ANNUAL GROUNDWATER MONITORING REPORT FOR 2017

MITIGATION ORDER ON CONSENT DOCKET NO. P-121-07
COCHISE COUNTY, ARIZONA

Prepared for:

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February 23, 2018

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1. INTRODUCTION

This annual report provides the results of groundwater monitoring activities conducted in calendar year 2017 for the Mitigation Plan (Clear Creek Associates, 2015a) submitted to Arizona Department of Environmental Quality (ADEQ) in March 2015. The Mitigation Plan was submitted pursuant to the Mitigation Order on Consent Docket No. P-121-07 (ADEQ, 2007) between ADEQ and Freeport Minerals Corporation Copper Queen Branch (CQB). ADEQ provided a conditional approval of the annual groundwater monitoring and groundwater monitoring report provisions of the Mitigation Plan (ADEQ, 2015).

1.1 Mitigation Plan

The Mitigation Plan describes the process being followed as the mitigation action[1] for a groundwater plume of sulfate in the vicinity of the Concentrator Tailing Storage Area (CTSA) near Naco, south of Bisbee, Arizona (Figure 1). The mitigation action addresses the potential for existing drinking water supplies to be affected[2] by sulfate. Drinking water supplies in the vicinity of the plume do not exceed the sulfate action level of 250 milligrams per liter (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 is Alternative 1C, which was identified as the recommended alternative by a Feasibility Study (Clear Creek Associates, 2014) submitted to and approved by ADEQ (ADEQ, 2014). The mitigation action contains the following components:

- a water supply study to identify a potential alternate groundwater source for public water supply mitigation, if needed,
- expanded groundwater monitoring to track plume migration in the vicinity of public drinking water supplies in the Naco area and to document sulfate concentrations at the leading edge of the plume 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,

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

[2] 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.

- long term plume monitoring to monitor sulfate at public and private drinking water supplies, and to describe the groundwater flow system and large scale geometry of the plume over time, and

- annual review of Arizona Department of Water Resources (ADWR) well registry records to identify new drinking water supply wells within a mile of the plume.

1.2 Scope of Annual Groundwater Monitoring Report

The Mitigation Plan describes the scope of the annual groundwater monitoring report as follows:

> *"Groundwater monitoring reports will provide the water quality and water level data collected under the expanded groundwater monitoring … and long term plume monitoring … programs. The results of well drilling, installation, testing, and monitoring for expanded groundwater monitoring will be incorporated into the groundwater monitoring report as the wells are installed and data become available. The annual ADWR well records review … will also be provided in the groundwater monitoring report. The reporting period will be a calendar year (i.e., January 1 through December 31). The groundwater monitoring report will be submitted by March 31 of the year following the reporting period."*

The primary objective of the annual groundwater monitoring report is to provide the water quality and water level data collected in 2017 for the long term plume monitoring and expanded groundwater monitoring programs. As described by the Mitigation Plan, the annual groundwater monitoring reports transmit data to ADEQ with little interpretation. Analysis and evaluation of the monitoring data are provided in mitigation performance review reports submitted to ADEQ under the Mitigation Plan.

1.3 Sources of Groundwater Monitoring Data in 2017

1.3.1 Long Term Plume Monitoring

The long term plume monitoring program monitors the sulfate concentration at public and private drinking water supplies, and monitors water levels and sulfate levels at a site-wide array of monitoring wells to track the large scale geometry and concentration of the plume. The objectives of long term plume monitoring are:

- determination of the sulfate concentration in drinking water supplies within one-mile 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.

Groundwater sampling and water level measurement for long term plume monitoring were conducted by CQB and Clear Creek Associates personnel. Table 1 provides the groundwater monitoring schedule for the monitoring program in 2017. The third quarter 2017 was a biennial sampling event. Table 2 summarizes the status of sampling in 2017. Figure 2 is a geologic map (Hayes and Landis, 1964) showing the monitoring area and identifying wells where the data reported herein have been collected. The well locations are identified by name on Figures 3 and 4.

The groundwater sampling and analysis methods for groundwater monitoring under the Mitigation Order are described in the Quality Assurance Project Plan contained in Appendix F of the Work Plan (Hydro Geo Chem, Inc., 2008). Dissolved sulfate is the only constituent monitored. Appendices A and B contain field data forms and laboratory reports, respectively, for samples collected in 2017.

1.3.2 Expanded Groundwater Monitoring Program

The expanded groundwater monitoring program monitors the position of the plume in the immediate vicinity of the existing Arizona Water Company and Naco Water Company public drinking water supplies near Naco. The results of this monitoring will be used to identify sentinel well locations near the public supplies and sentinel well sulfate action levels that would, if exceeded, initiate a contingent mitigation. Well installation and testing for the expanded groundwater monitoring program were completed and reported to ADEQ in 2015 (Clear Creek Associates, 2015b).

Basin fill wells installed for the expanded groundwater monitoring program are 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, and BMO-2015-2BL (Figure 4). Eight (8) consecutive quarters of sampling to determine baseline conditions was completed in the fourth quarter 2016. The results of baseline sulfate and water level monitoring at the expanded groundwater monitoring program wells are included in this

report. The Mitigation Performance Review for 2016 submitted to ADEQ in April 2017 (Clear Creek Associates, 2017) recommended a semi-annual sampling frequency for the expanded groundwater monitoring program wells as shown on Table 1.

1.4 ADWR Well Records Review

The ADWR well records review is conducted annually to identify new and existing wells that are registered within one mile of the edge of the plume. If a new drinking water supply well is identified within a mile of the plume, CQB offers to sample the well and adds it to the long term plume monitoring schedule, if acceptable to the well owner. The review of ADWR well registry records is reported in the annual groundwater monitoring report to maintain a current list of drinking water supply wells in the vicinity of the plume for monitoring under the Mitigation Plan.

2. GROUNDWATER MONITORING RESULTS

2.1 Sulfate Data

Sulfate analytical results for 2017 are tabulated in Table 3, along with the results of previous monitoring under the Mitigation Order. Historical sulfate concentration data collected prior to the Mitigation Order are summarized and evaluated in the Aquifer Characterization Report (Clear Creek Associates, 2010). The data review for preparation of this report determined that one of the laboratories conducting sulfate analyses was reporting results to only two significant figures, although the results were available in three significant figures. The laboratory was asked to provide the current and prior results with three significant figures, which required updating the previously reported results in Table 3 for some of the samples collected from 2015 through 2017. The tables and figures in this report use the data updated to three significant figures and, for that reason, may vary slightly from the information in previous annual groundwater monitoring reports.

Water quality samples were collected from wells site-wide in the first and third quarters of 2017, with the third quarter 2017 constituting the biennial sampling event (Table 1). Figures 5 and 6 are sulfate concentration contour maps for the first and third quarters of 2017 (Table 1). Figures 7 and 8 are sulfate concentration maps of the west edge of the plume in the first and third quarters of 2017. In Figures 5 through 8, concentration contouring is based on the highest sulfate concentration measured at co-located wells and the most recent sample result at wells with multiple measurements during a quarter. The extent of the sulfate plume and the sulfate contours drawn on these figures is based on consideration of both historical and 2017 sulfate concentration data.

Figure 9 shows sulfate concentrations through time at public drinking water supply wells. The sulfate concentrations at the AWC wells were all less than 76 mg/L in 2017, 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 had sulfate concentrations less than 10 mg/L in 2017. Sulfate concentrations at NWC-04 near Bisbee Junction, which is believed to be at the receding edge of the plume, ranged between 176 and 201 mg/L in 2017.

Figure 10 is a graph of sulfate concentration over time in monitoring wells installed for the expanded groundwater monitoring program. Sulfate concentrations measured in the fourth quarter 2014 are not shown on Figure 10 because the data are anomalous compared to the next eight quarters of sampling, possibly due to incomplete well development prior to sampling.

Sulfate concentrations in the expanded groundwater monitoring wells decreased slightly or were steady between 2015 and the third quarter 2017. The lack of increasing trends for sulfate indicates that there has been no discernable migration of the plume at the expanded groundwater monitoring program wells.

2.2 Water Elevation Data

Groundwater elevation data collected in 2017 are listed in Table 4, along with previous data collected for the Mitigation Order. Groundwater elevations were calculated using depth to water measurements made under static (non-pumping) conditions whenever possible.

Similar to sulfate sampling, site-wide water level measurements are made in the first and third quarters of the year (Table 1). Figures 11 and 12 are site-wide groundwater elevation contour maps for the first and third quarters of 2017. Figures 13 and 14 are groundwater elevation contour maps for basin fill at the west edge of the plume in the first and third quarters of 2017. In Figures 11 through 14, the most recent depth to water measurement is used for contouring at wells with multiple measurements during a quarter. The March 20, 2017 measurement at LADD 635 is anomalously low because it was made under pumping conditions. Therefore, it was not used for contouring on Figures 11 and 13. Water level measurements at NWC-03 CAP have been at or above historic maxima since September 2016 when water elevations abruptly increased (Table 4). The cause for the water level increase is uncertain, but will be evaluated during subsequent measurement events. The January 26 and July 18, 2017 water levels for NWC-03 CAP were not used for contouring on Figures 11 through 14 because they are not consistent with surrounding wells.

Groundwater elevations over time for BMO monitor wells with screened intervals in basin fill are shown by Figure 15 for selected plume edge and regional monitoring wells (see Table 1 for well use), and by Figure 16 for expanded groundwater monitoring program wells. Groundwater elevations in plume edge and regional BMO monitor wells in basin fill decreased from 2008 through 2013 and were relatively steady from 2013 to 2016. The late 2016 and 2017 data for some wells appear to show a resumption of the water level decline. Water elevations in expanded groundwater monitoring program wells show similar patterns of increase and decrease over time including an annual pattern of low summer and high winter water elevations.

Figure 17 shows hydrographs for BMO monitor wells in bedrock. Groundwater elevations in BMO monitoring wells screened in bedrock show various patterns depending on the location and depth of the well. Water levels in bedrock wells beneath the basin fill tend to decline until 2013 and then stabilize, like the basin fill wells. Water levels in shallow bedrock wells, such as

BMO-2010-1M and BMO-2012-1M, near Bisbee Junction have increased in elevation over time. Section 4.2.3.2 of the Aquifer Characterization Report (Clear Creek Associates, 2010) has a more detailed explanation of the different potentiometric systems in bedrock.

2.3 Quality Assurance/Quality Control

A data verification report is prepared for quality assurance and quality control purposes. The data verification report evaluates field and laboratory quality assurance data for acceptability in the context of data quality objectives for groundwater monitoring identified in the Quality Assurance Project Plan. The data verification report for 2017 is in Appendix C. Based on the data verification review, the field measurements and analytical results collected in 2017 are of acceptable quality for use in monitoring activities conducted pursuant to the Mitigation Order.

2.4 ADWR Well Records Review

Groundwater wells installed in Arizona are required to be registered with ADWR. Appendix D contains the ADWR well records review for 2017. The ADWR well records review was conducted using a version of the well records database current through January 17, 2018. The review identified registered wells within one mile of the sulfate plume and compared the list of wells in January 2018 to the list of wells produced for the last well records review which used a January 2017 version of the database.

The well records review identified new records for two wells, 55-227101 and 55-809938, within the 1.1-mile search area. Well 55-227101 is a geotechnical well installed for cathodic protection with a listed well owner of El Paso Natural Gas Co, LLC. Cathodic protection wells are not sources of drinking water. Well 55-809938 is private well listed as having a domestic water use. The well was installed in the 1940's, but is newly registered. Well 55-809938 is the same as the unregistered HARDT well that was sampled in 2013. The well is shown on Figure 3 and sample results for HARDT are included in Table 3. The physical location of well 55-809938 is more than one mile away from the plume edge as determined by field inspection of the well, although the cadastral location for the well lies within the search area for the well records review based on the 0.1-mile safety factor (Appendix D).

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TABLES

TABLE 1
Groundwater Monitoring Schedule in 2017

Well Name	ADWR 55 Registry Number	Well Use	Monitoring Purpose	Semiannual Sampling First Quarter	Annual Sampling Third Quarter	Biennial Sampling Third Quarter
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	909653	PDWS	DWS (<2000)	✓	✓	
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)	✓	✓	
COOPER	623564	PDWS	DWS (<2000)	✓	✓	

TABLE 1
Groundwater Monitoring Schedule in 2017

Well Name	ADWR 55 Registry Number	Well Use	Monitoring Purpose	Semiannual Sampling First Quarter	Annual Sampling Third Quarter	Biennial Sampling Third Quarter
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)		✓	
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)	✓	✓	
STEPHENS	808560	PNDW	RM	WLO	WLO	
SWAN	NR	PDWS	DWS (>2000)		✓	

TABLE 1
Groundwater Monitoring Schedule in 2017

Well Name	ADWR 55 Registry Number	Well Use	Monitoring Purpose	Semiannual Sampling First Quarter	Annual Sampling Third Quarter	Biennial Sampling Third Quarter
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:

35-71891	ADWR 35 Database
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
✓	sample and water level measurement

CLEAR CREEK ASSOCIATES

TABLE 2
Summary of Groundwater Monitoring in 2017

Well Name	ADWR 55 Registry Number	First Quarter Schedule	1Q 2017			Third Quarter Schedule	Biennial Sampling Third Quarter	3Q 2017		
			Water Level Measured?	Water Sample Collected?	Status			Water Level Measured?	Water Sample Collected?	Status
ANDERSON 396	613396	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	WLO	✓	Y	N	Unable to sample due to inoperable pump. Water level measured in July 2017.
ANDERSON 458	221458		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
ASLD 435	616435	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in August 2017.
AWC-02	616586	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in September 2017.
AWC-03	616585	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in September 2017.
AWC-04	616584	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in September 2017.
AWC-05	590620	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in September 2017.
BANKS 986	647986		N	N	Well is not scheduled for first quarter monitoring.	✓		N	Y	Water quality sample collected in July 2017. Unable to measure water level due to no port in wellhead.
BANKS 987	647987	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2017.
BARTON 919	644919	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2017.
BIMA	577927		N	N	Well is not scheduled for first quarter monitoring.		✓	N	Y	Water quality sample collected in July 2017. Water level not measured due to obstruction in well.
BMO-2008-1G	909474	✓	Y	Y	Water quality sample collected in March 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2008-3B	909147	✓	Y	Y	Water quality sample collected in March 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2008-4B	910096	WLO	N	N	No property access for water level measurement.	✓		Y	Y	Water quality sample collected in September 2017.
BMO-2008-5B	909653	✓	Y	Y	Water quality sample collected in March 2017.	✓		Y	Y	Water quality sample collected in August 2017.
BMO-2008-5M	909552	✓	Y	Y	Water quality sample collected in March 2017.	✓		Y	Y	Water quality sample collected in August 2017.
BMO-2008-6B	909146	✓	Y	Y	Water quality sample collected in March 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2008-6M	909019	✓	Y	Y	Water quality sample collected in March 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2008-7M	908794	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2008-8B	910097	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO	✓	Y	Y	Water quality sample collected in July 2017.
BMO-2008-8M	909711	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	✓		Y	Y	Water quality sample collected in July 2017.

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Well Name	ADWR 55 Registry Number	First Quarter Schedule	1Q 2017			Third Quarter Schedule	Biennial Sampling Third Quarter	3Q 2017		
			Water Level Measured?	Water Sample Collected?	Status			Water Level Measured?	Water Sample Collected?	Status
BMO-2008-9M	909255	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2008-10GL	909435	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO	✓	Y	Y	Water quality sample collected in July 2017.
BMO-2008-10GU	909272	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO	✓	Y	Y	Water quality sample collected in August 2017.
BMO-2008-11G	909434	✓	Y	Y	Water quality sample collected in March 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2008-13B	909551	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO	✓	Y	Y	Water quality sample collected in August 2017.
BMO-2008-13M	909760	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO	✓	Y	Y	Water quality sample collected in August 2017.
BMO-2010-1M	219957	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2010-2M	219958	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO	✓	Y	Y	Water quality sample collected in July 2017.
BMO-2010-3B	219970	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2010-3M	219969	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2012-1M	221388	✓	Y	Y	Water quality sample collected in March 2017.	✓		Y	Y	Water quality sample collected in July and August 2017.
BMO-2014-1BL	917394	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2014-1BU	917393	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2014-2BL	917452	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in September 2017.
BMO-2014-2BU	917453	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2014-3BL	917527	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2014-3BU	917494	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2014-4B	917620	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2014-4BL	917619	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2015-1B	917622	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2015-1BL	917621	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.

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Well Name	ADWR 55 Registry Number	First Quarter Schedule	1Q 2017			Third Quarter Schedule	Biennial Sampling Third Quarter	3Q 2017		
			Water Level Measured?	Water Sample Collected?	Status			Water Level Measured?	Water Sample Collected?	Status
BMO-2015-2B	917827	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BMO-2015-2BL	917828	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
BOOTH	914931	✓	N	N	Well owner has declined participation in groundwater sampling program.	✓		N	N	Well owner has declined participation in groundwater sampling program.
BURKE	212268		N	N	Well is not scheduled for first quarter monitoring.	✓		N	Y	Water quality sample collected in July 2017. Water level not measured per owner request.
CHAMBERS	629807		N	N	Well is not scheduled for first quarter monitoring.	✓		N	Y	Water quality sample collected in July 2017. Water level not measured due to no port in wellhead.
COB MW-1	903992	WLO	N	N	Well abandoned per City of Bisbee.	WLO	✓	N	N	Well abandoned per City of Bisbee.
COB MW-1B	225906		Y	N	Water level measured in January 2017. This well replaced COB MW-1 and will be sampled per the schedule for COB MW-1.	WLO		Y	Y	Water quality sample collected in July 2017. This well replaced COB MW-1 and will be sampled per the schedule for COB MW-1.
COB MW-2	903984	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
COB MW-3	906823	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
COB WL	593116	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
COOPER	623564	✓	N	Y	Water quality sample collected in January 2017. Unable to measure water level due to no port in wellhead.	✓		N	Y	Water quality sample collected in July 2017. Water level not measured due to no sounder-accessible port.
COOPER C	637069		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
DODSON	644927	✓	N	Y	Water quality sample collected in January 2017. Unable to measure water level due to obstruction in well.	✓		Y	Y	Water quality sample collected in July 2017.
DOUGLASS 791	592791		N	N	Well is not scheduled for first quarter monitoring.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2017.
DOUGLASS 792	592792		N	N	Well is not scheduled for first quarter monitoring.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2017.
EAST	599796		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
ECHAVE	219449		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
EPPELE 641	805641		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
FRANCO 383	221383		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
FULTZ	212447		N	N	Well is not scheduled for first quarter monitoring.	✓		N	N	Unable to contact well owner.
GARNER 557	558557	WLO	N	N	Unable to contact owner.	WLO		N	N	Unable to measure water level due to no port in wellhead.

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Summary of Groundwater Monitoring in 2017

Well Name	ADWR 55 Registry Number	First Quarter Schedule	1Q 2017			Third Quarter Schedule	Biennial Sampling Third Quarter	3Q 2017		
			Water Level Measured?	Water Sample Collected?	Status			Water Level Measured?	Water Sample Collected?	Status
GARNER 635	587635		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
GOAR RANCH	610695	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2017.
HOBAN	805290	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	✓		Y	Y	Water quality sample collected in July 2017.
HOWARD 312	221312		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
HOWARD NR	NR	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	WLO	✓	Y	Y	Water quality sample collected in July 2017.
KEEFER	209744		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
LADD 251	520251	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in August 2017.
LADD 538	503538	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in August 2017.
LADD 635	224635	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in August 2017.
LADD 837	519837	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in August 2017.
LADD 977	642977	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in August 2017.
MARCELL	NR		N	N	Well is not scheduled for first quarter monitoring.		✓	N	N	Unable to sample due to inoperable pump. Unable to collect water level due to port plug being rusted to port.
MCCONNELL 265	539265	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	WLO	✓	Y	Y	Water quality sample collected in July 2017.
MCCONNELL 459	221459		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
METZLER	35-71891	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2017.
MOORE	538847		N	N	Well is not scheduled for first quarter monitoring.	✓		N	Y	Water quality sample collected in July 2017. Unable to measure water level due to no port in wellhead.
NESS	509127		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
NOTEMAN	212483		N	N	Well is not scheduled for first quarter monitoring.		✓	N	Y	Water quality sample collected in July 2017. Water level not measured due to obstruction in well.
NSD-02	527587	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in September 2017.
NSD-03	527586	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in September 2017.
NWC-02	562944	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.

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Well Name	ADWR 55 Registry Number	First Quarter Schedule	1Q 2017			Third Quarter Schedule	Biennial Sampling Third Quarter	3Q 2017		
			Water Level Measured?	Water Sample Collected?	Status			Water Level Measured?	Water Sample Collected?	Status
NWC-03 CAP	627684	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2017.
NWC-04	551849	✓	N	Y	Water quality sample collected in January 2017. Unable to measure water level due to obstruction in well.	✓		N	Y	Water quality sample collected in July 2017. Water level not measured due to no port in wellhead.
NWC-06	575700	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
OLMOS	224745	WLO	N	N	Well identified for water level measurement only. Unable to measure water level due to obstruction in well.	✓		N	Y	Water quality sample collected in July 2017. Water level not measured due to obstruction in well.
OSBORN	643436		N	N	Well is not scheduled for first quarter monitoring.	✓		N	Y	Water quality sample collected in July 2017. Water level not measured due to obstruction in well.
PALMER	578819		N	N	Well is not scheduled for first quarter monitoring.	✓		N	N	Well is inoperable. Water level not measured due to no port in wellhead.
PANAGAKOS	35-76413	✓	Y	Y	Water quality sample collected in February 2017.	✓		Y	Y	Water quality sample collected in July 2017.
PARRA	576415		N	N	Well is not scheduled for first quarter monitoring.		✓	N	Y	Water quality sample collected in July 2017. Water level not measured due to no port in wellhead.
PIONKE 395	613395	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	WLO	✓	Y	N	Unable to sample due inoperable pump. Water level measured in September 2017.
PIONKE 517	221517		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
POOL	509518		N	N	Well is not scheduled for first quarter monitoring.	✓		N	N	Unable to contact well owner, does not respond to scheduling request.
POWER 639	222639	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
RAMIREZ	216425	WLO	N	N	Well identified for water level measurement only. Unable to measure water level due to obstruction in well.	✓		Y	Y	Water quality sample collected in July 2017.
RAY	803772		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
ROGERS 596	573596	WLO	N	N	No property access for water level measurement.	WLO		Y	N	Well identified for water level measurement only. Water level measured in September 2017.
ROGERS 803	641803	✓	N	N	No property access.	✓		Y	Y	Water quality sample collected in September 2017.
ROGERS E	216018		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
RUIZ	531770	✓	N	Y	Water quality sample collected in January 2017. Unable to measure water level due to obstruction in well.	✓		N	Y	Water quality sample collected in July 2017. Water level not measured due to obstruction in well.
SCHWARTZ	210865	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
STEPHENS	808560	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2017.
SWAN	NR		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.

CLEAR CREEK ASSOCIATES

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Well Name	ADWR 55 Registry Number	First Quarter Schedule	1Q 2017			Third Quarter Schedule	Biennial Sampling Third Quarter	3Q 2017		
			Water Level Measured?	Water Sample Collected?	Status			Water Level Measured?	Water Sample Collected?	Status
THOMPSON 151	612151	WLO	N	N	Unable to measure water level due to obstruction in well.	WLO		N	N	Water level not measured due to obstruction in well.
THOMPSON 341	218341		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
TM-02A	522574	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO	✓	Y	Y	Water quality sample collected in August 2017.
TM-06 MILLER	522695	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO	✓	Y	Y	Water quality sample collected in July 2017.
TM-07	522576	✓	N	Y	Water quality sample collected in March 2017. Unable to measure water level due to obstruction in well.	✓		N	Y	Water quality sample collected in August 2017. Water level not measured due to obstruction in well.
TM-10 USBP	522696	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
TM-15 MILLER	522699		Y	N	Water level measured in March 2017.	✓		Y	Y	Water quality sample collected in August 2017.
TM-16	522578	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO	✓	Y	Y	Water quality sample collected in July 2017.
TM-19A	522580		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
TM-42	562554	WLO	Y	N	Well identified for water level measurement only. Water level measured in March 2017.	WLO	✓	Y	Y	Water quality sample collected in July 2017.
TVI 236	802236	✓	Y	Y	Water quality sample collected in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.
TVI 713	567713	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2017.
TVI 875	568875		N	N	Well is not scheduled for first quarter monitoring.	✓		N	Y	Water quality sample collected in July 2017. Water level not measured due to no port in wellhead.
WEED	544535	✓	N	Y	Water quality sample collected in January 2017. Unable to measure water level due to no port in wellhead.	✓		N	Y	Water quality sample collected in July 2017. Water level not measured due to no port in wellhead.
WEISKOPF 802	641802	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	WLO	✓	Y	Y	Water quality sample collected in July 2017.
WEISKOPF 897	220897		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2017.
ZANDER	205126	WLO	Y	N	Well identified for water level measurement only. Water level measured in January 2017.	✓		Y	Y	Water quality sample collected in July 2017.

Notes:
35-71891 = ADWR 35 Database
ADWR = Arizona Department of Water Resources
bls = below land surface
N = No
✓ = sample and water level measurement
ND = No Data
NR = No Record
Y = Yes

CLEAR CREEK ASSOCIATES

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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[1]	6.37	23.1	1521	190
		5/13/08[1]	6.58	22.7	1489	195
		6/23/08[1]	6.30	23.3	1572	225
		6/23/08 DUP	6.30	23.3	1572	196
		7/29/08[1]	6.44	23.0	1647	204
		8/28/08[1]	M	23.0	1776	256
		9/23/08[1]	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[1]	7.06	21.9	753	201
		5/15/08[1]	7.16	22.2	845	211
		6/23/08[1]	6.93	21.5	903	193
		7/29/08[1]	7.21	22.2	921	203
		8/27/08[1]	7.12	22.1	864	189
		9/23/08[1]	7.16	22.3	818	193
		10/22/08	7.17	21.3	873	200

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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
BMO-2008-8M	909711	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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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	3660	2210
		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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
BMO-2010-1M	219957	9/9/10	7.82	24.6	727.0	150
		11/11/10	8.68	19.9	570	98
		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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
BMO-2010-3M	219969	7/31/10	7.73	24.3	390	14.8
		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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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
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
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
BMO-2014-3BL	917527	2/13/15	7.34	22.4	384	7.84
		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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2014-4B	917620	3/4/15	7.68	20.3	524.0	64.7
		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
BMO-2014-4BL	917619	3/1/15	7.63	21.1	671.9	165
		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
BMO-2015-1B	917622	3/15/15	8.11	20.2	676.3	175
		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
BMO-2015-1BL	917621	3/12/15	7.70	20.8	708.2	221
		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
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
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
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
		10/18/13	7.66	19.3	597.6	92.6

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BURKE	212268	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
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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	371	33
		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
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	1461	639

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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[1]	6.74	22.0	1739	137
		5/14/08[1]	6.88	22.3	1532	131
		6/23/08[1]	6.74	22.0	1788	111
		7/29/08[1]	6.74	22.2	1989	152
		8/28/08[1]	M	21.6	1889	137
		9/23/08[1]	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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
HOWARD 312	221312	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
HOWARD NR	NR	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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
PARRA	576415	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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
POOL	509518	2/20/08	7.95	20.9	497	134
		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
POWER	624535	2/12/08	7.11	18.9	428	15.5
		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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
RAY	803772	2/15/08	7.30	19.1	1540	159
		4/21/08[1]	6.92	21.3	1418	125
		5/13/08[1]	7.05	20.9	1418	123
		6/23/08[1]	6.87	21.1	1593	130
		7/29/08[1]	6.98	21.8	1411	120
		8/28/08[1]	M	21.1	1519	129
		9/23/08[1]	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
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
ROGERS 803	641803	2/7/08	7.45	18.6	601	138
		4/21/08[1]	7.32	21.4	552	128
		5/8/08[1]	7.14	21.2	622	141
		6/23/08[1]	7.06	22.9	660	129
		7/29/08[1]	6.78	23.1	339	134
		8/28/08[1]	7.18	21.6	635	128
		9/23/08[1]	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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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[1]	7.23	21.7	563	122
		5/19/08[1]	7.38	22.4	629	130
		6/23/08[1]	7.02	22.1	674	129
		7/29/08[1]	7.25	22.4	955	245
		8/28/08[1]	M	22.3	669	131
		9/23/08[1]	7.27	22.2	607	124
		10/22/08[1]	7.31	22.0	653	135
		11/19/08[1]	7.38	21.1	612	140
		12/17/08[1]	6.78	21.6	472	144
		1/29/09[1]	7.08	22.0	475	124
		2/23/09[1]	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
SRC	211345	4/23/08	7.57	25.8	380	19
		8/5/08	7.40	27.2	452	15.4
SWAN	NR	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
		7/714	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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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
WALKER	200393	2/13/08	7.05	20.2	650	20
		7/23/08	7.25	20.7	740	45.4

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

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
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

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
[1] Verified drinking water supply well, sample collected for sulfate trend analysis and interim action evaluation

TABLE 4
Compilation of 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
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
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

TABLE 4
Compilation of 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[1]	115	4432.64
					4/22/09[1]	118	4429.64
					10/9/09[1]	117	4430.64
					4/23/10[1]	119	4428.64
					4/11/13	127.64	4420.00
					7/25/13	128.89	4418.75
					10/7/13[1]	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
					10/2015[1]	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
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[1]	106	4433.52
					4/22/09[1]	114	4425.52
					10/9/09[1]	116	4423.52
					4/23/10[1]	116	4423.52
					4/11/13[1]	125	4414.52
					7/16/13[1]	126	4413.52
					10/7/13[1]	122	4417.52
					1/7/14[1]	121	4418.60
					5/14/14[1]	121.50	4418.02
					7/16/14[1]	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
					10/2015[1]	115.00	4424.52
					1/13/16[1]	118.00	4421.52
					7/19/16	125.50	4414.02
					1/19/17[1]	123.00	4416.52
					9/6/17	121.30	4418.22
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[1]	111.31	4429.17
					4/22/09[1]	110	4430.48
					10/9/09[1]	110	4430.48
					4/23/10[1]	109	4431.48
					4/11/13	120.93	4419.55
					7/16/13	123.76	4416.72
					10/7/13[1]	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
					10/2015[1]	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

TABLE 4
Compilation of 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[1]	289	4253.51
					4/23/10[1]	278	4264.51
					4/11/13	229.56	4312.95
					7/16/13	203.17	4339.34
					10/7/13[1]	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[1]	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
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

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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-2008-6B	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
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

TABLE 4
Compilation of 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
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
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

TABLE 4
Compilation of 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-2008-9M	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
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
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

TABLE 4
Compilation of 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-2008-11G	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
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
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	213.60	4433.55
					8/15/17	213.71	4433.44

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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
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
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

TABLE 4
Compilation of 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-2014-1BL	917394	600563.194	3468234.798	4557.18	11/7/14	123.03	4434.15
				4558.45	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
BMO-2014-1BU	917393	600570.805	3468231.440	4557.18	11/13/14	123.51	4433.67
				4558.54	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
BMO-2014-2BL	917452	600784.872	3468183.921	4560.31	11/20/14	126.15	4434.16
				4561.80	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
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
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

TABLE 4
Compilation of 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-2014-3BU	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
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
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
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
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
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

TABLE 4
Compilation of 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
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 [2]	3469889.889 [2]	4683.26 [2]	7/20/16	240.06	4443.20
					1/19/17	239.90	4443.36
					7/19/17	240.27	4442.99

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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
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
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

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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
					7/14/10	119.86	4523.06
GARNER 557	558557	602659.240	3468962.415	4638.45	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

TABLE 4
Compilation of 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
					3/9/10	238.84	4478.27
					4/27/10	239.17	4477.94
GL-03	539782	604386.940	3473747.943	4924.31	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
					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
GOAR RANCH	610695	602454.751	3468892.471	4631.13	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

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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

TABLE 4
Compilation of 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
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	219.80	4224.03
					3/20/17	220.91	4222.92
					8/10/17	222.12	4221.71

TABLE 4
Compilation of 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	227.40	4299.65
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
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	262.80	4207.31
					3/20/17	261.30	4208.81
					8/10/17	262.00	4208.11

TABLE 4
Compilation of 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	87.90	4425.50
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

TABLE 4
Compilation of 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
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
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

TABLE 4
Compilation of 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)
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
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
NWC-02	562944	600177.435	3467474.673	4600.44	10/27/08	160.51	4439.93
					4/29/09[3]	160.5	4439.94
					9/10/09[3]	155	4445.44
					4/2010[3]	131	4469.44
					3/1/13[3]	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

TABLE 4
Compilation of 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	203321	601153.857	3468350.838	4574.99	11/3/08	131.48	4443.51
					4/29/09[3]	130	4444.99
					9/10/09[3]	126	4448.99
					10/9/09[3]	125	4449.99
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
NWC-04	551849	605829.808	3469071.959	4690.77	12/2/08	352.11	4338.66
					4/29/09[3]	328	4362.77
					9/10/09[3]	324	4366.77
					4/2010[3]	216	4474.77
					3/1/13[3]	216	4474.77
NWC-06	575700	599822.821	3467749.954	4592.50	4/29/09[3]	156	4436.50
					9/10/09[3]	155	4437.50
					10/9/09[3]	148	4444.50
					4/2010[3]	140	4452.50
					3/1/13[3]	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
OLMOS	224745	599641.506	3468055.337	4576.92	1/13/16	145.84	4431.08
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

TABLE 4
Compilation of 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)
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
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

TABLE 4
Compilation of 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
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
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

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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
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
ROGERS 750[4]	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

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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
					9/13/12	Dry	<4426
					1/17/13	Dry	<4426
					7/9/13	Dry	<4426
					1/10/14	Dry	<4426
					7/8/14	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
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

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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
TM-15 MILLER	522699	599618.715	3471425.631	4729.25	3/20/17	300.54	4428.71
					8/1/17	300.76	4428.49
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
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

TABLE 4
Compilation of 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
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

TABLE 4
Compilation of 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

TABLE 4
Compilation of 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
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
WMD-2011-03M	913037	605360.830	3470671.273	4746.28	2/2/12	226.66	4519.62

TABLE 4
Compilation of 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

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)

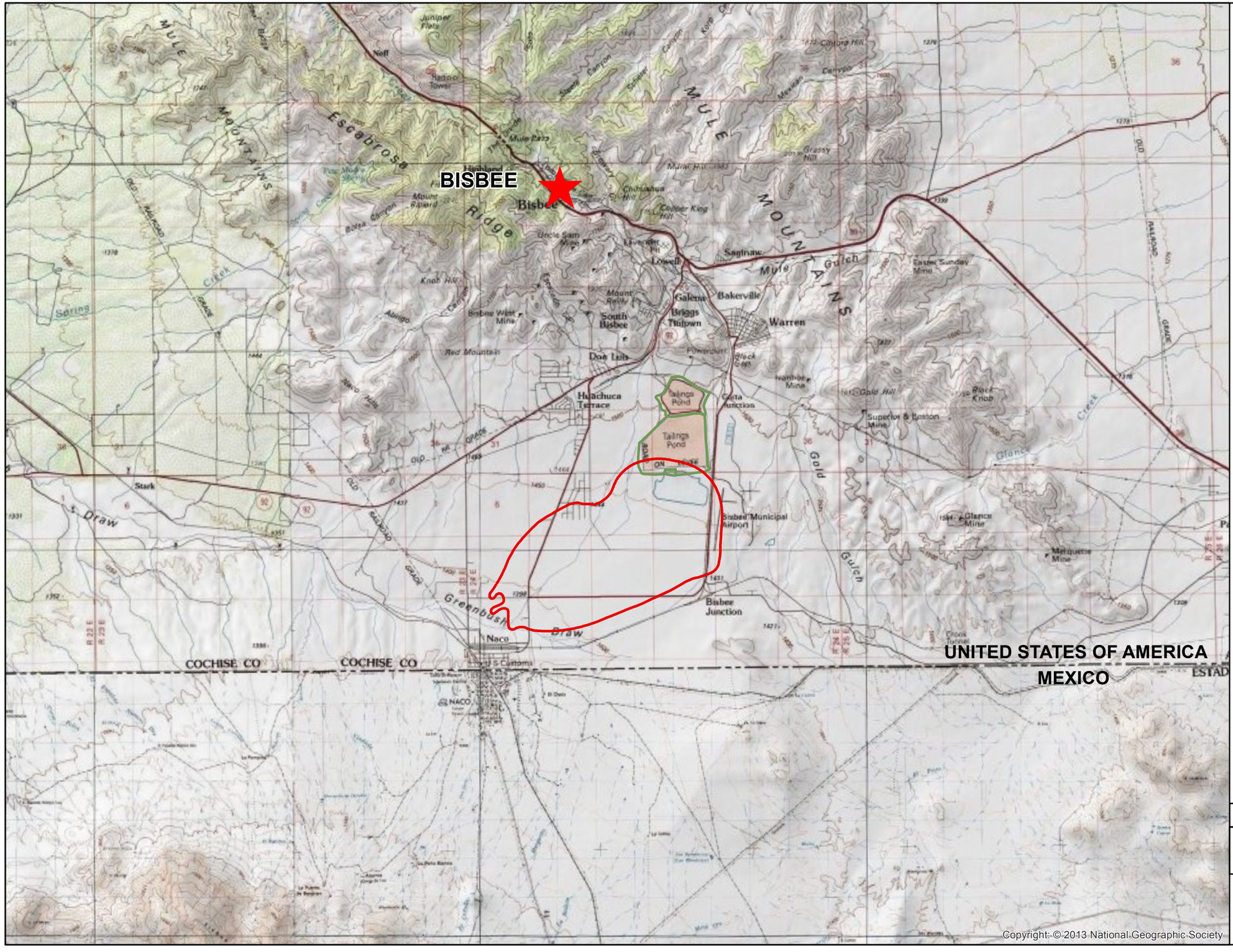
[1] Depth to water measurement provided by Arizona Water Company

[2] Preliminary data will be updated when well survey is conducted

[3] Depth to water measurement provided by Naco Water Company

[4] Well previously identified as ROGERS 803

FIGURES



Legend

- CTSA Facility
- Estimated 250 mg/L Sulfate Concentration Contour for Third Quarter 2017

Scale (Feet)

0 — 7,800 — 15,600

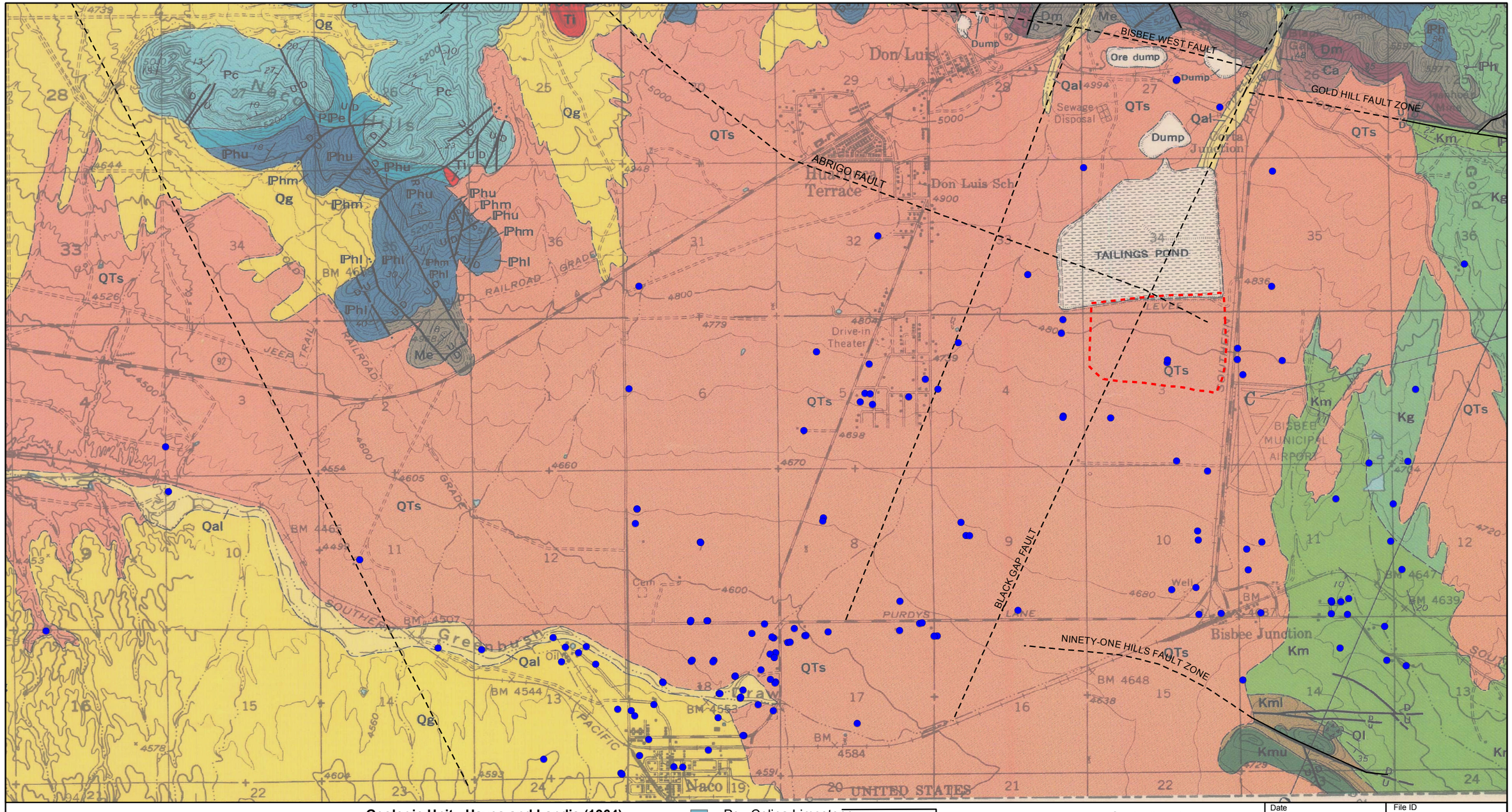
Notes:

Projection: UTM Zone 12N NAD83

Date	File ID
2/1/18	055038-511

CLEAR CREEK ASSOCIATES

FIGURE 1
PROJECT LOCATION MAP



Legend

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

Geologic Unit - Hayes and Landis (1964)

Basin Fill
- Qal - Quaternary Alluvium
- Qg - Quaternary Gravel
- QTs - Quaternary Tertiary sediment
- Ti - Tertiary Intrusive

Bisbee Group
- Kc - Cintura Formation (not shown)
- Kmu - Upper Mural Limestone
- Kml - Lower Mural Limestone
- Km - Morita Formation
- Kg - Glance Conglomerate

Paleozoic Sedimentary Formations
- Pc - Colina Limestone
- PPe - Earp Formation
- Phu, Phm, Phl - Horquilla Limestone
- Me - Escabrosa Limestone
- Dm - Martin Limestone
- Ca - Abrigo Limestone

See Figure 3 for Monitoring Location Names

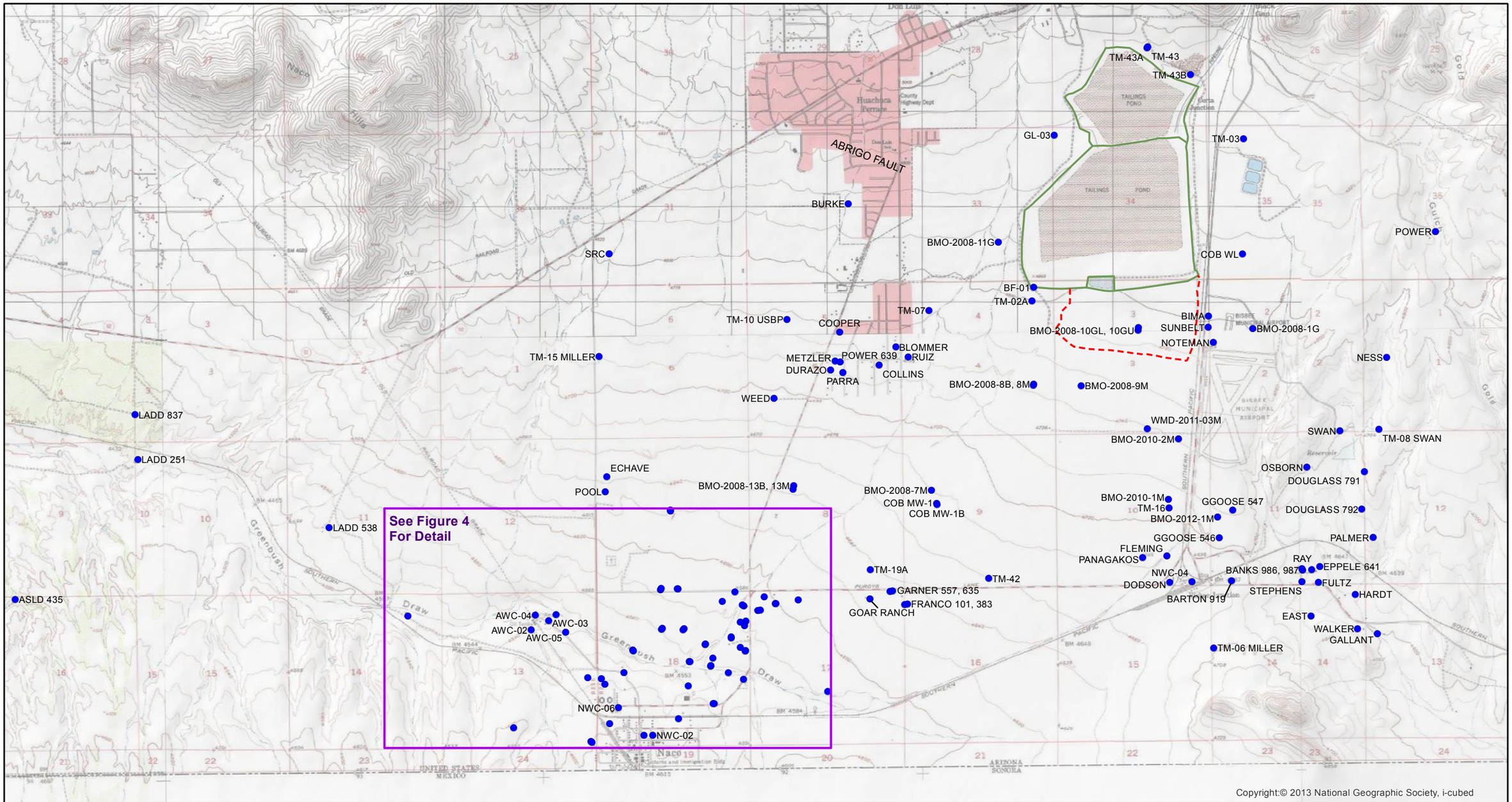
Scale (Feet)
0 3,000 6,000

Projection: UTM Zone 12N NAD83
Geology reprinted from Hayes and Landis (1964) USGS Miscellaneous Geologic Investigations I-418

Date: 1/17/17
File ID: 055038-402

CLEAR CREEK ASSOCIATES

FIGURE 2
GEOLOGIC MAP
WITH MONITORING LOCATIONS



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Legend

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

Scale (Feet)

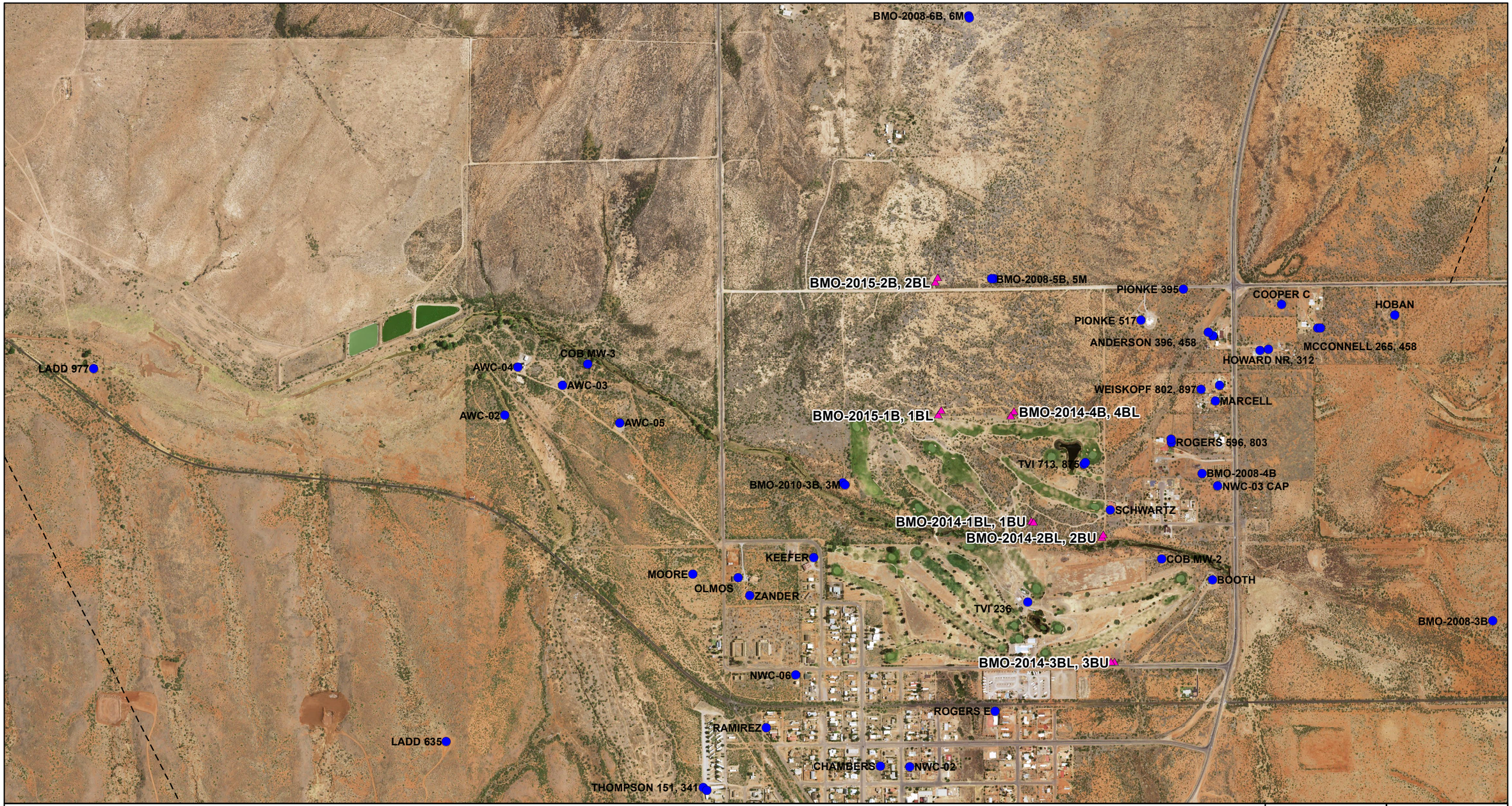
0 3,300 6,600

Projection: UTM Zone 12N NAD83

Date	File ID
1/17/17	055038-357

CLEAR CREEK ASSOCIATES

FIGURE 3
GROUNDWATER
MONITORING LOCATIONS



Legend

- Expanded Goundwater Monitoring Program Well
- Existing Well Location

Scale (Feet)

0 1,000 2,000

Projection: UTM Zone 12N
NAD83

Date	1/15/18	File ID	055038-461

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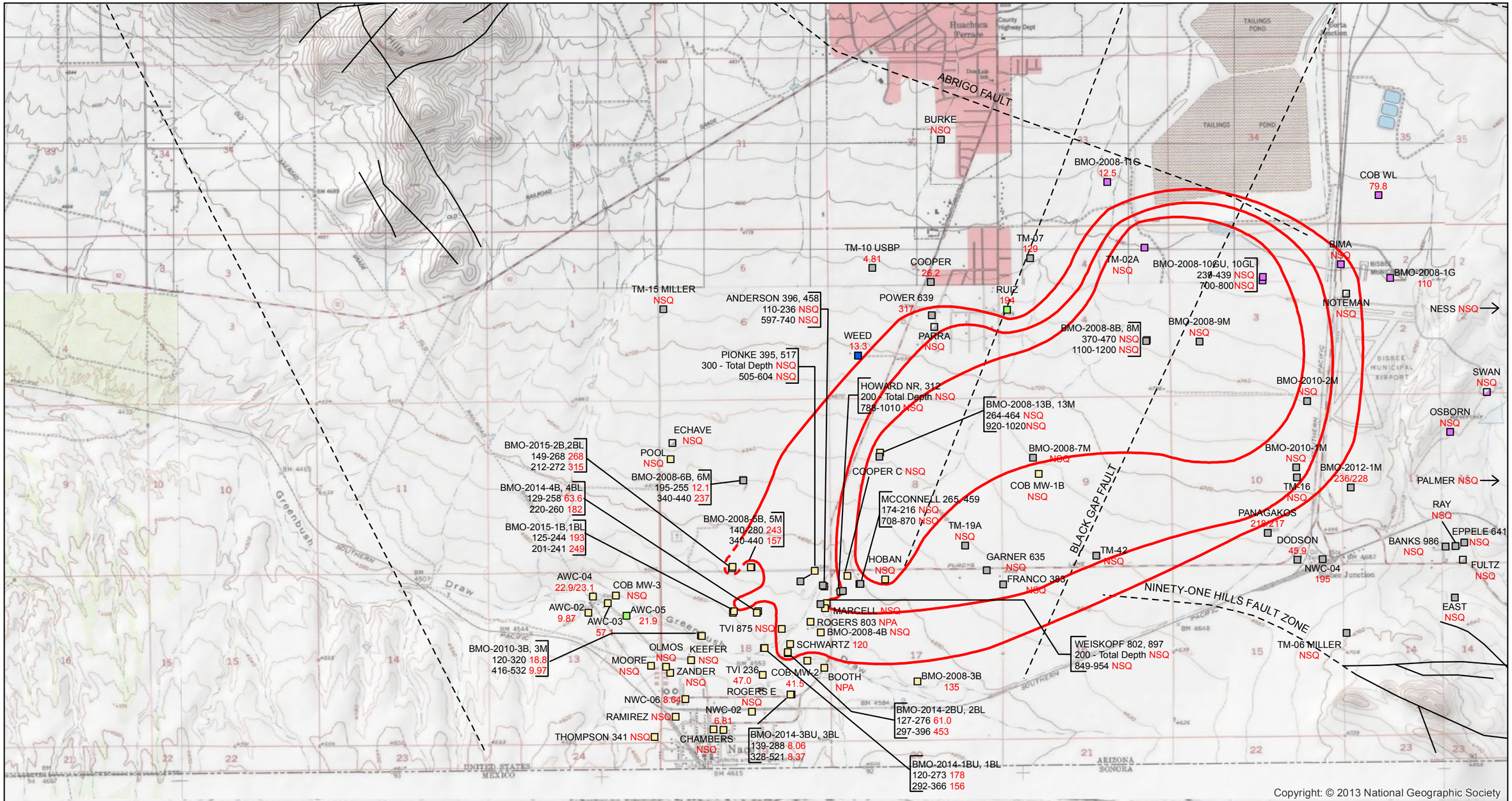
FIGURE 4
NACO AREA
WELL SITES



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Legend

- NWC-02 Well ID
- 6.81 SO4 Concentration (mg/L) Duplicate results separated by "/"
- SO4 Concentration Contours (dashed where inferred)
- 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

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

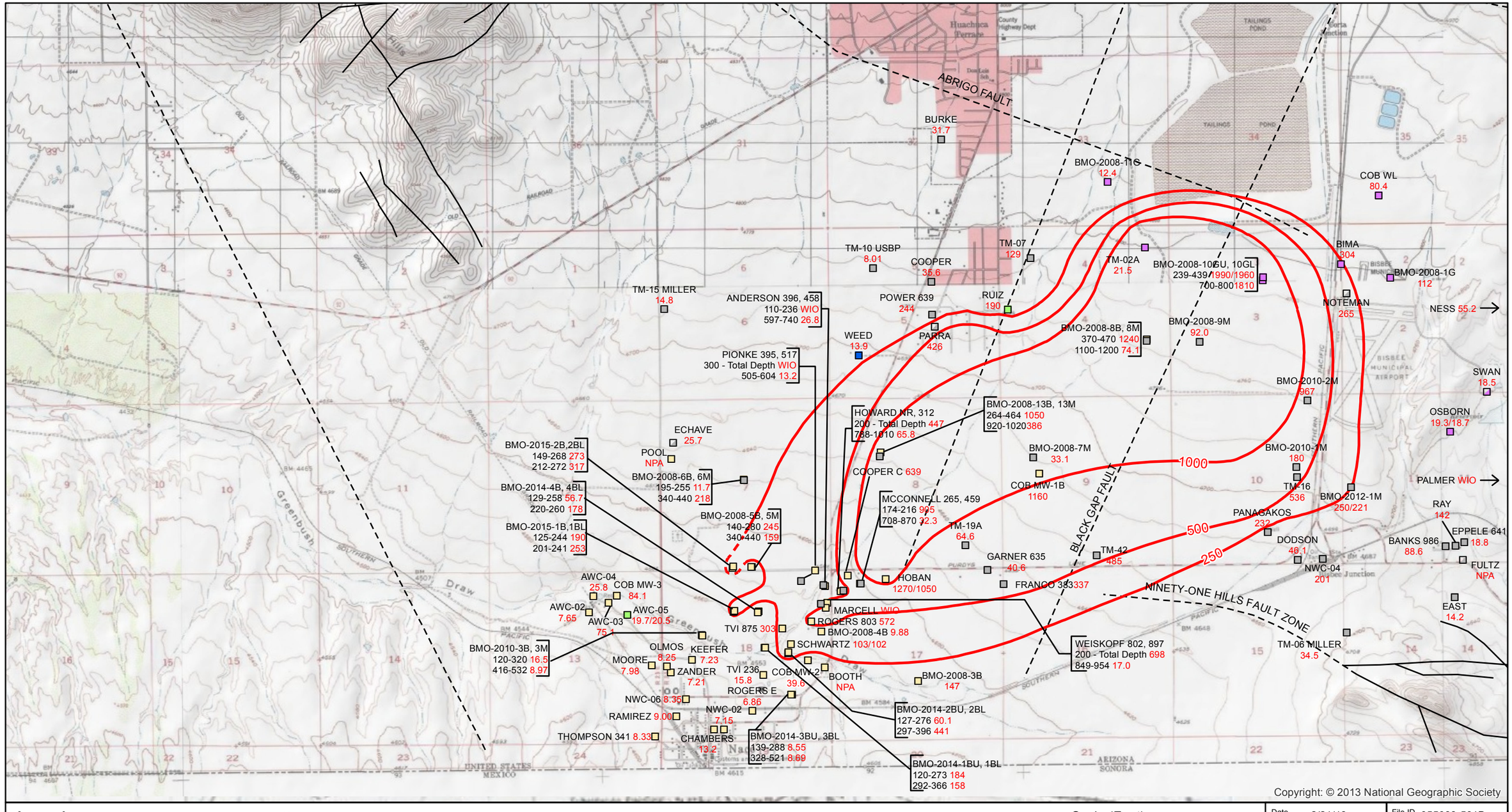
Scale (Feet)
0 3,000 6,000

Projection: UTM Zone 12N NAD83

Date 2/19/18
File ID 055038-492B

CLEAR CREEK ASSOCIATES

FIGURE 5
SULFATE CONCENTRATIONS IN SITE-WIDE GROUNDWATER SAMPLES FOR FIRST QUARTER 2017



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Legend

- NWC-02 Well ID
- 7.15 SO4 Concentration (mg/L) Duplicate results separated by "/"
- SO4 Concentration Contours (dashed where inferred)
- 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

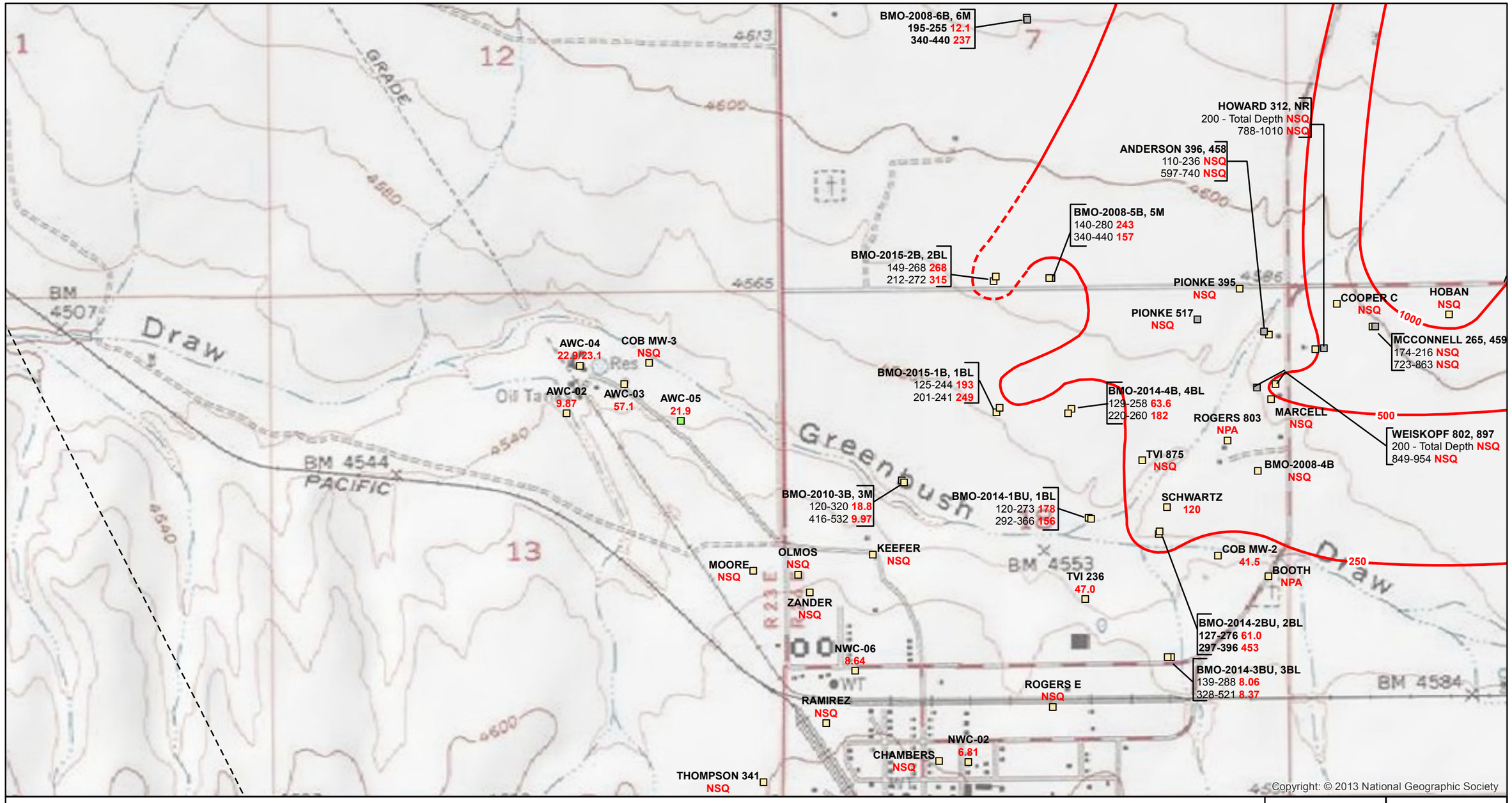
NSQ = Not Scheduled for Quarter
NPA = No Property Access
WIO = Well Inoperable
mg/L = milligrams per liter
ft bls = feet below land surface
Sulfate contours are based on represented and historical data.

Scale (Feet)
0 3,000 6,000
Projection: UTM Zone 12N NAD83

Date 2/21/18
File ID 055038-501B

CLEAR CREEK ASSOCIATES

FIGURE 6
SULFATE CONCENTRATIONS IN SITE-WIDE GROUNDWATER SAMPLES FOR THIRD QUARTER 2017



Legend

- **NWC-02** Well ID
- 6.81 Sulfate Concentration (mg/L)
  Duplicate results separated by "/"
- Sulfate Concentration (dashed where inferred)
- 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 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
mg/L = milligrams per liter
ft bls = feet below land surface
Sulfate contours are based on represented and historical data.

Scale (Feet)
0 1,000 2,000

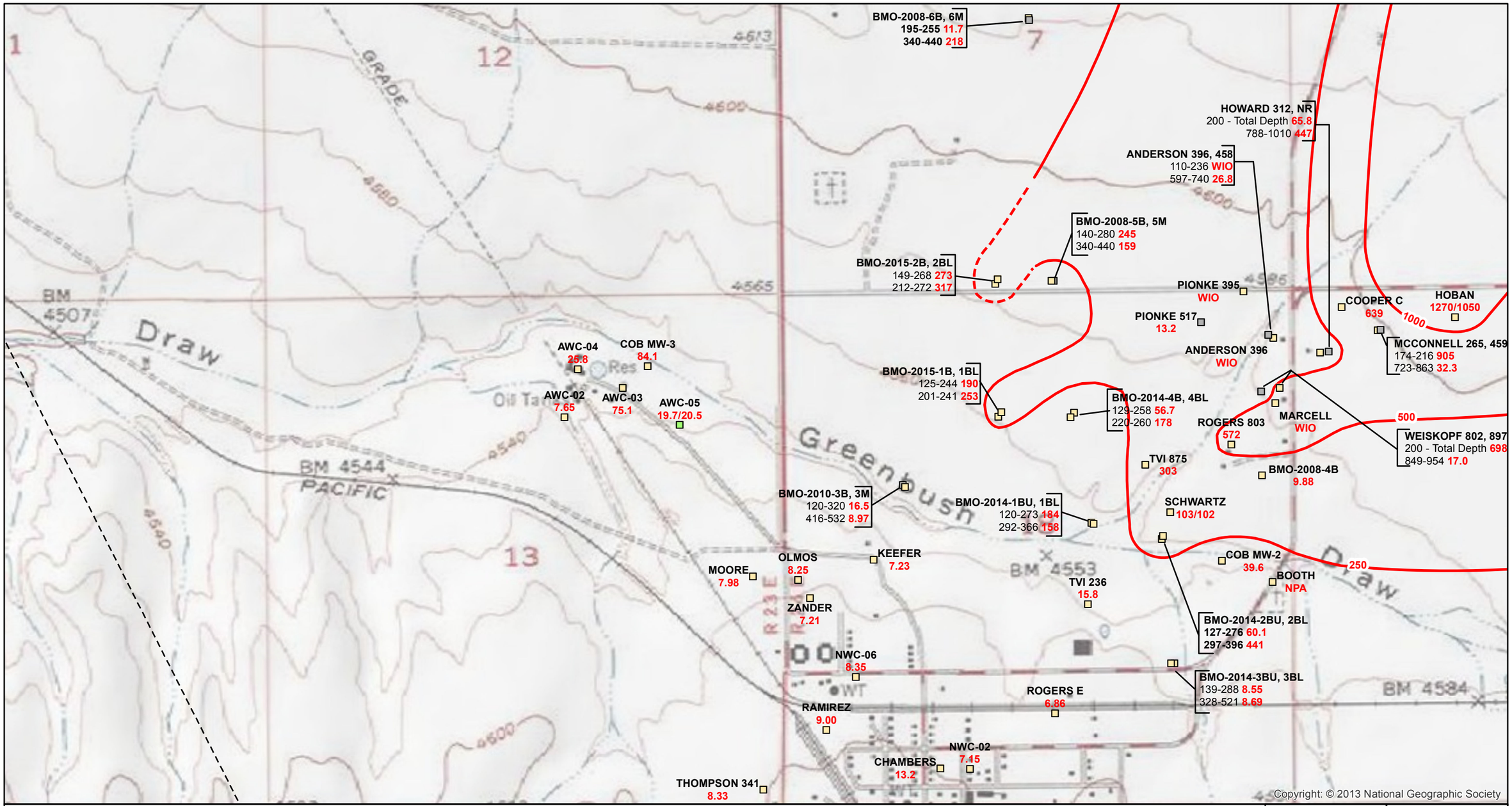
Projection: UTM Zone12N
NAD83

Date 2/19/18

File ID 055038-491B

CLEAR CREEK ASSOCIATES

FIGURE 7
SULFATE CONCENTRATIONS AT THE WEST EDGE OF THE PLUME FOR FIRST QUARTER 2017



Legend

- **NWC-02** Well ID
- 7.15 Sulfate Concentration (mg/L)
  Duplicate results separated by "/"
- Sulfate Concentration (dashed where inferred)
- 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 Glance Conglomerate
- Glance Conglomerate
- Glance Conglomerate - Estimated

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

NPA = No Property Access
WIO = Well Inoperable
mg/L = milligrams per liter
ft bls = feet below land surface
Sulfate contours are based on represented and historical data.

Scale (Feet)
0 1,000 2,000

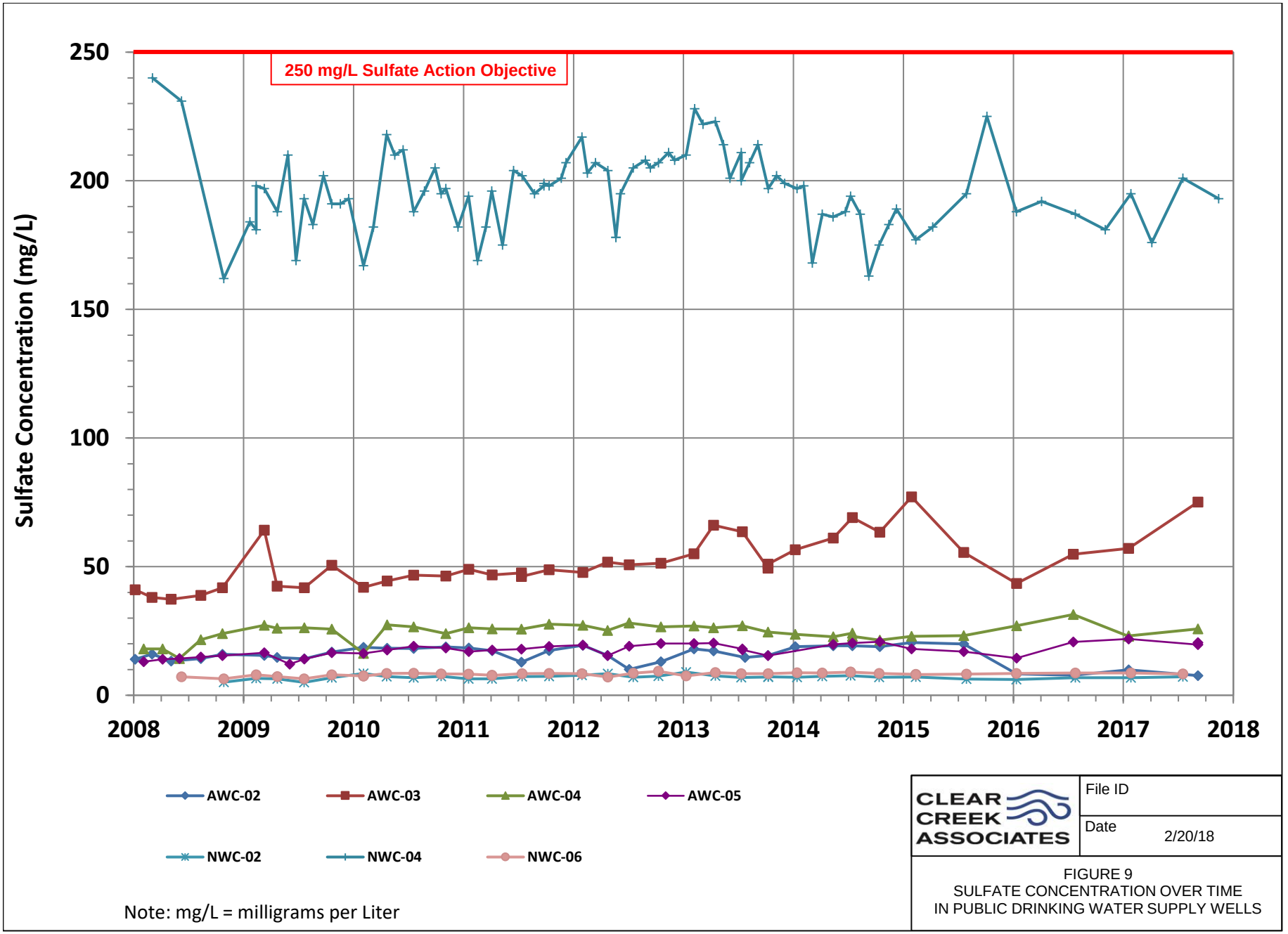
Projection: UTM Zone12N
NAD83

Date 2/20/18

File ID 055038-499B

CLEAR CREEK ASSOCIATES

FIGURE 8
SULFATE CONCENTRATIONS AT THE WEST EDGE OF THE PLUME FOR THIRD QUARTER 2017



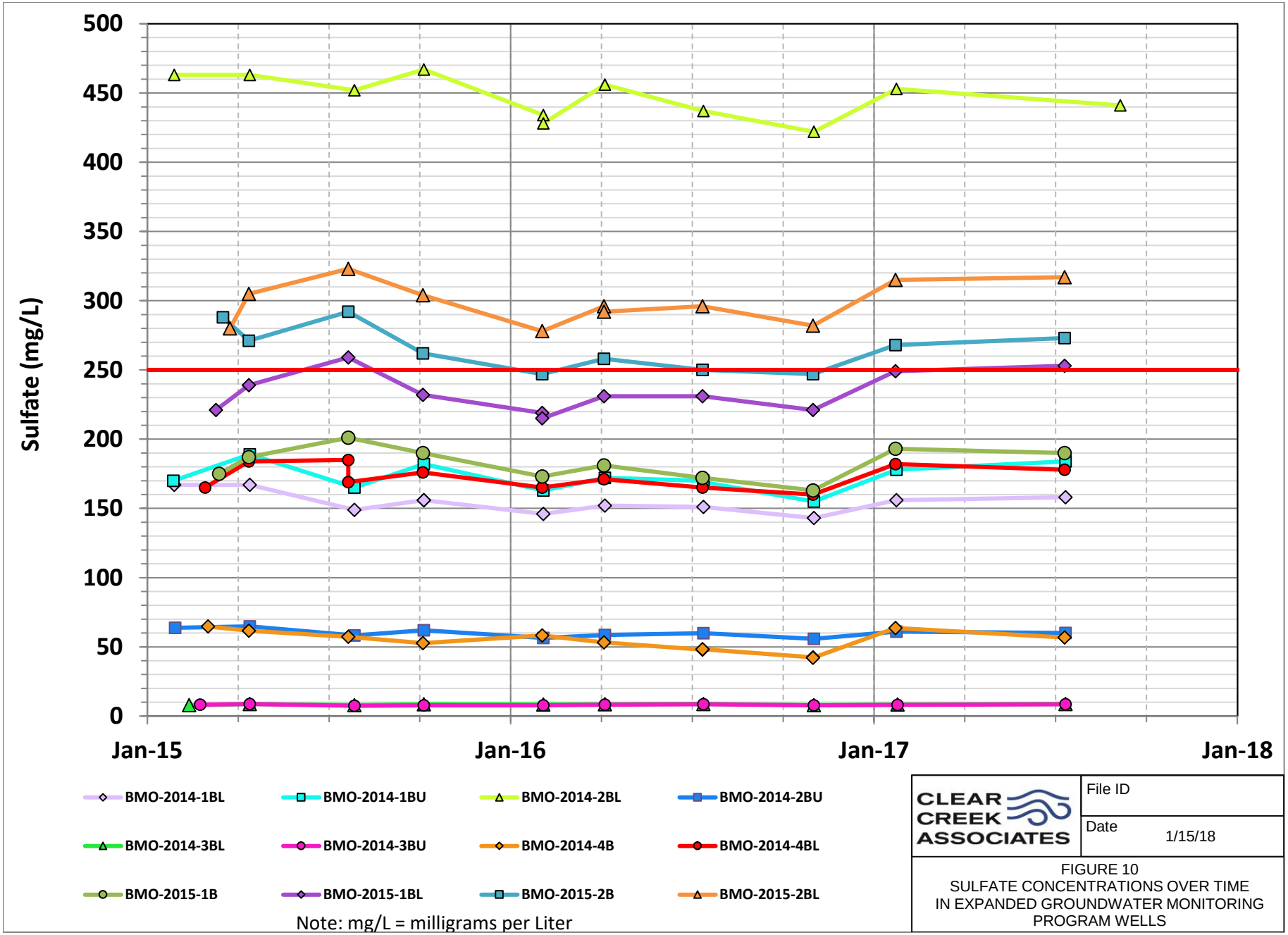
Note: mg/L = milligrams per Liter

CLEAR CREEK ASSOCIATES

File ID

Date 2/20/18

FIGURE 9
SULFATE CONCENTRATION OVER TIME
IN PUBLIC DRINKING WATER SUPPLY WELLS



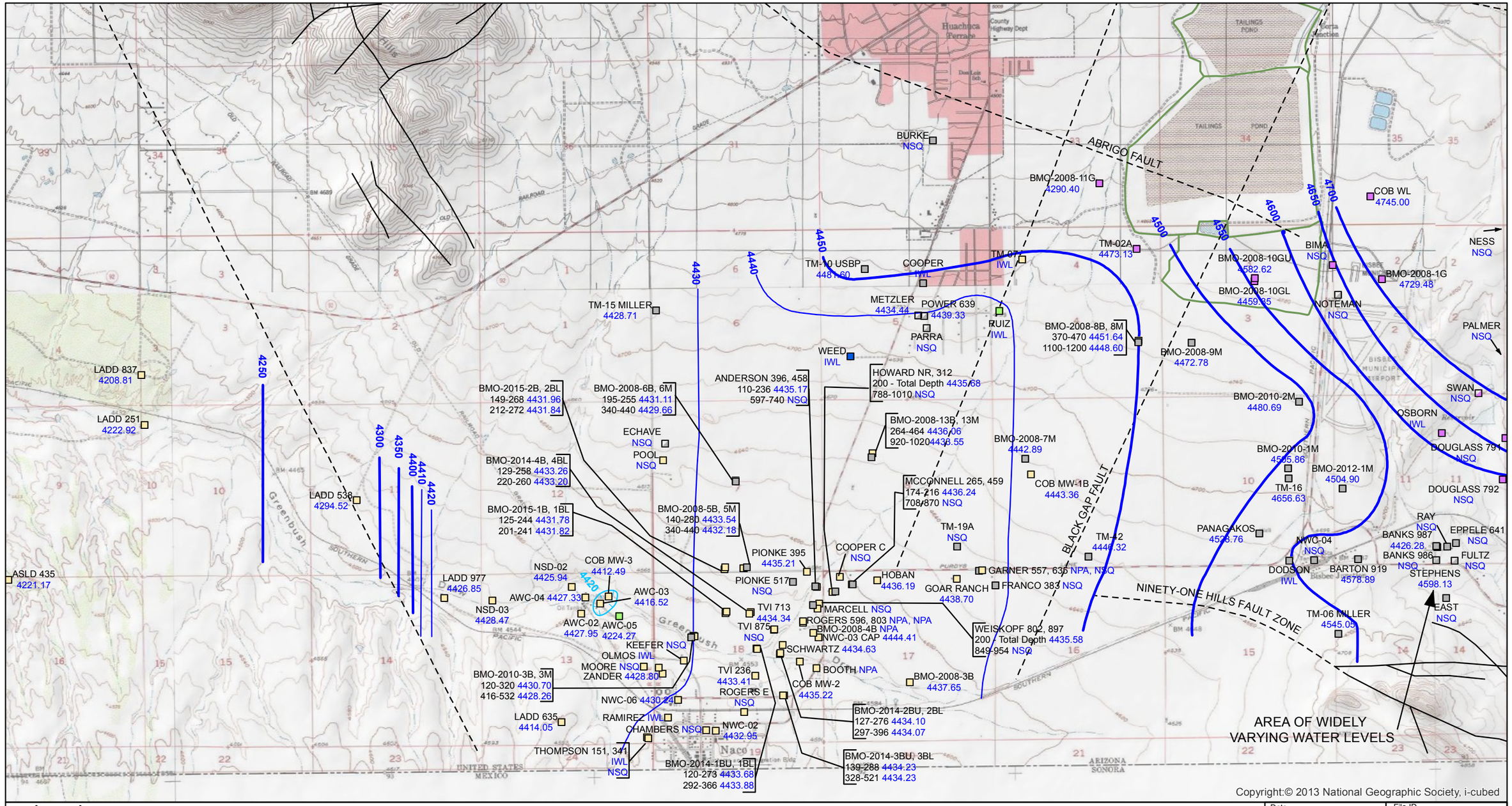
Note: mg/L = milligrams per Liter

CLEAR CREEK ASSOCIATES

File ID

Date 1/15/18

FIGURE 10
SULFATE CONCENTRATIONS OVER TIME
IN EXPANDED GROUNDWATER MONITORING
PROGRAM WELLS



Legend

- AWC-05 Well ID
- 4224.27 Groundwater Elevation (ft amsl)
- Groundwater Elevation Contours (10 ft)
- Groundwater Elevation Contours (50 ft) (dashed where inferred)
- Groundwater Depression
- Faults (dashed where inferred)
- CTSA 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 = Inaccesible 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
LADD 635 and NWC-03 CAP were not used for contouring

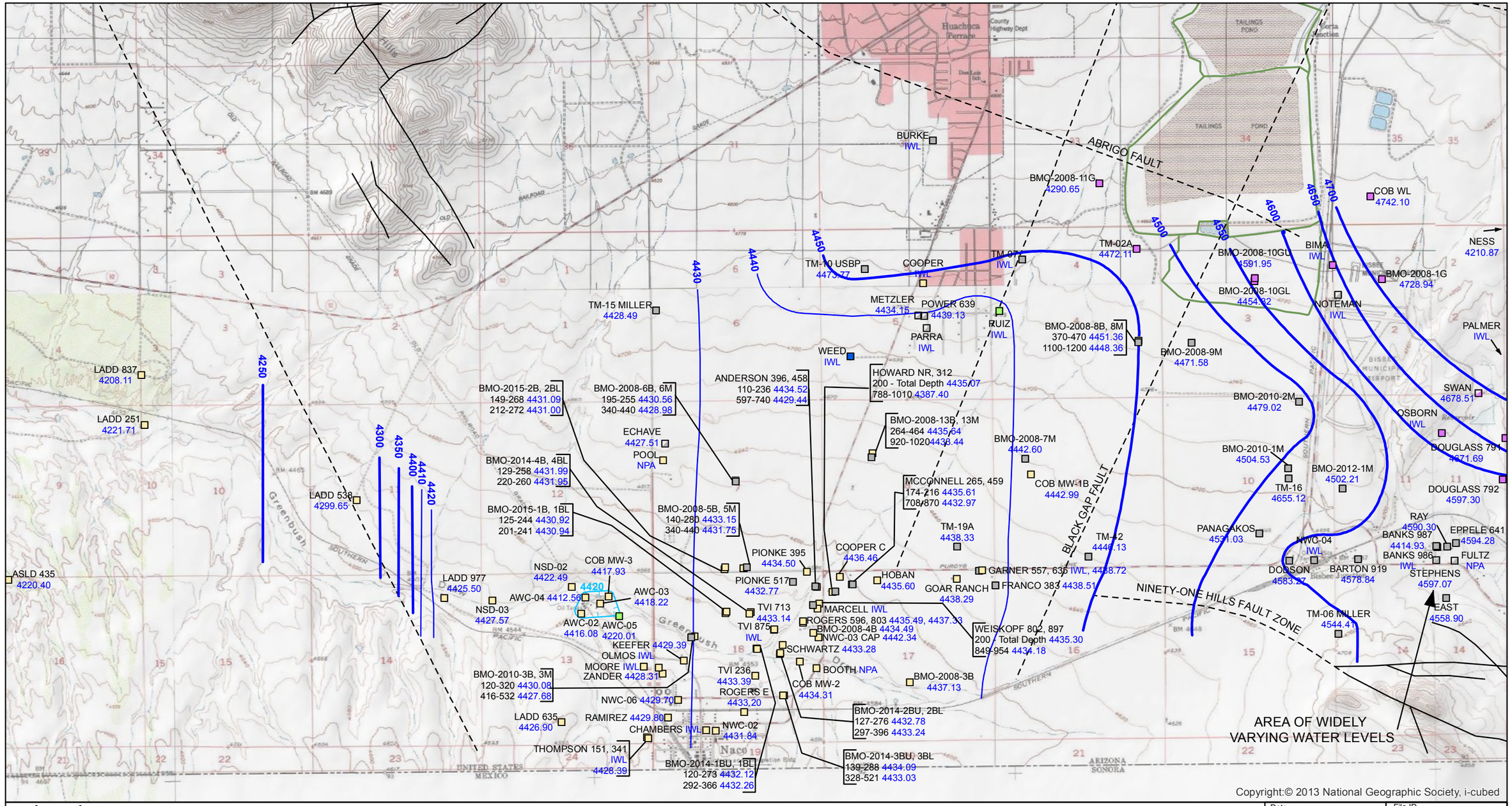
Scale (Feet)
0 3,000 6,000

Projection: UTM Zone 12N NAD83

Date 3/24/17
File ID 055038-490

CLEAR CREEK ASSOCIATES

FIGURE 11
SITE-WIDE
GROUNDWATER ELEVATIONS
FOR FIRST QUARTER 2017



Legend

- AWC-05 Well ID
- 4220.01 Groundwater Elevation (ft amsl)
- Groundwater Elevation Contours (10 ft)
- Groundwater Elevation Contours (50 ft) (dashed where inferred)
- Groundwater Depression
- Faults (dashed where inferred)
- CTSA 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 = Inaccesible for Water Level
NPA = No Property Access
ft amsl = feet above mean sea level
ft bls = feet below land surface
NWC-03 CAP not used for contouring

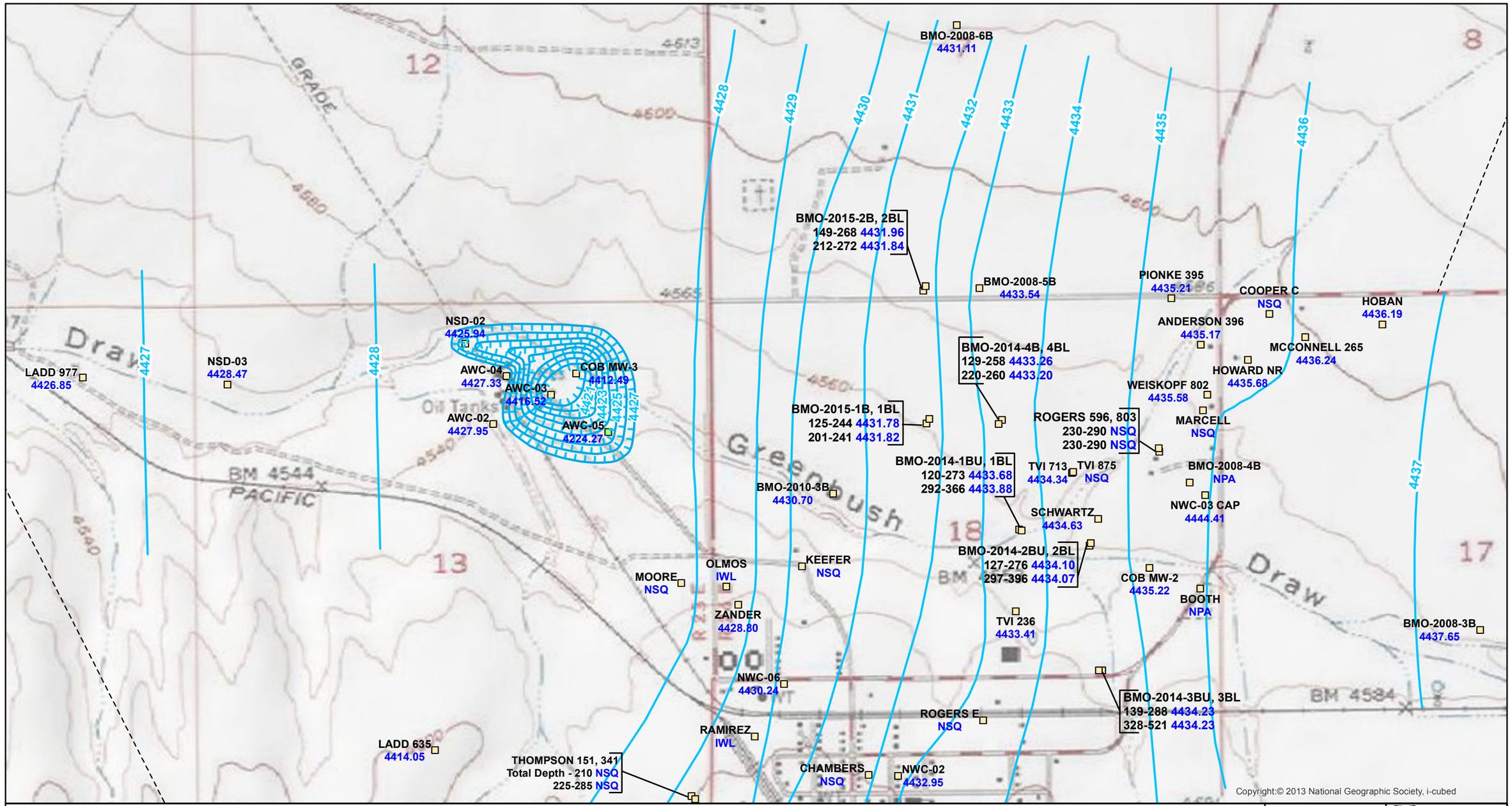
Scale (Feet)
0 3,000 6,000

Projection: UTM Zone 12N NAD83

Date 1/25/18
File ID 055038-496A

CLEAR CREEK ASSOCIATES

FIGURE 12
SITE-WIDE
GROUNDWATER ELEVATIONS
FOR THIRD QUARTER 2017



Legend

- AWC-02 Well ID
  4427.64 Groundwater Elevation (ft amsl)
- Groundwater Elevation Contour (ft amsl)
- Groundwater Elevation Depression Contour (ft amsl)
- Faults (dashed where inferred)

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 = Inaccesible 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
LADD 635 and NWC-03 CAP were not used for contouring

Scale (Feet)
0 1,000 2,000

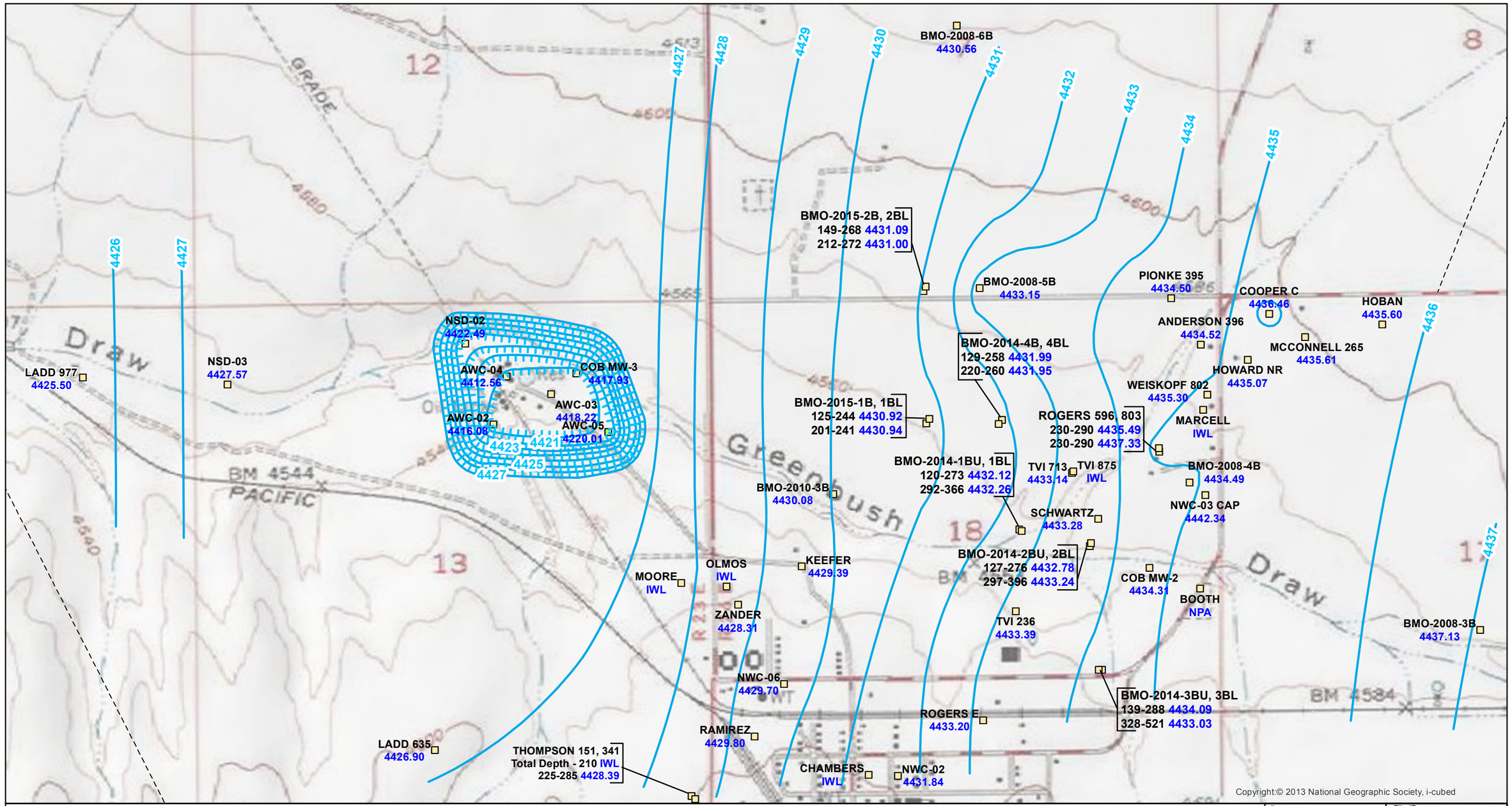
Projection: UTM Zone 12N NAD83

Date 2/22/18

File ID 055038-489

CLEAR CREEK ASSOCIATES

FIGURE 13
BASIN FILL
GROUNDWATER ELEVATIONS
AT WEST EDGE OF PLUME
FOR FIRST QUARTER 2017



Legend

- **AWC-02** Well ID
  4416.08 Groundwater Elevation (ft amsl)
- Groundwater Elevation Contour (ft amsl)
- Groundwater Elevation Depression Contour (ft amsl)
- Faults (dashed where inferred)

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 = Inaccesible for Water Level
NPA = No Property Access
ft amsl = feet above mean sea level
ft bls = feet below land surface
NWC-03 CAP was not used for contouring

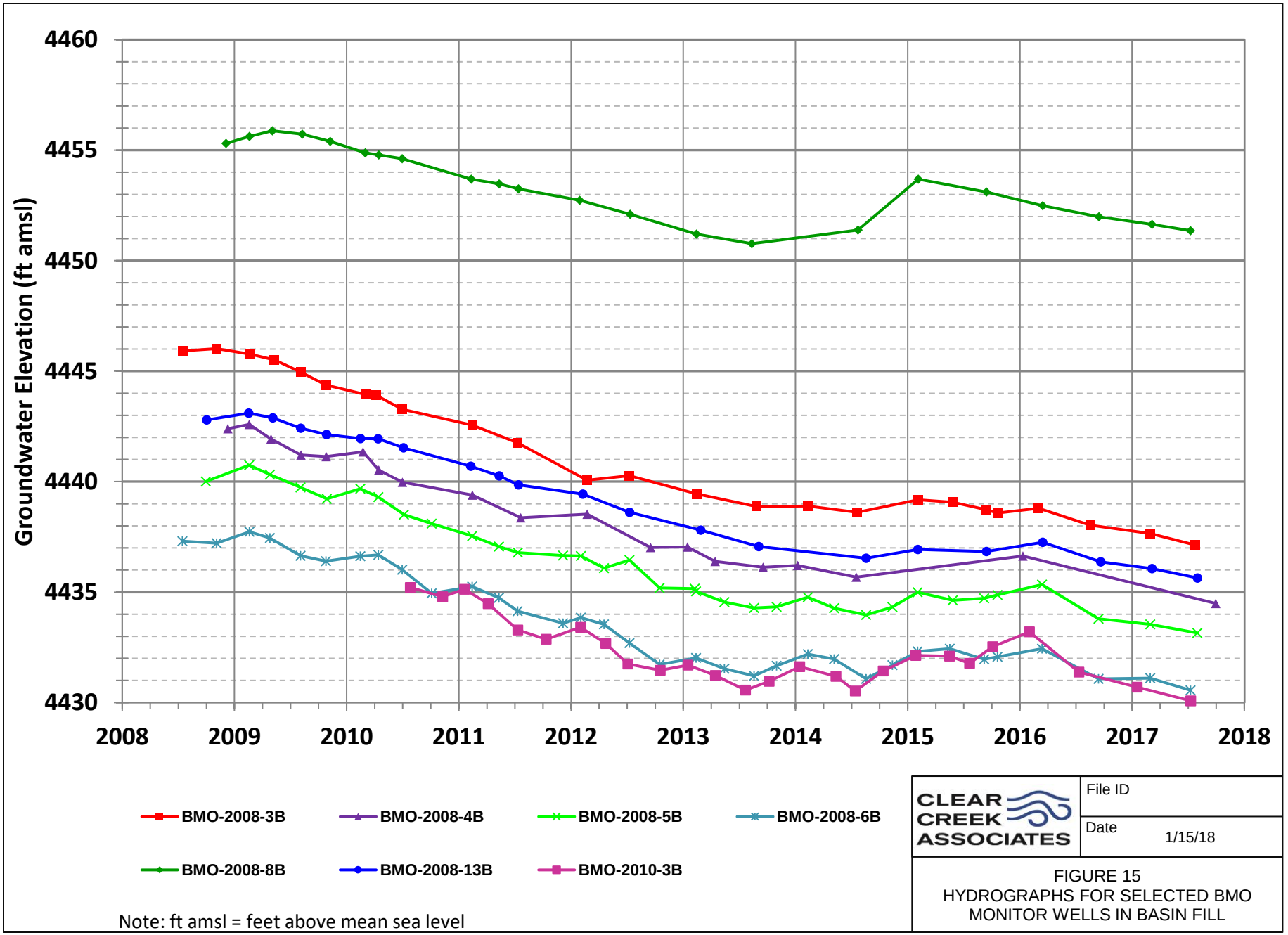
Scale (Feet)
0 1,000 2,000

Projection: UTM Zone
12N NAD83

Date	File ID
1/25/18	055038-497

CLEAR CREEK ASSOCIATES

FIGURE 14
BASIN FILL
GROUNDWATER ELEVATIONS
AT WEST EDGE OF PLUME
FOR THIRD QUARTER 2017



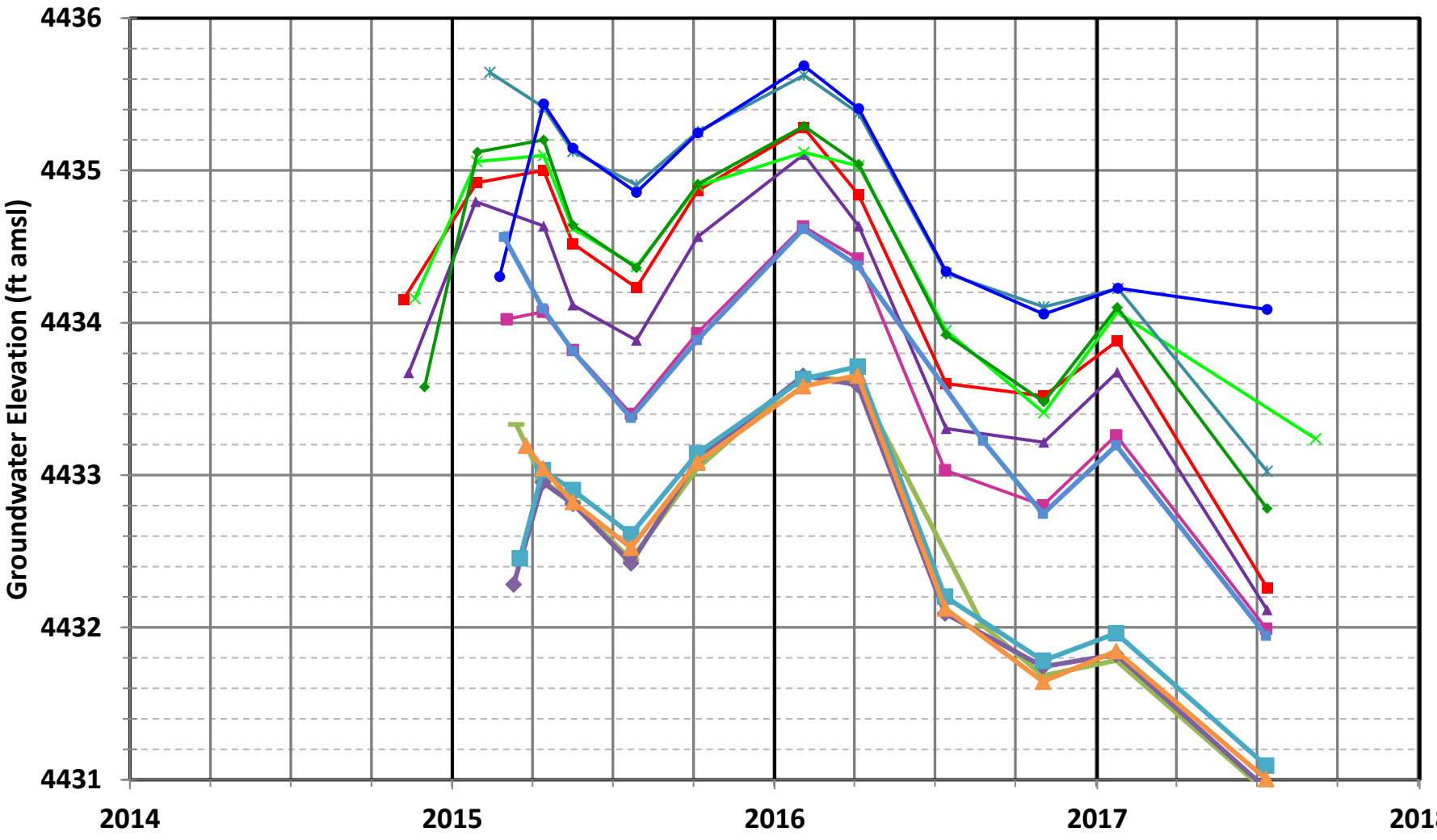
Note: ft amsl = feet above mean sea level

CLEAR CREEK ASSOCIATES

File ID

Date 1/15/18

FIGURE 15
HYDROGRAPHS FOR SELECTED BMO MONITOR WELLS IN BASIN FILL



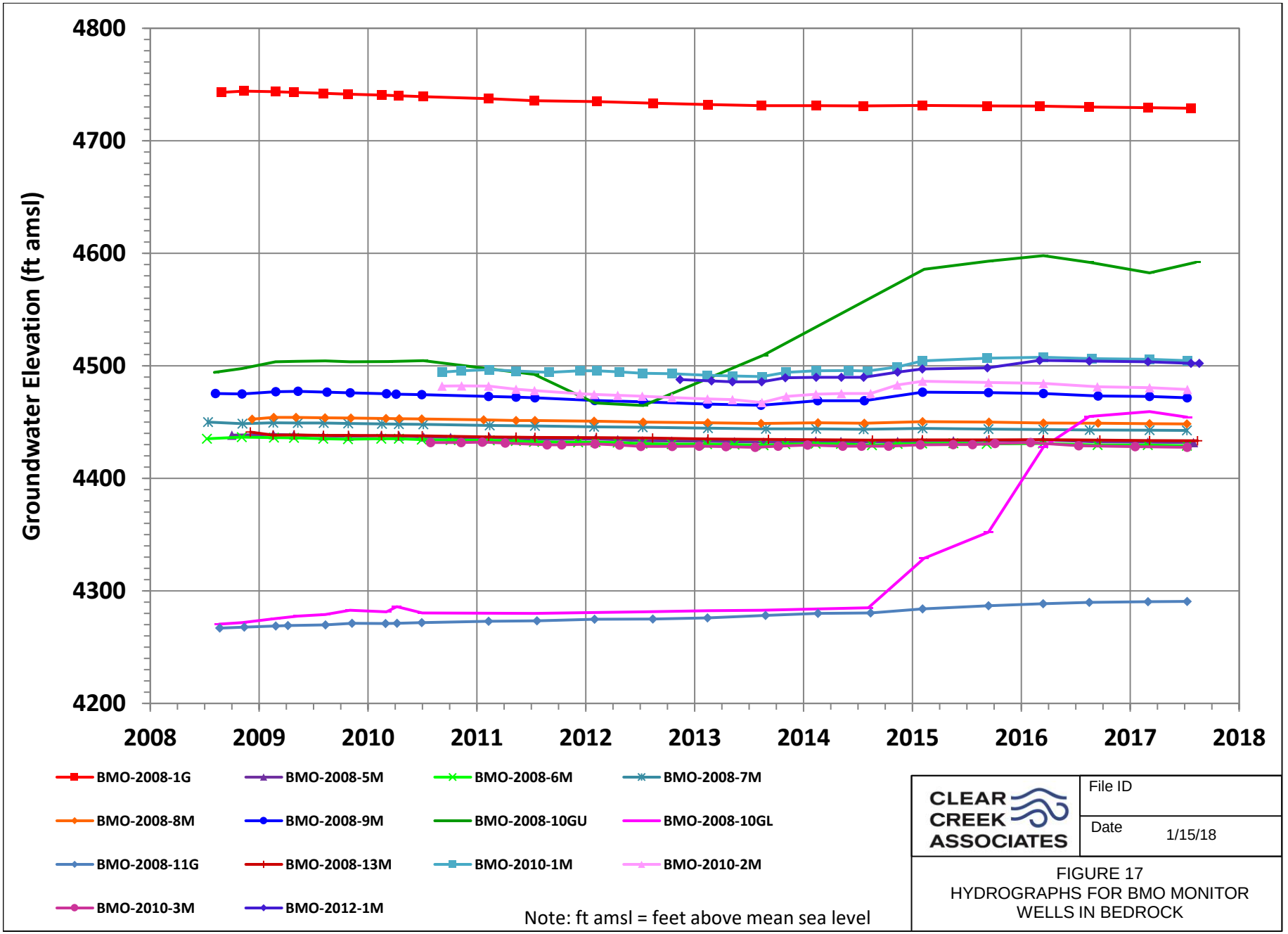
Note: ft amsl = feet above mean sea level

CLEAR CREEK ASSOCIATES

File ID

Date 1/15/18

FIGURE 16
HYDROGRAPHS FOR BMO MONITOR WELLS IN BASIN FILL
FOR EXPANDED GROUNDWATER MONITORING PROGRAM



Note: ft amsl = feet above mean sea level

CLEAR CREEK ASSOCIATES

File ID

Date 1/15/18

FIGURE 17
HYDROGRAPHS FOR BMO MONITOR WELLS IN BEDROCK

APPENDICES

APPENDIX A

GROUNDWATER SAMPLING FORMS

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 1-16-2017

Well ID: ANDERSON 396 | Weather: cloudy, 50's

ADWR No: 613396 | Sampler: JA

WELL DATA

Well Depth (ft bls): 285

Casing Diameter (in): 8

Static Water Level (ft bmp): 153.34'

Casing Volume (gal): x3 = Ø

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
			WLO				
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-19-2017
Well ID:	AWC-02	Weather:	Cloud, 40s
ADWR No:	616586	Sampler:	JA

WELL DATA

Well Depth (ft bls):	333
Casing Diameter (in):	20
Static Water Level (ft bmp):	119.69
Casing Volume (gal):	3479 x3 = 10437
Total Volume Purged (gal):	10800

20" = 16.31

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1315	Pump On						
1330	15	108	1620	7.62	20.4	441.7	
1345	30	108	3240	7.41	20.5	441.0	
1400	45	108	4860	7.41	20.4	434.2	
1415	60	108	6480	7.36	20.4	435.5	
1430	75	108	8100	7.36	20.4	432.3	
1445	90	108	9720	7.35	20.4	430.1	
1452	97	108	10476	7.33	20.5	428.7	
1455							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-02	1454	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 1-19-17

Well ID: AWC-03 | Weather: cloudy, 40's

ADWR No: 816585 | Sampler: JA

WELL DATA

Well Depth (ft bls): 270

Casing Diameter (in): ~~4~~ 7 16

Static Water Level (ft bmp): 123.00 (well was pumping ~245 min ago)

Casing Volume (gal): 1535 x3 = 4605

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
16 = 10.44 4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1155	Pump On						
1200	5	840	4200	7.41	19.4	480.6	
1202	7	840	5880	7.41	20.1	~~487~~ J^A 476.6	
1204	9	840	7560	7.41	20.1	473.8	
1206	11	840	9240	7.40	20.0	473.5	
1208	12	840	10920	7.41	20.1	473.5	
1210	14	840	12600	7.41	20.0	480.4	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-03	1215	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-19-2017
Well ID:	AWC-04	Weather:	Cloudy, 40's
ADWR No:	616584	Sampler:	JA

WELL DATA

Well Depth (ft bls):	337
Casing Diameter (in):	16
Static Water Level (ft bmp):	113.15
Casing Volume (gal):	2337 x3 = 7011
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

16 = 10.44

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1232	Pump On						
1237	5	880	4400	7.09	19.6	655.1	
1239	7	880	6160	7.06	19.6	655.0	
1241	9	880	7920	7.07	19.6	658.0	
1243	11	880	9680	7.06	19.6	657.8	
1245	13	880	11440	7.06	19.6	658.6	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-04	1255	Poly	250mL	1	300.0	NP	Y
DUP-011917	~~1256~~ 1358 JA	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-19-2017
Well ID:	AWC-05	Weather:	cloudy, 40's
ADWR No:	590620	Sampler:	JH

WELL DATA

Well Depth (ft bls):	1183
Casing Diameter (in):	16
Static Water Level (ft bmp):	318.24 (Pumping)
Casing Volume (gal):	9028. x3 = 27084
Total Volume Purged (gal):	92750

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
08:40	Pump On						
11:16	156	530	82680	7.46	21.3	434.7	
11:18	158	530	83740	7.46	21.3	434.9	
11:20	160	530	84800	7.45	21.4	433.2	
11:22	162	530	85860	7.46	21.4	432.7	
11:24	164	530	86920	7.46	21.4	434.7	
11:26	166	530	87980	7.46	21.4	438.2	
11:28	168	530	89040	7.46	21.3	432.8	
11:30	170	530	90100	7.45	21.4	436.7	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-05	1135	poly	250 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [x] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [x] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Well is pumping, on @ ~08:40

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 1-17-2017

Well ID: BANKS 987 | Weather: Pt. Cloudy, 50's

ADWR No: 647987 | Sampler: JA

WELL DATA

Well Depth (ft bls): 339

Casing Diameter (in): 6

Static Water Level (ft bmp): 221.90

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		WLO					
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-17-2017
Well ID:	BARTON 919	Weather:	Pt. Cloudy, 50's
ADWR No:	644919	Sampler:	JA

WELL DATA

Well Depth (ft bls):	130
Casing Diameter (in):	6
Static Water Level (ft bmp):	113.47
Casing Volume (gal):	x3 = Ø
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		WL	0				
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [x] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 3-1-17

Well ID: BMO - 2008 - 16 Weather: Sunny

ADWR No: Sampler: Christopher L Shuran

WELL DATA

Well Depth (ft bls):	310
Casing Diameter (in):	5"
Static Water Level (ft bmp):	75.62
Casing Volume (gal):	239 x3 = 717
Total Volume Purged (gal):	747

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1250	Pump On						
1320	30	8.3	249	6.94	21.7	923	
1340	50	8.3	415	6.96	22.2	923	
1400	70	8.3	581	6.97	22.0	922	
1420	90	8.3	747	6.94	22.1	923	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-16	1420	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 234.3

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 3-2-17

Well ID: BMO-2012-1M Weather: Sunny

ADWR No: Sampler: Christopher L Sturman

WELL DATA

Well Depth (ft bls): 405

Casing Diameter (in): 5"

Static Water Level (ft bmp): 216.10

Casing Volume (gal): 192.7 x3 = 578.1

Total Volume Purged (gal): 600

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1040	Pump On						
1050	10	6	60	6.96	23.4	921	
1110	30	6	180	6.94	23.5	920	
1140	60	6	360	6.96	23.2	920	
1220	100	6	600	6.98	23.1	922	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2012-1M	1220	PL	250	1	300	Ice	X
Dup-030217	1220	PL	250	1	300	Ice	X

WATER LEVEL MEASUREMENT COLLECTION

- [X] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [X] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

189

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 3-1-17

Well ID: BMO-2008-3B Weather: Sunny

ADWR No: Sampler: Christopher L Slaymaker

WELL DATA

Well Depth (ft bls):	260
Casing Diameter (in):	5"
Static Water Level (ft bmp):	146.32
Casing Volume (gal):	116 x3 = 348
Total Volume Purged (gal):	540

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1210	Pump On						
1220	10	27	135	6.91	21.0	618	
1225	15	27	405	6.96	20.9	616	
1230	20	27	540	6.99	21.0	618	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-3B	1230	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

113.7

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 3-1-17

Well ID: BMO-2008-5B Weather: Sunny

ADWR No: Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls): 285

Casing Diameter (in): 5"

Static Water Level (ft bmp): 151.56

Casing Volume (gal): 136 x3 = 408

Total Volume Purged (gal): 675

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1110	Pump On						
1115	5	27	135	7.04	21.4	757	
1125	15	27	405	7.08	21.5	760	
1135	25	27	675	7.07	21.5	756	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-5B	1135	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☑ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☑ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

133.4

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 3-1-17

Well ID: BMO-2008-5M Weather: Sunny

ADWR No: Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):	450
Casing Diameter (in):	5"
Static Water Level (ft bmp):	152.84
Casing Volume (gal):	303 x3 = 909
Total Volume Purged (gal):	990

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1005	Pump On						
1030	25	18	450	6.99	22.6	624	
1050	45	18	810	6.95	22.5	623	
1100	55	18	990	6.97	22.4	621	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-5M	1100	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

297

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 3-1-17

Well ID: BMO-2008-6B Weather: Sunny

ADWR No: Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls): 265

Casing Diameter (in): 5"

Static Water Level (ft bmp): 196.33

Casing Volume (gal): 70 x3 = 210

Total Volume Purged (gal): 225

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0855	Pump On						
0910	15	5.1	75	7.30	21.3	276	
0925	30	5.1	150	7.35	21.5	273	
0940	45	5.1	225	7.37	21.4	271	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-6B	0940	PL	250	1	300	Ice	X

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

684

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 3-1-17

Well ID: BMO-2008-6M Weather: Sunny

ADWR No: Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):	450
Casing Diameter (in):	5"
Static Water Level (ft bmp):	197.24
Casing Volume (gal):	257.7 x3 = 773.1
Total Volume Purged (gal):	840

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0810	Pump On						
0820	10	21	210	6.86	21.8	741	
0830	20	21	420	6.91	22.2	743	
0840	30	21	630	6.89	22.0	740	
0850	40	21	840	6.92	21.9	745	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-6M	0850	PL	250	1	300	Ice	X

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

2527

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 3-2-17

Well ID: BMO-2008-116 Weather: Sunny

ADWR No: Sampler: Christopher L Slumm

WELL DATA

Well Depth (ft bls): 760

Casing Diameter (in): 5"

Static Water Level (ft bmp): 554.27

Casing Volume (gal): 210 x3 = 630

Total Volume Purged (gal): 640

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0830	Pump On						
0840	10	8	80	7.48	24.6	327	
0900	30	8	240	7.52	24.7	325	
0930	60	8	480	7.58	24.7	328	
0950	80	8	640	7.59	24.8	328	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-116	0950	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☑ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☑ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: 205.7

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-18-2017
Well ID:	BMO-2010-3B	Weather:	clear, 40's
ADWR No:	219970	Sampler:	JA

WELL DATA

Well Depth (ft bls):	330
Casing Diameter (in):	5
Static Water Level (ft bmp):	119.89
Casing Volume (gal):	214 x3 = 642
Total Volume Purged (gal):	744

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0911	Pump On						
0926	15	8	120	7.51	20.0	421.0	lt. brown color
0941	30	8	240	7.52	20.3	414.3	clear
0956	45	8	360	7.48	20.5	414.8	
1011	60	8	480	7.46	20.5	413.4	
1026	75	8	600	7.45	20.5	413.9	
1041	90	8	720	—	—	—	
1044							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2010-3B	1041	Poly	250mL	1	300.00	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 1-18-2017

Well ID: BMO-2010-3M | Weather: Pt. Cloudy, 50's

ADWR No: 219969 | Sampler: JA

WELL DATA

Well Depth (ft bls): 532

Casing Diameter (in): 5

Static Water Level (ft bmp): 122.27

Casing Volume (gal): 418 x3 = 1254

Total Volume Purged (gal): 1281

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1058	Pump On						
1118	20	7	140	8.22	21.2	284.1	lt. brown color
1138	40	7	280	7.59	21.7	379.7	brown color
1158	60	7	420	7.58	22.0	379.9	lt brown color
1218	80	7	560	7.57	22.1	378.5	lt. brown color
1238	100	7	700	7.55	22.1	379.5	lt. yellow color
1258	120	7	840	7.55	22.1	379.4	clear
1318	140	7	980	7.56	22.2	380.4	↓
1338	160	7	1120	7.55	22.2	378.9	↓
1358	180	7	1260	7.54	22.2	382.3	Pump Off → 1405

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2010-3M	1401	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 1-24-2017

Well ID: BMO-2014-1BL Weather: Pt. Cloudy, 50's

ADWR No: ~~417394~~ 917393 Sampler: JA

WELL DATA

Well Depth (ft bls): 366

Casing Diameter (in): 5

Static Water Level (ft bmp): 124.57

Casing Volume (gal): 246 x3 = 739

Total Volume Purged (gal): 924

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1302	Pump On						
1317	15	14	210	7.28	21.5	683.7	
1332	30	14	420	7.29	21.3	685.3	
1347	45	14	630	7.29	21.4	687.2	
1357	55	14	770	7.29	21.4	684.6	
1408	66						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-1BL	1405	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-24-2017
Well ID:	BMO-2014-1BU	Weather:	Pt. cloudy, 50's
ADWR No:	~~417393~~ 55A 917394 written on well	Sampler:	JA

WELL DATA

Well Depth (ft bls):	273
Casing Diameter (in):	5
Static Water Level (ft bmp):	124.86
Casing Volume (gal):	151 x3 = 453
Total Volume Purged (gal):	546

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	~~1.02~~
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1208							
~~1150~~	Pump On						
1218	10	13	130	7.27	20.7	738.1	~13.6 gpm
1228	20	13	260	7.29	20.6	733.2	
1238	30	13	390	7.29	20.6	722.5	
1243	35	13	455	7.28	20.5	722.8	
1250	42						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2017-1BU	12:42	poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Generator cut out after 2 minutes - has happened at this particular well before? First started @ 1118

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 1-24-2017

Well ID: BMO-2014-2BL | Weather: Cloudy, 30's, freezing rain

ADWR No: 917452 | Sampler: JA

WELL DATA

Well Depth (ft bls): 396

Casing Diameter (in): 5

Static Water Level (ft bmp): 127.73

Casing Volume (gal): 274 x3 = 822

Total Volume Purged (gal): 888

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0801	Pump On						
0816	15	8	120	7.11	20.4	1174	
0831	30	8	240	7.13	20.4	1173	
0846	45	8	360	7.12	21.1	1180	
0901	60	8	480	7.10	21.2	1176	
0916	75	8	600	7.12	21.2	1176	
0931	90	8	720	7.11	21.1	1176	
0946	105	8	840	7.11	21.3	1170	
0952	111						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-2BL	0950	Poly	250mL	1	300	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 1-24-2017

Well ID: BMO-2014-2BU Weather: Pt. Cloud, 40's

ADWR No: 917453 Sampler: JA

WELL DATA

Well Depth (ft bls): 276

Casing Diameter (in): 5

Static Water Level (ft bmp): 127.75

Casing Volume (gal): 151 x3 = 454

Total Volume Purged (gal): 658

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0958	Pump On						
1008	10	14	140	7.36	20.0	526.5	
1018	20	14	280	7.35	20.1	531.3	
1028	30	14	420	7.37	20.1	528.7	
1033	35	14	490	7.36	20.1	531.2	
1045	47						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-2BU	10:41	poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-25-2017
Well ID:	BMO-2014-3BL	Weather:	Clear, 20's
ADWR No:	917527	Sampler:	JA

WELL DATA

Well Depth (ft bls):	521
Casing Diameter (in):	5
Static Water Level (ft bmp):	139.54
Casing Volume (gal):	389 x3 = 1167
Total Volume Purged (gal):	1404

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0730	Pump On						
0750	20	13	260	7.40	20.9	414.8	~13.6 gpm
0810	40	13	520	7.41	21.2	412.5	
0830	60	13	780	7.42	21.4	410.9	
0850	80	13	1040	7.40	21.4	409.9	
0900	90	13	1170	7.40	21.4	408.3	
0908	–	–	–	–	–	–	Generator cuts out
0938	100	13	1300	7.39	21.3	405.8	
0940	102	13	1326	7.38	21.4	406.4	
0946	108	13					Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-3BL	0943	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other:

Additional Comments: Generator cut out as preparing to sample @ 0908
Back on @ 0928 (20 minutes down)

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-25-2017
Well ID:	BMO-2014-3BU	Weather:	Clear 40's
ADWR No:	917494	Sampler:	SA

WELL DATA

Well Depth (ft bls):	288
Casing Diameter (in):	5
Static Water Level (ft bmp):	140.66
Casing Volume (gal):	150 x3 = 451
Total Volume Purged (gal):	611

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0952	Pump On						
1002	10	13	130	7.39	20.0	464.0	~13.6 gpm
1012	20	13	260	7.39	20.0	460.7	
1022	30	13	390	7.36	20.1	458.2	
1032	40	13	520	7.36	20.0	458.1	
1039	47						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-3BU	1036	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-23-2017
Well ID:	BMO-2014-4B	Weather:	Sunny, 50's, Windy
ADWR No:	917620	Sampler:	JA

WELL DATA

Well Depth (ft bls):	258
Casing Diameter (in):	5
Static Water Level (ft bmp):	134.41
Casing Volume (gal):	126 x3 = 378
Total Volume Purged (gal):	546

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1340	Pump On						
1350	10	13	130	7.40	20.4	495.1	~13.7 gpm
1355	15	13	195	7.44	20.4	491.8	
1400	20	13	260	7.42	20.4	490.6	
1405	25	13	325	7.42	20.4	490.5	
1410	30	13	390	7.42	20.4	493.0	
1422	42						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-4B	1418	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-23-2017
Well ID:	BMO-2014-4BL	Weather:	Pt cloudy, 50's, windy
ADWR No:	917619	Sampler:	JA

WELL DATA

Well Depth (ft bls):	201
Casing Diameter (in):	5
Static Water Level (ft bmp):	133.85
Casing Volume (gal):	129.7 x3 = 389
Total Volume Purged (gal):	494

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1252	Pump On						
1302	10	13	~~390~~ 130	7.32	20.6	652.1	
1307	15	13	195	7.36	20.6	~~672.4~~ 672.4	
1312	20	13	260	7.36	20.7	675.5	
1317	25	13	325	7.35	20.7	677.3	
1322	30	13	390	7.37	20.6	672.1	
1330	38						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-4BL	1326	PO1	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 1-23-2017

Well ID: BMO-2015-1B | Weather: pt cloudy, 50's

ADWR No: 917622 | Sampler: SA

WELL DATA

Well Depth (ft bls): 244

Casing Diameter (in): 5

Static Water Level (ft bmp): 130.28

Casing Volume (gal): 116 x3 = 348

Total Volume Purged (gal): 494

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
10:39	Pump On						
1049	10	13	130	7.43	20.4	721.5	
1054	15	13	195	7.43	20.3	714.5	
1059	20	13	260	7.42	20.4	703.3	
1104	25	13	325	7.42	20.4	697.3	
1109	30	13	390	7.43	20.4	692.6	
11:17	38						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-1B	11:13	Poly	250 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 1-23-2017

Well ID: BMO-2015-IBL | Weather: Pt Cloudy, 50's

ADWR No: 917621 | Sampler: JA

WELL DATA

Well Depth (ft bls): 241

Casing Diameter (in): 5

Static Water Level (ft bmp): 131.58

Casing Volume (gal): 134 x3 = 403

Total Volume Purged (gal): 533

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
11:28	Pump On						
11:33	5	13	65	7.39	20.4	777.1	
11:38	10	13	130	7.40	20.5	774.1	
11:43	15	13	195	7.40	20.4	773.8	
11:48	20	13	260	7.39	20.4	774.7	
11:53	25	13	325	7.39	20.5	770.9	
11:58	30	13	390	7.39	20.5	769.8	
12:03	32	13	455	7.39	20.5	769.1	
12:12	41						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-IBL	12:09	Poly	250 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 1-23-2017

Well ID: BMO-2015-2B | Weather: Pt. Cloud, 40's

ADWR No: 917827 | Sampler: SA

WELL DATA

Well Depth (ft bls):	~~272~~ SA 268
Casing Diameter (in):	5
Static Water Level (ft bmp):	150.12'
Casing Volume (gal):	120 x3 = ~~360~~ SA 361
Total Volume Purged (gal):	520

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0835	Pump On						
0848	~~10~~ SA 13	13	169	7.20	20.4	880.4	
0850	15	13	195	7.27	20.4	866.9	
0855	20	13	260	7.27	20.4	861.2	
0900	25	13	325	7.27	20.5	853.9	
0905	30	13	390	7.26	20.5	849.6	
0915							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-2B	0912	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-23-2017
Well ID:	BMO-2015-2BL	Weather:	Pt. Cloudy, 40's
ADWR No:	917828	Sampler:	JA

WELL DATA

Well Depth (ft bls):	272
Casing Diameter (in):	5
Static Water Level (ft bmp):	148.80
Casing Volume (gal):	126 x3 = 376.9
Total Volume Purged (gal):	520

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0922	Pump On						
0927	5	13	65	7.25	20.4	938.7	
0932	10	13	130	7.23	20.5	931.4	
0937	15	13	195	7.24	20.6	923.2	
0942	20	13	260	7.24	20.5	917.8	
0947	25	13	325	7.24	20.6	912.3	
0952	30	13	390	7.25	20.6	909.8	
1001	40						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-2BL	0957	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-19-2017
Well ID:	COB MW-1B	Weather:	Cloudy, 40s
ADWR No:	22 5906	Sampler:	JA

WELL DATA

Well Depth (ft bls):	500
Casing Diameter (in):	6
Static Water Level (ft bmp):	239.90
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		WL		O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-19-2017
Well ID:	~~COB MW-3A~~ COB MW-2	Weather:	Pt Cloudy, 40's
ADWR No:	903984	Sampler:	JA

WELL DATA

Well Depth (ft bls):	162
Casing Diameter (in):	4
Static Water Level (ft bmp):	130.99
Casing Volume (gal):	20 x3 = 60
Total Volume Purged (gal):	156

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0952	Pump On						
0957	5	6	30	7.30	19.5	528.9	clear
0954	7	6	42	7.42	19.5	526.3	"
1001	9	6	54	7.41	19.5	526.2	"
1003	11	6	66	7.40	19.5	525.8	"
1018							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COB MW-2	1017	poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Hand filtered Sample

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 1-27-2017

Well ID: COB MW-3 | Weather: clear, 20's

ADWR No: 906823 | Sampler: JA

WELL DATA

Well Depth (ft bls): 300

Casing Diameter (in): 4

Static Water Level (ft bmp): 126.14

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-25-2017
Well ID:	COB WL	Weather:	Pt. Cloudy, 40's
ADWR No:	593116	Sampler:	SA

WELL DATA

Well Depth (ft bls):	150
Casing Diameter (in):	4
Static Water Level (ft bmp):	87.06
Casing Volume (gal):	40.9 x3 = 123
Total Volume Purged (gal):	142

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
(4)	(0.65)
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1149	Pump On						
1154	5	6	30	6.46	20.1	1158	~6.8 gpm
1159	10	1	35	7.04	19.9	1188	decreased to ~1gpm
1219	30	1	55	7.31	21.3	1174	
1239	50	1	75	7.18	21.5	1165	
1259	70	1	95	7.11	21.4	1173	
1319	90	1	115	7.08	21.5	1174	
1339	110	1	135	7.07	21.5	1167	
1346							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COB WL	1340	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-25-17
Well ID:	COOPER	Weather:	Clear, 50s
ADWR No:	623564	Sampler:	JA

WELL DATA

Well Depth (ft bls):	325
Casing Diameter (in):	6
Static Water Level (ft bmp):	
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	120

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1600	Pump On						
1605	5	9	45	7.57	19.3	413.3	
1610	10	5	70	7.56	20.7	413.2	
1615	15	5	95	7.56	20.8	412.8	
1620	20						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COOPER	16:19	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☒ Other: Access port non-removable

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-26-2017
Well ID:	DODSON	Weather:	clear, 30's
ADWR No:	644927	Sampler:	JA

WELL DATA

Well Depth (ft bls):	200
Casing Diameter (in):	6
Static Water Level (ft bmp):	103.91 (previous quarter)
Casing Volume (gal):	141 x3 = 424
Total Volume Purged (gal):	495

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1100	Pump On						
1110	10	9	90	7.14	14.6	2269	
1120	20	9	180	7.09	19.8	2204	
1130	30	9	270	7.08	19.8	2157	
1140	40	9	360	7.07	19.8	2112	
1150	50	9	450	7.06	19.8	2049	
1155	55						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
DODSON	1154	POly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☒ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Used WL from previous quarter - obstruction ~89' down

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-18-2017
Well ID:	EECHAVE	Weather:	pt cloudy, 50's
ADWR No:	219449	Sampler:	JA

WELL DATA

Well Depth (ft bls):	345
Casing Diameter (in):	6
Static Water Level (ft bmp):	
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		W	L	O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-17-2017
Well ID:	GOAR RANCH	Weather:	Pt. Cloudy, 40's
ADWR No:	610695	Sampler:	JA

WELL DATA

Well Depth (ft bls):	250
Casing Diameter (in):	7
Static Water Level (ft bmp):	192.43
Casing Volume (gal):	x3 = 0
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

WLO

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-16-2017
Well ID:	HOWARD NR	Weather:	Cloudy, 50's
ADWR No:	NR	Sampler:	JA

WELL DATA

Well Depth (ft bls):	220
Casing Diameter (in):	6
Static Water Level (ft bmp):	158.23
Casing Volume (gal):	x3 = Ø
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		WL-0					
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WL-0							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-16-2017
Well ID:	MCCONNELL 265	Weather:	Cloudy 50s
ADWR No:	539265	Sampler:	JA

WELL DATA

Well Depth (ft bls):	216
Casing Diameter (in):	6
Static Water Level (ft bmp):	164.46
Casing Volume (gal):	x3 = Ø
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		WLO					
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 1-17-2017

Well ID: METZLER Weather: Pt. Cloudy, 50's

ADWR No: 35-71891 Sampler: JA

WELL DATA

Well Depth (ft bls): 351

Casing Diameter (in): 6

Static Water Level (ft bmp): 294.09

Casing Volume (gal): x3 = 6

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

WLO

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 3-16-2017

Well ID: NSD-02 Weather: Sunny, 80s

ADWR No: 52787 Sampler: JA

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 105.44

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	WL O						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	3-16-2017
Well ID:	NSD-03	Weather:	Sunny, 80s
ADWR No:	527586	Sampler:	JA

WELL DATA

Well Depth (ft bls):	
Casing Diameter (in):	
Static Water Level (ft bmp):	89.81
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	WLO						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-26-17
Well ID:	NWC-02	Weather:	clear, 20's
ADWR No:	562944	Sampler:	JA

WELL DATA

Well Depth (ft bls):	312
Casing Diameter (in):	6
Static Water Level (ft bmp):	167.44
Casing Volume (gal):	212.4 x3 = 637
Total Volume Purged (gal):	~~700~~ 650

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0851	Pump On						
0856	5	90	450	7.51	20.9	428.6	
0901	10	90	900	7.45	21.0	423.6	
0906	15	90	1350	7.41	21.0	421.2	
0910			1710				Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-02	0909	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [x] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Hand Filtered Sample

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-26-2017
Well ID:	NWC-03 CAP	Weather:	clear, 20s
ADWR No:	627684	Sampler:	JA

WELL DATA

Well Depth (ft bls):	179
Casing Diameter (in):	8
Static Water Level (ft bmp):	128.41
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		WL		O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-26-2017
Well ID:	NWC-04	Weather:	Clear, 20's
ADWR No:	551849	Sampler:	JA

WELL DATA

Well Depth (ft bls):	462
Casing Diameter (in):	10
Static Water Level (ft bmp):	
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0741	Pump On						
0746	5	17	85	7.36	23.2	855.1	
0751	10	17	170	7.40	23.1	850.4	
0756	15	17	255	7.41	23.1	851.9	
0808							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-04	0807	poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Hand filtered sample

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-26-2017
Well ID:	NWC-06	Weather:	Clear, 20's
ADWR No:	575700	Sampler:	JA

WELL DATA

Well Depth (ft bls):	340
Casing Diameter (in):	8
Static Water Level (ft bmp):	162.26
Casing Volume (gal):	464 x3 = 1392
Total Volume Purged (gal):	

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0925	Pump On						
0930	5	140	700	7.45	21.3	389.2	
0935	10	140	1400	7.42	21.3	392.5	
0940	15	140	2100	7.42	21.3	394.0	
0947							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-06	0946	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [x] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Hand filtered Sample

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-17-2017
Well ID:	OLMOS	Weather:	pt cloudy, 40's
ADWR No:	224745	Sampler:	JA

WELL DATA

Well Depth (ft bls):	306
Casing Diameter (in):	6
Static Water Level (ft bmp):	
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

WLO

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 2-24-17

Well ID: PANAGAKOS | Weather: clear, 60's

ADWR No: 35-76413 | Sampler: SA

WELL DATA

Well Depth (ft bls): 200

Casing Diameter (in): 8

Static Water Level (ft bmp): 162.64

Casing Volume (gal): 98 x3 = 294

Total Volume Purged (gal): 408

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1215	Pump On						
1230	15	6	90	7.34	19.0	1256	
1245	30	6	180	7.28	18.9	1264	
1300	45	6	270	7.23	19.0	1267	
1315	60	6	360	7.19	19.1	1278	
1323							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
PANAGAKOS	1320	poly	250 mL	1	300.0	NP	Y
DUP20170224	1200	poly	250 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 1-16-2017

Well ID: PIONKE 395 | Weather: Cloudy, lt Rain, 50's

ADWR No: 613395 | Sampler: JA

WELL DATA

Well Depth (ft bls): 330

Casing Diameter (in): 8

Static Water Level (ft bmp): 156.92

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	WLO						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-18-2017
Well ID:	POOL	Weather:	pt. Cloudy, 50's
ADWR No:	509518	Sampler:	JA

WELL DATA

Well Depth (ft bls):	313
Casing Diameter (in):	6
Static Water Level (ft bmp):	
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		WL		O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 1-26-2017

Well ID: POWER 639 Weather: Clear, 50's

ADWR No: 222634 Sampler: SA

WELL DATA

Well Depth (ft bls): 480

Casing Diameter (in): 6

Static Water Level (ft bmp): 295.05

Casing Volume (gal): 272 x3 = 816

Total Volume Purged (gal): 950

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1415	Pump On						
1430	15	10	150	7.23	21.1	929.8	~10.7 gpm
1445	30	10	300	7.20	20.9	935.4	
1500	45	10	450	7.16	21.0	976.2	
1515	60	10	600	7.15	20.9	991.8	
1530	75	10	750	7.16	20.9	985.1	
1545	90	10	900	7.14	20.9	989.9	
1550	95						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
POWER 639	15:49	Poly	250 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-16-2017
Well ID:	RAMIREZ	Weather:	Cloudy, 50's
ADWR No:	216 425	Sampler:	JA

WELL DATA

Well Depth (ft bls):	300
Casing Diameter (in):	6
Static Water Level (ft bmp):	IWL
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		WL		O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-18-2017
Well ID:	ROGERS E	Weather:	Pt cloudy, 50's
ADWR No:	216 018	Sampler:	SA

WELL DATA

		Casing Capacity	
Well Depth (ft bls):	285	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
Static Water Level (ft bmp):		4	0.65
Casing Volume (gal):	x3 =	5	1.02
Total Volume Purged (gal):		6	1.47
		8	2.61
		10	4.08
		Casing Volume = gallons/foot * water column (feet)	

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		W	L	O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-26-2017
Well ID:	RUIZ	Weather:	Clear, 50's
ADWR No:	531770	Sampler:	SA

WELL DATA

Well Depth (ft bls):	312
Casing Diameter (in):	6
Static Water Level (ft bmp):	299.74 [From 7/30/15]
Casing Volume (gal):	18 x3 = 54
Total Volume Purged (gal):	72

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1322	Pump On						
1327	5	4	20	7.03	20.1	844.8	
1332	10	4	40	7.08	20.4	843.7	
1337	15	4	60	7.09	20.4	844.2	
1340	18						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
RUIZ	1340	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☒ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-24-17
Well ID:	SCHWARTZ	Weather:	PC cloudy, 50s
ADWR No:	210865	Sampler:	JA

WELL DATA

Well Depth (ft bls):	305
Casing Diameter (in):	6
Static Water Level (ft bmp):	129.86
Casing Volume (gal):	257 x3 = 772
Total Volume Purged (gal):	847

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1500	Pump On						
1515	15	11	165	7.31	20.5	651.7	
1530	30	11	330	7.33	20.4	652.1	
1545	45	11	495	7.34	20.3	657.5	
1600	60	11	660	7.34	20.4	650.6	
1612	72	11	792	7.33	20.3	650.6	
1617	77						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
SCHWARTZ	16:16	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-17-2017
Well ID:	STEPHENS	Weather:	Pt. Cloudy, 50's
ADWR No:	808560	Sampler:	JA

WELL DATA

		Casing Capacity	
Well Depth (ft bls):		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):		2	0.16
Static Water Level (ft bmp):	53.09	4	0.65
Casing Volume (gal):	x3 =	5	1.02
Total Volume Purged (gal):		6	1.47
		8	2.61
		10	4.08
		Casing Volume = gallons/foot * water column (feet)	

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

WLO

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-16-2017
Well ID:	THOMPSON 151	Weather:	Cloudy, 50s
ADWR No:	612151	Sampler:	JA

WELL DATA

Well Depth (ft bls):	210
Casing Diameter (in):	7
Static Water Level (ft bmp):	
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		W	L	O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 3-1-17

Well ID: TM-7 Weather: Sunny

ADWR No: Sampler: Christopher L Shannon

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1500	Pump On						
1502	2	10	20	7.29	20.4	601	
1512	-						
1514	4	10	40	7.53	20.6	583	
1524	-						
1526	6	10	60	7.57	20.7	580	
1536	-						
1538	8	10	80	7.59	20.8	581	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-7	1538	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other:

Additional Comments: Sampled per Clear Creek method

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 3-20-17

Well ID: TM-15 Weather: Sunny

ADWR No: Sampler: Christopher L Slamm

WELL DATA

Well Depth (ft bls): 325

Casing Diameter (in): 4 11

Static Water Level (ft bmp): 300.54

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: SWL only

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-27-2017
Well ID:	TM-10 USBP	Weather:	Clear, 40's
ADWR No:	522896	Sampler:	JA

WELL DATA

Well Depth (ft bls):	290
Casing Diameter (in):	4
Static Water Level (ft bmp):	259.58
Casing Volume (gal):	20 x3 = 60
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1100	Pump On						
1110	10	6	60	7.66	20.9	416.4	~15 min, water good from start to finish
1120	20	1	66	7.82	21.0	420.1	intermittent flow rate, ~0.4 gpm
1125	25	6	126	7.78	21.3	416.3	
1130	30	1	132	7.75	21.3	418.4	
1138							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-10 USBP	11:37	poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Hand filtered Sample

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-27-2017
Well ID:	TM-14 NELSON	Weather:	Clear, 50's
ADWR No:		Sampler:	JA

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-27-17
Well ID:	TVI-236	Weather:	clear, 30s
ADWR No:	802236	Sampler:	JA

WELL DATA

Well Depth (ft bls):	222
Casing Diameter (in):	12
Static Water Level (ft bmp):	128.57
Casing Volume (gal):	548 x3 = 1645
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0955	Pump On						
1005	10			7.32	19.3	519.5	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TVI-236	10.12	poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: Ran for 10 min to clear drop pipe, collected sample

Additional Comments: Hand filtered sample. Water level of pond close to discharge pipe.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 1-27-2017

Well ID: TVI-713 | Weather: Clear, 30's

ADWR No: | Sampler: JA

WELL DATA

Well Depth (ft bls): 200

Casing Diameter (in): 8

Static Water Level (ft bmp): 132.88

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		W	L	O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 1-23-2017

Well ID: WEED | Weather: Mostly sunny, 50s, Gusty + windy

ADWR No: 574535 | Sampler: JA

WELL DATA

Well Depth (ft bls): 320

Casing Diameter (in): 6

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1513	Pump On						
1521	8	JA 5	8	7.53	20.4	390.2	
1528	15	JA 5	15	7.57	20.4	385.7	
1530	17	JA 5	17	7.57	20.4	386.2	
1533	20	JA 5	20	7.58	20.4	387.5	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WEED	1551	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-16-2017
Well ID:	WEISKOPF 802	Weather:	cloudy, 50's
ADWR No:	641802	Sampler:	JA

WELL DATA

Well Depth (ft bls):	200
Casing Diameter (in):	6
Static Water Level (ft bmp):	151.31
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		W	L	O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	1-27-2017
Well ID:	ZANDER	Weather:	clear, 40's
ADWR No:	205126	Sampler:	JA

WELL DATA

Well Depth (ft bls):	280
Casing Diameter (in):	6
Static Water Level (ft bmp):	152.14
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
			WL	O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Date	State well	Ladd House	Old house well	Middle #2	Stevenson Windmill	WSS-2015-01	
6/24/2011	262.51	288	84				
9/29/2011	262.28	276.58	83.62				
12/16/2011	264.32	250.68	84.8				
2/15/2012	262.24	253.8	84.67				
6/11/2012	264.04	258.9	85.7				
9/26/2012	261.75	255.76	84.96				
12/19/2012	261.94	249.43	86.27				
3/22/2013	324.62	250.51	85.18				Pump running
3/27/2013	266.68						
6/14/2013	261.51	282.3	86.54				Pump running
6/27/2013		270			250.85		
9/24/2013	261.38	250.8	82.66	219.6	250.85 (9-25-13)		
12/3-4/2013	260.85	251.36	84.48	217.44	250.79		
2/25/2014	261.04	253.36	85.27	217.59	250.75		
6/4/2014	262.53	259.63	85.88	218.27	250.93		
9/10/2014	263.68	248.34	86.15	219.04	250.97		
11/20/2014	261.18	268.66	80.95	213.58	250.66		
3/24/2015	261.44	248.46	83.73	214.18	250.25		
9/17/2015	264.32	243.05	86.44	216.39	250.17		
12/16/2015			86.81				
3/24/2016	261.79	266.62	87.22	217.85	250.17	169.56 (3-31-16)	
9/28/2016	262.8	246.14	86.11	219.8	250.21	170.21	
11/22/2016						170.9	
3/20/2017	261.3	232.53	86.55	220.91	250.55	184.94	Pump running

Well ID	SWL (3-7-17)			
TM-42	220.35			
Tm-16	61.08			
Tm-6	162.83			
Tm-2a	335.3			
Hoban	171.41			
BMO-2010-2m	265.47			
BMO-2010-1m	212.69			
BMO-2008-13m	213.6			
BMO-2008-13b	213.15			
BMO-2008-10Gu	210.83			
BMO-2008-10GL	332.86			
BMO-008-9m	289.83			
BMO-2008-8b	301.61			
BMO-2008-8m	303.85			
BMO-2008-7m	245.44			

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 4-6-2017

Well ID: NWC-04 | Weather:

ADWR No: 551849 | Sampler: SA

WELL DATA

Well Depth (ft bls): 462

Casing Diameter (in): 10

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0651	Pump On						
0659	8			7.22	22.8	841.1	
0701	10			7.33	23.0	837.1	
0706	15			7.34	23.2	841.4	
0711	20			7.33	23.2	846.8	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-04	0714	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Hand filtered sample

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/18/17

Well ID: ANDERSON 396 Weather: Partly Cloudy, 80s

ADWR No: 613396 Sampler: JA

WELL DATA

Well Depth (ft bls):	285
Casing Diameter (in):	8
Static Water Level (ft bmp):	153.99
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		WL	L	O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: Pump does not work or is no longer connected to electric power. WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/18/17

Well ID: ANDERSON 458 Weather: Partly Cloudy, 80s

ADWR No: 221458 Sampler: JA

WELL DATA

Well Depth (ft bls):	734
Casing Diameter (in):	5
Static Water Level (ft bmp):	155.93
Casing Volume (gal):	590 x3 = 1770
Total Volume Purged (gal):	1900

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1230	Pump On						
1300	30	10	300	7.96	23.3	401.7	
1330	60	10	600	8.01	23.7	397.2	
1400	90	10	900	8.02	24.0	395.6	
1430	120	10	1200	8.02	23.9	395.5	
1500	150	10	1500	8.00	24.1	395.3	
1530	180	10	1800	8.01	23.9	395.5	
1540							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
ANDERSON 458	1534	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 8-10-17

Well ID: ASLD 435 Weather: Sunny

ADWR No: Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 250.94

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	9/6/17
Well ID:	AWC-02	Weather:	clear, 80s
ADWR No:	616586	Sampler:	TA

WELL DATA

Well Depth (ft bls):	333
Casing Diameter (in):	20
Static Water Level (ft bmp):	131.56
Casing Volume (gal):	3286 x3 = 9858
Total Volume Purged (gal):	

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

20 * 16.31

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1014	Pump On						
1024	15	90	1350	7.38	20.8	421.7	
1044	30	90	2700	7.33	20.7	422.9	
1104	45	90	4050	7.37	20.7	422.3	
1119	60	90	5400	7.37	20.7	422.8	
1134	75	90	6750	7.39	20.7	422.3	
1149	90	90	8100	7.37	20.8	421.4	
1204	105	90	9450	7.40	20.8	422.4	
1209	110	90	9900	7.40	20.7	423.3	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-02	1211	Poly	250 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:		Date:	9/6/17
Well ID:	AWC-03	Weather:	clear, 80s
ADWR No:	616585	Sampler:	JA

WELL DATA

Well Depth (ft bls):	270
Casing Diameter (in):	16
Static Water Level (ft bmp):	121.3
Casing Volume (gal):	1552 x3 = 4656
Total Volume Purged (gal):	

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

16 = 10.44

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0903	Pump On						
0910	7	600	4200	7.43	20.3	524.1	
0912	9	600	5400	7.42	20.3	525.0	
0914	11	600	6600	7.41	20.3	525.5	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-03	0918	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 9/6/17

Well ID: AWC-04 Weather: clear, 80s

ADWR No: 616584 Sampler: SA

WELL DATA

Well Depth (ft bls): 337

Casing Diameter (in): 16

Static Water Level (ft bmp): 127.92

Casing Volume (gal): 2183 x3 = 6549

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

16 = 10.44

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0930	Pump On						
0940	10	750	7,500	7.22	19.9	556.6	
0942	12	750	9,000	7.19	19.8	587.1	
0944	14	750	10,500	7.17	19.8	571.0	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-04	0947	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 9/6/17

Well ID: AVC-05 | Weather: clear, 80s

ADWR No: 590620 | Sampler: SA

WELL DATA

Well Depth (ft bls): 1183

Casing Diameter (in): 16

Static Water Level (ft bmp): 322.50 SA

Casing Volume (gal): 7984 x3 = 26,952

Total Volume Purged (gal): 31920

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10 (16)	4.08 (16.44 upper)

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0753	Pump On						
0808	15	560	8,400	7.39	20.5	449.8	
0813	20	560	11,200	7.37	20.6	449.4	
0818	25	560	14000	7.37	20.6	449.2	
0823	30	560	16,800	7.38	20.7	448.7	
0828	35	560	19,600	7.38	20.7	448.2	
0833	40	560	22,400	7.38	20.8	447.4	
0838	45	560	25,200	7.39	20.8	447.3	
0843	50	560	28,000	7.38	20.9	447.4	
0850							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AVC-05	0847	Poly	250 mL	1	300.0	NP	Y
DUP20170906	1200	poly	250 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/26/17
Well ID:	BANKS 986	Weather:	Overcast, 90s
ADWR No:	647986	Sampler:	JA

WELL DATA

Well Depth (ft bls):	435
Casing Diameter (in):	6
Static Water Level (ft bmp):	IWL, Use WL from BANKS 987 (233.25)
Casing Volume (gal):	297 x3 = 891
Total Volume Purged (gal):	1004

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1341	Pump On						
1356	15	9	135	7.47	20.9	1176	
1411	30	9	270	7.46	20.9	1094	
1426	45	9	405	7.45	20.9	1076	Lightning
1456	75	7.5	630	7.47	20.9	1026	Shutdown
1511	90	7.5	742.5	7.45	20.9	1015	
1526	105	7.5	855	7.45	20.9	1000	
1541	120	7.5	967	7.45	20.9	1012	
1646							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BANKS 986	1646	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☒ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☒ Other: Used Water level from BANKS 987 well on same property

WELL PURGING INFORMATION

- ☒ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/26/17

Well ID: BANKS 987 | Weather: overcast, 90s

ADWR No: 647 987 | Sampler: JA

WELL DATA

Well Depth (ft bls): 339

Casing Diameter (in): 6

Static Water Level (ft bmp): 233.25

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		W	L	O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/14/17

Well ID: BARTON 919 | Weather: cloudy, 80s

ADWR No: 644919 | Sampler: JA

WELL DATA

Well Depth (ft bls): 130

Casing Diameter (in): 6

Static Water Level (ft bmp): 113.52

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	WLO						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/27/17

Well ID: BIMA | Weather: Overcast, 90s

ADWR No: 577927 | Sampler: JA

WELL DATA

Well Depth (ft bls): 460

Casing Diameter (in): 4

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal): No Purge

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1419	Pump On						
				6.84	25.4	1553	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BIMA	1421	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: No Purge per request by owner, Field reading

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 7-24-17

Well ID: BMO-2008-16 Weather: Sunny

ADWR No: Sampler: Christopher L Sharman

WELL DATA

Well Depth (ft bls):	310
Casing Diameter (in):	5"
Static Water Level (ft bmp):	76.16
Casing Volume (gal):	238.4 x3 = 716
Total Volume Purged (gal):	746

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0830	Pump On						
0900	30	8.3	249	7.10	21.9	920	
0920	50	8.3	415	7.12	21.8	921	
0940	70	8.3	581	7.14	22.1	924	
1000	90	8.3	747	7.11	22.2	925	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-16	1000	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☑ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☑ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: 234

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030
Client: Freeport Copper Queen Branch
Task No:
Date: 7-26-17
Well ID: BMO-2008-3B
Weather: Partly Cloudy
ADWR No:
Sampler: Christopher L Shaw

WELL DATA

Well Depth (ft bls): 260
Casing Diameter (in): 5"
Static Water Level (ft bmp): 146.84
Casing Volume (gal): 115.4 x3 = 346.2
Total Volume Purged (gal): 540

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0745	Pump On						
0755	10	27	135	7.13	21.6	646	
0800	15	27	405	7.16	21.5	648	
0805	20	27	540	7.17	21.5	648	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-3B	0805	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 113.2

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 9/30/17

Well ID: BMO-2008-4B | Weather: Clear, 80s

ADWR No: 910096 | Sampler: SA

WELL DATA

Well Depth (ft bls): 610

Casing Diameter (in): 5

Static Water Level (ft bmp): 138.68

Casing Volume (gal): 481 x3 = 1442

Total Volume Purged (gal): 1470

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1335	Pump On						
1350	15	10	150	7.53	22.2	376.1	
1405	30	10	300	7.54	22.4	385.5	
1420	45	10	450	7.45	22.6	388.8	
1435	60	10	600	7.43	22.6	389.7	
1455	80	10	800	7.43	22.5	392.3	
1515	100	10	1000	7.43	22.6	391.5	
1535	120	10	1200	7.43	22.5	392.6	
1600	145	10	1450	7.43	22.6	392.5	
1602							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-4B	1602	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 8-1-17

Well ID: BMO-2008-5B Weather: Partly Cloudy

ADWR No: Sampler: Christopher Shumway

WELL DATA

Well Depth (ft bls):	285
Casing Diameter (in):	5
Static Water Level (ft bmp):	151.95
Casing Volume (gal):	135.7 x3 = 407.1
Total Volume Purged (gal):	675

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1150	Pump On						
1155	5	27	135	7.01	21.9	776	
1205	15	27	405	7.04	22.0	778	
1215	25	27	675	7.05	22.0	779	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-5B	1215	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 1331

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 8-1-17

Well ID: BMO-2008-5M Weather: Partly Cloudy

ADWR No: Sampler: Christopher L Skinner

WELL DATA

Well Depth (ft bls):	450'
Casing Diameter (in):	5"
Static Water Level (ft bmp):	153.27
Casing Volume (gal):	303 x3 = 909
Total Volume Purged (gal):	990

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1045	Pump On						
1110	25	18	450	7.10	22.8	635	
1130	45	18	810	7.09	22.9	634	
1140	55	18	990	7.11	22.8	636	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-5M	1140	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: ~~297~~ 297

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030
Client: Freeport Copper Queen Branch
Task No:
Date: 7-10-17
Well ID: BMO - 2008-6B
Weather: Partly Cloudy
Sampler: Christopher L Shannon
ADWR No:

WELL DATA

Well Depth (ft bls):	265
Casing Diameter (in):	5"
Static Water Level (ft bmp):	196.88
Casing Volume (gal):	69.4 x3 = 208.2
Total Volume Purged (gal):	225

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1150	Pump On						
1205	15	5.1	75	7.56	22.1	288	
1220	30	5.1	150	7.55	22.2	290	
1235	45	5.1	225	7.52	22.1	291	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO - 2008-6B	1235	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 68.1

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 7-10-17

Well ID: BMO-2008-6M Weather: Sunny

ADWR No: Sampler: Christopher L Shumm

WELL DATA

Well Depth (ft bls):	450
Casing Diameter (in):	5"
Static Water Level (ft bmp):	197.92
Casing Volume (gal):	257 x3 = 771
Total Volume Purged (gal):	840

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1105	Pump On						
1115	10	21	210	6.97	22.8	742	
1125	20	21	420	7.01	22.6	741	
1135	30	21	630	7.02	22.5	745	
1145	40	21	840	7.04	22.6	742	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-6M	1145	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☑ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☑ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: 252.1

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 7-10-17

Well ID: BMO-2008-7M Weather: Sunny

ADWR No: Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):	670
Casing Diameter (in):	5"
Static Water Level (ft bmp):	245.73
Casing Volume (gal):	433 x3 = 1299
Total Volume Purged (gal):	1365

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0930	Pump On						
0955	25	21	525	7.32	23.3	460	
1015	45	21	945	7.34	23.4	463	
1035	65	21	1365	7.36	23.5	464	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-7M	1035	PL	25	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 424.3

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: | Date: 7-10-17

Well ID: BMO-2008-8B | Weather: Sunny

ADWR No: | Sampler: Christopher J. Sherman

WELL DATA

Well Depth (ft bls):	480
Casing Diameter (in):	5"
Static Water Level (ft bmp):	301.89
Casing Volume (gal):	181.7 x3 = 545
Total Volume Purged (gal):	639

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0800	Pump On						
0815	15	14.2	213	6.47	22.3	1285	
0825	25	14.2	355	6.72	22.1	1487	
0835	35	14.2	497	6.70	22.0	1510	
0845	45	14.2	639	6.69	22.2	1540	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-8B							

WATER LEVEL MEASUREMENT COLLECTION

- ☒ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☒ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: 178.2

256

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030
Client: Freeport Copper Queen Branch
Task No:
Date: 7-10-17
Well ID: BMQ-2008-8M
Weather: Sunny
ADWR No:
Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):	1210
Casing Diameter (in):	5.11
Static Water Level (ft bmp):	304.09
Casing Volume (gal):	9.24 x3 = 2,772
Total Volume Purged (gal):	2816

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0530	Pump On						
0630	60	17.6	1056	7.24	24.4	554	
0730	120	17.6	2112	7.20	24.5	542	
0800	150	17.6	2640	7.27	24.8	543	
0810	160	17.6	2816	7.28	24.7	542	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMQ-2008-8M	0810	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 905.9

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030
Client: Freeport Copper Queen Branch
Task No:
Date: 7-11-17
Well ID: BMO-2008-9 M
Weather: Partly Cloudy
Sampler: Christopher L Skavan
ADWR No:

WELL DATA

Well Depth (ft bls):	725
Casing Diameter (in):	5"
Static Water Level (ft bmp):	291.03
Casing Volume (gal):	493.6 x3 = 1481
Total Volume Purged (gal):	1504

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1250	Pump On						
1310	20	18.8	376	7.51	24.5	573	
1330	40	18.8	752	7.56	24.6	572	
1350	60	18.8	1128	7.52	24.6	574	
1410	80	18.8	1504	7.57	24.5	572	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-9M	1410	PL	250	1	300	16	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030
Client: Freeport Copper Queen Branch
Task No:
Date: 7-11-17
Well ID: BMO-2008-10CL
Weather: Partly Cloudy
ADWR No:
Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):	810
Casing Diameter (in):	5"
Static Water Level (ft bmp):	~~288~~ 332.89
Casing Volume (gal):	481.5 x3 = 1,444
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0530	Pump On						
0630	60	6.25	372	6.11	24.9	3820	
0730	120	6.2	744	6.16	24.2	3830	
0830	180	5	1,044	6.13	25.2	3790	
0930	240	4	1284	6.12	25.4	3780	
1015	285	4	1464	6.14	25.4	3790	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-10CL	1015	PL	250	1	300	Ice	X

WATER LEVEL MEASUREMENT COLLECTION

- ☑ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☑ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: 472.1

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 8-9-17

Well ID: BMO-2008-106U Weather: Sunny

ADWR No: Sampler: Christopher L Sturm

WELL DATA

Well Depth (ft bls):	449
Casing Diameter (in):	5"
Static Water Level (ft bmp):	201.50
Casing Volume (gal):	252.4 x3 = 757.2
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0530	Pump On						
0545	15	8.8	132	6.07	20.5	3860	
0600	30	8.8	264	6.03	20.5	3850	
0630	60	8.8	528	6.07	20.6	3870	
0700	90	8.8	792	6.06	20.4	3860	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-106U	0700	PL	250	1	300	Ice	Y
Dup-080917	0700	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 247.5 Duplicate

34ac

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 7-19-17

Well ID: BMO-2008-116 Weather: Sunny

ADWR No: Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):	760
Casing Diameter (in):	5.1
Static Water Level (ft bmp):	554.02
Casing Volume (gal):	210.1 x3 = 630.3
Total Volume Purged (gal):	640

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1100	Pump On						
1110	10	8	80	7.81	25.2	335	
1130	30	8	240	7.85	25.3	332	
1200	60	8	480	7.83	25.4	334	
1220	80	8	640	7.85	25.4	333	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-116	1220	PL	250	1	300	ICE	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 204

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: | Date: 8-2-17

Well ID: BMO-2008-13B | Weather: Partly Cloudy

ADWR No: | Sampler: Christopher L. Slamm

WELL DATA

Well Depth (ft bls):	475
Casing Diameter (in):	5"
Static Water Level (ft bmp):	213.57
Casing Volume (gal):	266.7 x3 = 800
Total Volume Purged (gal):	900

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0530	Pump On						
0540	10	20	200	6.65	21.2	2110	
0555	25	20	500	6.68	21.2	2120	
0605	35	20	700	6.67	21.3	2130	
0615	45	20	900	6.67	21.2	2130	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-13B	0615	PL	250	1	300	HCl	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 2615

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 8-15-17

Well ID: BMO-2008-13M Weather: Partly Cloudy

ADWR No: Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls): 1030

Casing Diameter (in): 5"

Static Water Level (ft bmp): 213.71

Casing Volume (gal): 832.6 x3 = 2,497.8

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0400	Pump On						
0620	140	5.7	798	9.32	22.7	1136	
0720	200	4.6	1140	8.42	23.6	1305	
0820	260	3.8	1416	8.46	24.2	1309	
0920	380	3.8	1872	8.48	24.3	1302	
1120	440	2.8	2100	8.44	24.5	1301	
1420	620	2.8	2604	8.42	24.7	1305	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-13M	1420	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 816.3

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: | Date: 7-12-17

Well ID: BMO-2010-1M | Weather: Cloudy

ADWR No: | Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):	550
Casing Diameter (in):	5"
Static Water Level (ft bmp):	214.02
Casing Volume (gal):	342.7 x3 = 1,028
Total Volume Purged (gal):	1035

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0615	Pump On						
0630	15	10	150	7.62	23.8	720	
0715	60	5	375	7.77	23.9	700	
0815	120	3	555	7.78	23.5	705	
0915	180	3	735	7.75	23.7	710	
1015	240	3	915	7.72	23.8	720	
1055	280	3	1035	7.70	24.0	715	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2010-1M	1055	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 33%

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030
Client: Freeport Copper Queen Branch
Task No:
Date: 7-12-17
Well ID: BMO-2010-2M
Weather: Cloudy
ADWR No:
Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):	380
Casing Diameter (in):	5"
Static Water Level (ft bmp):	267.14
Casing Volume (gal):	115.2 x3 = 345.6
Total Volume Purged (gal):	810

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1140	Pump On						
1150	10	27	270	6.58	22.5	2160	
1200	20	27	540	6.59	22.0	2170	
1210	30	27	810	6.60	22.2	2160	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2010-2M	1212	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 113

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/11/17
Well ID:	BMO-2010-3B	Weather:	Pt. Cloudy, breezy, 70's
ADWR No:	219470	Sampler:	JA

WELL DATA

Well Depth (ft bls):	330
Casing Diameter (in):	5
Static Water Level (ft bmp):	120.51
Casing Volume (gal):	213.7 x3 = 641
Total Volume Purged (gal):	760

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
08 17	Pump On						
08 32	15	6	90	7.28	20.6	432.6	
08 47	30	6	180	7.47	20.7	427.7	
09 02	45	6	270	7.43	20.6	425.3	
09 17	60	7	~~270~~ 375	7.43	20.6	425.8	
0932	75	7	480	7.41	20.7	425.0	
0947	90	7	585	7.40	20.7	425.2	
10 02	105	7	690	7.40	20.7	424.6	
1012	115						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2010-3B	1005	Poly	500mL	1	300.00	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/11/17

Well ID: BMO-2010-3M Weather: pt. cloudy, 80's

ADWR No: 219969 Sampler: JA

WELL DATA

Well Depth (ft bls): 5·

Casing Diameter (in): 5 32

Static Water Level (ft bmp): 122.85

Casing Volume (gal): 417 x3 = 1252

Total Volume Purged (gal): 1337

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1021	Pump On						
1051	30	7	210	7.63	21.7	364.1	
1121	60	7	420	7.56	22.3	387.6	
1151	90	7	630	7.54	22.4	385.7	
1221	120	7	840	7.55	22.5	383.9	
1251	150	7	1050	7.52	22.5	384.1	
1321	180	7	1260	7.52	22.6	384.8	
1322							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2010-3M	1327	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: | Date: 7-24-17

Well ID: BMO-2012-1M | Weather: Partly Cloudy

ADWR No: | Sampler: Christopher L Sturma

WELL DATA

Well Depth (ft bls):	405
Casing Diameter (in):	5"
Static Water Level (ft bmp):	217.59
Casing Volume (gal):	191.2 x3 = 574
Total Volume Purged (gal):	600

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0600	Pump On						
0610	10	6	60	7.04	23.1	936	
0630	30	6	180	7.04	23.0	939	
0700	60	6	360	7.09	23.1	939	
0740	100	6	600	7.08	23.0	938	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2012-1M	0740	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☑ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☑ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: 187.5

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 8-21-17

Well ID: BMO-2012-1M Weather: Sunny

ADWR No: Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):	405
Casing Diameter (in):	5"
Static Water Level (ft bmp):	217.55
Casing Volume (gal):	191.2 x3 = 574
Total Volume Purged (gal):	600

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0530	Pump On						
0540	10	6	60	6.92	22.4	943	
0600	30	6	180	7.12	22.7	941	
0630	60	6	360	7.13	22.9	945	
0710	100	6	600	7.14	22.8	944	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2012-1M	0710	PL	250	1	300	Ice	X

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 187.5

550

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/13/17

Well ID: BMO-2014-IBL | Weather: clear / 80s

ADWR No: 917394 | Sampler: JA

WELL DATA

Well Depth (ft bls):	366
Casing Diameter (in):	5
Static Water Level (ft bmp):	126.19
Casing Volume (gal):	245 x3 = 735
Total Volume Purged (gal):	874

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0931	Pump On						
0946	15	13	195	7.26	21.6	685.4	
1001	30	13	390	7.29	21.6	686.7	
1016	45	13	580	7.28	21.6	686.2	
1031	60	13	770	7.26	21.6	687.5	
1039							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-IBL	1036	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/13/17
Well ID:	BMO-2014-1BU	Weather:	clear, 80's
ADWR No:	917393	Sampler:	JA

WELL DATA

Well Depth (ft bls):	273
Casing Diameter (in):	5
Static Water Level (ft bmp):	126.42
Casing Volume (gal):	150 x3 = 450
Total Volume Purged (gal):	5A ~~450~~ 650

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0837	Pump On						
0847	10	13	130	7.25	20.9	747.2	
0857	20	13	260	7.26	20.9	745.3	
0907	30	13	390	7.26	20.8	740.8	
0917	40	13	520	7.27	20.8	736.4	
0927							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point: Spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-1BU	0922	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	9/6/17
Well ID:	BMO-2014-2BL	Weather:	clear, 90s
ADWR No:	917452	Sampler:	JA

WELL DATA

Well Depth (ft bls):	396
Casing Diameter (in):	5
Static Water Level (ft bmp):	128.56
Casing Volume (gal):	273 x3 = 819
Total Volume Purged (gal):	966

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1258	Pump On						
1313	15	14	210	7.03	20.8	1196	
1328	30	14	420	7.09	20.8	1201	
1343	45	14	630	7.09	20.8	1197	
1358	60	14	840	7.08	20.7	1197	
1407							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-2BL	1402	poly	250 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/13/17

Well ID: BMO-2014-2BU Weather: Mostly clear & humid, 70s

ADWR No: 917453 Sampler: JA

WELL DATA

Well Depth (ft bls): 276

Casing Diameter (in): 5

Static Water Level (ft bmp): 129.07

Casing Volume (gal): 150 x3 = 450

Total Volume Purged (gal): 602

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0655	Pump On						
0705	10	14	140	7.18	20.1	536.4	
0715	20	14	280	7.37	20.1	536.3	
0725	30	14	420	7.38	20.1	536.9	
0738							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point: SpGpot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-2BU	0731	Poly	500.0mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/13/17

Well ID: BMO-2014-3BL | Weather: Partly Cloud, 90s

ADWR No: 917527 | Sampler: JA

WELL DATA

Well Depth (ft bls): 521

Casing Diameter (in): 5

Static Water Level (ft bmp): 140.74

Casing Volume (gal): 388 x3 = 1164

Total Volume Purged (gal): 1272

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1122	Pump On						
1142	20	12	240	7.18	21.6	430.3	
1202	40	12	480	7.38	21.7	428.0	
1222	60	12	720	7.36	21.7	425.7	
1242	80	12	960	7.36	21.6	425.2	
1302	100	12	1200	7.37	21.7	423.3	
1308							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point: Spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-3BL	1304	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/13/17

Well ID: BMO-2014-3BU Weather: Overcast, 90s

ADWR No: 917494 Sampler: JA

WELL DATA

Well Depth (ft bls): 288

Casing Diameter (in): 5

Static Water Level (ft bmp): 140.80

Casing Volume (gal): 150 x3 = 450

Total Volume Purged (gal): 546

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1312	Pump On						
1322	10	13	130	7.33	20.2	475.3	
1332	20	13	260	7.32	20.2	473.8	
1342	30	13	390	7.33	20.1	473.3	
1347	35	13	455	7.34	20.2	472.9	
1354							
1354							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point: Spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-3BU	1350	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/12/17

Well ID: BMO-2014-4B | Weather: cloudy/overcast, light rain, 80s

ADWR No: 917620 | Sampler: SA

WELL DATA

Well Depth (ft bls): 258

Casing Diameter (in): 5

Static Water Level (ft bmp): 135.68

Casing Volume (gal): 125 x3 = 375

Total Volume Purged (gal): 494

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1256	Pump On						
1306	10	13	130	7.44	20.4	481.7	
1316	20	13	260	7.43	20.5	482.9	
1326	30	13	390	7.41	20.5	483.0	
1334							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point: Spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-4B	13:31	Poly	500.0	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/12/17
Well ID:	BMO-2014-4BL	Weather:	Raining/overcast, 80s
ADWR No:	917619	Sampler:	SA

WELL DATA

Well Depth (ft bls):	261
Casing Diameter (in):	5
Static Water Level (ft bmp):	135.10'
Casing Volume (gal):	128 x3 = 385
Total Volume Purged (gal):	444

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1214	Pump On						
1224	10	12	120	7.33	20.7	650.2	
1234	20	12	240	7.42	20.7	667.1	
1244	30	12	360	7.42	20.7	674.4	
1251							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point: Spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-4BL	1248	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/12/17

Well ID: BMO-2015-1B Weather: Cloudy, 80s

ADWR No: 917622 Sampler: JK

WELL DATA

Well Depth (ft bls): 244

Casing Diameter (in): 5

Static Water Level (ft bmp): 131.14

Casing Volume (gal): 115 x3 = 345

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1000	Pump On						
1010	10	13	130	7.39	20.5	726.7	
1020	20	13	260	7.42	20.5	711.5	
1030	30	13	390	7.43	20.5	699.2	
1035	35	13	455	7.44	20.5	697.6	
1043							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point: Spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-1B	1040	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/12/17

Well ID: BMO-2015-1BL | Weather: cloudy, 80's, light rain

ADWR No: 917621 | Sampler: JA

WELL DATA

Well Depth (ft bls): 241

Casing Diameter (in): 5

Static Water Level (ft bmp): 132.46

Casing Volume (gal): 111 x3 = 333

Total Volume Purged (gal): 520

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1055	Pump On						
1105	10	13	130	7.41	20.6	782.5	
1115	20	13	260	7.40	20.6	781.4	
1125	30	13	390	7.37	20.6	780.5	
1135							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point: SB-904

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-1BL	1131	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/12/17

Well ID: BMO-2015-2B | Weather: Cloudy, humid, 70's

ADWR No: 917827 | Sampler: JA

WELL DATA

Well Depth (ft bls):	268
Casing Diameter (in):	5
Static Water Level (ft bmp):	150.99
Casing Volume (gal):	119 x3 = 358
Total Volume Purged (gal):	420

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0744	Pump On						
0754	10	12	120	7.07	20.5	887.7	
0804	20	12	240	7.26	20.5	869.7	
0814	30	12	360	7.24	20.5	859.5	
0819	35	12		7.27	20.4	847.9	
0825							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-2B	0821	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/12/17

Well ID: BMO-2015-2BL Weather: pt. cloudy, humid, 80's

ADWR No: 917828 Sampler: JA

WELL DATA

Well Depth (ft bls): 272

Casing Diameter (in): 5

Static Water Level (ft bmp): 149.64

Casing Volume (gal): 125 x3 = 374

Total Volume Purged (gal): 576

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0833	Pump On						
0843	10	12	120	7.21	20.6	943.4	
0853	20	12	240	7.22	20.7	932.0	
0903	30	12	360	7.23	20.7	926.3	
0913	40	12	480	7.23	20.7	921.0	
0921	48						Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-2BL	0918	Poly	500 mL	1	300.0	IVP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/25/17

Well ID: BURKE | Weather: Cloudy, 80s

ADWR No: 212268 | Sampler: JA

WELL DATA

Well Depth (ft bls): 781

Casing Diameter (in): 6

Static Water Level (ft bmp): USE 587.06 from 8/3/15

Casing Volume (gal): 285 x3 = 855

Total Volume Purged (gal): 480

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1251	Pump On						
1256	5	10	50	7.90	23.4	474.8	
1301	10	10	100	7.91	23.4	476.1	
1306	15	10	150	7.92	23.4	475.3	
1321	30	10	300	7.91	23.5	474.4	
1336	45	10	450	7.91	23.5	475.3	
1339							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BURKE	1339	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☒ Other: NO WL collected at request of owner due to past experience w/ stuck sounder

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/25/17

Well ID: CHAMBERS | Weather: Cloudy, 90s

ADWR No: 629807 | Sampler: JA

WELL DATA

Well Depth (ft bls): 245

Casing Diameter (in): 6

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal): 150

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1615	Pump On						
1618	3	10	30	7.31	20.7	445.6	
1621	6	10	60	7.35	21.3	448.4	
1624	9	10	90	7.34	21.3	450.4	
1630							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
CHAMBERS	1630	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/19/17

Well ID: COB MW-1B | Weather: partly cloudy, 80's

ADWR No: 225906 | Sampler: JA

WELL DATA

Well Depth (ft bls): 500

Casing Diameter (in): 6

Static Water Level (ft bmp): 240.27

Casing Volume (gal): 382 x3 = 1146

Total Volume Purged (gal): 1272

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1135	Pump On						
1150	15	12	180	6.49	21.1	2571	
1205	30	12	360	6.48	20.9	2555	
1220	45	12	540	6.50	20.9	2532	
1235	60	12	720	6.51	20.9	2511	
1250	75	12	900	6.51	20.8	2500	
1305	90	12	1080	6.51	20.9	2482	
1315	100	12	1200	6.51	20.9	2474	
1321							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COB MW-1B	1319	Poly	500 mL	1	3000	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/19/17

Well ID: COB MW-2 Weather: Partly cloudy, 80s

ADWR No: 903984 Sampler: JA

WELL DATA

Well Depth (ft bls): 162

Casing Diameter (in): 4

Static Water Level (ft bmp): 131.90

Casing Volume (gal): 20 x3 = 60

Total Volume Purged (gal): 150

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
(4)	(0.65)
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0923	Pump On						
0928	5	6	30	7.32	19.5	547.9	
0933	10	6	60	7.29	19.5	549.6	
0938	15	6	90	7.29	19.5	548.6	
0944							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COB MW-2	0942	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/19/17

Well ID: COR MW-3 | Weather: Partly Cloudy, 70s

ADWR No: 906823 | Sampler: JA

WELL DATA

Well Depth (ft bls): 300

Casing Diameter (in): 4

Static Water Level (ft bmp): 120.70

Casing Volume (gal): 117 x3 = 351

Total Volume Purged (gal): 560

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
(4)	(0.65)
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0828	Pump On						
0833	5	20	100	7.19	20.1	554.9	
0838	10	20	200	7.39	20.2	540.4	
0843	15	20	300	7.35	20.2	532.4	
0848	20	20	400	7.34	20.2	529.5	
0856							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COR MW-3	0853	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Hand filtered sample

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/17/17

Well ID: COB WL Weather: Partly cloudy, 80s

ADWR No: 593116 Sampler: JA

WELL DATA

Well Depth (ft bls): 150

Casing Diameter (in): 4

Static Water Level (ft bmp): 89.96

Casing Volume (gal): 39 x3 = 117

Total Volume Purged (gal): 129

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
(4)	(0.65)
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0845	Pump On						
0850	5	7	35	6.91	20.1	1145	
0855	10	1	40	7.02	20.1	1173	
0915	30	1	60	7.24	21.7	1159	
0935	50	1	80	7.15	21.8	1162	
0955	70	1	100	7.10	21.8	1162	
1015	90	1	120	7.07	21.9	1162	
~~1035~~	~~110~~						
1024							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COB WL	1021	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Hand filtered sample

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/17/17

Well ID: COOPER | Weather: Overcast, rain, 80s

ADWR No: 623564 | Sampler: JA

WELL DATA

Well Depth (ft bls): 325

Casing Diameter (in): 6

Static Water Level (ft bmp): N/A (IWL)

Casing Volume (gal): x3 =

Total Volume Purged (gal): 190

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1502	Pump On						
1507	5	5	25	7.48	21.5	418.1	
1517	15	5	75	7.49	21.5	416.7	
1527	25	5	125	7.47	21.6	417.0	
1537	35	5	175	7.48	21.6	417.1	
1540							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COOPER	15.40	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☑ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☒ Other: Port in wellhead cannot be removed w/o damaging it. (plastic & tight)

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☑ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 7-13-17

Well ID: Cooper C Weather: Sunny

ADWR No: Sampler: Christopher L Shumway

WELL DATA

Well Depth (ft bls): 220

Casing Diameter (in): 6"

Static Water Level (ft bmp): 162.68

Casing Volume (gal): 84.3 x3 = 253

Total Volume Purged (gal): 297

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0740	Pump On						
0750	10	8.5	85	6.96	23.4	1462	
0800	20	8.5	170	6.98	23.1	1461	
0810	30	8.5	297	6.99	23.0	1461	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Cooper C	0810	PL	250	1	300	Ice	X

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 57.4

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/17/17

Well ID: DODSON Weather: Overcast, 80s

ADWR No: 644 Sampler: JA

WELL DATA

Well Depth (ft bls): 200

Casing Diameter (in): 6

Static Water Level (ft bmp): 103.07

Casing Volume (gal): 143 x3 = 429

Total Volume Purged (gal): 540

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1105	Pump On						
1115	10	12	120	7.11	20.0	2270	
1125	10	12	240	7.08	20.1	2055	
1135	30	12	360	7.08	19.9	1981	
1145	40	12	480	7.07	19.9	1920	
1150							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
DODSON	1150	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/13/17
Well ID:	DOUGLASS 791	Weather:	Mostly Cloudy, 90s
ADWR No:	592791	Sampler:	JA

WELL DATA

Well Depth (ft bls):	200
Casing Diameter (in):	5
Static Water Level (ft bmp):	31.58
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

WLO

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/13/17
Well ID:	DOUGLASS 792	Weather:	Mostly Cloudy, 90s
ADWR No:	592792	Sampler:	JA

WELL DATA

Well Depth (ft bls):	200
Casing Diameter (in):	5
Static Water Level (ft bmp):	84.43
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/27/17

Well ID: EAST | Weather: cloudy, 80s

ADWR No: 599796 | Sampler: JA

WELL DATA

Well Depth (ft bls): 125

Casing Diameter (in): 6

Static Water Level (ft bmp): 67.11

Casing Volume (gal): 85 x3 = 255

Total Volume Purged (gal): 324

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1155	Pump On						
1205	10	9	90	7.22	20.0	615.4	
1215	20	9	180	7.22	19.8	620.6	
1225	30	9	270	7.22	19.8	620.9	
1231							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
EAST	1231	Poly	500	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/28/17

Well ID: ECHAVE | Weather: clear, 80s

ADWR No: 219449 | Sampler: JA

WELL DATA

Well Depth (ft bls): 345

Casing Diameter (in): 6

Static Water Level (ft bmp): 220.49

Casing Volume (gal): 183 x3 = 549

Total Volume Purged (gal): 136

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0925	Pump On						
0930	5	8	40	7.59	25.1	406.7	
0935	10	8	80	7.65	24.8	405.9	
0940	15	8	120	7.59	25.1	403.2	
0942							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
ECHAVE	0942	Poly	250 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [x] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: water from tank, filled by pump, sampled from spigot near tank.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/27/17

Well ID: EPPELE 641 | Weather: Partly cloudy, 80s

ADWR No: 605641 | Sampler: JA

WELL DATA

Well Depth (ft bls): 265

Casing Diameter (in): 8

Static Water Level (ft bmp): 48.58

Casing Volume (gal): 565 x3 = 1695

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
(8)	(2.61)
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0902	Pump On						
0917	15	10	150	7.31	20.2	598.3	
0932	30	10	300	7.31	20.1	601.6	
0947	45	10	450	7.32	20.1	612.7	
1002	60	10	600	7.39	20.1	604.0	
1009	67	10	670	7.44	20.6	597.5	Pumped Dry
1039				7.56	21.5	574.0	Pumped Dry in 6min
1105				7.70	20.9	560.0	Pumped Dry in 4min
1129				7.70	21.4	563.1	Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
EPPELE 641	1133	Poly	500 ml	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [x] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Pumped Dry at 67 min. Wait 30 min for recharge - Pumped dry after 6 minutes. Wait 20 minutes for recharge / readings

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/20/17
Well ID:	FRANCO 383	Weather:	Overcast, 90s
ADWR No:	221 383	Sampler:	JA

WELL DATA

Well Depth (ft bls):	711
Casing Diameter (in):	5
Static Water Level (ft bmp):	198.37
Casing Volume (gal):	523 x3 = 1569
Total Volume Purged (gal):	1692

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1433	Pump On						
1448	15	12	180	7.35	24.8	1059	
1503	30	12	360	7.39	25.3	1058	
1518	45	12	540	7.37	25.3	1060	
1533	60	12	720	7.39	25.0	1060	
1548	75	12	900	7.36	25.0	1056	
1603	90	12	1080	7.35	25.0	1056	
1618	105	12	1260	7.35	24.9	1058	
1633	120	12	1440	7.36	24.9	1056	
1648	135	12	1620	7.36	24.9	1056	Pump Off 1654

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
FRANCO 383	1651	Poly	500mL	1	300.0	IVP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/26/17
Well ID:	GARNER 557	Weather:	Overcast, humid, 90s
ADWR No:	558 557	Sampler:	JA

WELL DATA

Well Depth (ft bls):	300
Casing Diameter (in):	6
Static Water Level (ft bmp):	IWL
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
				7.43	23.8	474.3	
		V	L	O			
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/26/17

Well ID: GARNER 635 | Weather: Overcast, 90s. humid

ADWR No: 587635 | Sampler: JA

WELL DATA

Well Depth (ft bls): 680

Casing Diameter (in): 5

Static Water Level (ft bmp): 202.02

Casing Volume (gal): 488 x3 = 1464

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1238	Pump On						
1238				7.46	23.4	474.1	
1241							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
GARNER 635	1241	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: No purge per owner request, sampled from spigot after 1 field parameter reading

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/12/17

Well ID: GOAR RANCH | Weather: Overcast, 80's

ADWR No: 610695 | Sampler: JA

WELL DATA

Well Depth (ft bls): 250

Casing Diameter (in): 7

Static Water Level (ft bmp): 192.84

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	WELL O						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WELL O							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WELL O

Additional Comments: WELL O

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 7-13-17

Well ID: Hoban Weather: Sunny

ADWR No: Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls): 300

Casing Diameter (in): 5"

Static Water Level (ft bmp): 172 —

Casing Volume (gal): 130.5 x3 = 391.5

Total Volume Purged (gal): 528

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0550	Pump On						
0600	10	17.6	176	6.77	21.7	1924	
0610	20	17.6	352	6.79	21.7	1927	
0620	30	17.6	528	6.78	21.7	1924	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Hoban	0620	PL	250	1	300	Ice	Y
Dup-071317	0620	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [x] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 128

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/21/17

Well ID: HOWARD 312 | Weather: Overcast, 80s

ADWR No: 221 312 | Sampler: JA

WELL DATA

Well Depth (ft bls): 980

Casing Diameter (in): 5

Static Water Level (ft bmp): 207.54

Casing Volume (gal): 788 x3 = 2364

Total Volume Purged (gal): 2430

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0930	Pump On						
0945	15	9	135	7.90	21.6	612.9	
1000	30	9	270	8.00	22.7	614.0	
1045	75	9	675	8.01	24.6	615.5	
1130	120	9	1080	7.99	25.9	616.3	
1215	165	9	1485	7.99	25.9	616.2	
1300	210	9	1890	7.99	26.0	616.5	
1345	255	9	2295	8.00	25.9	615.5	
1355	265	9	2385	8.00	26.0	616.4	
1400							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
HOWARD 312	13:59	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/21/17

Well ID: HOWARD NR | Weather: Overcast, light rain, 70's

ADWR No: NR | Sampler: SA

WELL DATA

Well Depth (ft bls): 220

Casing Diameter (in): 6

Static Water Level (ft bmp): 158.84

Casing Volume (gal): 90 x3 = 270

Total Volume Purged (gal): 340

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1418	Pump On						
1423	5	10	50	7.29	20.1	1188	
1428	10	10	100	7.25	20.2	1180	
1433	15	10	150	7.06	20.2	1227	
1438	20	10	200	7.04	20.1	1172	
1443	25	10	250	7.01	20.1	1256	
1448	30	10	300	6.98	20.1	1278	
1452							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
HOWARD NR	1452	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/25/17

Well ID: KEEFER | Weather: Cloudy, 80s

ADWR No: 209744 | Sampler: JA

WELL DATA

Well Depth (ft bls): 245

Casing Diameter (in): 6

Static Water Level (ft bmp): 142.64

Casing Volume (gal): 151 x3 = 453

Total Volume Purged (gal): 486

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1100	Pump On						
1110	10	9	90	7.29	20.6	476.2	
1120	20	9	180	7.29	19.9	479.6	
1130	30	9	270	7.31	19.5	490.2	
1140	40	9	360	7.30	19.5	494.3	
1150	50	9	450	7.31	19.4	499.5	
1154							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
KEEFER	1154	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/28/17

Well ID: MARCELL Weather: Cloudy, 90s

ADWR No: NR Sampler: JA

WELL DATA

Well Depth (ft bls): ~220

Casing Diameter (in): 6

Static Water Level (ft bmp): Inc

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

Unable to Sample

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☒ Other: Port plug rusted on, unable to remove with wrench

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: pump not working / not connected to power

Additional Comments: Unable to Sample, no water from spigot / pump not working.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/20/17

Well ID: MCCONNELL 265 Weather: overcast, 80s

ADWR No: 539265 Sampler: DA

WELL DATA

Well Depth (ft bls): 216

Casing Diameter (in): 6

Static Water Level (ft bmp): 165.09

Casing Volume (gal): 75 x3 = 225

Total Volume Purged (gal): 310

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1333	Pump On						
1338	5	10	50	6.77	20.5	2007	
1343	10	10	100	6.76	20.6	2005	
1348	15	10	150	6.74	20.6	1988	
1353	20	10	200	6.73	20.6	1974	
1358	25	10	250	6.73	20.6	1964	
1404							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
MCCONELL 265	1404	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/20/17

Well ID: MCCONNELL 459 | Weather: Overcast 80s

ADWR No: 22 1459 | Sampler: JA

WELL DATA

Well Depth (ft bls): 863

Casing Diameter (in): 5

Static Water Level (ft bmp): 168.58

Casing Volume (gal): 708 x3 = 2125

Total Volume Purged (gal): 2160

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0945	Pump On						
1000	15	10	150	7.73	23.2	454.4	
1015	30	10	300	7.92	24.2	444.4	
1045	60	10	600	7.95	24.7	451.8	
1115	90	10	900	7.91	24.8	451.9	
1145	120	10	1200	7.93	24.9	450.8	
1215	150	10	1500	7.92	24.8	451.3	
1245	180	10	1800	7.93	25.0	449.4	
1320	215	10	2150	7.93	24.9	449.8	
1326							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
MCCONNELL 459	1325	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/14/17

Well ID: METZLER Weather: Partly Cloudy, 90s

ADWR No: 35-71891 Sampler: JA

WELL DATA

Well Depth (ft bls): 351

Casing Diameter (in): 6

Static Water Level (ft bmp): 294.38

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	WL-0						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WL-0							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WL-0

Additional Comments: WL-0

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/25/17

Well ID: MOORE Weather: cloudy, 90s

ADWR No: 538847 Sampler: JA

WELL DATA

Well Depth (ft bls): 220

Casing Diameter (in): 6

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal): 231

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1700	Pump On						
1710	10	7	70	7.31	21.5	460.3	
1720	20	7	140	7.28	21.2	456.8	
1730	30	7	210	7.28	21.1	455.5	
1733							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
MOORE	1732	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/27/17
Well ID:	NESS	Weather:	Overcast, 90s
ADWR No:	509127	Sampler:	JA

WELL DATA

Well Depth (ft bls):	812
Casing Diameter (in):	6
Static Water Level (ft bmp):	550.36
Casing Volume (gal):	385 x3 = 1155
Total Volume Purged (gal):	1222

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1655	Pump On						
1710	15	13	195	7.64	26.3	544.1	
1725	30	13	390	7.41	26.6	543.8	
1740	45	13	585	7.38	26.7	546.9	
1755	60	13	780	7.40	27.0	546.9	
1810	75	13	975	7.38	26.9	547.7	
1825	90	13	1170	7.39	26.9	545.8	
1829							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NESS	1829	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Tank water filled by pump water, sampled from only available spigot. Will update sampling to NA purge - sample tank water per owner request

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/27/17

Well ID: NOTEMAN Weather: cloudy, 90s

ADWR No: 212 483 Sampler: SA

WELL DATA

Well Depth (ft bls): 470

Casing Diameter (in): 5

Static Water Level (ft bmp): Use 327.54 from 2/25/09

Casing Volume (gal): 145 x3 = 435

Total Volume Purged (gal): 468

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1300	Pump On						
1310	10	9	90	6.56	22.9	1391	
1320	20	9	180	6.58	22.9	1393	
1330	30	9	270	6.58	22.9	1387	
1340	40	9	360	6.57	23.0	1384	
1350	50	9	450	6.57	22.9	1383	
1352							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NOTEMAN	1352	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ SA No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☑ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 9/30/17

Well ID: NSD-02 Weather: Clear, 80s

ADWR No: 527587 Sampler: JA

WELL DATA

Well Depth (ft bls): 120

Casing Diameter (in): 12

Static Water Level (ft bmp): 108.89

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	WLO						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 9/30/17

Well ID: NSD-03 Weather: Clear, 80s

ADWR No: 527586 Sampler: JA

WELL DATA

Well Depth (ft bls): 100

Casing Diameter (in): 12

Static Water Level (ft bmp): 90.71

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	WL O						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/18/17
Well ID:	NVC-02	Weather:	7/humid, mostly clear, 80s
ADWR No:	5629 44	Sampler:	JA

WELL DATA

Well Depth (ft bls):	312
Casing Diameter (in):	6
Static Water Level (ft bmp):	168.60
Casing Volume (gal):	211 x3 = 633
Total Volume Purged (gal):	2070

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0704	Pump On						
0709	5	90	450	7.30	20.9	434.8	
0714	10	90	900	7.29	21.0	434.9	
0719	15	90	1350	7.29	21.0	435.8	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NVC-02	0724	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Hand Filtered Sample

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 9/18/17

Well ID: NVC-03 CAP Weather: Mostly Clear, Humid, 80s

ADWR No: 627 684 Sampler: JA

WELL DATA

Well Depth (ft bls): 179

Casing Diameter (in): 8

Static Water Level (ft bmp): 130.48

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/18/17

Well ID: NWC-04 | Weather: Mostly clear, 70s, Humid

ADWR No: 551849 | Sampler: JA

WELL DATA

Well Depth (ft bls): 462

Casing Diameter (in): 10

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0605	Pump On						
0610	5			7.22	23.9	845.7	
0615	10			7.22	23.9	844.7	
0620	15			7.23	23.9	844.7	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-04	0625	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Hand filtered sample

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/18/17

Well ID: NWC-06 | Weather: Mostly clear, Humid, 80s

ADWR No: 575700 | Sampler: JA

WELL DATA

Well Depth (ft bls): 340

Casing Diameter (in): 8

Static Water Level (ft bmp): 162.80

Casing Volume (gal): 463 x3 = 1389

Total Volume Purged (gal): 3045

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0743	Pump On						
0748	5	145	725	7.35	21.4	403.0	
0753	10	145	1450	7.35	21.4	404.3	
0758	15	145	2175	7.36	21.4	405.6	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-06	0804	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Hand filtered sample

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/25/17

Well ID: OLMO5 | Weather: Partly Cloudy, 80s, humid

ADWR No: 224745 | Sampler: SA

WELL DATA

Well Depth (ft bls): 306

Casing Diameter (in): 6

Static Water Level (ft bmp): use 145.84 from 1/13/16

Casing Volume (gal): 235 x3 = 705

Total Volume Purged (gal): 780

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0914	Pump On						
0929	15	10	150	7.28	20.7	418.5	
0944	30	10	300	7.34	20.6	420.5	
0959	45	10	450	7.33	20.7	425.7	
1014	60	10	600	7.32	20.7	432.2	
1029	75	10	750	7.29	20.6	434.7	
1032							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
OLMO5	1032	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☒ Other: well casing is not accessible from access port.

WELL PURGING INFORMATION

- ☑ Purged 3 well volumes and field parameters stabilized.
- ☒ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/31/17

Well ID: OSBORN Weather: Cloudy, 80s

ADWR No: 643436 Sampler: SA

WELL DATA

Well Depth (ft bls): 258

Casing Diameter (in): 8

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
1007	~	~	~	7.74	25.6	548.4	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
OSBORN	1007	Poly	250 mL	1	300.0	NP	Y
DUP20170731	0900	poly	250 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: No Purge, sample from storage tank spigot near electrical boxes.

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/27/17

Well ID: PALMER Weather: overcast, raining, 90s

ADWR No: 578819 Sampler: JA

WELL DATA

Well Depth (ft bls): 220

Casing Diameter (in): 6

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	unable	to	Sample				
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Unable to sample, no water flowing / no pipe connected to spigot on side of house. Storage tanks next to garage are empty & not connected to anything

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/17/17

Well ID: PANAGAKOS | Weather: cloudy, humid, PDS

ADWR No: 35-76413 | Sampler: JA

WELL DATA

Well Depth (ft bls): 200

Casing Diameter (in): 8

Static Water Level (ft bmp): 160.37

Casing Volume (gal): 103 x3 = 310

Total Volume Purged (gal): 395

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
(8)	(2.61)
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0905	Pump On						
0910	5	5	25	7.16	20.1	1197	
0920	15	5	75	7.22	20.2	1191	
0935	30	5	150	7.17	20.2	1196	
0950	45	5	225	7.16	20.2	1201	
1005	60	5	300	7.14	20.2	1214	
1015	70	5	350	7.13	20.2	1219	
1024							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
PANAGAKOS	1017	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/25/17

Well ID: PARRA | Weather: cloudy, 90s

ADWR No: 576415 | Sampler: JA

WELL DATA

Well Depth (ft bls): 355

Casing Diameter (in): 6

Static Water Level (ft bmp): use 280.99 from 7/20/99

Casing Volume (gal): 109 x3 = 327

Total Volume Purged (gal): 396

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1403	Pump On						
1413	10	9	90	7.01	20.9	1192	
1423	20	9	180	6.97	21.0	1193	
1433	30	9	270	6.98	20.9	1194	
1443	40	9	360	6.98	20.9	1194	
1447							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
PARRA	1447	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☑ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 9/30/17

Well ID: PLOVKE 395 | Weather: Clear, 80s

ADWR No: 613395 | Sampler: JA

WELL DATA

Well Depth (ft bls): 330

Casing Diameter (in): 8

Static Water Level (ft bmp): 157.63

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
(8)	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	WLO	WLO	WLO				
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO Pump not functioning

Additional Comments:

CLEAR CREEK ASSOCIATES

A QA review concluded that this water level is too deep/inaccurate. Therefore, the water level was re-measured and this water level was not included in the Groundwater Elevation table. -K.S., Clear Creek Associates

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 9/30/17

Well ID: PIOVKE 395 Weather: Clear, 80s

ADWR No: 613395 Sampler: JA

WELL DATA

Well Depth (ft bls): 330

Casing Diameter (in): 8

Static Water Level (ft bmp): 157.63

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	WLO						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO Pump not functioning

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/18/17
Well ID:	PIONKE 517	Weather:	Partly Cloudy, 80s
ADWR No:	221517	Sampler:	JA

WELL DATA

Well Depth (ft bls):	604
Casing Diameter (in):	5
Static Water Level (ft bmp):	154.44
Casing Volume (gal):	459 x3 = 1377
Total Volume Purged (gal):	1512

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0920	Pump On						
0940	20	12	240	7.43	22.0	389.4	
1000	40	12	480	7.43	22.3	389.7	
1020	60	12	720	7.43	22.4	389.8	
1040	80	12	960	7.42	22.4	389.5	
1100	100	12	1200	7.44	22.4	388.9	
1120	120	12	1440	7.44	22.5	388.7	
1126							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
PIONKE 517	1125	pol.	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/12/17
Well ID:	POWER 639	Weather:	Overcast, 80s
ADWR No:	222639	Sampler:	JA

WELL DATA

Well Depth (ft bls):	480
Casing Diameter (in):	6
Static Water Level (ft bmp):	295.25
Casing Volume (gal):	272 x3 = 816
Total Volume Purged (gal):	

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1500	Pump On						
1515	15	10	150	7.23	21.0	964.4	
1530	30	10	300	7.18	21.0	981.9	
1545	45	10	450	7.17	20.9	996.2	
1600	60	10	600	7.16	20.9	999.1	
1615	75	10	750	7.17	20.8	1008	
1630	90	10	900	7.16	20.8	1010	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point: Spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
POWER 639	1634	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/26/17

Well ID: RAMIREZ Weather: partly cloudy, 80s

ADWR No: 216425 Sampler: JA

WELL DATA

Well Depth (ft bls): 300

Casing Diameter (in): 6

Static Water Level (ft bmp): 166.81

Casing Volume (gal): 196 x3 = 588

Total Volume Purged (gal): 693

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0900	Pump On						
0915	15	11	165	7.28	22.1	404.0	
0930	30	11	330	7.34	22.1	409.7	
0945	45	11	495	7.37	22.0	415.4	
1000	60	11	660	7.37	22.0	414.5	
1003							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
RAMIREZ	1003	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/26/17

Well ID: RAY | Weather: cloudy, 80s

ADWR No: 803772 | Sampler: JA

WELL DATA

Well Depth (ft bls): 100

Casing Diameter (in): 8

Static Water Level (ft bmp): 57.61

Casing Volume (gal): 111 x3 = 333

Total Volume Purged (gal): 378

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
(8)	(2.61)
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1611	Pump On						
1621	10	7	70	6.94	19.8	1291	
1631	20	7	140	6.95	19.6	1294	
1641	30	7	210	6.93	19.7	1304	
1651	40	7	280	6.92	19.8	1298	
1701	50	7	350	6.93	19.8	1288	
1705							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
RAY	1705	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 9/30/17

Well ID: ROGERS 596 Weather: Clear, 80s

ADWR No: 573 596 Sampler: SA

WELL DATA

Well Depth (ft bls): 290

Casing Diameter (in): 6

Static Water Level (ft bmp): 141.86

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	WL		0				
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	9/30/17
Well ID:	ROGERS 803	Weather:	clear, 80s
ADWR No:	641803	Sampler:	JA

WELL DATA

Well Depth (ft bls):	~~140~~ JA 300'
Casing Diameter (in):	6
Static Water Level (ft bmp):	138.83
Casing Volume (gal):	237 x3 = ~~711~~
Total Volume Purged (gal):	744

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1111	Pump On						
1121	10	6	60	6.48	21.6	1608	cloudy brown water
1131	20	6	120	6.91	21.6	1629	↓
1141	30	6	180	6.92	21.6	1579	↓
1151	40	6	240	6.94	21.6	1501	water clears up
1211	60	6	360	6.95	21.6	1432	↓
1231	80	6	480	7.01	21.5	1383	
1251	100	6	600	7.00	21.4	1379	
1311	120	6	720	7.03	21.5	1396	
1314							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
ROGERS 803	1314	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/26/17

Well ID: ROGERS E | Weather: Cloudy, 80s

ADWR No: 216018 | Sampler: JA

WELL DATA

Well Depth (ft bls): 285

Casing Diameter (in): 6

Static Water Level (ft bmp): 157.46

Casing Volume (gal): 188 x3 = 564

Total Volume Purged (gal): 630

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1030	Pump On						
1045	15	10	150	7.32	21.5	427.3	
1100	30	10	300	7.32	21.0	428.3	
1115	45	10	450	7.32	21.0	429.3	
1130	60	10	600	7.31	21.3	429.3	
1133							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
ROGERS E	1133	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/25/17

Well ID: RUIZ Weather: cloudy, 90s

ADWR No: 531770 Sampler: JA

WELL DATA

Well Depth (ft bls): 312

Casing Diameter (in): 6

Static Water Level (ft bmp): use 299.74 from 7/30/15

Casing Volume (gal): 18 x3 = 54

Total Volume Purged (gal): 63

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1510	Pump On						
1515	5	3	15	7.06	20.4	850.2	
1520	10	3	30	7.06	20.5	851.8	
1525	15	3	45	7.05	20.6	851.0	
1530	20	3	60	7.06	20.5	850.8	
1531							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
RUIZ	1531	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☒ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/11/17

Well ID: SCHWARTZ | Weather: cloudy + breezy, 90s

ADWR No: 210865 | Sampler: JA

WELL DATA

Well Depth (ft bls): 305

Casing Diameter (in): 6

Static Water Level (ft bmp): 131.21

Casing Volume (gal): 256 x3 = 766

Total Volume Purged (gal): 860

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1420	Pump On						
1430	10	10	100	7.05	20.7	613.8	
1440	20	10	200	7.27	20.7	611.0	
1450	30	10	300	7.27	20.6	615.1	
1500	40	10	400	7.26	20.7	618.3	
1510	50	10	500	7.28	20.7	621.2	
1520	60	10	600	7.29	20.6	622.0	
1530	70	10	700	7.28	20.6	624.7	
1540	80	10	800	7.29	20.6	627.0	
1546			860				Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
SCHWARTZ	1545	Poly	500mL	1	300.0	NP	Y
DUP20170711	1400	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/14/17

Well ID: STEPHENS | Weather: Partly cloudy, 80s

ADWR No: 808560 | Sampler: SA

WELL DATA

Well Depth (ft bls): N/A

Casing Diameter (in):

Static Water Level (ft bmp): 54.15

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
		WLO					
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/27/17

Well ID: SWAN Weather: overcast, 90s

ADWR No: NR Sampler: JA

WELL DATA

Well Depth (ft bls):	98
Casing Diameter (in):	4
Static Water Level (ft bmp):	38.08
Casing Volume (gal):	39 x3 = 117
Total Volume Purged (gal):	238

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
(4)	(0.65)
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1530	Pump On						
1535	5	14	70	7.15	21.0	494.9	
1540	10	14	140	7.15	20.4	498.9	
1545	15	14	210	7.13	20.9	500.8	
1547							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
SWAN	1547	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/28/14

Well ID: THOMPSON 151 Weather: cloudy, 90s

ADWR No: 612 151 Sampler: JA

WELL DATA

Well Depth (ft bls): 210

Casing Diameter (in): 7

Static Water Level (ft bmp): IWL

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/28/17

Well ID: THOMPSON 34 Weather: Cloudy, 90s

ADWR No: 218341 Sampler: JH

WELL DATA

Well Depth (ft bls): 285

Casing Diameter (in): 7

Static Water Level (ft bmp): 168.34

Casing Volume (gal): 233 x3 = 700

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1221	Pump On						
1231	10			7.20	21.0	423.8	
1235	14			7.28	21.1	424.5	
1239	18			7.24	21.2	422.4	
1245							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
THOMPSON 34	1243	Poly	250 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected. (Top of casing)
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [x] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: removed pipe/vent pipe assembly for WL measurement from top of casing. NO foil purge Pac observer required to not overfill tank. Hand filtered sample.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030
Client: Freeport Copper Queen Branch
Task No:
Date: 8-1-17
Well ID: TM-2A
Weather: Partly Cloudy
ADWR No:
Sampler: Christopher L Sturm

WELL DATA

Well Depth (ft bls):	925
Casing Diameter (in):	4"
Static Water Level (ft bmp):	336.32
Casing Volume (gal):	382.6 x3 = 1148
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0530	Pump On						
0531	5	7.5	32	7.76	24.8	331	
0630	60	5.5	450	7.81	25.1	336	
0710	100	3.2	670	7.85	25.2	332	
0810	160	1.8	862	7.86	25.2	333	
0850	200	1.2	934	7.88	25.1	332	BS @ 0901
0550	20	5.15	1044	7.84	24.6	335	8-3-17, SWL - 419.18
0610	40	5.55	1154	7.87	24.7	333	
0630	60	5.5	1264	7.84	24.7	333	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-2A	0630	PL	250	1	300	Ice	X

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 528.7 8-3-17, Started pump @ 0530

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 7-26-17

Well ID: TM-6 Weather: Sunny

ADWR No: Sampler: Christopher L Shomo

WELL DATA

Well Depth (ft bls):	200'
Casing Diameter (in):	4"
Static Water Level (ft bmp):	163.47
Casing Volume (gal):	23.7 x3 = 71.1
Total Volume Purged (gal):	172

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0845	Pump On						
0850	5	11.5	57	7.24	20.5	521	
0855	10	11.5	115	7.26	20.4	520	
0900	15	11.5	172	7.27	20.4	521	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-6	0900	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 36.6

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030
Client: Freeport Copper Queen Branch
Task No:
Date: 8-2-17
Well ID: TM-7
Weather: Sunny
ADWR No:
Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls): 350
Casing Diameter (in): 4"
Static Water Level (ft bmp): NA
Casing Volume (gal): NA x3 =
Total Volume Purged (gal): NA

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0800	Pump On						
0802	2	10	20	7.34	21.7	561	
0812	—				21.5		
0814	4	10	40	7.55	21.5	564	
0824	—						
0826	6	10	60	7.52	21.6	566	
0836	—						
0838	8	10	80	7.56	21.5	563	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-7	0838	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☒ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other:

Additional Comments: Sampled per Clear Creek method

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 7/17/17

Well ID: TM-10 USBP | Weather: Overcast, raining 80s

ADWR No: 522696 | Sampler: JA

WELL DATA

Well Depth (ft bls):	290
Casing Diameter (in):	4
Static Water Level (ft bmp):	267.41
Casing Volume (gal):	15 x3 = 45
Total Volume Purged (gal):	~76

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
(4)	(0.65)
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
13 16	Pump On						
13 21	5	5	25	7.47	20.7	408.0	
13 26	10	1	30	7.67	20.6	408.3	
13 36	20	1	40	7.68	21.3	404.7	
13 46	30	1	50	7.71	22.8	409.8	
13 56	40	1	60	7.74	23.3	409.6	
14 06	50	1	70	7.77	23.5	409.5	
1412							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-10 USBP	14:11	poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [x] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Discharge rate fluctuates between ~0.5 & ~1.5 gpm after first 5 min.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 8-1-17

Well ID: TM-15 Weather: Partly Cloudy

ADWR No: Sampler: Christopher L Sharm

WELL DATA

Well Depth (ft bls):	325
Casing Diameter (in):	4"
Static Water Level (ft bmp):	300.26
Casing Volume (gal):	15.8 x3 = 47.4
Total Volume Purged (gal):	270

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0945	Pump On						
0955	10	9	90	7.37	22.9	383	
1005	20	9	180	7.39	22.9	383	
1015	30	9	270	7.38	22.9	384	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-15	1015	PL	250	1	300	Ice	X

WATER LEVEL MEASUREMENT COLLECTION

- [X] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [X] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 243

CLEAR CREEK ASSOC

Groundwater Sampling Form

Project No: 287030 | Client: Freeport Copper Queen Branch

Task No: | Date: 7-12-17

Well ID: TM-16 | Weather: Cloudy

ADWR No: | Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):	115
Casing Diameter (in):	4"
Static Water Level (ft bmp):	62.59
Casing Volume (gal):	34.1 x3 = 102.3
Total Volume Purged (gal):	315

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0545	Pump On						
0550	5	21	105	6.82	20.9	1318	
0555	10	21	210	6.86	20.9	1321	
0600	15	21	315	6.87	20.9	1321	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-16	0600	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 52.5

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030
Client: Freeport Copper Queen Branch
Task No:
Date: 7-26-17
Well ID: TM-19A
Weather: Partly Cloudy
ADWR No:
Sampler: Christ-plus 2 Storms

WELL DATA

Well Depth (ft bls):	700
Casing Diameter (in):	4"
Static Water Level (ft bmp):	207.54
Casing Volume (gal):	320.1 x3 = 960.3
Total Volume Purged (gal):	1000

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0630	Pump On						
0645	15	25	375	7.24	24.1	504	
0655	25	25	625	7.26	24.0	505	
0710	40	25	1000	7.27	24.1	505	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-19A	0710	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 492.5

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: Date: 7-26-17

Well ID: TM-42 Weather: Partly Cloudy

ADWR No: Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):	250
Casing Diameter (in):	5"
Static Water Level (ft bmp):	220.54
Casing Volume (gal):	31 x3 = 93
Total Volume Purged (gal):	150

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0545	Pump On						
0555	10	5	50	6.91	21.6	1232	
0605	20	5	100	6.97	21.6	1235	
0615	30	5	150	6.98	21.6	1234	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-42	0615	PL	250	1	300	Ice	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [x] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 29.5

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/31/17

Well ID: TVI 236 Weather: Partly cloudy, 80s

ADWR No: 802236 Sampler: JA

WELL DATA

Well Depth (ft bls): 222

Casing Diameter (in): 12

Static Water Level (ft bmp): 128.59

Casing Volume (gal): 548 x3 = 1644

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1208	Pump On						
1214	—	—	—	7.04	19.0	532.5	
12							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TVI 236	1223	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: Ran for 10 mins to clear drop pipe, collected sample

Additional Comments: Hand filtered sample

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/13/17
Well ID:	TVI - 7/3	Weather:	clear, 80s
ADWR No:	567713	Sampler:	SA

WELL DATA

Well Depth (ft bls):	200
Casing Diameter (in):	8
Static Water Level (ft bmp):	134.08
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	WLO						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLO							

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: WLO

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/13/17
Well ID:	TVI-875	Weather:	Clear, 80's
ADWR No:	568875	Sampler:	SA

WELL DATA

Well Depth (ft bls):	330
Casing Diameter (in):	
Static Water Level (ft bmp):	
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	1500

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0754	Pump On						
0757	3	500	1500	7.26	20.3	914.8	
0800	6	500	3000	7.21	20.1	923.9	
0803	9	500	4500	7.19	20.1	920.0	
0806							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point: Spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TVI-875	0805	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/24/17
Well ID:	WEED	Weather:	Overcast, 80s
ADWR No:	544535	Sampler:	JA

WELL DATA

Well Depth (ft bls):	320
Casing Diameter (in):	6
Static Water Level (ft bmp):	IWL
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1638	Pump On						
1643	5	3*	15	7.53	20.5	385.9	
1648	10	3	50	7.53	20.5	386.5	
1653	15	3	~~75~~	7.52	20.5	386.8	
1655							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WEED	1654	Poly	500 mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: * much greater discharge than 3 gpm, majority discharged to water tank

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/24/17

Well ID: WEISKOPF 802 Weather: cloudy, 80s

ADWR No: 641802 Sampler: JA

WELL DATA

Well Depth (ft bls): 200

Casing Diameter (in): 6

Static Water Level (ft bmp): 151.59

Casing Volume (gal): 71 x3 = 213

Total Volume Purged (gal): 256

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1258	Pump On						
1313	15	4	60	7.19	26.6	1056	
1328	30	4	120	6.90	23.8	1485	
1343	45	4	180	6.87	23.4	1515	
1358	60	4	240	6.85	22.8	1524	
1402							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WEISKOPF 802	1402	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	7/24/17
Well ID:	WEISKOPF 897	Weather:	Partly cloudy, humid, 80s
ADWR No:	220897	Sampler:	JA

WELL DATA

Well Depth (ft bls):	1030
Casing Diameter (in):	5
Static Water Level (ft bmp):	151.52
Casing Volume (gal):	896 x3 = 2688
Total Volume Purged (gal):	2736

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
(5)	(1.02)
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0900	Pump On						
0930	30	12	360	7.60	22.9	386.9	
1000	60	12	720	7.61	22.8	386.9	
1030	90	12	1080	7.62	23.1	386.2	
1100	120	12	1440	7.58	23.2	386.1	
1130	150	12	1800	7.58	23.2	386.4	
1200	180	12	2160	7.57	23.0	387.3	
1230	210	12	2520	7.57	23.2	386.1	
1245	225	12	2700	7.58	23.1	386.7	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WEISKOPF	1245	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 7/24/17

Well ID: ZANDER Weather: Overcast, 90s, Heavy Rain

ADWR No: 205126 Sampler: JA

WELL DATA

Well Depth (ft bls): 280

Casing Diameter (in): 6

Static Water Level (ft bmp): 152.63

Casing Volume (gal): 187 x3 = 561

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
(6)	(1.47)
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1435	Pump On						
1445	10	11	110	7.31	20.6	432.1	
1455	20	11	220	7.32	20.5	425.5	
1505	30	11	330	7.30	20.5	431.8	
1515	40	11	440	7.30	20.5	431.3	
1525	50	11	550	7.27	20.5	431.0	
1535	60	11	660	7.26	20.5	430.2	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
ZANDER	1545	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Date	**State well**	**Ladd House**	**Old house well**	**Middle #2**	**Stevenson Windmill**	**WSS-2015-01**	
6/24/2011	262.51	288	84				
9/29/2011	262.28	276.58	83.62				
12/16/2011	264.32	250.68	84.8				
2/15/2012	262.24	253.8	84.67				
6/11/2012	264.04	258.9	85.7				
9/26/2012	261.75	255.76	84.96				
12/19/2012	261.94	249.43	86.27				
3/22/2013	324.62	250.51	85.18				Pump running
3/27/2013	266.68						
6/14/2013	261.51	282.3	86.54				Pump running
6/27/2013		270			250.85		
9/24/2013	261.38	250.8	82.66	219.6	250.85 (9-25-13)		
12/3-4/2013	260.85	251.36	84.48	217.44	250.79		
2/25/2014	261.04	253.36	85.27	217.59	250.75		
6/4/2014	262.53	259.63	85.88	218.27	250.93		
9/10/2014	263.68	248.34	86.15	219.04	250.97		
11/20/2014	261.18	268.66	80.95	213.58	250.66		
3/24/2015	261.44	248.46	83.73	214.18	250.25		
9/17/2015	264.32	243.05	86.44	216.39	250.17		
12/16/2015			86.81				
3/24/2016	261.79	266.62	87.22	217.85	250.17	169.56 (3-31-16)	
9/28/2016	262.8	246.14	86.11	219.8	250.21	170.21	
11/22/2016						170.9	
3/20/2017	261.3	232.53	86.55	220.91	250.55	184.94	Pump running
8/10/2017	262	227.4	87.9	222.12	250.94		
8/24/2017						172.09	

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch

Task No: 1 Date: 11/14/17

Well ID: NWC-04 Weather:

ADWR No: 551849 Sampler: Michael Chambers

WELL DATA

Well Depth (ft bls): 462

Casing Diameter (in): 10

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0942	Pump On						
0946				7.72	23.6	877.0	
0949				7.42	23.3	864.7	
0952				7.45	23.7	862.4	
0955				7.31	23.3	860.1	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-04	1000	Poly	500mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☒ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Sampled at 1000, hand filtered

CLEAR CREEK ASSOCIATES

APPENDIX B

ANALYTICAL REPORTS

TURNER
LABORATORIES INC.

February 15, 2018

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 17A0613
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 10 sample(s) on 01/20/2017 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,
Turner Laboratories, Inc.
ADHS License AZ0066

Max DiSante
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Date Received: 01/20/2017

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
17A0613-01	BMO-2010-3B	Ground Water	01/18/2017 1041
17A0613-02	BMO-2010-3M	Ground Water	01/18/2017 1401
17A0613-03	COB MW-2	Ground Water	01/19/2017 1017
17A0613-04	AWC-05	Ground Water	01/19/2017 1135
17A0613-05	AWC-03	Ground Water	01/19/2017 1215
17A0613-06	AWC-04	Ground Water	01/19/2017 1255
17A0613-07	Dup-011917	Ground Water	01/19/2017 1358
17A0613-08	AWC-02	Ground Water	01/19/2017 1454
17A0613-09	FB20170119	Ground Water	01/19/2017 1416
17A0613-10	EQB20170119	Ground Water	01/19/2017 1417

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Date Received: 01/20/2017

Case Narrative

This report was originally generated on 2/10/2017. It is being revised on 2/6/2018 to report additional significant figures, which were not on the original report. It is being revised again on 2/15/2018 to report to only 3 significant figures.

E4	Concentration estimated. Analyte was detected below laboratory Minimum Reporting Limit (MRL) but above MDL.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Lab Sample ID: 17A0613-01

Client Sample ID: BMO-2010-3B
Collection Date/Time: 01/18/2017 1041
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	18.8	0.100	5.00		mg/L	1	01/24/2017 1241	01/24/2017 1451	KM

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Lab Sample ID: 17A0613-02

Client Sample ID: BMO-2010-3M
Collection Date/Time: 01/18/2017 1401
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	9.97	0.100	5.00		mg/L	1	01/24/2017 1241	01/24/2017 1510	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Lab Sample ID: 17A0613-03

Client Sample ID: COB MW-2
Collection Date/Time: 01/19/2017 1017
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	41.5	0.100	5.00		mg/L	1	01/24/2017 1241	01/24/2017 1528	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Lab Sample ID: 17A0613-04

Client Sample ID: AWC-05
Collection Date/Time: 01/19/2017 1135
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	21.9	0.100	5.00		mg/L	1	01/24/2017 1241	01/24/2017 1547	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Lab Sample ID: 17A0613-05

Client Sample ID: AWC-03
Collection Date/Time: 01/19/2017 1215
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	57.1	0.500	25.0		mg/L	5	01/25/2017 1700	01/26/2017 0348	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Lab Sample ID: 17A0613-06

Client Sample ID: AWC-04
Collection Date/Time: 01/19/2017 1255
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	22.9	0.100	5.00		mg/L	1	01/24/2017 1241	01/24/2017 1623	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Lab Sample ID: 17A0613-07

Client Sample ID: Dup-011917
Collection Date/Time: 01/19/2017 1358
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	23.1	0.100	5.00		mg/L	1	01/24/2017 1241	01/24/2017 1642	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Lab Sample ID: 17A0613-08

Client Sample ID: AWC-02
Collection Date/Time: 01/19/2017 1454
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	9.87	0.100	5.00		mg/L	1	01/24/2017 1241	01/24/2017 1700	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Lab Sample ID: 17A0613-09

Client Sample ID: FB20170119
Collection Date/Time: 01/19/2017 1416
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	1.22	0.100	5.00	E4	mg/L	1	01/24/2017 1241	01/24/2017 1719	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Lab Sample ID: 17A0613-10

Client Sample ID: EQB20170119
Collection Date/Time: 01/19/2017 1417
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	1.23	0.100	5.00	E4	mg/L	1	01/24/2017 1241	01/24/2017 1737	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0613
Date Received: 01/20/2017

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1701202 - IC PREP										
Blank (1701202-BLK1)				Prepared & Analyzed: 01/24/2017						
Sulfate	ND	5.00	mg/L							
LCS (1701202-BS1)				Prepared & Analyzed: 01/24/2017						
Sulfate	12.1	5.00	mg/L	12.50		97	90-110			
LCS Dup (1701202-BSD1)				Prepared & Analyzed: 01/24/2017						
Sulfate	12.3	5.00	mg/L	12.50		99	90-110	2	10	
Matrix Spike (1701202-MS1)	**Source: 17A0613-10**			Prepared & Analyzed: 01/24/2017						
Sulfate	12.5	5.00	mg/L	12.50	1.23	90	80-120			
Matrix Spike Dup (1701202-MSD1)	**Source: 17A0613-10**			Prepared & Analyzed: 01/24/2017						
Sulfate	12.9	5.00	mg/L	12.50	1.23	94	80-120	3	10	

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 17A0613 DATE 1-20-17 PAGE ____ OF ____

PROJECT NAME CQB Quarterly # 287030
CONTACT NAME: Chris Sherman
COMPANY NAME: Freeport McMoRan CQB
ADDRESS: 36 Highway 92
CITY Bisbee STATE AZ ZIP CODE 85603
PHONE 520 508 7063 FAX 520 432 1395
SAMPLER'S SIGNATURE

NUMBER OF CONTAINERS

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	SO4 - 300.0	U, Filtered
BMO-2010-3B	1-18-17	10 41		GW	X	
BMO-2010-3M	1-18-17	14 01		GW	X	
COB MW-2	1-19-17	10 17		GW	X	
AWC-05	1-19-17	11 35		GW	X	
AWC-03	1-19-17	12 15		GW	X	
AWC-04	1-19-17	1255		GW	X	
DUP-011917	1-19-17	1358		GW	X	
AWC-02	1-19-17	1454		GW	X	
FB20170119	1-19-17	1416		GW	X	X
EQB20170119	1-19-17	1417		GW	X	X

1. RELINQUISHED BY:
Signature
Jacob Alden
Printed Name
ClearCreek Associates
Firm
1-20-17 09:26
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
____ **Standard (approx.10 days)***
____ Next day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ____ N
P.O. # ____
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 10
Temperature 1.8
[X] Wet Ice [ ] Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Printed Name
TURNER LABORATORIES, INC.
Firm 1-20-17 0926
Date/Time

***LEGEND**
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	[ ] Yes	[ ] No	Custody Seals	[ ]	Preservation Confirmation	[X]
ADEQ Forms:	[ ] Yes	[ ] No	Container Intact	[X]	Appropriate Head Space	[X]
Mail ADEQ Forms:	[ ] Yes	[ ] No	COC/Labels Agree	[X]	Received Within Hold Time	[X]

All samples filtered with a Ø.45 µm filter, unless noted
Copy Results to Ben Daigneau + Fernando Alda

TURNER
LABORATORIES INC.

February 15, 2018

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 17A0736
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 24 sample(s) on 01/27/2017 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,
Turner Laboratories, Inc.
ADHS License AZ0066

Max DiSante
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB **Order: CQB**
Work Order: 17A0736
Date Received: 01/27/2017

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
17A0736-01	BMO-2015-2B	Drinking Water	01/23/2017 0912
17A0736-02	BMO-2015-2BL	Drinking Water	01/23/2017 0957
17A0736-03	BMO-2015-1B	Drinking Water	01/23/2017 1113
17A0736-04	BMO-2015-1BL	Drinking Water	01/23/2017 1209
17A0736-05	BMO-2014-4BL	Drinking Water	01/23/2017 1326
17A0736-06	BMO-2014-4B	Drinking Water	01/23/2017 1418
17A0736-07	WEED	Drinking Water	01/23/2017 1551
17A0736-08	BMO-2014-2BL	Drinking Water	01/24/2017 0950
17A0736-09	BMO-2014-2BU	Drinking Water	01/24/2017 1041
17A0736-10	BMO-2014-1BU	Drinking Water	01/24/2017 1247
17A0736-11	BMO-2014-1BL	Drinking Water	01/24/2017 1405
17A0736-12	Schwartz	Drinking Water	01/24/2017 1616
17A0736-13	BMO-2014-3BL	Drinking Water	01/25/2017 0943
17A0736-14	BMO-2014-3BU	Drinking Water	01/25/2017 1036
17A0736-15	COB WL	Drinking Water	01/25/2017 1640
17A0736-16	Cooper	Drinking Water	01/25/2017 1619
17A0736-17	NWC-04	Drinking Water	01/26/2017 0807
17A0736-18	NWC-02	Drinking Water	01/26/2017 0909
17A0736-19	NWC-06	Drinking Water	01/26/2017 0946
17A0736-20	Dodson	Drinking Water	01/26/2017 1154
17A0736-21	Ruiz	Drinking Water	01/26/2017 1340
17A0736-22	Power 634	Drinking Water	01/26/2017 1549
17A0736-23	TUI-236	Drinking Water	01/27/2017 1012
17A0736-24	TM-10 USBP	Drinking Water	01/27/2017 1137

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Date Received: 01/27/2017

Case Narrative

This report was originally generated on 2/10/2017. It is being revised on 2/6/2018 to report additional significant figures, which were not on the original report. It is being revised again on 2/15/2018 to report to only 3 significant figures.

E4	Concentration estimated. Analyte was detected below laboratory Minimum Reporting Limit (MRL) but above MDL.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-01

Client Sample ID: BMO-2015-2B
Collection Date/Time: 01/23/2017 0912
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	268	1.00	50.0		mg/L	10	02/03/2017 1550	02/03/2017 2320	KM

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-02

Client Sample ID: BMO-2015-2BL
Collection Date/Time: 01/23/2017 0957
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	315	1.00	50.0		mg/L	10	02/03/2017 1550	02/03/2017 2339	KM

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-03

Client Sample ID: BMO-2015-1B
Collection Date/Time: 01/23/2017 1113
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	193	1.00	50.0		mg/L	10	02/03/2017 1550	02/03/2017 2357	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-04

Client Sample ID: BMO-2015-1BL
Collection Date/Time: 01/23/2017 1209
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	249	1.00	50.0		mg/L	10	02/03/2017 1550	02/04/2017 0016	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-05

Client Sample ID: BMO-2014-4BL
Collection Date/Time: 01/23/2017 1326
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	182	1.00	50.0		mg/L	10	02/03/2017 1550	02/04/2017 0034	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-06

Client Sample ID: BMO-2014-4B
Collection Date/Time: 01/23/2017 1418
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	63.6	0.500	25.0		mg/L	5	02/03/2017 1550	02/04/2017 0052	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-07

Client Sample ID: WEED
Collection Date/Time: 01/23/2017 1551
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	13.3	0.100	5.00		mg/L	1	01/31/2017 1625	01/31/2017 2248	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-08

Client Sample ID: BMO-2014-2BL
Collection Date/Time: 01/24/2017 0950
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	453	2.00	100		mg/L	20	02/03/2017 1550	02/04/2017 0111	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-09

Client Sample ID: BMO-2014-2BU
Collection Date/Time: 01/24/2017 1041
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	61.0	0.500	25.0		mg/L	5	02/03/2017 1550	02/04/2017 0129	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-10

Client Sample ID: BMO-2014-1BU
Collection Date/Time: 01/24/2017 1247
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	178	1.00	50.0		mg/L	10	02/03/2017 1550	02/04/2017 0148	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-11

Client Sample ID: BMO-2014-1BL
Collection Date/Time: 01/24/2017 1405
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	156	1.00	50.0		mg/L	10	02/03/2017 1550	02/04/2017 0206	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-12

Client Sample ID: Schwartz
Collection Date/Time: 01/24/2017 1616
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	120	1.00	50.0		mg/L	10	02/03/2017 1550	02/04/2017 0320	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-13

Client Sample ID: BMO-2014-3BL
Collection Date/Time: 01/25/2017 0943
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	8.37	0.100	5.00		mg/L	1	01/31/2017 1625	02/01/2017 0211	KM

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-14

Client Sample ID: BMO-2014-3BU
Collection Date/Time: 01/25/2017 1036
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	8.06	0.100	5.00		mg/L	1	01/31/2017 1625	02/01/2017 0229	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-15

Client Sample ID: COB WL
Collection Date/Time: 01/25/2017 1640
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	79.8	0.500	25.0		mg/L	5	02/03/2017 1550	02/04/2017 0338	KM

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-16

Client Sample ID: Cooper
Collection Date/Time: 01/25/2017 1619
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	26.2	0.100	5.00		mg/L	1	01/31/2017 1625	02/01/2017 0306	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-17

Client Sample ID: NWC-04
Collection Date/Time: 01/26/2017 0807
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	195	1.00	50.0		mg/L	10	02/03/2017 1550	02/04/2017 0357	KM

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-18

Client Sample ID: NWC-02
Collection Date/Time: 01/26/2017 0909
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	6.81	0.100	5.00		mg/L	1	01/31/2017 1625	02/01/2017 0343	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-19

Client Sample ID: NWC-06
Collection Date/Time: 01/26/2017 0946
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	8.64	0.100	5.00		mg/L	1	01/31/2017 1625	02/01/2017 0401	KM

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-20

Client Sample ID: Dodson
Collection Date/Time: 01/26/2017 1154
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	45.9	0.100	5.00		mg/L	1	01/31/2017 1625	02/01/2017 0420	KM

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-21

Client Sample ID: Ruiz
Collection Date/Time: 01/26/2017 1340
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	194	1.00	50.0		mg/L	10	02/03/2017 1550	02/04/2017 0415	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-22

Client Sample ID: Power 634
Collection Date/Time: 01/26/2017 1549
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	317	1.00	50.0		mg/L	10	02/03/2017 1550	02/04/2017 0434	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-23

Client Sample ID: TUI-236
Collection Date/Time: 01/27/2017 1012
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	47.0	0.100	5.00		mg/L	1	01/31/2017 1625	02/01/2017 0647	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Lab Sample ID: 17A0736-24

Client Sample ID: TM-10 USBP
Collection Date/Time: 01/27/2017 1137
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	4.81	0.100	5.00	E4	mg/L	1	01/31/2017 1625	02/01/2017 0706	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17A0736
Date Received: 01/27/2017

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1701270 - IC PREP										
Blank (1701270-BLK1)				Prepared & Analyzed: 01/31/2017						
Sulfate	1.22	5.00	mg/L							
LCS (1701270-BS1)				Prepared & Analyzed: 01/31/2017						
Sulfate	12.2	5.00	mg/L	12.50		98	90-110			
LCS Dup (1701270-BSD1)				Prepared & Analyzed: 01/31/2017						
Sulfate	12.4	5.00	mg/L	12.50		99	90-110	0.9	10	
Matrix Spike (1701270-MS1)		**Source: 17A0768-01**		Prepared & Analyzed: 01/31/2017						
Sulfate	39.9	5.00	mg/L	12.50	29.0	88	80-120			
Matrix Spike (1701270-MS5)		**Source: 17A0736-10RE1**		Prepared: 02/03/2017 Analyzed: 02/04/2017						
Sulfate	29.7		mg/L	12.50	17.8	95	80-120			
Matrix Spike (1701270-MS6)		**Source: 17A0736-11RE1**		Prepared: 02/03/2017 Analyzed: 02/04/2017						
Sulfate	28.0		mg/L	12.50	15.6	99	80-120			
Matrix Spike Dup (1701270-MSD1)		**Source: 17A0768-01**		Prepared & Analyzed: 01/31/2017						
Sulfate	40.1	5.00	mg/L	12.50	29.0	89	80-120	0.4	10	
Matrix Spike Dup (1701270-MSD5)		**Source: 17A0736-10RE1**		Prepared: 02/03/2017 Analyzed: 02/04/2017						
Sulfate	29.8		mg/L	12.50	17.8	96	80-120	0.5	10	
Matrix Spike Dup (1701270-MSD6)		**Source: 17A0736-11RE1**		Prepared: 02/03/2017 Analyzed: 02/04/2017						
Sulfate	28.0		mg/L	12.50	15.6	99	80-120	0.3	10	

TURNER LABORATORIES INC.
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Tucson, Arizona 85745
(520) 882-5880
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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 17A0736 DATE 1/27/16 PAGE 1 OF 3

PROJECT NAME CQB Quarterly # 287030
CONTACT NAME: Chris Sherman
COMPANY NAME: Freeport McMoRan CQB
ADDRESS: 36 Highway 92
CITY Bisbee STATE AZ ZIP CODE 85603
PHONE 520 508 7063 FAX 520 432 1395
SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	SO4 -300.0 Unfiltered
BMO-2015-2B	1-23-17	0912		GW	1	X
BMO-2015-2BL	1-23-17	0957		GW	1	X
BMO-2015-1B	1-23-17	1113		GW	1	X
BMO-2015-1BL	1-23-17	1209		GW	1	X
BMO-2014-4BL	1-23-17	1326		GW	1	X
BMO-2014-4B	1-23-17	1418		GW	1	X
WEED	1-23-17	1551		GW	1	X
BMO-2014-2BL	1-24-17	0950		GW	1	X
BMO-2014-2B	1-24-17	1041		GW	1	X
BMO-2014-1B	1-24-17	1247		GW	1	X
BMO-2014-1BL	1-24-17	1405		GW	1	X

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

1. RELINQUISHED BY:
Signature
Jacob Alde
Printed Name
Clear Creek
Firm
1/27/17 1650
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Martha Howard
Printed Name
TURNER LABORATORIES, INC.
Firm
1/27/17 16.50
Date/Time

TURNAROUND REQUIREMENTS:
_____Standard (approx.10 days)*
___Next day ___2 Day ___5 Day*
___ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
___ I. Routine Report
___ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ___ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 11
Temperature 2.4
☒ Wet Ice ☐ Blue Ice

***LEGEND**
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes ☐ No	Custody Seals	☐	Preservation Confirmation	☒
ADEQ Forms:	☐ Yes ☐ No	Container Intact	☒	Appropriate Head Space	☒
Mail ADEQ Forms:	☐ Yes ☐ No	COC/Labels Agree	☒	Received Within Hold Time	☒

All samples filtered with a 0.45 µm filter, unless noted
Copy results to Ben Daigneau & Forrest Alde

TURNER LABORATORIES INC.
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Tucson, Arizona 85745
(520) 882-5880
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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 17A0736 DATE 1/27/17 PAGE 2 OF 3

PROJECT NAME CQB Quarterly # 287030
CONTACT NAME: Chris Sherman
COMPANY NAME: Freeport McMoRan CQB
ADDRESS: 36 Highway 92
CITY Bisbee STATE AZ ZIP CODE 85603
PHONE 520 508 7063 FAX
SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX: SO_4 - 300.0	Unfiltered
SCHWARTZ	1-24-17	1616		GW	1	X	
BMO-2014-3BL	1-25-17	0943		GW	1	X	
BMO-2014-3BU	1-25-17	1036		GW	1	X	
COB WL	1-25-17	1340		GW	1	X	
COOPER	1-25-17	1619		GW	1	X	
NWC-04	1-26-17	0807		GW	1	X	
NWC-02	1-26-17	0909		GW	1	X	
NWC-06	1-26-17	0946		GW	1	X	
DODSON	1-26-17	1154		GW	1	X	
RUIZ	1-26-17	1340		GW	1	X	
POWER 634	1-26-17	1544		GW	1	X	

1. RELINQUISHED BY:
Signature
Jacob Alden
Printed Name
Clear Creek
Firm
1/27/17 1650
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Martha Howard
Printed Name
TURNER LABORATORIES, INC.
Firm
1/27/17 16:50
Date/Time

TURNAROUND REQUIREMENTS:
_____ Standard (approx.10 days)*
___ Next day ___ 2 Day ___ 5 Day*
___ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
___ I. Routine Report
___ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ___ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 11
Temperature 2.4
☒ Wet Ice ☐ Blue Ice

***LEGEND**
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes ☐ No	Custody Seals	☐	Preservation Confirmation	☐
ADEQ Forms:	☐ Yes ☐ No	Container Intact	☐	Appropriate Head Space	☐
Mail ADEQ Forms:	☐ Yes ☐ No	COC/Labels Agree	☐	Received Within Hold Time	☐

All Samples Filtred with a Ø.45 µm filter, unless noted.
Copy results to Ben Daigneau & Fernando Alday

TURNER LABORATORIES INC.
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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 17A0736 DATE 1/27/17 PAGE 3 OF 3

PROJECT NAME CQB Quarterly # 287030
CONTACT NAME: Chris Sherman
COMPANY NAME: Freeport McMoRan CQB
ADDRESS: 36 Highway 92
CITY Bisbee STATE AZ ZIP CODE 85603
PHONE 520 508 7063 FAX 520 432 1395
SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	SO4 - 300.0	Un-filtered
TVI-236	1-27-17	1012		GW	1	X	
TM-10 USBP	1-27-17	1137		GW	1	X	

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

1. RELINQUISHED BY:
Signature
Jacob Alden
Printed Name
Clear Creek
Firm
1/27/17 1650
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
_____ Standard (approx.10 days)*
___ Next day ___ 2 Day ___ 5 Day*
___ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
___ I. Routine Report
___ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account ___ Y ___ N
P.O. # _____
Bill to: _____

SAMPLE RECEIPT:
Total Containers 2
Temperature 2.4
☒ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Martha Howard
Printed Name
TURNER LABORATORIES, INC.
Firm
1/27/17 1650
Date/Time

***LEGEND**
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes	☐ No	Custody Seals	☐	Preservation Confirmation	☒
ADEQ Forms:	☐ Yes	☐ No	Container Intact	☒	Appropriate Head Space	☒
Mail ADEQ Forms:	☐ Yes	☐ No	COC/Labels Agree	☒	Received Within Hold Time	☒

All samples filtered with a 0.45 µm filter unless noted
Copy results to Ben Daigneau & Fernando Alday

TURNER
LABORATORIES INC.

February 15, 2018

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 17B0713
Order Name: CQB Quarterly 287030

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 4 sample(s) on 02/24/2017 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,
Turner Laboratories, Inc.
ADHS License AZ0066

Max DiSante
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17B0713
Date Received: 02/24/2017

Order: CQB Quarterly 287030

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
17B0713-01	PANAGAKOS	Ground Water	02/24/2017 1320
17B0713-02	FB20170224	Drinking Water	02/24/2017 1301
17B0713-03	EQB20170224	Drinking Water	02/24/2017 1305
17B0713-04	DUP20170224	Drinking Water	02/24/2017 1200

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17B0713
Date Received: 02/24/2017

Case Narrative

This report was originally generated on 3/9/2017. It is being revised on 2/6/2018 to report additional significant figures, which were not on the original report. It is being revised again on 2/15/2018 to report to only 3 significant figures.

E4	Concentration estimated. Analyte was detected below laboratory Minimum Reporting Limit (MRL) but above MDL.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17B0713
Lab Sample ID: 17B0713-01

Client Sample ID: PANAGAKOS
Collection Date/Time: 02/24/2017 1320
Matrix: Ground Water
Order Name: CQB Quarterly 287030

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	218	1.00	50.0		mg/L	10	02/28/2017 1115	02/28/2017 1125	KM

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17B0713
Lab Sample ID: 17B0713-02

Client Sample ID: FB20170224
Collection Date/Time: 02/24/2017 1301
Matrix: Drinking Water
Order Name: CQB Quarterly 287030

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	1.20	0.100	5.00	E4	mg/L	1	02/27/2017 1559	02/27/2017 1714	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17B0713
Lab Sample ID: 17B0713-03

Client Sample ID: EQB20170224
Collection Date/Time: 02/24/2017 1305
Matrix: Drinking Water
Order Name: CQB Quarterly 287030

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	1.18	0.100	5.00	E4	mg/L	1	02/27/2017 1559	02/27/2017 1732	KM

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17B0713
Lab Sample ID: 17B0713-04

Client Sample ID: DUP20170224
Collection Date/Time: 02/24/2017 1200
Matrix: Drinking Water
Order Name: CQB Quarterly 287030

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	217	1.00	50.0		mg/L	10	02/28/2017 1115	02/28/2017 1143	KM

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17B0713
Date Received: 02/24/2017

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1702289 - IC PREP										
Blank (1702289-BLK1)				Prepared & Analyzed: 02/27/2017						
Sulfate	ND	5.00	mg/L							
LCS (1702289-BS1)				Prepared & Analyzed: 02/27/2017						
Sulfate	12.4	5.00	mg/L	12.50		99	90-110			
LCS Dup (1702289-BSD1)				Prepared & Analyzed: 02/27/2017						
Sulfate	12.5	5.00	mg/L	12.50		100	90-110	0.8	10	
Matrix Spike (1702289-MS1)		**Source: 17B0726-01**		Prepared & Analyzed: 02/27/2017						
Sulfate	14.7	5.00	mg/L	12.50	3.31	91	80-120			
Matrix Spike Dup (1702289-MSD1)		**Source: 17B0726-01**		Prepared & Analyzed: 02/27/2017						
Sulfate	14.8	5.00	mg/L	12.50	3.31	92	80-120	0.4	10	

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Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 17B0713 DATE 2-24-2017 PAGE 1 OF 1

PROJECT NAME CQB Quarterly # 287030
CONTACT NAME Chris Sherman
COMPANY NAME Freeport McMoRan CQB
ADDRESS 36 Highway 92
ZIP 85603 PHONE 520 508 7063 Fax/EMAIL 520 432 1395
SAMPLER'S SIGNATURE

NUMBER OF CONTAINERS

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	Base Neutrals 625/8270	Acids	Volatile Organics 624	524.2	8260	TTHMS	HAA5	Chloride	Sulfate	Resistivity	NO_2	NO_3	TKN	TPH	1664	Oil & Grease	VOA	TCLP Analysis Semi-VOA	Pest.	TCLP	Metals Total	Dissolved	RCRA8	Total	Cyanide Amen.	WAD	SDWA-INORGANICS PRIMARY	SECONDARY	MPN	Coliform PIA	Fecal	pH	Ct.	Cl	COD	Turb	TSS	BOD	SO_4 - 300.0	Unfiltered
PANAGAKOS	2/24/17	1320		GW																																				X		
FB20170224	2/24/17	1301		GW																																				X	X	
EQB20170224	2/24/17	1305		GW																																				X	X	
DUP20170224	2/24/17	1200		GW																																				X		

1. RELINQUISHED BY:
Signature
Jacob Alden
Printed Name
Clear Creek Associates
Firm
2-24-2017 / 16:48
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
____ Standard (approx. 10 days)*
____ Next Day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ____ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 4
Temperature 5.1
☒ Wet Ice
☐ Ambient
☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Printed Name
TURNER LABORATORIES, INC.
Firm
2/24/17 1648
Date/Time

* LEGEND
SAMPLE MATRIX
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

Compliance Analysis: ☐ Yes ☐ No		Custody Seals ☐		Preservation Confirmation ☒	
ADEQ Forms: ☐ Yes ☐ No		Container Intact ☒		Appropriate Head Space ☒	
Mail ADEQ Forms: ☐ Yes ☐ No		COC / Labels Agree ☒		Received Within Hold Time ☐	

SPECIAL INSTRUCTIONS/COMMENTS:
All samples filtered with a Ø.45 µm filter, unless noted.
Copy results to Ben Daigneau + Fernando Alday

www.svl.net One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7C0107**
Reported: 21-Mar-17 12:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BMO-2008-6M	X7C0107-01	Ground Water	01-Mar-17 08:50	CLS	07-Mar-2017	
BMO-2008-6B	X7C0107-02	Ground Water	01-Mar-17 09:40	CLS	07-Mar-2017	
BMO-2008-5M	X7C0107-03	Ground Water	01-Mar-17 11:00	CLS	07-Mar-2017	
BMO-2008-5B	X7C0107-04	Ground Water	01-Mar-17 11:35	CLS	07-Mar-2017	
BMO-2008-3B	X7C0107-05	Ground Water	01-Mar-17 12:30	CLS	07-Mar-2017	
BMO-2008-1G	X7C0107-06	Ground Water	01-Mar-17 14:20	CLS	07-Mar-2017	
TM-7	X7C0107-07	Ground Water	01-Mar-17 15:38	CLS	07-Mar-2017	
BMO-2008-11G	X7C0107-08	Ground Water	02-Mar-17 09:50	CLS	07-Mar-2017	
BMO-2012-1M	X7C0107-09	Ground Water	02-Mar-17 12:20	CLS	07-Mar-2017	
DUP-030217	X7C0107-10	Ground Water	02-Mar-17 12:20	CLS	07-Mar-2017	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7C0107**
Reported: 21-Mar-17 12:10

Client Sample ID: **BMO-2008-6M**
SVL Sample ID: **X7C0107-01 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 01-Mar-17 08:50
Received: 07-Mar-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	237	mg/L	3.00	1.40	10	X710124	SMB	03/09/17 13:31	D2,M3

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7C0107**
Reported: 21-Mar-17 12:10

Client Sample ID: **BMO-2008-6B**
SVL Sample ID: **X7C0107-02 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 01-Mar-17 09:40
Received: 07-Mar-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	12.1	mg/L	0.30	0.14		X710124	SMB	03/09/17 14:09	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7C0107**
Reported: 21-Mar-17 12:10

Client Sample ID: **BMO-2008-5M**
SVL Sample ID: **X7C0107-03 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 01-Mar-17 11:00
Received: 07-Mar-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	157	mg/L	3.00	1.40	10	X710124	SMB	03/09/17 14:22	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7C0107**
Reported: 21-Mar-17 12:10

Client Sample ID: **BMO-2008-5B**
SVL Sample ID: **X7C0107-04 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 01-Mar-17 11:35
Received: 07-Mar-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	243	mg/L	3.00	1.40	10	X710124	SMB	03/09/17 14:35	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7C0107**
Reported: 21-Mar-17 12:10

Client Sample ID: **BMO-2008-3B**
SVL Sample ID: **X7C0107-05 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 01-Mar-17 12:30
Received: 07-Mar-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	135	mg/L	3.00	1.40	10	X710124	SMB	03/09/17 14:48	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7C0107**
Reported: 21-Mar-17 12:10

Client Sample ID: **BMO-2008-1G**
SVL Sample ID: **X7C0107-06 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 01-Mar-17 14:20
Received: 07-Mar-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	110	mg/L	3.00	1.40	10	X710124	SMB	03/09/17 15:27	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7C0107**
Reported: 21-Mar-17 12:10

Client Sample ID: **TM-7**
SVL Sample ID: **X7C0107-07 (Ground Water)**

Sampled: 01-Mar-17 15:38
Received: 07-Mar-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	129	mg/L	3.00	1.40	10	X710124	SMB	03/09/17 15:40	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7C0107**
Reported: 21-Mar-17 12:10

Client Sample ID: **BMO-2008-11G**
SVL Sample ID: **X7C0107-08 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 02-Mar-17 09:50
Received: 07-Mar-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	12.5	mg/L	0.30	0.14		X710124	SMB	03/09/17 15:53	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7C0107**
Reported: 21-Mar-17 12:10

Client Sample ID: **BMO-2012-1M**
SVL Sample ID: **X7C0107-09 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 02-Mar-17 12:20
Received: 07-Mar-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	236	mg/L	3.00	1.40	10	X710124	SMB	03/09/17 16:06	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7C0107**
Reported: 21-Mar-17 12:10

Client Sample ID: **DUP-030217**
SVL Sample ID: **X7C0107-10 (Ground Water)**

Sampled: 02-Mar-17 12:20
Received: 07-Mar-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	228	mg/L	3.00	1.40	10	X710124	SMB	03/09/17 16:19	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7C0107**
Reported: 21-Mar-17 12:10

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.14	0.30	X710124	09-Mar-17	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.5	10.0	105	90 - 110	X710124	09-Mar-17	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	242	237	10.0	R > 4S	90 - 110	X710124	09-Mar-17	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	242	231	10.0	105	90 - 110	X710124	09-Mar-17	D2

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography											
EPA 300.0	Sulfate as SO4	mg/L	228	242	10.0	R > 4S	5.9	20	X710124	09-Mar-17	D2,M3

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

TURNER
LABORATORIES INC.

February 15, 2018

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 17D0292
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 1 sample(s) on 04/06/2017 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,
Turner Laboratories, Inc.
ADHS License AZ0066

Max DiSante
Laboratory Director

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17D0292
Date Received: 04/06/2017

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
17D0292-01	NWC-04	Drinking Water	04/06/2017 0714

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17D0292
Date Received: 04/06/2017

Case Narrative

This report was originally generated on 4/14/2017. It is being revised on 2/6/2018 to report additional significant figures, which were not on the original report. It is being revised again on 2/15/2018 to report to only 3 significant figures.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17D0292
Lab Sample ID: 17D0292-01

Client Sample ID: NWC-04
Collection Date/Time: 04/06/2017 0714
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	176	1.22	50.0		mg/L	10	04/10/2017 1849	04/10/2017 2155	MH

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17D0292
Date Received: 04/06/2017

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1704049 - IC PREP										
Blank (1704049-BLK1)				Prepared & Analyzed: 04/06/2017						
Sulfate	1.07	5.00	mg/L							
LCS (1704049-BS1)				Prepared & Analyzed: 04/06/2017						
Sulfate	12.4	5.00	mg/L	12.50		99	90-110			
LCS Dup (1704049-BSD1)				Prepared & Analyzed: 04/06/2017						
Sulfate	12.5	5.00	mg/L	12.50		100	90-110	0.8	10	
Matrix Spike (1704049-MS1)		**Source: 17D0288-01**		Prepared & Analyzed: 04/06/2017						
Sulfate	27.1	5.00	mg/L	12.50	15.8	90	80-120			
Matrix Spike Dup (1704049-MSD1)		**Source: 17D0288-01**		Prepared & Analyzed: 04/06/2017						
Sulfate	27.2	5.00	mg/L	12.50	15.8	91	80-120	0.5	10	

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 17D0292 DATE 4-6-17 JA PAGE 1 OF 1

PROJECT NAME CQB Quarterly # 287030
CONTACT NAME Chris Sherman
COMPANY NAME Freeport McMoRan CQB
ADDRESS 36 Highway 92, Bisbee AZ
ZIP 85603 PHONE 520-508-7063 Fax EMAIL 520-432-1345
SAMPLER'S SIGNATURE

NUMBER OF CONTAINERS

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	Base Neutrals 625/8270 / Acids	Volatile Organics 624 / 524.2 / 8260	THMs / HAA5	Chloride / Sulfate / Resistivity	NO3 / NO2	TKN	TPH / 1664 / Oil & Grease	TCLP Analysis Semi-VOA / VOA / Pest.	Metals TCLP / Dissolved / Total / RCRA8	Cyanide Total / Amen. / WAD	SDWA-INORGANICS PRIMARY / SECONDARY	Coliform MPN / PIA	pH / Fecal / Cr6 / Cl2	COD / TSS / Turb / BOD
NWC-04	4-6-17	07:14		GW				X										

1. RELINQUISHED BY:
Signature
Printed Name: Jake Allen
Firm: Clear Creek Associates
Date/Time: 4-6-17 JA 10:02

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
____ Standard (approx. 10 days)*
____ Next Day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ____ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 1
Temperature 3.2
☒ Wet Ice
☐ Ambient
☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Printed Name: KTB
Firm: TURNER LABORATORIES, INC.
Date/Time: 4-6-17 1002

* LEGEND SAMPLE MATRIX
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

Compliance Analysis: ☐ Yes ☐ No		Custody Seals ☐		Preservation Confirmation ☒	
ADEQ Forms: ☐ Yes ☐ No		Container Intact ☒		Appropriate Head Space ☒	
Mail ADEQ Forms: ☐ Yes ☐ No		COC / Labels Agree ☒		Received Within Hold Time ☒	

SPECIAL INSTRUCTIONS/COMMENTS:
All samples filtered with a 0.45 µm filter, unless noted.
Copy results to Ben Daigneau & Fernando Al

TURNER
LABORATORIES INC.

February 15, 2018

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 17G0444
Order Name: CC13.2870.30

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 20 sample(s) on 07/14/2017 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,
Turner Laboratories, Inc.
ADHS License AZ0066

Max DiSante
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Date Received: 07/14/2017

Order: CC13.2870.30

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
17G0444-01	BMO-2010-3B	Ground Water	07/11/2017 1005
17G0444-02	BMO-2010-3M	Ground Water	07/11/2017 1327
17G0444-03	Schwartz	Ground Water	07/11/2017 1545
17G0444-04	DUP20170711	Ground Water	07/11/2017 1400
17G0444-05	BMO-2015-2B	Ground Water	07/12/2017 0821
17G0444-06	BMO-2015-2BL	Ground Water	07/12/2017 0918
17G0444-07	BMO-2015-1B	Ground Water	07/12/2017 1040
17G0444-08	BMO-2015-1BL	Ground Water	07/12/2017 1131
17G0444-09	BMO-2014-4BL	Ground Water	07/12/2017 1248
17G0444-10	BMO-2014-4B	Ground Water	07/12/2017 1331
17G0444-11	Power 639	Ground Water	07/12/2017 1634
17G0444-12	BMO-2014-2BU	Ground Water	07/13/2017 0731
17G0444-13	BMO-2014-1BU	Ground Water	07/13/2017 0922
17G0444-14	BMO-2014-1BL	Ground Water	07/13/2017 0922
17G0444-15	TVI 875	Ground Water	07/13/2017 0805
17G0444-16	BMO-2014-3BL	Ground Water	07/13/2017 1304
17G0444-17	BMO-2014-3BU	Ground Water	07/13/2017 1350
17G0444-18	FB20170713	Ground Water	07/13/2017 1200
17G0444-19	EQB20170713	Ground Water	07/13/2017 1200
17G0444-20	COB WL	Ground Water	07/14/2017 1021

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Date Received: 07/14/2017

Case Narrative

This report was originally generated on 8/2/2017. It is being revised on 2/6/2018 to report additional significant figures, which were not on the original report. It is being revised again on 2/15/2018 to report to only 3 significant figures.

E4	Concentration estimated. Analyte was detected below laboratory Minimum Reporting Limit (MRL) but above MDL.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-01

Client Sample ID: BMO-2010-3B
Collection Date/Time: 07/11/2017 1005
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	16.5	0.204	5.00		mg/L	1	07/17/2017 1445	07/17/2017 2106	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-02

Client Sample ID: BMO-2010-3M
Collection Date/Time: 07/11/2017 1327
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	8.97	0.204	5.00		mg/L	1	07/17/2017 1445	07/17/2017 2124	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-03

Client Sample ID: Schwartz
Collection Date/Time: 07/11/2017 1545
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	103	1.02	25.0		mg/L	5	07/20/2017 1130	07/21/2017 0026	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-04

Client Sample ID: DUP20170711
Collection Date/Time: 07/11/2017 1400
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	102	1.02	25.0		mg/L	5	07/20/2017 1130	07/21/2017 0044	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-05

Client Sample ID: BMO-2015-2B
Collection Date/Time: 07/12/2017 0821
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	273	2.04	50.0		mg/L	10	07/20/2017 1130	07/21/2017 0103	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-06

Client Sample ID: BMO-2015-2BL
Collection Date/Time: 07/12/2017 0918
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	317	2.04	50.0		mg/L	10	07/20/2017 1130	07/21/2017 0121	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-07

Client Sample ID: BMO-2015-1B
Collection Date/Time: 07/12/2017 1040
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	190	1.02	25.0		mg/L	5	07/20/2017 1130	07/21/2017 0140	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-08

Client Sample ID: BMO-2015-1BL
Collection Date/Time: 07/12/2017 1131
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	253	2.04	50.0		mg/L	10	07/20/2017 1130	07/21/2017 0158	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-09

Client Sample ID: BMO-2014-4BL
Collection Date/Time: 07/12/2017 1248
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	178	1.02	25.0		mg/L	5	07/20/2017 1130	07/21/2017 0216	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-10

Client Sample ID: BMO-2014-4B
Collection Date/Time: 07/12/2017 1331
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	56.7	1.02	25.0		mg/L	5	07/20/2017 1130	07/21/2017 0330	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-11

Client Sample ID: Power 639
Collection Date/Time: 07/12/2017 1634
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	244	2.04	50.0		mg/L	10	07/20/2017 1130	07/21/2017 0349	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-12

Client Sample ID: BMO-2014-2BU
Collection Date/Time: 07/13/2017 0731
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	60.1	1.02	25.0		mg/L	5	07/20/2017 1130	07/21/2017 0407	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-13

Client Sample ID: BMO-2014-1BU
Collection Date/Time: 07/13/2017 0922
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	184	1.02	25.0		mg/L	5	07/20/2017 1130	07/21/2017 0426	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-14

Client Sample ID: BMO-2014-1BL
Collection Date/Time: 07/13/2017 0922
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	158	1.02	25.0		mg/L	5	07/20/2017 1130	07/21/2017 0444	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-15

Client Sample ID: TVI 875
Collection Date/Time: 07/13/2017 0805
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	303	2.04	50.0		mg/L	10	07/20/2017 1130	07/21/2017 0502	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-16

Client Sample ID: BMO-2014-3BL
Collection Date/Time: 07/13/2017 1304
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	8.69	0.204	5.00		mg/L	1	07/17/2017 1445	07/18/2017 0333	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-17

Client Sample ID: BMO-2014-3BU
Collection Date/Time: 07/13/2017 1350
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	8.55	0.204	5.00		mg/L	1	07/17/2017 1445	07/18/2017 0352	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-18

Client Sample ID: FB20170713
Collection Date/Time: 07/13/2017 1200
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	1.26	0.204	5.00	E4	mg/L	1	07/17/2017 1445	07/18/2017 0410	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-19

Client Sample ID: EQB20170713
Collection Date/Time: 07/13/2017 1200
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	1.26	0.204	5.00	E4	mg/L	1	07/17/2017 1445	07/18/2017 0429	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Lab Sample ID: 17G0444-20

Client Sample ID: COB WL
Collection Date/Time: 07/14/2017 1021
Matrix: Ground Water
Order Name: CC13.2870.30

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	80.4	1.02	25.0		mg/L	5	07/20/2017 1130	07/21/2017 0521	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0444
Date Received: 07/14/2017

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1707149 - IC PREP										
Blank (1707149-BLK1)				Prepared & Analyzed: 07/17/2017						
Sulfate	1.24	5.00	mg/L							
LCS (1707149-BS1)				Prepared & Analyzed: 07/17/2017						
Sulfate	12.0	5.00	mg/L	12.50		96	90-110			
LCS Dup (1707149-BSD1)				Prepared & Analyzed: 07/17/2017						
Sulfate	12.0	5.00	mg/L	12.50		96	90-110	0.02	10	
Matrix Spike (1707149-MS3)		**Source: 17G0468-01**		Prepared: 07/17/2017 Analyzed: 07/18/2017						
Sulfate	13.9	5.00	mg/L	12.50	2.72	90	80-120			
Matrix Spike (1707149-MS4)		**Source: 17G0444-01**		Prepared: 07/17/2017 Analyzed: 07/18/2017						
Sulfate	27.1	5.00	mg/L	12.50	16.5	85	80-120			
Matrix Spike (1707149-MS5)		**Source: 17G0444-02**		Prepared: 07/17/2017 Analyzed: 07/18/2017						
Sulfate	20.3	5.00	mg/L	12.50	8.97	91	80-120			
Matrix Spike Dup (1707149-MSD3)		**Source: 17G0468-01**		Prepared: 07/17/2017 Analyzed: 07/18/2017						
Sulfate	13.5	5.00	mg/L	12.50	2.72	86	80-120	3	10	
Matrix Spike Dup (1707149-MSD4)		**Source: 17G0444-01**		Prepared: 07/17/2017 Analyzed: 07/18/2017						
Sulfate	28.1	5.00	mg/L	12.50	16.5	93	80-120	4	10	
Matrix Spike Dup (1707149-MSD5)		**Source: 17G0444-02**		Prepared: 07/17/2017 Analyzed: 07/18/2017						
Sulfate	19.8	5.00	mg/L	12.50	8.97	86	80-120	3	10	

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1760444 DATE 7-14-17 PAGE 1 OF 2

PROJECT NAME CQB Quarterly # CC13.2870.30
CONTACT NAME Chris Sherman
COMPANY NAME Freeport McMoRan CQB
ADDRESS 36 Highway 92, Bisbee AZ
ZIP 85603 PHONE 520-508-7062 Fax EMAIL 520-432-1395
SAMPLER'S SIGNATURE

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Chloride	Sulfate	Resistivity	NO3	NO2	TKN	TPH	1664	Oil & Grease	TCLP Analysis Semi-VOA	VOA	Pest.	TCLP	Metals Total	Dissolved	RCRA8	Total	Cyanide Amen.	WAD	SDWA-INORGANICS PRIMARY	SECONDARY	Coliform MPN	PIA	pH	Fecal	Cl2	Cr6	Turb	COD	TSS	BOD
BMO-2010-3B	7/11/17	10:05		GW	1	X																													
BMO-2010-3M	7/11/17	13:27		GW	1	X																													
SCHWARTZ	7/11/17	15:45		GW	1	X																													
DUP20170711	7/11/17	14:00		GW	1	X																													
BMO-2015-2B	7/12/17	08:21		GW	1	X																													
BMO-2015-2BL	7/12/17	09:18		GW	1	X																													
BMO-2015-1B	7/12/17	10:40		GW	1	X																													
BMO-2025-1BL	7/12/17	11:31		GW	1	X																													
BMO-2014-4BL	7/12/17	12:48		GW	1	X																													
BMO-2014-4B	7/12/17	13:31		GW	1	X																													

1. RELINQUISHED BY:
Signature
Printed Name: Jake Alden
Firm: Clear Creek Associates
Date/Time: 7-14-17 / 16:10

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Printed Name: Joseph Catalano
Firm: TURNER LABORATORIES, INC.
Date/Time: 7-14-17 1610

TURNAROUND REQUIREMENTS:
____ Standard (approx. 10 days)*
____ Next Day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ____ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 10
Temperature 60.1
☑ Wet Ice
☐ Ambient
☐ Blue Ice

* LEGEND SAMPLE MATRIX
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

Compliance Analysis: ☐ Yes ☐ No	Custody Seals ☐	Preservation Confirmation ☑
ADEQ Forms: ☐ Yes ☐ No	Container Intact ☑	Appropriate Head Space ☑
Mail ADEQ Forms: ☐ Yes ☐ No	COC / Labels Agree ☑	Received Within Hold Time ☑

SPECIAL INSTRUCTIONS/COMMENTS:
All samples filtered with a 0.45 µm filter, unless noted.
Copy results to Ben Daigneau & Fernando Alday

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1760444 DATE 7-14-17 PAGE 2 OF 2

PROJECT NAME CQB Quarterly # CC13.2870.30
CONTACT NAME Chris Sherman
COMPANY NAME Freeport McMoRan CQB
ADDRESS 36 Highway 92, Bisbee AZ
ZIP 85603 PHONE 520-508-7063 Fax/EMAIL 520-432-1395
SAMPLER'S SIGNATURE

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Chloride	Sulfate	Resistivity	NO2	NO3	TKN	TPH	1664	Oil & Grease	TCLP Analysis	VOA	Semi-VOA	Pest.	Metals	TCLP	Dissolved	Total	RCRA8	Cyanide	Total	Amen.	WAD	SDWA-INORGANICS	PRIMARY	SECONDARY	Coliform	MPN	PIA	Fecal	pH	Cl2	Turb	COD	TSS	BOD	5+ Filtered
POWER 639	7/12/17	16:34		GW	1	X																																		
BMO-2014-2BL	7/13/17	07:31		GW	1	X																																		
BMO-2014-1BU	7/13/17	09:22		GW	1	X																																		
BMO-2014-1BL	7/13/17	10:36		GW	1	X																																		
TVI-875	7/13/17	08:05		GW	1	X																																		
BMO-2014-3BL	7/13/17	13:04		GW	1	X																																		
BMO-2014-3BU	7/13/17	13:50		GW	1	X																																		
FB20170713	7/13/17	12:00		GW	1	X																																X		
EQB20170713	7/13/17	12:03		GW	1	X																																X		
COB WL	7/14/17	10:21		GW	1	X																																		

1. RELINQUISHED BY:
Signature
Jake Alden
Printed Name
Clear Creek Associates
Firm
7-14-17 / 16:10
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
____ Standard (approx. 10 days)*
____ Next Day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ____ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 10
Temperature 6.0 \
☑ Wet Ice
☐ Ambient
☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Joseph Catalano
Printed Name
TURNER LABORATORIES, INC.
Firm
7-14-17 / 1610
Date/Time

* LEGEND
SAMPLE MATRIX
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

Compliance Analysis: ☐ Yes ☐ No		Custody Seals ☐	Preservation Confirmation ☑
ADEQ Forms: ☐ Yes ☐ No		Container Intact ☑	Appropriate Head Space ☑
Mail ADEQ Forms: ☐ Yes ☐ No		COC / Labels Agree ☑	Received Within Hold Time ☑

SPECIAL INSTRUCTIONS/COMMENTS:
All samples filtered with a 0.45µm filter unless noted.
Copy results to Ben Dargineau & Fernando Alday

TURNER
LABORATORIES INC.

February 15, 2018

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 17G0637
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 17 sample(s) on 07/21/2017 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,
Turner Laboratories, Inc.
ADHS License AZ0066

Max DiSante
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB **Order: CQB**
Work Order: 17G0637
Date Received: 07/21/2017

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
17G0637-01	Panagakos	Ground Water	07/17/2017 1017
17G0637-02	Dodson	Ground Water	07/17/2017 1150
17G0637-03	TM-10 USBP	Ground Water	07/17/2017 1411
17G0637-04	Cooper	Ground Water	07/17/2017 1540
17G0637-05	NWC-04	Ground Water	07/18/2017 0625
17G0637-06	NWC-02	Ground Water	07/18/2017 0724
17G0637-07	NWC-06	Ground Water	07/18/2017 0804
17G0637-08	Pionke 517	Ground Water	07/18/2017 1125
17G0637-09	Anderson 458	Ground Water	07/18/2017 1534
17G0637-10	COB MW-3	Ground Water	07/19/2017 0853
17G0637-11	COB MW-2	Ground Water	07/19/2017 0942
17G0637-12	COB MW-1B	Ground Water	07/19/2017 1314
17G0637-13	MC Connell 459	Ground Water	07/20/2017 1325
17G0637-14	MC Connell 265	Ground Water	07/20/2017 1404
17G0637-15	Franco 383	Ground Water	07/20/2017 1651
17G0637-16	Howard 312	Ground Water	07/21/2017 1359
17G0637-17	Howard NR	Ground Water	07/21/2017 1452

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Date Received: 07/21/2017

Case Narrative

This report was originally generated on 8/7/2017. It is being revised on 2/6/2018 to report additional significant figures, which were not on the original report. It is being revised again on 2/15/2018 to report to only 3 significant figures.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-01

Client Sample ID: Panagakos
Collection Date/Time: 07/17/2017 1017
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	232	2.04	50.0		mg/L	10	07/25/2017 1150	07/25/2017 1944	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-02

Client Sample ID: Dodson
Collection Date/Time: 07/17/2017 1150
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	46.1	0.204	5.00		mg/L	1	07/25/2017 1150	07/25/2017 1335	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-03

Client Sample ID: TM-10 USBP
Collection Date/Time: 07/17/2017 1411
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	8.01	0.204	5.00		mg/L	1	07/25/2017 1150	07/25/2017 1354	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-04

Client Sample ID: Cooper
Collection Date/Time: 07/17/2017 1540
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	35.6	1.02	25.0		mg/L	5	07/25/2017 1405	07/25/2017 1658	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-05

Client Sample ID: NWC-04
Collection Date/Time: 07/18/2017 0625
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	201	1.02	25.0		mg/L	5	07/25/2017 1405	07/25/2017 1717	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-06

Client Sample ID: NWC-02
Collection Date/Time: 07/18/2017 0724
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	7.15	0.204	5.00		mg/L	1	07/26/2017 1607	07/27/2017 1859	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-07

Client Sample ID: NWC-06
Collection Date/Time: 07/18/2017 0804
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	8.35	0.204	5.00		mg/L	1	07/26/2017 1630	07/27/2017 1917	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-08

Client Sample ID: Pionke 517
Collection Date/Time: 07/18/2017 1125
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	13.2	0.204	5.00		mg/L	1	07/26/2017 1630	07/27/2017 1936	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-09

Client Sample ID: Anderson 458
Collection Date/Time: 07/18/2017 1534
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	26.8	1.02	25.0		mg/L	5	07/26/2017 1550	07/26/2017 2001	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-10

Client Sample ID: COB MW-3
Collection Date/Time: 07/19/2017 0853
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	84.1	1.02	25.0		mg/L	5	07/27/2017 1042	07/27/2017 1327	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-11

Client Sample ID: COB MW-2
Collection Date/Time: 07/19/2017 0942
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	39.6	0.204	5.00		mg/L	1	07/27/2017 1042	07/27/2017 1118	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-12

Client Sample ID: COB MW-1B
Collection Date/Time: 07/19/2017 1314
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	1160	10.2	250		mg/L	50	07/27/2017 1042	07/27/2017 1345	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-13

Client Sample ID: MC Connell 459
Collection Date/Time: 07/20/2017 1325
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	32.3	1.02	25.0		mg/L	5	07/27/2017 1042	07/27/2017 1154	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-14

Client Sample ID: MC Connell 265
Collection Date/Time: 07/20/2017 1404
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	905	10.2	250		mg/L	50	07/27/2017 1042	07/27/2017 1517	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-15

Client Sample ID: Franco 383
Collection Date/Time: 07/20/2017 1651
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	337	2.04	50.0		mg/L	10	07/27/2017 1042	07/27/2017 1536	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-16

Client Sample ID: Howard 312
Collection Date/Time: 07/21/2017 1359
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	65.8	1.02	25.0		mg/L	5	07/27/2017 1042	07/27/2017 1250	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Lab Sample ID: 17G0637-17

Client Sample ID: Howard NR
Collection Date/Time: 07/21/2017 1452
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	447	5.10	125		mg/L	25	07/27/2017 1042	07/27/2017 1554	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0637
Date Received: 07/21/2017

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1707250 - IC PREP										
Blank (1707250-BLK1)				Prepared & Analyzed: 07/25/2017						
Sulfate	ND	5.00	mg/L							
LCS (1707250-BS1)				Prepared & Analyzed: 07/25/2017						
Sulfate	12.8	5.00	mg/L	12.50		103	90-110			
LCS Dup (1707250-BSD1)				Prepared & Analyzed: 07/25/2017						
Sulfate	12.5	5.00	mg/L	12.50		100	90-110	2	10	
Matrix Spike (1707250-MS1)		**Source: 17G0702-01**		Prepared & Analyzed: 07/25/2017						
Sulfate	14.2	5.00	mg/L	12.50	1.83	99	80-120			
Matrix Spike (1707250-MS2)		**Source: 17G0702-02**		Prepared & Analyzed: 07/25/2017						
Sulfate	14.6	5.00	mg/L	12.50	2.16	99	80-120			
Matrix Spike Dup (1707250-MSD1)		**Source: 17G0702-01**		Prepared & Analyzed: 07/25/2017						
Sulfate	14.5	5.00	mg/L	12.50	1.83	102	80-120	2	10	
Matrix Spike Dup (1707250-MSD2)		**Source: 17G0702-02**		Prepared & Analyzed: 07/25/2017						
Sulfate	14.6	5.00	mg/L	12.50	2.16	99	80-120	0.1	10	
Batch 1707268 - IC PREP										
Blank (1707268-BLK1)				Prepared & Analyzed: 07/26/2017						
Sulfate	1.12	5.00	mg/L							
LCS (1707268-BS1)				Prepared & Analyzed: 07/26/2017						
Sulfate	12.2	5.00	mg/L	12.50		97	90-110			
LCS Dup (1707268-BSD1)				Prepared & Analyzed: 07/26/2017						
Sulfate	12.3	5.00	mg/L	12.50		99	90-110	1	10	
Matrix Spike (1707268-MS2)		**Source: 17G0756-01RE1**		Prepared: 07/26/2017 Analyzed: 07/27/2017						
Sulfate	21.2		mg/L	12.50	10.6	85	80-120			
Matrix Spike Dup (1707268-MSD2)		**Source: 17G0756-01RE1**		Prepared: 07/26/2017 Analyzed: 07/27/2017						
Sulfate	21.2		mg/L	12.50	10.6	85	80-120		10	
Batch 1707280 - IC PREP										
Blank (1707280-BLK1)				Prepared & Analyzed: 07/27/2017						
Sulfate	1.12	5.00	mg/L							
LCS (1707280-BS1)				Prepared & Analyzed: 07/27/2017						
Sulfate	11.8	5.00	mg/L	12.50		95	90-110			
LCS Dup (1707280-BSD1)				Prepared & Analyzed: 07/27/2017						
Sulfate	11.9	5.00	mg/L	12.50		95	90-110	0.7	10	
Matrix Spike (1707280-MS2)		**Source: 17G0637-11**		Prepared & Analyzed: 08/01/2017						
Sulfate	31.4		mg/L	12.50	19.8	93	80-120			
Matrix Spike Dup (1707280-MSD2)		**Source: 17G0637-11**		Prepared & Analyzed: 08/01/2017						
Sulfate	32.5		mg/L	12.50	19.8	102	80-120	3	10	

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1760637 DATE 7/21/17 PAGE 1 OF 2

PROJECT NAME CQB Quarterly # CC13.2870.30
CONTACT NAME Chris Sherman
COMPANY NAME Freeport McMoRan CQB
ADDRESS 36 Highway 92, Bisbee AZ
ZIP 85603 PHONE 520-508-7063 Fax EMAIL 520-432-1395
SAMPLER'S SIGNATURE

NUMBER OF CONTAINERS

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	Base Neutrals 625/8270	Acids	Volatile Organics 624	524.2	8260	THMS	HAA5	Chloride	Sulfate	Resistivity	NO3	NO2	TKN	TPH	1664	Oil & Grease	VOA	TCLP Analysis Semi-VOA	Pest.	TCLP	Metals	Dissolved	Total	RCRA8	Total	Cyanide	Amen.	WAD	SDWA-INORGANICS PRIMARY	SECONDARY	MPN	Coliform PIA	pH	Fecal	Cl2	Cl	Turb	COD	TSS	BOD
PANAGAKOS	7/17	1017		GW								X																																
DODSON	7/17	1150		GW								X																																
TM-10 45BP	7/17	1411		GW								X																																
COOPER	7/17	1540		GW								X																																
NWC-04	7/18	0825		GW								X																																
NWC-02	7/18	0724		GW								X																																
NWC-06	7/18	0804		GW								X																																
PIONKE 517	7/18	1125		GW								X																																
ANDERSON 458	7/18	1534		GW								X																																
COB MW-3	7/19	0853		GW								X																																

1. RELINQUISHED BY:
Signature
Jake Alden
Printed Name
Clear Creek Associates
Firm
7-21-17 / 1658
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
____ Standard (approx. 10 days)*
____ Next Day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ____ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 10
Temperature 1.9
☑ Wet Ice
☐ Ambient
☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Joseph Cutalo
Printed Name
TURNER LABORATORIES, INC.
Firm
7/21/1658
Date/Time

* LEGEND SAMPLE MATRIX
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

Compliance Analysis: ☐ Yes ☐ No		Custody Seals ☐	Preservation Confirmation ☑
ADEQ Forms: ☐ Yes ☐ No		Container Intact ☑	Appropriate Head Space ☑
Mail ADEQ Forms: ☐ Yes ☐ No		COC / Labels Agree ☑	Received Within Hold Time ☑

SPECIAL INSTRUCTIONS/COMMENTS:
All samples filtered with a 0.45µm filter, unless noted.
Copy results to Ben Daigneau & Fernando Alda

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 176063 7 DATE 7/21/17 PAGE 2 OF 2

PROJECT NAME CQB Quarterly # CC13.2870.30
CONTACT NAME Chris Sherman
COMPANY NAME Freeport McMoRan CQB
ADDRESS 36 Highway 92, Bisbee AZ
ZIP 85603 PHONE 520-508-7063 Fax EMAIL 520-432-13915
SAMPLER'S SIGNATURE

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

NUMBER OF CONTAINERS

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	Chloride	Sulfate	Resistivity	NO3	NO2	TKN	TPH	1664	Oil & Grease	TCLP Analysis VOA	Semi-VOA	Pest.	Metals TCLP	Dissolved	Total	RCRA8	Cyanide Total	Amen.	WAD	SDWA-INORGANICS PRIMARY	SECONDARY	Coliform MPN	PIA	Fecal	pH	Cl2	Cl	Turb	TSS	COD	BOD
COB MW-2	7/19	0942		GW	X																													
COB MW-1B	7/19	1314		GW	X																													
MCCONNELL 454	7/20	1325		GW	X																													
MCCONNELL 265	7/20	1404		GW	X																													
FRANCO 383	7/20	1651		GW	X																													
HOWARD 372	7/21	1359		GW	X																													
HOWARD NR	7/21	1452		GW	X																													

1. RELINQUISHED BY:
Signature
Jake Alday
Printed Name
Clear Creek Associates
Firm
7-21-17 / 1658
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
____ Standard (approx. 10 days)*
____ Next Day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ____ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 7
Temperature 1.0 C
☑ Wet Ice
☐ Ambient
☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature Joseph Catuleo
Printed Name
TURNER LABORATORIES, INC.
Firm
7/21-17 1700
Date/Time

* LEGEND
SAMPLE MATRIX
DW = DRINKING WATER
GW = GROUNDWATER
SO = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

Compliance Analysis: ☐ Yes ☐ No		Custody Seals ☐	Preservation Confirmation ☐
ADEQ Forms: ☐ Yes ☐ No		Container Intact ☑	Appropriate Head Space ☑
Mail ADEQ Forms: ☐ Yes ☐ No		COC / Labels Agree ☑	Received Within Hold Time ☑

SPECIAL INSTRUCTIONS/COMMENTS:
All samples filtered with a 0.45µ filter unless noted
Copy results to Ben Daigneau & Fernando Alday

TURNER
LABORATORIES INC.

February 15, 2018

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 17G0807
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 24 sample(s) on 07/28/2017 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,
Turner Laboratories, Inc.
ADHS License AZ0066

Max DiSante
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB **Order: CQB**
Work Order: 17G0807
Date Received: 07/28/2017

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
17G0807-01	Weiskopf 897	Ground Water	07/24/2017 1248
17G0807-02	Zander	Ground Water	07/24/2017 1545
17G0807-03	Weed	Ground Water	07/24/2017 1654
17G0807-04	Olmos	Ground Water	07/25/2017 1032
17G0807-05	Keefer	Ground Water	07/25/2017 1154
17G0807-06	Burke	Ground Water	07/25/2017 1339
17G0807-07	Parra	Ground Water	07/25/2017 1447
17G0807-08	Ruiz	Ground Water	07/25/2017 1531
17G0807-09	Chambers	Ground Water	07/25/2017 1630
17G0807-10	Moore	Ground Water	07/25/2017 1732
17G0807-11	Rameriz	Ground Water	07/26/2017 1003
17G0807-12	Rogers E	Ground Water	07/26/2017 1133
17G0807-13	Garner 635	Ground Water	07/26/2017 1241
17G0807-14	Weiskopf 802	Ground Water	07/26/2017 1202
17G0807-15	Banks 986	Ground Water	07/26/2017 1046
17G0807-16	Ray	Ground Water	07/26/2017 1705
17G0807-17	Eppele 641	Ground Water	07/27/2017 1133
17G0807-18	East	Ground Water	07/27/2017 1231
17G0807-19	Noteman	Ground Water	07/27/2017 1352
17G0807-20	Bima	Ground Water	07/27/2017 1421
17G0807-21	Swan	Ground Water	07/27/2017 1547
17G0807-22	Ness	Ground Water	07/27/2017 1829
17G0807-23	Echave	Ground Water	07/28/2017 0942
17G0807-24	Thompson 341	Ground Water	07/28/2017 1243

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Date Received: 07/28/2017

Case Narrative

This report was originally generated on 8/14/2017. It is being revised on 2/6/2018 to report additional significant figures, which were not on the original report. It is being revised again on 2/15/2018 to report to only 3 significant figures.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-01

Client Sample ID: Weiskopf 897
Collection Date/Time: 07/24/2017 1248
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	17.0	0.204	5.00		mg/L	1	08/07/2017 1700	08/07/2017 1716	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-02

Client Sample ID: Zander
Collection Date/Time: 07/24/2017 1545
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	7.21	0.204	5.00		mg/L	1	08/07/2017 1728	08/07/2017 1734	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client:	Freeport McMoran - Copper Queen Branch	**Client Sample ID:**	Weed
Project:	CQB	**Collection Date/Time:**	07/24/2017 1654
Work Order:	17G0807	**Matrix:**	Ground Water
Lab Sample ID:	17G0807-03	**Order Name:**	CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	13.9	0.204	5.00		mg/L	1	08/07/2017 1728	08/07/2017 1752	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client:	Freeport McMoran - Copper Queen Branch	**Client Sample ID:**	Olmos
Project:	CQB	**Collection Date/Time:**	07/25/2017 1032
Work Order:	17G0807	**Matrix:**	Ground Water
Lab Sample ID:	17G0807-04	**Order Name:**	CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	8.25	0.204	5.00		mg/L	1	08/07/2017 1728	08/07/2017 1811	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-05

Client Sample ID: Keefer
Collection Date/Time: 07/25/2017 1154
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	7.23	0.204	5.00		mg/L	1	08/07/2017 1728	08/07/2017 1829	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-06

Client Sample ID: Burke
Collection Date/Time: 07/25/2017 1339
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	31.7	0.204	5.00		mg/L	1	08/07/2017 1728	08/07/2017 1848	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-07

Client Sample ID: Parra
Collection Date/Time: 07/25/2017 1447
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	426	5.10	125		mg/L	25	08/09/2017 1130	08/09/2017 1655	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-08

Client Sample ID: Ruiz
Collection Date/Time: 07/25/2017 1531
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	190	1.02	25.0		mg/L	5	08/09/2017 1130	08/09/2017 1713	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-09

Client Sample ID: Chambers
Collection Date/Time: 07/25/2017 1630
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	13.2	0.204	5.00		mg/L	1	08/07/2017 1728	08/07/2017 2038	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-10

Client Sample ID: Moore
Collection Date/Time: 07/25/2017 1732
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	7.98	0.204	5.00		mg/L	1	08/07/2017 1728	08/07/2017 2057	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-11

Client Sample ID: Rameriz
Collection Date/Time: 07/26/2017 1003
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	9.00	0.204	5.00		mg/L	1	08/07/2017 1728	08/07/2017 2115	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-12

Client Sample ID: Rogers E
Collection Date/Time: 07/26/2017 1133
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	6.86	0.204	5.00		mg/L	1	08/07/2017 1728	08/07/2017 2134	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-13

Client Sample ID: Garner 635
Collection Date/Time: 07/26/2017 1241
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	40.6	0.204	5.00		mg/L	1	08/07/2017 1728	08/07/2017 2152	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-14

Client Sample ID: Weiskopf 802
Collection Date/Time: 07/26/2017 1202
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	698	5.10	125		mg/L	25	08/09/2017 1130	08/09/2017 1732	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-15

Client Sample ID: Banks 986
Collection Date/Time: 07/26/2017 1046
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	88.6	1.02	25.0		mg/L	5	08/09/2017 1130	08/09/2017 1750	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-16

Client Sample ID: Ray
Collection Date/Time: 07/26/2017 1705
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	142	1.02	25.0		mg/L	5	08/09/2017 1130	08/09/2017 1809	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-17

Client Sample ID: Eppele 641
Collection Date/Time: 07/27/2017 1133
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	18.8	0.204	5.00		mg/L	1	08/07/2017 1728	08/07/2017 2306	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-18

Client Sample ID: East
Collection Date/Time: 07/27/2017 1231
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	14.2	0.204	5.00		mg/L	1	08/07/2017 1728	08/07/2017 2324	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-19

Client Sample ID: Noteman
Collection Date/Time: 07/27/2017 1352
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	265	2.04	50.0		mg/L	10	08/10/2017 1230	08/10/2017 1701	MR

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-20

Client Sample ID: Bima
Collection Date/Time: 07/27/2017 1421
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	304	2.04	50.0		mg/L	10	08/10/2017 1230	08/10/2017 1720	MR

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-21

Client Sample ID: Swan
Collection Date/Time: 07/27/2017 1547
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	18.5	0.204	5.00		mg/L	1	08/07/2017 1728	08/08/2017 0115	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-22

Client Sample ID: Ness
Collection Date/Time: 07/27/2017 1829
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	55.2	1.02	25.0		mg/L	5	08/10/2017 1230	08/10/2017 1738	MR

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-23

Client Sample ID: Echave
Collection Date/Time: 07/28/2017 0942
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	25.7	0.204	5.00		mg/L	1	08/07/2017 1728	08/08/2017 0152	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Lab Sample ID: 17G0807-24

Client Sample ID: Thompson 341
Collection Date/Time: 07/28/2017 1243
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	8.33	0.204	5.00		mg/L	1	08/07/2017 1728	08/08/2017 0210	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0807
Date Received: 07/28/2017

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1708070 - IC PREP										
Blank (1708070-BLK1)				Prepared & Analyzed: 08/07/2017						
Sulfate	ND	5.00	mg/L							
LCS (1708070-BS1)				Prepared & Analyzed: 08/07/2017						
Sulfate	12.0	5.00	mg/L	12.50		96	90-110			
LCS Dup (1708070-BSD1)				Prepared & Analyzed: 08/07/2017						
Sulfate	12.3	5.00	mg/L	12.50		98	90-110	2	10	
Matrix Spike (1708070-MS1)		**Source: 17G0807-01**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	28.9	5.00	mg/L	12.50	17.0	96	80-120			
Matrix Spike (1708070-MS2)		**Source: 17G0807-02**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	18.2	5.00	mg/L	12.50	7.21	88	80-120			
Matrix Spike (1708070-MS3)		**Source: 17G0807-03**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	25.6	5.00	mg/L	12.50	13.9	94	80-120			
Matrix Spike (1708070-MS4)		**Source: 17G0807-04**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	19.8	5.00	mg/L	12.50	8.25	92	80-120			
Matrix Spike (1708070-MS5)		**Source: 17G0807-05**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	18.3	5.00	mg/L	12.50	7.23	89	80-120			
Matrix Spike Dup (1708070-MSD1)		**Source: 17G0807-01**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	28.5	5.00	mg/L	12.50	17.0	93	80-120	1	10	
Matrix Spike Dup (1708070-MSD2)		**Source: 17G0807-02**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	18.7	5.00	mg/L	12.50	7.21	92	80-120	3	10	
Matrix Spike Dup (1708070-MSD3)		**Source: 17G0807-03**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	25.6	5.00	mg/L	12.50	13.9	93	80-120	0.2	10	
Matrix Spike Dup (1708070-MSD4)		**Source: 17G0807-04**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	19.7	5.00	mg/L	12.50	8.25	92	80-120	0.4	10	
Matrix Spike Dup (1708070-MSD5)		**Source: 17G0807-05**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	18.3	5.00	mg/L	12.50	7.23	88	80-120	0.2	10	

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 178 G0807 DATE 7/28/17 PAGE 1 OF 3

PROJECT NAME CQB Quarterly # CC13.2770.30
CONTACT NAME Chris Sherman
COMPANY NAME Freeport McMoRan CQB
ADDRESS 36 Highway 92, Bisbee AZ
ZIP 85603 PHONE 520-508-7063 FAX EMAIL 520-432-1395
SAMPLER'S SIGNATURE

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

	SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Base Neutrals 625/8270 / Acids	Volatile Organics 624 / 524.2 / 8260	TTHMS / HAA5	Chloride / Sulfate / Resistivity	NO2 / NO3 / TKN	TPH / 1664 / Oil & Grease	VOA / TCLP Analysis Semi-VOA / Pest	TCLP / Metals / Total	Dissolved / RCRA8	Total / Cyanide / Amen. / WAD	SDWA-INORGANICS PRIMARY / SECONDARY	MPN / Coliform PIA	pH / Fecal / Cl2 / Cl	COD / TSS / Turb / BOD
1	WEISKOPF 897	7/24	1248		GW					X										
2	ZANDER	7/24	1545		GW					X										
3	WEED	7/24	1654		GW					X										
4	OLMOS	7/25	1032		GW					X										
5	KEEFER	7/25	1154		GW					X										
6	BURKE	7/25	1339		GW					X										
7	PARRA	7/25	1447		GW					X										
8	RUIZ	7/25	1531		GW					X										
9	CHAMBERS	7/25	1630		GW					X										
10	MOORE	7/25	1732		GW					X										

1. RELINQUISHED BY:
Signature
Jake Alden
Printed Name
Clear Creek Associates
Firm
7/28/17 1658
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
___ Standard (approx. 10 days)*
___ Next Day ___ 2 Day ___ 5 Day*
___ Email Preliminary Results
* Working Days

REPORT REQUIREMENTS:
___ I. Routine Report
___ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ___ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 10
Temperature 1.1
☐ Wet Ice
☐ Ambient
☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Joseph Catalao
Printed Name
TURNER LABORATORIES, INC.
Firm
7/28/17 1701
Date/Time

* LEGEND SAMPLE MATRIX
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

Compliance Analysis: ☐ Yes ☐ No		Custody Seals ☐	Preservation Confirmation ☐
ADEQ Forms: ☐ Yes ☐ No		Container Intact ☐	Appropriate Head Space ☐
Mail ADEQ Forms: ☐ Yes ☐ No		COC / Labels Agree ☐	Received Within Hold Time ☐

SPECIAL INSTRUCTIONS/COMMENTS:
All Samples filtered with a Ø.45µm filter, unless noted
Copy results to Ben Dingeman + Fernando Alday

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1708O7 DATE 7/28/17 PAGE 2 OF 3

PROJECT NAME CQB Quarterly # CC13.2770.30

CONTACT NAME

COMPANY NAME

ADDRESS

ZIP PHONE EMAIL

SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Base Neutrals 625/8270	Acids	Volatile Organics 624	524.2	8260	TTHMS	HAA5	Chloride	Sulfate	Resistivity	NO3	NO2	TKN	TPH	1664	Oil & Grease	TCLP Analysis VOA	Semi-VOA	Pest	Metals TCLP	Dissolved	Total	RCRA8	Cyanide Total	Amen.	WAD	SDWA-INORGANICS PRIMARY	SECONDARY	Coliform MPN	PIA	Fecal	pH	Cl2	Turb	COD	TSS	BOD
11/12 RAMIREZ	7/26	1003		GW									Y																													
12/13 ROGERS E	7/26	1133		GW									Y																													
13/14 GARNER 635	7/26	1241		GW									Y																													
14/15 GARNER 557	7/26	1248		GW									Y																													
15/16 BANKS 986	7/26	1646		GW									Y																													
16/17 RAY	7/26	1705		GW									Y																													
17/18 EPPELE 641	7/27	1133		GW									Y																													
18/19 EAST	7/27	1231		GW									Y																													
19/20 MOTEMAN	7/27	1352		GW									Y																													
20/21 BIMA	7/27	1421		GW									Y																													

1. RELINQUISHED BY:
Signature
Jake Alder
Printed Name
Clear Creek Associates
Firm
7/28/17 0638
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
____ Standard (approx. 10 days)*
____ Next Day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
Account ____ Y ____ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 10
Temperature 1.0 1
☐ Wet Ice
☐ Ambient
☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Joseph Catalano
Printed Name
TURNER LABORATORIES, INC.
Firm
7/28/17 1701
Date/Time

* LEGEND SAMPLE MATRIX
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

Compliance Analysis: ☐ Yes ☐ No
ADEQ Forms: ☐ Yes ☐ No
Mail ADEQ Forms: ☐ Yes ☐ No

Custody Seals ☐
Container Intact ☑
COC / Labels Agree ☑

Preservation Confirmation ☑
Appropriate Head Space ☑
Received Within Hold Time ☑

SPECIAL INSTRUCTIONS/COMMENTS:

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 17G0807 DATE 7/28/17 PAGE 3 OF 3

PROJECT NAME CQB Quarterly # CC13.2870.30

CONTACT NAME

COMPANY NAME

ADDRESS

ZIP PHONE EMAIL

SAMPLER'S SIGNATURE

	SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX
21	SWAN	7/27	1547		GW		X
22	VESS	7/27	1829		GW		X
23	ECHAVE	7/28	0942		GW		X
24	THOMPSON 341	7/28	1243		GW		X

Base Neutrals ☐ Acids ☐ 625/8270
Volatile Organics ☐ 624 ☐ 524.2 ☐ 8260
TTHMS ☐ HAA5 ☐
Chloride ☐ Sulfate ☑ Resistivity ☐
NO_2 ☐ NO_3 ☐ TKN ☐
TPH ☐ 1664 ☐ Oil & Grease ☐
VOA ☐ TCLP Analysis Semi-VOA ☐ Pest ☐
TCLP ☐ Dissolved ☐ Metals Total ☐ RCRA8 ☐
Total ☐ Cyanide Amen. ☐ WAD ☐
SDWA-INORGANICS PRIMARY ☐ SECONDARY ☐
MPN ☐ Coliform PIA ☐ Fecal ☐
pH ☐ Cl. ☐ Ct. ☐ Turb ☐
COD ☐ TSS ☐ BOD ☐

1. RELINQUISHED BY:
Signature
Printed Name: Jake Hilton
Firm: Clear Creek Associates
Date/Time: 7/28/17 1658

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
____ Standard (approx. 10 days)*
____ Next Day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ____ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 4
Temperature 1.0.1
☐ Wet Ice
☐ Ambient
☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Printed Name: Joseph Catalan
Firm: TURNER LABORATORIES, INC.
Date/Time: 7/28/17 1701

* LEGEND
SAMPLE MATRIX
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

Compliance Analysis: ☐ Yes ☐ No
ADEQ Forms: ☐ Yes ☐ No
Mail ADEQ Forms: ☐ Yes ☐ No

Custody Seals ☐
Container Intact ☑
COC / Labels Agree ☑

Preservation Confirmation ☑
Appropriate Head Space ☑
Received Within Hold Time ☑

SPECIAL INSTRUCTIONS/COMMENTS:

TURNER
LABORATORIES INC.

February 15, 2018

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 17G0821
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 5 sample(s) on 07/31/2017 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,
Turner Laboratories, Inc.
ADHS License AZ0066

Max DiSante
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0821
Date Received: 07/31/2017

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
17G0821-01	Dup20170731	Ground Water	07/31/2017 0900
17G0821-02	OSBORN	Ground Water	07/31/2017 1007
17G0821-03	FB20170731	Ground Water	07/31/2017 1200
17G0821-04	EQB20170731	Ground Water	07/31/2017 1200
17G0821-05	TVI 236	Ground Water	07/31/2017 1223

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0821
Date Received: 07/31/2017

Case Narrative

This report was originally generated on 8/14/2017. It is being revised on 2/6/2018 to report additional significant figures, which were not on the original report. It is being revised again on 2/15/2018 to report to only 3 significant figures.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0821
Lab Sample ID: 17G0821-01

Client Sample ID: Dup20170731
Collection Date/Time: 07/31/2017 0900
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	18.7	0.204	5.00		mg/L	1	08/07/2017 1728	08/08/2017 0229	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0821
Lab Sample ID: 17G0821-02

Client Sample ID: OSBORN
Collection Date/Time: 07/31/2017 1007
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	19.3	0.204	5.00		mg/L	1	08/07/2017 1728	08/08/2017 0247	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0821
Lab Sample ID: 17G0821-03

Client Sample ID: FB20170731
Collection Date/Time: 07/31/2017 1200
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	0.982	0.204	5.00		mg/L	1	08/07/2017 1728	08/08/2017 0306	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0821
Lab Sample ID: 17G0821-04

Client Sample ID: EQB20170731
Collection Date/Time: 07/31/2017 1200
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	ND	0.204	5.00		mg/L	1	08/07/2017 1728	08/08/2017 0324	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0821
Lab Sample ID: 17G0821-05

Client Sample ID: TVI 236
Collection Date/Time: 07/31/2017 1223
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	15.8	0.204	5.00		mg/L	1	08/07/2017 1728	08/08/2017 0438	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17G0821
Date Received: 07/31/2017

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1708070 - IC PREP										
Blank (1708070-BLK1)				Prepared & Analyzed: 08/07/2017						
Sulfate	ND	5.00	mg/L							
LCS (1708070-BS1)				Prepared & Analyzed: 08/07/2017						
Sulfate	12.0	5.00	mg/L	12.50		96	90-110			
LCS Dup (1708070-BSD1)				Prepared & Analyzed: 08/07/2017						
Sulfate	12.3	5.00	mg/L	12.50		98	90-110	2	10	
Matrix Spike (1708070-MS1)		**Source: 17G0807-01**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	28.9	5.00	mg/L	12.50	17.0	96	80-120			
Matrix Spike (1708070-MS2)		**Source: 17G0807-02**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	18.2	5.00	mg/L	12.50	7.21	88	80-120			
Matrix Spike (1708070-MS3)		**Source: 17G0807-03**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	25.6	5.00	mg/L	12.50	13.9	94	80-120			
Matrix Spike (1708070-MS4)		**Source: 17G0807-04**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	19.8	5.00	mg/L	12.50	8.25	92	80-120			
Matrix Spike (1708070-MS5)		**Source: 17G0807-05**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	18.3	5.00	mg/L	12.50	7.23	89	80-120			
Matrix Spike Dup (1708070-MSD1)		**Source: 17G0807-01**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	28.5	5.00	mg/L	12.50	17.0	93	80-120	1	10	
Matrix Spike Dup (1708070-MSD2)		**Source: 17G0807-02**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	18.7	5.00	mg/L	12.50	7.21	92	80-120	3	10	
Matrix Spike Dup (1708070-MSD3)		**Source: 17G0807-03**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	25.6	5.00	mg/L	12.50	13.9	93	80-120	0.2	10	
Matrix Spike Dup (1708070-MSD4)		**Source: 17G0807-04**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	19.7	5.00	mg/L	12.50	8.25	92	80-120	0.4	10	
Matrix Spike Dup (1708070-MSD5)		**Source: 17G0807-05**		Prepared: 08/07/2017 Analyzed: 08/08/2017						
Sulfate	18.3	5.00	mg/L	12.50	7.23	88	80-120	0.2	10	

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1760821 DATE 7/31/17 PAGE 1 OF 1

PROJECT NAME CQB Quarterly # CC13.2870.30
CONTACT NAME Chris Sherman
COMPANY NAME Freeport McMoRan CQB
ADDRESS 36 Highway 92, Bisbee AZ
ZIP 85603 PHONE 520-508-7063 FAX EMAIL 520-432-1395
SAMPLER'S SIGNATURE

NUMBER OF CONTAINERS

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	Base Neutrals 625/8270	Acids	Volatile Organics 624	524.2	8260	THMS	HAA5	Chloride	Sulfate	Resistivity	NO3	NO2	TKN	TPH	1664	Oil & Grease	VOA	TCLP Analysis	Semi-VOA	Pest	Metals	TCLP	Dissolved	Total	RCRA8	Total	Cyanide	Amen	WAD	SDWA-INORGANICS PRIMARY	SECONDARY	MPN	Coliform	PIA	pH	Fecal	Cl2	Cr6	Turb	COD	TSS	BOD	Unfiltered			
DUP20170731	7/31	0900		GW								X																																					
05BORIV	7/31	1007		GW								X																																					
FB20170731	7/31	1200		GW								X																																	X				
EQB20170731	7/31	1200		GW								X																																	X				
TVI 236	7/31	1223		GW								X																																					

1. RELINQUISHED BY:
Signature
Jake Alden
Printed Name
Clear Creek Associates
Firm
7/31/17 1525
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
____ Standard (approx. 10 days)*
____ Next Day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ____ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 5
Temperature 4.8
☑ Wet Ice
☐ Ambient
☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Joseph Catalano
Printed Name
TURNER LABORATORIES, INC.
Firm
7/31/17 1525
Date/Time

* LEGEND SAMPLE MATRIX
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

Compliance Analysis: ☐ Yes ☐ No		Custody Seals ☐		Preservation Confirmation ☑	
ADEQ Forms: ☐ Yes ☐ No		Container Intact ☑		Appropriate Head Space ☑	
Mail ADEQ Forms: ☐ Yes ☐ No		COC / Labels Agree ☑		Received Within Hold Time ☑	

SPECIAL INSTRUCTIONS/COMMENTS:
All samples filtered with a 0.45 μm filter, unless noted.
Copy results to Ben Daigneau & Fernando Alday

TURNER
LABORATORIES INC.

February 15, 2018

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 17I0258
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 8 sample(s) on 09/06/2017 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,
Turner Laboratories, Inc.
ADHS License AZ0066

Max DiSante
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17I0258
Date Received: 09/06/2017

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
17I0258-01	AWC-05	Ground Water	09/06/2017 0847
17I0258-02	AWC-03	Ground Water	09/06/2017 0918
17I0258-03	AWC-04	Ground Water	09/06/2017 0947
17I0258-04	AWC-02	Ground Water	09/06/2017 1211
17I0258-05	DUP20170406	Drinking Water	09/06/2017 1200
17I0258-06	BMO-2014-2BL	Ground Water	09/06/2017 1402
17I0258-07	FB20170906	Ground Water	09/06/2017 1100
17I0258-08	EQB20170906	Ground Water	09/06/2017 1100

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17I0258
Date Received: 09/06/2017

Case Narrative

This report was originally generated on 9/19/2017. It is being revised on 2/6/2018 to report additional significant figures, which were not on the original report. It is being revised again on 2/15/2018 to report to only 3 significant figures.

E4	Concentration estimated. Analyte was detected below laboratory Minimum Reporting Limit (MRL) but above MDL.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17I0258
Lab Sample ID: 17I0258-01

Client Sample ID: AWC-05
Collection Date/Time: 09/06/2017 0847
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	19.7	0.204	5.00		mg/L	1	09/07/2017 1140	09/07/2017 1533	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17I0258
Lab Sample ID: 17I0258-02

Client Sample ID: AWC-03
Collection Date/Time: 09/06/2017 0918
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	75.1	1.02	25.0		mg/L	5	09/07/2017 1140	09/07/2017 1552	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17I0258
Lab Sample ID: 17I0258-03

Client Sample ID: AWC-04
Collection Date/Time: 09/06/2017 0947
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	25.8	0.204	5.00		mg/L	1	09/07/2017 1140	09/07/2017 1610	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17I0258
Lab Sample ID: 17I0258-04

Client Sample ID: AWC-02
Collection Date/Time: 09/06/2017 1211
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	7.65	0.204	5.00		mg/L	1	09/07/2017 1140	09/07/2017 1628	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17I0258
Lab Sample ID: 17I0258-05

Client Sample ID: DUP20170406
Collection Date/Time: 09/06/2017 1200
Matrix: Drinking Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	20.5	0.204	5.00		mg/L	1	09/11/2017 0945	09/11/2017 1521	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17I0258
Lab Sample ID: 17I0258-06

Client Sample ID: BMO-2014-2BL
Collection Date/Time: 09/06/2017 1402
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	441	2.04	50.0		mg/L	10	09/07/2017 1140	09/07/2017 1705	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17I0258
Lab Sample ID: 17I0258-07

Client Sample ID: FB20170906
Collection Date/Time: 09/06/2017 1100
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	0.243	0.204	5.00	E4	mg/L	1	09/07/2017 1140	09/07/2017 1724	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17I0258
Lab Sample ID: 17I0258-08

Client Sample ID: EQB20170906
Collection Date/Time: 09/06/2017 1100
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	0.218	0.204	5.00	E4	mg/L	1	09/07/2017 1140	09/07/2017 1742	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17I0258
Date Received: 09/06/2017

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1709055 - IC PREP										
Blank (1709055-BLK1)				Prepared & Analyzed: 09/07/2017						
Sulfate	0.218	5.00	mg/L							
LCS (1709055-BS1)				Prepared & Analyzed: 09/07/2017						
Sulfate	11.7	5.00	mg/L	12.50		94	90-110			
LCS Dup (1709055-BSD1)				Prepared & Analyzed: 09/07/2017						
Sulfate	11.8	5.00	mg/L	12.50		94	90-110	0.6	10	
Matrix Spike (1709055-MS1)		**Source: 17I0208-01**		Prepared & Analyzed: 09/07/2017						
Sulfate	28.9	5.00	mg/L	12.50	17.7	89	80-120			
Matrix Spike (1709055-MS2)		**Source: 17I0230-01**		Prepared & Analyzed: 09/07/2017						
Sulfate	12.4	5.00	mg/L	12.50	1.54	87	80-120			
Matrix Spike (1709055-MS3)		**Source: 17I0258-01**		Prepared: 09/07/2017 Analyzed: 09/08/2017						
Sulfate	30.8	5.00	mg/L	12.50	19.7	89	80-120			
Matrix Spike (1709055-MS4)		**Source: 17I0230-01**		Prepared & Analyzed: 09/11/2017						
Sulfate	13.8	5.00	mg/L	12.50	1.54	98	80-120			
Matrix Spike Dup (1709055-MSD1)		**Source: 17I0208-01**		Prepared & Analyzed: 09/07/2017						
Sulfate	29.6	5.00	mg/L	12.50	17.7	94	80-120	2	10	
Matrix Spike Dup (1709055-MSD2)		**Source: 17I0230-01**		Prepared & Analyzed: 09/07/2017						
Sulfate	12.7	5.00	mg/L	12.50	1.54	89	80-120	2	10	
Matrix Spike Dup (1709055-MSD3)		**Source: 17I0258-01**		Prepared: 09/07/2017 Analyzed: 09/08/2017						
Sulfate	31.0	5.00	mg/L	12.50	19.7	90	80-120	0.5	10	
Matrix Spike Dup (1709055-MSD4)		**Source: 17I0230-01**		Prepared & Analyzed: 09/11/2017						
Sulfate	13.7	5.00	mg/L	12.50	1.54	97	80-120	0.6	10	

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
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Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 17I0258 DATE 9/6/17 PAGE 1 OF 1

PROJECT NAME CQB Quarterly # CC13.2870.30
CONTACT NAME Chris Sherman
COMPANY NAME Freeport McMoRan CQB
ADDRESS 36 Highway 92 Bisbee, AZ 85603
PHONE 520-508-7063 FAX 520-432-1395
SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	50 - 3000.0	Unfiltered
AWC-05	9/6	0847		GW		X	
AWC-03	9/6	0918		GW		X	
AWC-04	9/6	0947		GW		X	
AWC-02	9/6	1211		GW		X	
DUP20170906	9/6	1200		GW		X	
BMO-2014-2BL	9/6	1402		GW		X	
FB20170906	9/6	1100		GW		X	X
EQB20170906	9/6	1100		GW		X	X

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

Base Neutrals 625/8270 ☐ Acids ☐ Volatile Organics 624/524.2/8260 ☐ TTHMS ☐ HAAS ☐ Pesticides 8081 ☐ PCB's 8082 ☐ NO_2 ☐ NO_3 ☐ TKN ☐ Oil and Grease Grav. 1664A ☐ TCLP Analysis VOA ☐ Semi-VOA ☐ Pest. ☐ Metals TCLP ☐ Dissolved ☐ Total ☐ RCRA8 ☐ Cyanide Total ☐ Amen. ☐ WAD ☐ SDWA-INORGANICS PRIMARY ☐ SECONDARY ☐ Coliform MPN ☐ Colilert ☐ pH ☐ C_4 ☐ Cl_2 ☐ COD ☐ TSS ☐ BOD ☐

1. RELINQUISHED BY:
Signature
David Alden
Printed Name
Clear Creek Associates
Firm
9/6/17 16:25
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
___ Standard (approx. 10 days)*
___ Next Day ___ 2 Day ___ 5 Day*
___ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
___ I. Routine Report
___ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
Account ___ Y ___ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 8
Temperature 1.9
☒ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Printed Name
TURNER LABORATORIES, INC.
Firm
9/6/17 16:25
Date/Time

* LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis: ☐ Yes ☐ No		Custody Seals ☐		Preservation Confirmation ☒	
ADEQ Forms: ☐ Yes ☐ No		Container Intact ☒		Appropriate Head Space ☒	
Mail ADEQ Forms: ☐ Yes ☐ No		COC / Labels Agree ☒		Received Within Hold Time ☒	

All Samples filtered with a 0.45µm filter, unless noted.
Copy results to Ben Daigneau & Fernando Alday

TURNER
LABORATORIES INC.

February 15, 2018

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 17J0127
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 2 sample(s) on 10/02/2017 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,
Turner Laboratories, Inc.
ADHS License AZ0066

Max DiSante
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17J0127
Date Received: 10/02/2017

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
17J0127-01	ROGERS 803	Ground Water	09/30/2017 1314
17J0127-02	BMO-2008-4B	Ground Water	09/30/2017 1602

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17J0127
Date Received: 10/02/2017

Case Narrative

This report was originally generated on 10/03/2017. It is being revised on 2/6/2018 to report additional significant figures, which were not on the original report. It is being revised again on 2/15/2018 to report to only 3 significant figures.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17J0127
Lab Sample ID: 17J0127-01

Client Sample ID: ROGERS 803
Collection Date/Time: 09/30/2017 1314
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	572	5.10	125		mg/L	25	10/02/2017 1620	10/02/2017 2139	AP

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17J0127
Lab Sample ID: 17J0127-02

Client Sample ID: BMO-2008-4B
Collection Date/Time: 09/30/2017 1602
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	9.88	0.204	5.00		mg/L	1	10/02/2017 0955	10/02/2017 1549	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17J0127
Date Received: 10/02/2017

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1710004 - IC PREP										
Blank (1710004-BLK1)				Prepared & Analyzed: 10/02/2017						
Sulfate	1.10	5.00	mg/L							
LCS (1710004-BS1)				Prepared & Analyzed: 10/02/2017						
Sulfate	12.3	5.00	mg/L	12.50		98	90-110			
LCS Dup (1710004-BSD1)				Prepared & Analyzed: 10/02/2017						
Sulfate	12.3	5.00	mg/L	12.50		98	90-110	0.4	10	
Matrix Spike (1710004-MS1)		**Source: 17I0684-02**		Prepared & Analyzed: 10/02/2017						
Sulfate	12.7	5.00	mg/L	12.50	1.22	92	80-120			
Matrix Spike (1710004-MS2)		**Source: 17I0685-01**		Prepared & Analyzed: 10/02/2017						
Sulfate	12.3	5.00	mg/L	12.50	1.10	90	80-120			
Matrix Spike Dup (1710004-MSD1)		**Source: 17I0684-02**		Prepared & Analyzed: 10/02/2017						
Sulfate	12.9	5.00	mg/L	12.50	1.22	93	80-120	1	10	
Matrix Spike Dup (1710004-MSD2)		**Source: 17I0685-01**		Prepared & Analyzed: 10/02/2017						
Sulfate	12.4	5.00	mg/L	12.50	1.10	90	80-120	0.6	10	

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1750127 DATE 10/2/17 PAGE _____ OF _____

PROJECT NAME CQB Quarterly # CQB.2870.30
CONTACT NAME Chris Sherman
COMPANY NAME Freeport McMoRan CQB
ADDRESS 36 Highway 92
Bisbee, AZ 85603 PHONE 520 508-7063 FAX 520 432-1395
SAMPLER'S SIGNATURE

NUMBER OF CONTAINERS

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	#	Base Neutrals ☐ Acids ☐ 625/8270	Volatile Organics 624/524.2/8260 ☐	TTHMS ☐	HAA5 ☐	Pesticides ☐ PCB's 8081 ☐	NO_2 ☐ NO_3 ☐ TKN ☐	Oil and Grease Grav. 1664A ☐	TCLP Analysis Semi-VOA ☐ Pest. ☐ VOA ☐	Metals TCLP ☐ Total ☐ Dissolved ☐ RCRA8 ☐	Cyanide Total ☐ Amen. ☐ WAD ☐	SDWA/INORGANICS PRIMARY ☐ SECONDARY ☐	Coliform MPN ☐ Colilert ☐	pH ☐ Cl_2 ☐ C_a ☐	COD ☐ TSS ☐ BOD ☐	Sulfate (SO_4) - 300.0
ROGERS 803	9/30	13:14		GW	1															X
BMO-2008-4B	9/30	16:02		GW	1															X

1. RELINQUISHED BY:
Signature
Printed Name: Kyle Alden
Firm: Clear Creek Associates
Date/Time: 10/2/17 08:49

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
____ Standard (approx. 10 days)*
____ Next Day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
Account ✓ Y ____ N
P.O. #
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 2
Temperature 2.8
☐ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Printed Name: Joseph Catalano
Firm: TURNER LABORATORIES, INC.
Date/Time: 10/2/17 0849

* LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis: ☐ Yes ☐ No	Custody Seals ☐	Preservation Confirmation ☐
ADEQ Forms: ☐ Yes ☐ No	Container Intact ☐	Appropriate Head Space ☐
Mail ADEQ Forms: ☐ Yes ☐ No	COC / Labels Agree ☐	Received Within Hold Time ☐

All samples filtered with a 0.45 µm filter, unless noted.
Copy results to Ben Daigneau & Fernando Alday

www.svl.net One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BMO-2008-8M	X7G0213-01	Ground Water	10-Jul-17 08:10	CLS	13-Jul-2017	
BMO-2008-8B	X7G0213-02	Ground Water	10-Jul-17 08:45	CLS	13-Jul-2017	
BMO-2008-7M	X7G0213-03	Ground Water	10-Jul-17 10:35	CLS	13-Jul-2017	
BMO-2008-6M	X7G0213-04	Ground Water	10-Jul-17 11:45	CLS	13-Jul-2017	
BMO-2008-6B	X7G0213-05	Ground Water	10-Jul-17 12:35	CLS	13-Jul-2017	
BMO-2008-10GL	X7G0213-06	Ground Water	11-Jul-17 10:15	CLS	13-Jul-2017	
BMO-2008-11G	X7G0213-07	Ground Water	11-Jul-17 12:27	CLS	13-Jul-2017	
BMO-2008-9M	X7G0213-08	Ground Water	11-Jul-17 14:10	CLS	13-Jul-2017	
TM-16	X7G0213-09	Ground Water	12-Jul-17 06:00	CLS	13-Jul-2017	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-8M**
SVL Sample ID: **X7G0213-01 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 10-Jul-17 08:10
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	74.1	mg/L	3.00	1.30	10	X728245	DJS	07/18/17 11:11	D2,M3

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-8B**
SVL Sample ID: **X7G0213-02 (Ground Water)**

Sampled: 10-Jul-17 08:45
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	1240	mg/L	30.0	13.0	100	X728245	DJS	07/18/17 11:57	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-7M**
SVL Sample ID: **X7G0213-03 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 10-Jul-17 10:35
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	33.1	mg/L	0.30	0.13		X728245	DJS	07/18/17 12:13	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-6M**
SVL Sample ID: **X7G0213-04 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 10-Jul-17 11:45
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	218	mg/L	3.00	1.30	10	X728245	DJS	07/18/17 14:31	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-6B**
SVL Sample ID: **X7G0213-05 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 10-Jul-17 12:35
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	11.7	mg/L	0.30	0.13		X728245	DJS	07/18/17 13:14	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Freeport McMoRan - Bisbee
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-10GL**
SVL Sample ID: **X7G0213-06 (Ground Water)**

Sampled: 11-Jul-17 10:15
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	1810	mg/L	30.0	13.0	100	X728245	DJS	07/18/17 15:18	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-11G**
SVL Sample ID: **X7G0213-07 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 11-Jul-17 12:27
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	12.4	mg/L	0.30	0.13		X728245	DJS	07/18/17 13:45	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-9M**
SVL Sample ID: **X7G0213-08 (Ground Water)**

Sampled: 11-Jul-17 14:10
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	92.0	mg/L	3.00	1.30	10	X728245	DJS	07/18/17 14:00	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **TM-16**
SVL Sample ID: **X7G0213-09 (Ground Water)**

Sampled: 12-Jul-17 06:00
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	536	mg/L	7.50	3.25	25	X728245	DJS	07/18/17 14:16	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.13	0.30	X728245	18-Jul-17	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	X728245	18-Jul-17	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	82.8	74.1	10.0	R > 4S	90 - 110	X728245	18-Jul-17	D2,M3

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography											
EPA 300.0	Sulfate as SO4	mg/L	82.2	82.8	10.0	R > 4S	0.7	20	X728245	18-Jul-17	D2,M3

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BMO-2008-8M	X7G0213-01	Ground Water	10-Jul-17 08:10	CLS	13-Jul-2017	
BMO-2008-8B	X7G0213-02	Ground Water	10-Jul-17 08:45	CLS	13-Jul-2017	
BMO-2008-7M	X7G0213-03	Ground Water	10-Jul-17 10:35	CLS	13-Jul-2017	
BMO-2008-6M	X7G0213-04	Ground Water	10-Jul-17 11:45	CLS	13-Jul-2017	
BMO-2008-6B	X7G0213-05	Ground Water	10-Jul-17 12:35	CLS	13-Jul-2017	
BMO-2008-10GL	X7G0213-06	Ground Water	11-Jul-17 10:15	CLS	13-Jul-2017	
BMO-2008-11G	X7G0213-07	Ground Water	11-Jul-17 12:27	CLS	13-Jul-2017	
BMO-2008-9M	X7G0213-08	Ground Water	11-Jul-17 14:10	CLS	13-Jul-2017	
TM-16	X7G0213-09	Ground Water	12-Jul-17 06:00	CLS	13-Jul-2017	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-8M**
SVL Sample ID: **X7G0213-01 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 10-Jul-17 08:10
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	74.1	mg/L	3.00	1.30	10	X728245	DJS	07/18/17 11:11	D2,M3

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-8B**
SVL Sample ID: **X7G0213-02 (Ground Water)**

Sampled: 10-Jul-17 08:45
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	1240	mg/L	30.0	13.0	100	X728245	DJS	07/18/17 11:57	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-7M**
SVL Sample ID: **X7G0213-03 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 10-Jul-17 10:35
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	33.1	mg/L	0.30	0.13		X728245	DJS	07/18/17 12:13	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Freeport McMoRan - Bisbee
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-6M**
SVL Sample ID: **X7G0213-04 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 10-Jul-17 11:45
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	218	mg/L	3.00	1.30	10	X728245	DJS	07/18/17 14:31	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-6B**
SVL Sample ID: **X7G0213-05 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 10-Jul-17 12:35
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	11.7	mg/L	0.30	0.13		X728245	DJS	07/18/17 13:14	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-10GL**
SVL Sample ID: **X7G0213-06 (Ground Water)**

Sampled: 11-Jul-17 10:15
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	1810	mg/L	30.0	13.0	100	X728245	DJS	07/18/17 15:18	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-11G**
SVL Sample ID: **X7G0213-07 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 11-Jul-17 12:27
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	12.4	mg/L	0.30	0.13		X728245	DJS	07/18/17 13:45	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **BMO-2008-9M**
SVL Sample ID: **X7G0213-08 (Ground Water)**

Sampled: 11-Jul-17 14:10
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	92.0	mg/L	3.00	1.30	10	X728245	DJS	07/18/17 14:00	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Client Sample ID: **TM-16**
SVL Sample ID: **X7G0213-09 (Ground Water)**

Sampled: 12-Jul-17 06:00
Received: 13-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	536	mg/L	7.50	3.25	25	X728245	DJS	07/18/17 14:16	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0213**
Reported: 20-Jul-17 11:43

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.13	0.30	X728245	18-Jul-17	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	X728245	18-Jul-17	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	82.8	74.1	10.0	R > 4S	90 - 110	X728245	18-Jul-17	D2,M3

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography											
EPA 300.0	Sulfate as SO4	mg/L	82.2	82.8	10.0	R > 4S	0.7	20	X728245	18-Jul-17	D2,M3

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0265**
Reported: 25-Jul-17 09:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BMO-2010-1M	X7G0265-01	Ground Water	12-Jul-17 10:55	CLS	14-Jul-2017	
BMO-2010-2M	X7G0265-02	Ground Water	12-Jul-17 12:10	CLS	14-Jul-2017	
HOBAN	X7G0265-03	Ground Water	13-Jul-17 06:20	CLS	14-Jul-2017	
DUP-071317	X7G0265-04	Ground Water	13-Jul-17 06:20	CLS	14-Jul-2017	
COOPER C	X7G0265-05	Ground Water	13-Jul-17 08:10	CLS	14-Jul-2017	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0265**
Reported: 25-Jul-17 09:53

Client Sample ID: **BMO-2010-1M**
SVL Sample ID: **X7G0265-01 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 12-Jul-17 10:55
Received: 14-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	180	mg/L	3.00	1.30	10	X729203	SMB	07/20/17 15:00	D2,M3

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray

Kirby Gray
Technical Director

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0265**
Reported: 25-Jul-17 09:53

Client Sample ID: **BMO-2010-2M**
SVL Sample ID: **X7G0265-02 (Ground Water)**

Sampled: 12-Jul-17 12:10
Received: 14-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	967	mg/L	30.0	13.0	100	X729203	SMB	07/20/17 15:27	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0265**
Reported: 25-Jul-17 09:53

Client Sample ID: **HOBAN**
SVL Sample ID: **X7G0265-03 (Ground Water)**

Sampled: 13-Jul-17 06:20
Received: 14-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	1270	mg/L	30.0	13.0	100	X729203	SMB	07/20/17 15:35	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0265**
Reported: 25-Jul-17 09:53

Client Sample ID: **DUP-071317**
SVL Sample ID: **X7G0265-04 (Ground Water)**

Sampled: 13-Jul-17 06:20
Received: 14-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	1050	mg/L	30.0	13.0	100	X729203	SMB	07/21/17 08:56	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0265**
Reported: 25-Jul-17 09:53

Client Sample ID: **COOPER C**
SVL Sample ID: **X7G0265-05 (Ground Water)**

Sampled: 13-Jul-17 08:10
Received: 14-Jul-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	639	mg/L	15.0	6.50	50	X729203	SMB	07/20/17 15:53	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7G0265**
Reported: 25-Jul-17 09:53

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.13	0.30	X729203	20-Jul-17	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.5	10.0	105	90 - 110	X729203	20-Jul-17	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	165	180	10.0	R > 4S	90 - 110	X729203	20-Jul-17	D2,M3

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography											
EPA 300.0	Sulfate as SO4	mg/L	190	165	10.0	100	13.9	20	X729203	20-Jul-17	D2

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0033**
Reported: 15-Aug-17 13:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BMO-2012-1M	X7H0033-01	Ground Water	24-Jul-17 07:40	CLS	02-Aug-2017	Q6
BMO-2008-1G	X7H0033-02	Ground Water	24-Jul-17 10:00	CLS	02-Aug-2017	Q6
TM-42	X7H0033-03	Ground Water	26-Jul-17 06:15	CLS	02-Aug-2017	Q6
TM-19A	X7H0033-04	Ground Water	26-Jul-17 07:10	CLS	02-Aug-2017	Q6
BMO-2008-3B	X7H0033-05	Ground Water	26-Jul-17 08:05	CLS	02-Aug-2017	Q6
TM-6	X7H0033-06	Ground Water	26-Jul-17 09:00	CLS	02-Aug-2017	Q6

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

(Q6) SVL received the following containers outside of published EPA guidelines for preservation temperatures (0-6°C).
The guidelines do not pertain to nitric-preserved metals.

Default Cooler (Received Temperature: 10.6°C)

Labnumber	Container	Client ID	Labnumber	Container	Client ID
X7H0033-01 A	Filtered Raw HDPE	BMO-2012-1M	X7H0033-02 A	Filtered Raw HDPE	BMO-2008-1G
X7H0033-03 A	Filtered Raw HDPE	TM-42	X7H0033-04 A	Filtered Raw HDPE	TM-19A
X7H0033-05 A	Filtered Raw HDPE	BMO-2008-3B	X7H0033-06 A	Filtered Raw HDPE	TM-6

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0033**
Reported: 15-Aug-17 13:47

Client Sample ID: **BMO-2012-1M**
SVL Sample ID: **X7H0033-01 (Ground Water)**

Sampled: 24-Jul-17 07:40
Received: 02-Aug-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	250	mg/L	3.00	1.30	10	X731149	SMB	08/07/17 12:26	D2,M3

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0033**
Reported: 15-Aug-17 13:47

Client Sample ID: **BMO-2008-1G**
SVL Sample ID: **X7H0033-02 (Ground Water)**

Sampled: 24-Jul-17 10:00
Received: 02-Aug-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	112	mg/L	3.00	1.30	10	X731149	SMB	08/07/17 14:11	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0033**
Reported: 15-Aug-17 13:47

Client Sample ID: **TM-42**
SVL Sample ID: **X7H0033-03 (Ground Water)**

Sampled: 26-Jul-17 06:15
Received: 02-Aug-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	485	mg/L	7.50	3.25	25	X731149	SMB	08/07/17 14:26	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0033**
Reported: 15-Aug-17 13:47

Client Sample ID: **TM-19A**
SVL Sample ID: **X7H0033-04 (Ground Water)**

Sampled: 26-Jul-17 07:10
Received: 02-Aug-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	64.6	mg/L	3.00	1.30	10	X731149	SMB	08/07/17 14:40	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0033**
Reported: 15-Aug-17 13:47

Client Sample ID: **BMO-2008-3B**
SVL Sample ID: **X7H0033-05 (Ground Water)**

Sampled: 26-Jul-17 08:05
Received: 02-Aug-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	147	mg/L	3.00	1.30	10	X731149	SMB	08/07/17 14:55	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0033**
Reported: 15-Aug-17 13:47

Client Sample ID: **TM-6**
SVL Sample ID: **X7H0033-06 (Ground Water)**

Sampled: 26-Jul-17 09:00
Received: 02-Aug-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	34.5	mg/L	0.30	0.13		X731149	SMB	08/07/17 15:09	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0033**
Reported: 15-Aug-17 13:47

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.13	0.30	X731149	07-Aug-17	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	X731149	07-Aug-17	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	236	250	10.0	R > 4S	90 - 110	X731149	07-Aug-17	D2,M3

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography											
EPA 300.0	Sulfate as SO4	mg/L	237	236	10.0	R > 4S	0.5	20	X731149	07-Aug-17	D2,M3

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
Q6	Sample was received outside of recommended temperature range.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0239**
Reported: 17-Aug-17 09:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
TM-15	X7H0239-01	Ground Water	01-Aug-17 10:15	CL	09-Aug-2017	
BMO-2008-5M	X7H0239-02	Ground Water	01-Aug-17 11:40	CL	09-Aug-2017	
BMO-2008-5B	X7H0239-03	Ground Water	01-Aug-17 12:15	CL	09-Aug-2017	
BMO-2008-13B	X7H0239-04	Ground Water	02-Aug-17 06:15	CL	09-Aug-2017	
TM-7	X7H0239-05	Ground Water	02-Aug-17 08:38	CL	09-Aug-2017	
TM-2A	X7H0239-06	Ground Water	03-Aug-17 06:30	CL	09-Aug-2017	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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36 West Hwy 92
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0239**
Reported: 17-Aug-17 09:57

Client Sample ID: **TM-15**
SVL Sample ID: **X7H0239-01 (Ground Water)**

Sampled: 01-Aug-17 10:15
Received: 09-Aug-17
Sampled By: CL

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	14.8	mg/L	0.30	0.13		X732221	SMB	08/14/17 09:44	M1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0239**
Reported: 17-Aug-17 09:57

Client Sample ID: **BMO-2008-5M**
SVL Sample ID: **X7H0239-02 (Ground Water)**

Sampled: 01-Aug-17 11:40
Received: 09-Aug-17
Sampled By: CL

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	159	mg/L	3.00	1.30	10	X732221	SMB	08/14/17 10:10	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0239**
Reported: 17-Aug-17 09:57

Client Sample ID: **BMO-2008-5B**
SVL Sample ID: **X7H0239-03 (Ground Water)**

Sampled: 01-Aug-17 12:15
Received: 09-Aug-17
Sampled By: CL

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	245	mg/L	3.00	1.30	10	X732221	SMB	08/14/17 10:19	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0239**
Reported: 17-Aug-17 09:57

Client Sample ID: **BMO-2008-13B**
SVL Sample ID: **X7H0239-04 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 02-Aug-17 06:15
Received: 09-Aug-17
Sampled By: CL

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	1050	mg/L	15.0	6.50	50	X732221	SMB	08/14/17 10:28	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0239**
Reported: 17-Aug-17 09:57

Client Sample ID: **TM-7**
SVL Sample ID: **X7H0239-05 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 02-Aug-17 08:38
Received: 09-Aug-17
Sampled By: CL

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	129	mg/L	3.00	1.30	10	X732221	SMB	08/14/17 10:55	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0239**
Reported: 17-Aug-17 09:57

Client Sample ID: **TM-2A**
SVL Sample ID: **X7H0239-06 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 03-Aug-17 06:30
Received: 09-Aug-17
Sampled By: CL

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	21.5	mg/L	0.30	0.13		X732221	SMB	08/14/17 11:04	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0239**
Reported: 17-Aug-17 09:57

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.13	0.30	X732221	14-Aug-17	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.4	10.0	104	90 - 110	X732221	14-Aug-17	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	26.3	14.8	10.0	115	90 - 110	X732221	14-Aug-17	M1

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography											
EPA 300.0	Sulfate as SO4	mg/L	26.2	26.3	10.0	114	0.3	20	X732221	14-Aug-17	M1

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M1	Matrix spike recovery was high, but the LCS recovery was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0437**
Reported: 30-Aug-17 11:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BMO-2008-10GU	X7H0437-01	Ground Water	09-Aug-17 07:00	CLS	17-Aug-2017	
DUP-080917	X7H0437-02	Ground Water	09-Aug-17 07:00	CLS	17-Aug-2017	
FB-081517	X7H0437-03	Ground Water	15-Aug-17 10:30	CLS	17-Aug-2017	
EQB-081517	X7H0437-04	Ground Water	15-Aug-17 11:00	CLS	17-Aug-2017	
BMO-2008-13M	X7H0437-05	Ground Water	15-Aug-17 14:20	CLS	17-Aug-2017	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0437**
Reported: 30-Aug-17 11:59

Client Sample ID: **BMO-2008-10GU**
SVL Sample ID: **X7H0437-01 (Ground Water)**

Sampled: 09-Aug-17 07:00
Received: 17-Aug-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	1990	mg/L	30.0	13.0	100	X733242	SMB	08/22/17 20:53	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0437**
Reported: 30-Aug-17 11:59

Client Sample ID: **DUP-080917**
SVL Sample ID: **X7H0437-02 (Ground Water)**

Sampled: 09-Aug-17 07:00
Received: 17-Aug-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	1960	mg/L	15.0	6.50	50	X733242	SMB	08/22/17 21:07	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0437**
Reported: 30-Aug-17 11:59

Client Sample ID: **FB-081517**
SVL Sample ID: **X7H0437-03 (Ground Water)**

Sampled: 15-Aug-17 10:30
Received: 17-Aug-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.13		X733242	SMB	08/22/17 21:22	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0437**
Reported: 30-Aug-17 11:59

Client Sample ID: **EQB-081517**
SVL Sample ID: **X7H0437-04 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 15-Aug-17 11:00
Received: 17-Aug-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.13		X733242	SMB	08/22/17 22:05	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0437**
Reported: 30-Aug-17 11:59

Client Sample ID: **BMO-2008-13M**
SVL Sample ID: **X7H0437-05 (Ground Water)**

Sampled: 15-Aug-17 14:20
Received: 17-Aug-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	386	mg/L	15.0	6.50	50	X733242	SMB	08/22/17 22:19	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0437**
Reported: 30-Aug-17 11:59

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.13	0.30	X733242	22-Aug-17	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.2	10.0	102	90 - 110	X733242	22-Aug-17	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	10.7	<0.30	10.0	107	90 - 110	X733242	22-Aug-17	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography											
EPA 300.0	Sulfate as SO4	mg/L	10.7	10.7	10.0	107	0.6	20	X733242	22-Aug-17	

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0506**
Reported: 06-Sep-17 11:16

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BMO-2012-1M	X7H0506-01	Ground Water	21-Aug-17 07:10	CLS	22-Aug-2017	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0506**
Reported: 06-Sep-17 11:16

Client Sample ID: **BMO-2012-1M**
SVL Sample ID: **X7H0506-01 (Ground Water)**

Sampled: 21-Aug-17 07:10
Received: 22-Aug-17
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	221	mg/L	3.00	1.30	10	X734175	SMB	08/25/17 13:14	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **X7H0506**
Reported: 06-Sep-17 11:16

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.13	0.30	X734175	25-Aug-17	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.1	10.0	101	90 - 110	X734175	25-Aug-17	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	231	221	10.0	99.2	90 - 110	X734175	25-Aug-17	D2

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Filtered Anions by Ion Chromatography											
EPA 300.0	Sulfate as SO4	mg/L	232	231	10.0	105	0.2	20	X734175	25-Aug-17	D2

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

TURNER
LABORATORIES INC.

February 15, 2018

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 17K0406
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 1 sample(s) on 11/14/2017 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,
Turner Laboratories, Inc.
ADHS License AZ0066

Max DiSante
Laboratory Director

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17K0406
Date Received: 11/14/2017

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
17K0406-01	NWC-04	Ground Water	11/14/2017 1000

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17K0406
Date Received: 11/14/2017

Case Narrative

This report was originally generated on 11/29/2017. It is being revised on 2/6/2018 to report additional significant figures, which were not on the original report. It is being revised again on 2/15/2018 to report to only 3 significant figures.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor

Turner Laboratories, Inc.

Date: 02/15/2018

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17K0406
Lab Sample ID: 17K0406-01

Client Sample ID: NWC-04
Collection Date/Time: 11/14/2017 1000
Matrix: Ground Water
Order Name: CQB

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	193	0.635	25.0		mg/L	5	11/15/2017 0900	11/15/2017 1547	AP

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 17K0406
Date Received: 11/14/2017

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1711138 - IC PREP										
Blank (1711138-BLK1)				Prepared & Analyzed: 11/14/2017						
Sulfate	0.932	5.00	mg/L							
LCS (1711138-BS1)				Prepared & Analyzed: 11/14/2017						
Sulfate	12.5	5.00	mg/L	12.50		100	90-110			
LCS Dup (1711138-BSD1)				Prepared & Analyzed: 11/14/2017						
Sulfate	12.5	5.00	mg/L	12.50		100	90-110	0.5	10	
Matrix Spike (1711138-MS3)		**Source: 17K0410-01**		Prepared & Analyzed: 11/15/2017						
Sulfate	33.1		mg/L	12.50	21.7	91	80-120			
Matrix Spike Dup (1711138-MSD3)		**Source: 17K0410-01**		Prepared & Analyzed: 11/15/2017						
Sulfate	33.3		mg/L	12.50	21.7	92	80-120	0.6	10	

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 17K0406 DATE 11/14/17 PAGE 1 OF 1

PROJECT NAME CQB Quarterly # CC13.2870.30
CONTACT NAME : Chris Sherman
COMPANY NAME : Freeport McMoRan CQB
ADDRESS : 36 Highway 92
CITY Bisbee STATE AZ ZIP CODE 85603
PHONE 520-508-7063 FAX 520-432-1395
SAMPLER'S SIGNATURE [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Sulfate 300.0
NWC-04	11/14/17	1000		GW	1	X
				GW		
				GW		
				GW		
				GW		
				GW		
				GW		
				GW		
				GW		
				GW		
				GW		

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

1. RELINQUISHED BY: [signature]
Signature
Michael Chambers
Printed Name
Firm Clear Creek Associates
Date/Time 11/14/17 1359

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY: [signature]
Signature
Martha Howard
Printed Name
TURNER LABORATORIES, INC.
Firm
11/14/17 13:59
Date/Time

TURNAROUND REQUIREMENTS:
✓ Standard (approx.10 days)*
___Next day ___2 Day ___5 Day*
___ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
✓ I. Routine Report
___ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account ___ Y ___ N
P.O. # ___
Bill to: CQB

SAMPLE RECEIPT:
Total Containers 1
Temperature 6.1
☒ Wet Ice ☐ Blue Ice

***LEGEND**
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes	☐ No	Custody Seals	☐	Preservation Confirmation	☒
ADEQ Forms:	☐ Yes	☐ No	Container Intact	☒	Appropriate Head Space	☒
Mail ADEQ Forms:	☐ Yes	☐ No	COC/Labels Agree	☒	Received Within Hold Time	☒

All samples filtered with a 0.45µm filter, unless noted.
Copy results to Ben Daigneau & Fernando Alday.

APPENDIX C

DATA VERIFICATION REPORT

APPENDIX C

DATA VERIFICATION REPORT

ANNUAL GROUNDWATER MONITORING REPORT FOR 2017

Prepared for:

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

Prepared by:

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

February 23, 2018

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1. INTRODUCTION

This report summarizes the data verification review of field measurements, groundwater sampling, and laboratory analyses conducted during 2017 by Clear Creek Associates and Freeport Minerals Corporation, Copper Queen Branch (CQB) pursuant to Mitigation Order on Consent Docket No. P-121-07 (ADEQ, 2007). Clear Creek Associates and CQB collected groundwater samples according to the groundwater monitoring program described by the Mitigation Plan (Clear Creek Associates, 2015) and subsequent modifications (Clear Creek Associates, 2017). Analytical results for groundwater samples collected for this project during 2017 were reported to Clear Creek Associates by SVL Analytical, Inc. (SVL) of Kellogg, Idaho and Turner Laboratories (Turner) of Tucson, Arizona. Clear Creek Associates compiled and evaluated the analytical results for preparation of this report.

Quality assurance (QA) and quality control (QC) procedures for groundwater monitoring are specified in the *Quality Assurance Project Plan for Aquifer Characterization Plan* (QAPP) (Appendix F of Hydro Geo Chem, Inc., 2008), including water level measurement, groundwater sampling, chain-of-custody (COC) documentation, laboratory analysis, and reporting. This report reviews field sampling procedures for samples collected by Clear Creek Associates and CQB. Additionally, sample handling and laboratory QA/QC data are evaluated according to the data quality indicators (DQIs) in the QAPP.

The laboratory reports for the 2017 groundwater samples are in Appendix B of the annual report, including COC forms, laboratory correspondence, QC summaries, data qualifiers, and internal QA/QC tests performed by the laboratory. Based on the results of laboratory control samples, matrix spike/recovery and blank spikes, neither SVL nor Turner advised any modifications regarding the usability and data validation status of the laboratory results. The analytical results for 158 samples collected by Clear Creek Associates and CQB in 2017 are contained in 18 reports with the SVL and Turner laboratory identification numbers listed in the following tables.

The data review for preparation of the annual report determined that Turner was reporting results to only two significant figures, although the results were available in three significant figures. Turner was asked to provide the current and prior results with three significant figures, which required updating the previously reported results in Table 3 of the main report for some of the samples collected from 2015 through 2017. The tables and figures in this report use the data updated to three significant figures and, for that reason, may vary slightly from the information in previous annual groundwater monitoring reports.

LAB ID	Q1 WELLS REPORTED
Number of wells sampled: 41 Number of well samples collected (including duplicates and multiple samples from one well): 44 Number of duplicate samples collected: 3 Number of field and equipment blanks collected: 4 Total number of samples collected: 48	
17A0613	BMO-2010-3B, BMO-2010-3M, COB MW-2, AWC-05, AWC-03, AWC-04, DUP-011917, AWC-02, FB20170119, EQB20170119
17A0736	BMO-2015-2B, BMO-2015-2BL, BMO-2015-1B, BMO-2015-1BL, BMO-2014-4BL, BMO-2014-4B, WEED, BMO-2014-2BL, BMO-2014-2BU, BMO-2014-1BU, BMO-2014-1BL, SCHWARTZ, BMO-2014-3BL, BMO-2014-3BU, COB WL, COOPER, NWC-04, NWC-02, NWC-06, DODSON, RUIZ, POWER 639, TVI-236, TM-10 USBP
17B0713	PANAGAKOS, FB20170224, EQB20170224, DUP20170224
X7C0107	BMO-2008-6M, BMO-2008-6B, BMO-2008-5M, BMO-2008-5B, BMO-2008-3B, BMO-2008-1G, TM-7, BMO-2008-11G, BMO-2012-1M, DUP-030217
LAB ID	**Q2 WELLS REPORTED**
Number of wells sampled: 1 Number of well samples collected (including duplicates and multiple samples from one well): 1 Number of duplicate samples collected: 0 Number of field and equipment blanks collected: 0 Total number of samples collected: 1	
17D0292	NWC-04
LAB ID	**Q3 WELLS REPORTED**
Number of wells sampled: 95 Number of well samples collected (including duplicates and multiple samples from one well): 100 Number of duplicate samples collected: 5 Number of field and equipment blanks collected: 8 Total number of samples collected: 108	
17G0444	BMO-2010-3B, BMO-2010-3M, SCHWARTZ, DUP20170711, BMO-2015-2B, BMO-2015-2BL, BMO-2015-1B, BMO-2015-1BL, BMO-2014-4BL, BMO-2014-4B, POWER 639, BMO-2014-2BU, BMO-2014-1BU, BMO-2014-1BL, TVI 875, BMO-2014-3BL, BMO-2014-3BU, FB20170713, EQB20170713, COB WL
17G0637	PANAGAKOS, DODSON, TM-10 USBP, COOPER, NWC-04, NWC-02, NWC-06, PIONKE 517, ANDERSON 458, COB MW-3, COB MW-2, COB MW-1B, MCCONNELL 459, MCCONNELL 265, FRANCO 383, HOWARD 312, HOWARD NR
17G0807	WEISKOPF 897, ZANDER, WEED, OLMOS, KEEFER, BURKE, PARRA, RUIZ, CHAMBERS, MOORE, RAMIREZ, ROGERS E, GARNER 635, WEISKOPF 802, BANKS 986, RAY, EPPELE 641, EAST, NOTEMAN, BIMA, SWAN, NESS, ECHAVE, THOMPSON 341
17G0821	DUP20170731, OSBORN, FB20170731, EQB20170731, TVI 236
17I0258	AWC-05, AWC-03, AWC-04, AWC-02, DUP20170906, BMO-2014-2BL, FB20170906, EQB20170906
17J0127	ROGERS 803, BMO-2008-4B
X7G0213	BMO-2008-8M, BMO-2008-8B, BMO-2008-7M, BMO-2008-6M, BMO-2008-6B, BMO-2008-10GL, BMO-2008-11G, BMO-2008-9M, TM-16
X7G0265	BMO-2010-1M, BMO-2010-2M, HOBAN, DUP-071317, COOPER C
X7H0033	BMO-2012-1M, BMO-2008-1G, TM-42, TM-19A, BMO-2008-3B, TM-6
X7H0239	TM-15, BMO-2008-5M, BMO-2008-5B, BMO-2008-13B, TM-7, TM-2A
X7H0437	BMO-2008-10GU, DUP-080917, FB-081517, EQB-081517, BMO-2008-13M
X7H0506	BMO-2012-1M
LAB ID	**Q4 WELLS REPORTED**
Number of wells sampled: 1 Number of well samples collected (including duplicates and multiple samples from one well): 1 Number of duplicate samples collected: 0 Number of field and equipment blanks collected: 0 Total number of samples collected: 1	
17K0406	NWC-04

2. OPERATIONS

Field operations for this project consisted of the following for all wells sampled by Clear Creek Associates and CQB:

- Static water level measurement, if possible,
- Well purging, if needed,
- Collection of water quality field parameters (pH in standard units [SU], specific conductance [SC] in microSiemens per centimeter [µS/cm], and temperature in degrees Celsius [°C]),
- Collection of groundwater samples for water quality analysis,
- Collection of groundwater QA and QC samples per requirements in the QAPP, and
- Equipment decontamination.

Field notebook entries and sampling forms were evaluated for quality assurance and met the documentation requirements stated in the QAPP.

2.1 Water Level Monitoring

Static water level measurements were attempted at each well that was sampled (where there are no known obstructions or lack of wellhead access to prevent static water level measurement) and at all wells where water level only monitoring was conducted. Water levels at pumping wells were measured while the well pump was off. Because it is not always possible to ascertain how long the pump had been off prior to the water level measurement, some water levels may be affected by residual drawdown. Before measuring the water level at each well, the battery on the water level indicator was checked and the sensitivity level was adjusted, if necessary. Depth to water below a surveyed measuring point was measured to the nearest 0.01 feet, and verified by measuring the depth to water multiple times in order to obtain a consistent reading and accurate measurement.

2.2 Groundwater Sampling

Groundwater samples were collected from operable wells designated for water quality sampling under the Mitigation Plan. All wells sampled contained dedicated submersible pumps. Location information for the wells sampled for water quality and water level measurements is listed in Table 4 of the main text.

2.2.1 Pre-Sampling Field Activities

The pH[1] and SC[2] multipurpose meters were calibrated on each day of sampling. In addition, the water level indicator was checked for a signal, which indicates a working meter and sufficient battery strength. On each day where sampling extended for more than half a day, a mid-day calibration check was performed on the pH and SC meters. In addition to calibrating the instruments daily, measures were taken to 1) properly decontaminate field equipment, 2) ensure the appropriate storage and transport temperature of the samples, and 3) document activities related to the collection of groundwater samples as part of this project. These objectives were met by 1) replenishing or obtaining supplies of distilled water and ice daily, 2) use of the proper preservative and sample collection containers, 3) properly packing the samples on ice during field activities, 4) using distilled water to properly decontaminate field equipment prior to the start of sampling each day and after sampling at each well, and 5) obtaining the appropriate field notebook in order to document field activities related to the groundwater monitoring program.

2.2.2 Well Purging, Field Measurements, and Sample Collection

Three wetted casing volumes were purged from each well prior to sampling, when possible. However, when three casing volumes could not be purged, this information was noted on the groundwater sampling form (Appendix A of the annual report). Purge water was discharged to the ground surface.

Field measurements of pH, temperature, and specific conductance were collected at varying intervals during well purging at each well where a water quality sample was collected. If possible, field parameters were monitored until the measurements stabilized within 0.3 standard units for pH, 2 °C for temperature and 100 µS/cm for specific conductance as described in Section 4.2.1.2 of the QAPP.

In 2017, 146 groundwater samples (duplicate and multiple samples included) were collected for analysis from 94 wells. Groundwater samples were collected by filtering the sample into a 250-milliliter bottle using a clean filtration apparatus and one disposable 0.45-micron filter. Samples were labelled with the site name, date, time collected, sampler's initials, and the required analysis on the bottle. All bottles were provided by the laboratories and maintained in a clean and secure work area until used in the field.

[1] Field pH meters were calibrated using a three point calibration
[2] Field SC meters were calibrated using standard stock solutions

2.2.3 Post-Sampling Field Activities

Post-sampling field activities consisted of equipment decontamination, sample storage, and sample shipping. Field equipment that came into contact with the sample was decontaminated using Alconox® detergent and distilled water. After washing, the equipment was rinsed with distilled water. After sample collection, samples from each well were placed into a plastic bag to prevent the label from becoming illegible and stored on ice until they could be packed securely for shipping to the laboratory. The chain of custody is filled out prior to shipping or delivery to the laboratory, signed by the sampler, and then placed in a plastic bag along with the samples.

3. SAMPLE HANDLING

All 2017 samples collected by Clear Creek Associates and CQB were shipped to SVL or hand-delivered to Turner for analysis. COC documentation accompanied all samples submitted and included the sample name, collection date, and time. Laboratory reports include the date and time the samples were received by SVL or Turner. As noted on the laboratory reports from SVL and Turner, all of the sample bottles were received intact, properly preserved, and in good condition. The samples were shipped to SVL or delivered to Turner within one to eight days of sample collection. All shipped samples were sent overnight delivery. The samples were collected, shipped or delivered, and received by SVL or Turner within the established holding time for dissolved sulfate analysis in accordance with United States Environmental Protection Agency (EPA) Method 300.0.

4. LABORATORY QUALITY CONTROL

As specified in the QAPP, laboratory QC was maintained for all analyses through proper licensure, the use of approved analytical methods, QC measurements, appropriate turn-around-time for analysis (timeliness), method detection limits (MDLs), Reporting Limits (RLs), and practical quantitation limits (PQLs). Each of these controls is discussed in the following subsections.

The review of laboratory QC included a review to identify any qualified data and an assessment to determine their significance. Additionally, the laboratory QC summaries were reviewed to verify that results met QA criteria.

4.1 Licensure

SVL is licensed with the Arizona Department of Health Services (license number AZ0538) and is accredited in accordance with the National Environmental Laboratory Accreditation Conference. Turner is also licensed with the Arizona Department of Health Services (license number AZ0066).

4.2 Analytical Method

EPA method 300.0 was used for sulfate analysis during this monitoring period.

4.3 Method Detection Limit (MDL), Reporting Limit (RL) and Practical Quantitation Limit (PQL)

The MDLs, RLs, and PQLs change based on dilution of the samples. The MDLs, RLs, and PQLs of an undiluted sample as reported by SVL and Turner are shown in the following table:

Lab	Method	MDL (mg/L)	RL/PQL (mg/L)	Target MDL[1] (mg/L)
SVL	EPA 300.0	0.13-0.14	0.30	10
Turner	EPA 300.0	0.1-0.204	5.0	10

mg/L = milligrams per liter
[1] Target MDL from Table F.2 of QAPP
.

The SVL and Turner-reported MDLs are equal to or less than the target MDL identified in the QAPP. Turner has a range of MDL values because the laboratories are required to evaluate the MDL semiannually to maintain state licensure. The PQL is the amount of a constituent that can be consistently quantified with acceptable precision and accuracy (QAPP Section 3.3.7). The PQL for an undiluted sample reported by Turner is 5.0. The RL is used by SVL and is the smallest concentration the laboratory will report for a constituent. The RL of an undiluted sample reported by SVL is 0.3 mg/L. The Turner PQL and SVL RL are lower than the Target MDL of 10 mg/L from the QAPP. Reporting limit samples with higher range concentrations of sulfate required dilution, which increases the PQL and RL. In all cases of an RL or PQL greater than 10 mg/L sulfate, the laboratory analysis yielded a detected quantity. Thus, detection sensitivity of the analyses is adequate to be consistent with the Target MDL.

4.4 Timeliness

All samples submitted for sulfate analysis were analyzed within the twenty-eight day holding time specified by EPA Method 300.0.

4.5 Quality Control Measurements

The following QC samples were prepared and analyzed:

- Calibration blanks and calibration verification standards
- Analytical spike samples
- Laboratory duplicate samples
- Field blank samples

4.5.1 Calibration Blanks and Calibration Verification Standards

Results from the analyses of the initial calibration blanks and initial calibration verification standards conducted by EPA Method 300.0 were reviewed. The results of each initial calibration blank analyzed showed results below the RL or PQL. All analytical results for the initial calibration verification standards and laboratory-fortified blanks showed percent recoveries that were within the acceptance criteria specified by the SVL and Turner QA Plans.

4.5.2 Analytical Spike

Analytical spike and spike duplicate samples were analyzed by the laboratories for 10 percent of the samples analyzed. The spike samples were prepared by adding a sulfate spike to one randomly chosen sample out of every ten samples analyzed.

Spike recoveries for most SVL analyses were between 90 and 110 percent. In the SVL results, instances in which analytical spike recoveries were high, low, or unusable are qualified with an "M1", "M2", or "M3" flag, respectively. The "M1" flag was used on SVL report X7H0239. The "M2" flag was not used in 2017. The "M3" flag was used on SVL reports X7C0107, X7G0213, X7G0265, and X7H0033. In all cases where a qualifier was used, the method control sample recovery was checked by SVL to ensure that it was acceptable within the criteria specified by their QA Plan. The method control samples were prepared by adding a sulfate spike to de-ionized water.

Spike recoveries for samples analyzed by Turner were between 80 and 120 percent. There were no analytical flags reported by Turner.

4.5.3 Laboratory Duplicate Samples

Analyses of laboratory duplicate samples were reviewed as part of this data verification report. In all cases where the relative percent difference (RPD) could be calculated for laboratory duplicate samples, the RPD was within 20 percent, which is the tolerance range set by the laboratory. The results met QA criteria and demonstrate an appropriate level of precision in laboratory analysis of these samples. Field duplicate samples are discussed in Section 5.1.

4.5.4 Sample Re-Analysis

No samples were re-analyzed in 2017.

4.5.5 Blank Samples

Field and equipment blank samples were collected in accordance with procedures described in Section 4.2.1.5 of the QAPP. Field and equipment blank samples were collected and submitted along with other samples to evaluate the potential for contaminant introduction under field conditions. Section 4.2.1.5 of the QAPP requires the collection of a minimum of one field blank and one equipment blank sample for every twenty samples. The blank sample requirement was not met in 2017, as six field blank and five equipment blank samples were collected for 146 total

well samples. As a corrective action, Clear Creek will review the requirement for blank samples collection with field staff.

During 2017, 12 blank samples were collected, including six field blanks (FB20170119, FB20170224, FB20170713, FB20170731, FB20170906, and FB-081517) and six field equipment blanks (EQB20170119, EQB20170224, EQB20170713, EQB20170731, EQB20170906, and EQB-081517). None of the blank samples collected in 2017 had sulfate concentrations above the SVL reporting limit of 0.30 mg/L, or the Turner reporting limit of 5.0 mg/L. The results demonstrate that the sulfate concentrations reported in 2017 were not affected by sample collection and sample handling procedures.

5. DATA QUALITY INDICATORS

The QAPP provides several DQIs for assessing the overall quality of the data. These DQIs include the following:

- Precision
- Bias
- Accuracy
- Representativeness
- Comparability
- Completeness
- Sensitivity

Each of these DQIs is discussed below in relation to the groundwater sampling and analysis conducted in 2017.

5.1 Precision

Precision indicates how well a measurement can be reproduced. Precision is quantified by calculating the RPD between sulfate analyses of duplicate samples and by measuring the water level multiple times before recording the result.

For the QA/QC of analytical data, precision was quantified by calculating the RPDs between duplicates among the following groups of duplicate samples:

- Laboratory duplicate samples
- Field duplicate samples

As discussed in Section 4.5.3 there were no exceedances of RPD QA criteria for any laboratory duplicates. During this monitoring period eight field-filtered duplicate samples (DUP-011917, DUP20170224, DUP-030217, DUP20170711, DUP20170731, DUP20170906, DUP-071317, and DUP-081517) were collected for analysis. The collection of eight duplicate samples meets the QA/QC method and quantity goal stated in Section 4.2.1.5 of the QAPP.

Sulfate results for the duplicate samples collected are provided in the table below. The range of RPD values was between 0.46 and 18.97 percent, all within the 20 percent acceptance criteria for field duplicates, as stated in Section 3.3.1 of the QAPP. Overall, the DQI for precision is met for the analytical data.

Turner/SVL Project No.	Well ID	Duplicate ID	Sample (mg/l)	Duplicate (mg/l)	RPD
17S0613	AWC-04	Dup-011917	22.9	23.1	0.87%
17B0713	PANAGAKOS	DUP20170224	218	217	0.46%
X7C0107	BMO-2012-1M	DUP-030217	236	228	3.45%
17G0444	SCHWARTZ	DUP20170711	103	102	0.98%
17G0821	OSBORN	DUP20170731	19.3	18.7	3.16%
X7G0265	HOBAN	DUP-071317	1270	1050	18.97%
X7H0437	BMO-2008-10GU	DUP080917	1990	1960	1.52%
17I0258	AWC-05	DUP20170906	19.7	20.5	3.98%

mg/L = milligrams per liter
RPD = Relative Percent Difference

Precision for water level monitoring was met by measuring the water level repeatedly until readings were within 0.03 feet of one another. Readings within that range were obtained from all wells where groundwater measurements were collected; meeting the DQI for precision.

5.2 Bias

Bias is a systematic distortion of measurements causing consistent errors in one direction. Bias is managed in this data set by the consistent application of standardized sample collection and analysis procedures. As discussed in Section 4.5.5, none of the blank samples had measurable concentrations of sulfate indicating that the sampling collection and analysis procedures did not contribute sulfate to the results.

5.3 Accuracy

Accuracy is a measure of the agreement of a measurement to a known value and is measured using the recoveries from laboratory control samples. As discussed in Sections 4.5.1, 4.5.2, and 4.5.3 there were no significant exceedances of the recovery QA criteria for any of the calibration standards, analytical spikes, or laboratory duplicates, respectively. As discussed in Section 4.5.5, none of the blank samples had measurable concentrations of sulfate indicating that the sampling collection and analysis procedures did not significantly contribute sulfate to the results.

The accuracy of water level measurements was evaluated by comparing measurements to prior measurements to ensure consistency. Based on this information, the overall accuracy of the data is judged sufficient for the purpose of aquifer characterization.

5.4 Representativeness

All water level measurements and samples were taken from locations identified in the Mitigation Plan following standard sampling procedures and QA/QC guidelines specified in the QAPP. Moreover, results are expected to be representative of groundwater quality at the sampled locations because sulfate was not detected in the field or equipment blanks.

5.5 Comparability

All samples were collected using standardized procedures (HGC, 2008) and were analyzed by SVL and Turner using standardized methods. Insofar as standardized sample collection and analytical methods are adhered to, the sample results should be comparable.

5.6 Completeness

All samples collected and subsequently analyzed and reported by SVL and Turner satisfy the QA/QC criteria for this project. The completeness of analytical results is 100 percent, which exceeds the minimum 90 percent completeness in Section 3.3.6 of the QAPP.

5.7 Sensitivity

The analytical methods used to analyze the samples meet the MDL requirements specified in Table F.2 of the QAPP. The water level sounder was accurate to 0.01 feet as specified in Section 4 of the QAPP. Therefore, the analytical sensitivity is considered acceptable for use in aquifer characterization.

5.8 Reliability

After analyzing the results of all samples, comparing results to historical data, and carefully reviewing the field and laboratory methods used, the data is reported here is judged to provide a reliable representation of groundwater conditions at the sampled locations for 2017.

6. REFERENCES

Arizona Department of Environmental Quality (ADEQ). 2007. Mitigation Order on Consent Docket No. P-121-07, In the Matter of: Phelps Dodge Corporation, Copper Queen Branch, located at 36 West Highway 92, Bisbee, Arizona, ADEQ Identification Number 100531. November 14, 2007.

Clear Creek Associates. 2015. Mitigation Plan for Sulfate with respect to Drinking Water Supplies, Mitigation Order on Consent No. P-121-07. March 6, 2015.

Clear Creek Associates. 2017. Mitigation Performance Review for 2016, Mitigation Order on Consent No. P-121-07. April 12, 2017.

Hydro Geo Chem, Inc. 2008. Revision 1, Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Concentrator Tailing Storage Area, Cochise County, Arizona. July 3, 2008.

APPENDIX D

WELL RECORDS REGISTRY REVIEW

APPENDIX D

WELL RECORDS REGISTRY REVIEW

ANNUAL GROUNDWATER MONITORING REPORT FOR 2017

Prepared for:

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February 23, 2018

APPENDIX D

WELL RECORDS REGISTRY REVIEW

ANNUAL GROUNDWATER MONITORING REPORT FOR 2017

Prepared for:

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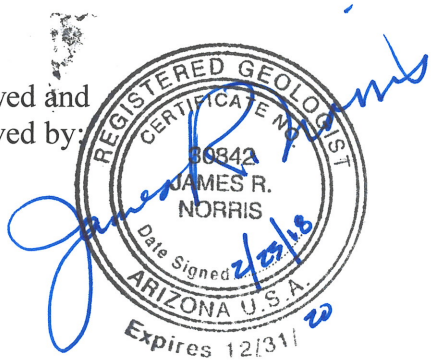
Reviewed and
Approved by:



James R. Norris
Arizona Registered Geologist No. 30842

February 23, 2018

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D.1. Imaged Records

1. INTRODUCTION

1.1 Scope and Objectives

This report describes a review of the Arizona Department of Water Resources (ADWR) Program 55 Well Registry Database (WRD) to identify new registered wells installed since January 2017 within one mile of the groundwater sulfate plume near the Freeport Minerals Corporation, Copper Queen Branch (CQB) Concentrator Tailing Storage Area (CTSA) (Figure D.1). The well registry records review is a requirement of the Mitigation Plan (Clear Creek Associates, 2015) submitted to Arizona Department of Environmental Quality (ADEQ) in 2015 pursuant to Mitigation Order on Consent Docket No. P-121-07 (MO) between CQB and ADEQ.

The well registry records review is conducted pursuant to Section 2.4 of the Mitigation Plan which states the following.

> *"The ADWR well registry records will be reviewed annually to identify new existing wells installed within one mile of the plume. Water use at new wells will be determined from the ADWR registry record and by inquiry with the well owner."*

An initial inventory of wells within one mile of the plume was submitted to ADEQ in 2008 (Hydro Geo Chem, Inc., 2008). A well inventory update conducted using WRD information available as of April 2012 was submitted to ADEQ in 2014 (Clear Creek Associates, 2014). Clear Creek Associates (2016) describes the registered wells identified using the January 2016 WRD. The last well records review used WRD information available as of January 2017 and was submitted to ADEQ in March 2017 (Clear Creek Associates, 2017).

The well records review reported herein discusses only new WRD records added between January 2017 and January 2018 WRDs, using a download of the WRD to identify wells registered since January 2017 within a mile of the plume. The WRD was downloaded (http://gisdata-azwater.opendata.arcgis.com/) on January 18, 2018 as a shapefile for use with ESRI ArcMap software. ADWR (2018) reports that the WRD is updated as new NOIs are received, making the WRD used for this review current as of the download date January 17, 2018.

1.2 Monitoring of Drinking Water Supplies

The MO set the action level for sulfate concentration in drinking water supplies at 250 milligrams per liter (mg/L). The edge of the sulfate plume is defined as the 250 mg/L sulfate concentration contour estimated based on the results of groundwater monitoring. CQB conducts groundwater sampling for sulfate at drinking water supply and monitoring wells according to the long term plume monitoring and expanded groundwater monitoring programs described in the Mitigation Plan. Public drinking water supplies and private drinking water supplies within 2000 feet of the plume are sampled semiannually. Annual sampling is performed at private drinking water supplies between 2,000 feet and one mile of the plume, and at drinking water supply wells installed below the plume as mitigation actions. New drinking water supply wells within a mile of the plume are added to the long term plume monitoring program as they are identified, contingent on well owner approval.

2. METHODOLOGY

2.1 Identification of Wells Within One Mile of the Plume

Figures D.1 and D.2 show the sulfate plume based on groundwater monitoring data for the third quarter of 2017. The January 2018 WRD and Geographic Information Systems (GIS) software were used to identify registered wells installed within 1 mile of the sulfate plume. The database was imported into the GIS software and a shapefile was created to encompass the area 1 mile from the edge of the sulfate plume plus a safety factor of 0.1 miles. The safety factor accounts for uncertainty in the exact position of wells because the WRD contains only cadastral coordinates accurate to approximately 470 feet. Figure D.2 shows the outline of the search area 1.1 miles from the sulfate plume. The list of wells within the January 2018 search area was compared to the list of wells reported in the 2017 Well Records Review to identify new records. Table D.1 lists the two new records added to the WRD between January 2017 and January 2018. The locations for the new well records are shown on Figure D.2.

3. RESULTS

3.1 New Records Identified

The well records review identified two new records for wells within a mile of the plume (Table D.1 and Figure D.2). The well registry numbers are 55-227101 and 55-809938. The ADWR imaged records for these wells are attached as Appendix D.1.

The record for well 55-227101 is a Well Driller Report and Well Log which lists the well as a cathodic protection well. Cathodic protection wells are a type of geotechnical well. The well owner listed for 55-227101 is El Paso Natural Gas Company, LLC.

The record for 55-809938 is an ADWR Request to Change Well Information filed by John E. and Lois C. Munger and a Late Registration of a Well filed by the previous owner. According to the Late Registration of a Well document, the well was drilled in 1945 or 1946 and its use is domestic landscape care. Well 55-809938 is the same as the HARDT well sampled in 2013 based on information provided by the previous well owner. The physical location of the well is more than one mile away from the plume edge based on field inspection of the well site, although the cadastral location for the well lies within the 1.1-mile search area due to the safety factor applied for the search. The well is shown on Figure 3 and sample results are included in Table 3 of the main report.

No action was taken for the two wells identified by the records review. The Mitigation Order requires sampling of drinking water supply wells within 1-mile of the sulfate plume. Well 55-227101 is not a drinking water supply well and well 55-809938 is more than one mile from the sulfate plume.

4. REFERENCES

Arizona Department of Water Resources (ADWR). 2018. Email correspondence from Karen Fisher, ADWR, to Ben Daigneau, Clear Creek Associates. RE: Wells 55. January 18, 2018.

Clear Creek Associates. 2014. Well Inventory Update, Task 1 of Aquifer Characterization Plan for Mitigation Order on Consent Docket No. P-121-07, Cochise County, Arizona. June 30, 2014.

Clear Creek Associates. 2015. Mitigation Plan for Sulfate with Respect for Drinking Water Supplies, Mitigation Order on Consent Docket No. P-121-07, Cochise County, Arizona. March 6, 2015.

Clear Creek Associates. 2016. Annual Groundwater Monitoring Report for 2015, Mitigation Order on Consent Docket No. P-121-07, Cochise County, Arizona. March 1, 2016.

Clear Creek Associates. 2017. Annual Groundwater Monitoring Report for 2016, Mitigation Order on Consent Docket No. P-121-07, Cochise County, Arizona. March 1, 2017.

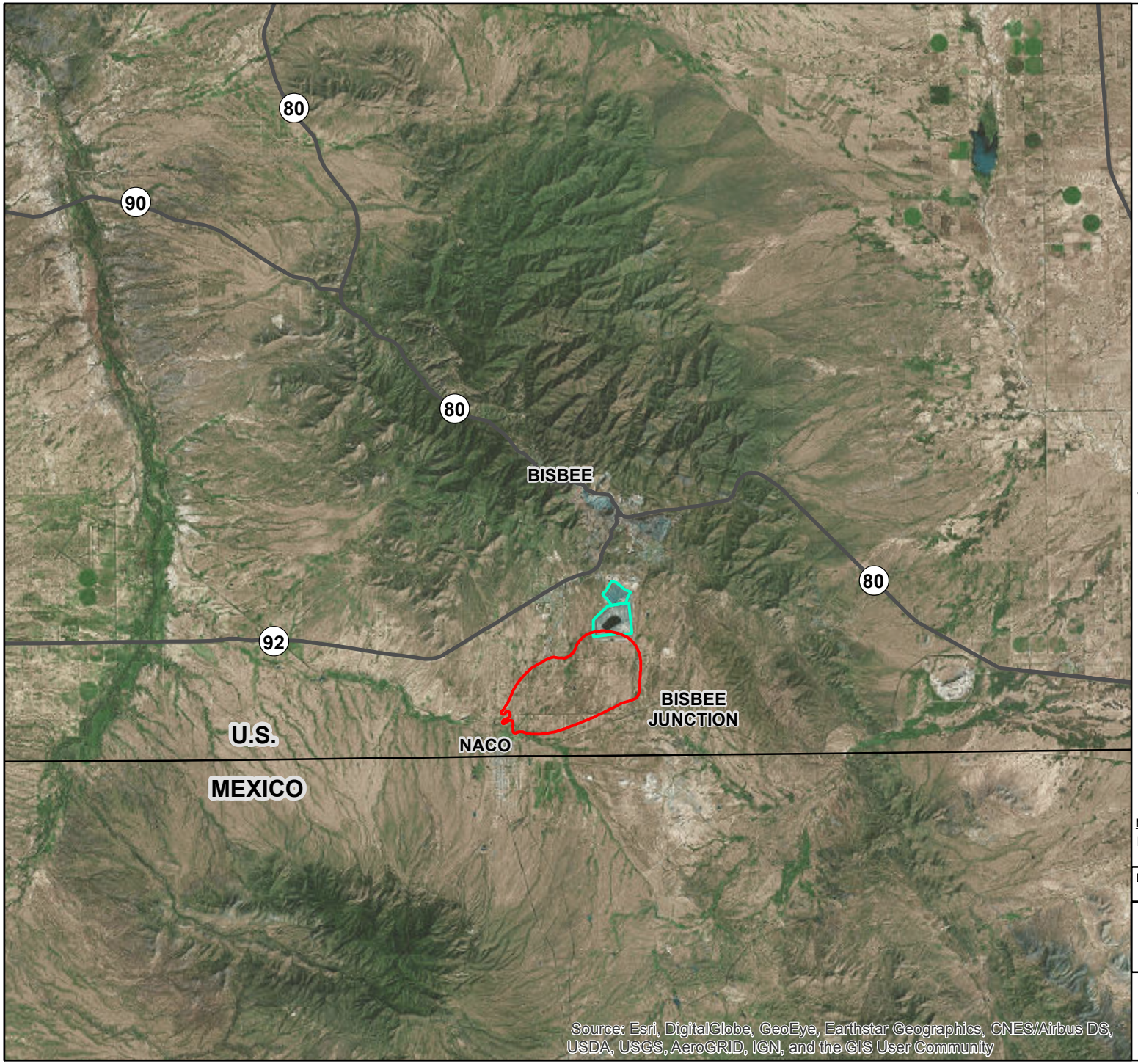
HGC. 2008. Well Inventory Report, Task 1 of Aquifer Characterization Plan for Mitigation Order on Consent No. P-121-07, Cochise County, Arizona. July 28, 2008.

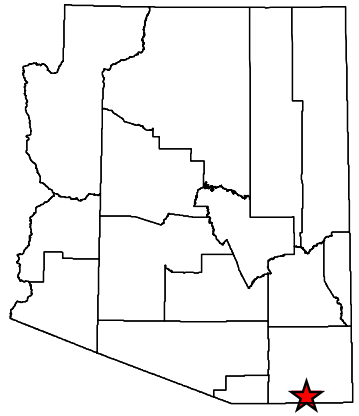
TABLE

TABLE D.1.
Well Categorization for Recently Installed Wells

Well Registry Number	Owner Name	Well Name	Category	MO Groundwater Monitoring Frequency	Operational	Usage
Geotechnical Well						
227101	El Paso Natural Gas Co., LLC	EPNG CPS 403	Geotechnical	Not Applicable	Unknown	Cathodic Protection
Monitor Well						
809938	John E. and Lois C. Munger	HARDT	Domestic/Landscape Care	Not Applicable	Unknown	Unknown

FIGURES





Legend

- Third Quarter 2017 250 mg/L Sulfate Plume
- CTSA
- Highway
- International Border

Notes:

Projection: UTM Zone 12N NAD83

Date	File ID
1/17/18	055038-507

CLEAR CREEK ASSOCIATES

FIGURE D.1.
PROJECT LOCATION MAP

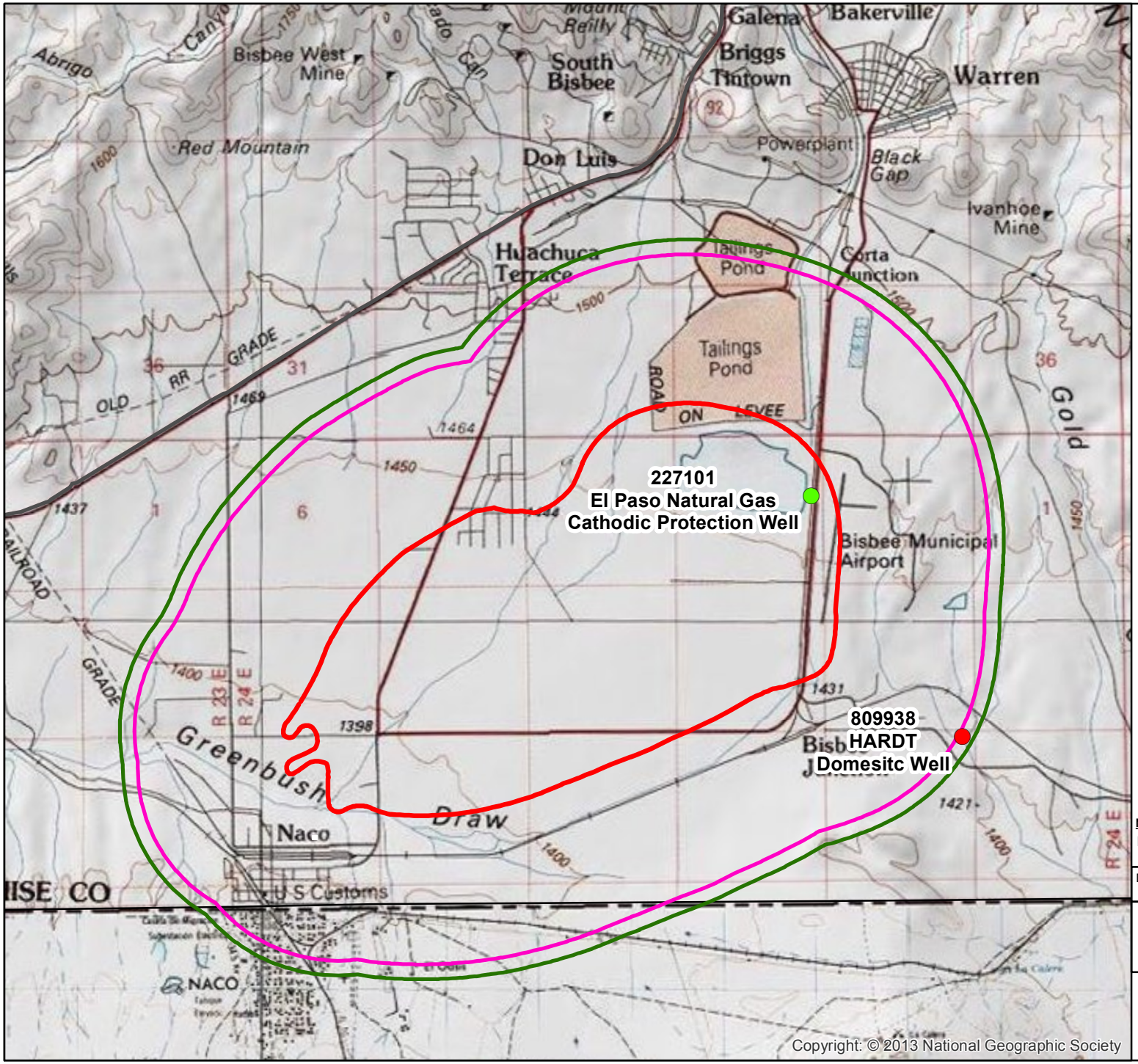


FIGURE D.2
Well Search Area
and New Well Registrations

APPENDIX D.1

IMAGED RECORDS

Arizona Department of Water Resources
Information Management Unit
PO Box 36020 • Phoenix, Arizona 85067-6020
(602) 771-8527 • 602-771-8500

Well Driller Report and Well Log

7/25/17

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL.

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK

FILE NUMBER: D(24-24) 3 ADD
WELL REGISTRATION NUMBER: 55 - 227101
PERMIT NUMBER (IF ISSUED):

SECTION 1. DRILLING AUTHORIZATION

Drilling Firm — Mail To:

NAME	DWR LICENSE NUMBER
CHAMPION CORROSION PRODUCTS, INC.	817
ADDRESS: P.O. BOX 7847	TELEPHONE NUMBER: 432-682-8343
CITY / STATE / ZIP: MIDLAND, TX, 79708-7847	FAX: 432-689-7389

RECEIVED
MAY 22 2017
ADWR

SECTION 1. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: EL PASO NATURAL GAS CO LLC

MAILING ADDRESS: 5151 E. BROADWAY BLVD, STE 1680

CITY / STATE / ZIP: TUCSON, AZ, 85711

CONTACT PERSON NAME AND TITLE:

TELEPHONE NUMBER: 520 663-4223 FAX:

WELL NAME (e.g., MW-1, PZ-3, Ict 25 Well, Smith Well, etc.): EPNG CPS 403

Location of Well

WELL LOCATION ADDRESS (IF ANY): CPS 403 EPNG Line 2003 @MP 245 + 7

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
24 S	24 E	3	NE 1/4	SE 1/4	SE 1/4

LATITUDE: N/A ° ' "N LONGITUDE: N/A ° ' "W

METHOD OF LATITUDE/LONGITUDE (CHECK ONE): ☐ USGS Quad Map ☐ Conventional Survey N/A ☐ *GPS: Hand-Held ☐ *GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL: Unknown Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE): ☐ USGS Quad Map ☐ Conventional Survey N/A ☐ *GPS: Hand-Held ☐ *GPS: Survey-Grade

*IF GPS WAS USED, GEOGRAPHIC COORDINATE DATUM (CHECK ONE): ☐ NAD-83 ☐ Other (please specify) N/A

COUNTY: Cochise

ASSESSOR'S PARCEL ID NUMBER (MOST RECENT): BOOK 101 MAP 41 PARCEL 002

SECTION 3. WELL CONSTRUCTION DETAILS

Drilling Method — CHECK ONE
- XX Air Rotary
- ☐ Bored or Augered
- ☐ Cable Tool
- ☐ Dual Rotary
- ☐ Mud Rotary
- ☐ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☐ Other (please specify)

Method of Well Development — CHECK ONE
- ☐ Airlift
- ☐ Bail
- ☐ Surge Block
- ☐ Surge Pump
- XX Other (please specify) Cathodic Protection

Condition of Well — CHECK ONE
- ☐ Capped N/A
- ☐ Pump Installed

Method of Sealing at Reduction Points — CHECK ONE
- ☐ None N/a
- ☐ Packed
- ☐ Swedged
- ☐ Welded
- ☐ Other (please specify)

Construction Dates

DATE WELL CONSTRUCTION STARTED: 04/15/2017

DATE WELL CONSTRUCTION COMPLETED: 04/21/~~2201~~7 2017

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY: Mike Loftis DATE: 05/15/2017

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 227101

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILD) (attach additional page if needed)

Depth

DEPTH OF BORING	DEPTH OF COMPLETED WELL
500' Feet Below Land Surface	500' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
Not Verified Feet Below Land Surface	N/A	N/A	☐ Valve ☐ Other: N/A

Borehole

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (inches)
0	100	12 1/4
100	500	7 7/8

Installed Casing

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	OUTER (inches)	MATERIAL TYPE (T) STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T) BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE (inches)
0	100	8.625		XX									

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T) NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE GROUT	BENTONITE CHIPS	BENTONITE PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK SAND	FILTER PACK GRAVEL	FILTER PACK SIZE
0	100			XX								
100	500								Anodes & Coke Breeze			

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 227101

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
0	5	Top Soil	
5	500	Red Rock	

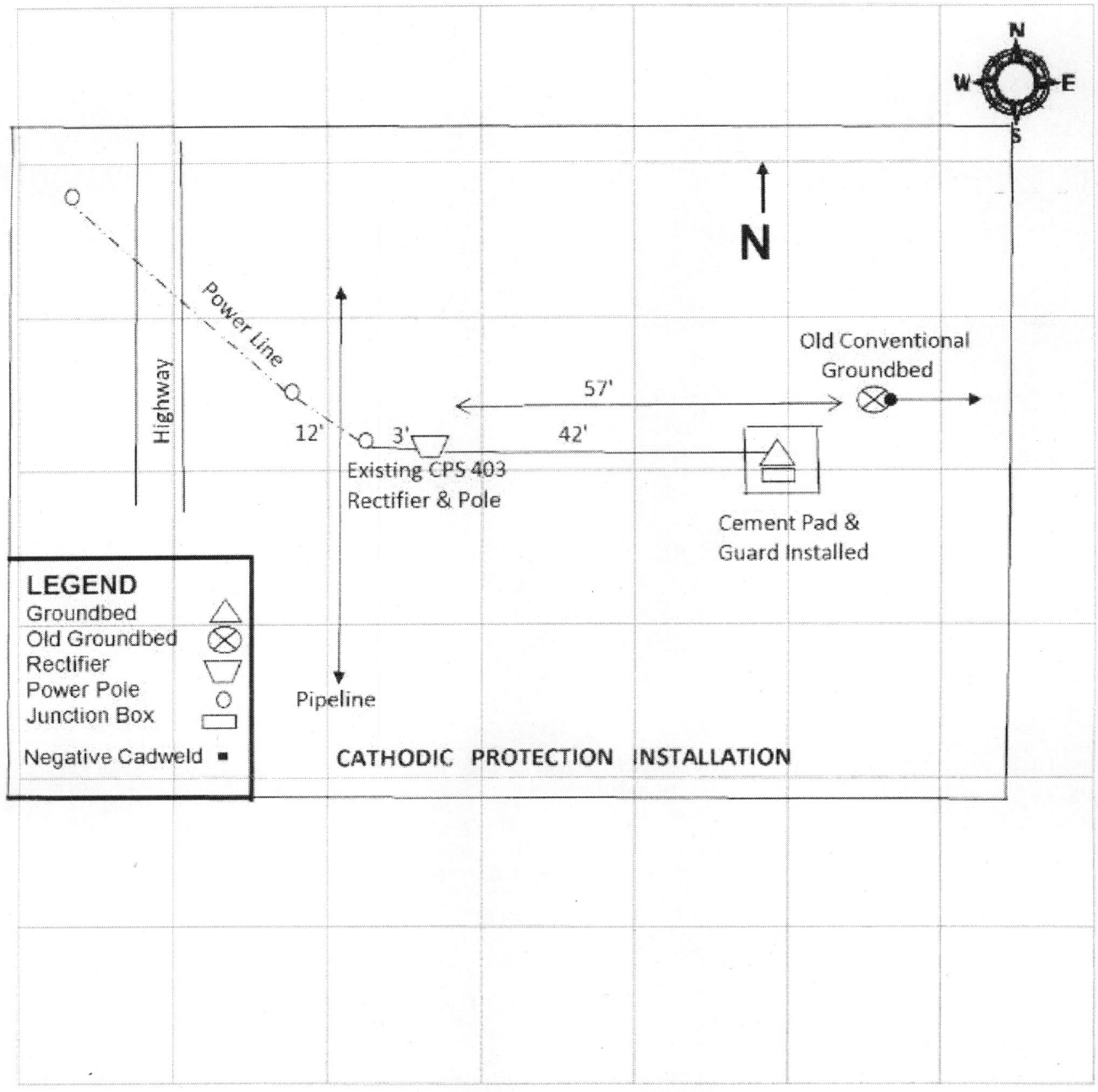
Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 227101

SECTION 6. WELL SITE PLAN

NAME OF WELL OWNER	COUNTY ASSESSOR'S PARCEL ID NUMBER (MOST RECENT)		
	BOOK	MAP	PARCEL
EL PASO NATURAL GAS CO LLC	101	41	002

- Please draw the following: (1) the boundaries of property on which the well was located; (2) the well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.
- Please indicate the distance between the well location and any septic tank system or sewer system.



Run Date: 03/24/2017

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

Location D 24.0 24.0 3 A D D

Well Reg.No 55 - 227101

AMA NOT WITHIN ANY AMA OR INA

Registered Name EL PASO NATURAL GAS CO LLC
5151 E. BROADWAY BLVD, STE 1680
TUCSON AZ 85711

File Type NEW WELLS (INTENTS OR APPLICATIONS)
Application/Issue Date 01/24/2017

Owner OWNER
Driller No. 817
Driller Name CHAMPION CORROSION PRODUCTS, INC.
Driller Phone 432-682-8343
County COCHISE
Parcel No. 101-41-002
Intended Capacity GPM 0.00

Well Type SPCL - CATHODIC PROTECTION
SubBasin SIERRA VISTA
Watershed SAN PEDRO RIVER
Registered Water Uses NO WATER USE
Registered Well Uses CATHODIC PROTECTION
Discharge Method NO DISCHARGE METHOD LISTED
Power NO POWER CODE LISTED

Well Depth	0.00	**Case Diam**	0.00	**Tested Cap**	0.00
Pump Cap.	0.00	**Case Depth**	0.00	**CRT**	
Draw Down	0.00	**Water Level**	0.00	**Log**	
		Acres Irrig	0.00	**Finish**	NO CASING CODE LISTED

Contamination Site: NO - NOT IN ANY REMEDIAL ACTION SITE

Tribe: GRIC Maintenance area

Comments EPNG CPS 403

Current Action

3/24/2017 555 DRILLER & OWNER PACKETS MAILED
Action Comment: bew

Action History

3/24/2017 155 NOI RECEIVED FOR A NEW NON-PRODUCTION WELL
Action Comment: bew

3/24/2017 550 DRILLING AUTHORITY ISSUED
Action Comment: bew

3/24/2017 221 VARIANCE REQUEST GRANTED
Action Comment: bew

3/24/2017 220 VARIANCE REQUEST RECEIVED
Action Comment: bew

ARIZONA DEPARTMENT OF WATER RESOURCES
1110 W. Washington St. Suite 310
Phoenix, Arizona 85007

VARIANCE GRANTED

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILLING OPERATIONS

WELL REGISTRATION NO: **55-227101** WELL OWNER ID: EPNG CPS 403

AUTHORIZED DRILLER: **CHAMPION CORROSION PRODUCTS, INC.** LICENSE NO: **817**

NOTICE OF INTENTION TO DRILL SPCL - CATHODIC PROTECTION WELL(S) HAS BEEN FILED WITH THE DEPARTMENT BY:

WELL OWNER: **EL PASO NATURAL GAS CO LLC 5151 E. BROADWAY BLVD, STE 1680 TUCSON, AZ, 85711**

THE WELL(S) IS/ARE TO BE LOCATED IN THE:

SE 1/4 of the **SE** 1/4 of the **NE** 1/4 Section **3** Township **24.0 SOUTH** Range **24.0 EAST**

NO. OF WELLS IN THIS PROJECT: **1** ASSESSOR'S PARCEL NO: **101-41-002**

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE DAY OF **March 25, 2018**

Stella Murillo

GROUNDWATER PERMITTING AND WELLS

THE DRILLER MUST FILE A LOG OF THE WELL WITHIN 30 DAYS OF COMPLETION OF DRILLING.

GREAT SEAL OF THE STATE OF ARIZONA
DITAT DEUS
1912

ARIZONA DEPARTMENT *of* WATER RESOURCES
1110 W. Washington St. Suite 310
Engineering and Permits Division
Phoenix, AZ 85007
602-771-8500

NOTICE TO WELL DRILLERS

This is a reminder that a valid drill card be present for the drilling of each and every well constructed on a site.* The problem seems to occur during the construction of a well when an unexpected problem occurs. Either the hole collapses, the hole is dry, a drill bit is lost and can't be recovered, or any number of other situations where the driller feels that he needs to move over and start another well. If you encounter this type of scenario, please be aware drillers do not have the authority to start another well without first obtaining drilling authority for the new well. Please note the following statutes and regulations pertaining to well drilling and construction:

ARIZONA REVISED STATUTE (A.R.S.)

A.R.S. § 45-592.A.

A person may construct, replace or deepen a well in this state only pursuant to this article and section 45-834.01. The drilling of a well may not begin until all requirements of this article and section 45-834.01, as applicable, are met.

***

A.R.S. § 594.A.

The director shall adopt rules establishing construction standards for new wells and replacement wells, the deepening and abandonment of existing wells and the capping of open wells.

***

A.R.S. § 600.A

A well driller shall maintain a complete and accurate log of each well drilled.

ARIZONA ADMINISTRATIVE CODE (A.A.C.)

A.A.C. R12-15-803.A.

A person shall not drill or abandon a well, or cause a well to be drilled or abandoned, in a manner which is not in compliance with A.R.S. Title 45, Chapter 2, Article 10, and the rules adopted thereunder.

***

A.A.C. R12-15-810.A.

A well drilling contractor or single well licensee may commence drilling a well only if the well drilling contractor or licensee has possession of a drilling card at the well site issued by the Director in the name of the well drilling contractor or licensee, authorizing the drilling of the specific well in the specific location.

***

A.A.C. R12-15-816.F.

In the course of drilling a new well, the well may be abandoned without first filing a notice of intent to abandon and without an abandonment card.

*** THIS REQUIREMENT DOES NOT PERTAIN TO THE DRILLING OF MINERAL EXPLORATION, GEOTECHNICAL OR HEAT PUMP BOREHOLES**

ARIZONA DEPARTMENT of WATER RESOURCES
1110 W. Washington St. Suite 310
Phoenix, Arizona 85007
602-771-8500
azwater.gov

3/24/2017

EL PASO NATURAL GAS CO LLC
5151 E. BROADWAY BLVD, STE 1680
TUCSON, AZ 85711

DOUGLAS A. DUCEY
Governor

THOMAS BUSCHATZKE
Director

Registration No.: 55- 227101
File Number: D(24-24) 3 ADD

Dear Well Applicant:

Enclosed is a copy of the Notice of Intention to Drill and Abandon (NOI) an Exploration/Specialty Well which you or your driller recently filed with the Department of Water Resources. This letter is to inform you that the Department has approved the NOI and has mailed, or made available for download, a drilling authorization card to your designated well drilling contractor. The driller may not begin drilling until he/she has received the authorization, and must keep it in their possession at the well site during drilling.

Well drilling activities must be completed within one year after the date the NOI was filed with the Department. If drilling is not completed within one year, a new NOI must be filed and authorization from this Department received before proceeding with drilling. If the well cannot be successfully completed as initially intended (dry hole, cave in, lost tools, etc.), the well must be properly abandoned and a Well Abandonment Completion Report must be filed by your driller [as required by A.A.C. R12-15-816(F)].

If you change drillers, you must notify the Department of the new driller's identity on a Request to Change Well Information (form 55-71A). Please ensure that the new driller is licensed by the Department to drill the type of well you require. A new driller may not begin drilling until he/she receives a new drilling authorization card from the Department.

If you find it necessary to change the location of the proposed well(s), you may not proceed with drilling until you file an amended NOI with the Department. An amended drilling authorization card will then be issued to the well drilling contractor, which must be in their possession before drilling begins.

State statute requires the drilling contractor to file a complete and accurate Well Drillers Report and Well Log (form 55-55) within 30 days after completion of drilling. A Well Abandonment Completion Report (form 55-58) must also be completed by the drilling contractor for geotechnical wells that are drilled and abandoned. Blank report forms were provided to your driller with the drilling authorization card. If a well must be abandoned during the drilling, a Well Abandonment Completion Report (form 55-58) must be completed and submitted to the Department. You should insist and ensure that all of the required reports are accurately completed and timely filed with the Department.

Please be advised that Arizona statute [A.R.S. § 45-593(C)] requires a registered well owner to notify the Department of a change in ownership of the well and/or information pertaining to the physical characteristics of the well in order to keep this well registration file current and accurate. Any change in well information or a request to change well driller must be filed on a Request to Change Well Information form (form 55-71A) that may be downloaded from the ADWR Internet website at www.azwater.gov.

Sincerely,

Groundwater Permitting and Wells Section

Arizona Department of Water Resources
Groundwater Permitting and Wells Section
P.O. Box 36020 Phoenix, Arizona 85067-6020
(602) 771-8527 • Fax: (602) 771-8690
· www.azwater.gov ·

Notice of Intention to Drill and Abandon an *Exploration / Specialty* Well

$150 FEE

- Review instructions prior to completing form in black or blue ink.
- You must include with your Notice:
  - $150 check or money order for the filing fee. Only one Notice of Intent to Drill is required for all wells that are drilled by or for the same person to obtain geophysical, mineralogical or geotechnical data within a single section of land.
  - Well construction diagram showing all proposed well construction features listed in Section 6 and the proposed abandonment specifications listed in Section 7.

Authority for fee: A.R.S. § 45-113 and A.A.C. 12-15-104

AMA / INA	B	SB
–	USP	76
RECEIVED DATE	WS	
3-24-2017	11	
ISSUED DATE	WQARF	CERCLA
3-24-2017	000	–

FILE NUMBER: D(24-24)3ADD
WELL REGISTRATION NUMBER: 55 - 227101

SECTION 1. REGISTRY INFORMATION

To determine the location of well, please refer to the Well Registry Map (https://gisweb.azwater.gov/WellRegistry/Default.aspx) and/or Google Earth (http://www.earthpoint.us/Townships.aspx)

Well Type

CHECK ONE
- ☐ Mineral Exploration
- ☐ Geotechnical
- ☐ Heat Pump
- ☒ Cathodic Protection
- ☐ Grounding
- ☐ Other *(please specify)*:

COUNTY WHERE WELL(S) ARE LOCATED: COCHISE

Location of Well

WELL LOCATION ADDRESS *(if any)*: Cochise Co. Parcel #101-41-002 (EPNG L2003 @ MP245+27) CPS 403

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE	Number of Wells (holes) per 10-acre location
24.0 S	24.0 E	3	NE ¼	SE ¼	SE ¼	1
			¼	¼	¼	
			¼	¼	¼	
			¼	¼	¼	
			¼	¼	¼	
			¼	¼	¼	

Use additional boxes to the right to list 160,40,10 acre descriptions for multiple wells drilled to obtain geophysical or geotechnical data on different 10-acre parcels within a single section of land (160, 40, 10 acre descriptions are not required for mineralogical exploration wells).

SECTION 2. OWNER INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: El Paso Natural Gas Company, LLC
MAILING ADDRESS: 5151 E. Broadway Blvd, Suite 1680
CITY / STATE / ZIP CODE: Tucson, AZ 85711
CONTACT PERSON NAME AND TITLE: Kelley Sims, Land Agent
TELEPHONE NUMBER: (520) 663-4223
FAX: (520) 663-4259

RECEIVED
MAR 24 2017
ARIZONA DEPARTMENT OF WATER RESOURCES

Landowner *(check this box if Well Owner and Landowner are same)* ☐

FULL NAME OF COMPANY, GOVERNMENT AGENCY, OR INDIVIDUAL: City of Bisbee / Bisbee Municipal Airport
MAILING ADDRESS: 118 Arizona Street
CITY / STATE / ZIP CODE: Bisbee, AZ 85603
CONTACT PERSON NAME AND TITLE: Andy Haratyk, Public Works Director
TELEPHONE NUMBER: (520) 249-5404
FAX:

SECTION 3. DRILLING AUTHORIZATION

Drilling Firm

NAME: Champion Corrosion Products Inc.
DWR LICENSE NUMBER: 817
ROC LICENSE # CATEGORY: 264324 (A-4)
TELEPHONE NUMBER: 432-682-8343
FAX NUMBER: 432-689-7389
EMAIL ADDRESS: mlives@loftiscompany.com

Consultant *(if applicable)*

CONSULTING FIRM: N/A
CONTACT PERSON NAME:
TELEPHONE NUMBER:
FAX NUMBER:
EMAIL ADDRESS:

SECTION 4. QUESTIONS

	Yes	No	If Yes:
1. Is the proposed well site within 100 feet of a septic tank system, sewer disposal area, landfill, hazardous materials or petroleum storage area or tank?	☐	☒	You must submit a letter requesting a variance from the 100-foot setback requirement (A.A.C. R12-15-818). However, if the proposed well is a geotechnical well that will be abandoned before the drill rig leaves the well site, a variance may be requested by simply checking the box below. ☐ *I request a variance from the 100-foot setback requirement for a geotechnical well.*
2. If applicable, are you requesting a variance to use thermoplastic casing in lieu of steel in the surface seal?	☒	☐	The wells must be constructed in a vault. Pursuant to A.A.C. R12-15-801(27) a "vault" is defined as a tamper-resistant watertight structure used to complete a well below the land surface.
3. Is there another well name or identification number associated with this well? (e.g., Silver Well #1, CP-2, etc.)	☒	☐	PLEASE STATE: EPNG CPS 403

BW

55-227101

SECTION 5. WELL CONSTRUCTION DIAGRAM

Provide a well construction diagram showing all existing well construction features listed in Section 6 and the proposed abandonment specifications listed in Section 7. Please submit additional sheets and additional well construction diagrams if multiple wells are to be drilled and construction or abandonment details vary.

Please see attached

Notice of Intent to Drill and Abandon an *Exploration / Specialty* Well

WELL REGISTRATION NUMBER
55 - 227101
DATE CONSTRUCTION TO BEGIN
03/2017

SECTION 6. PROPOSED WELL CONSTRUCTION PLAN *(attach additional page if needed)*

Borehole

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (inches)
0	100	12 1/4
100	500	7 7/8

Casing *(if applicable)*

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	OUTER DIAMETER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
0	100	8.625	☐	☐	☐		☐	☐	☐	☐	☐		
100	500		☐	☐	☐		☐	☐	☐	☐	☐		

Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	100	☐	☐	☒	☐	☐	☐	☐		☐	☐	
100	500	☐	☐	☐	☐	☐	☐	☐	Anodes & Coke Breeze	☐	☐	
		☐	☐	☐	☐	☐	☐	☐		☐	☐	

VARIANCE GRANTED

SECTION 7. PROPOSED WELL ABANDONMENT DESIGN *(Refer to ADWR'S Well Abandonment Handbook for additional information.)*

Casing Treatment *(if applicable)*

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	TYPE (T): SONAR JET	BRUSH OR SCRAPE	MILLS KNIFE	CASING REMOVAL (explain in Remarks)	IF OTHER TYPE, DESCRIBE OR IF CASING IS TO BE PERFORATED, DESCRIBE SPACING AND SIZE OF PERFORATIONS TO BE ADDED
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	

Sealing or Fill Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	GROUT TYPE (T): NEAT CEMENT	CONCRETE	SAND-CEMENT GROUT	CEMENT-BENTONITE GROUT	SAND-BENTONITE GROUT	HIGH SOLIDS BENTONITE: GROUT	CHIPS	PELLETS	SAND	MIXING RATIO by (check one) Weight / Volume	ESTIMATED VOLUME OF MATERIAL (cubic feet)
		☐	☐	☐	☐	☐	☐	☐	☐	☐		At a Later Date
		☐	☐	☐	☐	☐	☐	☐	☐	☐		Anodes & Coke Breeze
		☐	☐	☐	☐	☐	☐	☐	☐	☐		

Proposed Abandonment Method *(See Well Abandonment Handbook)*

CHECK ONE
- ☐ Standard Method
- ☐ Alternative 1
- ☐ Alternative 2
- ☐ Alternative 3
- ☐ Alternative 4:
  - ☐ Variance Option *
- ☐ Alternative 5:
  - ☐ Variance Option 1*
  - ☐ Variance Option 2*
- ☑ Other *(please specify)*: Please see attached.

* requires a letter requesting a variance

Emplacement Method of Sealing or Fill Material

CHECK ONE
- ☑ Tremie Pumped *(Recommended)*
- ☐ Gravity
- ☐ Pressure Grouting
- ☐ Other *(please specify)*:

SECTION 8. LAND AND WELL OWNER

I state that this notice is filed in compliance with A.R.S. § 45-594 and A.A.C. R12-15-816 and is complete and correct to the best of my knowledge and belief.

Land Owner	Well Owner *(if different from Land Owner; See instructions)*
PRINT NAME AND TITLE: Lori Stanger, EPNG/KM Project Mgr./Easement Holder Rep.	PRINT NAME AND TITLE
SIGNATURE OF LAND OWNER: Lori Stanger	SIGNATURE OF WELL OWNER
DATE: 03/23/2017	DATE
☒ By checking this box, you agree to allow ADWR to contact you via electronic mail.	☐ By checking this box, you agree to allow ADWR to contact you via electronic mail.
EMAIL ADDRESS: Lori.Stanger@kindermorgan.com	EMAIL ADDRESS

SAVE FORM

NOTICE

A.R.S. § 41-1030(B), (D), (E) and (F) provide as follows:

B. An agency shall not base a licensing decision in whole or in part on a licensing requirement or condition that is not specifically authorized by statute, rule or state tribal gaming compact. A general grant of authority in statute does not constitute a basis for imposing a licensing requirement or condition unless a rule is made pursuant to that general grant of authority that specifically authorizes the requirement or condition.

D. This section may be enforced in a private civil action and relief may be awarded against the state. The court may award reasonable attorney fees, damages and all fees associated with the license application to a party that prevails in an action against the state for a violation of this section.

E. A state employee may not intentionally or knowingly violate this section. A violation of this section is cause for disciplinary action or dismissal pursuant to the agency's adopted personnel policy.

F. This section does not abrogate the immunity provided by section 12-820.01 or 12-820.02.

Kinder Morgan
NatGas O&M

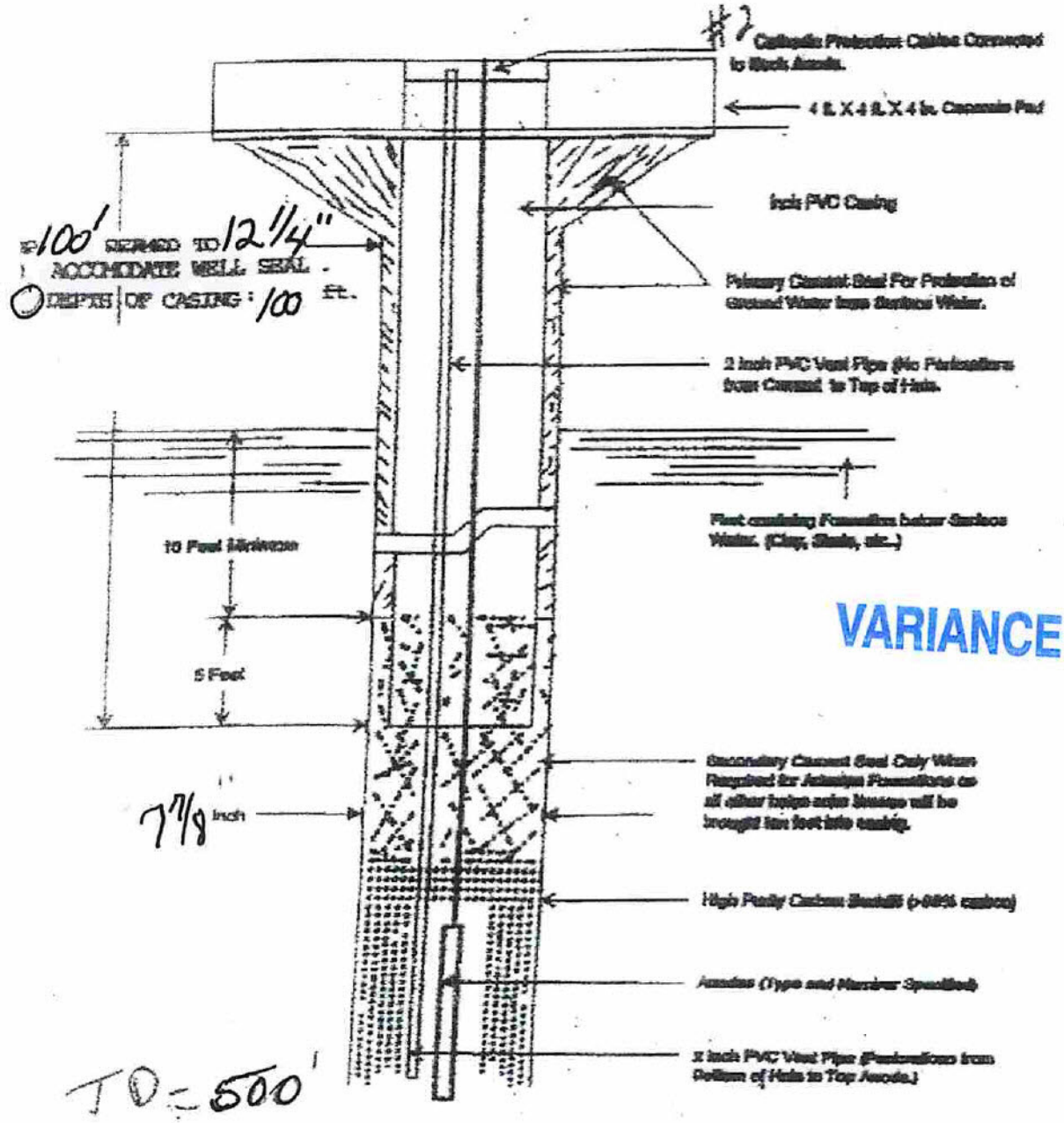
CORROSION
Cathodic Protection
Design and Installation

El Paso
Natural Gas Company

55-227101

Deep Anode Ground Bed Casing Detail

*CS 403



≥100' REAMED TO 12 1/4" TO ACCOMMODATE WELL SEAL.
DEPTH OF CASING: 100 ft.

7 7/8 Inch

TD = 500'

Design of cathodic protection "Deep" Anode ground beds in Arizona to isolate surface and ground waters. Provisions for artesian water will be made but the secondary seal will not be installed unless an artesian formation is encountered.

VARIANCE GRANTED

Champion Corrosion Products, Inc.
P.O. Box 7847
Midland, TX 79708
(432) 682-8343 Tel
(432) 689-7389 Fax
mlives@loftiscompany.com

March 23, 2017

VARIANCE GRANTED

Arizona Department of Water Resources
Water Management Division
P.O. Box 36020
Phoenix, AZ 85067-6020

Re: Request For Variance
CPS 403 - Section 3, T-24-S, R-24-E, Cochise County, AZ

To Whom It May Concern:

In accordance with the minimum construction requirement Standard R12-15-811-B, we request a variance be allowed to use thermoplastic casing instead of steel. By utilizing thermoplastic casing, the pipe functions as an electrical insulator and will not deteriorate as the cathodic protection well operates. If a steel casing were used, the casing could become part of the electrical circuit and rapidly deteriorate. The cementing/grouting completion of the thermoplastic casing achieves the surface seal as required. A diagram is attached.

Sincerely,

Mary L. Ives
Operations Manager
432-682-8343 tel
432-689-7389 fax

mli

Attachment: Diagram of construction of cathodic protection groundbed for
Kinder Morgan Nat Gas O&M/El Paso Natural Gas Company LLC.

55-22701

Form 9-28 (Rev. 6-56)

STATE OF ARIZONA

Document Identity 60262-G1

COUNTY OF COCHISE

24

KNOW ALL MEN BY THESE PRESENTS, that the undersigned, hereinafter referred to as Grantor, for and in consideration of the sum of ONE DOLLAR AND OTHER CONSIDERATIONS, to the undersigned in hand paid by EL PASO NATURAL GAS COMPANY, a corporation, hereinafter called Grantee, the receipt of which is hereby acknowledged, does hereby grant, sell and convey unto said Grantee, its successors and assigns, an easement and right to construct, maintain and operate the hereinafter described facilities, with appurtenances thereto, on the hereinafter described land.

This grant shall carry with it the right of ingress and egress to and from the said land, with the right to use existing roads, for the purpose of constructing, inspecting, repairing and maintaining the facilities and the removal or replacement of same at will, either in whole or in part. Grantee shall have the right of exclusive use of any portion of said property occupied by Grantee's improvements which are constructed on or above the surface thereof.

TO HAVE AND TO HOLD the above described rights and easements, together with all rights necessary to operate and maintain the facilities on the easement hereby granted unto the said Grantee, its successors and assigns, and the Grantee may assign the rights and easements herein granted, either in whole or in part, subject to the terms of this grant, and such rights and easements shall be covenants running with said land and be binding upon Grantor, his heirs, legal representatives and successors in title.

Grantee may at any time, and upon permanent abandonment of said right of way and removal of all improvements constructed thereon, shall execute and record a reconveyance and release hereof, whereupon this right of way and easement and all rights and privileges herein mutually granted shall be fully cancelled and terminated.

Grantor represents and warrants that he is the owner in fee simple of the land hereinafter described, subject only to outstanding mortgages, if any, now of record in said county, and agrees that in the event of default by Grantor, Grantee shall have the right to discharge or redeem for Grantor, in whole or in part, any mortgage, tax or other lien on said land and thereupon be subrogated to such lien.

It is hereby understood that the parties securing this grant in behalf of the Grantee are without authority to make any covenant or agreement not herein expressed.

DESCRIPTION OF FACILITIES

Cathodic Protection Station to provide a low resistance ground bed to which soil-generated current on Grantee's natural gas pipe line may be directed; composed of necessary ground beds, rectifier, service pole and underground cables, as shown on Grantee's drawing number 2003.10-X-1, a copy of which has been furnished Grantor.

DESCRIPTION OF PROPERTY SITUATED IN COCHISE COUNTY, STATE OF ARIZONA

Subdivision ~~Section~~ ~~Cochise~~ ~~Arizona~~

That portion of the SW¼NW¼ of Section 2, and of the SE¼NE¼ of Section 3 more particularly described in Quit Claim Deed dated July 19, 1938 recorded August 6, 1938, in Book 125, Deeds of Real Estate, at page 327, County Records of Cochise County, Arizona.

"Service pole is to be erected to comply with minimum Federal Aviation Agency Standards in effect at any given time. All liability attributable to the installation shall be the sole responsibility of the Grantee".

Grantee will, within 30 days after written request by Grantor, relocate with facility upon another site supplied by Grantor, one time and one time only.

I hereby certify that the within instrument was filed and recorded at request of El Paso Natural Gas Co. Book 1492 - El Paso, Tex.

Witness my hand and Official Seal

Date OCT 28 1960 - 9.00 AM

Fee $ 2.75

I. R. S.

Total $

Page 247 16410

Docket 259

WITNESS THE EXECUTION HEREOF the 10th day of October A.D. 1960

by Lee W. Bodenhamer, City Clerk.

City of Bisbee, Arizona

By Lee W. Bodenhamer

Witness to Signature

Project Name. Cathodic Protection Station No. 403

W/O. Dwg. No. 2003.10-X-1

Form 9-14 (Rev. 7-55) (Corporate Acknowledgement for Arizona)

STATE OF Arizona
COUNTY OF Cochise

On this the 18th day of OCTOBER 1960, before me SHIRLEY SKINFILL the undersigned officer, personally appeared Lee W. Bodenhamer who acknowledged himself to be the City Clerk of The City of Bisbee, Arizona, a corporation, and that he as such City Clerk, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as ~~President~~ City Clerk.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission expires:

REG. NO. 33690

Shirley Skinfill

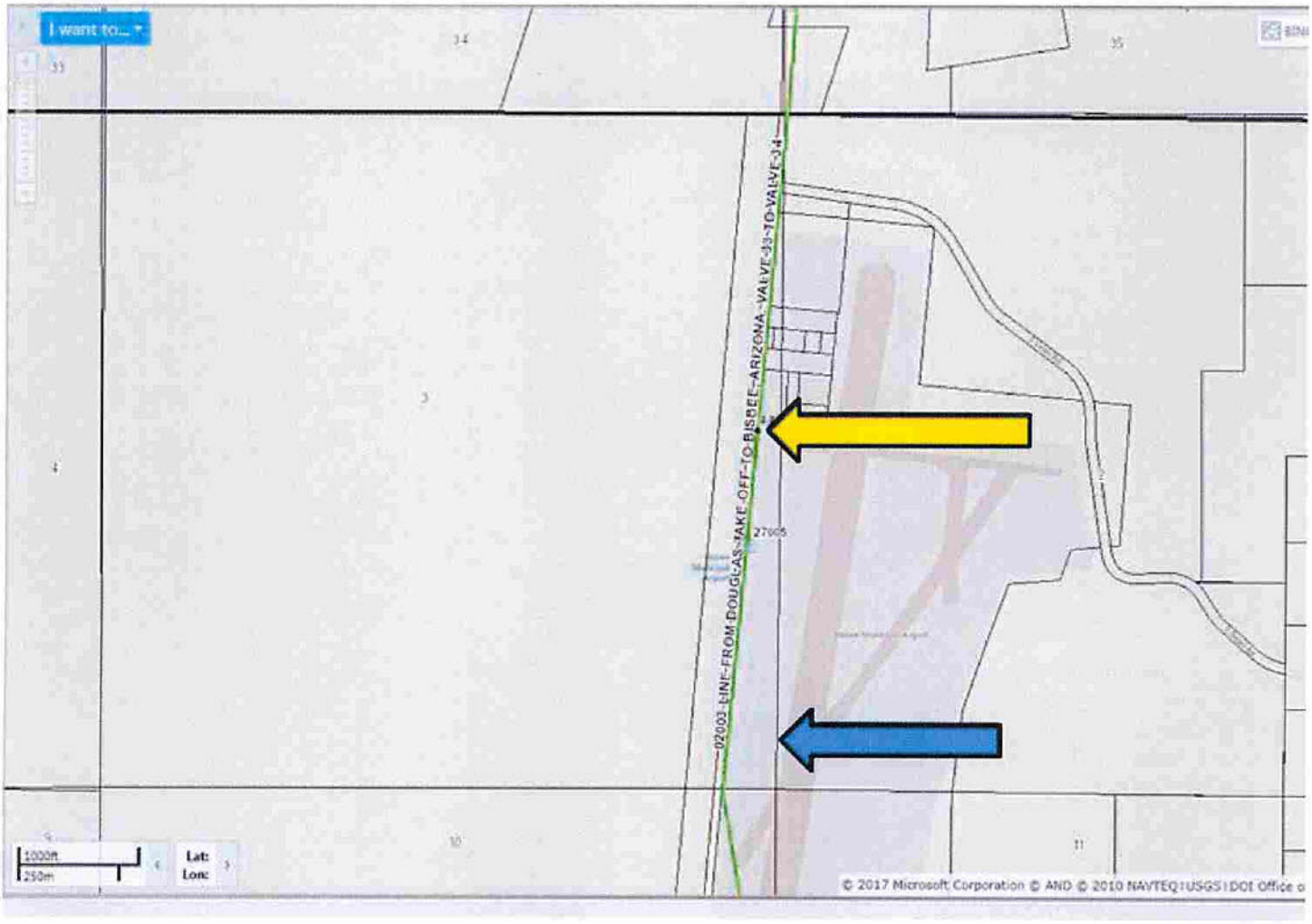
Notary Public in and for Cochise County, State of Arizona

Bruce Wildey 55-227101

From: Sims, Kelley B (Kelley) <Kelley_Sims@Kindermorgan.com>
Sent: Friday, March 24, 2017 12:42 PM
To: Bruce Wildey
Subject: CPS 403 Location on the Bisbee Municipal Airport

Hello,
The green line below is the EPNG pipeline. The blue arrow is pointing to the section line between Sections 2 and 3.

The yellow arrow points to the location of the new CPS 403 groundbed in the SESENE of Section 3. My mapping layer is showing that the wedge-shaped parcel along the east side of Section 3 was, like the rest of the airport property in Section 2, given the parcel number 101-41-002. If you find out it has a different number, please let me know so I can correct my records.



Kelley
Kelley Sims, SR/WA

El Paso Natural Gas
Company, L.L.C.
a Kinder Morgan company

Land Department, Tucson Area
5151 E. Broadway, Suite 1680
Tucson, AZ 85711
(520) 663-4223

Transaction Receipt - Success

Arizona Water Resources
Arizona Water Resources
MID:347501639533
1700 W Washington St
Phoenix , AZ 85012
602-771-8454

03/24/2017 11:57AM
Remittance ID
Arizona032417145513136Ald
Transaction ID:
181851135

MARGARET LOFTIS
10100 Basilone Ridge
SAN ANTONIO, Texas 78255
United States
Visa - 6807
Approval Code: 09916D

Sale
Amount: $150.00

55-227101
N/A
Cash Receipts
0
palder@azwater.gov

Cardmember acknowledges receipt of goods and/or services in the amount of the total shown hereon and agrees to perform the obligations set forth by the cardmember's agreement with the issuer.

Signature

click here to continue.

Printed: 3/24/2017 11:58:14 AM

Arizona Department of Water Resources

1110 West Washington Street, Suite 310
Phoenix AZ 85007

Customer:
MARGARET LOFTIS
10100 BASILONE RIDGE
SAN ANTONIO, TX 78255

Receipt #: 17-50517
Office: Engineering and Peri
Receipt Date: 03/24/2017
Sale Type: Mail
Cashier: WRPXA

Item No.	Function Code	AOBJ	Description	Ref ID	Qty	Unit Price	Ext Price
8504	122221	4439-6E	CATHODIC PROTECTION, HEAT PUMP, GROUNDING, MONITOR	227101	1	150.00	150.00
					RECEIPT TOTAL:		**150.00**

Payment type: CREDIT CARD
Amount Paid: $150.00
Payment Received Date: 03/24/2017

Authorization 181851135

Notes:

No refund without valid receipt

Run Date: 10/12/2017

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

Location D 24.0 24.0 14 A A A

Well Reg.No 55 - 809938

AMA NOT WITHIN ANY AMA OR INA

Registered Name JOHN E. & LOIS C. MUNGER
731 W. PASEO NORTENO
TUCSON AZ 85704

File Type LATE REGISTRATION
Application/Issue Date 05/10/2017

Owner OWNER
Driller No. 0
Driller Name
Driller Phone
County COCHISE
Parcel No. 101-48-001D
Intended Capacity GPM 0.00

Well Type EXEMPT
SubBasin DOUGLAS
Watershed WHITE WATER DRAW
Registered Water Uses DOMESTIC
Registered Well Uses WATER PRODUCTION
Discharge Method NO DISCHARGE METHOD LISTED
Power NO POWER CODE LISTED

Well Depth	120.00	**Case Diam**	8.00	**Tested Cap**	0.00
Pump Cap.	0.00	**Case Depth**	0.00	**CRT**	
Draw Down	0.00	**Water Level**	0.00	**Log**	
		Acres Irrig	0.00	**Finish**	STEEL - PERFORATED OR SLOTTED CASING

Contamination Site: NO - NOT IN ANY REMEDIAL ACTION SITE

Tribe: Not in a tribal zone

Comments 760 E. Border Rd., Bisbee
Estimated that the well was drilled between 1945 and 1946 by unknown drilling firm, per owner. - TNV 5/24/2017

Places Of Use

D 24 0 24 0 14 A A A

Current Action

10/12/2017 860 CHANGE OF WELL OWNERSHIP
Action Comment: agt

Action History

5/25/2017 101 LATE REGISTRATION APPROVED
Action Comment: TNV

5/10/2017 100 LATE REGISTRATION RECEIVED
Action Comment: TNV

Arizona Department of Water Resources
Water Management Support Section
P.O. Box 36020 Phoenix, Arizona 85067-6020
(602) 771-8527 • www.azwater.gov

Request to Change Well Information

RECEIVED
SEP 15 2017
ARIZONA DEPARTMENT OF WATER RESOURCES

FILE NUMBER: D(24-24)14 AAA
WELL REGISTRATION NUMBER: 55 – 809938

- Review instructions prior to completing form in back or blue ink.
- You must include with your Notice:
  - check or money order for any required fee(s)
- Authority for fee: A.R.S. § 45-113 and A.A.C. R12-15-104

** PLEASE PRINT CLEARLY **

SECTION 1. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: JUDITH JUNE FISHER

MAILING ADDRESS:

CITY / STATE / ZIP CODE:

CONTACT PERSON NAME AND TITLE:

TELEPHONE NUMBER: (928) 428-6485

FAX:

Location of Well

WELL LOCATION ADDRESS (IF ANY): 760 E. BORDER ROAD , Bisbee, AZ 85603

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
24S	24E	14	A ¼	A ¼	A ¼

LATITUDE			LONGITUDE		
° Degrees	' Minutes	" N Seconds	° Degrees	' Minutes	" W Seconds

METHOD OF LATITUDE/LONGITUDE (CHECK ONE)
☐ USGS Quad Map ☐ Conventional Survey ☐ *GPS: Hand-Held ☐ *GPS: Survey-Grade

*IF GPS WAS USED, GEOGRAPHIC COORDINATE DATUM (CHECK ONE)
☐ NAD-83 ☐ Other *(please specify):*

COUNTY ASSESSOR'S PARCEL ID NUMBER: BOOK 101 MAP 48 PARCEL 001D

COUNTY WHERE WELL IS LOCATED: Cochise

Type of Request (CHECK ONE)

☐ Change of Well Drilling Contractor *(Fill out Section 2)*
☐ Change of Well Ownership *(Fill out Section 3)*
☐ Change of Well Information (location, use, etc.) *(Fill out Section 4)*

SECTION 2. REQUEST TO CHANGE WELL DRILLING CONTRACTOR

FEE $120 per Well

- If drilling or abandoning a well, the Department must receive this request and issue authorization to the new drilling firm prior to the commencement of well drilling or abandonment.

Current Well Drilling Contractor

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL:

DWR LICENSE NUMBER:

TELEPHONE NUMBER:

FAX:

New Well Drilling Contractor

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL:

DWR LICENSE NUMBER:

ROC LICENSE CATEGORY:

TELEPHONE NUMBER:

FAX:

SECTION 3. STATEMENT OF CHANGE OF WELL OWNERSHIP

FEE $30 per Well

-

Previous Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: JUDITH JUNE FISHER

MAILING ADDRESS: 1240 N. 8TH AVENUE

CITY / STATE / ZIP CODE: THATCHER, AZ 85552

CONTACT PERSON NAME AND TITLE:

TELEPHONE NUMBER: (928) 428-6485

FAX:

New Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: JOHN E. MUNGER and LOIS C. MUNGER

MAILING ADDRESS: 731 W. PASEO NORTENO

CITY / STATE / ZIP CODE: TUCSON, AZ 85704

CONTACT PERSON NAME AND TITLE:

TELEPHONE NUMBER:

FAX:

SECTION 4. CHANGE OF WELL INFORMATION (No Fee Required)

NOTE: Applies only to wells that have already been drilled. For proposed wells, an amended Notice of Intent to Drill a Well must be filed.

EXPLAIN

SECTION 5. OPTIONAL BY PROPERTY OWNER AND WELL OWNER ONLY

☐ By checking this box, I hereby provide ADWR permission to enter the property for the purpose of taking water level measurements at this well. *(See instructions.)*

SECTION 6. WELL OWNER SIGNATURE

I HEREBY CERTIFY that the above statements are true to the best of my knowledge and belief.

TYPE OR PRINT NAME AND TITLE: JUDITH JUNE FISHER, SUCCESSOR TRUSTEE OF LORENE M. HARDT, TRUSTEE OF THE GEORGE E. AND LORENE M. HARDT TRUST, DATED AUGUST 20, 1997

SIGNATURE OF WELL OWNER: Judith June Fisher

DATE:

THECOUNTYRECORDER.COM

[Subscriber Log In]

Cochise County, AZ Recorder's Office

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COCHISE Go

List of Counties

Document Identifier	2017-17629 Prev Doc Next Doc
Book-Page	
Recording Date-Time	09-11-2017 01:04:54 PM
Document Type	JOINT TENANCY DEED
Page Count	4
View Image	View Image
Description	
Grantor	GEORGE E HARDT TRUST LORENE M HARDT TRUST
Grantee	MUNGER, JOHN E MUNGER, LOIS C

Related Documents - Affected By

Reception#	Document Type	Relationship
2017-17629RP	AFFIDAVIT OF PROPERTY VALUE	

Legal

Lot	Block	Subdivision

Section	Township	Range
14	24S	24E

Parcel ID
10148001R

Street City

Recording Fees

Fee Name	Amount
Recording	$11.00
Real Property Transfer	$0.00
Recorder's Surcharge	$4.00
Postage	$0.00
Additional Titles	$0.00
State Surcharge	$0.00
Total Fee	$15.00

Requested By

Document Content Questions: please contact the appropriate County Recorder's Office.
Web Site Questions: please send any questions or comments regarding this site to Support.
This web site and **theCountyRecorder**™ are the property of Saul's Creek Engineering, Inc., Colorado Springs CO.

2017-17629
Page 1 of 4
Requested By: Pioneer Title Agency
David W. Stevens - Recorder
Cochise County , AZ
09-11-2017 01:04 PM Recording Fee $15.00

at the request of Pioneer Title Agency, Inc.
When recorded mail to
JOHN E. MUNGER
731 W. PASEO NORTENO
TUCSON, AZ 85704

70600463-CR

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Tax Parcel No.: 101-48-001R-1

JOINT TENANCY DEED

For consideration of Ten Dollars, and other valuable considerations, I or we,

JUDITH JUNE FISHER, SUCCESSOR TRUSTEE OF LORENE M. HARDT, TRUSTEE OF THE GEORGE E. AND LORENE M. HARDT TRUST, DATED AUGUST 20, 1997

do/does hereby convey to

JOHN E. MUNGER and LOIS C. MUNGER, HUSBAND AND WIFE

not as tenants in common and not as community property estate, and not as community property with right of survivorship, but as joint tenants with right of survivorship, the following described property in the County of Cochise, State of Arizona.

See Exhibit A attached hereto and made a part hereof.

Pursuant to A.R.S § 33-404, the names and addresses of the beneficiaries of the above referenced Trust are disclosed in the Trust Disclosure Exhibit attached hereto and incorporated herein by reference.

SUBJECT TO: Current taxes and other assessments, reservations in patents and all easements, rights of way, encumbrances, liens, covenants, conditions, restrictions, obligations, and liabilities as may appear of record.

The Grantor warrants the title against all persons whomsoever.

The Grantees by signing the acceptance below evidence their intention to acquire said premises as joint tenants with the right of survivorship, and not as community property and not as tenants in common and not as community property with right of survivorship.

Dated September 7, 2017

Accepted and approved:

JOHN E. MUNGER

JUDITH JUNE FISHER, SUCCESSOR TRUSTEE OF LORENE M. HARDT, TRUSTEE OF THE GEORGE E. AND LORENE M. HARDT TRUST, DATED AUGUST 20, 1997

LOIS C. MUNGER

UNOFFICIAL DOCUMENT

State of Arizona }
} ss.
County of Cochise }

The foregoing instrument was acknowledged before me this 8 day of September, 2017, by JOHN E. MUNGER and LOIS C. MUNGER.

NOTARY PUBLIC
My commission expires: 07-01-19

CANDY ROMO
Notary Public - State of Arizona
COCHISE COUNTY
My Commission Expires
July 1, 2019

State of Arizona }
} ss.
County of Cochise }

The foregoing instrument was acknowledged before me this 8 day of September, 2017, by JUDITH JUNE FISHER, SUCCESSOR TRUSTEE OF THE LORENE M. HARDT, TRUSTEE OF THE GEORGE E. AND LORENE M. HARDT TRUST, DATED AUGUST 20, 1997.

NOTARY PUBLIC
My commission expires: 07-01-19

CANDY ROMO
Notary Public - State of Arizona
COCHISE COUNTY
My Commission Expires
July 1, 2019

THIS NOTARY CERTIFICATE IS TO BE ATTACHED TO: JOINT TENANCY DEED
Date of Document: September 7, 2017 / Consisting of 3 pages
Parties to Document:
JOHN E. MUNGER and LOIS C. MUNGER
JUDITH JUNE FISHER

UNOFFICIAL DOCUMENT

Exhibit A

PARCEL I:

A portion of the Northeast quarter of the Northeast quarter of Section 14, Township 24 South, Range 24 East of the Gila and Salt River Base and Meridian, Cochise County, Arizona, more particularly described as follows:

COMMENCING at the North quarter corner of said Section 14, being a G.L.O monument, to which a found ½ iron pin with obliterated plastic cap, bears North 89°51'52" East, a distance of 1,185.88 feet;
thence North 89°51'52" East, along the North Section line of said Section 14, a distance of 1,185.88 feet to the TRUE POINT OF BEGINNING;
thence North 89°50'38" East, a distance of 339.21 feet;
thence South 43°18'10" East, a distance of 234.91 feet;
thence South 69°13'50" East, a distance of 106.59 feet;
thence South 59°55'50" East, a distance of 174.29 feet;
thence South 79°22'51" East, a distance of 102.56 feet;
thence South 00°02'45" East, a distance of 191.32 feet;
thence South 74°19'34" West, a distance of 281.37 feet to a point on the Northern edge of Border Road right of way;
thence North 36°41'50" West, a distance of 445.75 feet, along the Northern edge of Border Road right of way, to point on a tangent curve to the left and a radius of 630.03 feet;
thence along said tangent curve to the left, along the Northern edge of Border Road right of way, a distance of 392.42 feet through a central angle of 35°41'14" to the POINT OF BEGINNING.

PARCEL II:

That portion of the East 600.00 feet of the Northeast quarter of the Northeast quarter of Section 14, Township 24 South, Range 24 East of the Gila and Salt River Base and Meridian, Cochise County, Arizona, more particularly described as follows:

COMMENCING at the Northeast corner of said Section 14;
thence South 00° 08' 05" West 431.00 feet;
thence North 89° 51' 55" West 193.91 feet to the TRUE POINT OF BEGINNING;
thence North 89° 51' 55" West 208.72 feet;
thence North 00° 08' 05" East 208.72 feet;
thence South 89° 51' 55" East 208.72 feet;
thence South 00° 08' 05" West 208.72 feet to the TRUE POINT OF BEGINNING.

UNOFFICIAL DOCUMENT

Attribute	Value
GID	133610
APN	10148001R
Book	101
Map	48
Parcel	001R
Zoning	R-36
Category Designation	C-NEIGHBORHOOD CONSERVATION
Tax Area Code	0271
School District	BISBEE (02)
Incorporated City	NONE
Fire District	NACO (05)
Hospital District	NONE
Sanitation District	NONE
Light District	NONE
Flood District	NONE
Irrigation District	NONE
Road District	NONE
JTE District	COCHISE
Use Code	8714

Printed: 9/21/2017 4:30:14 PM

Arizona Department of Water Resources

1110 West Washington Street, Suite 310
Phoenix AZ 85007

Customer:

PIONEER TITLE AGENCY, INC.
8 BISBEE ROAD
BISBEE, AZ 85603

Receipt #: 18-54105
Office: MAIN OFFICE
Receipt Date: 09/21/2017
Sale Type: IN_PERSON
Cashier: WRPXA

Item No.	Function Code	AOBJ	Description	Ref ID	Qty	Unit Price	Ext Price
81213	WRFREV	4439-TT	Change of Ownership/Change of Well Information/Well Assignment	809938	1	30.00	30.00
						RECEIPT TOTAL:	**30.00**

Payment type: CHECK
Amount Paid: $30.00
Payment Received Date: 09/21/2017

Check # 70055566

Notes: FROM TTA.

Escrow No. 70600463 - 006 CR Check Date: 09/11/2017 Check No. 70055566

DESCRIPTION	CODE	AMOUNT
WELL TRANSFER FEE		$30.00
	Check Total	$30.00

Seller/Buyer: FISHER/MUNGER
Property Address: 760 E. BORDER ROAD Bisbee, AZ 85603
Tax Parcel Id: 101-48-001R-1

Run Date: 05/25/2017

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

Location D 24.0 24.0 14 A A A

Well Reg.No 55 - 809938

AMA NOT WITHIN ANY AMA OR INA

Registered Name GEORGE E. & LORENE M. HARDT
PO BOX 972
THATCHER AZ 85552

File Type LATE REGISTRATION
Application/Issue Date 05/10/2017

Owner OWNER
Driller No. 0
Driller Name
Driller Phone
County COCHISE
Parcel No. 101-48-001D
Intended Capacity GPM 0.00

Well Type EXEMPT
SubBasin DOUGLAS
Watershed WHITE WATER DRAW
Registered Water Uses DOMESTIC
Registered Well Uses WATER PRODUCTION
Discharge Method NO DISCHARGE METHOD LISTED
Power NO POWER CODE LISTED

Well Depth	120.00	**Case Diam**	8.00	**Tested Cap**	0.00
Pump Cap.	0.00	**Case Depth**	0.00	**CRT**	
Draw Down	0.00	**Water Level**	0.00	**Log**	
		Acres Irrig	0.00	**Finish**	STEEL - PERFORATED OR SLOTTED CASING

Contamination Site: NO - NOT IN ANY REMEDIAL ACTION SITE

Tribe: Not in a tribal zone

Comments 760 E. Border Rd., Bisbee
Estimated that the well was drilled between 1945 and 1946 by unknown drilling firm, per owner. - TNV 5/24/2017

Places Of Use

D 24 0 24 0 14 A A A

Current Action

5/25/2017 101 LATE REGISTRATION APPROVED
Action Comment: TNV

Action History

5/10/2017 100 LATE REGISTRATION RECEIVED
Action Comment: TNV

DOUGLAS A. DUCEY
Governor

THOMAS BUSCHATZKE
Director

ARIZONA DEPARTMENT of WATER RESOURCES
1110 West Washington Street, Suite 310
Phoenix, Arizona 85007
602.771.8500
azwater.gov

May 4, 2017

George E. & Lorene M. Hardt c/o Judy Fisher
P.O. Box 972
Thatcher, AZ 85552

Re: Well Registry Number: 55-809938
File (Location) Number: D (24-24)14 AAA

Dear Well Owner:

Enclosed is a copy of the Late Registration of a Well form that you recently submitted to our Department. Your cancelled check can serve as your receipt. The Registration Number that has been assigned to your well is referenced above.

Also enclosed is a blank Request to Change Well Information form. This form should be used for any **future** changes to this well, as follows:

- Change of ownership of the well (Section 2);
- Change of address of well owner;
- Change in well data, such as pump capacity (Section 4);
- Correction of legal description as to location of the well;
- Change of well driller, **prior** to drilling/deepening/modifying the well;
- Amending any information that was previously filed with this Department.

Please contact this office if further assistance or information is required.

Sincerely,

Torren Valdez
Groundwater Permitting and Wells

COPY

RECEIVED

MAY 10 2017

ADWR

Arizona Department of Water Resources
Groundwater Permitting and Wells
P.O. Box 36020 Phoenix, Arizona 85067-6020
(602) 771-8527 • (602) 771-8690 fax
• www.azwater.gov •

Late Registration of a Well

FEE $60.00

- Review instructions prior to completing form in black or blue ink.
- You must include with your application:
  - check or money order for the fee(s)
- Authority for fee: A.R.S. § 45-113 and A.A.C. R12-15-104

AMA / INA	B	SB
O	DOU	35
RECEIVED DATE	WS	
5/10/2017	13 WWD	
ISSUED DATE	WQARF	CERCLA
5/25/2017	000	

FILE NUMBER: D(24-24)14 AAA
WELL REGISTRATION NUMBER: 55- 809938

** PLEASE PRINT CLEARLY **

SECTION 1. REGISTRY INFORMATION

Well Type	Fee
CHECK ONE ☒ Exempt (Pump has a maximum capacity of not more than 35 gpm and water is not used for irrigation purposes inside an AMA.) (*See instructions.*)	$60
☐ Non-Exempt (Pump has a maximum capacity of more than 35 gpm and the well is located outside an AMA.) (*See instructions.*)	$60

ORIGINAL WELL DRILLING FIRM (IF KNOWN): Unknown

ORIGINAL WELL DRILL DATE (ESTIMATE IF NOT KNOWN): estimate 1945 - 46

PROPERTY OWNER WHEN WELL WAS DRILLED (IF KNOWN): George E Hardt

Location of Well

WELL LOCATION ADDRESS (IF ANY) OR CROSS-STREETS: 760 E. Border Rd, Bisbee (Per owner TNV)

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
24S	24E	14	NE ¼	NE ¼	NE ¼

LATITUDE			LONGITUDE		
° Degrees	' Minutes	" N Seconds	° Degrees	' Minutes	" W Seconds

METHOD OF LATITUDE/LONGITUDE (CHECK ONE): ☐ *GPS: Hand-Held ☐ Google Earth ☐ Conventional Survey ☐ *GPS: Survey-Grade

*IF GPS, GEOGRAPHIC COORDINATE DATUM (CHECK ONE): ☐ NAD-83 ☐ Other (*please specify*):

COUNTY ASSESSOR'S PARCEL ID NUMBER			# OF ACRES
BOOK	MAP	PARCEL	
101	48	001D	1

PLACE OF USE (ONLY IF DIFFERENT FROM LOCATION OF WELL)

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
101	48	001D	¼	¼	¼

COUNTY WHERE WELL IS LOCATED: Cochise

SECTION 2. OWNER INFORMATION

Land Owner	Well Owner (*check this box if Land Owner and Well Owner are same*) ☑
FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: George E + Lorene M Hardt	FULL NAME OF COMPANY, GOVERNMENT AGENCY, OR INDIVIDUAL:
MAILING ADDRESS: c/o Judy Fisher PO Box 972	MAILING ADDRESS:
CITY / STATE / ZIP CODE: Thatcher, AZ 85552	CITY / STATE / ZIP CODE:
CONTACT PERSON NAME AND TITLE: Judy Fisher, personal Rep.	CONTACT PERSON NAME AND TITLE:
TELEPHONE NUMBER: 928-428-6485 / FAX:	TELEPHONE NUMBER: / FAX:

SECTION 3.

Questions	Yes	No	If Yes:
1. Is the well site within 100 feet of a septic tank system, sewer disposal area, landfill, hazardous materials or petroleum storage area or tank?	☐	☒	EXPLAIN
2. Is there another well name or identification number associated with this well? (e.g., Lot 39 Well, MW-1, Smith Well, etc.)	☐	☒	PLEASE STATE
3. If this well is an exempt well, is it the second exempt well on this parcel for the same use?	☐	☒	EXPLAIN

ES

Late Registration of a Well

WELL REGISTRATION NUMBER
55 - 809938

SECTION 4. WATER/SITE INFORMATION

Principal Use **of Water**	***Other Uses*** **of Water**	
CHECK ONE	CHECK ALL THAT APPLY	MAXIMUM PUMP CAPACITY: Less than 35 GPM — Gallons Per Minute
☐ Irrigation (# of acres _____)	☐ Irrigation (# of acres _____)	TOTAL DEPTH OF WELL: 120' — Feet Below Land Surface
☐ Commercial	☐ Commercial	STATIC WATER LEVEL: Unknown — Feet Below Land Surface
☒ Domestic	☐ Domestic	
☐ Industrial	☐ Industrial	
☐ Drainage	☐ Drainage	
☐ Monitoring	☐ Monitoring	
☐ Municipal	☐ Municipal	
☐ Stock	☐ Stock	
☐ Dewatering	☐ Dewatering	
☐ Other (please specify):	☐ Other (please specify):	
Landscape Care		

SECTION 5. EXISTING WELL CONSTRUCTION DESIGN (attach additional page if needed)

Borehole

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (inches)
		8"

Existing Casing (to the best of your knowledge)

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	OUTER DIAMETER (inches)	MATERIAL TYPE (T) STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T) BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
			X						X				

Existing Annular Material (to the best of your knowledge)

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T) NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE GROUT	BENTONITE CHIPS	BENTONITE PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK SAND	FILTER PACK GRAVEL	FILTER PACK SIZE
			X										

SECTION 6. OPTIONAL BY PROPERTY OWNER AND WELL OWNER ONLY

☒ By checking this box, I hereby provide ADWR permission to enter the property for the purpose of taking water level measurements at this well. *(See instructions.)*

SECTION 7. WELL OWNER OR PROPERTY OWNER SIGNATURE

I state that this registration is complete and correct to the best of my knowledge and belief.

TYPE OR PRINT NAME AND TITLE	SIGNATURE OF WELL OWNER OR LANDOWNER	DATE
Judith J Fisher trustee, Ex of Will personal Representative	Judith J Fisher	4-24-17

10139009
10139004C
10139004C
10144013D
10139004D
10142004
10144002
10139008J
12
11
10144003
10144013C
10145003
10144010
10139008K
10146011
T24S R24E
10148005
10148001D
10148001R
10148001L
10148001M
10148001Q
10146001
14
10148007B
10148001P
13
10148001F
10148003
10147008
10146003B
10147001
10146003E
10146014
10146003C
10146003F

10139009
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10139004C
10144013D
10139004D
10142004
10144002
10139008J
12
11
10144003
10144013C
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10139008K
10146011
T24S R24E
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10148001D
10148001R
10148001L
10148001M
10148001Q
10146001
14
10148007B
10148001P
10148001F
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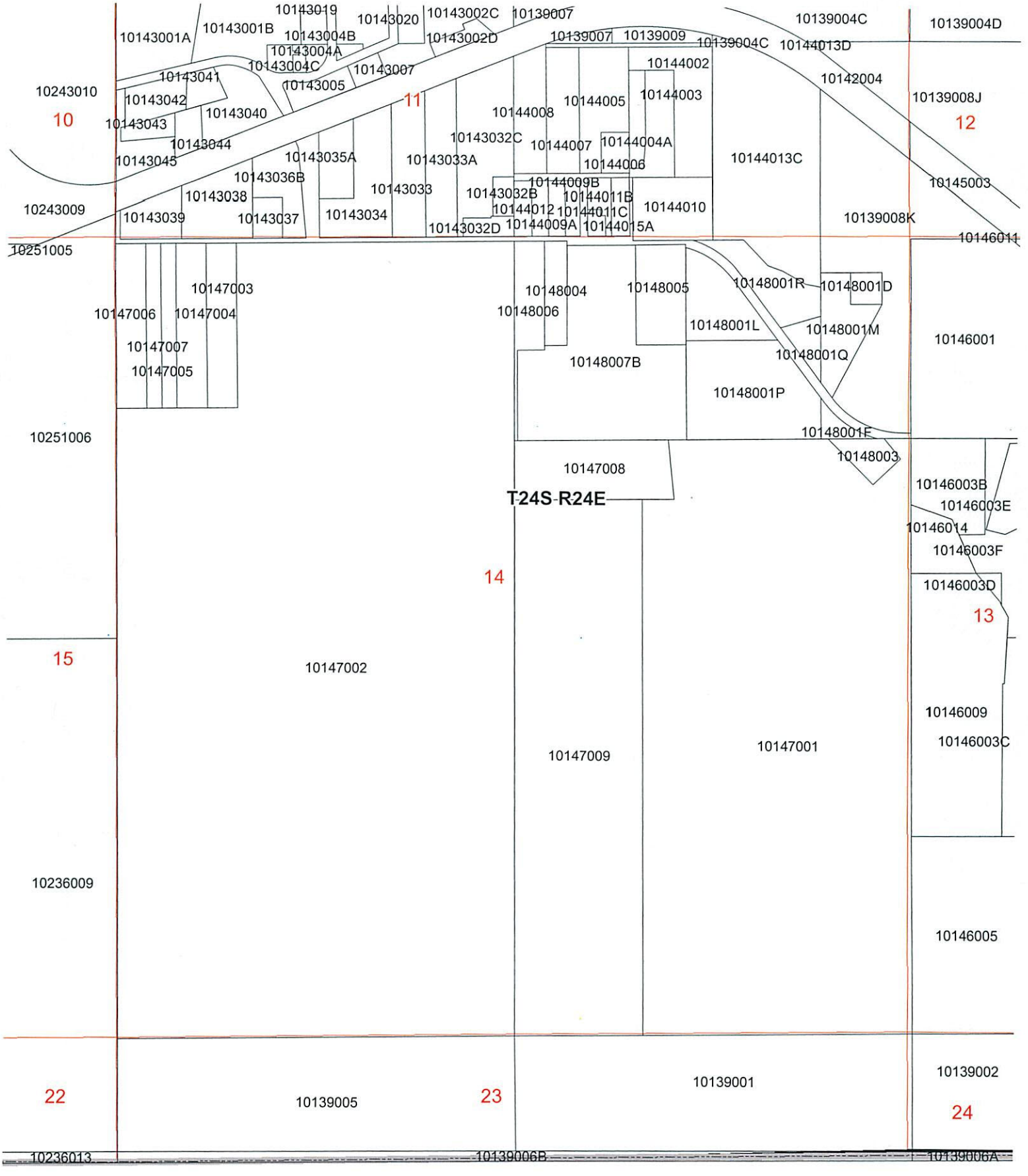
10148003
10147008
10146003B
10146003E
10147001
10146014
10146003F
10146003C

E Border Rd
E Border Rd
E Border Rd
E Border Rd
766 E Border Rd
Bisbee, AZ 85603
31.349785, -109.869443
Imagery ©2017 DigitalGlobe, USDA Farm Service Agency. Map data ©2017 Google
3D Earth view is not available
Terms
Send feedback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10143020
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10139009
10139004C
10144013D
10143004A
10143004C
10143007
10144002
10142004
10243010
10143041
10143005
10143042
11
10144005
10144003
10139008J
10
10143040
10144008
12
10143043
10143032C
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10143044
10144007
10144006
10144013C
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10143036B
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10143032B
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10243009
10144012
10144011C
10144010
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10144015A
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10146011
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10148001D
10147006
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10148001M
10146001
10147007
10148001Q
10147005
10148007B
10148001P
10251006
10148001E
10148003
10147008
10146003B
T24S-R24E
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14
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10147001
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10146005
22
10139005
23
10139001
10139002
24
10236013
10139006B
10139006A

Printed: 5/10/2017 11:55:11 AM

Arizona Department of Water Resources

1110 West Washington Street, Suite 310
Phoenix AZ 85007

Customer:
JUDY FISHER
1240 N 8TH AVE
THATCHER, AZ 85552

Receipt #: 17-51348
Office: MAIN OFFICE
Receipt Date: 05/10/2017
Sale Type: IN_PERSON
Cashier: WRSYM

Item No.	Function Code	AOBJ	Description	Ref ID	Qty	Unit Price	Ext Price
67482	WRFREV	4439-TT	Late registration of well	809938	1	60.00	60.00
						RECEIPT TOTAL:	**60.00**

Payment type: CHECK
Amount Paid: $60.00
Payment Received Date: 05/10/2017

Check # 133

Notes: FROM TTA.

No refund without valid receipt