/18	7.36	20.3	504.5	76.3		
AWC-04	616584	2/4/08	ND	ND	ND	18
		4/7/08	ND	ND	ND	18
		6/2/08	ND	ND	ND	14.3
		8/12/08	7.08	22.5	458	21.6
		10/23/08	6.91	22.2	616	24
		3/11/09	7.02	21.3	539	27.2
		4/22/09	6.93	22.1	560	26.1
		7/22/09	7.13	22.5	587	26.2
		10/21/09	7.00	21.2	607	25.7
		2/3/10	7.35	19.3	438	16.3
		4/23/10	7.14	19.2	625	27.4
		7/20/10	7.02	24.1	600	26.6
		11/4/10	7.41	20.3	593.2	24
		1/19/11	8.15	20.5	690	26.2
		4/7/11	7.00	20.4	637.2	25.8
		7/13/11	6.88	20.4	610.1	25.7
		10/13/11	6.38	24.0	619.7	27.6
		2/2/12	6.97	20.1	637.6	27.2
		4/24/12	7.10	22.1	570	25.2
		7/5/12	7.03	21.6	568.0	28.2
		7/5/12 DUP	7.03	21.6	568.0	28.1
		10/18/12	7.20	20.8	606.7	26.6
		2/5/13	7.29	19.7	616.8	26.9
		4/11/13	7.38	21.7	595.4	26.2
		7/16/13	7.30	21.0	585.7	27.0
		10/9/13	7.36	20.4	588.6	24.6
		1/7/14	7.36	19.7	651.4	23.7
		5/14/14	7.38	19.8	674.2	22.7
		7/16/14	7.32	20.7	632.2	24.1
		7/16/14 DUP	7.32	20.7	632.2	22.9
		10/15/14	7.01	21.9	688	21.4
1/29/15	7.20	21.0	687	22.9		
7/21/15	7.38	21.2	619.6	23.2		
1/13/16	7.42	19.2	556.6	27.0		
7/19/16	7.24	20.6	590.7	31.4		
1/19/17	7.06	19.6	658.6	22.9		
1/19/17 DUP	7.06	19.6	658.6	23.1		
9/6/17	7.17	19.8	571.0	25.8		
1/17/18	7.13	19.6	532.6	38.6		
7/25/18	6.99	19.3	663.1	24.3		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
AWC-05	590620	2/4/08	ND	ND	ND	13
		4/7/08	ND	ND	ND	14
		6/2/08	ND	ND	ND	14.3
		8/12/08	6.74	23.3	425	14.9
		10/23/08	7.45	21.0	422	15.4
		3/11/09	7.31	22.1	398	16.5
		6/3/09	7.33	22.0	418	12.1
		7/22/09	7.49	24.4	423	14.1
		10/21/09	7.37	21.1	433	16.5
		2/3/10	7.35	19.3	438	16.3
		4/23/10	7.62	18.9	443	17.6
		7/20/10	7.62	24.2	440	19.1
		11/4/10	7.92	20.7	427.1	18.4
		1/19/11	7.64	20.3	420	17
		4/7/11	7.22	20.8	438.3	17.6
		7/13/11	6.52	22.9	419.8	17.9
		10/13/11	6.82	26.0	427.5	19
		2/2/12	7.35	21.4	427.9	19.5
		4/24/12	7.18	21.4	430	15.4
		7/5/12	7.24	22.6	432.1	19.1
		10/18/12	7.66	22.6	436.1	20.1
		2/5/13	7.57	20.2	437.7	20.1
		4/11/13	7.54	21.2	444.5	20.3
		7/16/13	7.56	21.3	454.5	18.0
		7/16/13 DUP	7.56	21.3	454.5	17.7
		10/9/13	7.58	21.3	455.3	15.4
		5/14/14	7.54	21.2	442.3	19.8
		7/16/14	7.60	22.6	470.9	20.3
		10/15/14	7.38	23	452	20.8
		1/29/15	7.64	19.6	443	18.0
7/21/15	7.67	21.9	457.9	17.0		
1/13/16	7.69	19.9	444.4	14.4		
7/19/16	7.40	22.2	443.1	20.7		
1/19/17	7.45	21.4	436.7	21.9		
9/6/17	7.38	20.9	447.4	19.7		
9/6/17 DUP	7.38	20.9	447.4	20.5		
1/17/18	7.34	20.5	437.0	20.2		
7/25/18	7.35	20.4	456.9	17.9		
BANKS 986	647986	2/27/08	7.53	21.8	980	44
		5/12/08	7.40	22.1	1021	65.2
		7/21/08	7.43	22.9	1034	82.2
		10/13/08	7.28	21.7	980	53
		1/21/09	7.66	21.6	872	164
		4/8/09	7.56	22.7	933	47
		7/9/09	7.59	23.1	871	70.9
		10/7/09	7.50	22.2	838	67.7
		2/25/10	7.56	21.1	1020	50.5
		4/20/10	7.71	22.8	1013	53.9
		7/20/10	7.70	23.2	828.3	71.5
		10/20/10	7.60	22.4	948.7	73.4
		1/17/11	7.73	20.6	1038	53.5
		4/5/11	7.66	21.5	965.0	64.5
		7/11/11	7.72	25.4	890.0	68.8
		10/12/11	7.88	21.2	1551	172
		1/31/12	7.69	20.2	1017	64.3
		1/31/12 DUP	7.69	20.2	1017	64.9
		4/11/12	7.77	22.0	1025	64.0
		7/6/12	7.66	23.7	940	78.6
		7/6/12 DUP	7.66	23.7	940	77.9
		10/4/12	7.73	22.0	845.4	62.6
		1/18/13	7.82	21.9	832.4	70.5
		4/8/13	7.87	20.7	861.7	62.9
		7/9/13	8.04	22.9	769.1	67.9
		10/15/13	7.59	21.7	1158	79.6
		1/14/14	7.77	20.9	967.4	75.2
		4/8/14	7.47	21.4	1337	113
		7/8/14	7.58	22.3	1175	107
		7/8/14 DUP	7.58	22.3	1175	110
10/21/14	7.37	22.7	1158	91.3		
7/24/15	7.67	22.6	1002	76.3		
7/12/16	7.59	22.2	1029	68.7		
7/26/17	7.45	20.9	1012	88.6		
7/30/18	7.40	21.0	987.6	66.6		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BF-01	539783	5/23/08	6.41	18.3	2698	1450
		8/5/08	6.11	22.4	3095	1330
		11/5/08	6.33	19.9	3027	1490
		2/20/09	6.42	19.2	1477	1330
		5/6/09	5.98	23.9	2632	1280
		8/17/09	6.21	29.7	2948	1250
		11/4/09	6.24	23.0	2846	1280
		3/1/10	6.34	21.1	2945	1260
		4/7/10	5.83	20.4	1853	1450
		7/6/10	5.93	22.6	1403	1310
		7/13/11	6.26	21.3	2960	1350
		2/1/12	6.18	19.8	2910	1480
		8/14/12	6.00	21.5	3000	1500
BIMA	577927	2/6/08	6.69	22.2	1335	210
		4/25/08 <sup>1</sup>	6.37	23.1	1521	190
		5/13/08 <sup>1</sup>	6.58	22.7	1489	195
		6/23/08 <sup>1</sup>	6.30	23.3	1572	225
		6/23/08 DUP	6.30	23.3	1572	196
		7/29/08 <sup>1</sup>	6.44	23.0	1647	204
		8/28/08 <sup>1</sup>	M	23.0	1776	256
		9/23/08 <sup>1</sup>	6.29	23.0	1741	296
		10/22/08	6.41	22.3	1801	285
		1/20/09	6.40	21.7	1233	190
		1/20/09 DUP	6.40	21.7	1233	200
		4/7/09	6.45	23.4	1436	212
		7/8/09	6.31	23.4	1483	189
		10/5/09	6.34	22.7	1525	233
		1/20/10	6.88	17.0	M	222
		4/19/10	6.70	21.9	1533	256
		7/12/10	6.70	24.0	1577	273
		10/18/10	6.47	24.3	1702	296
		1/19/11	6.65	21.2	1672	283
		4/4/11	6.61	24.0	1643	282
		8/25/11	6.27	25.9	1460	300
		10/10/11	6.5	24.1	1520	322
		2/3/12	6.48	18.5	1540	312
		4/23/12	6.57	23.9	1790	303
		7/10/12	6.06	23.7	1200	301
		11/29/12	6.51	20.6	1664	310
		3/13/13	7.29	19.8	1175	317
		4/10/13	6.64	13.9	1569	308
		7/8/13	6.62	28.0	1580	301
		10/11/13	6.57	21.8	1749	301
		1/10/14	6.63	10.7	1664	297
		4/10/14	6.62	15.8	1685	300
		7/8/14	6.56	21.6	1653	297
10/23/14	6.25	23.9	1704	227		
7/23/15	6.87	26.2	1627	271		
7/15/16	6.90	28.7	1602	271		
7/27/17	6.84	25.4	1553	304		
BLOMMER	633472	2/5/08	7.43	20.2	714	206
		4/21/08 <sup>1</sup>	7.06	21.9	753	201
		5/15/08 <sup>1</sup>	7.16	22.2	845	211
		6/23/08 <sup>1</sup>	6.93	21.5	903	193
		7/29/08 <sup>1</sup>	7.21	22.2	921	203
		8/27/08 <sup>1</sup>	7.12	22.1	864	189
		9/23/08 <sup>1</sup>	7.16	22.3	818	193
		10/22/08	7.17	21.3	873	200

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2008-1G	909474	8/27/08	7.09	24.2	808	107
		11/11/08	7.00	20.8	721	143
		2/25/09	7.01	22.0	860	109
		4/28/09	7.04	22.2	762	198
		8/4/09	7.23	22.8	950	104
		10/27/09	7.11	21.9	922	103
		2/17/10	7.36	20.5	899.3	98.4
		4/15/10	7.04	22.2	711	95.2
		7/7/10	6.91	21.5	640	88.1
		7/7/10 DUP	6.91	21.5	640	87.1
		2/10/11	6.80	21.0	916	105
		7/12/11	7.2	26.6	1015	121
		2/8/12	7.02	20.2	869	116
		8/14/12	6.97	21.9	959	120
		2/14/13	7.09	21.2	986	112
		8/14/13	6.96	21.6	1009	120
		2/13/14	6.76	21.1	1010	114
		7/22/14	6.87	22.0	1010	117
		2/4/15	7.35	22.1	942	116
		9/10/15	7.21	21.8	953	109
		3/3/16	7.16	22.1	950	108
		8/17/16	7.05	22.2	986	121
		3/1/17	6.99	22.1	923	110
7/24/17	7.11	22.2	925	112		
2/14/18	7.08	20.9	924	112		
7/10/18	7.24	22.2	920	115		
BMO-2008-3B	909147	7/18/08	7.35	23.9	615	106
		11/4/08	7.36	21.4	599	179
		11/4/08 DUP	7.36	21.4	599	177
		2/19/09	7.24	21.4	664	155
		5/11/09	7.23	22.1	631	149
		8/6/09	7.33	21.4	718	151
		8/6/09 DUP	7.33	21.4	718	156
		10/26/09	7.32	21.8	684	153
		3/3/10	7.38	21.4	695	164
		4/8/10	6.47	21.3	585	162
		7/1/10	6.92	21.4	541	157
		2/14/11	6.98	20.6	698	169
		7/12/11	7.04	21.4	672	148
		2/23/12	6.92	21.0	695	173
		7/10/12	7.02	21.5	651	150
		2/15/13	6.63	20.4	692	163
		8/27/13	7.1	21.1	725	170
		2/11/14	7.01	20.7	729	162
		7/21/14	6.98	21.0	706	163
		2/5/15	7.11	21.2	652	145
		9/14/15	7.29	21.7	638	133
		3/3/16	7.29	21.8	637	136
		8/18/16	7.18	21.4	637	139
3/1/17	6.99	21.0	618	135		
7/26/17	7.17	21.5	648	147		
2/8/18	7.46	21.0	653	150		
7/10/18	7.35	21.9	663	154		
BMO-2008-4B	910096	12/11/08	7.34	22.8	374	9.4
		2/18/09	7.17	23.2	370	13.4
		4/30/09	7.33	24.5	376	11.4
		4/30/09 DUP	7.33	24.5	376	11.8
		8/6/09	7.53	24.6	397	11.5
		10/27/09	7.53	23.7	379	11.2
		2/24/10	7.48	21.8	362	9.7
		4/16/10	7.70	23.4	330	9.73
		7/2/10	7.25	23.6	323	10.10
		2/15/11	7.65	22.2	362	8.90
		7/22/11	7.33	23.7	371	10.2
		2/23/12	7.21	22.3	354	10.5
		8/15/12	6.96	23.6	380	9.5
		1/15/13	7.63	22.7	370.2	10.3
		1/15/13 DUP	7.63	22.7	370.2	9.5
		4/15/13	7.75	23.0	368.2	11.2
		9/18/13	7.69	23.4	384.6	9.8
		1/9/14	7.81	22.2	371.4	11.1
		7/18/14	7.78	23.3	379.1	11.6
		9/30/17	7.43	22.6	392.5	9.88
		7/26/18	7.43	22.6	386.1	10.9

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2008-5B	909653	9/30/08	7.08	22.0	688	193
		2/18/09	7.03	21.5	691	192
		4/27/09	7.32	22.1	605	177
		8/4/09	7.35	22.3	724	174
		10/29/09	7.29	21.8	731	181
		10/29/09 DUP	7.29	21.8	731	185
		2/15/10	7.22	21.7	720	185
		4/15/10	7.21	23.0	571	194
		7/7/10	6.94	22.2	551	183
		10/5/10	6.85	22.3	722	201
		2/14/11	6.90	21.8	725	203
		5/12/11	7.06	21.5	722	195
		7/13/11	6.99	22.0	712	200
		12/7/11	6.95	19.9	730	213
		2/3/12	7.16	20.2	726	215
		4/18/12	6.96	21.7	712	192
		7/10/12	6.87	21.5	726	218
		10/16/12	6.69	21.4	712	207
		2/7/13	7.40	21.4	771.4	229
		2/12/13	6.49	20.7	752	227
		5/15/13	7.01	21.8	742	220
		8/20/13	7.00	21.7	792	226
		11/1/13	6.92	21.5	792	233
		2/11/14	6.88	21.5	804	230
		5/7/14	6.87	21.5	800	228
		8/19/14	6.99	21.6	795	221
		11/13/14	6.92	21.9	755	228
		2/3/15	7.05	21.8	755	227
		9/8/15	7.16	22.3	764	236
		3/14/16	7.06	21.5	774	237
		9/14/16	7.22	21.8	771	240
		3/1/17	7.07	21.5	756	243
8/1/17	7.05	22	779	245		
2/8/18	7.28	21.4	798	267		
3/8/18	7.3	21.4	792	246		
3/8/18 DUP	7.3	21.4	792	246		
4/11/18	7.25	21.4	814	240		
5/29/18	7.31	22.1	811	262		
6/19/18	7.26	22.3	817	252		
7/25/18	7.02	23.0	794	250		
BMO-2008-5M	909552	10/2/08	7.13	23.6	551	107
		2/18/09	7.06	22.5	562	122
		4/27/09	7.50	22.9	501	111
		8/4/09	7.53	23.1	605	122
		10/29/09	7.35	22.4	610	123
		2/15/10	7.31	22.5	581	123
		4/16/10	7.28	22.6	509	125
		4/16/10 DUP	7.28	22.6	509	124
		7/7/10	7.02	23.5	482	123
		10/5/10	6.81	22.5	602	127
		2/14/11	6.95	22.2	591	124
		5/12/11	7.16	23.0	558	119
		7/12/11	7.22	22.7	590	126
		12/7/11	7.1	21.2	601	129
		2/3/12	6.99	21.5	589	130
		4/18/12	6.71	22.4	587	120
		7/10/12	6.82	22.4	592	135
		10/16/12	6.86	21.9	591	134
		2/12/13	6.65	21.6	610	139
		5/15/13	6.73	22.4	603	135
		8/20/13	7.18	22.5	640	138
		11/1/13	7.07	22.0	641	142
		2/11/14	6.84	22.1	646	138
		5/7/14	6.85	22.1	648	140
		8/19/14	6.97	22.1	645	143
		11/13/14	7.18	22.6	612	139
		2/3/15	7.26	22.5	612	143
		9/8/15	7.19	23.1	615	146
		3/14/16	7.26	22.5	618	142
		9/14/16	7.12	22.5	623	153
		3/1/17	6.97	22.4	621	157
		8/1/17	7.11	22.8	636	159
2/8/18	7.26	22.4	646	168		
7/25/18	7.22	23.2	651	161		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2008-6B	909146	7/16/08	7.36	24.1	475	53.3
		11/4/08	7.41	21.5	398	60.3
		2/19/09	7.23	21.1	444	54.3
		4/27/09	7.55	21.7	389	52.7
		8/4/09	7.48	23.4	470	48.5
		10/26/09	7.29	22.5	448	48.7
		2/15/10	7.53	21.2	391	33.5
		4/15/10	7.47	21.0	362	37.0
		7/1/10	7.24	22.2	361	40.1
		10/5/10	7.05	21.0	407	37.2
		2/14/11	7.27	21.8	397	40.2
		5/12/11	7.32	21.5	380	35.0
		7/12/11	7.27	21.1	390	37.8
		12/7/11	7.28	20.8	330	21.8
		2/3/12	7.28	20.1	346	23.0
		4/18/12	7.25	21.4	336	19.7
		7/10/12	6.86	21.2	328	21.9
		10/16/12	6.79	21.5	342	19.9
		2/12/13	6.87	20.7	339	16.2
		5/15/13	6.87	21.2	297	12.7
		8/20/13	7.36	21.5	310	10.6
		11/1/13	7.04	21.0	340	13.9
		2/11/14	7.38	21.6	290	20.1
		5/7/14	7.48	21.1	297	13.6
		8/19/14	7.08	21.6	298	13.4
		11/13/14	7.23	21.6	305	14.9
		2/3/15	7.24	20.6	272	12.1
		9/8/15	7.26	22.2	282	11.8
		3/14/16	7.47	21.9	267	12.4
		9/14/16	7.46	21.8	301	12.6
3/1/17	7.37	21.4	271	12.1		
7/10/17	7.52	22.1	291	11.7		
2/8/18	7.26	20.9	284	13.3		
7/10/18	7.78	22.2	296	18.2		
BMO-2008-6M	909019	7/10/08	M	22.1	702	182
		11/4/08	7.33	21.8	621	199
		2/20/09	7.11	22.0	702	193
		4/28/09	7.34	22.4	595	119
		8/4/09	7.40	23.3	750	189
		10/26/09	7.18	22.4	727	187
		2/15/10	7.29	20.8	733	193
		4/15/10	7.36	20.2	619	208
		7/1/10	7.15	22.0	571	198
		10/5/10	6.87	21.3	720	202
		2/14/11	6.80	21.3	731	202
		5/12/11	7.12	21.9	709	189
		7/12/11	7.06	21.8	709	194
		12/7/11	6.94	21.3	710	200
		2/3/12	7.03	21.2	720	206
		4/18/12	7.01	21.4	701	188
		7/10/12	6.67	21.4	702	208
		10/16/12	6.89	21.8	708	207
		2/12/13	6.71	20.5	740	204
		5/8/13	7.01	21.9	726	212
		8/20/13	6.99	21.7	772	213
		11/1/13	6.83	21.5	773	223
		2/11/14	6.81	21.8	786	217
		5/7/14	6.77	21.3	788	220
		8/19/14	6.9	21.9	774	210
		11/13/14	7.14	22.0	740	218
		2/3/15	7.20	21.9	741	216
		9/8/15	7.09	23.0	750	222
		3/14/16	7.16	22.1	768	229
		9/14/16	7.06	22.2	760	229
3/1/17	6.92	21.9	745	237		
7/10/17	7.04	22.6	742	218		
2/8/18	7.3	21.8	775	244		
7/10/18	7.26	22.1	761	234		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2008-7M	908794	7/14/08	7.63	25.2	500	31.4
		11/6/08	7.53	22.6	380	34.5
		2/18/09	7.31	23.3	452	27.6
		5/11/09	7.43	24.4	426	26.0
		8/6/09	7.81	24.1	486	25.1
		10/27/09	7.53	23.0	470	26.1
		2/17/10	7.57	23.4	452	25.4
		2/17/10 DUP	7.57	23.4	452	25.0
		4/15/10	7.52	23.2	415	26.0
		7/6/10	7.28	23.5	391	22.8
		2/14/11	7.18	22.0	465	27.5
		2/14/11 DUP	7.18	22.0	465	26.4
		7/15/11	7.1	22.8	466	26.5
		1/30/12	7.16	22.0	454	26.4
		7/11/12	7.18	22.7	455	28.1
		2/15/13	7.23	21.8	471	25.8
		8/28/13	7.15	22.9	494	27.7
		8/28/13 DUP	7.15	22.9	494	27.8
		2/13/14	7.09	22.6	494	27.8
		7/22/14	7.13	23.2	488	27.3
9/14/15	7.51	23.4	469	30.6		
8/18/16	7.43	23.3	457	30.0		
7/10/17	7.36	23.5	464	33.1		
7/23/18	7.36	23.5	464	34.7		
BMO-2008-8B	910097	12/5/08	6.47	20.1	2480	1890
		2/19/09	6.19	21.0	2958	1570
		5/5/09	6.18	21.3	2888	1370
		8/10/09	6.42	21.5	2897	1250
		11/9/09	6.33	21.8	2889	1510
		11/9/09 DUP	6.33	21.8	2889	1520
		3/3/10	6.51	20.4	3016	1320
		4/16/10	6.06	21.4	1682	1470
		7/1/10	6.10	21.4	1594	1440
		7/15/11	6.21	21.2	2940	1380
		1/30/12	6.22	21.2	2880	1480
		1/30/12 DUP	6.22	21.2	2880	1480
		7/12/12	6.41	21.1	2860	1440
		2/13/13	6.25	20.7	2830	1330
		8/12/13	6.38	21.3	2780	1420
		7/24/14	6.26	21.2	2520	1380
		7/10/17	6.69	22.2	1540	1240
		12/9/08	7.16	23.4	852	197
		2/19/09	7.27	23.5	758	147
		2/19/09 DUP	7.27	23.5	758	149
5/5/09	7.19	25.1	680	122		
8/10/09	7.49	24.8	673	107		
11/5/09	7.30	25.4	675	104		
3/3/10	7.70	24.1	641	99.5		
4/16/10	7.29	24.5	541	97.0		
7/1/10	6.99	25.0	502	94.7		
1/24/11	7.05	23.4	595	98.2		
7/15/11	6.89	22.1	590	79.9		
1/30/12	7.36	23.9	565	77.6		
7/12/12	7.15	24.2	554	73.1		
7/12/12 DUP	7.15	24.2	554	73.2		
2/14/13	7.1	24.3	565	64.9		
8/12/13	7.19	24.6	585	65.0		
2/19/14	7.07	24.3	579	63.3		
2/19/14 DUP	7.07	24.3	579	63.4		
7/24/14	7.07	24.7	569	66.8		
9/15/15	7.35	25.0	541	67.0		
9/15/16	7.52	24.6	535	63.5		
9/15/16 DUP	7.52	24.6	535	63.9		
7/10/17	7.28	24.7	542	74.1		
7/23/18	7.48	24.8	536	76.9		
7/23/18 DUP	7.48	24.8	536	74.5		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2008-9M	909255	8/8/08	7.72	25.7	415	47.3
		11/5/08	7.89	21.4	444	54.4
		2/26/09	7.71	24.5	482	28.8
		5/12/09	7.76	24.8	449	51.7
		8/17/09	7.76	25.6	534	53.4
		11/3/09	7.82	24.9	552	56.9
		3/4/10	8.07	22.4	520	58.6
		4/6/10	6.74	23.8	484	60.1
		7/1/10	7.40	24.6	425	61.0
		2/10/11	6.79	24.0	520	64.2
		7/15/11	7.56	24.3	516	67.0
		2/1/12	7.54	22.4	516	67.4
		7/12/12	7.68	24.2	513	68.9
		2/13/13	7.37	23.8	531	68.2
		8/12/13	7.47	24.2	553	71.1
		2/18/14	7.26	23.8	569	74.1
		7/24/14	7.36	24.4	571	74.2
		9/14/15	7.68	24.7	550	85.6
9/15/16	7.64	24.4	571	86.7		
7/11/17	7.57	24.5	572	92.0		
7/26/18	7.66	24.4	584	97.2		
BMO-2008-10GL	909435	8/20/08	6.22	29.5	2924	1320
		11/5/08	6.47	25.3	2573	1290
		2/25/09	6.34	26.8	2646	1180
		5/12/09	6.35	26.2	2402	1120
		8/11/09	6.52	27.3	2661	1030
		11/2/09	6.52	26.7	2565	1100
		3/4/10	6.76	24.1	2937	1080
		4/8/10	6.03	25.6	1575	1260
		7/2/10	6.16	26.3	1338	1020
		7/13/11	6.32	24.8	1726	644
		2/2/12	6.45	24.8	1600	624
		7/13/12	6.71	25.7	1571	545
		2/18/13	6.45	25.4	1530	498
		2/18/13 DUP	6.45	25.4	1530	494
		8/13/13	6.57	25.5	1586	520
		8/7/14	6.56	25.8	1417	442
		7/11/17	6.14	25.6	3790	1810
		BMO-2008-10GU	909272	8/4/08	6.41	23.6
11/5/08	6.15			20.2	3343	1890
2/25/09	5.96			22.7	3426	1740
5/6/09	5.99			23.2	3359	1710
8/11/09	6.28			22.5	3348	1690
11/2/09	6.27			21.8	3157	1730
3/10/10	6.67			19.1	3951	1700
4/7/10	5.96			20.4	3210	1510
7/6/10	5.90			21.8	1610	1670
7/13/11	6.12			22.3	3890	1670
2/1/12	6.09			19.2	3820	1870
8/19/13	6.10			21.0	3630	1780
8/9/17	6.06			20.4	3860	1990
8/9/17 DUP	6.06			20.4	3860	1960
BMO-2008-11G	909434	8/22/08	8.02	28.2	359	14.2
		11/12/08	7.96	24.2	257	13.9
		2/26/09	7.92	25.1	319	12.3
		4/28/09	8.14	25.5	273	11.8
		8/12/09	8.24	25.3	365	11.2
		11/9/09	8.03	25.5	339	13.9
		3/1/10	8.37	23.2	338	13.0
		4/9/10	6.88	24.5	301	13.0
		7/1/10	6.97	25.4	298	12.3
		2/10/11	6.99	24.0	327	11.7
		7/22/11	7.26	24.6	331	12.1
		7/22/11 DUP	7.26	24.6	331	12.0
		1/31/12	7.41	24.1	328	11.9
		8/14/12	7.35	24.6	337	12.3
		2/13/13	7.54	24.2	343	11.9
		8/27/13	7.48	24.9	363	12.2
		2/19/14	7.51	24.2	363	12.2
		8/14/14	7.58	24.7	360	12.4
		2/5/15	7.87	24.8	334	12.5
		9/14/15	7.78	25.3	335	12.3
		9/14/15 DUP	7.78	25.3	335	12.4
		3/15/16	7.76	24.9	334	12.2
		8/17/16	7.96	25.6	332	12.6
		3/2/17	7.59	24.8	328	12.5
		7/11/17	7.85	25.4	333	12.4
		2/12/18	7.96	24.4	341	13.1
		7/12/18	7.89	25.4	339	13.3



## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2008-13B	909551	10/3/08	6.49	21.6	2180	980
		2/17/09	6.51	20.9	1941	1000
		5/6/09	6.55	22.0	1891	930
		8/5/09	6.63	21.5	2137	950
		10/28/09	6.81	19.7	2259	1010
		2/16/10	6.87	20.8	2093	997
		4/14/10	6.38	21.2	1346	974
		7/6/10	6.37	21.8	1208	972
		7/15/11	6.44	20.8	2160	1010
		2/9/12	6.68	20.3	2180	1060
		7/11/12	6.55	21.2	2190	1080
		2/27/13	6.54	20.3	2160	1090
		9/4/13	6.57	20.8	2070	1050
		8/19/14	6.63	21.2	1890	1070
		8/2/17	6.67	21.2	2130	1050
BMO-2008-13M	909760	12/3/08	7.73	24.1	1463	494
		2/17/09	8.21	22.7	1340	441
		4/29/09	8.04	24.8	1126	217
		8/5/09	8.04	25.4	1392	387
		10/28/09	8.12	21.4	1347	403
		2/16/10	8.07	24.9	1297	375
		4/13/10	8.06	23.2	1130	398
		7/2/10	8.30	23.9	1027	386
		7/15/11	8.4	23.4	1331	388
		2/6/12	8.47	23.2	1300	ND
		8/13/12	8.75	24.2	1311	397
		2/15/13	8.8	22.4	1280	383
		9/6/13	8.81	23.8	1300	402
		8/20/14	8.48	23.6	1362	410
		8/15/17	8.42	24.7	1305	386
		9/9/10	7.82	24.6	727.0	150
		BMO-2010-1M	219957	11/11/10	8.68	19.9
2/11/11	8.15			20.8	589	138
5/12/11	7.74			23.0	710	129
8/31/11	7.74			23.2	562	154
12/13/11	7.63			21.3	713	149
2/8/12	7.69			22.0	605	158
4/24/12	7.08			23.4	701	150
7/9/12	6.37			24.3	715	161
10/17/12	7.40			23.9	699	154
2/13/13	7.09			22.2	712	152
5/8/13	7.12			22.5	725	160
8/15/13	7.39			23.5	767	156
11/4/13	7.38			22.6	774	163
2/12/14	8.33			22.0	672	161
6/2/14	7.55			23.3	771	165
8/4/14	7.38			23.8	772	179
11/12/14	7.43			23.4	733	165
9/9/15	7.59			24.2	729	170
8/25/16	7.93			23.3	646	169
7/12/17	7.70			24.0	715	180
8/7/18	7.85	23.8	751	169		
BMO-2010-2M	219958	9/15/10	6.66	22.6	2054	915
		11/11/10	6.97	20.6	1800	935
		2/10/11	6.53	20.8	2120	950
		5/13/11	6.54	21.1	2160	887
		7/14/11	6.62	21.5	2160	917
		12/13/11	6.59	20.3	2140	984
		1/30/12	6.41	21.4	2180	989
		4/18/12	6.48	21.2	2170	893
		7/9/12	6.41	21.8	2190	1030
		10/17/12	6.60	21.3	2200	998
		2/13/13	6.45	21.0	2190	962
		5/8/13	6.42	21.0	2160	996
		8/15/13	6.58	21.2	2157	978
		11/4/13	6.53	21.9	2120	998
		2/12/14	6.52	21.0	2160	1000
		5/8/14	6.46	21.0	1990	1010
		8/14/14	6.48	21.0	1940	1040
		8/14/14 DUP	6.48	21.0	1940	1030
		11/12/14	6.59	21.3	2210	939
		7/12/17	6.6	22.2	2160	967

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2010-3B	219970	7/29/10	7.48	23.1	420	16.0
		11/10/10	7.43	21.2	370	14.9
		1/20/11	7.44	20.9	416.1	14.4
		4/7/11	7.38	20.1	424.6	14.9
		7/13/11	7.68	22.3	404.5	13.8
		10/13/11	7.63	23.4	411.2	15.9
		2/2/12	7.52	20.4	400.2	16.9
		2/2/2012 DUP	7.52	20.4	400.2	17.1
		4/24/12	7.30	21.8	390	16.0
		7/5/12	7.51	22.4	419.1	15.7
		10/18/12	7.58	21.6	411.9	17.0
		1/16/13	7.58	20.8	420.5	17.4
		4/16/13	7.65	21.2	415.1	17.5
		7/23/13	7.67	21.8	420	19.8
		10/8/13	7.72	20.9	420.3	16.8
		1/15/14	7.65	20.2	431.2	18.8
		5/13/14	7.66	21.0	421.2	18.0
		5/13/2014 DUP	7.66	21.0	421.2	18.0
		7/15/14	7.63	21.8	419.1	19.0
		10/14/14	7.48	22.6	395	17.4
		10/14/14 DUP	7.48	22.6	395	18.1
		1/28/15	7.59	22.2	420	19.2
		7/22/15	7.67	21.8	420	20.7
2/2/16	7.67	18.9	407.5	16.1		
7/12/16	7.59	21.0	424.9	16.8		
1/18/17	7.45	20.5	413.9	18.8		
7/11/17	7.40	20.7	424.6	16.5		
1/8/18	7.42	20.4	415.7	21.8		
1/8/18 DUP	7.42	20.4	415.7	21.1		
7/10/18	7.44	20.5	428.1	16.0		
7/31/10	7.73	24.3	390	14.8		
BMO-2010-3M	219969	11/10/10	7.66	21.8	340	12.6
		11/10/10 DUP	7.66	21.8	340	12.7
		1/20/11	7.72	22.6	380.4	11.5
		4/7/11	7.38	23.5	376.5	12.3
		8/25/11	7.17	24.3	340	10.4
		10/13/11	7.73	23.6	375.8	10.5
		2/2/12	7.68	22.0	367.1	10.6
		4/24/12	7.49	23.9	370	10.1
		7/5/12	7.66	23.7	381.8	10.3
		10/18/12	7.71	23.3	379.9	10.4
		1/16/13	7.68	22.1	383.1	10.0
		4/16/13	7.83	22.3	383.7	10.2
		4/16/2013 DUP	7.83	22.3	383.7	10.2
		7/23/13	7.80	23.4	386.0	10.7
		10/8/13	7.76	22.8	384.8	9.4
		1/15/14	7.76	22.1	389.8	9.1
		5/13/14	7.75	22.9	387.1	10.4
		7/15/14	7.74	23.1	386.9	10.2
		10/14/14	7.57	24.1	367.0	10.8
		1/28/15	7.70	24.1	391	10.6
		7/22/15	7.79	23.5	383.9	8.64
		7/22/15 DUP	7.79	23.5	383.9	9.25
		2/2/16	7.83	19.8	367.5	8.46
7/12/16	7.75	22.7	383.3	10.1		
1/18/17	7.54	22.2	382.3	9.97		
7/11/17	7.52	22.6	384.8	8.97		
1/8/18	7.52	22.2	379.7	9.69		
7/10/18	7.55	22.1	389.2	9.17		
BMO-2012-1M	221388	11/13/12	7.55	21.3	933.7	231
		2/27/13	6.97	22.4	793	205
		5/8/13	6.77	22.9	814	197
		8/14/13	7.09	22.9	858	202
		11/1/13	6.98	22.4	850	210
		2/13/14	7.00	22.2	883	214
		5/8/14	6.90	22.9	875	207
		7/22/14	6.99	22.6	857	210
		11/13/14	7.10	22.6	839	208
		2/4/15	7.40	22.5	843	214
		9/10/15	7.29	23.3	862	216
		3/3/16	7.32	23.4	888	222
		8/17/16	7.15	23.3	928	222
		3/2/17	6.98	23.1	922	236
		3/2/17 DUP	6.98	23.1	922	228
		7/24/17	7.08	23.0	938	250
		8/21/17	7.14	22.8	944	221
2/13/18	7.24	22.7	960	237		
7/16/18	7.33	23.4	960	236		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2014-1BL	917394	11/7/14	7.21	24.2	716	160
		1/29/15	7.46	22.2	686	167
		4/15/15	7.43	21.9	695.0	167
		7/29/15	7.57	22.8	695.0	149
		10/7/15	7.55	21.6	685.9	156
		10/7/15 DUP	7.55	21.6	685.9	156
		2/4/16	7.66	20.2	675.4	146
		4/6/16	7.43	21.7	696.3	152
		7/14/16	7.47	21.9	690.7	151
		11/2/16	7.28	21.6	689.9	143
		1/24/17	7.29	21.4	684.6	156
		7/13/17	7.26	21.6	687.5	158
		1/10/18	7.24	21.5	685.3	159
		7/12/18	7.25	21.7	693.4	163
BMO-2014-1BU	917393	11/13/14	7.46	22.1	571	84
		1/28/15	7.45	21.6	694	170
		4/15/15	7.40	21.3	735.2	189
		7/29/15	7.55	22.3	729.7	165
		10/7/15	7.51	20.9	728.8	182
		2/4/16	7.51	20.1	715.7	163
		4/6/16	7.47	21.0	733.5	172
		7/14/16	7.45	21.6	724.8	170
		7/14/16 DUP	7.45	21.6	724.8	169
		11/2/16	7.29	20.9	719.5	155
		1/24/17	7.28	20.5	722.8	178
		7/13/17	7.27	20.8	736.4	184
		1/10/18	7.25	20.5	694.3	158
		7/12/18	7.24	20.7	730.3	181
BMO-2014-2BL	917452	11/20/14	7.34	22.8	804	210
		1/29/15	7.36	20.8	1109	463
		4/15/15	7.27	21.2	1169	463
		7/29/15	7.34	22.5	1191	452
		10/7/15	7.41	20.8	1180	467
		2/4/16	7.38	19.7	1164	434
		2/4/16 DUP	7.38	19.7	1164	428
		4/6/16	7.43	21.2	1187	456
		7/14/16	7.27	21.9	1182	437
		11/2/16	7.18	20.8	1184	422
		1/24/17	7.11	21.3	1170	453
		9/6/17	7.08	20.7	1197	441
		1/10/18	7.10	20.5	1167	448
		7/12/18	7.12	20.4	1186	445
BMO-2014-2BU	917453	12/1/14	7.35	20.8	819.2	230
		1/30/15	7.65	19.9	524	63.8
		4/15/15	7.56	20.7	536.1	64.8
		7/29/15	7.62	22.2	538.7	58.2
		10/7/15	7.74	20.6	541.1	62.0
		2/4/16	7.58	19.8	528.0	56.5
		4/6/16	7.58	21.7	539.3	58.6
		7/14/16	7.56	21.4	536.6	59.9
		11/2/16	7.39	20.2	535.9	55.8
		1/24/17	7.36	20.1	531.2	61.0
		7/13/17	7.38	20.1	536.9	60.1
		1/10/18	7.35	19.8	525.4	57.0
		7/12/18	7.37	20.1	537.5	55.6
		BMO-2014-3BL	917527	2/13/15	7.34	22.4
4/15/15	7.72			21.6	402.3	8.73
7/29/15	7.72			23.1	413.7	7.92
10/7/15	7.64			21.6	415.6	8.51
2/4/16	7.62			20.9	409.8	8.36
4/6/16	7.62			21.9	424.9	8.62
7/14/16	7.62			22.7	419.4	8.77
11/2/16	7.40			21.4	423.2	7.98
1/25/17	7.38			21.4	406.4	8.37
7/13/17	7.37			21.7	423.3	8.69
1/12/18	7.31			21.3	402.0	8.25
1/12/18	7.31			21.3	402.0	8.25
7/12/18	7.42			21.5	423.0	7.71

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2014-3BU	917494	2/24/15	7.64	18.2	471.4	8.22
		4/15/15	7.67	20.4	469.5	8.71
		7/29/15	7.62	21.9	471.9	7.46
		10/7/15	7.62	20.4	467.9	7.82
		2/4/16	7.64	19.7	466.4	7.68
		4/6/16	7.53	20.9	473.2	8.25
		7/14/16	7.56	21.3	465.9	8.57
		11/2/16	7.40	20.0	471.1	7.79
		1/25/17	7.36	20.0	458.1	8.06
		7/13/17	7.34	20.2	472.9	8.55
		1/12/18	7.28	20.0	457.5	8.06
		7/12/18	7.35	20.0	470.0	7.95
		BMO-2014-4B	917620	3/4/15	7.68	20.3
4/14/15	7.61			20.9	494.7	61.7
7/23/15	7.60			21.7	493.7	57.2
10/6/15	7.70			20.5	481.9	52.7
2/3/16	7.74			19.8	491.1	58.2
4/5/16	7.61			20.9	491.9	53.2
7/13/16	7.55			21.3	478.3	48.0
7/13/16 DUP	7.55			21.3	478.3	48.3
11/1/16	7.58			20.6	472.7	42.5
11/1/16 DUP	7.58			20.6	472.7	42.1
1/23/17	7.42			20.4	493.0	63.6
7/12/17	7.41			20.5	483.0	56.7
1/9/18	7.39			20.3	490.9	64.7
7/11/18	7.38			20.3	467.7	47.4
BMO-2014-4BL	917619			3/1/15	7.63	21.1
		4/14/15	7.63	21.4	665.1	184
		7/23/15	7.66	21.9	669.7	185
		7/23/15 DUP	7.66	21.9	669.7	169
		10/6/15	7.71	20.9	660.4	176
		2/3/16	7.69	20.1	660.2	165
		4/5/16	7.53	21.2	671.7	171
		7/13/16	7.51	21.5	653.5	165
		11/1/16	7.47	20.9	665.8	160
		1/23/17	7.37	20.6	672.1	182
		7/12/17	7.42	20.7	674.4	178
		1/9/18	7.36	20.5	681.5	183
		7/11/18	7.32	20.6	687.8	187
		BMO-2015-1B	917622	3/15/15	8.11	20.2
4/14/15	7.59			20.9	680.1	187
7/23/15	7.68			21.7	690.7	201
10/6/15	7.66			20.6	681.9	190
2/3/16	7.64			19.8	678.5	173
4/5/16	7.57			20.5	691.4	181
7/13/16	7.52			21.2	675.3	172
11/1/16	7.44			20.4	683.6	163
1/23/17	7.43			20.4	692.6	193
7/12/17	7.44			20.5	697.6	190
1/9/18	7.36			20.3	703.1	203
7/11/18	7.39			20.3	705.9	194
BMO-2015-1BL	917621			3/12/15	7.70	20.8
		4/14/15	7.55	20.7	733.4	239
		7/23/15	7.62	22.3	747.3	259
		10/6/15	7.74	20.8	747.3	232
		2/3/16	7.71	19.2	736.1	219
		2/3/16 DUP	7.71	19.2	736.1	215
		4/5/16	7.58	21.0	767.1	231
		7/13/16	7.49	21.6	763.8	231
		11/1/16	7.41	20.6	770.0	221
		1/23/17	7.39	20.5	769.1	249
		7/12/17	7.37	20.6	780.5	253
		1/9/18	7.38	20.5	784.5	251
		7/11/18	7.35	20.5	791.5	253
BMO-2015-2B	917827	3/19/15	7.43	20.0	795.2	288
		4/14/15	7.41	20.7	832.4	271
		7/23/15	7.47	22.2	847.5	292
		10/6/15	7.60	20.9	844.3	262
		2/3/16	7.48	20.4	823.2	247
		4/5/16	7.44	21.4	849.8	258
		7/13/16	7.33	21.8	837.2	250
		11/1/16	7.26	20.6	848.1	247
		1/23/17	7.26	20.5	849.6	268
		7/12/17	7.27	20.4	847.9	273
		1/9/18	7.25	20.2	841.9	276
		7/11/18	7.17	20.4	856.9	261

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2015-2BL	917828	3/26/15	7.29	22.3	887.1	280
		4/14/15	7.38	20.9	860.0	305
		7/23/15	7.43	22.1	902.3	323
		10/6/15	7.54	21.2	890.3	304
		2/3/16	7.45	20.5	884.7	278
		4/5/16	7.42	21.3	903.9	296
		4/5/16 DUP	7.42	21.3	903.9	292
		7/13/16	7.33	21.8	903.7	296
		11/1/16	7.24	20.8	905.7	282
		1/23/17	7.25	20.6	909.8	315
		7/12/17	7.23	20.7	921.0	317
		1/9/18	7.19	20.5	915.5	320
7/11/18	7.14	20.5	923.8	307		
BOOTH	914931	1/5/13	7.67	18.5	574.3	91.4
		6/14/13	7.61	51.1	604.2	95
		6/14/13 DUP	7.61	51.1	604.2	92.5
		7/17/13	7.75	23.2	497.6	75
BURKE	212268	10/18/13	7.66	19.3	597.6	92.6
		2/7/08	7.17	23.0	411	29.5
		4/22/08	7.13	27.0	423	26
		8/5/08	7.06	26.8	496	21.9
		10/20/08	7.57	26.0	466	20.5
		2/11/09	7.23	25.0	363	23.9
		4/28/09	7.16	26.1	369	24.2
		8/19/09	7.36	26.7	486	22.5
		12/16/09	7.28	25.7	488	26
		3/2/10	7.56	12.3	432	23.8
		4/22/10	7.49	16.4	452	24.8
		7/21/10	7.56	25.6	423.7	33.1
		10/10/13	7.87	21.9	469.6	27.5
		1/8/14	8.17	10.9	464.9	28.6
		4/16/14	7.80	21.1	471.0	28.3
		7/21/14	8.19	27.8	448.8	29.6
		10/21/14	8.06	22.2	456.0	29.1
		8/3/15	7.72	27.4	479.3	27.2
		7/21/16	7.98	26.4	478.0	28.6
		7/21/16 DUP	7.98	26.4	478.0	28.5
7/25/17	7.91	23.5	475.3	31.7		
7/26/18	7.51	27.4	480.8	30.5		
CHAMBERS	629807	3/6/08	7.73	17.8	408	7.7
		5/5/08	7.15	22.1	421	6
		7/14/08	7.43	23.2	434	5.8
		10/15/08	7.41	22.5	420	4
		1/27/09	7.57	21.5	312	5.3
		4/14/09	7.42	22.4	384	6.8
		7/15/09	7.83	23.4	414	4.3
		10/13/09	7.41	22.6	410	6.5
		1/26/10	7.31	21.3	416	5.7
		4/23/10	7.47	20.9	427.5	8.34
		7/21/10	7.49	23.1	430	7.75
		10/19/10	8.00	23.0	440	7.04
		1/18/11	7.47	22.4	390	7.30
		4/11/11	7.18	22.0	427.3	7.74
		7/18/11	7.18	23.8	420.2	8.18
		10/12/11	7.33	22.6	425.8	7.8
		2/6/12	7.43	21.8	434.6	9.08
		4/23/12	7.46	22.7	460	8.84
		7/17/12	7.31	22.4	410	8.41
		10/8/12	7.44	22.4	430.0	10.1
		1/10/13	7.57	21.5	440.8	9.64
		4/18/13	7.49	21.7	434.1	9.78
		7/15/13	7.40	22.7	434.6	9.81
		7/15/13 DUP	7.40	22.7	434.6	10.2
		10/10/13	7.51	21.8	439.7	10.3
		1/13/14	7.56	21.0	431.3	10.7
		4/14/14	7.48	22.2	435.9	10.9
		7/10/14	7.50	22.9	436.4	11.0
		10/17/14	7.31	22.5	456.0	10.8
		7/21/15	7.48	22.7	447.7	11.4
7/14/16	7.49	22.8	459.8	13.2		
7/25/17	7.34	21.3	450.4	13.2		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
COB MW-1	903992	2/22/08	6.93	21.2	1401	720
		5/20/08	6.88	22.0	2050	980
		7/30/08	6.88	21.7	1780	730
		10/23/08	6.95	21.2	1690	750
		2/12/09	6.92	21.1	1313	750
		4/21/09	7.15	22.7	1366	720
		7/22/09	6.94	21.6	1570	680
		7/22/09 DUP	6.94	21.6	1570	730
		10/22/09	6.81	22.3	1582	820
		2/4/10	7.04	21.1	1653	680
		4/20/10	6.92	21.8	1836	783
		7/13/10	7.02	22.3	2004	919
		7/14/11	6.78	21.4	1924	927
		7/12/12	6.74	23.4	1760	805
		2/5/13	6.95	21.5	1773	877
		7/11/13	7.17	21.4	1858	842
		7/9/14	6.95	21.5	2000	1000
		7/9/14 DUP	6.95	21.5	2000	1020
		7/27/15	6.96	21.6	1993	902
COB MW-1B	225906	7/20/16	6.63	21.8	2405	1210
		7/19/17	6.51	20.9	2474	1160
COB MW-2	903984	5/20/08	7.32	21.2	490	40.5
		7/30/08	7.34	20.8	511	37.6
		10/23/08	7.36	20.3	498	34.9
		2/12/09	7.35	20.2	379	35.6
		4/23/09	7.33	21.8	431	34
		7/22/09	7.36	21.3	483	33.5
		10/22/09	7.24	21.0	454	32.2
		3/3/10	7.55	19.7	450	33.5
		4/26/10	7.28	21.3	479.6	34.8
		7/13/10	6.91	21.2	479.5	30.4
		7/13/10 DUP	6.91	21.2	479.5	30.6
		1/20/11	7.47	20.7	440	29.6
		7/14/11	7.11	21.1	472.6	29.8
		1/31/12	7.53	20.3	466.6	30.0
		7/12/12	7.36	21.2	630	29.2
		1/9/13	7.48	20.0	473.5	35.8
		7/25/13	7.34	20.9	485.4	40.6
		1/6/14	7.58	19.9	487.8	40.5
		7/9/14	7.52	20.5	503.5	43.7
		2/4/15	7.38	20.3	619	40.5
		7/27/15	7.57	20.8	514.6	40.3
		7/27/15 DUP	7.57	20.8	514.6	41.6
		1/11/16	7.54	19.5	510.6	41.2
		7/20/16	7.52	20.0	523.7	41.6
		1/19/17	7.40	19.5	525.8	41.5
		7/19/17	7.29	19.5	548.6	39.6
		1/11/18	7.26	19.3	552.3	36.1
7/17/18	7.28	19.4	572.5	32.6		
COB MW-3	906823	2/28/08	7.39	21.0	416	57.8
		3/27/08	ND	ND	ND	57.7
		4/30/08	ND	ND	ND	37
		5/20/08	7.56	22.3	473	35.8
		7/24/08	ND	ND	ND	64.9
		7/30/08	7.64	22.3	541	67.3
		10/9/08	ND	ND	ND	52.5
		10/23/08	7.43	20.8	507	76.6
		2/12/09	7.35	21.1	432	112
		4/23/09	7.35	22.6	407	43.7
		7/22/09	7.38	21.5	460	52.3
		10/22/09	7.40	21.3	466	74.2
		10/22/09 DUP	7.40	21.3	466	73.9
		3/3/10	7.36	21.1	480	102
		4/26/10	7.35	22.0	497.9	77.6
		7/13/10	7.41	21.7	456.7	46.5
		7/14/11	7.19	21.8	440.0	40.1
		7/12/12	7.34	21.4	450	39.5
		2/5/13	7.60	20.4	476.4	65.1
		2/5/13 DUP	7.60	20.4	476.4	64.7
		7/25/13	7.42	21.4	485.0	66.6
		7/9/14	7.61	21.4	525.3	90.9
		7/27/15	7.56	21.6	560.3	105
		7/20/16	7.48	20.4	507.4	72.7
		7/19/17	7.34	20.2	529.5	84.1
		7/17/18	7.37	20.0	528.5	92.7

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
COB WL	593116	2/22/08	6.99	20.6	919	90
		3/24/08	ND	ND	ND	98.2
		4/28/08	ND	ND	ND	98.7
		5/20/08	7.30	21.9	1053	98
		7/30/08	7.17	22.0	1098	97.1
		7/30/08	ND	ND	ND	100
		10/15/08	ND	ND	ND	107
		10/23/08	7.23	21.4	1075	104
		2/12/09	6.98	20.6	814	94
		4/23/09	7.29	22.2	923	98
		7/22/09	7.17	22.5	1037	97.3
		10/22/09	7.17	22.4	988	96.1
		3/3/10	7.48	21.1	1030	97.1
		4/26/10	7.36	21.9	1038	97.7
		4/26/10 DUP	7.36	21.9	1038	97.9
		7/13/10	7.18	22.3	1013	88.7
		7/14/11	6.91	21.6	1019	87.3
		7/12/12	7.07	23.2	1060	92.0
		2/5/13	7.91	21.5	1057	98.3
		7/25/13	7.23	22.7	1074	97.6
		7/9/14	7.42	21.8	1132	81.5
		2/4/15	6.90	23.3	1488	73.7
		7/27/15	7.25	22.9	1221	69.6
1/11/16	7.25	20.4	1195	73.5		
7/20/16	7.12	22.5	1184	74.4		
1/25/17	7.07	21.5	1167	79.8		
7/14/17	7.07	21.9	1162	80.4		
1/11/18	7.07	21.7	1169	77.3		
7/9/18	7.21	21.8	1165	73.0		
7/9/18 DUP	7.21	21.8	1165	74.5		
COLLINS	565260	2/12/08	6.88	21.6	1470	520
		5/29/08	7.01	22.0	1459	520
		7/31/08	6.86	21.6	1502	536
		10/20/08	8.44	24.7	1510	518
		2/11/09	6.68	21.4	1147	567
		4/21/09	6.92	22.5	1150	499
		7/22/09	7.00	22.4	1413	460
		10/20/09	6.60	21.9	1432	513
		2/2/10	6.98	21.2	1439	471
		4/23/10	6.99	20.6	1472	561
		7/20/10	6.69	25.0	1420	569
		7/17/13	6.97	21.6	1409	519
		COOPER	623564	2/14/08	7.02	20.8
5/14/08	8.08			22.1	419	34.2
7/31/08	7.81			28.4	455	33.7
10/20/08	8.44			24.7	448	31.2
2/11/09	7.32			19.2	333	34.3
4/21/09	8.19			24.9	346	33.4
7/20/09	8.45			29.8	430	32.3
10/14/09	7.85			24.6	423	33.6
2/1/10	7.83			13.6	433	32.4
4/22/10	7.82			17.9	433	34.5
7/19/10	7.98			29.3	420	35.0
10/18/10	7.12			73.1	450	33.1
1/19/11	8.83			18.4	410	32.1
4/11/11	7.65			21.0	442.6	34.3
7/11/11	7.45			24.2	426.5	32.1
11/22/11	7.86			20.6	426.1	33.7
2/1/12	7.97			21.8	429.2	34.1
4/10/12	7.41			22.4	426.8	32.5
7/18/12	7.45			22.9	430	33.4
10/9/12	7.70			22.1	432.8	34.3
1/11/13	7.76			21.5	434.1	32.7
4/10/13	7.72			21.1	427.5	31
7/11/13	7.65			23.2	432.5	31.9
10/7/13	7.68			22.7	430.5	31.4
1/16/14	7.65			21.6	431.7	30.8
4/10/14	7.66			22.3	433.1	31.5
7/10/14	7.68			22.4	428.8	32.2
10/8/14	7.37			23.5	408	31.1
1/27/15	7.67			20.5	411	29.8
8/3/15	7.67			22.7	421.3	27.1
3/31/16	7.52			22.4	410	28.8
7/25/16	7.62			22.4	420.2	27.3
1/25/17	7.56			20.8	412.8	26.2
7/17/17	7.48	21.6	417.1	35.6		
1/16/18	7.45	20.8	402.8	26.1		
7/16/18	7.45	21.8	415.8	25.5		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
COOPER C	637069	3/20/08	6.93	21.3	2081	880
		5/5/08	6.78	22.4	2139	990
		7/15/08	6.86	22.3	2162	1040
		7/15/08 DUP	6.86	22.3	2162	960
		10/16/08	6.80	21.4	2078	1020
		1/27/09	6.92	20.5	1489	950
		4/14/09	6.85	21.6	1833	930
		7/14/09	6.75	22.1	1972	910
		10/12/09	6.70	21.8	1858	830
		1/27/10	7.27	19.6	1930	620
		4/22/10	6.76	19.5	1921	884
		7/21/10	6.84	22.9	1761	921
		10/20/10	7.16	20.9	1980	829
		1/17/11	6.95	20.5	1880	756
		4/11/11	6.82	21.0	1942	834
		8/26/11	6.84	21.8	1800	847
		2/1/12	7.13	20.5	2024	867
		4/25/12	6.83	21.5	1960	817
		7/11/12	6.48	22.8	2030	834
		10/10/12	6.98	21.2	1985	863
		2/27/13	6.58	20.9	1805	821
		5/8/13	6.41	20.7	1744	798
		8/13/13	6.69	21.2	1739	756
		11/1/13	6.61	21.2	1624	738
		2/10/14	6.69	21.6	1616	715
5/7/14	6.48	22.5	1612	686		
7/21/14	6.63	23.1	1548	671		
11/13/14	6.87	22.4	1520	638		
9/10/15	6.84	22.8	1997	641		
8/18/16	6.92	25.2	1468	647		
7/13/17	6.99	23.0	1461	639		
7/25/18	6.95	22.2	1545	661		
DODSON	644927	2/20/08	7.61	17.3	857	54
		5/12/08	7.11	21.1	1118	34.2
		7/24/08	7.25	21.6	1233	49.3
		10/13/08	7.15	20.5	1095	56.9
		1/22/09	7.20	20.4	892	51.8
		4/9/09	7.09	21.4	1103	50.1
		7/8/09	7.18	21.1	1153	55.9
		10/6/09	7.07	21.1	1140	49.3
		1/21/10	7.15	18.9	1227	44.6
		4/19/10	7.46	19.9	1261	48.8
		4/19/10 DUP	7.46	19.9	1261	48.6
		7/20/10	7.16	22.7	1260	47.5
		10/18/10	6.43	21.2	1260	49.3
		1/19/11	7.88	19.5	1120	57.9
		4/5/11	7.03	20.9	1300	49.0
		7/12/11	6.86	23.7	1352	52.9
		10/10/11	6.79	20.9	1280	50.9
		10/10/11 DUP	6.79	20.9	1280	49.6
		1/31/12	7.17	20.3	1454	50.4
		4/12/12	7.06	20.6	1492	45.4
		7/11/12	7.10	21.5	1790	54.0
		10/4/12	7.27	20.6	1626	48.7
		1/18/13	7.27	20.2	1743	51.8
		1/18/13 DUP	7.27	20.2	1743	51.6
		4/9/13	7.33	19.6	1886	74.4
		7/9/13	7.39	21.0	1825	53.6
		10/9/13	7.24	20.2	1612	63.3
		1/9/14	7.31	19.7	1586	61.4
		4/15/14	7.24	20.7	1636	58.5
		7/14/14	7.27	21.9	1651	54.4
		10/16/14	7.12	21.3	1706	53.2
		1/26/15	7.46	20.2	1650	59.5
		1/26/15 DUP	7.46	20.2	1650	59.9
7/23/15	7.34	21.1	1716	60.8		
1/12/16	7.41	18.6	1749	49.2		
7/18/16	7.28	20.7	2233	49.1		
1/26/17	7.06	19.8	2049	45.9		
7/17/17	7.07	19.9	1920	46.1		
1/17/18	7.01	19.6	1922	45.4		
7/30/18	7.05	19.4	2408	39.1		



## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
DURAZO	NR	2/10/09	7.22	18.8	848	386
		4/20/09	7.37	22.7	901	367
		7/15/09	7.57	22.8	1102	332
		10/14/09	7.17	21.9	1048	377
		2/1/10	7.30	21.1	1105	344
		4/26/10	7.22	23.1	1099	388
		7/20/10	7.28	23.0	1070	405
		10/19/10	7.28	21.9	1112	398
		1/19/11	7.94	21.6	1050	360
		4/4/11	7.20	21.9	1119	383
		7/14/11	7.01	23.6	1101	409
		10/12/11	7.23	24.9	1000	396
		2/7/12	7.26	25.3	1152	404
		4/12/12	7.41	21.8	1101	407
EAST	599796	2/8/08	7.45	19.9	423	10.6
		5/14/08	7.31	20.9	595	14.8
		7/23/08	7.34	20.8	605	11.8
		10/14/08	7.33	20.3	531	8.9
		1/20/09	7.33	20.0	482	12.5
		4/8/09	7.32	20.6	555	15.9
		7/13/09	7.33	21.2	613	13.8
		10/8/09	7.29	20.8	593	13.4
		1/25/10	7.08	19.0	585	10.7
		4/21/10	7.42	20.5	616	14.4
		4/21/10 DUP	7.42	20.5	616	13.9
		7/14/10	7.45	22.2	577.1	12.1
		10/20/10	7.64	21.2	650	12.1
		1/18/11	7.44	21.0	615.9	13.1
		4/5/11	7.19	20.8	612.5	13.8
		7/12/11	7.23	21.7	595.1	12.7
		10/12/11	7.31	21.4	599.7	15.1
		10/12/11 DUP	7.31	21.4	599.7	15.1
		1/31/12	7.24	20.0	610	12.8
		4/11/12	7.53	20.6	609.3	14.6
		7/9/12	7.20	21.1	580	14.2
		10/4/12	7.49	20.4	623.8	15.0
		1/17/13	7.46	20.0	613.0	13.1
		4/9/13	7.54	19.6	597.7	12.2
		7/9/13	7.46	21.2	603.6	12.1
		10/15/13	7.51	20.2	622.6	17.2
		1/14/14	7.54	20.2	632.2	15.5
		1/14/14 DUP	7.54	20.2	632.2	15.5
		4/8/14	7.44	20.5	634.7	15.3
		7/8/14	7.43	20.7	618.8	13.1
10/22/14	7.23	22.8	601.0	20.7		
7/24/15	7.5	21.0	626.5	13.1		
7/12/16	7.30	21.3	615.9	14.7		
7/27/17	7.22	19.8	620.9	14.2		
7/30/18	7.26	19.8	605.9	12.4		
ECHAVE	219449	2/1/12	7.39	20.7	390.0	26.7
		4/23/12	7.50	22.5	440.0	26.4
		7/17/12	7.44	22.2	430	26.1
		10/9/12	7.69	21.9	404.7	26.1
		10/9/12 DUP	7.69	21.9	404.7	26.0
		1/18/13	7.61	21.7	408.5	25.4
		5/14/13	7.74	22.2	400.2	25.2
		7/17/13	7.81	22.1	406.4	24.3
		10/8/13	7.66	21.4	404.3	24.5
		1/13/14	7.68	21.0	412.4	25.7
		4/10/14	7.67	21.4	409.3	26.4
		7/17/14	7.68	21.6	405.0	26.7
		10/22/14	7.43	21.4	406.0	25.9
		8/3/15	7.88	28.7	406.8	24.6
		7/22/16	7.86	27.5	391.5	24.7
7/28/17	7.59	25.1	403.2	25.7		
7/17/18	7.68	24.3	397.5	24.1		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
EPPELE 641	805641	3/11/08	7.98	21.4	646	21.7
		5/12/08	7.21	21.7	667	24.7
		7/21/08	7.49	23.9	605	19
		10/14/08	7.56	20.4	642	21.8
		1/21/09	7.60	21.1	500	22.7
		4/8/09	7.56	22.4	538	19.7
		7/9/09	7.43	24.3	550	17.5
		7/20/10	7.58	23.3	529.2	21.1
		10/20/10	7.66	21.0	572.1	17.2
		1/17/11	7.43	21.0	576.4	17.3
		4/5/11	7.43	21.5	569.2	16.7
		7/11/11	7.27	23.5	563.1	18.6
		7/11/11 DUP	7.27	23.5	563.1	18.3
		10/12/11	7.38	20.9	500.0	19.6
		1/31/12	7.68	19.9	560.8	18.2
		4/11/12	7.74	20.6	563.8	19.5
		4/11/12 DUP	7.74	20.6	563.8	19.6
		7/6/12	7.60	21.7	560	18.8
		10/3/12	7.84	20.7	558.8	19.5
		1/17/13	7.76	19.1	559.6	18.8
		4/8/13	7.71	20.4	564.1	17.5
		4/8/13 DUP	7.71	20.4	564.1	17.4
		7/9/13	7.66	21.9	570.1	17.5
		10/15/13	7.86	21.1	682.5	31.9
		1/14/14	7.97	19.1	602.8	29.0
		4/8/14	7.60	19.4	600.2	21.5
7/8/14	7.65	21.0	596.9	21.6		
10/21/14	7.22	22.2	659	32.2		
7/24/15	7.60	21.2	638.1	22.6		
7/12/16	7.84	24.6	576.6	18.9		
7/12/16 DUP	7.84	24.6	576.6	18.9		
7/27/17	7.70	21.4	563.1	18.8		
7/31/18	7.78	21.6	558.9	17.8		
FLEMING	218386	7/15/10	6.98	24.2	1390	573
FRANCO 101	500101	2/6/08	7.47	19.6	1301	670
		5/5/08	6.93	23.1	1557	680
		7/14/08	7.00	22.7	1586	680
		10/15/08	7.20	20.5	1560	680
		1/22/09	7.19	20.1	1178	740
		4/14/09	7.24	23.1	1416	690
		7/13/09	7.30	27.3	1532	670
		10/12/09	7.16	24.2	1493	650
		1/26/10	6.91	18.5	1529	640
		4/23/10	7.43	15.8	1559	699
		7/13/10	7.48	28.6	901.6	188
FRANCO 383	221383	9/13/12	7.66	25.0	1005	318
		10/5/12	7.63	24.4	1002	324
		11/13/12	7.67	19.8	988.2	349
		12/3/12	7.54	19.4	1001	332
		1/15/13	7.52	13.5	1010	333
		2/6/13	7.55	18.9	1004	353
		3/7/13	7.4	20.5	979.9	338
		4/10/13	7.7	20.4	1000	335
		7/10/13	7.69	25.7	1018	335
		10/16/13	7.63	21.9	1018	350
		1/14/14	7.68	20.1	1039	345
		4/8/14	7.68	24.3	1044	351
		4/8/14 DUP	7.68	24.3	1044	330
		7/14/14	7.63	26.5	1030	349
		10/8/14	7.47	23.5	954	335
		7/27/15	7.68	27.3	1047	322
		7/18/16	7.63	26.0	1040	339
		7/20/17	7.36	24.9	1056	337
7/27/18	7.42	25.8	1063	371		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
FULTZ	212447	2/27/08	6.76	21.1	1827	152
		4/21/08 <sup>1</sup>	6.74	22.0	1739	137
		5/14/08 <sup>1</sup>	6.88	22.3	1532	131
		6/23/08 <sup>1</sup>	6.74	22.0	1788	111
		7/29/08 <sup>1</sup>	6.74	22.2	1989	152
		8/28/08 <sup>1</sup>	M	21.6	1889	137
		9/23/08 <sup>1</sup>	6.82	21.9	1821	137
		10/22/08	6.80	21.4	1940	145
		1/21/09	6.74	21.2	1481	82
		4/9/09	6.78	21.5	1695	138
		7/13/09	7.04	23.4	1452	81
		10/8/09	7.00	21.6	1262	72
		10/8/09 DUP	7.00	21.6	1262	71.8
		1/25/10	7.11	21.8	1282	66.7
		4/20/10	7.32	21.2	1202	68.3
		7/14/10	7.75	22.2	1132	57.0
		10/20/10	7.27	20.5	1091	54.7
		1/18/11	7.23	20.4	1136	56.9
		4/5/11	7.08	22.1	1082	49.5
		4/5/11 DUP	7.08	22.1	1082	51.7
8/25/11	6.45	23.3	940	50.6		
10/12/11	7.22	21.7	870	48.5		
GALLANT	502527	2/11/08	7.46	20.2	604	17.9
		7/23/08	7.26	21.2	925	20.9
GARNER 635	587635	2/4/08	7.61	22.7	479	37.8
		5/5/08	7.26	24.9	468	35.8
		7/15/08	7.63	25.6	480	37.4
		10/15/08	7.65	24.1	472	36
		1/28/09	7.69	23.4	368	37.4
		4/15/09	7.83	24.1	412	36.9
		7/16/09	7.56	25.1	445	35.7
		10/14/09	7.58	25.2	446	36.1
		2/2/10	7.79	22.8	465	35.1
		4/22/10	7.84	23.7	464.1	36.9
		7/20/10	7.57	25.3	458.2	38.8
		10/19/10	8.23	25.4	510	37.9
		1/19/11	7.82	24.1	463.4	35.7
		1/19/11 DUP	7.82	24.1	463.4	35.7
		4/6/11	7.76	23.4	467.4	35.8
		7/15/11	7.19	25.0	457.40	37.7
		10/11/11	7.57	24.2	400.0	38
		2/2/12	7.38	22.7	469.5	39.2
		4/13/12	7.62	24.0	460.0	33.5
		7/11/12	7.52	24.9	520	37.7
		7/11/12 DUP	7.52	24.9	520	37.2
		10/5/12	8.09	23.1	472.9	39.1
		1/11/13	7.83	23.7	470.8	38.7
		4/15/13	7.79	23.4	471.5	40
		7/10/13	7.9	25.0	469.5	36.7
		10/11/13	7.78	24.0	476.7	38.8
		1/17/14	7.81	23.2	473.6	41
		4/15/14	7.74	23.7	470.7	40.4
		7/26/17	7.46	23.4	474.1	40.6
		7/24/18	7.48	23.9	468.1	41.7
GGOOSE 547	628547	5/21/08	7.08	22.7	856	199
		8/15/08	7.02	24.8	915	178
		10/29/08	7.27	22.6	897	216
		2/24/09	7.06	23.8	851	186
		5/14/09	7.15	23.9	743	174
		8/19/09	7.20	23.8	887	175
		11/11/09	7.15	23.1	897	188
GL-03	539782	3/4/08	7.43	25.7	417	20.3
		5/22/08	7.06	25.3	647	43.3
		8/4/08	7.10	26.8	673	36.1
		11/12/08	7.21	25.2	478	34.9
		2/26/09	7.05	26.5	603	54.8
		5/5/09	6.91	28.1	682	43.9
		8/1/09	7.12	27.4	768	43.1
		11/10/09	6.96	27.0	692	49
		3/2/10	7.36	24.9	693	43.4
		3/2/10 DUP	7.36	24.9	693	45.1
		4/9/10	6.17	25.6	556	48.1
		7/7/10	6.48	26.3	546	44.4
		2/1/12	6.57	24.1	559	42.0
HARDT	NR	2/5/13	7.15	17.5	670.6	17.7

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
HOBAN	805290	2/27/08	6.93	22.1	1359	510
		5/7/08	6.88	22.3	1532	670
		7/14/08	6.88	23.1	1719	690
		10/16/08	6.98	22.4	1624	692
		1/28/09	6.82	21.3	1220	580
		4/15/09	7.07	21.7	1423	700
		7/14/09	6.78	22.6	1551	670
		10/15/09	6.75	22.7	1487	670
		10/15/09 DUP	6.75	22.7	1487	780
		3/2/10	7.12	19.8	1575	580
		8/31/11	6.64	22.3	1772	893
		12/14/11	6.68	20.2	1870	944
		2/1/12	6.74	20.9	1900	993
		4/19/12	6.81	21.5	1805	868
		7/11/12	6.86	21.4	1906	1110
		10/17/12	6.74	22.0	1846	1040
		2/15/13	6.64	20.7	1934	954
		5/8/13	6.6	21.4	1903	1060
		8/13/13	6.85	21.6	1925	1030
		11/1/13	6.74	21.0	1920	1070
		2/10/14	6.64	21.0	1950	991
		5/7/14	6.69	21.1	1958	1030
		7/21/14	6.69	21.6	1903	1030
		11/13/14	6.88	21.7	1965	1020
		9/10/15	6.82	22.1	1922	1030
		8/18/16	6.77	22.0	1922	1050
		7/13/17	6.77	21.7	1924	1270
7/13/17 DUP	6.77	21.7	1924	1050		
7/25/18	7.01	22.2	1907	998		
8/14/12	8.35	26.3	629.3	69.2		
10/16/12	8.18	26.6	648.3	68.1		
2/6/13	8.18	24.1	650.3	71.9		
4/9/13	8.2	24.3	621	67.5		
7/12/13	8.25	26.8	624.9	67.9		
10/16/13	8.12	25.6	623.7	70.2		
1/8/14	8.22	24.8	620.1	70.8		
4/10/14	8.14	26	621.7	66.1		
4/10/14 DUP	8.14	26	621.7	68.2		
7/14/14	8.16	26.6	618.3	69.1		
10/10/14	7.99	26.4	621.0	66.8		
7/31/15	8.17	27.4	618.8	67.5		
7/27/16	8.12	26.3	612.6	67.9		
7/21/17	8.00	26.0	616.4	65.8		
7/23/18	8.05	26.1	614.7	70.7		
3/4/08	7.06	20.4	1280	571		
5/8/08	6.95	21.0	1494	673		
7/14/08	7.00	21.1	1566	610		
10/15/08	7.00	20.6	1598	683		
1/28/09	6.82	21.0	1203	640		
1/28/09 DUP	6.82	21.0	1203	640		
4/15/09	7.02	21.5	1397	620		
7/15/09	7.16	21.5	1539	640		
10/12/09	6.89	21.4	1414	600		
1/27/10	7.35	20.0	1714	440		
1/27/10 DUP	7.35	20.0	1714	520		
4/21/10	7.16	20.8	1490	710		
7/19/10	6.94	24.6	1350	548		
10/18/10	6.47	21.4	1420	568		
1/17/11	7.12	19.8	1370	520		
4/11/11	7.20	20.6	1489	616		
8/26/11	7.11	23.2	1160	498		
10/11/11	7.1	21.0	1220	545		
10/11/11 DUP	7.1	21.0	1220	538		
2/1/12	7.29	20.6	1367	630		
4/13/12	6.99	21.2	1508	632		
9/13/12	7.12	21.9	1576	699		
10/16/12	7.06	21.1	1417	576		
2/6/13	7.06	20.3	1499	679		
4/9/13	7.38	19.4	1319	521		
7/12/13	7.40	21.6	1430	590		
10/16/13	7.15	20.3	1319	522		
1/8/14	7.24	20.3	1267	462		
4/10/14	7.23	20.6	1262	471		
7/14/14	7.18	21.1	1300	496		
7/14/14 DUP	7.18	21.1	1300	495		
10/10/14	6.93	23.2	1339	413		
7/31/15	7.16	21.9	1316	484		
7/21/17	6.98	20.1	1278	447		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
KEEFER	209744	2/6/08	7.70	19.0	378	6.8
		5/6/08	7.19	20.3	512	9
		7/16/08	7.21	21.4	539	8
		10/28/08	7.32	20.1	534	21.2
		1/28/09	7.42	19.5	356	6.1
		4/16/09	7.29	20.0	452	7.7
		7/14/09	7.35	22.1	533	7
		10/13/09	7.24	20.7	516	8.7
		1/26/10	7.15	18.8	483	7.3
		4/20/10	7.44	20.5	540.9	8.77
		7/15/10	7.50	22.2	535.8	8.84
		10/19/10	6.72	20.2	470	7.89
		1/18/11	7.45	20.6	450	7.24
		4/6/11	7.48	19.1	546.2	8.04
		7/18/11	7.19	23.2	492.3	7.79
		10/11/11	7.39	20.7	486.9	7.98
		2/6/12	7.36	20.3	482.0	6.84
		4/23/12	7.23	21.6	500	7.14
		7/17/12	7.40	21.0	500	7.29
		10/9/12	7.58	20.1	506.6	8.47
		1/10/13	7.55	19.3	466.3	6.37
		4/18/13	7.58	20	475.9	7.3
		7/11/13	7.67	20.8	485.1	7.23
		7/11/13 DUP	7.67	20.8	485.1	7.24
		10/7/13	7.53	20.6	458.9	6.39
		1/7/14	7.61	19.7	464.8	6.54
		4/9/14	7.59	20.2	473.3	6.61
		7/10/14	7.49	21.6	460.5	6.66
		10/8/14	7.32	22.3	429	6.35
		7/21/15	7.62	22.1	462.2	6.09
		7/25/16	7.42	22.2	477.9	6.81
7/25/17	7.31	19.4	499.5	7.23		
2/23/18	7.31	19.5	472.7	6.60		
7/9/18	7.35	19.9	494.4	6.25		
MARCELL	NR	8/26/11	7.12	25.1	1390	669
		9/26/11	6.63	22.1	1502	638
		11/22/11	7.29	21.0	1536	687
		2/1/12	7.42	20.8	1557	705
		4/13/12	7.15	21.8	1560	668
		7/13/12	6.86	22.3	1730	650
		10/17/12	7.18	21.3	1546	660
		10/17/12 DUP	7.18	21.3	1546	657
		2/6/13	7.25	19.8	1553	714
		2/6/13 DUP	7.25	19.8	1553	714
		4/10/13	7.07	19.9	1578	695
7/15/13	7.09	21.4	1617	724		
MCCONNELL 265	539265	2/20/08	7.21	21.1	1435	720
		5/6/08	6.77	21.6	1668	737
		7/15/08	6.91	22.3	1775	700
		10/15/08	6.82	21.3	1686	703
		1/28/09	6.85	21	1274	660
		4/15/09	7.04	21.3	1472	657
		7/15/09	7.01	22.2	1607	662
		10/12/09	6.77	21.7	1594	666
		1/26/10	6.71	21.5	1641	685
		4/22/10	6.95	20.1	1691	811
		7/21/10	6.86	23.5	1560	805
		10/18/10	6.97	22.0	1704	775
		1/19/11	7.38	20.6	1610	711
		4/8/11	7.04	19.8	1775	810
		7/12/11	6.60	23.7	1702	790
		10/11/11	7.18	21.8	1590	845
		2/7/12	7.14	20.6	1842	847
		4/11/12	6.82	21.4	1781	833
		7/6/12	6.88	22.4	1827	851
		10/8/12	7.07	20.9	1862	934
		1/10/13	6.89	20.9	1854	902
		1/10/13 DUP	6.89	20.9	1854	889
		4/18/13	7.11	20.4	1889	884
		7/10/13	7.14	22.1	1897	898
		10/14/13	7.00	21.0	1911	908
		1/8/14	7.23	20.9	1942	985
		4/14/14	6.99	20.7	1913	963
7/14/14	6.95	21.8	1941	975		
10/7/14	6.84	22.2	1976	968		
7/31/15	7.04	21.9	1970	949		
7/20/17	6.73	20.6	1964	905		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
MCCONNELL 459	221459	7/27/12	8.25	26.5	510.0	41
		10/8/12	8.12	25.3	517.3	43.4
		1/15/13	8.06	24.5	512.6	37.4
		4/10/13	8.14	23.5	487.0	35.5
		7/10/13	8.10	25.5	480.7	34.5
		10/14/13	8.04	24.9	486.7	34.6
		1/8/14	8.20	23.7	489.4	37.1
		4/14/14	8.08	24.6	474.3	35.9
		9/9/14	8.12	25.1	465.7	33.0
		10/7/14	7.94	25.7	478.0	34.1
		7/31/15	8.13	25.9	453.6	28.5
		7/26/16	8.08	25.6	455.3	30.4
		7/20/17	7.93	24.9	449.8	32.3
		7/17/18	7.93	24.8	446.7	28.6
METZLER	35-71891	3/5/08	7.27	21.6	1055	317
		5/15/08	7.12	22.8	1051	329
		7/31/08	7.16	22.5	1078	317
		10/20/08	7.24	22.2	1080	305
		10/20/08 DUP	7.24	22.2	1080	326
		2/11/09	7.12	21.3	818	321
		4/20/09	7.22	23.2	845	313
		7/15/09	7.41	22.9	1031	293
		7/15/09 DUP	7.41	22.9	1031	309
		10/14/09	7.1	22.7	989	315
		2/1/10	7.22	21.7	1021	286
		5/18/10	7.56	21.0	1053	330
		7/16/10	7.20	24.1	1007	330
		10/19/10	7.15	22.6	1006	319
		1/19/11	7.55	21.1	930	298
		4/4/11	7.03	23.3	1018	323
		7/12/11	7.07	22.3	993.0	312
		10/12/11	7.27	22.1	910	301
		2/7/12	7.36	21.5	1019	326
		4/12/12	7.34	21.1	1009	320
MOORE	538847	2/20/08	7.69	22.2	362	7.1
		5/8/08	7.09	22.4	432	7.5
		7/16/08	7.34	23.0	482	9.8
		10/29/08	7.32	22.4	452	19.2
		1/29/09	7.11	21.7	328	6.6
		4/16/09	7.40	22.1	374	6.4
		7/15/09	7.44	23.3	439	5.8
		10/13/09	7.36	22.6	429	7.1
		1/26/10	7.54	19.6	423	6.3
		4/22/10	7.47	20.6	433	7.40
		7/15/10	7.44	24.1	431.3	7.54
		7/15/10 DUP	7.44	24.1	431.3	7.11
		10/19/10	6.79	22.1	430	7.14
		1/18/11	7.48	21.1	390	6.42
		4/6/11	7.39	21.4	426.3	6.70
		7/13/11	6.91	23.2	423.4	7.62
		10/11/11	7.31	22.5	419.0	7.31
		1/31/12	7.35	21.7	430	7.21
		4/23/12	7.34	22.8	470	6.99
		4/23/12 DUP	7.34	22.8	470	7.05
		7/17/12	7.36	22.9	430	7.01
		7/17/12 DUP	7.36	22.9	430	6.99
		10/8/12	7.64	21.4	433.2	7.51
		1/10/13	7.50	20.8	439.9	7.16
		4/19/13	7.68	21.6	434.7	7.25
		7/11/13	7.56	22.9	442.2	7.14
		10/7/13	7.59	21.5	431.8	6.99
		10/13/14	7.47	22.0	433	6.72
		8/3/15	7.61	22.9	446.7	7.12
		7/14/16	7.55	23.0	445.8	7.86
7/25/17	7.28	21.1	455.5	7.98		
8/1/18	7.24	26.9	436.8	8.10		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
NESS	509127	7/24/08	7.35	26.5	563	50.2
		10/16/08	7.47	21.4	542	48.9
		1/26/09	7.39	17.2	422	52.3
		5/11/09	7.52	28.8	472	45.9
		8/11/09	7.56	28.7	525	39.8
		11/12/09	7.53	24.5	537	51.3
		2/2/10	7.67	19.7	535	48.7
		4/21/10	7.70	23.5	518.9	42.1
		7/19/10	7.58	28.9	524.7	48.1
		1/18/11	7.49	21.8	536.6	50.1
		7/12/11	7.48	26.3	520.0	43.5
		2/3/12	7.58	21.1	538.2	49.0
		7/10/12	7.20	26.8	380	40.1
		7/10/12 DUP	7.20	26.8	380	39.2
		1/9/13	7.57	19.1	549.6	53.9
		7/8/13	7.84	27.9	539.2	46.8
		1/6/14	7.61	20.3	542.4	53.4
		7/7/14	7.60	25.3	536.6	48.3
		7/20/15	7.75	27.4	560.8	54.3
		7/11/16	7.60	28.5	545.2	49.6
7/27/17	7.39	26.4	545.8	55.2		
7/31/18	7.42	26.4	550.7	54.1		
NOTEMAN	212483	2/5/08	6.70	19.9	1317	310
		5/13/08	6.67	23.0	1445	272
		7/24/08	6.68	24.2	1539	274
		10/23/08	6.57	23.2	1643	356
		1/19/09	6.38	22.9	1098	322
		4/7/09	6.56	23.8	1375	303
		7/8/09	6.55	24.6	1405	260
		10/5/09	6.48	24.1	1442	281
		1/20/10	6.79	20.3	1450	289
		4/19/10	6.81	22.4	1446	307
		7/19/10	6.77	24.6	1438	309
		10/18/10	6.08	24.6	1430	280
		1/19/11	6.84	22.3	1446	266
		4/4/11	6.72	22.9	1446	276
		4/4/11 DUP	6.72	22.9	1446	279
		7/11/11	6.78	23.9	1406	272
		10/11/11	6.96	23.4	1250	286
		2/3/12	6.68	21.3	1370	301
		4/23/12	6.68	24.0	1580	291
		7/9/12	6.57	24.7	1360	265
		7/9/12 DUP	6.57	24.7	1360	265
		10/4/12	6.80	23.6	1412	287
		1/17/13	6.69	23.3	1417	288
		4/8/13	6.90	22.3	1409	280
		7/9/13	6.89	24.3	1400	278
		10/14/13	6.75	23.2	1528	355
		1/10/14	6.83	22.2	1440	311
		4/10/14	6.84	23.2	1426	301
		7/7/14	6.80	23.2	1423	289
		12/10/14	6.66	22.8	1528	366
		7/23/15	6.87	24.1	1424	287
		7/15/16	6.79	23.9	1412	257
		7/27/17	6.57	22.9	1383	265
NOTEMAN HOUSE	212483	2/3/12	7.06	13.5	1520	324
NSD-02	527587	2/5/08	ND	ND	ND	43
		7/7/08	8.02	21.0	609.00	44
NSD-03	527586	2/5/08	ND	ND	ND	70.7
		7/7/08	7.64	21.0	570.00	58.9

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
NWC-02	562944	10/27/08	7.47	22.2	438	5.1
		2/12/09	7.58	21.6	330	6.6
		4/23/09	7.39	23.8	373	6.4
		7/21/09	7.62	23.9	408	5
		10/21/09	7.32	22.6	436	6.8
		2/3/10	7.68	19.6	423	8.5
		4/21/10	7.57	22.1	413	7.26
		7/20/10	7.36	23.7	412.5	6.87
		10/19/10	7.42	22.5	416.2	7.39
		1/18/11	7.47	23.2	390	6.43
		4/6/11	7.27	22.9	413.5	6.4
		7/15/11	7.03	22.5	416.3	7.24
		10/13/11	7.45	21.9	370	7.31
		1/30/12	7.39	21.2	431.3	7.78
		4/25/12	7.42	22.4	370	8.42
		7/18/12	7.33	22.5	430	6.99
		10/10/12	7.58	21.7	423.9	7.46
		1/10/13	7.58	21.8	396.4	9.02
		4/17/13	7.64	21.2	426.2	7.52
		7/12/13	7.65	22.0	429.3	6.91
		10/10/13	7.49	21.2	433.4	7.05
		10/10/13 DUP	7.49	21.2	433.4	7.14
		1/13/14	7.6	21.2	426.7	7.03
		4/7/14	7.59	21.3	432.9	7.34
		7/10/14	7.57	22.0	431.6	7.65
		10/13/14	7.48	23.1	424	7.04
		2/12/15	7.42	21.0	436	7.11
		7/30/15	7.62	22.2	436.2	6.31
		1/12/16	7.81	20.2	421.5	6.17
		7/26/16	7.54	21.4	434.4	6.81
		1/26/17	7.41	21.0	421.2	6.81
		7/18/17	7.29	21.0	435.8	7.15
1/16/18	7.39	20.8	427.3	6.76		
7/18/18	7.34	20.7	435.3	6.50		
NWC-03	203321	3/4/08	ND	ND	ND	560
		6/9/08	ND	ND	ND	524
		10/27/08	7.07	21.9	1374	489
		2/12/09	7.06	20.2	1023	412
		4/23/09	6.98	21.9	1129	466
		4/23/09 DUP	6.98	21.9	1129	460
		7/21/09	7.21	22.9	1194	458
		10/21/09	6.94	21.8	1224	444
		2/3/10	7.24	20.7	1214	444
		4/21/10	7.22	21.6	1178	433
		7/20/10	7.04	22.8	1229	477
		10/19/10	7.22	21.3	1172	432
		1/18/11	7.09	22.8	1120	386
		4/6/11	7.19	21.7	1114	361
		7/15/11	6.91	21.8	1094	386
		10/13/11	7.23	21.6	960	353
		1/30/12	7.15	21.5	1061	379
		4/25/12	7.17	21.6	920	346
		4/25/12 DUP	7.17	21.6	920	347
		7/18/12	7.05	22.1	1080	354
		10/10/12	7.31	21.1	1029	354
		10/10/12 DUP	7.31	21.1	1029	353
		1/10/13	7.18	20.8	1051	370



## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
NWC-04	551849	3/4/08	ND	ND	ND	240
		6/9/08	ND	ND	ND	231
		10/27/08	7.32	25.0	856	162
		1/22/09	7.23	22.9	688	184
		2/12/09	7.20	19.8	699	181
		2/12/09 DUP	7.20	19.8	699	198
		3/11/09	7.15	23.4	846	197
		4/23/09	7.21	24.1	797	188
		5/28/09	7.01	24.1	933	210
		6/24/09	6.93	25.6	792	169
		7/21/09	7.48	24.3	859	193
		8/19/09	7.12	24.5	906	183
		9/23/09	7.16	23.8	953	202
		10/21/09	7.18	24.3	875	191
		11/18/09	7.24	22.9	909	191
		12/16/09	7.28	22.3	926	193
		2/3/10	7.49	22.3	844	167
		3/8/10	7.33	22.5	880	182
		4/21/10	7.34	22.8	913	218
		5/18/10	7.68	25.8	901.3	210
		6/15/10	7.31	24.5	917.5	212
		7/20/10	7.28	28.3	873.2	188
		8/25/10	7.55	24.8	820.9	196
		9/29/10	7.38	24.5	920.2	205
		10/19/10	7.34	23.6	870.2	195
		11/4/10	7.53	23.9	853.2	197
		12/14/10	7.41	23.6	856.8	182
		1/18/11	7.31	24.1	860	194
		2/17/11	7.46	22.3	848.6	169
		3/17/11	7.44	24.1	888.1	182
		4/5/11	7.32	23.4	878.7	196
		5/11/11	7.32	23.1	868.1	175
		6/17/11	7.28	23.7	856.3	204
		7/15/11	7.06	23.5	875.1	202
		8/25/11	7.32	25.1	780	195
		9/26/11	6.56	26.2	875.4	198
		9/26/11 DUP	6.56	26.2	875.4	199
		10/13/11	7.46	23.3	770	198
		11/22/11	7.36	22.9	853.5	201
		12/8/11	7.33	22.3	872.2	207
		1/30/12	7.34	23.4	914.4	217
		2/17/12	7.45	22.9	898.1	203
		3/15/12	7.39	23.9	888.2	207
		4/25/12	7.16	23.4	870	204
		5/22/12	7.25	23.9	970	178
		5/22/12	7.25	23.9	970	178
		6/6/12	7.27	24.4	1040	195
		7/18/12	7.25	23.7	880	205
		8/28/12	7.49	24.2	893.3	208
		9/13/12	7.40	23.9	883.7	205
10/10/12	7.48	23.2	883.6	207		
11/13/12	7.56	21.7	849.8	211		
12/3/12	7.40	23.0	898.6	208		
1/10/13	7.37	22.2	903.1	210		
2/7/13	7.54	23.0	917.5	228		
3/7/13	7.49	22.4	892.4	222		
4/17/13	7.43	22.6	903.8	223		
5/14/13	7.53	23.2	881.7	214		
6/5/13	7.29	33.9	862.7	201		
7/12/13	7.29	23.5	897.2	211		
7/12/13 DUP	7.29	23.5	897.2	200		
8/9/13	7.43	23.5	898.6	207		
9/5/13	7.56	23.8	893.6	214		
10/10/13	7.39	22.6	873.7	197		
11/6/13	7.58	21.8	852.3	202		
12/3/13	7.50	23.1	843.4	199		
1/13/14	7.12	21.9	885.6	197		
2/5/14	7.46	22.4	833.3	198		
3/5/14	7.59	22.8	813.3	168		
4/7/14	7.49	22.9	834.2	187		
5/13/14	7.56	23.4	819.8	186		
6/23/14	7.62	24.5	806.7	188		
7/10/14	7.57	23.8	826.2	194		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
NWC-04	551849	8/11/14	7.59	23.5	824.0	187
		9/9/14	7.50	24.0	789.5	163
		10/13/14	7.39	24.5	802	175
		11/14/14	7.46	22.9	835.4	183
		12/10/14	7.33	23.3	840.7	189
		2/12/15	7.81	20.3	856.4	177
		4/9/15	7.41	24.6	823.2	182
		7/30/15	7.60	24.5	935.6	195
		10/6/15	7.54	23.2	866.8	225
		1/12/16	7.57	22.7	811.2	188
		4/5/16	7.47	23.9	847.7	192
		7/26/16	7.45	23.8	907.3	187
		11/2/16	7.32	23.0	900.6	181
		1/26/17	7.41	23.1	851.9	195
		4/6/17	7.33	23.2	846.8	176
		7/18/17	7.23	23.9	844.7	201
		11/14/17	7.31	23.3	860.1	193
		1/16/18	7.30	23.4	809.6	181
		5/2/18	7.41	23.7	854.1	192
		7/18/18	7.32	23.2	863.5	195
10/16/18	7.40	23.6	850.1	210		
10/16/18 DUP	7.40	23.6	850.1	210		
NWC-06	575700	6/9/08	ND	ND	ND	7.2
		10/27/08	7.35	23.3	414	6.4
		2/12/09	7.54	21.8	306	8
		4/23/09	7.30	24.5	354	7.3
		7/21/09	7.63	23.5	388	6.4
		10/21/09	7.26	23.2	413	8
		2/3/10	7.61	20.5	404	7.5
		2/3/10 DUP	7.61	20.5	404	7.4
		4/21/10	7.54	22.4	387	8.49
		7/20/10	7.33	26.0	388.6	8.59
		10/19/10	7.49	22.7	394.5	8.32
		1/18/11	7.45	23.4	380	8.24
		4/6/11	7.42	23.1	388.3	7.76
		4/6/11 DUP	7.42	23.1	388.3	7.73
		7/15/11	7.09	22.9	394.3	8.36
		10/13/11	7.51	22.3	340	8.48
		1/30/12	7.47	22.1	402.7	8.44
		4/25/12	7.34	22.5	410	7.11
		7/18/12	7.39	22.8	380	8.60
		10/10/12	7.62	21.9	393.6	9.33
		1/10/13	7.47	21.3	429.2	7.55
		4/17/13	7.66	21.1	404.1	8.82
		7/12/13	7.59	22.4	404.1	8.40
		10/10/13	7.56	21.6	403.3	8.38
		1/13/14	7.64	21.3	401.8	8.78
		4/7/14	7.65	21.7	403.7	8.62
		7/10/14	7.68	22.4	405.9	8.97
		7/10/14 DUP	7.68	22.4	405.9	8.99
		10/13/14	7.59	23.4	393	8.51
		2/12/15	7.60	21.2	405	8.12
		2/12/15 DUP	7.60	21.2	405	8.09
		7/30/15	7.66	22.6	406.5	8.20
		1/12/16	7.74	20.7	397.5	8.50
7/26/16	7.58	21.8	409.1	8.69		
1/26/17	7.42	21.3	394.0	8.64		
7/18/17	7.35	21.4	405.6	8.35		
1/16/18	7.45	21.1	400.4	8.85		
7/18/18	7.38	21.2	407.2	8.35		
OLMOS	224745	1/13/16	7.61	20.4	421.0	8.04
		7/14/16	7.58	22.5	445.9	7.97
		7/25/17	7.29	20.6	434.7	8.25
		7/13/18	7.31	20.6	446.1	7.58
		7/13/18 DUP	7.31	20.6	446.1	7.46

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
OSBORN	643436	2/25/08	7.35	22.4	508	16.4
		5/13/08	7.22	22.2	576	17.2
		7/22/08	7.24	22.9	618	17.7
		7/22/08 DUP	7.24	22.9	618	17.5
		10/16/08	7.39	22.4	595	15.9
		1/20/09	7.33	22.4	469	16
		4/7/09	7.25	24.0	542	17
		8/18/09	7.16	24.6	643	17.4
		10/5/09	7.14	22.9	599	17.9
		1/21/10	7.47	19.5	591	15.6
		4/19/10	7.60	21.5	601.9	19.3
		7/12/10	7.69	24.2	594.0	18.4
		7/12/11	7.87	29.8	575.9	19.5
		2/3/12	8.15	15.3	390	19.2
		1/8/13	7.88	10.5	544.4	20.4
		7/8/13	7.56	39.2	510.3	19.2
		1/10/14	7.89	18.1	580.5	18.7
		7/7/14	7.84	29.2	496.3	18.0
		7/11/16	7.56	37.8	515.4	18.6
		7/31/17	7.74	25.6	548.4	19.3
7/31/17 DUP	7.74	25.6	548.4	18.7		
PALMER	578819	2/14/08	7.91	17.5	435	15.9
		5/13/08	7.92	22.9	508	16.6
		7/22/08	7.64	25.8	548	16.2
		10/16/08	7.61	17.0	527	15.9
		1/20/09	7.33	19.4	441	14.3
		4/8/09	7.65	19.1	475	15.4
		7/8/09	7.47	27.2	521	14.3
		10/5/09	7.81	22.2	538	16.2
		1/20/10	7.72	11.9	510	13.8
		4/22/10	7.97	13.6	520	16.7
		7/12/10	7.62	30.2	518.8	15.7
		10/18/10	8.13	22.1	511.9	16.5
		1/18/11	7.24	17.1	517.0	15.7
		4/5/11	8.04	19.0	499.2	15.8
		7/12/11	7.65	26.6	517.6	16.4
		10/11/11	7.85	22.0	510.4	17
		2/3/12	7.94	10.0	521.4	17.1
		4/11/12	7.52	18.7	519.8	17.3
		7/10/12	7.30	27.9	390	16.6
		10/3/12	8.09	25.7	526.7	17.6
		10/3/12 DUP	8.09	25.7	526.7	17.5
		1/9/13	7.9	17.5	532.8	16.8
		4/8/13	8.07	18.4	534.1	17
		7/17/13	7.74	22.3	531.0	17.2
		10/14/13	8.03	20.1	533.1	16.9
		1/6/14	7.82	11.9	517.4	17.4
		4/7/14	7.96	18.3	534.8	17.3
		7/7/14	8.07	23.9	534.4	18.3
		10/23/14	7.86	19.6	536.0	17.5
		7/20/15	7.95	25.9	540.1	17.6
7/31/18	7.65	29.6	534.8	17.1		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
PANAGAKOS	35-76413	4/21/08	6.80	20.5	1228	410
		7/21/08	6.95	21.9	1390	444
		10/13/08	6.86	21.2	1386	480
		10/13/08 DUP	6.86	21.2	1386	500
		1/22/09	6.92	19.7	997	397
		4/9/09	6.81	21.7	1228	431
		4/9/09 DUP	6.81	21.7	1228	426
		7/9/09	6.89	22.3	1469	490
		10/6/09	6.83	21.1	1328	472
		1/21/10	7.06	18.8	1291	318
		4/20/10	7.25	21.0	1528	608
		7/20/10	6.90	24.0	1560	706
		10/18/10	6.38	22.1	1530	568
		7/14/11	6.93	23.3	1070	223
		8/25/11	7.17	23.4	1170	222
		2/6/12	6.98	20.8	1017	166
		2/29/12	7.09	20.3	1080	362
		3/15/12	7.02	21.4	1138	282
		4/12/12	6.90	20.9	1265	346
		4/12/12 DUP	6.90	20.9	1265	352
		7/9/12	6.82	22.2	1140	292
		11/27/12	7.51	20.1	1164	274
		2/6/13	7.05	19.9	1054	212
		4/9/13	7.24	19.7	1105	232
		7/10/13	7.26	21.4	1218	329
		10/15/13	7.14	20.5	1109	240
		1/10/14	7.23	19.6	1079	227
		4/16/14	7.17	20.4	1103	228
		7/17/14	7.13	21.4	1357	467
		10/16/14	6.9	22.1	1104	193
		1/26/15	7.11	19.6	1349	428
		7/27/15	7.03	22.2	1445	469
		1/11/16	7.18	18.9	1402	443
1/11/16 DUP	7.18	18.9	1402	452		
2/24/17	7.19	19.1	1270	218		
2/24/17 DUP	7.19	19.1	1270	217		
7/17/17	7.13	20.2	1219	232		
1/18/18	7.08	19.0	1151	223		
1/18/18 DUP	7.08	19.0	1151	226		
7/30/18	6.96	20.5	1389	384		
2/11/08	7.08	21.8	1067	360		
5/15/08	7.10	21.8	1200	405		
7/31/08	7.00	22.4	1248	423		
7/31/08 DUP	7.00	22.4	1248	404		
10/20/08	7.07	22.9	1246	387		
2/13/09	7.24	22.1	965	405		
4/20/09	7.10	22.6	971	372		
7/20/09	7.17	23.9	1174	375		
10/20/09	6.80	22.5	1188	388		
2/1/10	7.07	21.5	1197	353		
4/22/10	6.91	20.3	1219	417		
7/14/10	7.13	22.2	1201	403		
7/14/10 DUP	7.13	22.2	1201	391		
10/20/10	7.51	21.4	1270	411		
1/19/11	7.49	20.8	1130	391		
4/4/11	6.90	22.6	1207	382		
7/12/11	6.76	23.7	1156	404		
10/12/11	7.44	22.3	1070	406		
2/7/12	7.64	21.4	1212	428		
4/13/12	7.49	21.1	1204	402		
4/13/12 DUP	7.49	21.1	1204	390		
7/18/12	7.03	22.6	1210	418		
7/18/12 DUP	7.03	22.6	1210	419		
10/9/12	7.30	21.3	1209	428		
1/11/13	7.64	20.3	1217	413		
4/11/13	7.29	21.2	1206	427		
7/17/13	7.21	21.9	1212	411		
10/18/13	7.18	21.3	1212	406		
1/8/14	7.21	20.8	1221	437		
4/15/14	7.18	21.5	1213	416		
7/21/14	7.30	22.4	1193	432		
10/6/14	7.12	21.5	1133	413		
8/3/15	7.24	22.3	1193	391		
7/22/16	7.17	22.6	1151	392		
7/25/17	6.98	20.9	1194	426		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
PIONKE 395	613395	2/6/08	7.53	19.9	910	394
		5/7/08	7.08	21.4	1100	391
		7/17/08	6.99	21.9	1209	420
		10/27/08	7.03	20.8	1175	460
		1/29/09	7.13	19.9	847	385
		4/14/09	7.58	20.7	1053	411
		7/13/09	7.35	21.5	1165	472
		10/7/09	7.43	21.1	1100	403
		3/8/10	7.72	18.6	1201	406
		4/26/10	7.22	21.9	1224	438
		7/15/10	7.32	22.3	1158	474
		10/18/10	7.33	21.3	1277	473
		10/18/10 DUP	7.33	21.3	1277	487
		1/19/11	7.32	19.9	1222	471
		4/8/11	7.13	19.2	1232	467
		7/12/11	7.30	23.8	1226	500
		10/11/11	6.98	20.8	1100	502
		2/1/12	7.25	17.5	1230	481
		2/1/12 DUP	7.25	17.5	1230	495
		4/12/12	7.17	22.1	1218	508
7/11/12	6.59	22.9	1280	439		
10/17/12	7.16	22.3	1136	419		
PIONKE 517	221517	9/18/12	7.91	23.4	395.8	14
		10/11/12	7.75	22.8	394.7	14.9
		1/9/13	7.79	22.6	389.9	14.3
		4/17/13	7.74	22.1	391.9	14.6
		7/16/13	7.84	22.9	391.5	13.9
		10/17/13	7.73	22.7	391.5	13.8
		2/5/14	7.75	21.5	394.2	14.9
		4/9/14	7.71	22.9	400.9	14.0
		7/11/14	7.76	23.7	388.9	14.6
		10/7/14	7.46	25.8	406	14.0
		7/22/15	7.79	23.3	392.1	13.9
		7/26/16	7.67	23.2	389.2	14.1
		7/18/17	7.44	22.5	388.7	13.2
		7/24/18	7.53	22.3	385.7	13.4
		POOL	509518	2/20/08	7.95	20.9
5/19/08	7.40			22.2	585	122
7/31/08	7.47			22.3	599	117
10/21/08	7.51			21.4	598	120
2/13/09	7.62			20.8	473	141
4/21/09	7.73			22.6	470	124
7/20/09	7.76			22.9	579	122
10/20/09	7.22			21.2	577	122
2/24/10	7.56			22.4	577	110
4/22/10	7.75			20.2	606.5	130
7/14/10	7.38			21.7	580.9	117
10/20/10	7.79			21.3	620	115
1/20/11	7.71			20.5	530	112
1/20/11 DUP	7.71			20.5	530	114
4/6/11	7.37			21.6	567.4	114
8/1/18	7.47			24.2	580.9	113
POWER	624535			2/12/08	7.11	18.9
		7/22/08	7.10	21.7	795	20.2
POWER 639	222639	1/16/14	7.38	20.9	1004	234
		2/5/14	7.35	20.8	1004	328
		3/5/14	7.39	21.3	991.4	187
		4/15/14	7.38	21.6	999.4	249
		5/13/14	7.40	21.4	990.9	206
		6/23/14	7.44	21.9	886.4	117
		7/17/14	7.40	22.1	861.3	168
		8/11/14	7.50	21.8	864.9	136
		9/9/14	7.49	21.7	850.4	105
		1/27/15	7.27	22.0	922	291
		3/10/15	7.35	21.9	1032	265
		4/28/15	7.43	20.6	1002	308
		5/14/15	7.32	21.3	991.4	269
		6/11/15	7.26	22.0	1019	308
		7/30/15	7.33	22.3	1014	287
		1/14/16	7.46	19.7	985.7	298
		7/27/16	7.27	22.2	992.0	301
		1/26/17	7.14	20.9	989.9	317
		7/12/17	7.16	20.8	1010	244
		1/10/18	7.25	20.7	856.9	191
7/25/18	7.35	20.8	814.9	205		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
RAMIREZ	216425	2/4/08	7.47	21.7	408	7.6
		5/6/08	7.19	22.7	405	8.3
		7/17/08	7.32	24.5	439	8.8
		10/27/08	7.41	22.2	412	7.3
		1/29/09	7.24	22.2	301	8.3
		4/16/09	7.49	22.4	344	7.6
		7/10/09	7.52	23.9	411	6.4
		10/6/09	7.30	23.8	388	8.4
		1/25/10	7.48	22.4	390	7.8
		4/21/10	7.45	22.6	397	9.04
		7/21/10	7.38	25.1	420	8.98
		10/19/10	7.91	23.7	450	10.8
		1/18/11	7.52	23.1	380	8.18
		4/11/11	7.24	23.2	408.5	8.65
		7/18/11	7.27	25.4	402.6	8.44
		10/12/11	7.40	23.3	412.7	8.55
		1/30/12	7.38	22.3	412.2	8.80
		4/10/12	7.40	23.2	404.5	8.70
		7/6/12	7.32	24.2	415.7	8.97
		10/8/12	7.61	22.5	412.0	9.14
		10/8/12 DUP	7.61	22.5	412.0	9.07
		1/17/13	7.52	22.2	409.6	8.82
		4/19/13	7.6	22.1	413.9	8.63
		7/15/13	7.58	23.6	416.2	8.19
		10/7/13	7.68	22.6	412.7	8.37
		1/13/14	7.63	21.9	409.8	8.79
		4/14/14	7.55	22.2	417.5	8.67
		7/10/14	7.58	23.2	413.5	8.92
		10/17/14	7.36	23	422.0	8.67
		7/21/15	7.54	23.7	414.6	8.46
7/14/16	7.55	23.6	420.5	8.57		
7/26/17	7.37	22.0	414.5	9.00		
7/25/18	7.35	22.1	420.2	8.35		
RAY	803772	2/15/08	7.30	19.1	1540	159
		4/21/08 <sup>1</sup>	6.92	21.3	1418	125
		5/13/08 <sup>1</sup>	7.05	20.9	1418	123
		6/23/08 <sup>1</sup>	6.87	21.1	1593	130
		7/29/08 <sup>1</sup>	6.98	21.8	1411	120
		8/28/08 <sup>1</sup>	M	21.1	1519	129
		9/23/08 <sup>1</sup>	6.90	22.2	1519	125
		10/22/08	6.96	20.8	1604	145
		1/20/09	6.92	20.6	1355	88
		4/8/09	6.85	21.4	1759	178
		7/9/09	6.93	22.3	1434	126
		10/7/09	6.98	21.3	1288	127
		1/26/10	6.82	20.6	1352	125
		4/20/10	7.14	21.5	1318	134
		7/14/10	7.11	23.8	1313	137
		10/20/10	7.14	19.6	1368	127
		1/17/11	7.04	20.8	1451	132
		1/17/11 DUP	7.04	20.8	1451	125
		4/5/11	7.03	20.8	1387	132
		7/11/11	7.07	22.8	1345	126
		10/12/11	7.06	21.6	1250	130
		1/31/12	7.28	20.5	1360	131
		4/11/12	7.03	20.6	1359	131
		7/6/12	7.11	22.1	1430	129
		10/3/12	7.12	21.1	1464	130
		1/17/13	7.05	19.5	1527	126
		1/17/13 DUP	7.05	19.5	1527	140
		4/8/13	7.32	20	1476	131
		7/9/13	7.18	21.4	1451	128
		10/15/13	7.13	20.8	1487	135
		1/14/14	7.25	19.2	1433	133
		4/8/14	7.09	20.8	1502	146
		7/8/14	7.14	21.4	1409	147
10/22/14	6.88	21.6	1422	147		
8/3/15	7.22	21.4	1360	133		
7/12/16	7.03	21.6	1419	133		
7/26/17	6.93	19.8	1288	142		
7/31/18	6.89	19.8	1493	138		
7/31/18 DUP	6.89	19.8	1493	139		
ROGERS 596	573596	10/19/09	6.89	23.3	1360	590
		11/5/09	6.79	21.9	1418	540
		2/25/10	6.99	19.6	1603	520
		4/22/10	7.21	18.2	1641	710
		1/18/18	6.85	18.9	1431	655
		7/26/18	6.85	22.9	1644	735

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
ROGERS 803	641803	2/7/08	7.45	18.6	601	138
		4/21/08 <sup>1</sup>	7.32	21.4	552	128
		5/8/08 <sup>1</sup>	7.14	21.2	622	141
		6/23/08 <sup>1</sup>	7.06	22.9	660	129
		7/29/08 <sup>1</sup>	6.78	23.1	339	134
		8/28/08 <sup>1</sup>	7.18	21.6	635	128
		9/23/08 <sup>1</sup>	7.24	21.9	599	133
		10/22/08	7.36	21.3	650	144
		2/10/09	7.42	17.9	475	141
		4/29/09	7.52	21.9	506	211
		8/3/09	7.39	24.2	674	150
		7/16/10	7.46	23.9	643.4	169
		10/19/10	7.32	21.1	643.8	154
		10/19/10 DUP	7.32	21.1	643.8	154
		1/20/11	7.44	18.1	610	143
		4/8/11	7.30	20.2	658.2	160
		7/14/11	7.12	23.5	653.5	166
		10/12/11	7.41	21.8	665.3	175
		1/30/12	7.40	20.0	580	171
		4/23/12	7.32	23.9	720	166
		7/13/12	7.26	24.0	820	171
		7/13/12 DUP	7.26	24.0	820	166
		10/10/12	7.41	24.3	671.4	177
		1/15/13	7.37	16.9	681.1	174
		4/15/13	7.57	23.8	698	190
		7/15/13	7.39	23.6	697.8	184
10/16/13	7.47	25.4	710.6	185		
1/9/14	7.46	21.4	701.8	190		
4/11/14	7.52	26.1	711.3	190		
7/18/14	7.48	24.9	709.2	192		
9/30/17	7.03	21.5	1396	572		
ROGERS E	216018	2/4/08	7.40	21.0	435	4.6
		5/7/08	7.18	22.2	415	5.9
		7/17/08	7.28	23.0	446	7.1
		10/27/08	7.38	21.4	434	15.7
		2/10/09	7.51	20.7	322	5.4
		4/16/09	7.48	22.0	361	4.9
		7/13/09	7.34	22.6	420	3.8
		10/6/09	7.31	22.3	407	5.8
		1/25/10	7.52	20.6	414	5.1
		4/21/10	7.44	21.1	421	6.04
		7/21/10	7.37	23.8	430	6.47
		10/19/10	7.80	22.8	460	5.92
		1/18/11	7.39	21.5	390	5.50
		4/11/11	7.19	22.7	427.2	6.13
		7/18/11	7.12	24.3	418.5	6.00
		10/13/11	7.52	22.2	370	5.99
		1/30/12	7.38	20.8	427.2	6.22
		4/10/12	7.37	22.1	421.8	6.31
		7/17/12	7.32	22.7	420	5.85
		10/17/12	7.55	21.7	429.0	6.04
		1/17/13	7.46	21.5	431.5	6.01
		4/18/13	7.63	21.3	433.5	6.26
		7/17/13	7.59	22.1	427.7	6.05
		7/17/13 DUP	7.59	22.1	427.7	6.28
		10/10/13	7.51	21.9	436.9	5.8
		1/7/14	7.49	21.0	434.0	6.24
		4/14/14	7.59	21.4	431.2	6.11
		7/10/14	7.54	22.4	428.5	6.41
		10/17/14	7.31	22.6	452	5.81
		7/30/15	7.57	22.9	430.3	5.90
		7/14/16	7.58	22.7	430.2	6.71
		7/26/17	7.31	21.3	429.3	6.86
2/23/18	7.32	21.0	423.0	6.20		
7/13/18	7.33	20.8	430.3	6.32		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
RUIZ	531770	2/5/08	7.73	18.2	445	263
		5/15/08	7.23	25.9	965	265
		7/30/08	6.99	22.1	999	243
		10/20/08	7.04	22.0	995	238
		2/12/09	6.94	20.9	748	254
		4/21/09	7.18	22.3	759	227
		8/3/09	7.05	22.9	1029	221
		10/28/09	7.09	20.6	920	227
		2/1/10	7.08	20.9	934	236
		4/26/10	7.01	22.5	920.1	240
		7/20/10	7.08	22.5	880	240
		10/20/10	7.52	20.7	970	231
		1/18/11	7.19	20.2	860	213
		4/8/11	7.09	19.8	923.3	236
		8/26/11	6.85	22.6	800	220
		10/13/11	7.19	21.5	810	230
		2/7/12	7.28	20.7	915.6	230
		2/7/12 DUP	7.28	20.7	915.6	228
		4/13/12	7.04	21.1	896.5	203
		7/18/12	6.87	21.6	900	214
		10/9/12	7.18	21.4	890.6	229
		1/11/13	7.21	20.7	895.8	219
		1/11/13 DUP	7.21	20.7	895.8	211
		4/11/13	7.26	21.9	876.8	229
		7/25/13	7.13	21.4	887.3	228
		10/17/13	7.23	20.8	891.9	210
		1/8/14	7.32	20.5	886.8	220
		4/15/14	7.26	21.2	873.5	215
		8/11/14	7.32	21.2	869.2	221
		10/21/14	7.09	21.4	886	209
		10/21/14 DUP	7.09	21.4	886	212
		1/27/15	7.14	21.4	853	215
7/30/15	7.2	21.9	865.8	191		
1/12/16	7.29	19.9	831.3	190		
7/25/16	7.17	21.2	854.5	183		
1/26/17	7.09	20.4	844.2	194		
7/25/17	7.06	20.5	850.8	190		
1/16/18	7.03	20.1	829.4	185		
7/24/18	7.02	20.7	827.2	180		



## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
SCHWARTZ	210865	2/8/08	7.52	21.5	506	158
		4/21/08 <sup>1</sup>	7.23	21.7	563	122
		5/19/08 <sup>1</sup>	7.38	22.4	629	130
		6/23/08 <sup>1</sup>	7.02	22.1	674	129
		7/29/08 <sup>1</sup>	7.25	22.4	955	245
		8/28/08 <sup>1</sup>	M	22.3	669	131
		9/23/08 <sup>1</sup>	7.27	22.2	607	124
		10/22/08 <sup>1</sup>	7.31	22.0	653	135
		11/19/08 <sup>1</sup>	7.38	21.1	612	140
		12/17/08 <sup>1</sup>	6.78	21.6	472	144
		1/29/09 <sup>1</sup>	7.08	22.0	475	124
		2/23/09 <sup>1</sup>	7.33	22.1	610	123
		4/17/09	7.46	22.2	520	120
		7/10/09	7.52	22.8	651	116
		7/10/09 DUP	7.52	22.8	651	117
		10/6/09	7.27	22.5	613	120
		1/22/10	7.79	19.5	664	133
		4/21/10	7.50	20.9	638	129
		7/21/10	7.43	22.0	650	134
		10/19/10	7.76	21.2	710	147
		1/17/11	7.15	21.2	620	116
		4/11/11	7.20	21.5	656.9	128
		7/18/11	7.36	23.7	612.4	116
		10/12/11	7.35	22.4	635.8	124
		2/6/12	7.32	21.3	629.7	116
		2/6/12 DUP	7.32	21.3	629.7	114
		4/10/12	7.48	21.6	626.1	120
		7/16/12	7.31	21.9	710	117
		10/17/12	7.48	21.6	645	121
		3/13/13	7.57	20.7	623.6	118
		5/14/13	7.61	21.5	629.7	112
		7/15/13	7.49	22.1	770.2	198
		10/14/13	7.55	20.9	633.3	109
		1/13/14	7.61	20.6	663.1	125
		4/9/14	7.48	21.5	635.9	110
		7/18/14	7.45	21.8	790.5	216
		10/22/14	7.28	22	646.0	119
		2/3/15	7.35	22.4	714	125
		2/3/15 DUP	7.35	22.4	714	126
		8/4/15	7.49	22.5	641.8	109
1/14/16	7.55	20.6	678.3	134		
7/27/16	7.51	22.3	621.3	103		
7/27/16 DUP	7.51	22.3	621.3	102		
1/24/17	7.33	20.3	650.6	120		
7/11/17	7.29	20.6	627.0	103		
7/11/17 DUP	7.29	20.6	627.0	102		
1/9/18	7.26	20.5	619.5	97.2		
7/11/18	7.33	20.4	622.9	96.2		
4/23/08	7.57	25.8	380	19		
8/5/08	7.40	27.2	452	15.4		
2/13/08	7.28	20.7	467	24.1		
5/14/08	7.24	21.2	479	23.7		
7/24/08	7.35	22.4	506	18		
10/16/08	7.32	20.7	488	19		
1/20/09	7.05	20.4	391	19.8		
4/7/09	7.21	21.5	447	19.9		
7/8/09	7.18	23.1	473	18.5		
10/5/09	7.18	21.4	496	19.7		
1/21/10	7.49	19.5	501	18.4		
4/21/10	7.42	20.3	512.1	20.9		
7/19/10	7.13	23.8	518.6	22.2		
1/18/11	7.19	17.8	483.6	18.7		
7/12/11	7.05	22.4	478.2	19.1		
2/3/12	7.40	20.5	484.5	20.1		
2/3/12 DUP	7.40	20.5	484.5	19.5		
7/10/12	7.00	22.7	370	19.4		
1/11/13	7.38	20.0	489.0	19.3		
7/8/13	7.45	22.8	489.7	19.4		
1/10/14	7.65	19.7	428.6	19.2		
7/7/14	7.44	21.8	464.7	19.4		
7/20/15	7.45	23.0	491.2	18.8		
7/20/15 DUP	7.45	23.0	491.2	18.9		
7/11/16	7.30	22.6	504.7	18.6		
7/27/17	7.13	20.9	500.8	18.5		
7/31/18	7.10	20.9	557.7	20.1		
SRC	211345					
SWAN	NR					

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
THOMPSON 341	218341	5/29/13	7.22	24.4	415.9	7.32
		8/9/13	7.57	22.2	420.0	7.62
		10/9/13	7.49	21.6	425.2	7.54
		1/16/14	7.53	21.5	432.7	7.48
		4/14/14	7.50	21.6	425.8	7.68
		7/21/14	7.48	22.3	414.2	8.02
		10/22/14	7.23	22.3	430	8.02
		8/3/15	7.50	23.1	425.7	7.52
		7/15/16	7.45	22.4	420.8	8.46
		7/28/17	7.24	21.2	422.4	8.33
		7/26/18	7.34	21.0	420.6	8.27
TM-02A	522574	3/4/08	8.67	22.6	302	12.3
		5/23/08	7.75	22.9	321	14.7
		8/15/08	7.84	26.4	369	14.4
		10/30/08	8.07	23.9	375	21.9
		2/24/09	8.10	24.8	340	20.3
		5/6/09	8.06	26.7	320	18.7
		8/12/09	8.34	26.9	398	20
		11/4/09	8.16	26.3	381	21.8
		3/10/10	8.13	25.2	351	21.4
		3/10/10 DUP	8.13	25.2	351	21.3
		4/6/10	6.96	24.6	363	25.6
		7/6/10	7.38	24.6	343	22.1
		2/10/11	6.93	20.2	359	22.9
		7/13/11	7.92	24.8	349	22.5
		2/2/12	7.89	22.2	360	23.0
		8/14/12	7.65	24.6	366	23.4
		2/15/13	7.72	22.2	369	22.1
		8/27/13	7.72	24.7	414	23.5
		2/18/14	7.54	24.3	388	24.5
		8/12/14	7.62	24.7	395	25.6
8/1/17	7.84	24.7	333	21.5		
TM-03	522575	5/20/08	7.51	22.2	778	110
		8/6/08	7.08	21.6	828	97
		11/12/08	7.47	20.5	590	128
		2/26/09	7.21	21.8	737	107
		2/26/09 DUP	7.21	21.8	737	102
		5/13/09	7.47	22.2	695	109
		8/18/09	7.48	22.4	822	98
		11/10/09	7.55	21.8	761	106
		3/2/10	7.56	21.6	748	99
		4/14/10	7.55	20.6	635	103
		7/7/10	7.19	21.4	566	103
		2/1/12	7.48	21.1	744	112
		2/27/08	7.44	19.6	457	13.9
		5/20/08	7.50	20.7	506	32.7
8/4/08	7.41	20.7	529	31.3		
10/29/08	7.55	20.2	531	34.5		
2/26/09	7.18	20.4	574	32.7		
5/13/09	7.35	20.9	465	30.6		
8/18/09	7.50	20.9	560	30.9		
8/18/09 DUP	7.50	20.9	560	29.9		
11/12/09	7.53	20.4	530	31.1		
4/14/10	7.35	19.4	461	29.0		
7/2/10	7.24	20.1	438	29.8		
7/21/11	7.1	20.1	516	31.7		
7/9/12	6.82	20.8	505	33.5		
2/14/13	6.92	19.6	527	31.1		
8/19/13	7.21	19.9	556	32.5		
7/21/14	7.17	19.9	551	33.0		
7/26/17	7.27	20.4	521	34.5		
TM-06 MILLER	522695	2/27/08	7.44	19.6	457	13.9
		5/20/08	7.50	20.7	506	32.7
		8/4/08	7.41	20.7	529	31.3
		10/29/08	7.55	20.2	531	34.5
		2/26/09	7.18	20.4	574	32.7
		5/13/09	7.35	20.9	465	30.6
		8/18/09	7.50	20.9	560	30.9
		8/18/09 DUP	7.50	20.9	560	29.9
		11/12/09	7.53	20.4	530	31.1
		4/14/10	7.35	19.4	461	29.0
		7/2/10	7.24	20.1	438	29.8
		7/21/11	7.1	20.1	516	31.7
		7/9/12	6.82	20.8	505	33.5
		2/14/13	6.92	19.6	527	31.1
8/19/13	7.21	19.9	556	32.5		
7/21/14	7.17	19.9	551	33.0		
7/26/17	7.27	20.4	521	34.5		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
TM-07	522576	3/6/08	7.54	20.8	726	22.5
		5/22/08	6.96	20.1	385	22.9
		8/6/08	7.04	22.8	519	22.2
		11/4/08	7.76	20.6	347	31.2
		2/20/09	7.77	19.9	376	22.5
		5/13/09	7.30	22.9	559	130
		8/17/09	7.60	22.6	442	134
		11/3/09	7.85	21.8	441	134
		3/2/10	7.67	21.6	422	124
		5/25/10	7.77	21.2	398	42.6
		7/6/10	7.58	22.0	350	44.7
		2/11/11	6.87	20.1	393	24.9
		7/21/11	6.90	21.4	402	41.7
		2/9/12	7.15	23.0	670	171
		8/13/12	6.83	21.7	415	25.4
		2/27/13	6.81	19.9	380	25.6
		8/28/13	7.36	21.2	369	25.0
		2/13/14	6.99	20.4	372	27.4
		8/21/14	7.35	20.6	358	48.5
		2/4/15	7.58	21.0	375	102
9/15/15	7.36	21.5	411	91.3		
3/14/16	7.46	21.4	419	130		
9/15/16	7.47	21.2	638	123		
3/1/17	7.59	20.8	581	129		
8/2/17	7.56	21.5	563	129		
2/12/18	7.78	20.4	544	133		
8/6/18	7.52	21.8	586	116		
TM-08 SWAN	522817	2/13/08	7.63	24.1	511	24.1
		5/14/08	7.44	24.4	480	12.6
		7/23/08	7.76	28.1	522	12.6
TM-10 USBP	522696	12/8/11	6.95	19.6	381	16.8
		3/15/12	7.85	20.2	382.3	15.1
		4/24/12	7.88	21.0	280	13.4
		4/24/12 DUP	7.88	21.0	280	13.3
		9/13/12	8.09	21.1	407	13.3
		10/19/12	8.17	21.0	428.2	12.8
		3/7/13	8.33	21.2	415.1	12.7
		4/17/13	8.27	20.3	423.9	12.8
		7/23/13	8.16	21.4	426.1	13.2
		11/6/13	7.90	21.3	386.5	4.81
		11/6/13 DUP	7.90	21.3	386.5	4.64
		1/15/14	7.91	21.1	424.4	3.98
		5/15/14	7.98	20.4	410.6	5.12
		7/15/14	7.86	21.4	421.9	5.46
		10/16/14	7.51	22.0	439	4.16
		1/28/15	7.75	23.0	413	3.96
		7/24/15	7.87	22.6	478.8	4.38
		2/2/16	7.95	19.8	493.5	5.32
		7/13/16	7.73	22.0	514.9	6.67
		1/27/17	7.75	21.3	418.4	4.81
7/17/17	7.77	23.5	409.5	8.01		
1/8/18	7.60	20.8	387.3	6.80		
7/9/18	7.92	23.5	391.4	8.65		
TM-15 MILLER	522699	2/27/08	7.66	21.9	344	14
		5/23/08	7.54	22.1	371	14.4
		8/5/08	7.42	23.3	413	13.7
		10/28/08	7.63	22.6	387	18.6
		10/28/08 DUP	7.63	22.6	387	18.8
		2/26/09	7.57	22.0	373	14.6
		5/13/09	7.61	23.1	344	13.7
		8/17/09	7.73	23.2	398	14.2
		11/3/09	7.73	23.4	414	14.8
		2/24/10	7.66	22.8	381	14.4
		4/27/10	7.71	23.0	383.6	14.9
		7/20/10	7.77	23.0	324	14.3
		7/12/11	7.36	23.2	380	14.2
		7/10/12	7.04	23.7	379	14.9
		2/12/13	6.96	21.7	393	14.6
		9/4/13	7.2	22.8	412	14.8
		7/22/14	7.18	23.2	407	14.6
		9/8/15	7.19	23.0	411	14.7
		9/14/16	7.45	23.1	381	14.5
		8/1/17	7.38	22.9	384	14.8
7/18/18	7.46	23.1	386	14.8		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
TM-16	522578	3/5/08	7.17	20.6	1351	497
		5/22/08	7.05	20.5	1304	522
		8/6/08	6.67	20.9	1410	466
		11/5/08	7.14	19.8	1162	547
		2/20/09	6.90	21.1	1292	492
		5/13/09	6.93	21.1	1179	484
		8/19/09	7.08	21.2	1354	468
		11/10/09	7.02	21.0	1310	505
		3/2/10	7.13	20.4	1313	451
		4/14/10	6.90	19.9	987	484
		7/2/10	6.81	20.8	858	474
		7/14/11	6.97	20.5	1285	511
		7/16/11	6.97	20.5	1285	513
		7/9/12	6.95	21.0	1292	544
		8/15/13	6.86	20.3	1374	539
		8/4/14	6.79	20.6	1368	550
		7/12/17	6.87	20.9	1321	536
TM-19A	522581	3/6/08	8.02	22.2	240	56.1
		5/22/08	7.36	24.0	501	64.5
		8/6/08	7.32	22.6	494	55.3
		11/18/08	7.79	24.3	365	66.3
		3/3/09	7.41	24.5	489	66.2
		4/22/09	7.44	24.3	494	62.5
		8/12/09	7.61	24.4	554	61.3
		11/4/09	7.47	24.2	522	63
		3/10/10	7.54	22.9	511	60.6
		4/9/10	6.49	23.0	435	66.5
		7/7/10	6.93	23.8	428	63.2
		2/14/11	6.69	21.4	511	61.9
		7/15/11	7.11	24.1	499	62.1
		2/2/12	7.13	22.5	498	62.2
		7/10/12	7.12	23.5	505	63.7
		2/15/13	6.74	23.2	522	60.1
		9/4/13	7.11	23.8	538	61.3
		2/12/14	6.93	23.6	548	62.8
		7/21/14	7.06	24.2	542	63.3
		9/10/15	7.31	24.0	502	61.4
		8/18/16	7.27	24.1	505	64.7
7/26/17	7.27	24.1	505	64.6		
7/25/18	7.49	24.3	511	71.4		
TM-42	562554	3/5/08	7.10	20.8	1342	482
		5/22/08	7.05	21.4	1270	483
		8/6/08	6.69	22.0	1388	467
		11/6/08	6.90	21.0	1025	477
		2/18/09	6.72	22.3	1245	429
		5/7/09	6.88	24.5	1155	430
		5/7/09 DUP	6.88	24.5	1155	445
		8/18/09	7.04	24.4	1336	428
		11/3/09	7.07	23.1	1266	430
		2/24/10	7.13	22.7	1236	390
		4/19/10	6.87	21.5	985	444
		7/2/10	6.81	23.9	827	407
		7/12/11	6.83	22.0	1205	441
		2/9/12	6.76	20.5	1172	444
		7/11/12	6.72	21.1	1155	449
		2/12/13	6.69	20.2	1185	400
		8/28/13	6.89	21.3	1212	416
		7/21/14	6.85	21.4	1205	418
		7/26/17	6.98	21.6	1234	485
TM-43	564729	3/3/08	8.57	21.0	341	2.1
		8/4/08	8.14	25.7	436	<5
TM-43A	564726	3/3/08	6.17	19.9	2788	1420
		8/4/08	6.03	21.6	3149	1320
TM-43B	565004	3/3/08	6.79	20.6	514	0.7
		8/5/08	6.89	21.0	507	31.8
		8/5/08 DUP	6.89	21.0	507	32.5

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
TVI 236	802236	3/20/08	7.48	20.0	488	31.3
		5/7/08	7.13	20.4	494	32.6
		7/15/08	7.39	21.9	532	37.6
		10/15/08	7.45	22.3	490	36.6
		2/11/09	7.32	20.1	391	27.6
		4/17/09	7.36	19.3	418	28.1
		4/17/09 DUP	7.36	19.3	418	28.3
		7/21/09	7.59	22.9	484	31.3
		10/19/09	7.31	22.1	513	33.2
		2/2/10	7.39	20.4	497	26
		4/23/10	7.46	20.0	504.6	30.9
		7/15/10	7.37	21.5	499.4	39.3
		7/15/11	6.80	22.4	499.6	42.9
		7/16/12	7.30	21.1	500	36.3
		10/9/12	7.56	20.4	513.7	40.9
		7/18/13	7.38	20.9	514.4	42.4
		7/16/14	7.41	21.1	517.3	43.9
		7/30/15	7.43	20.5	529.1	16.5
		1/12/16	7.57	19.5	505.8	44.1
		9/26/16	7.42	19.0	511.4	15.1
1/27/17	7.32	19.3	519.5	47.0		
7/31/17	7.04	19.0	532.5	15.8		
1/17/18	7.30	18.6	531.3	29.5		
7/27/18	7.22	19.3	535.8	17.5		
TVI 875	568875	2/21/08	7.28	21.1	739	244
		5/7/08	7.09	21.2	833	250
		7/15/08	7.27	22.4	925	274
		10/15/08	7.26	22.1	878	245
		2/11/09	7.20	20.7	738	312
		4/17/09	7.31	21.5	690	251
		7/21/09	7.47	22.2	812	236
		10/19/09	7.23	21.9	822	247
		2/2/10	7.32	20.8	939	250
		4/23/10	7.34	20.2	930.4	294
		7/15/10	7.46	21.8	842.5	262
		10/20/10	7.79	21.9	890	242
		1/20/11	7.39	21.0	780	226
		4/11/11	7.20	21.1	820.6	235
		7/15/11	6.75	22.2	791.9	239
		10/12/11	7.35	22.7	868.5	262
		2/3/12	7.20	20.5	850	299
		4/25/12	7.19	21.3	840	267
		7/16/12	7.13	22.2	860	261
		7/16/12 DUP	7.13	22.2	860	267
		10/9/12	7.39	20.9	882.8	281
		2/6/13	7.23	20.8	946.1	335
		4/10/13	7.35	20.9	907.6	296
		7/18/13	7.31	21.4	994.2	355
		10/8/13	7.35	21.0	894.6	275
		1/9/14	7.23	20.3	917.4	305
		4/9/14	7.31	20.9	910.7	296
		7/16/14	7.30	21.6	940.2	328
		10/9/14	7.12	21.2	963	245
		7/30/15	7.35	22.1	915.4	277
7/14/16	7.28	21.6	919.1	271		
7/13/17	7.19	20.1	920.0	303		
7/12/18	7.16	20.0	928.8	309		
WALKER	200393	2/13/08	7.05	20.2	650	20
		7/23/08	7.25	20.7	740	45.4

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
WEED	544535	2/14/08	7.74	21.7	323	11.1
		5/15/08	7.22	22.7	365	12.6
		7/30/08	7.42	32.0	407	11.5
		10/20/08	8.10	31.6	405	10.2
		2/13/09	7.66	21.0	303	12.6
		4/22/09	7.46	22.2	368	11.6
		7/16/09	7.50	21.9	365	10.8
		10/20/09	7.34	21.6	381	12.7
		2/1/10	7.60	20.8	382	12.2
		4/26/10	7.69	22.1	366	13.4
		7/21/10	7.36	22.1	354.9	13.6
		7/21/10 DUP	7.36	22.1	354.9	13.5
		10/19/10	7.63	21.2	378.8	11.7
		1/19/11	7.62	21.1	383.6	12.2
		4/11/11	7.44	21.5	386.6	13
		7/18/11	7.56	22.0	379.3	12.7
		10/12/11	7.02	21.7	382.8	13.3
		2/6/12	7.60	21.4	385.0	13.5
		4/25/12	7.60	22.1	360	12.7
		7/5/12	7.64	21.7	385.8	12.9
		10/9/12	7.66	21.5	385.1	14.0
		2/7/13	7.7	21.4	389.7	14.0
		2/7/13 DUP	7.7	21.4	389.7	13.2
		4/10/13	7.76	20.6	383.9	13.0
		7/19/13	7.63	21.3	386.6	14.2
		10/18/13	7.72	21.1	387.3	13.1
		1/15/14	7.73	20.7	388.4	13.4
		4/10/14	7.85	21.5	387.1	13.5
		7/18/14	7.79	21.4	386.7	14.1
		10/22/14	7.5	22.7	394	13.7
1/30/15	7.81	20.7	381	14.2		
8/4/15	7.72	22	386.7	13.1		
1/14/16	7.79	20.2	376.9	13.7		
7/22/16	7.89	22.9	376.2	13.2		
1/23/17	7.58	20.4	387.5	13.3		
7/24/17	7.52	20.5	386.8	13.9		
1/16/18	7.51	20.3	384.2	14.0		
7/16/18	7.49	20.4	385.1	13.3		
WEISKOPF 802	641802	2/15/08	7.48	20.0	1072	500
		5/7/08	7.10	21.8	1251	483
		7/16/08	7.07	22.2	1399	560
		10/28/08	6.98	20.8	1401	602
		1/29/09	6.79	20.7	1014	503
		4/15/09	7.53	21.1	1164	503
		7/15/09	7.84	22.1	1317	486
		10/15/09	6.89	21.4	1216	484
		2/2/10	7.22	20.4	1319	451
		4/22/10	7.30	19.3	1329	572
		7/19/10	7.06	23.1	1330	573
		10/20/10	7.64	21.6	1360	515
		10/20/10 DUP	7.64	21.6	1360	529
		1/17/11	7.16	22.0	1270	481
		4/11/11	6.88	22.4	1365	557
		8/26/11	6.83	23.5	1200	549
		10/13/11	7.07	22.8	1299	539
		2/3/12	7.35	21.5	1363	583
		4/25/12	7.07	23.5	1300	575
		7/13/12	6.83	22.2	1530	552
		10/11/12	7.26	21.3	1369	572
		10/11/12 DUP	7.26	21.3	1369	577
		1/16/13	7.14	20.5	1298	523
		4/17/13	7.22	20.1	1337	558
		7/18/13	7.45	21.3	1131	420
		10/17/13	7.29	22.5	1131	437
		1/16/14	7.28	22.7	1323	563
		4/11/14	7.29	23.0	1304	558
		7/18/14	7.17	23.3	1375	608
		10/9/14	7.08	24.5	1094	405
8/4/15	7.07	24.5	1571	699		
8/4/15 DUP	7.07	24.5	1571	701		
7/26/16	7.00	22.8	1483	702		
7/24/17	6.85	22.8	1524	698		

## APPENDIX A Sulfate Data

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
WEISKOPF 897	220897	12/6/12	7.93	23.6	398.3	18.5
		1/16/13	7.88	23.1	398.9	18.2
		1/16/13 DUP	7.88	23.1	398.9	18.2
		4/17/13	7.86	22.6	394.4	19.0
		7/18/13	7.84	24.3	393.2	18.0
		10/17/13	7.90	23.3	392.2	18.3
		1/16/14	7.90	23	395.8	18.4
		4/11/14	7.92	23.5	390.5	17.9
		7/18/14	7.87	23.9	387.4	18.4
		10/9/14	7.69	22.8	392	17.7
		8/4/15	7.89	24.9	385.7	17.3
		7/26/16	7.81	23.8	387.0	17.8
		7/24/17	7.58	23.1	386.7	17.0
		7/16/18	7.60	22.9	383.3	16.7
WMD-2011-03M	913037	2/2/12	6.66	22.0	1190	391
ZANDER	205126	2/4/08	7.24	19.7	392	5.7
		5/6/08	7.26	21.2	404	6.3
		7/16/08	6.92	22.9	441	6.9
		10/28/08	7.40	21.2	415	15
		2/10/09	7.50	20.4	317	6
		4/16/09	7.47	21.7	352	5.5
		7/14/09	7.36	22.9	418	4.5
		10/13/09	7.41	21.7	407	6.3
		1/26/10	7.49	20.3	411	5.7
		4/2/10	7.55	20.0	416	6.70
		7/21/10	7.38	22.7	388.2	6.78
		10/19/10	6.78	21.3	430	6.56
		1/18/11	7.59	18.9	380	6.14
		1/18/11 DUP	7.59	18.9	380	6.06
		4/6/11	7.20	19.7	425.8	6.12
		7/13/11	7.29	22.9	410.10	6.43
		10/12/11	7.35	22.2	426.2	6.38
		1/31/12	7.29	20.3	420	6.59
		4/10/12	7.49	21.9	420.1	6.90
		4/10/12 DUP	7.49	21.9	420.1	6.65
		7/17/12	7.34	22.2	430	6.38
		10/8/12	7.58	20.8	431.4	7.03
		1/10/13	7.58	20.7	436.1	6.52
		4/18/13	7.65	20.8	436.7	6.66
		7/15/13	7.55	21.8	431.1	6.49
		10/7/13	7.59	21.5	430.2	6.41
		1/7/14	7.50	20.9	435.4	6.77
		4/9/14	7.57	21.5	434.4	6.57
		7/17/14	7.61	21.5	432.0	6.99
		10/13/14	7.52	23.8	422.0	6.24
		8/3/15	7.61	22.5	430.3	6.54
		7/15/16	7.53	22.4	434.1	7.12
7/24/17	7.26	20.5	430.2	7.21		
7/24/18	7.28	20.7	427.0	7.12		

**Notes:**

35-71891 = ADWR 35 Database

ADWR = Arizona Department of Water Resources

deg C = degrees Celsius

DUP = Blind duplicate

M = Multi-Meter Malfunction

mg/L = milligrams per liter

ND = No Data

NR = No Record

SC = Specific Conductance

SU = Standard Units

µS/cm = microsiemens per centimeter

<sup>1</sup> Verified drinking water supply well, sample collected for sulfate trend analysis and interim action evaluation

**APPENDIX B**  
**WATER ELEVATION DATA**



## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
ANDERSON 396	613396	601134.729	3468816.065	4588.51	3/20/08	145.46	4443.05
					5/5/08	145.84	4442.67
					7/14/08	146.16	4442.35
					10/15/08	146.21	4442.30
					1/27/09	145.97	4442.54
					4/14/09	146.21	4442.30
					7/14/09	146.88	4441.63
					10/12/09	147.31	4441.20
					1/27/10	147.31	4441.20
					4/21/10	147.57	4440.94
					7/19/10	148.34	4440.17
					10/19/10	147.75	4440.76
					1/17/11	148.63	4439.88
					4/11/11	149.46	4439.05
					7/14/11	149.92	4438.59
					10/11/11	150.19	4438.32
					2/1/12	150.19	4438.32
					4/25/12	150.69	4437.82
					7/12/12	151.34	4437.17
					10/10/12	151.50	4437.01
					1/17/13	151.24	4437.27
					4/15/13	152.08	4436.43
					7/18/13	152.19	4436.32
					10/16/13	152.41	4436.10
					1/9/14	152.14	4436.37
					4/7/14	152.56	4435.95
					7/11/14	152.02	4436.49
10/6/14	152.70	4435.81					
2/2/15	152.09	4436.42					
5/18/15	152.22	4436.29					
7/22/15	152.63	4435.88					
10/8/15	152.39	4436.12					
1/12/16	152.00	4436.51					
7/19/16	154.43	4434.08					
1/16/17	153.34	4435.17					
7/18/17	153.99	4434.52					
1/16/18	153.89	4434.62					
7/18/18	154.61	4433.90					
ANDERSON 458	221458	601118.690	3468826.284	4585.37	9/7/12	173.76	4411.61
					10/10/12	151.82	4433.55
					1/17/13	152.17	4433.20
					4/15/13	158.42	4426.95
					7/18/13	157.56	4427.81
					10/16/13	156.24	4429.13
					1/9/14	152.58	4432.79
					4/7/14	153.54	4431.83
					7/11/14	156.66	4428.71
					10/6/14	157.31	4428.06
					5/18/15	156.79	4428.58
					7/22/15	157.03	4428.34
7/19/16	153.02	4432.35					
7/18/17	155.93	4429.44					
7/18/18	158.55	4426.82					
ASLD 435	616435	593496.865	3468879.791	4471.34	6/27/13	250.85	4220.49
					9/24/13	250.85	4220.49
					12/3/13	250.79	4220.55
					2/25/14	250.75	4220.59
					6/4/14	250.93	4220.41
					9/10/14	250.97	4220.37
					11/20/14	250.66	4220.68
					3/24/15	250.25	4221.09
					9/17/15	250.17	4221.17
					3/24/16	250.17	4221.17
					9/28/16	250.21	4221.13
					3/20/17	250.55	4220.79
8/10/17	250.94	4220.40					
3/8/18	251.30	4220.04					
8/22/18	251.57	4219.77					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
AWC-02	616586	598907.911	3468549.357	4547.64	4/8/08	116	4431.64
					8/27/08	121.12	4426.52
					10/23/08 <sup>1</sup>	115	4432.64
					4/22/09 <sup>1</sup>	118	4429.64
					10/9/09 <sup>1</sup>	117	4430.64
					4/23/10 <sup>1</sup>	119	4428.64
					4/11/13	127.64	4420.00
					7/25/13	128.89	4418.75
					10/7/13 <sup>1</sup>	125.00	4422.64
					1/7/14	125.36	4422.28
					5/14/14	124.89	4422.75
					7/16/14	124.49	4423.15
					10/15/14	122.52	4425.12
					1/29/15	120.00	4427.64
					5/18/15	162.60	4385.04
					7/21/15	129.08	4418.56
					10/20/15 <sup>1</sup>	128.00	4419.64
					1/13/16	128.80	4418.84
7/19/16	125.40	4422.24					
1/19/17	119.69	4427.95					
9/6/17	131.56	4416.08					
1/17/18	131.93	4415.71					
7/25/18	129.03	4418.61					
AWC-03	616585	599090.322	3468681.898	4539.52	4/8/08	112	4427.52
					8/27/08	119.40	4420.12
					10/23/08 <sup>1</sup>	106	4433.52
					4/22/09 <sup>1</sup>	114	4425.52
					10/9/09 <sup>1</sup>	116	4423.52
					4/23/10 <sup>1</sup>	116	4423.52
					4/11/13 <sup>1</sup>	125	4414.52
					7/16/13 <sup>1</sup>	126	4413.52
					10/7/13 <sup>1</sup>	122	4417.52
					1/7/14 <sup>1</sup>	121	4418.60
					5/14/14 <sup>1</sup>	121.50	4418.02
					7/16/14 <sup>1</sup>	123.50	4416.02
					10/15/14	119.60	4419.92
					1/29/15	120.20	4419.32
					5/19/15	186.20	4353.32
					7/21/15	118.00	4421.52
					10/20/15 <sup>1</sup>	115.00	4424.52
					1/13/16 <sup>1</sup>	118.00	4421.52
7/19/16	125.50	4414.02					
1/19/17 <sup>1</sup>	123.00	4416.52					
9/6/17 <sup>1</sup>	121.30	4418.22					
1/17/18 <sup>1</sup>	113.60	4425.92					
7/25/18 <sup>1</sup>	125.7	4413.82					
AWC-04	616584	598949.929	3468717.084	4540.48	4/8/08	108	4432.48
					8/27/08	112.56	4427.92
					10/23/08 <sup>1</sup>	111.31	4429.17
					4/22/09 <sup>1</sup>	110	4430.48
					10/9/09 <sup>1</sup>	110	4430.48
					4/23/10 <sup>1</sup>	109	4431.48
					4/11/13	120.93	4419.55
					7/16/13	123.76	4416.72
					10/7/13 <sup>1</sup>	116.00	4424.48
					1/7/14	115.98	4424.50
					5/14/14	115.32	4425.16
					7/16/14	118.44	4422.04
					10/15/14	114.29	4426.19
					1/29/15	112.20	4428.28
					5/19/15	113.90	4426.58
					7/21/15	131.70	4408.78
					10/20/15 <sup>1</sup>	129	4411.48
					1/13/16	130.33	4410.15
7/19/16	119.70	4420.78					
1/19/17	113.15	4427.33					
9/6/17	127.92	4412.56					
1/17/18	125.86	4414.62					
7/25/18	120.27	4420.21					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
AWC-05	590620	599269.904	3468541.692	4542.51	4/8/08	284	4258.51
					8/27/08	299.65	4242.86
					10/23/08	284	4258.51
					4/22/09	286	4256.51
					6/3/09	125	4417.51
					10/9/09 <sup>1</sup>	289	4253.51
					4/23/10 <sup>1</sup>	278	4264.51
					4/11/13	229.56	4312.95
					7/16/13	203.17	4339.34
					10/7/13 <sup>1</sup>	142.00	4400.51
					1/7/14	123.09	4419.42
					5/14/14	346.75	4195.76
					7/16/14	346.34	4196.17
					10/15/14	316.16	4226.35
					1/29/15	133.98	4408.53
					5/18/15	148.05	4394.46
					7/21/15	120.84	4421.67
					10/2015 <sup>1</sup>	116	4426.51
					1/13/16	116.22	4426.29
7/19/16	329.30	4213.21					
1/19/17	318.24	4224.27					
9/6/17	322.50	4220.01					
1/17/18	194.14	4348.37					
7/25/18	132.92	4409.59					
BANKS 987	647987	606981.921	3469206.175	4648.18	2/27/08	208.00	4440.18
					5/12/08	216.30	4431.88
					7/21/08	228.95	4419.23
					10/13/08	228.20	4419.98
					1/21/09	206.64	4441.54
					4/8/09	205.50	4442.68
					7/9/09	235.68	4412.50
					10/7/09	236.71	4411.47
					2/25/10	216.98	4431.20
					4/20/10	219.35	4428.83
					7/20/10	235.60	4412.58
					10/20/10	230.24	4417.94
					1/17/11	215.28	4432.90
					4/5/11	221.68	4426.50
					7/11/11	237.39	4410.79
					10/12/11	237.34	4410.84
					1/31/12	228.95	4419.23
					4/11/12	219.39	4428.79
					7/6/12	232.59	4415.59
					10/4/12	237.16	4411.02
					1/18/13	237.81	4410.37
					4/8/13	237.92	4410.26
					7/9/13	238.32	4409.86
					10/15/13	239.48	4408.70
					1/14/14	239.53	4408.65
					4/8/14	231.49	4416.69
					7/8/14	228.85	4419.33
					10/21/14	233.96	4414.22
					1/26/15	230.87	4417.31
					7/24/15	237.53	4410.65
1/11/16	237.42	4410.76					
7/12/16	232.54	4415.64					
1/17/17	221.90	4426.28					
7/26/17	233.25	4414.93					
1/15/18	237.31	4410.87					
7/30/18	237.12	4411.06					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BARTON 919	644919	606243.850	3469076.689	4692.36	5/12/08	113.71	4578.65
					7/23/08	113.56	4578.80
					10/16/08	113.20	4579.16
					3/11/09	112.92	4579.44
					4/10/09	112.89	4579.47
					7/7/09	112.86	4579.50
					7/17/13	114.18	4578.18
					1/14/14	113.96	4578.40
					7/17/14	113.42	4578.94
					7/20/15	113.22	4579.14
					1/11/16	113.33	4579.03
					7/19/16	113.35	4579.01
1/17/17	113.47	4578.89					
7/14/17	113.52	4578.84					
1/15/18	113.88	4578.48					
7/17/18	113.95	4578.41					
BF-01	539783	604169.077	3472151.593	4835.23	3/4/08	348.99	4486.24
					5/23/08	348.80	4486.43
					8/5/08	348.66	4486.57
					11/5/08	348.94	4486.29
					2/20/09	348.78	4486.45
					5/6/09	348.73	4486.50
					8/17/09	348.73	4486.50
					11/4/09	348.65	4486.58
					3/1/10	348.84	4486.39
					4/7/10	348.70	4486.53
					7/6/10	348.69	4486.54
					7/13/11	348.67	4486.56
					2/1/12	347.84	4487.39
					8/13/12	343.95	4491.28
BIMA	577927	606001.245	3471852.804	4802.05	5/13/08	367.31	4434.74
					8/18/08	370.24	4431.81
					10/23/08	353.96	4448.09
					1/20/09	353.07	4448.98
					4/7/09	357.76	4444.29
					7/8/09	365.44	4436.61
					10/5/09	370.11	4431.94
					4/19/10	382.25	4419.80
					7/21/10	386.89	4415.16
					10/18/10	387.39	4414.66
					1/19/11	391.47	4410.58
					4/4/11	395.22	4406.83
BMO-2008-1G	909474	606467.681	3471723.644	4805.10	8/27/08	62.05	4743.05
					11/11/08	60.95	4744.15
					2/25/09	61.43	4743.67
					4/28/09	62.01	4743.09
					8/4/09	62.96	4742.14
					10/27/09	63.61	4741.49
					2/17/10	64.51	4740.59
					4/15/10	65.05	4740.05
					7/7/10	65.83	4739.27
					2/10/11	67.74	4737.36
					7/12/11	69.37	4735.73
					2/8/12	70.33	4734.77
					8/14/12	71.73	4733.37
					2/14/13	72.95	4732.15
					8/14/13	73.82	4731.28
					2/13/14	73.79	4731.31
					7/22/14	74.14	4730.96
					2/4/15	73.70	4731.40
					9/10/15	74.12	4730.98
					3/3/16	74.30	4730.80
8/17/16	75.02	4730.08					
3/1/17	75.62	4729.48					
7/24/17	76.16	4728.94					
2/14/18	76.97	4728.13					
7/10/18	77.70	4727.40					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2008-3B	909147	602012.923	3467919.582	4583.97	7/18/08	138.05	4445.92
					11/4/08	137.95	4446.02
					2/19/09	138.19	4445.78
					5/11/09	138.46	4445.51
					8/6/09	139.02	4444.95
					10/26/09	139.60	4444.37
					3/3/10	140.03	4443.94
					4/8/10	140.07	4443.90
					7/1/10	140.70	4443.27
					2/14/11	141.41	4442.56
					7/12/11	142.21	4441.76
					2/23/12	143.90	4440.07
					7/10/12	143.70	4440.27
					2/15/13	144.53	4439.44
					8/27/13	145.10	4438.87
					2/11/14	145.08	4438.89
					7/21/14	145.36	4438.61
					2/5/15	144.79	4439.18
					5/28/15	144.90	4439.07
					9/14/15	145.24	4438.73
10/21/15	145.39	4438.58					
3/3/16	145.18	4438.79					
8/18/16	145.94	4438.03					
3/1/17	146.32	4437.65					
7/26/17	146.84	4437.13					
2/8/18	147.16	4436.81					
7/10/18	147.92	4436.05					
BMO-2008-4B	910096	601099.405	3468383.430	4573.17	12/11/08	130.77	4442.40
					2/18/09	130.58	4442.59
					4/30/09	131.24	4441.93
					8/6/09	131.96	4441.21
					10/27/09	132.04	4441.13
					2/24/10	131.82	4441.35
					4/16/10	132.65	4440.52
					7/2/10	133.20	4439.97
					2/15/11	133.78	4439.39
					7/22/11	134.80	4438.37
					2/23/12	134.64	4438.53
					9/17/12	136.15	4437.02
					1/15/13	136.13	4437.04
					4/15/13	136.78	4436.39
					9/18/13	137.04	4436.13
					1/9/14	136.96	4436.21
					7/18/14	137.49	4435.68
					1/12/16	136.54	4436.63
					9/30/17	138.68	4434.49
1/18/18	138.71	4434.46					
7/26/18	139.42	4433.75					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2008-5B	909653	600438.159	3468994.715	4585.10	9/30/08	145.10	4440.00
					2/18/09	144.35	4440.75
					4/27/09	144.78	4440.32
					8/4/09	145.36	4439.74
					10/29/09	145.88	4439.22
					2/15/10	145.42	4439.68
					4/15/10	145.80	4439.30
					7/7/10	146.59	4438.51
					10/5/10	147.00	4438.10
					2/14/11	147.56	4437.54
					5/12/11	148.04	4437.06
					7/13/11	148.31	4436.79
					12/7/11	148.45	4436.65
					2/3/12	148.47	4436.63
					4/18/12	149.02	4436.08
					7/10/12	148.65	4436.45
					10/16/12	149.91	4435.19
					2/7/13	149.94	4435.16
					2/12/13	150.06	4435.04
					5/15/13	150.55	4434.55
					8/20/13	150.82	4434.28
					11/1/13	150.77	4434.33
					2/11/14	150.33	4434.77
					5/7/14	150.83	4434.27
					8/19/14	151.13	4433.97
					11/13/14	150.78	4434.32
					2/3/15	150.10	4435.00
					5/28/15	150.47	4434.63
					9/8/15	150.38	4434.72
					10/21/15	150.23	4434.87
3/14/16	149.76	4435.34					
9/14/16	151.31	4433.79					
3/1/17	151.56	4433.54					
8/1/17	151.95	4433.15					
2/8/18	151.97	4433.13					
3/8/18	152.04	4433.06					
4/11/18	152.27	4432.83					
5/29/18	152.32	4432.78					
6/19/18	152.74	4432.36					
7/25/18	152.96	4432.14					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2008-5M	909552	600445.071	3468994.282	4585.02	10/2/08	146.65	4438.37
					2/18/09	145.97	4439.05
					4/27/09	146.46	4438.56
					8/4/09	147.13	4437.89
					10/29/09	147.68	4437.34
					2/15/10	147.07	4437.95
					4/16/10	147.34	4437.68
					7/7/10	148.28	4436.74
					10/5/10	148.68	4436.34
					2/14/11	148.74	4436.28
					5/12/11	149.66	4435.36
					7/12/11	150.20	4434.82
					12/7/11	150.30	4434.72
					2/3/12	150.05	4434.97
					4/18/12	150.70	4434.32
					7/10/12	151.65	4433.37
					10/16/12	151.77	4433.25
					2/12/13	152.00	4433.02
					5/15/13	152.42	4432.60
					8/20/13	152.76	4432.26
11/1/13	152.53	4432.49					
2/11/14	151.78	4433.24					
5/7/14	152.26	4432.76					
8/19/14	152.78	4432.24					
11/13/14	152.27	4432.75					
2/3/15	151.61	4433.41					
5/19/15	151.58	4433.44					
9/8/15	151.63	4433.39					
3/14/16	150.87	4434.15					
9/14/16	152.68	4432.34					
3/1/17	152.84	4432.18					
8/1/17	153.27	4431.75					
2/8/18	153.03	4431.99					
7/25/18	154.19	4430.83					
BMO-2008-6B	909146	600366.523	3469820.644	4627.44	7/16/08	190.13	4437.31
					11/4/08	190.23	4437.21
					2/19/09	189.71	4437.73
					4/27/09	189.99	4437.45
					8/4/09	190.80	4436.64
					10/26/09	191.04	4436.40
					2/15/10	190.82	4436.62
					4/15/10	190.75	4436.69
					7/1/10	191.43	4436.01
					10/5/10	192.50	4434.94
					2/14/11	192.19	4435.25
					5/12/11	192.70	4434.74
					7/12/11	193.30	4434.14
					12/7/11	193.85	4433.59
					2/3/12	193.60	4433.84
					4/18/12	193.90	4433.54
					7/10/12	194.75	4432.69
					10/16/12	195.71	4431.73
					2/12/13	195.42	4432.02
					5/15/13	195.91	4431.53
8/20/13	196.23	4431.21					
11/1/13	195.77	4431.67					
2/11/14	195.24	4432.20					
5/7/14	195.47	4431.97					
8/19/14	196.36	4431.08					
11/13/14	195.74	4431.70					
2/3/15	195.12	4432.32					
5/19/15	195.00	4432.44					
9/8/15	195.48	4431.96					
10/21/15	195.37	4432.07					
3/14/16	195.00	4432.44					
9/14/16	196.36	4431.08					
3/1/17	196.33	4431.11					
7/10/17	196.88	4430.56					
2/8/18	197	4430.44					
7/10/18	197.57	4429.87					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2008-6M	909019	600367.943	3469813.885	4626.90	7/10/08	191.63	4435.27
					11/4/08	190.25	4436.65
					2/20/09	190.70	4436.20
					4/28/09	190.98	4435.92
					8/4/09	191.77	4435.13
					10/26/09	192.14	4434.76
					2/15/10	191.78	4435.12
					4/15/10	191.64	4435.26
					7/1/10	192.53	4434.37
					10/5/10	192.96	4433.94
					2/14/11	193.14	4433.76
					5/12/11	193.68	4433.22
					7/12/11	194.47	4432.43
					12/7/11	194.92	4431.98
					2/3/12	194.65	4432.25
					4/18/12	195.00	4431.90
					7/10/12	196.10	4430.80
					10/16/12	196.53	4430.37
					2/12/13	196.45	4430.45
					5/15/13	196.90	4430.00
					8/20/13	197.43	4429.47
					11/1/13	196.53	4430.37
					2/11/14	196.18	4430.72
					5/7/14	196.33	4430.57
					8/19/14	197.40	4429.50
					11/13/14	196.32	4430.58
2/3/15	195.90	4431.00					
5/19/15	195.64	4431.26					
9/8/15	196.32	4430.58					
3/14/16	195.87	4431.03					
9/14/16	197.37	4429.53					
3/1/17	197.24	4429.66					
7/10/17	197.92	4428.98					
2/8/18	197.96	4428.94					
7/10/18	198.63	4428.27					



## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2008-7M	908794	603099.165	3470029.283	4688.33	7/14/08	238.31	4450.02
					11/6/08	239.69	4448.64
					2/18/09	238.90	4449.43
					5/11/09	239.03	4449.30
					8/6/09	239.17	4449.16
					10/27/09	239.55	4448.78
					2/17/10	239.98	4448.35
					4/15/10	240.13	4448.20
					7/6/10	240.28	4448.05
					2/14/11	241.26	4447.07
					7/15/11	241.81	4446.52
					1/30/12	242.44	4445.89
					7/11/12	243.0	4445.33
					2/15/13	243.8	4444.53
					8/28/13	244.32	4444.01
					2/13/14	244.31	4444.02
					7/22/14	244.66	4443.67
					2/5/15	243.91	4444.42
					9/14/15	244.59	4443.74
					3/16/16	244.91	4443.42
8/18/16	245.23	4443.10					
3/7/17	245.44	4442.89					
7/10/17	245.73	4442.60					
2/1/18	245.82	4442.51					
7/23/18	246.18	4442.15					
BMO-2008-8B	910097	604171.347	3471141.719	4753.25	12/5/08	297.94	4455.31
					2/19/09	297.63	4455.62
					5/5/09	297.37	4455.88
					8/10/09	297.53	4455.72
					11/9/09	297.85	4455.40
					3/3/10	298.37	4454.88
					4/16/10	298.46	4454.79
					7/1/10	298.64	4454.61
					2/11/11	299.56	4453.69
					5/13/11	299.78	4453.47
					7/15/11	300.00	4453.25
					1/30/12	300.52	4452.73
					7/12/12	301.15	4452.10
					2/13/13	302.05	4451.20
					8/12/13	302.48	4450.77
					7/24/14	301.86	4451.39
					2/5/15	299.56	4453.69
					9/15/15	300.14	4453.11
					3/16/16	300.76	4452.49
					9/15/16	301.26	4451.99
3/7/17	301.61	4451.64					
7/10/17	301.89	4451.36					
2/1/18	301.83	4451.42					
7/23/18	302.83	4450.42					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2008-8M	909711	604167.912	3471127.902	4752.45	12/9/08	299.79	4452.66
					2/19/09	298.32	4454.13
					5/5/09	298.27	4454.18
					8/10/09	298.57	4453.88
					11/5/09	298.81	4453.64
					3/3/10	299.18	4453.27
					4/16/10	299.42	4453.03
					7/1/10	299.70	4452.75
					1/24/11	300.46	4451.99
					5/13/11	301.00	4451.45
					7/15/11	300.96	4451.49
					1/30/12	301.60	4450.85
					7/12/12	302.45	4450.00
					2/14/13	303.07	4449.38
					8/12/13	303.60	4448.85
					2/19/14	303.11	4449.34
					7/24/14	303.48	4448.97
					2/5/15	301.98	4450.47
					9/15/15	302.46	4449.99
					3/16/16	303.19	4449.26
9/15/16	303.43	4449.02					
3/7/17	303.85	4448.60					
7/10/17	304.09	4448.36					
2/1/18	303.94	4448.51					
7/23/18	304.20	4448.25					
BMO-2008-9M	909255	604668.669	3471121.675	4762.61	8/8/08	287.17	4475.44
					11/5/08	287.65	4474.96
					2/26/09	285.65	4476.96
					5/12/09	285.28	4477.33
					8/17/09	286.09	4476.52
					11/3/09	286.55	4476.06
					3/4/10	287.45	4475.16
					4/6/10	287.81	4474.80
					7/1/10	288.26	4474.35
					2/10/11	289.77	4472.84
					5/13/11	290.47	4472.14
					7/15/11	290.95	4471.66
					2/1/12	293.44	4469.17
					7/12/12	294.65	4467.96
					2/13/13	296.67	4465.94
					8/12/13	297.63	4464.98
					2/18/14	293.68	4468.93
					7/24/14	293.53	4469.08
					2/5/15	286.01	4476.60
					9/14/15	286.34	4476.27
3/16/16	287.22	4475.39					
9/15/16	289.35	4473.26					
3/7/17	289.83	4472.78					
7/11/17	291.03	4471.58					
2/1/18	289.66	4472.95					
7/26/18	291.78	4470.83					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2008-10GL	909435	605264.072	3471702.043	4792.21	8/20/08	521.75	4270.46
					11/5/08	520.50	4271.71
					2/25/09	516.72	4275.49
					5/12/09	514.68	4277.53
					8/11/09	513.23	4278.98
					11/2/09	509.43	4282.78
					3/4/10	510.88	4281.33
					4/8/10	506.31	4285.90
					7/2/10	511.80	4280.41
					7/13/11	512.16	4280.05
					2/2/12	511.34	4280.87
					7/13/12	510.90	4281.31
					2/18/13	509.91	4282.30
					8/13/13	509.32	4282.89
					8/7/14	507.21	4285.00
					2/10/15	463.22	4328.99
					9/14/15	439.93	4352.28
					3/16/16	364.33	4427.88
8/17/16	337.26	4454.95					
3/7/17	332.86	4459.35					
7/11/17	337.89	4454.32					
2/1/18	337.84	4454.37					
7/26/18	333.28	4458.93					
BMO-2008-10GU	909272	605267.551	3471731.866	4793.45	8/4/08	299.28	4494.17
					11/5/08	295.89	4497.56
					2/25/09	289.84	4503.61
					5/6/09	289.35	4504.10
					8/11/09	289.09	4504.36
					11/2/09	289.77	4503.68
					3/10/10	289.58	4503.87
					4/7/10	289.5	4503.95
					7/6/10	288.93	4504.52
					7/13/11	301.02	4492.43
					2/1/12	326.51	4466.94
					7/13/12	328.7	4464.75
					8/19/13	283.97	4509.48
					2/10/15	207.58	4585.87
					9/14/15	200.36	4593.09
					3/16/16	195.53	4597.92
					8/17/16	201.47	4591.98
					3/7/17	210.83	4582.62
8/9/17	201.50	4591.95					
2/1/18	201.09	4592.36					
7/26/18	200.53	4592.92					
BMO-2008-11G	909434	603800.995	3472626.482	4844.67	8/22/08	577.76	4266.91
					11/12/08	576.80	4267.87
					2/26/09	575.91	4268.76
					4/8/09	575.46	4269.21
					8/12/09	574.84	4269.83
					11/9/09	573.41	4271.26
					3/1/10	573.68	4270.99
					4/9/10	573.56	4271.11
					7/1/10	572.97	4271.70
					2/10/11	571.61	4273.06
					7/22/11	571.20	4273.47
					1/31/12	569.83	4274.84
					8/14/12	569.70	4274.97
					2/13/13	568.75	4275.92
					8/27/13	566.50	4278.17
					2/19/14	564.68	4279.99
					8/14/14	564.24	4280.43
					2/5/15	560.60	4284.07
9/14/15	557.84	4286.83					
3/15/16	556.04	4288.63					
8/17/16	554.94	4289.73					
3/2/17	554.27	4290.40					
7/11/17	554.02	4290.65					
2/12/18	552.11	4292.56					
7/12/18	552.20	4292.47					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2008-13B	909551	601657.612	3470076.358	4649.21	10/3/08	206.42	4442.79
					2/17/09	206.11	4443.10
					5/6/09	206.32	4442.89
					8/5/09	206.79	4442.42
					10/28/09	207.08	4442.13
					2/16/10	207.26	4441.95
					4/14/10	207.27	4441.94
					7/6/10	207.68	4441.53
					2/10/11	208.51	4440.70
					5/13/11	208.95	4440.26
					7/15/11	209.36	4439.85
					2/9/12	209.78	4439.43
					7/11/12	210.60	4438.61
					2/27/13	211.40	4437.81
					9/4/13	212.15	4437.06
					8/19/14	212.68	4436.53
					2/4/15	212.28	4436.93
					9/15/15	212.37	4436.84
3/16/16	211.95	4437.26					
9/21/16	212.84	4436.37					
3/7/17	213.15	4436.06					
8/2/17	213.57	4435.64					
2/1/18	213.6	4435.61					
8/6/18	214.22	4434.99					
BMO-2008-13M	909760	601650.495	3470040.455	4647.15	12/3/08	206.00	4441.15
					2/17/09	208.74	4438.41
					4/29/09	208.53	4438.62
					8/5/09	208.85	4438.30
					10/28/09	208.91	4438.24
					2/16/10	209.16	4437.99
					4/13/10	209.20	4437.95
					7/2/10	209.30	4437.85
					2/10/11	210.36	4436.79
					5/13/11	210.50	4436.65
					7/15/11	210.67	4436.48
					2/6/12	210.90	4436.25
					8/13/12	211.42	4435.73
					2/15/13	212.13	4435.02
					9/6/13	212.52	4434.63
					8/20/14	213.14	4434.01
					2/4/15	212.97	4434.18
					9/15/15	212.91	4434.24
3/16/16	212.76	4434.39					
9/21/16	213.22	4433.93					
3/7/17	213.6	4433.55					
8/15/17	213.71	4433.44					
2/1/18	214.09	4433.06					
8/6/18	214.37	4432.78					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2010-1M	219957	605581.263	3469935.750	4718.55	9/7/10	224.13	4494.42
					11/10/10	222.97	4495.58
					2/11/11	222.01	4496.54
					5/12/11	223.08	4495.47
					8/31/11	224.38	4494.17
					12/13/11	222.86	4495.69
					2/8/12	222.97	4495.58
					4/24/12	223.87	4494.68
					7/9/12	225.05	4493.50
					10/17/12	225.63	4492.92
					2/13/13	226.85	4491.70
					5/8/13	227.45	4491.10
					8/15/13	228.10	4490.45
					11/4/13	224.41	4494.14
					2/12/14	222.90	4495.65
					6/2/14	222.80	4495.75
					8/4/14	223.14	4495.41
					11/12/14	219.47	4499.08
					2/5/15	214.19	4504.36
					9/9/15	211.68	4506.87
3/16/16	210.91	4507.64					
8/25/16	212.23	4506.32					
3/7/17	212.69	4505.86					
7/12/17	214.02	4504.53					
2/1/18	213.31	4505.24					
8/7/18	214.94	4503.61					
BMO-2010-2M	219958	605685.549	3470564.646	4746.16	9/7/10	264.13	4482.03
					11/11/10	263.94	4482.22
					2/10/11	264.13	4482.03
					5/13/11	266.97	4479.19
					7/14/11	268.05	4478.11
					12/13/11	270.98	4475.18
					1/30/12	271.50	4474.66
					4/18/12	272.31	4473.85
					7/9/12	273.20	4472.96
					10/17/12	274.27	4471.89
					2/13/13	275.52	4470.64
					5/8/13	276.05	4470.11
					8/15/13	278.76	4467.40
					11/4/13	273.26	4472.90
					2/12/14	271.44	4474.72
					5/8/14	270.65	4475.51
					8/14/14	270.78	4475.38
					11/12/14	263.19	4482.97
					2/5/15	259.84	4486.32
					9/14/15	260.92	4485.24
3/16/16	261.81	4484.35					
9/13/16	264.66	4481.50					
3/7/17	265.47	4480.69					
7/12/17	267.14	4479.02					
2/1/18	266.24	4479.92					
8/7/18	268.92	4477.24					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2010-3B	219970	599977.962	3468347.363	4550.59	7/28/10	115.38	4435.21
					11/10/10	115.80	4434.79
					1/20/11	115.46	4435.13
					4/7/11	116.11	4434.48
					7/13/11	117.30	4433.29
					10/13/11	117.72	4432.87
					2/2/12	117.18	4433.41
					4/24/12	117.92	4432.67
					7/5/12	118.84	4431.75
					10/18/12	119.13	4431.46
					1/16/13	118.89	4431.70
					4/16/13	119.36	4431.23
					7/23/13	120.02	4430.57
					10/8/13	119.63	4430.96
					1/15/14	118.96	4431.63
					5/13/14	119.40	4431.19
					7/15/14	120.06	4430.53
					10/14/14	119.16	4431.43
					1/28/15	118.46	4432.13
					5/18/15	118.49	4432.10
7/22/15	118.81	4431.78					
10/6/15	118.06	4432.53					
2/2/16	117.39	4433.20					
7/12/16	119.21	4431.38					
1/18/17	119.89	4430.70					
7/11/17	120.51	4430.08					
1/8/18	119.84	4430.75					
7/10/18	121.45	4429.14					
BMO-2010-3M	219969	599970.801	3468353.543	4550.53	7/30/10	118.63	4431.90
					11/10/10	118.75	4431.78
					1/20/11	118.32	4432.21
					4/7/11	119.09	4431.44
					8/25/11	120.74	4429.79
					10/13/11	120.67	4429.86
					2/2/12	119.91	4430.62
					4/24/12	120.93	4429.60
					7/5/12	122.05	4428.48
					10/18/12	122.06	4428.47
					1/16/13	121.86	4428.67
					4/16/13	122.26	4428.27
					7/23/13	122.97	4427.56
					10/8/13	121.91	4428.62
					1/15/14	120.91	4429.62
					5/13/14	121.90	4428.63
					7/15/14	121.92	4428.61
					10/14/14	121.87	4428.66
					1/28/15	120.63	4429.90
					5/18/15	120.48	4430.05
7/22/15	120.42	4430.11					
10/6/15	119.44	4431.09					
2/2/16	118.65	4431.88					
7/12/16	121.56	4428.97					
1/18/17	122.27	4428.26					
7/11/17	122.85	4427.68					
1/8/18	121.24	4429.29					
7/10/18	124.08	4426.45					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)	
BMO-2012-1M	221388	606097.384	3469746.747	4719.76	11/13/12	231.90	4487.86	
					2/27/13	233.20	4486.56	
					5/8/13	233.97	4485.79	
					8/14/13	233.96	4485.80	
					11/1/13	230.44	4489.32	
					2/13/14	229.85	4489.91	
					5/8/14	229.89	4489.87	
					7/22/14	229.94	4489.82	
					11/13/14	225.37	4494.39	
					2/4/15	222.57	4497.19	
					9/10/15	221.60	4498.16	
					3/3/16	214.86	4504.90	
					8/17/16	215.57	4504.19	
					3/2/17	216.10	4503.66	
7/24/17	217.59	4502.17						
8/21/17	217.55	4502.21						
2/13/18	217.58	4502.18						
7/16/18	219.60	4500.16						
BMO-2014-1BL	917394	600563.194	3468234.798	4558.45	4557.18	11/7/14	123.03	4434.15
					1/29/15	123.53	4434.92	
					4/15/15	123.45	4435.00	
					5/18/15	123.93	4434.52	
					7/29/15	124.22	4434.23	
					10/7/15	123.58	4434.87	
					2/4/16	123.17	4435.28	
					4/6/16	123.61	4434.84	
					7/14/16	124.85	4433.60	
					11/2/16	124.93	4433.52	
					1/24/17	124.57	4433.88	
					7/13/17	126.19	4432.26	
					1/10/18	125.47	4432.98	
					7/12/18	127.11	4431.34	
BMO-2014-1BU	917393	600570.805	3468231.440	4558.54	4557.18	11/13/14	123.51	4433.67
					1/28/15	123.74	4434.80	
					4/15/15	123.90	4434.64	
					5/18/15	124.42	4434.12	
					7/29/15	124.65	4433.89	
					10/7/15	123.97	4434.57	
					2/4/16	123.43	4435.11	
					4/6/16	123.90	4434.64	
					7/14/16	125.23	4433.31	
					11/2/16	125.32	4433.22	
					1/24/17	124.86	4433.68	
					7/13/17	126.42	4432.12	
					1/10/18	125.73	4432.81	
					7/12/18	127.19	4431.35	
BMO-2014-2BL	917452	600784.872	3468183.921	4561.80	4560.31	11/20/14	126.15	4434.16
					1/29/15	126.74	4435.06	
					4/15/15	126.70	4435.10	
					5/18/15	127.18	4434.62	
					7/29/15	127.43	4434.37	
					10/7/15	126.90	4434.90	
					2/4/16	126.68	4435.12	
					4/6/16	126.77	4435.03	
					7/14/16	127.85	4433.95	
					11/2/16	128.39	4433.41	
					1/24/17	127.73	4434.07	
					9/6/17	128.56	4433.24	
					1/10/18	129.09	4432.71	
					7/12/18	129.61	4432.19	

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2014-2BU	917453	600788.520	3468192.762	4560.31	12/1/14	126.73	4433.58
				4561.85	1/30/15	126.73	4435.12
					4/15/15	126.65	4435.20
					5/18/15	127.21	4434.64
					7/29/15	127.49	4434.36
					10/7/15	126.94	4434.91
					2/4/16	126.56	4435.29
					4/6/16	126.81	4435.04
					7/14/16	127.93	4433.92
					11/2/16	128.37	4433.48
					1/24/17	127.75	4434.10
					7/13/17	129.07	4432.78
					1/10/18	129.01	4432.84
7/12/18	129.67	4432.18					
BMO-2014-3BL	917527	600822.399	3467786.416	4572.213	2/13/15	136.57	4435.64
				4573.765	4/15/15	138.35	4435.42
					5/18/15	138.64	4435.13
					7/29/15	138.86	4434.91
					10/7/15	138.51	4435.26
					2/4/16	138.14	4435.63
					4/6/16	138.39	4435.38
					7/14/16	139.44	4434.33
					11/2/16	139.66	4434.11
					1/25/17	139.54	4434.23
					7/13/17	140.74	4433.03
					1/11/18	140.48	4433.29
					1/12/18	140.56	4433.21
7/12/18	141.74	4432.03					
BMO-2014-3BU	917494	600810.534	3467787.733	4572.213	2/24/15	137.91	4434.30
				4574.887	4/15/15	139.45	4435.44
					5/18/15	139.74	4435.15
					7/29/15	140.03	4434.86
					10/7/15	139.64	4435.25
					2/4/16	139.20	4435.69
					4/6/16	139.48	4435.41
					7/14/16	140.55	4434.34
					11/2/16	140.83	4434.06
					1/25/17	140.66	4434.23
					7/13/17	140.80	4434.09
					1/11/18	141.50	4433.39
					1/12/18	141.52	4433.37
7/12/18	141.65	4433.24					
BMO-2014-4B	917620	600508.792	3468581.267	4566.453	3/4/15	132.43	4434.02
				4567.672	4/14/15	133.60	4434.07
					5/18/15	133.85	4433.82
					7/23/15	134.27	4433.40
					10/6/15	133.74	4433.93
					2/3/16	133.04	4434.63
					4/5/16	133.25	4434.42
					7/13/16	134.64	4433.03
					11/1/16	134.87	4432.80
					1/23/17	134.41	4433.26
					7/12/17	135.68	4431.99
					1/9/18	135.05	4432.62
					7/11/18	136.51	4431.16
BMO-2014-4BL	917619	600498.091	3468566.229	4566.453	3/1/15	131.89	4434.56
				4567.045	4/14/15	132.95	4434.10
					5/18/15	133.23	4433.82
					7/23/15	133.67	4433.38
					10/6/15	133.16	4433.89
					2/3/16	132.43	4434.62
					4/5/16	132.67	4434.38
					8/25/16	133.82	4433.23
					11/1/16	134.30	4432.75
					1/23/17	133.85	4433.20
					7/12/17	135.10	4431.95
					1/9/18	134.47	4432.58
					7/11/18	136.07	4430.98



## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2015-1B	917622	600261.991	3468563.389	4561.382	3/15/15	128.05	4433.33
				4562.063	4/14/15	129.10	4432.96
					5/18/15	129.24	4432.82
					7/23/15	129.62	4432.44
					10/6/15	129.02	4433.04
					2/3/16	128.41	4433.65
					4/5/16	128.45	4433.61
					8/25/16	130.05	4432.01
					11/1/16	130.38	4431.68
					1/23/17	130.28	4431.78
					7/12/17	131.14	4430.92
					1/9/18	130.50	4431.56
7/11/18	131.87	4430.19					
BMO-2015-1BL	917621	600272.479	3468583.092	4561.382	3/12/15	129.10	4432.28
				4563.402	4/14/15	130.45	4432.95
					5/18/15	130.59	4432.81
					7/23/15	130.98	4432.42
					10/6/15	130.30	4433.10
					2/3/16	129.75	4433.65
					4/5/16	129.81	4433.59
					7/13/16	131.31	4432.09
					11/1/16	131.66	4431.74
					1/23/17	131.58	4431.82
					7/12/17	132.46	4430.94
					1/9/18	131.79	4431.61
7/11/18	133.21	4430.19					
BMO-2015-2B	917827	600267.799	3468996.635	4579.624	3/19/15	147.17	4432.45
				4582.082	4/14/15	149.05	4433.03
					5/18/15	149.18	4432.90
					7/23/15	149.47	4432.61
					10/6/15	148.94	4433.14
					2/3/16	148.45	4433.63
					4/5/16	148.37	4433.71
					7/13/16	149.88	4432.20
					11/1/16	150.30	4431.78
					1/23/17	150.12	4431.96
					7/12/17	150.99	4431.09
					1/9/18	150.43	4431.65
7/11/18	151.72	4430.36					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2015-2BL	917828	600252.069	3468983.910	4579.624	3/26/15	146.43	4433.19
				4580.644	4/14/15	147.60	4433.04
					5/18/15	147.82	4432.82
					7/23/15	148.12	4432.52
					10/6/15	147.56	4433.08
					2/3/16	147.06	4433.58
					4/5/16	146.99	4433.65
					7/13/16	148.52	4432.12
					11/1/16	149.00	4431.64
					1/23/17	148.80	4431.84
					7/12/17	149.64	4431.00
1/9/18	149.09	4431.55					
7/11/18	150.39	4430.25					
BOOTH	914931	601132.466	3468049.945	4568.21	1/15/13	131.47	4436.74
					4/19/13	132.04	4436.17
					10/18/13	132.56	4435.65
BURKE	212268	602230.087	3473029.816	4856.30	4/22/08	606.55	4249.75
					8/5/08	605.86	4250.44
					10/28/08	604.88	4251.42
					2/19/09	603.91	4252.39
					4/28/09	603.70	4252.60
					8/19/09	602.66	4253.64
					10/10/13	601.06	4255.24
					1/8/14	592.90	4263.40
					4/16/14	592.51	4263.79
					7/21/14	592.35	4263.95
10/21/14	594.68	4261.62					
8/3/15	587.06	4269.24					
COB MW-1	903992	603153.259	3469889.889	4683.26	2/22/08	232.47	4450.79
					5/20/08	233.12	4450.14
					7/30/08	233.37	4449.89
					10/23/08	233.62	4449.64
					2/12/09	234.05	4449.21
					4/21/09	234.99	4448.27
					7/22/09	234.34	4448.92
					10/22/09	234.69	4448.57
					2/4/10	235.15	4448.11
					4/20/10	235.47	4447.79
					7/13/10	235.68	4447.58
					7/14/11	236.98	4446.28
					7/12/12	238.24	4445.02
					2/5/13	239.11	4444.15
					7/11/13	239.67	4443.59
7/9/14	240.03	4443.23					
2/4/15	239.46	4443.80					
7/27/15	239.83	4443.43					
COB MW-1B	225906	603153.259 <sup>2</sup>	3469889.889 <sup>2</sup>	4683.26 <sup>2</sup>	7/20/16	240.06	4443.20
					1/19/17	239.90	4443.36
					7/19/17	240.27	4442.99

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
COB MW-2	903984	600973.257	3468114.836	4566.21	2/22/08	122.85	4443.36
					5/20/08	123.00	4443.21
					7/30/08	123.53	4442.68
					10/23/08	124.02	4442.19
					2/12/09	123.39	4442.82
					4/23/09	124.16	4442.05
					7/22/09	124.91	4441.30
					10/22/09	125.33	4440.88
					3/3/10	124.93	4441.28
					4/26/10	125.47	4440.74
					7/13/10	126.54	4439.67
					1/20/11	126.46	4439.75
					7/14/11	128.17	4438.04
					1/31/12	128.04	4438.17
					7/12/12	129.58	4436.63
					1/9/13	129.28	4436.93
					7/25/13	130.21	4436.00
					1/6/14	130.11	4436.10
					7/9/14	131.32	4434.89
					2/4/15	126.60	4439.61
5/28/15	130.39	4435.82					
7/27/15	130.32	4435.89					
10/7/15	129.96	4436.25					
1/11/16	129.56	4436.65					
7/20/16	130.90	4435.31					
1/19/17	130.99	4435.22					
7/19/17	131.90	4434.31					
1/11/18	131.72	4434.49					
7/17/18	132.56	4433.65					
COB MW-3	906823	599169.225	3468726.000	4538.63	2/28/08	120.84	4417.79
					5/20/08	125.00	4413.63
					7/30/08	118.50	4420.13
					10/23/08	117.93	4420.70
					2/12/09	110.91	4427.72
					4/23/09	125.13	4413.50
					7/22/09	124.09	4414.54
					10/22/09	118.03	4420.60
					3/3/10	120.14	4418.49
					4/26/10	123.12	4415.51
					7/13/10	128.60	4410.03
					7/14/11	132.41	4406.22
					7/12/12	133.89	4404.74
					2/5/13	123.68	4414.95
					7/25/13	129.05	4409.58
					1/6/14	127.52	4411.11
					7/9/14	124.19	4414.44
					2/4/15	115.11	4423.52
					7/27/15	118.39	4420.24
					10/7/15	114.37	4424.26
1/11/16	112.93	4425.70					
7/20/16	120.25	4418.38					
1/27/17	126.14	4412.49					
7/19/17	120.70	4417.93					
1/11/18	116.02	4422.61					
7/17/18	125.77	4412.86					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
COB WL	593116	606357.506	3472502.012	4832.06	2/22/08	56.50	4775.56
					5/20/08	57.50	4774.56
					7/30/08	58.64	4773.42
					10/23/08	58.76	4773.30
					2/12/09	58.89	4773.17
					4/23/09	59.73	4772.33
					7/22/09	61.27	4770.79
					10/22/09	62.82	4769.24
					3/3/10	65.24	4766.82
					4/26/10	66.13	4765.93
					7/13/10	67.52	4764.54
					7/14/11	73.86	4758.20
					7/12/12	78.85	4753.21
					2/5/13	82.41	4749.65
					7/25/13	81.36	4750.70
					7/9/14	78.12	4753.94
					2/4/15	58.14	4773.92
					7/27/15	80.09	4751.97
1/11/16	81.72	4750.34					
7/20/16	84.80	4747.26					
1/25/17	87.06	4745.00					
7/14/17	89.96	4742.10					
1/11/18	89.87	4742.19					
7/9/18	91.48	4740.58					
COLLINS	565260	602551.286	3471341.335	4733.72	2/12/08	289.47	4444.25
					5/29/08	288.53	4445.19
					7/31/08	290.08	4443.64
					10/20/08	290.15	4443.57
					4/21/09	290.66	4443.06
					7/20/09	290.78	4442.94
					10/20/09	290.52	4443.20
					2/2/10	291.64	4442.08
4/23/10	291.96	4441.76					
7/20/10	292.21	4441.51					
COOPER C	637069	601349.987	3468913.011	4599.14	3/4/08	155.08	4444.06
					5/5/08	155.34	4443.80
					7/15/08	156.01	4443.13
					10/16/08	155.85	4443.29
					1/27/09	155.62	4443.52
					4/14/09	155.86	4443.28
					7/14/09	156.50	4442.64
					10/12/09	156.89	4442.25
					1/27/10	157.03	4442.11
					4/22/10	157.31	4441.83
					7/21/10	158.00	4441.14
					10/20/10	158.41	4440.73
					1/17/11	158.37	4440.77
					4/11/11	158.74	4440.40
					8/26/11	159.51	4439.63
					10/13/11	159.81	4439.33
					2/1/12	159.80	4439.34
					4/25/12	160.26	4438.88
					7/12/12	160.88	4438.26
					10/10/12	161.10	4438.04
					2/27/13	161.40	4437.74
					5/8/13	161.70	4437.44
					8/13/13	162.07	4437.07
					11/1/13	162.23	4436.91
					2/10/14	161.90	4437.24
					5/7/14	162.63	4436.51
7/21/14	162.67	4436.47					
11/13/14	162.48	4436.66					
5/19/15	162.14	4437.00					
9/10/15	162.14	4437.00					
10/21/15	162.17	4436.97					
3/16/16	161.76	4437.38					
8/18/16	162.78	4436.36					
7/13/17	162.68	4436.46					
2/5/18	163.66	4435.48					
7/25/18	164.42	4434.72					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
DODSON	644927	605594.560	3469063.772	4686.34	5/12/08	81.38	4604.96
					7/24/08	82.20	4604.14
					10/13/08	81.82	4604.52
					1/22/09	82.33	4604.01
					4/9/09	82.84	4603.50
					7/8/09	86.88	4599.46
					10/6/09	87.27	4599.07
					1/21/10	88.54	4597.80
					4/19/10	89.53	4596.81
					7/20/10	90.79	4595.55
					10/18/10	90.33	4596.01
					1/19/11	90.34	4596.00
					4/5/11	91.05	4595.29
					7/12/11	92.07	4594.27
					10/10/11	93.11	4593.23
					1/31/12	93.68	4592.66
					4/12/12	94.19	4592.15
					10/4/12	97.80	4588.54
					1/18/13	99.73	4586.61
					4/9/13	98.09	4588.25
					7/9/13	98.38	4587.96
					10/9/13	92.69	4593.65
					1/9/14	93.21	4593.13
4/15/14	94.64	4591.70					
7/14/14	95.43	4590.91					
10/16/14	97.22	4589.12					
1/26/15	95.81	4590.53					
7/23/15	97.32	4589.02					
1/12/16	99.34	4587.00					
7/18/16	103.91	4582.43					
7/17/17	103.07	4583.27					
1/17/18	101.44	4584.90					
7/30/18	117.18	4569.16					
DOUGLASS 791	592791	607632.993	3470222.677	4703.27	2/13/08	22.11	4681.16
					5/13/08	24.60	4678.67
					7/22/08	27.00	4676.27
					10/16/08	23.60	4679.67
					1/19/09	26.51	4676.76
					4/8/09	28.53	4674.74
					7/7/09	31.04	4672.23
					10/5/09	31.49	4671.78
					1/21/10	34.55	4668.72
					4/19/10	36.40	4666.87
					7/12/10	36.74	4666.53
					1/18/11	25.96	4677.31
					1/30/12	27.72	4675.55
					4/11/12	29.99	4673.28
					7/5/12	32.67	4670.60
					1/9/13	27.24	4676.03
					7/8/13	32.70	4670.57
					1/6/14	23.56	4679.71
					7/7/14	28.22	4675.05
					7/20/15	30.86	4672.41
7/11/16	32.09	4671.18					
7/13/17	31.58	4671.69					
8/1/18	36.48	4666.79					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
DOUGLASS 792	592792	607607.541	3469829.115	4681.73	2/13/08	87.76	4593.97
					5/13/08	87.21	4594.52
					7/22/08	86.90	4594.83
					10/16/08	86.45	4595.28
					1/20/09	86.26	4595.47
					4/8/09	86.04	4595.69
					7/7/09	86.16	4595.57
					10/5/09	86.19	4595.54
					1/21/10	86.45	4595.28
					4/19/10	87.19	4594.54
					7/12/10	87.55	4594.18
					1/18/11	87.8	4593.93
					7/12/11	88.38	4593.35
					1/30/12	88.92	4592.81
					4/11/12	89.18	4592.55
					7/5/12	95.64	4586.09
					1/9/13	82.60	4599.13
					7/8/13	83.66	4598.07
					1/6/14	83.55	4598.18
					7/7/14	82.43	4599.30
7/20/15	82.57	4599.16					
7/11/16	83.48	4598.25					
7/13/17	84.43	4597.30					
8/1/18	85.76	4595.97					
EAST	599796	607076.365	3468712.215	4626.01	2/8/08	50.20	4575.81
					5/14/08	52.45	4573.56
					7/23/08	52.16	4573.85
					10/14/08	52.19	4573.82
					1/20/09	50.52	4575.49
					4/8/09	51.91	4574.10
					7/13/09	56.93	4569.08
					10/8/09	60.95	4565.06
					1/25/10	59.35	4566.66
					4/21/10	58.88	4567.13
					7/14/10	61.86	4564.15
					10/20/10	61.20	4564.81
					1/18/11	59.79	4566.22
					4/5/11	59.73	4566.28
					7/12/11	63.79	4562.22
					10/12/11	63.64	4562.37
					1/31/12	63.82	4562.19
					4/11/12	65.72	4560.29
					7/9/12	70.50	4555.51
					10/4/12	73.34	4552.67
					1/17/13	75.04	4550.97
					4/9/13	78.05	4547.96
					7/9/13	78.37	4547.64
					10/15/13	72.38	4553.63
					1/14/14	71.88	4554.13
4/8/14	71.03	4554.98					
7/8/14	72.03	4553.98					
10/22/14	67.75	4558.26					
7/24/15	74.64	4551.37					
7/12/16	65.02	4560.99					
7/27/17	67.11	4558.90					
7/30/18	77.95	4548.06					
ECHAVE	219449	599701	3470168	4648	2/1/12	216.71	4431.29
					1/18/13	218.41	4429.59
					7/28/17	220.49	4427.51
					2/23/18	219.94	4428.06
					7/17/18	220.37	4427.63

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
EPPELE 641	805641	607165.354	3469229.942	4642.86	3/11/08	29.52	4613.34
					5/12/08	30.64	4612.22
					7/21/08	25.59	4617.27
					10/14/08	24.53	4618.33
					1/21/09	27.35	4615.51
					4/8/09	29.08	4613.78
					7/9/09	31.51	4611.35
					10/7/09	29.92	4612.94
					7/20/10	50.38	4592.48
					10/20/10	48.88	4593.98
					1/17/11	51.13	4591.73
					4/5/11	53.81	4589.05
					7/11/11	56.82	4586.04
					10/12/11	37.62	4605.24
					1/31/12	46.80	4596.06
					4/11/12	52.07	4590.79
					7/6/12	62.39	4580.47
					10/3/12	71.66	4571.20
					1/17/13	59.73	4583.13
					4/8/13	83.98	4558.88
7/9/13	92.84	4550.02					
10/15/13	28.50	4614.36					
1/14/14	49.32	4593.54					
4/8/14	52.03	4590.83					
7/8/14	66.62	4576.24					
10/21/14	24.56	4618.30					
7/24/15	41.32	4601.54					
7/12/16	38.41	4604.45					
7/27/17	48.58	4594.28					
7/31/18	62.29	4580.57					
FLEMING	218386	605565.701	3469342.523	4693.68	2/18/09	299.30	4394.38
					4/8/09	301.81	4391.87
					7/7/09	304.60	4389.08
					10/6/09	307.84	4385.84
					1/21/10	311.73	4381.95
					4/20/10	315.26	4378.42
					7/15/10	318.32	4375.36
					11/4/10	349.62	4344.06
					1/19/11	356.89	4336.79
					7/12/11	364.72	4328.96
					2/3/12	370.84	4322.84
					7/9/12	373.86	4319.82
					1/18/13	373.96	4319.72
					7/17/13	374.88	4318.80
1/10/14	379.63	4314.05					
7/17/14	372.97	4320.71					
FRANCO 101	500101	602848.756	3468830.905	4636.75	4/10/13	196.05	4440.70
					7/10/13	196.19	4440.56
					10/16/13	196.65	4440.10
					1/14/14	196.77	4439.98
					4/8/14	196.86	4439.89
					7/14/14	197.08	4439.67
10/8/14	197.91	4438.84					
FRANCO 383	221383	602817.854	3468831.563	4636.88	9/13/12	195.19	4441.69
					10/5/12	195.00	4441.88
					12/3/12	196.70	4440.18
					1/15/13	196.30	4440.58
					2/6/13	195.62	4441.26
					3/7/13	196.20	4440.68
					4/10/13	196.25	4440.63
					7/10/13	196.13	4440.75
					10/16/13	196.30	4440.58
					1/14/14	196.46	4440.42
					4/8/14	196.89	4439.99
					7/14/14	196.87	4440.01
					10/8/14	196.86	4440.02
					7/27/15	198.11	4438.77
7/18/16	197.32	4439.56					
7/20/17	198.37	4438.51					
7/27/18	198.73	4438.15					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
FULTZ	212447	607153.306	3469063.892	4642.92	10/22/08	40.59	4602.33
					1/21/09	40.66	4602.26
					4/9/09	42.88	4600.04
					7/13/09	54.94	4587.98
					10/8/09	56.16	4586.76
					1/25/10	53.45	4589.47
					4/20/10	63.82	4579.10
GARNER 557	558557	602659.240	3468962.415	4638.45	7/14/10	119.86	4523.06
					2/21/08	191.05	4447.40
					5/5/08	191.28	4447.17
					7/15/08	191.44	4447.01
					10/16/08	191.83	4446.62
					1/28/09	191.92	4446.53
					4/15/09	192.09	4446.36
					7/16/09	192.52	4445.93
					10/14/09	192.82	4445.63
					2/2/10	193.33	4445.12
					4/22/10	193.49	4444.96
					7/20/10	193.93	4444.52
					10/19/10	194.29	4444.16
					1/19/11	194.61	4443.84
					4/6/11	194.86	4443.59
					7/15/11	195.25	4443.20
					10/11/11	195.72	4442.73
					2/2/12	196.09	4442.36
					4/13/12	196.30	4442.15
					7/11/12	196.72	4441.73
10/5/12	197.08	4441.37					
1/11/13	197.51	4440.94					
4/15/13	197.76	4440.69					
7/10/13	197.87	4440.58					
10/11/13	198.27	4440.18					
1/17/14	198.46	4439.99					
4/15/14	198.58	4439.87					
GARNER 635	587635	602665.352	3468967.902	4640.74	2/4/08	193.20	4447.54
					5/5/08	195.90	4444.84
					7/15/08	193.58	4447.16
					10/15/08	194.35	4446.39
					1/28/09	194.80	4445.94
					4/15/09	195.54	4445.20
					7/16/09	194.88	4445.86
					10/14/09	196.36	4444.38
					2/2/10	195.32	4445.42
					4/22/10	196.01	4444.73
					8/25/10	195.57	4445.17
					10/19/10	225.83	4414.91
					1/19/11	196.89	4443.85
					4/6/11	197.40	4443.34
					7/15/11	198.07	4442.67
					10/11/11	197.75	4442.99
					2/2/12	199.50	4441.24
					4/13/12	200.40	4440.34
					7/11/12	199.15	4441.59
					10/5/12	202.71	4438.03
					1/11/13	199.38	4441.36
					4/15/13	200.53	4440.21
					7/10/13	200.13	4440.61
					10/11/13	200.27	4440.47
					1/17/14	201.83	4438.91
					4/15/14	200.67	4440.07
7/26/17	202.02	4438.72					
1/16/18	202.07	4438.67					
7/24/18	205.65	4435.09					



## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
GGOOSE 547	628547	606256.657	3469820.260	4717.11	5/21/08	220.91	4496.20
					8/15/08	238.48	4478.63
					10/29/08	235.90	4481.21
					2/24/09	236.13	4480.98
					5/14/09	236.17	4480.94
					8/19/09	236.01	4481.10
					8/19/09	236.01	4481.10
					11/11/09	237.66	4479.45
GL-03	539782	604386.940	3473747.943	4924.31	3/9/10	238.84	4478.27
					4/27/10	239.17	4477.94
					5/22/08	660.15	4264.16
					8/4/08	659.79	4264.52
					12/2/08	658.25	4266.06
					2/26/09	658.62	4265.69
					5/5/09	657.23	4267.08
					8/12/09	656.56	4267.75
					8/12/09	656.56	4267.75
					11/10/09	655.31	4269.00
GOAR RANCH	610695	602454.751	3468892.471	4631.13	3/2/10	655.52	4268.79
					4/9/10	655.35	4268.96
					7/7/10	655.05	4269.26
					2/1/12	651.72	4272.59
					2/21/08	183.90	4447.23
					5/5/08	188.11	4443.02
					7/16/08	184.41	4446.72
					10/22/08	184.68	4446.45
					1/27/09	184.87	4446.26
					4/15/09	184.96	4446.17
					7/7/09	185.36	4445.77
					10/12/09	185.72	4445.41
					2/2/10	186.25	4444.88
					4/22/10	186.44	4444.69
					7/13/10	186.76	4444.37
					1/19/11	187.52	4443.61
					7/12/11	188.24	4442.89
					2/6/12	189.02	4442.11
					9/13/12	190.08	4441.05
					1/11/13	190.48	4440.65
					9/18/13	191.21	4439.92
					1/17/14	191.48	4439.65
					7/21/14	191.73	4439.40
2/2/15	191.44	4439.69					
8/4/15	191.74	4439.39					
1/11/16	191.68	4439.45					
7/25/16	191.83	4439.30					
1/17/17	192.43	4438.70					
7/12/17	192.84	4438.29					
1/15/18	193.12	4438.01					
7/17/18	193.56	4437.57					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
HOBAN	805290	601705.848	3468880.329	4607.60	2/27/08	163.05	4444.55
					5/7/08	163.28	4444.32
					7/14/08	163.87	4443.73
					10/16/08	163.95	4443.65
					1/28/09	163.82	4443.78
					4/15/09	164.16	4443.44
					7/14/09	164.59	4443.01
					10/15/09	165.00	4442.60
					3/2/10	165.32	4442.28
					5/18/10	165.71	4441.89
					7/20/10	166.17	4441.43
					10/19/10	166.45	4441.15
					8/31/11	167.76	4439.84
					12/14/11	168.13	4439.47
					2/1/12	168.09	4439.51
					4/19/12	168.32	4439.28
					7/11/12	169.10	4438.50
					10/17/12	169.40	4438.20
					2/15/13	169.70	4437.90
					5/8/13	169.95	4437.65
					8/13/13	170.31	4437.29
					11/1/13	170.54	4437.06
					2/10/14	170.22	4437.38
					5/7/14	170.61	4436.99
					7/21/14	170.90	4436.70
					11/13/14	170.81	4436.79
					2/4/15	170.26	4437.34
					5/19/15	170.37	4437.23
9/10/15	170.57	4437.03					
10/21/15	170.58	4437.02					
3/16/16	170.33	4437.27					
8/18/16	171.05	4436.55					
3/7/17	171.41	4436.19					
7/13/17	172.00	4435.60					
2/5/18	172.12	4435.48					
7/25/18	172.74	4434.86					
HOWARD 312	221312	601308.920	3468772.630	4594.9356	8/14/12	188.36	4406.58
					10/16/12	193.33	4401.61
					2/6/13	193.74	4401.20
					4/9/13	195.30	4399.64
					7/12/13	198.27	4396.67
					10/16/13	201.08	4393.86
					1/8/14	202.61	4392.33
					4/10/14	204.64	4390.30
					7/14/14	206.97	4387.97
					10/10/14	206.36	4388.58
					5/19/15	208.08	4386.86
					7/31/15	210.54	4384.40
					7/27/16	207.89	4387.05
7/21/17	207.54	4387.40					
7/23/18	204.95	4389.99					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
HOWARD NR	NR	601281.159	3468770.377	4593.91	3/4/08	150.10	4443.81
					5/8/08	150.70	4443.21
					7/14/08	150.91	4443.00
					10/15/08	150.67	4443.24
					1/28/09	150.67	4443.24
					4/15/09	151.15	4442.76
					7/15/09	151.76	4442.15
					10/12/09	152.08	4441.83
					1/27/10	152.20	4441.71
					4/21/10	152.30	4441.61
					7/19/10	153.16	4440.75
					10/18/10	153.53	4440.38
					1/17/11	153.51	4440.40
					4/11/11	154.24	4439.67
					8/26/11	154.79	4439.12
					10/11/11	155.02	4438.89
					2/1/12	155.08	4438.83
					4/13/12	155.40	4438.51
					9/13/12	156.29	4437.62
					10/16/12	156.43	4437.48
					2/6/13	156.27	4437.64
					4/9/13	156.71	4437.20
					7/12/13	157.18	4436.73
					10/16/13	157.52	4436.39
					1/8/14	157.16	4436.75
					4/10/14	157.55	4436.36
					7/14/14	157.92	4435.99
					10/10/14	157.68	4436.23
					2/2/15	157.11	4436.80
					5/19/15	157.31	4436.60
7/31/15	157.58	4436.33					
10/8/15	157.36	4436.55					
1/12/16	157.01	4436.90					
7/27/16	157.93	4435.98					
1/16/17	158.23	4435.68					
7/21/17	158.84	4435.07					
1/15/18	158.86	4435.05					
7/23/18	159.64	4434.27					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
KEEFER	209744	599879.175	3468119.015	4572.03	2/6/08	134.67	4437.36
					5/6/08	135.28	4436.75
					7/16/08	136.24	4435.79
					10/28/08	135.87	4436.16
					1/28/09	134.88	4437.15
					4/16/09	135.00	4437.03
					7/14/09	136.07	4435.96
					10/13/09	136.67	4435.36
					1/26/10	136.26	4435.77
					4/20/10	136.26	4435.77
					7/15/10	137.29	4434.74
					10/19/10	137.68	4434.35
					1/18/11	137.42	4434.61
					4/6/11	137.91	4434.12
					7/18/11	140.39	4431.64
					10/11/11	141.68	4430.35
					2/6/12	139.27	4432.76
					4/23/12	139.76	4432.27
					7/17/12	140.69	4431.34
					10/9/12	141.00	4431.03
					1/10/13	140.80	4431.23
					4/8/13	141.32	4430.71
					7/11/13	141.81	4430.22
					10/7/13	141.63	4430.40
					1/7/14	141.10	4430.93
					4/9/14	140.91	4431.12
7/10/14	141.97	4430.06					
10/8/14	141.45	4430.58					
5/19/15	140.47	4431.56					
7/21/15	140.80	4431.23					
10/8/15	140.21	4431.82					
1/14/16	139.54	4432.49					
7/25/16	143.37	4428.66					
7/25/17	142.64	4429.39					
2/23/18	142.25	4429.78					
7/9/18	143.46	4428.57					
LADD 251	520251	594788.933	3470348.534	4443.83	3/22/13	221.32	4222.51
					6/14/13	221.78	4222.05
					9/24/13	219.6	4224.23
					12/3/13	217.44	4226.39
					2/25/14	217.59	4226.24
					6/4/14	218.27	4225.56
					9/10/14	219.04	4224.79
					11/20/14	213.58	4230.25
					3/24/15	214.18	4229.65
					9/17/15	216.39	4227.44
					3/24/16	217.85	4225.98
					9/28/16	219.8	4224.03
					3/20/17	220.91	4222.92
					8/10/17	222.12	4221.71
3/8/18	222.94	4220.89					
8/22/18	223.64	4220.19					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
LADD 538	505538	596790.675	3469638.573	4527.05	2/9/10	253.10	4273.95
					4/28/10	253.83	4273.22
					7/28/10	254.05	4273.00
					12/8/10	252.87	4274.18
					3/17/11	252.76	4274.29
					6/24/11	288.00	4239.05
					9/29/11	276.58	4250.47
					12/16/11	250.68	4276.37
					2/15/12	253.80	4273.25
					6/11/12	258.90	4268.15
					9/26/12	255.76	4271.29
					12/19/12	249.43	4277.62
					3/22/13	250.51	4276.54
					6/27/13	270.00	4257.05
					9/24/13	250.80	4276.25
					12/3/13	251.36	4275.69
					2/25/14	253.36	4273.69
					6/4/14	259.63	4267.42
					9/10/14	248.68	4278.37
					11/20/14	268.66	4258.39
3/24/15	248.46	4278.59					
9/17/15	243.05	4284.00					
3/24/16	266.62	4260.43					
9/28/16	246.14	4280.91					
3/20/17	232.53	4294.52					
8/10/17	227.4	4299.65					
3/8/18	222.4	4304.65					
8/22/18	219.90	4307.15					
LADD 635	224635	598724.834	3467541.096	4598.99	7/18/15	169.31	4429.68
					12/17/15	169.54	4429.45
					3/31/16	169.56	4429.43
					9/28/16	170.21	4428.78
					11/22/16	170.90	4428.09
					3/20/17	184.94	4414.05
					8/24/17	172.09	4426.90
					3/8/18	172.22	4426.77
8/22/18	173.07	4425.92					
LADD 837	519837	594757.700	3470817.194	4470.11	2/9/10	262.80	4207.31
					4/28/10	262.65	4207.46
					7/28/10	265.75	4204.36
					12/8/10	262.38	4207.73
					3/17/11	262.65	4207.46
					6/24/11	262.51	4207.60
					9/29/11	262.28	4207.83
					12/16/11	264.32	4205.79
					2/15/12	262.24	4207.87
					6/11/12	264.04	4206.07
					9/26/12	261.75	4208.36
					12/19/12	261.94	4208.17
					3/27/13	266.68	4203.43
					6/14/13	261.51	4208.60
					9/24/13	261.38	4208.73
					12/3/13	260.85	4209.26
					2/25/14	261.04	4209.07
					6/4/14	262.53	4207.58
					9/10/14	263.68	4206.43
					11/20/14	261.18	4208.93
3/24/15	261.44	4208.67					
9/17/15	264.32	4205.79					
3/24/16	261.79	4208.32					
9/28/16	262.8	4207.31					
3/20/17	261.3	4208.81					
8/10/17	262.0	4208.11					
3/8/18	283.2	4186.90					
8/22/18	281.46	4188.65					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
LADD 977	642977	597619.168	3468714.011	4513.40	3/17/11	82.32	4431.08
					6/24/11	84.00	4429.40
					9/29/11	83.62	4429.78
					12/16/11	84.8	4428.60
					2/15/12	84.67	4428.73
					6/11/12	85.7	4427.70
					9/26/12	84.96	4428.44
					12/19/12	86.27	4427.13
					3/22/13	85.18	4428.22
					6/14/13	86.54	4426.86
					9/24/13	82.66	4430.74
					12/3/13	84.48	4428.92
					2/25/14	85.27	4428.13
					6/4/14	85.88	4427.52
					9/10/14	86.15	4427.25
					11/20/14	80.95	4432.45
					3/24/15	83.73	4429.67
					5/19/15	84.28	4429.12
					9/17/15	86.44	4426.96
					12/17/15	86.81	4426.59
3/24/16	87.22	4426.18					
9/28/16	86.11	4427.29					
3/20/17	86.55	4426.85					
8/10/17	87.9	4425.50					
3/8/18	87.92	4425.48					
8/22/18	88.92	4424.48					
MCCONNELL 265	539265	601463.094	3468840.139	4600.70	2/20/08	156.15	4444.55
					5/6/08	156.40	4444.30
					7/15/08	157.07	4443.63
					11/19/08	157.17	4443.53
					1/28/09	156.70	4444.00
					4/15/09	157.22	4443.48
					7/15/09	157.59	4443.11
					10/12/09	158.13	4442.57
					1/26/10	158.35	4442.35
					4/22/10	158.68	4442.02
					7/21/10	159.37	4441.33
					10/18/10	159.63	4441.07
					1/19/11	159.69	4441.01
					4/8/11	159.10	4441.60
					7/12/11	160.77	4439.93
					10/11/11	161.17	4439.53
					2/7/12	161.31	4439.39
					4/11/12	161.57	4439.13
					7/6/12	162.36	4438.34
					10/8/12	162.43	4438.27
					1/10/13	162.57	4438.13
					4/18/13	163.08	4437.62
					10/14/13	163.61	4437.09
					1/8/14	163.42	4437.28
					4/14/14	163.79	4436.91
					7/14/14	164.03	4436.67
					10/7/14	163.89	4436.81
					2/2/15	163.32	4437.38
					5/19/15	163.54	4437.16
					7/31/15	163.83	4436.87
10/8/15	163.64	4437.06					
1/11/16	163.36	4437.34					
7/26/16	167.70	4433.00					
1/16/17	164.46	4436.24					
7/20/17	165.09	4435.61					
1/15/18	165.10	4435.60					
7/17/18	165.09	4435.61					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
MCCONNELL 459	221459	601471.708	3468840.682	4601.55	7/27/12	170.50	4431.05
					10/8/12	166.81	4434.74
					1/15/13	166.32	4435.23
					4/10/13	166.79	4434.76
					7/19/13	167.53	4434.02
					10/14/13	167.13	4434.42
					1/8/14	167.90	4433.65
					4/14/14	167.28	4434.27
					9/9/14	167.37	4434.18
					10/7/14	167.24	4434.31
					5/19/15	168.03	4433.52
					7/31/15	170.86	4430.69
					7/26/16	167.13	4434.42
7/20/17	168.58	4432.97					
7/17/18	169.08	4432.47					
METZLER	35-71891	602091.308	3471381.176	4728.53	3/5/08	288.30	4440.23
					5/15/08	286.53	4442.00
					7/31/08	286.82	4441.71
					10/20/08	287.09	4441.44
					2/11/09	287.74	4440.79
					4/20/09	287.47	4441.06
					7/15/09	287.58	4440.95
					10/14/09	287.99	4440.54
					2/1/10	288.38	4440.15
					5/18/10	288.65	4439.88
					7/16/10	288.88	4439.65
					10/19/10	289.09	4439.44
					1/19/11	289.54	4438.99
					4/4/11	289.87	4438.66
					7/12/11	289.98	4438.55
					10/12/11	290.47	4438.06
					2/7/12	290.92	4437.61
					4/12/12	291.15	4437.38
					7/18/12	291.37	4437.16
					10/4/12	291.63	4436.90
					1/11/13	292.15	4436.38
					4/11/13	292.29	4436.24
					7/17/13	292.43	4436.10
					10/17/13	292.86	4435.67
					1/16/14	293.20	4435.33
					4/15/14	293.20	4435.33
					7/21/14	293.45	4435.08
					10/8/14	293.62	4434.91
1/27/15	293.36	4435.17					
8/3/15	293.54	4434.99					
1/12/16	293.69	4434.84					
7/25/16	293.40	4435.13					
1/17/17	294.09	4434.44					
7/14/17	294.38	4434.15					
1/15/18	294.51	4434.02					
7/17/18	294.94	4433.59					
MOORE	538847	599499.9949	3468066.557	4568.49	8/1/18	155.64	4412.85

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
NESS	509127	607866.391	3471419.494	4761.23	7/24/08	557.90	4203.33
					10/16/08	549.30	4211.93
					2/25/09	536.40	4224.83
					5/11/09	544.64	4216.59
					8/11/09	566.87	4194.36
					11/12/09	537.34	4223.89
					2/2/10	531.85	4229.38
					4/21/10	568.11	4193.12
					7/19/10	573.02	4188.21
					1/18/11	541.80	4219.43
					7/12/11	597.71	4163.52
					2/3/12	591.24	4169.99
					1/9/13	551.35	4209.88
					1/6/14	538.84	4222.39
					7/7/14	594.42	4166.81
7/20/15	553.54	4207.69					
7/11/16	556.90	4204.33					
7/27/17	550.36	4210.87					
7/31/18	538.72	4222.51					
NOTEMAN	212483	606053.800	3471576.400	4800.68	5/13/08	339.77	4460.91
					8/27/08	344.34	4456.34
					11/22/08	322.26	4478.42
					2/25/09	327.54	4473.14
NSD-02	527587	598820.051	3468821.474	4531.38	10/7/09	101.17	4430.21
					3/16/10	99.43	4431.95
					5/25/10	101.63	4429.75
					8/25/10	102.38	4429.00
					3/17/11	102.68	4428.70
					6/17/11	109.29	4422.09
					12/7/11	104.41	4426.97
					3/6/12	104.30	4427.08
					12/14/12	107.24	4424.14
					3/22/13	107.20	4424.18
					6/24/13	113.50	4417.88
					9/23/13	105.00	4426.38
					12/19/13	103.45	4427.93
					3/24/14	103.12	4428.26
					6/23/14	107.06	4424.32
					9/23/14	104.77	4426.61
					12/22/14	101.30	4430.08
					3/23/15	101.56	4429.82
					6/22/15	104.33	4427.05
					9/28/15	113.64	4417.74
					12/21/15	112.43	4418.95
					3/21/16	113.42	4417.96
6/20/16	114.78	4416.60					
9/29/16	103.99	4427.39					
3/16/17	105.44	4425.94					
9/30/17	108.89	4422.49					
3/26/18	106.02	4425.36					
9/24/18	106.13	4425.25					



## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
NSD-03	527586	598070.538	3468694.259	4518.28	10/7/09	85.62	4432.66
					3/16/10	83.51	4434.77
					5/25/10	84.49	4433.79
					8/25/10	85.70	4432.58
					3/17/11	86.76	4431.52
					6/17/11	88.76	4429.52
					12/7/11	89.30	4428.98
					3/6/12	89.24	4429.04
					12/14/12	90.83	4427.45
					3/22/13	88.65	4429.63
					6/24/13	91.70	4426.58
					9/23/13	86.88	4431.40
					12/19/13	89.11	4429.17
					3/24/14	89.48	4428.80
					6/23/14	90.77	4427.51
					9/23/14	89.10	4429.18
					12/22/14	86.80	4431.48
					3/23/15	87.68	4430.60
					6/22/15	89.40	4428.88
					9/28/15	90.65	4427.63
12/21/15	90.97	4427.31					
3/21/16	91.30	4426.98					
6/20/16	92.16	4426.12					
9/29/16	89.50	4428.78					
3/16/17	89.81	4428.47					
9/30/17	90.71	4427.57					
3/26/18	91.28	4427.00					
9/24/18	92.22	4426.06					
NWC-02	562944	600177.435	3467474.673	4600.44	10/27/08	160.51	4439.93
					4/29/09 <sup>3</sup>	160.5	4439.94
					9/10/09 <sup>3</sup>	155	4445.44
					4/2010 <sup>3</sup>	131	4469.44
					3/1/13 <sup>3</sup>	131	4469.44
					2/12/15	165.02	4435.42
					7/30/15	166.36	4434.08
					10/6/15	165.92	4434.52
					1/12/16	166.36	4434.08
					7/26/16	167.43	4433.01
					1/26/17	167.49	4432.95
					7/18/17	168.60	4431.84
					1/16/18	168.50	4431.94
7/18/18	169.35	4431.09					
NWC-03	203321	601153.857	3468350.838	4574.99	11/3/08	131.48	4443.51
					4/29/09 <sup>3</sup>	130	4444.99
					9/10/09 <sup>3</sup>	126	4448.99
					10/9/09 <sup>3</sup>	125	4449.99

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
NWC-03 CAP	627684	601151.704	3468343.653	4572.82	2/2/09	130.03	4442.79
					4/23/09	130.62	4442.20
					7/21/09	131.26	4441.56
					10/21/09	131.60	4441.22
					2/3/10	131.34	4441.48
					4/21/10	131.86	4440.96
					7/20/10	131.50	4441.32
					1/18/11	132.91	4439.91
					7/15/11	134.42	4438.40
					10/13/11	134.73	4438.09
					1/31/12	134.50	4438.32
					4/25/12	135.09	4437.73
					7/18/12	135.73	4437.09
					10/10/12	135.97	4436.85
					1/10/13	135.60	4437.22
					4/17/13	136.32	4436.50
					7/12/13	136.78	4436.04
					10/10/13	136.78	4436.04
					1/13/14	136.43	4436.39
					4/7/14	136.93	4435.89
7/10/14	137.30	4435.52					
2/12/15	136.27	4436.55					
7/30/15	136.88	4435.94					
9/29/16	130.38	4442.44					
1/26/17	128.41	4444.41					
7/18/17	130.48	4442.34					
1/16/18	121.55	4451.27					
2/23/18	124.44	4448.38					
7/18/18	119.39	4453.43					
NWC-04	551849	605829.808	3469071.959	4690.77	12/2/08	352.11	4338.66
					4/29/09 <sup>3</sup>	328	4362.77
					9/10/09 <sup>3</sup>	324	4366.77
					4/2010 <sup>3</sup>	216	4474.77
					3/1/13 <sup>3</sup>	216	4474.77
NWC-06	575700	599822.821	3467749.954	4592.50	4/29/09 <sup>3</sup>	156	4436.50
					9/10/09 <sup>3</sup>	155	4437.50
					10/9/09 <sup>3</sup>	148	4444.50
					4/2010 <sup>3</sup>	140	4452.50
					3/1/13 <sup>3</sup>	140	4452.50
					7/30/15	160.95	4431.55
					10/6/15	160.48	4432.02
					1/12/16	168.81	4423.69
					7/26/16	167.73	4424.77
					1/26/17	162.26	4430.24
					7/18/17	162.80	4429.70
1/16/18	162.78	4429.72					
7/18/18	163.77	4428.73					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
OLMOS	224745	599641.506	3468055.337	4576.92	1/13/16	145.84	4431.08
					1/15/18	148.47	4428.45
					7/13/18	150.28	4426.64
OSBORN	643436	607031.823	3470270.548	4711.95	5/13/08	68.65	4643.30
					8/5/08	69.53	4642.42
					10/16/08	69.83	4642.12
					1/20/09	69.23	4642.72
					4/7/09	69.60	4642.35
					7/8/09	96.61	4615.34
					10/5/09	75.09	4636.86
					1/21/10	75.37	4636.58
					4/19/10	81.59	4630.36
					7/12/10	83.00	4628.95
					7/12/11	74.60	4637.35
2/3/12	74.57	4637.38					
7/9/12	74.63	4637.32					
PANAGAKOS	35-76413	605304.234	3469323.140	4691.40	1/22/09	155.28	4536.12
					4/9/09	156.15	4535.25
					7/9/09	161.61	4529.79
					10/6/09	167.20	4524.20
					1/21/10	166.92	4524.48
					4/20/10	167.11	4524.29
					7/20/10	171.78	4519.62
					10/18/10	176.39	4515.01
					7/14/11	173.78	4517.62
					8/25/11	172.89	4518.51
					2/6/12	169.09	4522.31
					2/29/12	169.32	4522.08
					3/15/12	169.64	4521.76
					4/12/12	168.85	4522.55
					7/9/12	170.38	4521.02
					11/27/12	169.82	4521.58
					1/18/13	169.12	4522.28
					2/6/13	168.76	4522.64
					4/9/13	167.79	4523.61
					7/10/13	168.51	4522.89
					10/15/13	164.49	4526.91
					1/10/14	160.32	4531.08
					4/16/14	158.75	4532.65
7/17/14	159.69	4531.71					
10/16/14	159.28	4532.12					
1/26/15	158.02	4533.38					
7/27/15	160.04	4531.36					
1/11/16	160.50	4530.90					
2/24/17	162.64	4528.76					
7/17/17	160.37	4531.03					
1/18/18	160.12	4531.28					
7/30/18	161.94	4529.46					
PARRA	576415	602170.716	3471263.549	4727.21	5/15/08	279.78	4447.43
					8/18/08	280.06	4447.15
					11/3/08	280.39	4446.82
					2/13/09	280.75	4446.46
					4/28/09	280.88	4446.33
7/20/09	280.99	4446.22					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
PIONKE 395	613395	601045.471	3468960.981	4592.13	7/17/08	149.88	4442.25
					11/3/08	150.99	4441.14
					2/25/09	149.68	4442.45
					4/14/09	150.01	4442.12
					7/13/09	150.47	4441.66
					10/7/09	150.96	4441.17
					3/8/10	151.11	4441.02
					4/26/10	151.32	4440.81
					7/15/10	151.90	4440.23
					10/18/10	152.38	4439.75
					1/19/11	152.38	4439.75
					4/8/11	153.04	4439.09
					7/12/11	153.57	4438.56
					10/11/11	153.87	4438.26
					2/1/12	153.92	4438.21
					4/12/12	154.35	4437.78
					7/11/12	154.97	4437.16
					10/17/12	155.31	4436.82
					1/9/13	155.25	4436.88
					4/17/13	155.76	4436.37
					7/18/13	156.09	4436.04
					10/17/13	156.39	4435.74
					2/5/14	155.84	4436.29
					4/9/14	156.21	4435.92
					7/11/14	156.66	4435.47
					10/7/14	156.47	4435.66
2/2/15	155.81	4436.32					
5/18/15	155.97	4436.16					
7/22/15	156.29	4435.84					
10/8/15	156.03	4436.10					
1/11/16	155.64	4436.49					
7/26/16	156.55	4435.58					
1/16/17	156.92	4435.21					
9/30/17	157.63	4434.50					
1/15/18	157.42	4434.71					
7/24/18	158.37	4433.76					
PIONKE 517	221517	600909.967	3468866.654	4587.20792	9/18/12	152.00	4435.21
					10/11/12	152.15	4435.06
					1/9/13	152.23	4434.98
					4/17/13	152.58	4434.63
					7/16/13	153.11	4434.10
					10/17/13	153.27	4433.94
					3/5/14	153.24	4433.97
					4/9/14	153.07	4434.14
					7/11/14	153.56	4433.65
					10/7/14	153.31	4433.90
					5/18/15	152.76	4434.45
					7/22/15	153.12	4434.09
					7/26/16	153.32	4433.89
7/18/17	154.44	4432.77					
7/24/18	155.18	4432.03					
POOL	509518	599683.603	3470013.823	4639.09	2/20/08	204.22	4434.87
					5/19/08	204.72	4434.37
					7/31/08	205.56	4433.53
					10/21/08	205.06	4434.03
					2/13/09	204.74	4434.35
					4/21/09	204.87	4434.22
					7/20/09	205.69	4433.40
					10/20/09	206.06	4433.03
					2/24/10	205.59	4433.50
					4/22/10	205.48	4433.61
					7/14/10	206.58	4432.51
					10/20/10	206.74	4432.35
					3/21/16	209.98	4429.11
8/1/18	212.45	4426.64					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
POWER 639	222639	602146.123	3471373.655	4734.38	1/16/14	294.07	4440.31
					2/5/14	294.07	4440.31
					3/5/14	294.20	4440.18
					4/15/14	294.14	4440.24
					5/13/14	294.25	4440.13
					6/23/14	294.28	4440.10
					7/17/14	294.32	4440.06
					8/11/14	294.44	4439.94
					9/9/14	294.47	4439.91
					10/8/14	294.49	4439.89
					1/27/15	294.24	4440.14
					3/10/15	294.19	4440.19
					4/28/15	294.17	4440.21
					5/14/15	249.23	4485.15
					6/11/15	294.29	4440.09
					7/30/15	294.38	4440.00
					1/14/16	294.65	4439.73
					7/27/16	294.81	4439.57
1/26/17	295.05	4439.33					
7/12/17	295.25	4439.13					
1/10/18	295.47	4438.91					
7/25/18	295.75	4438.63					
RAMIREZ	216425	599730.649	3467584.363	4596.61	10/27/08	159.45	4437.16
					1/29/09	158.74	4437.87
					4/16/09	158.66	4437.95
					7/10/09	159.64	4436.97
					10/6/09	160.36	4436.25
					1/25/10	160.10	4436.51
					4/21/10	159.96	4436.65
					7/21/10	161.05	4435.56
					10/19/10	161.23	4435.38
					1/18/11	161.22	4435.39
					4/11/11	161.48	4435.13
					7/18/11	162.39	4434.22
					10/12/11	163.04	4433.57
					4/10/12	163.22	4433.39
					7/6/12	163.85	4432.76
					10/8/12	164.38	4432.23
					4/19/13	164.96	4431.65
					1/13/14	165.26	4431.35
					4/14/14	164.85	4431.76
					2/2/15	164.33	4432.28
					5/28/15	164.39	4432.22
					7/21/15	164.65	4431.96
					10/8/15	164.72	4431.89
1/14/16	164.15	4432.46					
7/14/16	165.52	4431.09					
7/26/17	166.81	4429.80					
1/15/18	167.59	4429.02					
7/25/18	167.71	4428.90					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
RAY	803772	607083.422	3469195.147	4647.91	2/15/08	40.85	4607.06
					5/13/08	43.82	4604.09
					7/29/08	45.25	4602.66
					10/22/08	44.54	4603.37
					1/20/09	44.31	4603.60
					4/8/09	44.68	4603.23
					7/9/09	48.99	4598.92
					10/7/09	49.87	4598.04
					1/26/10	47.61	4600.30
					4/20/10	49.78	4598.13
					7/14/10	51.36	4596.55
					10/20/10	49.85	4598.06
					1/17/11	50.51	4597.40
					4/5/11	51.84	4596.07
					7/11/11	55.74	4592.17
					10/12/11	53.63	4594.28
					1/31/12	53.21	4594.70
					4/11/12	54.50	4593.41
					7/6/12	58.75	4589.16
					10/3/12	60.98	4586.93
					1/17/13	56.57	4591.34
					4/18/13	56.32	4591.59
					7/9/13	60.30	4587.61
10/15/13	44.33	4603.58					
1/14/14	34.50	4613.41					
4/8/14	36.72	4611.19					
7/8/14	43.38	4604.53					
10/22/14	44.65	4603.26					
8/4/15	48.31	4599.60					
7/12/16	53.50	4594.41					
7/26/17	57.61	4590.30					
7/31/18	54.96	4592.95					
ROGERS 596	573596	601001.503	3468491.639	4577.35	11/11/09	135.46	4441.89
					2/25/10	135.89	4441.46
					4/22/10	135.62	4441.73
					7/16/10	136.63	4440.72
					10/19/10	136.61	4440.74
					1/20/11	134.21	4443.14
					4/8/11	137.68	4439.67
					7/14/11	138.09	4439.26
					10/12/11	138.09	4439.26
					1/30/12	137.91	4439.44
					4/23/12	138.61	4438.74
					7/13/12	139.65	4437.70
					10/10/12	139.55	4437.80
					1/15/13	139.23	4438.12
					4/15/13	139.97	4437.38
					7/15/13	139.94	4437.41
					10/16/13	140.50	4436.85
					1/9/14	140.12	4437.23
					4/11/14	140.56	4436.79
					7/18/14	140.64	4436.71
1/12/16	139.57	4437.78					
9/30/17	141.86	4435.49					
1/18/18	141.88	4435.47					
7/26/18	142.57	4434.78					
ROGERS 750 <sup>d</sup>	641750	600977.690	3468417.386	4579.02	2/7/08	129.85	4449.17
					7/29/08	131.86	4447.16
					10/22/08	132.08	4446.94
					2/10/09	130.62	4448.40
					4/29/09	131.33	4447.69
8/3/09	135.07	4443.95					
ROGERS 803	641803	601003.273	3468480.391	4576.16	9/30/17	138.83	4437.33
					1/18/18	138.90	4437.26
					7/26/18	139.62	4436.54

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
ROGERS E	216018	600449.648	3467636.029	4590.66	7/17/08	149.65	4441.01
					11/3/08	150.15	4440.51
					2/10/09	149.02	4441.64
					4/16/09	149.53	4441.13
					7/13/09	150.31	4440.35
					10/6/09	150.76	4439.90
					1/25/10	150.64	4440.02
					4/21/10	150.97	4439.69
					8/25/10	151.15	4439.51
					10/19/10	151.57	4439.09
					10/13/11	153.79	4436.87
					1/30/12	153.56	4437.10
					4/10/12	154.13	4436.53
					7/17/12	155.10	4435.56
					1/17/13	154.56	4436.10
					4/18/13	155.66	4435.00
					7/17/13	155.71	4434.95
					4/14/14	155.97	4434.69
7/30/15	155.91	4434.75					
10/8/15	155.55	4435.11					
7/26/17	157.46	4433.20					
2/23/18	157.28	4433.38					
7/13/18	158.53	4432.13					
ROGERS 803	641803	601003.273	3468480.391	4576.16	9/30/17	138.83	4437.33
RUIZ	531770	602857.357	3471424.219	4735.18	2/5/08	293.29	4441.89
					5/15/08	293.57	4441.61
					7/30/08	293.86	4441.32
					10/20/08	294.18	4441.00
					2/12/09	294.62	4440.56
					4/21/09	294.66	4440.52
					8/3/09	294.98	4440.20
					10/28/09	295.33	4439.85
					2/1/10	295.70	4439.48
					4/26/10	295.96	4439.22
					4/8/11	297.20	4437.98
					4/13/12	298.47	4436.71
					1/11/13	299.39	4435.79
					4/11/13	299.72	4435.46
					7/25/13	300.06	4435.12
					10/17/13	300.07	4435.11
					1/8/14	300.19	4434.99
					4/15/14	300.31	4434.87
10/21/14	300.38	4434.80					
1/27/15	299.76	4435.42					
7/30/15	299.74	4435.44					
1/12/16	300.20	4434.98					
7/24/18	301.45	4433.73					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
SCHWARTZ	210865	600811.014	3468269.622	4564.49	2/8/08	121.80	4442.69
					5/19/08	123.49	4441.00
					7/29/08	122.64	4441.85
					10/22/08	123.39	4441.10
					1/29/09	122.87	4441.62
					4/17/09	123.53	4440.96
					7/10/09	124.15	4440.34
					10/6/09	124.55	4439.94
					1/22/10	124.32	4440.17
					4/21/10	124.65	4439.84
					7/21/10	125.80	4438.69
					10/19/10	126.30	4438.19
					1/17/11	125.35	4439.14
					4/11/11	127.50	4436.99
					7/18/11	127.67	4436.82
					10/12/11	127.51	4436.98
					2/6/12	127.34	4437.15
					4/10/12	127.78	4436.71
					7/16/12	128.84	4435.65
					10/17/12	128.98	4435.51
					3/13/13	128.81	4435.68
					5/14/13	129.60	4434.89
					7/15/13	129.05	4435.44
					10/14/13	130.15	4434.34
					4/9/14	129.77	4434.72
					7/18/14	129.81	4434.68
10/22/14	129.66	4434.83					
2/3/15	128.66	4435.83					
5/18/15	129.30	4435.19					
8/4/15	129.51	4434.98					
10/8/15	129.34	4435.15					
1/14/16	128.32	4436.17					
7/27/16	130.01	4434.48					
1/24/17	129.86	4434.63					
7/11/17	131.21	4433.28					
1/9/18	130.46	4434.03					
7/11/18	131.96	4432.53					
STEPHENS	808560	606981.766	3469072.799	4651.22	5/13/08	44.94	4606.28
					8/5/08	46.61	4604.61
					10/16/08	46.60	4604.62
					1/21/09	47.19	4604.03
					4/8/09	48.45	4602.77
					7/7/09	49.41	4601.81
					10/7/09	50.33	4600.89
					1/26/10	51.13	4600.09
					4/20/10	51.24	4599.98
					7/14/10	51.91	4599.31
					1/18/11	52.98	4598.24
					7/11/11	54.44	4596.78
					1/31/12	55.65	4595.57
					7/9/12	10.69	4640.53
					1/18/13	10.50	4640.72
					7/10/13	58.16	4593.06
					1/14/14	45.51	4605.71
					7/8/14	45.39	4605.83
					1/26/15	47.91	4603.31
					7/24/15	49.71	4601.51
1/11/16	50.88	4600.34					
7/12/16	52.64	4598.58					
1/17/17	53.09	4598.13					
7/14/17	54.15	4597.07					
1/15/18	55.74	4595.48					
7/30/18	56.02	4595.20					



## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
SUNBELT	201531	605998.250	3471735.149	4806.52	2/6/08	352.10	4454.42
					5/15/08	358.97	4447.55
					8/5/08	Dry	<4426
					10/16/08	347.00	4459.52
					1/21/09	344.78	4461.74
					4/10/09	349.64	4456.88
					7/8/09	356.99	4449.53
					10/5/09	Dry	<4426
					1/21/10	Dry	<4426
					4/19/10	Dry	<4426
					7/12/10	Dry	<4426
					1/19/11	Dry	<4426
					8/25/11	Dry	<4426
					2/3/12	Dry	<4426
					7/9/12	Dry	<4426
SWAN	NR	607378.547	3470648.298	4716.59	2/13/08	26.50	4690.09
					5/14/08	30.69	4685.90
					7/24/08	32.06	4684.53
					10/16/08	27.53	4689.06
					1/20/09	29.77	4686.82
					4/7/09	31.47	4685.12
					7/8/09	33.61	4682.98
					10/5/09	35.12	4681.47
					1/21/10	36.64	4679.95
					4/21/10	38.06	4678.53
					7/19/10	39.67	4676.92
					1/18/11	35.06	4681.53
					7/12/11	39.32	4677.27
					2/3/12	37.86	4678.73
					7/10/12	40.39	4676.20
					1/9/13	38.51	4678.08
					7/8/13	42.26	4674.33
					1/10/14	29.43	4687.16
7/7/14	33.68	4682.91					
7/20/15	33.08	4683.51					
7/11/16	35.60	4680.99					
7/27/17	38.08	4678.51					
7/31/18	42.14	4674.45					
THOMPSON 151	612151	599543.561	3467387.294	4597.62	8/9/13	167.86	4429.76
					10/10/13	167.68	4429.94
					1/16/14	167.19	4430.43
					4/14/14	166.98	4430.64
					7/21/14	167.78	4429.84
					10/22/14	167.56	4430.06
					2/2/15	166.56	4431.06
					5/19/15	166.51	4431.11
8/3/15	167.09	4430.53					
THOMPSON 341	218341	599532.241	3467396.849	4596.73	7/28/17	168.34	4428.39
					1/16/18	168.22	4428.51
					7/26/18	169.23	4427.50

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
TM-02A	522574	604152.059	3472008.794	4808.43	3/4/08	346.62	4461.81
					5/23/08	346.16	4462.27
					8/15/08	353.91	4454.52
					10/30/08	349.45	4458.98
					2/24/09	348.64	4459.79
					5/6/09	349.38	4459.05
					8/12/09	349.13	4459.30
					11/4/09	348.97	4459.46
					3/10/10	348.19	4460.24
					4/6/10	353.86	4454.57
					7/6/10	349.20	4459.23
					2/10/11	347.60	4460.83
					7/13/11	348.14	4460.29
					2/2/12	346.94	4461.49
					8/13/12	344.53	4463.90
					2/14/13	343.50	4464.93
					8/27/13	343.84	4464.59
					2/18/14	341.47	4466.96
					8/12/14	338.50	4469.93
					2/5/15	336.02	4472.41
9/14/15	334.23	4474.20					
3/16/16	333.52	4474.91					
8/17/16	333.90	4474.53					
3/7/17	335.30	4473.13					
8/1/17	336.32	4472.11					
2/1/18	337.14	4471.29					
7/26/18	337.17	4471.26					
TM-03	522575	606366.130	3473711.046	4897.85	3/12/08	127.14	4770.71
					5/20/08	127.40	4770.45
					8/6/08	128.02	4769.83
					11/12/08	128.00	4769.85
					2/26/09	126.94	4770.91
					5/13/09	113.86	4783.99
					8/18/09	128.80	4769.05
					11/10/09	125.38	4772.47
					3/2/10	128.02	4769.83
					4/14/10	130.56	4767.29
					7/7/10	131.25	4766.60
					2/1/12	135.04	4762.81
TM-06 MILLER	522695	606055.975	3468376.658	4707.88	2/26/08	158.78	4549.10
					5/20/08	158.76	4549.12
					8/4/08	158.80	4549.08
					10/29/08	158.85	4549.03
					2/16/09	159.28	4548.60
					5/13/09	158.81	4549.07
					8/18/09	158.91	4548.97
					11/12/09	158.96	4548.92
					3/8/10	158.99	4548.89
					4/14/10	159.02	4548.86
					7/2/10	159.13	4548.75
					7/21/11	159.88	4548.00
					7/9/12	161.40	4546.48
					2/14/13	161.05	4546.83
					8/19/13	161.30	4546.58
					7/21/14	162.60	4545.28
					2/5/15	162.36	4545.52
					9/10/15	162.94	4544.94
					3/16/16	162.14	4545.74
					9/21/16	163.08	4544.80
3/7/17	162.83	4545.05					
7/26/17	163.47	4544.41					
2/5/18	163.46	4544.42					
7/16/18	163.96	4543.92					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
TM-10 USBP	522696	601586.268	3471816.397	4741.18	3/15/12	279.30	4461.88
					4/24/12	279.03	4462.15
					9/13/12	278.30	4462.88
					10/19/12	277.45	4463.73
					3/7/13	276.55	4464.63
					4/17/13	276.42	4464.76
					7/23/13	275.99	4465.19
					11/6/13	254.20	4486.98
					1/15/14	262.00	4479.18
					5/15/14	269.39	4471.79
					7/15/14	271.03	4470.15
					10/16/14	235.11	4506.07
					1/28/15	252.47	4488.71
					7/24/15	264.53	4476.65
					2/2/16	262.66	4478.52
7/13/16	269.35	4471.83					
1/27/17	259.58	4481.60					
7/17/17	267.41	4473.77					
1/8/18	255.19	4485.99					
7/9/18	266.18	4475.00					
TM-15 MILLER	522699	599618.715	3471425.631	4729.25	3/20/17	300.54	4428.71
					8/1/17	300.76	4428.49
					7/18/18	301.32	4427.93
TM-16	522578	605588.075	3469842.199	4717.71	3/5/08	81.00	4636.71
					5/22/08	81.24	4636.47
					8/6/08	81.65	4636.06
					11/5/08	81.75	4635.96
					2/26/09	81.88	4635.83
					5/13/09	82.01	4635.70
					8/19/09	82.37	4635.34
					11/10/09	82.83	4634.88
					3/2/10	83.09	4634.62
					4/14/10	83.22	4634.49
					7/2/10	83.51	4634.20
					7/14/11	80.41	4637.30
					7/9/12	72.55	4645.16
					8/15/13	61.42	4656.29
					8/4/14	62.55	4655.16
					2/5/15	58.80	4658.91
					9/9/15	60.06	4657.65
					3/16/16	60.43	4657.28
					8/25/16	59.24	4658.47
					3/7/17	61.08	4656.63
7/12/17	62.59	4655.12					
2/1/18	60.18	4657.53					
8/7/18	62.44	4655.27					
TM-19A	522581	602458.710	3469197.426	4645.87	3/6/08	199.85	4446.02
					5/22/08	199.50	4446.37
					8/6/08	199.19	4446.68
					11/18/08	199.46	4446.41
					3/3/09	199.81	4446.06
					4/22/09	200.57	4445.30
					8/12/09	201.46	4444.41
					11/4/09	201.16	4444.71
					3/10/10	201.34	4444.53
					4/9/10	201.55	4444.32
					7/7/10	202.35	4443.52
					2/14/11	203.00	4442.87
					7/15/11	203.30	4442.57
					2/2/12	203.84	4442.03
					7/11/12	204.75	4441.12
					10/16/12	205.02	4440.85
					2/15/13	205.30	4440.57
					9/4/13	205.73	4440.14
					2/12/14	207.47	4438.40
					7/21/14	210.56	4435.31
9/10/15	206.48	4439.39					
8/18/16	207.24	4438.63					
7/26/17	207.54	4438.33					
7/25/18	208.53	4437.34					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
TM-42	562554	603698.271	3469104.903	4666.67	3/5/08	211.04	4455.63
					5/22/08	210.98	4455.69
					8/6/08	211.55	4455.12
					11/6/08	207.05	4459.62
					2/18/09	212.31	4454.36
					5/7/09	212.37	4454.30
					8/18/09	212.77	4453.90
					11/3/09	213.05	4453.62
					2/24/10	213.36	4453.31
					4/19/10	213.51	4453.16
					7/2/10	213.52	4453.15
					7/12/11	214.62	4452.05
					7/11/12	216.10	4450.57
					2/12/13	216.55	4450.12
					8/28/13	217.38	4449.29
					7/21/14	218.33	4448.34
					2/4/15	218.87	4447.80
					9/10/15	219.31	4447.36
3/16/16	219.55	4447.12					
8/18/16	219.89	4446.78					
3/7/17	220.35	4446.32					
7/26/17	220.54	4446.13					
2/5/18	220.81	4445.86					
8/6/18	221.12	4445.55					
TVI 236	802236	600552.215	3467978.431	4561.98	5/7/08	123.30	4438.68
					7/15/08	121.55	4440.43
					10/15/08	122.35	4439.63
					2/11/09	121.28	4440.70
					4/17/09	122.73	4439.25
					7/21/09	123.96	4438.02
					10/19/09	123.88	4438.10
					2/2/10	122.26	4439.72
					4/23/10	122.70	4439.28
					7/15/10	125.08	4436.90
					7/15/11	127.23	4434.75
					7/16/12	127.81	4434.17
					10/9/12	128.45	4433.53
					7/18/13	127.38	4434.60
					7/16/14	129.24	4432.74
					2/2/15	126.81	4435.17
					5/19/15	128.38	4433.60
					7/30/15	128.31	4433.67
					10/7/15	127.26	4434.72
					1/12/16	126.49	4435.49
7/20/16	128.90	4433.08					
9/26/16	128.26	4433.72					
1/27/17	128.57	4433.41					
7/31/17	128.59	4433.39					
1/17/18	129.66	4432.32					
7/27/18	130.16	4431.82					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
TVI 713	567713	600729.095	3468412.946	4567.22	5/7/08	127.10	4440.12
					7/14/08	126.30	4440.92
					10/15/08	130.00	4437.22
					2/11/09	149.87	4417.35
					4/17/09	126.73	4440.49
					7/21/09	127.36	4439.86
					10/19/09	127.79	4439.43
					2/2/10	126.71	4440.51
					4/23/10	127.53	4439.69
					7/15/10	129.14	4438.08
					10/20/10	130.84	4436.38
					1/20/11	134.36	4432.86
					4/11/11	135.72	4431.50
					7/15/11	131.61	4435.61
					10/12/11	130.33	4436.89
					2/3/12	130.01	4437.21
					4/25/12	131.33	4435.89
					7/16/12	131.97	4435.25
					10/9/12	132.16	4435.06
					2/6/13	131.14	4436.08
					4/10/13	132.08	4435.14
					7/18/13	131.72	4435.50
					10/8/13	133.10	4434.12
					1/9/14	132.37	4434.85
					4/9/14	132.93	4434.29
					7/16/14	132.57	4434.65
					10/9/14	132.29	4434.93
					1/29/15	132.01	4435.21
5/18/15	132.34	4434.88					
7/30/15	132.71	4434.51					
10/7/15	132.00	4435.22					
1/12/16	131.34	4435.88					
7/14/16	133.11	4434.11					
1/27/17	132.88	4434.34					
7/13/17	134.08	4433.14					
1/10/18	134.24	4432.98					
7/12/18	134.83	4432.39					

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
WEISKOPF 802	641802	601154.951	3468658.855	4586.89	2/15/08	143.31	4443.58
					5/7/08	143.90	4442.99
					7/16/08	144.22	4442.67
					10/28/08	145.81	4441.08
					1/29/09	143.99	4442.90
					4/15/09	144.38	4442.51
					7/15/09	144.99	4441.90
					10/15/09	145.66	4441.23
					2/2/10	145.28	4441.61
					4/22/10	145.72	4441.17
					7/19/10	146.46	4440.43
					10/20/10	147.11	4439.78
					1/17/11	146.72	4440.17
					4/11/11	146.31	4440.58
					8/26/11	148.06	4438.83
					10/13/11	148.30	4438.59
					2/1/12	148.23	4438.66
					4/25/12	148.82	4438.07
					7/13/12	149.79	4437.10
					10/11/12	149.73	4437.16
					1/16/13	149.49	4437.40
					4/17/13	150.16	4436.73
					7/18/13	150.24	4436.65
					10/17/13	150.69	4436.20
					1/16/14	150.08	4436.81
					4/11/14	150.75	4436.14
					7/18/14	150.85	4436.04
10/9/14	150.89	4436.00					
2/2/15	150.01	4436.88					
5/18/15	150.25	4436.64					
8/4/15	150.72	4436.17					
10/8/15	150.47	4436.42					
1/12/16	151.01	4435.88					
7/26/16	150.95	4435.94					
1/16/17	151.31	4435.58					
7/24/17	151.59	4435.30					
1/12/18	152.06	4434.83					
7/16/18	152.74	4434.15					
WEISKOPF 897	220897	601096.780	3468647.358	4585.70	12/6/12	149.27	4436.43
					1/16/13	148.70	4437.00
					4/17/13	149.80	4435.90
					7/18/13	150.15	4435.55
					10/17/13	150.38	4435.32
					1/16/14	149.78	4435.92
					4/11/14	150.50	4435.20
					7/18/14	150.55	4435.15
					10/9/14	150.34	4435.36
					5/18/15	149.95	4435.75
					8/4/15	150.31	4435.39
7/26/16	150.63	4435.07					
7/24/17	151.52	4434.18					
7/16/18	152.37	4433.33					
WMD-2011-03M	913037	605360.830	3470671.273	4746.28	2/2/12	226.66	4519.62

## APPENDIX B Groundwater Elevation Data

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
ZANDER	205126	599678.880	3467998.486	4580.94	2/4/08	144.85	4436.09
					5/6/08	145.33	4435.61
					7/16/08	146.40	4434.54
					10/28/08	146.01	4434.93
					2/10/09	144.83	4436.11
					4/16/09	144.94	4436.00
					7/14/09	146.14	4434.80
					10/13/09	146.77	4434.17
					1/26/10	146.34	4434.60
					4/22/10	146.27	4434.67
					7/21/10	147.81	4433.13
					10/19/10	147.80	4433.14
					1/18/11	147.52	4433.42
					4/6/11	147.84	4433.10
					7/13/11	148.91	4432.03
					10/12/11	149.50	4431.44
					1/31/12	149.31	4431.63
					4/10/12	149.64	4431.30
					7/17/12	150.63	4430.31
					10/8/12	150.92	4430.02
					1/10/13	150.89	4430.05
					4/18/13	151.36	4429.58
					7/15/13	152.14	4428.80
					10/7/13	151.65	4429.29
					1/7/14	151.10	4429.84
					4/9/14	150.81	4430.13
7/17/14	152.02	4428.92					
8/3/15	150.65	4430.29					
10/8/15	150.10	4430.84					
1/12/16	149.46	4431.48					
7/15/16	151.25	4429.69					
1/27/17	152.14	4428.80					
7/24/17	152.63	4428.31					
1/16/18	152.03	4428.91					
7/24/18	153.67	4427.27					

**Notes:**

35-71891 = ADWR 35 Database

ADWR = Arizona Department of Water Resources

ft amsl = feet above mean sea level

NR = No Record

UTM = Universal Transverse Mercator Zone 12, North American Datum 1983 (NAD83)

<sup>1</sup> Depth to water measurement provided by Arizona Water Company

<sup>2</sup> Preliminary data will be updated when well survey is conducted

<sup>3</sup> Depth to water measurement provided by Naco Water Company

<sup>4</sup> Well previously identified as ROGERS 803