

ANNUAL GROUNDWATER MONITORING REPORT FOR 2019

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



Prepared for:

**FREEPORT MINERALS CORPORATION
COPPER QUEEN BRANCH**

36 West Highway 92
Bisbee, Arizona 85603

Prepared by:

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March 10, 2020

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Expires: 6/30/2020

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1. INTRODUCTION

This annual report provides the results of groundwater monitoring activities conducted in calendar year 2019 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 action¹ 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 affected² 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.

The water supply study was completed and reported to ADEQ in 2016 (Clear Creek Associates, 2016). The expanded groundwater monitoring, long term plume monitoring, and review of ADWR well registry records are ongoing programs.

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 2019 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 (e.g. Clear Creek Associates, 2019b).

1.3 Sources of Groundwater Monitoring Data in 2019

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. 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 2019. The third quarter 2019 was a biennial sampling event. Table 2 summarizes the status of sampling in 2019. 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 2019.

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). These well are sampled semi-annually. The results of sulfate and

water level monitoring at the expanded groundwater monitoring program wells are included in this report.

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.

The ADWR Well Records Review for 2018 (Clear Creek Associates, 2019a) identified a notice of intent (NOI) to drill for an exempt production well. Clear Creek contacted the well owner Mr. Terry, in March 2019 and determined that the new well was not installed, but that there is an existing unregistered well on the property. The existing unregistered well was determined to be a drinking water source that is more than 2,000 feet from the sulfate plume. Samples were collected from the well in first and third quarter 2019. Per the Mitigation Plan (Clear Creek 2015a), the well was added to the groundwater monitoring schedule for annual sampling.

2. GROUNDWATER MONITORING RESULTS

2.1 Sulfate Data

Sulfate analytical results for 2019 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).

Water quality samples were collected from wells site-wide in the first and third quarters of 2019, with the third quarter 2019 constituting a biennial sampling event (Table 1). Figures 5 and 6 are sulfate concentration contour maps for the first and third quarters of 2019. Figures 7 and 8 are sulfate concentration maps of the west edge of the plume in the first and third quarters of 2019. The sulfate concentration contouring on Figures 5 through 8 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 contours drawn on these figures are based on consideration of both historical and 2019 sulfate concentration data.

In the first quarter 2018 Clear Creek personnel determined that the drinking water supply at the Rogers property had been switched to ROGERS 596 because ROGERS 803 was not operational. Both wells are connected to the same distribution system and an increase in the electrical conductivity of the sample at the property caused Clear Creek to inquire with the homeowner about any change in the water supply. The homeowner confirmed that ROGERS 596 is the current drinking water source. Per the mitigation plan, ROGERS 596 has been sampled semiannually since the first quarter of 2018 as the well is a private drinking water supply well within 2,000 feet of the sulfate plume. ROGERS 803 was added to Table 1 for semiannual sampling to reflect the change in well usage.

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 2019, and less than the 150 mg/L temporary sulfate action level set in the Mitigation Plan for the AWC wellfield. Wells NWC-02 and NWC-06 had sulfate concentrations less than 9 mg/L in 2019. Sulfate concentrations at NWC-04 near Bisbee Junction, which is believed to be at the receding edge of the plume, ranged between 190 and 196 mg/L in 2019.

Figure 10 is a graph of sulfate concentrations 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 were relatively steady between 2015 and the third quarter 2019 in that concentrations at each well appear to vary within a range specific to the well and there are no abrupt increases in the trends of concentration. The lack of an abrupt increase in 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 2019 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.

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 2019. 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 2019. In Figures 11 through 14, the most recent depth to water measurement is used for contouring at wells with multiple measurements during a quarter.

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, were relatively steady from 2013 to 2016, and declined from 2016 through 2019. Water elevations in expanded groundwater monitoring program wells show similar patterns of increase and decrease over time as do the plume edge and regional BMO monitor wells 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, then stabilize, and then continue to decline after 2016 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 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 2019 is in Appendix C. Based on the data verification review, the field measurements and analytical results collected in 2019 are of acceptable quality for use in monitoring activities conducted pursuant to the Mitigation Order.

2.4 Results of 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 2019. The ADWR well records review was conducted using a version of the well records database current through January 17, 2020. The review identified registered wells within one mile of the sulfate plume in January 2020 that were not in the January 2019 well records review.

The well records review identified one new record for a well within the 1.1-mile search area. The well record is a Late Registration of a Well. The well owner is listed as Cynthia Osborn. The registration indicates the well is not used and has no pump. A photo included in the imaged record shows an open well casing with no capping plate or pump equipment. Clear Creek confirmed that the well has no pump and is not currently used in a phone call with Ms. Osborn on January 21, 2020. The well was not added to the mitigation order sampling schedule because it is not operational and the water is not being used as a drinking source.

3. REFERENCES

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- 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.

TABLES

TABLE 1
Groundwater Monitoring Schedule in 2019

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

TABLE 1
Groundwater Monitoring Schedule in 2019

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

TABLE 1
Groundwater Monitoring Schedule in 2019

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

Notes:

- 1 In September 2018 BMO-2008-5B was verified as not being used for drinking water supply based on discussion with the property owner.
- 35-71891 ADWR 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

TABLE 2
Summary of Groundwater Monitoring in 2019

Well Name	ADWR 55 Registry Number	First Quarter Schedule	1Q 2019			Third Quarter Schedule	Biennial Sampling Third Quarter of Odd Numbered Years	3Q 2019		
			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 2019.	WLO	✓	Y	N	Unable to sample due to inoperable pump. Water level measured in July 2019.
ANDERSON 458	221458		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2019.
ASLD 435	616435	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in September 2019.
AWC-02	616586	✓	Y	N	Unable to sample due to inoperable pump. Water level measured in January 2019.	✓		Y	N	Unable to sample due to inoperable pump. Water level measured in July 2019.
AWC-03	616585	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
AWC-04	616584	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
AWC-05	590620	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BANKS 986	647986		N	N	Well is not scheduled for first quarter monitoring.	✓		N	Y	Water quality sample collected in July 2019. Unable to measure water level due to obstruction in well.
BANKS 987	647987	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2019.
BARTON 919	644919	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2019.
BIMA	577927		N	N	Well is not scheduled for first quarter monitoring.		✓	N	Y	Water quality sample collected in July 2019. Unable to measure water level due to obstruction in well.
BMO-2008-1G	909474	✓	Y	Y	Water quality sample collected in February 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2008-3B	909147	✓	Y	Y	Water quality sample collected in February 2019.	✓		Y	Y	Water quality sample collected in August 2019.
BMO-2008-4B	910096	WLO	Y	N	Water level measured in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2008-5B	909653	✓	Y	Y	Water quality sample collected in February 2019.	✓		Y	Y	Water quality sample collected in August 2019.
BMO-2008-5M	909552	✓	Y	Y	Water quality sample collected in February 2019.	✓		Y	Y	Water quality sample collected in August 2019.
BMO-2008-6B	909146	✓	Y	Y	Water quality sample collected in February 2019.	✓		Y	Y	Water quality sample collected in August 2019.
BMO-2008-6M	909019	✓	Y	Y	Water quality sample collected in February 2019.	✓		Y	Y	Water quality sample collected in August 2019.
BMO-2008-7M	908794	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	✓		Y	Y	Water quality sample collected in August 2019.
BMO-2008-8B	910097	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	WLO	✓	Y	Y	Water quality sample collected in August 2019.
BMO-2008-8M	909711	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	✓		Y	Y	Water quality sample collected in August 2019.
BMO-2008-9M	909255	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	✓		Y	Y	Water quality sample collected in August 2019.
BMO-2008-10GL	909435	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	WLO	✓	Y	Y	Water quality sample collected in August 2019.

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Summary of Groundwater Monitoring in 2019

Well Name	ADWR 55 Registry Number	First Quarter Schedule	1Q 2019			Third Quarter Schedule	Biennial Sampling Third Quarter of Odd Numbered Years	3Q 2019		
			Water Level Measured?	Water Sample Collected?	Status			Water Level Measured?	Water Sample Collected?	Status
BMO-2008-10GU	909272	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	WLO	✓	Y	Y	Water quality sample collected in August 2019.
BMO-2008-11G	909434	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in August 2019.
BMO-2008-13B	909551	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	WLO	✓	Y	Y	Water quality sample collected in August 2019.
BMO-2008-13M	909760	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	WLO	✓	Y	Y	Water quality sample collected in August 2019.
BMO-2010-1M	219957	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2010-2M	219958	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	WLO	✓	Y	Y	Water quality sample collected in July 2019.
BMO-2010-3B	219970	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2010-3M	219969	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2012-1M	221388	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2014-1BL	917394	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2014-1BU	917393	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2014-2BL	917452	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2014-2BU	917453	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2014-3BL	917527	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2014-3BU	917494	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2014-4B	917620	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2014-4BL	917619	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2015-1B	917622	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2015-1BL	917621	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2015-2B	917827	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BMO-2015-2BL	917828	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
BOOTH	914931	✓	N	N	Well owner has declined participation in well sampling program.	✓		N	N	Well owner has declined participation in well sampling program.
BURKE	212268		N	N	Well is not scheduled for first quarter monitoring.	✓		N	Y	Water quality sample collected in July 2019. Water level not measured per owner request.

TABLE 2
Summary of Groundwater Monitoring in 2019

Well Name	ADWR 55 Registry Number	First Quarter Schedule	1Q 2019			Third Quarter Schedule	Biennial Sampling Third Quarter of Odd Numbered Years	3Q 2019		
			Water Level Measured?	Water Sample Collected?	Status			Water Level Measured?	Water Sample Collected?	Status
CHAMBERS	629807		N	N	Well is not scheduled for first quarter monitoring.	✓		N	Y	Water quality sample collected in July 2019. Unable to measure water level due to no access to wellhead.
COB MW-1B	225906	✓	N	N	Well identified for water level measurements only. No water level collected at per well owner request. Recommended for removal from schedule in 2018 Mitigation Performance Review.	WLO	✓	N	Y	Water quality sample collected in July 2019. Water level not measured per owner request.
COB MW-2	903984	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
COB MW-3	906823	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
COB WL	593116	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
COOPER	623564	✓	N	Y	Water quality sample collected in January 2019. Water level not measured due to no port in wellhead.	✓		N	Y	Water quality sample collected in July 2019. Unable to measure water level due to no access to wellhead.
COOPER C	637069		Y	N	Water level measured in January 2019.	✓		Y	Y	Water quality sample collected in August 2019.
DODSON	644927	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
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 2019.
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 2019.
EAST	599796		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2019.
ECHAVE	219449	WLO	Y	N	Water level measured in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
EPPELE 641	805641		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	N	Unable to sample due to inoperable pump. Water level measured in July 2019.
FRANCO 383	221383		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2019.
FULTZ	212447		N	N	Well owner has declined participation in well sampling program.	✓		N	N	Well owner has declined participation in well sampling program.
GARNER 557	558557	WLO	N	N	Unable to measure water level due to no port in wellhead.	WLO		N	N	Unable to measure water level due to no port in wellhead.
GARNER 635	587635		Y	N	Water level measured in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
GOAR RANCH	610695	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2019.
HOBAN	805290	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	✓		Y	Y	Water quality sample collected in August 2019.
HOWARD 312	221312		N	N	Well is not scheduled for first quarter monitoring.	WLO	✓	Y	Y	Water quality sample collected in July 2019.
HOWARD NR	NR	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
KEEFER	209744	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
LADD 251	520251	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in September 2019.

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Summary of Groundwater Monitoring in 2019

Well Name	ADWR 55 Registry Number	First Quarter Schedule	1Q 2019			Third Quarter Schedule	Biennial Sampling Third Quarter of Odd Numbered Years	3Q 2019		
			Water Level Measured?	Water Sample Collected?	Status			Water Level Measured?	Water Sample Collected?	Status
LADD 538	503538	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in September 2019.
LADD 635	224635	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in September 2019.
LADD 837	519837	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in September 2019.
LADD 977	642977	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in September 2019.
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 measurements only. Water level measured in January 2019.	WLO	✓	Y	N	Unable to sample due to inoperable pump. Water level measured in July 2019.
MCCONNELL 459	221459		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2019.
METZLER	35-71891	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2019.
MOORE	538847		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2019.
NESS	509127		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2019.
NOTEMAN	212483		N	N	Well is not scheduled for first quarter monitoring.		✓	N	Y	Water quality sample collected in July 2019. Unable to measure water level due to obstruction in well.
NSD-02	527587	WLO	Y	N	Well identified for water level measurements only. Water level measured in March 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2019.
NSD-03	527586	WLO	Y	N	Well identified for water level measurements only. Water level measured in March 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2019.
NWC-02	562944	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
NWC-03 CAP	627684	WLO	N	N	Water level not measured due to obstruction in well.	WLO		N	N	Well is dry.
NWC-04	551849	✓	N	Y	Water quality sample collected in January 2019. Water level not measured due to no port in wellhead.	✓		N	Y	Water quality sample collected in July 2019. Unable to measure water level due to no port in wellhead.
NWC-06	575700	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
OLMOS	224745	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
OSBORN	643436		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 no port in wellhead
PALMER	578819		N	N	Well is not scheduled for first quarter monitoring.	✓		N	Y	Water quality sample collected in July 2019. Unable to measure water level due to no port in wellhead.
PANAGAKOS	35-76413	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
PARRA	576415		N	N	Well is not scheduled for first quarter monitoring.		✓	N	Y	Water quality sample collected in July 2019. Unable to measure water level due to no port in wellhead.
PIONKE 395	613395	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	WLO	✓	Y	N	Unable to sample due to inoperable pump. Water level measured in July 2019.

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Well Name	ADWR 55 Registry Number	First Quarter Schedule	1Q 2019			Third Quarter Schedule	Biennial Sampling Third Quarter of Odd Numbered Years	3Q 2019		
			Water Level Measured?	Water Sample Collected?	Status			Water Level Measured?	Water Sample Collected?	Status
PIONKE 517	221517		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2019.
POOL	509518		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2019.
POWER 639	222639	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
RAMIREZ	216425	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
RAY	803772		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2019.
ROGERS 596	573596	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
ROGERS 803	641803	✓	Y	N	Unable to sample due to inoperable pump. Water level measured in January 2019.	✓		Y	N	Unable to sample due to inoperable pump. Water level measured in July 2019.
ROGERS E	216018		Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
RUIZ	531770	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
SCHWARTZ	210865	✓	Y	Y	Water quality sample collected in January 2019.	✓		N	N	Property is under new ownership. Unable to sample due to no access agreement.
STEPHENS	808560	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	WLO		Y	N	Well identified for water level measurements only. Water level measured in July 2019.
SWAN	NR		N	N	Well is not scheduled for first quarter monitoring.	✓		N	N	Well owner has declined participation in well sampling program.
TERRY	229470	Initial Sampling	N	Y	Water quality sample collected in March 2019. Unable to measure water level due to no port in wellhead.	✓		N	Y	Water quality sample collected in July 2019. Unable to measure water level due to no port in wellhead.
THOMPSON 151	612151	WLO	N	N	Water level not measured due to obstruction in well.	WLO		N	N	Unable to measure water level due to obstruction.
THOMPSON 341	218341		Y	N	Water level measured in January 2019 because water level at THOMPSON 151 could not be measured.	✓	✓	Y	Y	Water quality sample collected in July 2019.
TM-02A	522574	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	WLO	✓	Y	Y	Water quality sample collected in August 2019.
TM-06 MILLER	522695	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	WLO		Y	Y	Water quality sample collected in July 2019.
TM-07	522576	✓	N	Y	Water quality sample collected in February 2019. Water level not measured due to obstruction in well.	✓		N	Y	Water quality sample collected in August 2019. Water level not measured due to obstruction.
TM-10 USBP	522696	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.
TM-15 MILLER	522699		N	N	Well is not scheduled for first quarter monitoring.	✓	✓	Y	Y	Water quality sample collected in August 2019.
TM-16	522578	WLO	Y	N	Well identified for water level measurements only. Water level measured in February 2019.	WLO		Y	Y	Water quality sample collected in July 2019.
TM-19A	522580		N	N	Well is not scheduled for first quarter monitoring.	✓	✓	Y	Y	Water quality sample collected in August 2019.
TM-42	562554	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	WLO		Y	Y	Water quality sample collected in August 2019.
TVI 236	802236	✓	Y	Y	Water quality sample collected in January 2019.	✓		Y	N	Unable to sample due to inoperable pump. Water level measured in July 2019.

TABLE 2
Summary of Groundwater Monitoring in 2019

Well Name	ADWR 55 Registry Number	First Quarter Schedule	1Q 2019			Third Quarter Schedule	Biennial Sampling Third Quarter of Odd Numbered Years	3Q 2019		
			Water Level Measured?	Water Sample Collected?	Status			Water Level Measured?	Water Sample Collected?	Status
TVI 713	567713	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	WLO		Y	N	Well identified for water level measurement only. Water level measured in July 2019.
TVI 875	568875		N	N	Well is not scheduled for first quarter monitoring.	✓		N	Y	Water quality sample collected in July 2019. Water level not measured due to no port in wellhead.
WEED	544535	✓	N	Y	Water quality sample collected in January 2019. Water level not measured due to no port in wellhead.	✓	✓	N	Y	Water quality sample collected in July 2019. Water level not measured due to no port in wellhead.
WEISKOPF 802	641802	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	WLO		Y	Y	Water quality sample collected in July 2019.
WEISKOPF 897	220897		N	N	Well is not scheduled for first quarter monitoring.	✓		Y	Y	Water quality sample collected in July 2019.
ZANDER	205126	WLO	Y	N	Well identified for water level measurements only. Water level measured in January 2019.	✓		Y	Y	Water quality sample collected in July 2019.

Notes:

35-71891 = ADWR 35 Database

ADWR = Arizona Department of Water Resources

bls = below land surface

N = No

ND = No Data

NR = No Record

Y = Yes

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
		7/18/18	7.88	24.2	397.1	23.4
		7/11/19	7.85	24.1	396.2	22.4
		AWC-02	616586	1/7/08	ND	ND
3/3/08	ND			ND	ND	16
5/5/08	ND			ND	ND	13.3
8/12/08	7.01			22.3	630	14.3
10/23/08	7.31			23.1	464	15.9
3/11/09	7.19			21.8	420	15.5
4/22/09	7.17			22.6	430	14.7
7/22/09	7.24			22.7	444	14.2
10/21/09	7.19			21.3	468	16.8
2/3/10	7.44			19.7	449	18.6
4/23/10	7.56			19.7	526	18.3
7/20/10	7.27			23.9	450	18.2
11/4/10	7.72			21.3	465.9	18.8
1/19/11	7.84			19.0	500	18.4
4/7/11	7.27			20.3	488.5	17.3
7/13/11	5.93			23.9	431.5	12.9
10/13/11	6.72			25.1	464.6	17.4
10/13/11 DUP	6.72			25.1	464.6	17.4
2/2/12	7.20			20.8	479.5	19.4
4/24/12	7.23			23.0	430	15.5
7/5/12	7.25			22.1	437.1	10.1
10/18/12	7.48			21.6	473.6	13.0
2/5/13	7.54			19.3	448.9	18.0
4/11/13	7.53			22.1	471.3	17.2
7/25/13	7.35			22.1	460.5	14.7
10/9/13	7.53			21.2	476.4	15.5
1/7/14	7.45			20.3	503.7	18.8
1/7/14 DUP	7.45			20.3	503.7	18.9
5/14/14	7.34			21.0	508.4	19.2
7/16/14	7.54			21.8	499.5	19.2
10/15/14	7.26			23.2	520	18.9
1/29/15	7.44			21.4	511	20.5
7/21/15	7.62			22.5	506.7	19.9
1/13/16	7.63			20.6	411.2	8.27
7/19/16	7.40	22.1	418.7	7.80		
1/19/17	7.33	20.5	428.7	9.87		
9/6/17	7.4	20.7	423.3	7.65		
1/17/18	7.26	20.5	442.6	13.0		
7/25/18	7.33	20.5	489.9	16.7		
7/25/18 DUP	7.33	20.5	489.9	16.9		

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		
1/17/18	7.25	19.9	487.6	57.0		
7/25/18	7.36	20.3	504.5	76.3		
1/16/19	7.33	20.1	500.8	75.7		
7/23/19	7.29	20.0	506.7	68.6		
AWC-04	616584	2/4/08	ND	ND	ND	18
		4/7/08	ND	ND	ND	18
		6/2/08	ND	ND	ND	14.3
		8/12/08	7.08	22.5	458	21.6
		10/23/08	6.91	22.2	616	24
		3/11/09	7.02	21.3	539	27.2
		4/22/09	6.93	22.1	560	26.1
		7/22/09	7.13	22.5	587	26.2
		10/21/09	7.00	21.2	607	25.7
		2/3/10	7.35	19.3	438	16.3
		4/23/10	7.14	19.2	625	27.4
		7/20/10	7.02	24.1	600	26.6
		11/4/10	7.41	20.3	593.2	24
		1/19/11	8.15	20.5	690	26.2
		4/7/11	7.00	20.4	637.2	25.8
		7/13/11	6.88	20.4	610.1	25.7
		10/13/11	6.38	24.0	619.7	27.6
		2/2/12	6.97	20.1	637.6	27.2
		4/24/12	7.10	22.1	570	25.2
		7/5/12	7.03	21.6	568.0	28.2
		7/5/12 DUP	7.03	21.6	568.0	28.1
		10/18/12	7.20	20.8	606.7	26.6
		2/5/13	7.29	19.7	616.8	26.9
		4/11/13	7.38	21.7	595.4	26.2
		7/16/13	7.30	21.0	585.7	27.0
		10/9/13	7.36	20.4	588.6	24.6
		1/7/14	7.36	19.7	651.4	23.7
		5/14/14	7.38	19.8	674.2	22.7
		7/16/14	7.32	20.7	632.2	24.1
		7/16/14 DUP	7.32	20.7	632.2	22.9
		10/15/14	7.01	21.9	688	21.4
		1/29/15	7.20	21.0	687	22.9
		7/21/15	7.38	21.2	619.6	23.2
1/13/16	7.42	19.2	556.6	27.0		
7/19/16	7.24	20.6	590.7	31.4		
1/19/17	7.06	19.6	658.6	22.9		
1/19/17 DUP	7.06	19.6	658.6	23.1		
9/6/17	7.17	19.8	571.0	25.8		
1/17/18	7.13	19.6	532.6	38.6		
7/25/18	6.99	19.3	663.1	24.3		
1/16/19	6.99	19.4	706.8	20.7		
7/23/19	7.06	19.5	591.8	24.2		

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)
AWC-05	590620	2/4/08	ND	ND	ND	13
		4/7/08	ND	ND	ND	14
		6/2/08	ND	ND	ND	14.3
		8/12/08	6.74	23.3	425	14.9
		10/23/08	7.45	21.0	422	15.4
		3/11/09	7.31	22.1	398	16.5
		6/3/09	7.33	22.0	418	12.1
		7/22/09	7.49	24.4	423	14.1
		10/21/09	7.37	21.1	433	16.5
		2/3/10	7.35	19.3	438	16.3
		4/23/10	7.62	18.9	443	17.6
		7/20/10	7.62	24.2	440	19.1
		11/4/10	7.92	20.7	427.1	18.4
		1/19/11	7.64	20.3	420	17
		4/7/11	7.22	20.8	438.3	17.6
		7/13/11	6.52	22.9	419.8	17.9
		10/13/11	6.82	26.0	427.5	19
		2/2/12	7.35	21.4	427.9	19.5
		4/24/12	7.18	21.4	430	15.4
		7/5/12	7.24	22.6	432.1	19.1
		10/18/12	7.66	22.6	436.1	20.1
		2/5/13	7.57	20.2	437.7	20.1
		4/11/13	7.54	21.2	444.5	20.3
		7/16/13	7.56	21.3	454.5	18.0
		7/16/13 DUP	7.56	21.3	454.5	17.7
		10/9/13	7.58	21.3	455.3	15.4
		5/14/14	7.54	21.2	442.3	19.8
		7/16/14	7.60	22.6	470.9	20.3
		10/15/14	7.38	23	452	20.8
		1/29/15	7.64	19.6	443	18.0
		7/21/15	7.67	21.9	457.9	17.0
		1/13/16	7.69	19.9	444.4	14.4
		7/19/16	7.40	22.2	443.1	20.7
1/19/17	7.45	21.4	436.7	21.9		
9/6/17	7.38	20.9	447.4	19.7		
9/6/17 DUP	7.38	20.9	447.4	20.5		
1/17/18	7.34	20.5	437.0	20.2		
7/25/18	7.35	20.4	456.9	17.9		
1/16/19	7.39	21.0	441.6	19.3		
7/23/19	7.33	20.7	445.2	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
		7/1/11	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
		4/1/12	7.77	22.0	1025	64.0
		7/6/12	7.66	23.7	940	78.6
		7/6/12 DUP	7.66	23.7	940	77.9
		10/4/12	7.73	22.0	845.4	62.6
		1/18/13	7.82	21.9	832.4	70.5
		4/8/13	7.87	20.7	861.7	62.9
		7/9/13	8.04	22.9	769.1	67.9
		10/15/13	7.59	21.7	1158	79.6
		1/14/14	7.77	20.9	967.4	75.2
		4/8/14	7.47	21.4	1337	113
		7/8/14	7.58	22.3	1175	107
		7/8/14 DUP	7.58	22.3	1175	110
		10/21/14	7.37	22.7	1158	91.3
		7/24/15	7.67	22.6	1002	76.3
		7/12/16	7.59	22.2	1029	68.7
7/26/17	7.45	20.9	1012	88.6		
7/30/18	7.40	21.0	987.6	66.6		
7/11/19	7.27	22.2	933.8	67.6		

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
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		
7/11/19	6.75	28.2	1514	240		
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
		2/14/18	7.08	20.9	924	112
		7/10/18	7.24	22.2	920	115
		2/5/19	7.15	21.4	920	99.5
		7/31/19	7.15	22.2	907	100
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
		2/1/14	7.01	20.7	729	162
		7/21/14	6.98	21.0	706	163
		2/5/15	7.11	21.2	652	145
		9/14/15	7.29	21.7	638	133
		3/3/16	7.29	21.8	637	136
		8/18/16	7.18	21.4	637	139
		3/1/17	6.99	21.0	618	135
		7/26/17	7.17	21.5	648	147
		2/8/18	7.46	21.0	653	150
		7/10/18	7.35	21.9	663	154
		2/5/19	7.41	21.2	703	169
2/5/19 DUP	7.41	21.2	703	173		
8/6/19	7.29	22.2	727	165		
BMO-2008-4B	910096	12/11/08	7.34	22.8	374	9.4
		2/18/09	7.17	23.2	370	13.4
		4/30/09	7.33	24.5	376	11.4
		4/30/09 DUP	7.33	24.5	376	11.8
		8/6/09	7.53	24.6	397	11.5
		10/27/09	7.53	23.7	379	11.2
		2/24/10	7.48	21.8	362	9.7
		4/16/10	7.70	23.4	330	9.73
		7/2/10	7.25	23.6	323	10.10
		2/15/11	7.65	22.2	362	8.90
		7/22/11	7.33	23.7	371	10.2
		2/23/12	7.21	22.3	354	10.5
		8/15/12	6.96	23.6	380	9.5
		1/15/13	7.63	22.7	370.2	10.3
		1/15/13 DUP	7.63	22.7	370.2	9.5
		4/15/13	7.75	23.0	368.2	11.2
		9/18/13	7.69	23.4	384.6	9.8
		1/9/14	7.81	22.2	371.4	11.1
		7/18/14	7.78	23.3	379.1	11.6
		9/30/17	7.43	22.6	392.5	9.88
		7/26/18	7.43	22.6	386.1	10.9
		7/22/19	7.53	22.8	377.1	11.2
		7/22/19 DUP	7.53	22.8	377.1	11.2

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)
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
		2/1/14	6.88	21.5	804	230
		5/7/14	6.87	21.5	800	228
		8/19/14	6.99	21.6	795	221
		11/13/14	6.92	21.9	755	228
		2/3/15	7.05	21.8	755	227
		9/8/15	7.16	22.3	764	236
		3/14/16	7.06	21.5	774	237
		9/14/16	7.22	21.8	771	240
		3/1/17	7.07	21.5	756	243
		8/1/17	7.05	22	779	245
2/8/18	7.28	21.4	798	267		
3/8/18	7.3	21.4	792	246		
3/8/18 DUP	7.3	21.4	792	246		
4/1/18	7.25	21.4	814	240		
5/29/18	7.31	22.1	811	262		
6/19/18	7.26	22.3	817	252		
7/25/18	7.02	23.0	794	250		
2/4/19	7.06	21.6	802	238		
8/7/19	7.09	22.3	814	239		
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
		2/1/14	6.84	22.1	646	138
		5/7/14	6.85	22.1	648	140
		8/19/14	6.97	22.1	645	143
		11/13/14	7.18	22.6	612	139
		2/3/15	7.26	22.5	612	143
		9/8/15	7.19	23.1	615	146
		3/14/16	7.26	22.5	618	142
		9/14/16	7.12	22.5	623	153
		3/1/17	6.97	22.4	621	157
		8/1/17	7.11	22.8	636	159
		2/8/18	7.26	22.4	646	168
7/25/18	7.22	23.2	651	161		
2/4/19	7.40	22.1	654	155		
8/7/19	7.32	23.0	659	152		

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
		2/1/14	7.38	21.6	290	20.1
		5/7/14	7.48	21.1	297	13.6
		8/19/14	7.08	21.6	298	13.4
		11/13/14	7.23	21.6	305	14.9
		2/3/15	7.24	20.6	272	12.1
		9/8/15	7.26	22.2	282	11.8
		3/14/16	7.47	21.9	267	12.4
		9/14/16	7.46	21.8	301	12.6
		3/1/17	7.37	21.4	271	12.1
		7/10/17	7.52	22.1	291	11.7
2/8/18	7.26	20.9	284	13.3		
7/10/18	7.78	22.2	296	18.2		
2/4/19	7.38	21.6	280	10.7		
8/6/19	7.64	22.1	237	8.00		
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
		2/1/14	6.81	21.8	786	217
		5/7/14	6.77	21.3	788	220
		8/19/14	6.9	21.9	774	210
		11/13/14	7.14	22.0	740	218
		2/3/15	7.20	21.9	741	216
		9/8/15	7.09	23.0	750	222
		3/14/16	7.16	22.1	768	229
		9/14/16	7.06	22.2	760	229
		3/1/17	6.92	21.9	745	237
		7/10/17	7.04	22.6	742	218
2/8/18	7.3	21.8	775	244		
7/10/18	7.26	22.1	761	234		
2/4/19	7.35	22.0	753	209		
8/6/19	7.18	22.4	755	199		

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		
7/23/18	7.36	23.5	464	34.7		
8/8/19	7.77	23.6	478	35.5		
8/8/19 DUP	7.77	23.6	478	35.1		
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
		8/8/19	6.50	22.2	2640	1130
		12/9/08	7.16	23.4	852	197
		2/19/09	7.27	23.5	758	147
		2/19/09 DUP	7.27	23.5	758	149
		5/5/09	7.19	25.1	680	122
8/10/09	7.49	24.8	673	107		
11/5/09	7.30	25.4	675	104		
3/3/10	7.70	24.1	641	99.5		
4/16/10	7.29	24.5	541	97.0		
7/1/10	6.99	25.0	502	94.7		
1/24/11	7.05	23.4	595	98.2		
7/15/11	6.89	22.1	590	79.9		
1/30/12	7.36	23.9	565	77.6		
7/12/12	7.15	24.2	554	73.1		
7/12/12 DUP	7.15	24.2	554	73.2		
2/14/13	7.1	24.3	565	64.9		
8/12/13	7.19	24.6	585	65.0		
2/19/14	7.07	24.3	579	63.3		
2/19/14 DUP	7.07	24.3	579	63.4		
7/24/14	7.07	24.7	569	66.8		
9/15/15	7.35	25.0	541	67.0		
9/15/16	7.52	24.6	535	63.5		
9/15/16 DUP	7.52	24.6	535	63.9		
7/10/17	7.28	24.7	542	74.1		
7/23/18	7.48	24.8	536	76.9		
7/23/18 DUP	7.48	24.8	536	74.5		
8/8/19	7.63	25.2	542	66.8		
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		
7/23/18	7.48	24.8	536	76.9		
7/23/18 DUP	7.48	24.8	536	74.5		
8/8/19	7.63	25.2	542	66.8		

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)
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
		7/1/17	7.57	24.5	572	92.0
7/26/18	7.66	24.4	584	97.2		
8/12/19	7.59	24.5	584	91.7		
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
		7/1/17	6.14	25.6	3790	1810
		8/1/19	6.20	25.7	3860	1770
		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		
8/1/09	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		
8/1/19	6.11	21.3	3900	1830		
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		
7/1/17	7.85	25.4	333	12.4		
2/12/18	7.96	24.4	341	13.1		
7/12/18	7.89	25.4	339	13.3		
1/28/19	7.99	25.2	338	12.2		
8/6/19	7.88	25.4	338	12.2		

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)
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
8/20/19	6.68	21.5	2190	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
		8/20/19	8.78	23.9	1299	388
		BMO-2010-1M	219957	9/9/10	7.82	24.6
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		
8/7/18	7.85	23.8	751	169		
7/30/19	7.54	24.0	7.32	173		
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
7/30/19	6.67	22.1	2190	894		

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
		1/8/18	7.42	20.4	415.7	21.8
		1/8/18 DUP	7.42	20.4	415.7	21.1
		7/10/18	7.44	20.5	428.1	16.0
1/8/19	7.42	20.2	418.6	19.5		
7/16/19	7.41	20.5	424.5	26.0		
7/16/19 DUP	7.41	20.5	424.5	25.8		
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
		1/8/18	7.52	22.2	379.7	9.69
		7/10/18	7.55	22.1	389.2	9.17
		1/8/19	7.42	22.0	378.4	8.97
7/16/19	7.53	22.4	385.6	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
		2/13/18	7.24	22.7	960	237
		7/16/18	7.33	23.4	960	236
		1/29/19	7.25	22.6	956	215
7/31/19	7.22	23.3	959	213		

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		
		1/10/18	7.24	21.5	685.3	159		
		7/12/18	7.25	21.7	693.4	163		
		1/10/19	7.15	21.8	683.6	158		
7/18/19	7.15	22.5	691.5	150				
BMO-2014-1BU	917393	11/13/14	7.46	22.1	571	84		
		1/28/15	7.45	21.6	694	170		
		4/15/15	7.40	21.3	735.2	189		
		7/29/15	7.55	22.3	729.7	165		
		10/7/15	7.51	20.9	728.8	182		
		2/4/16	7.51	20.1	715.7	163		
		4/6/16	7.47	21.0	733.5	172		
		7/14/16	7.45	21.6	724.8	170		
		7/14/16 DUP	7.45	21.6	724.8	169		
		11/2/16	7.29	20.9	719.5	155		
		1/24/17	7.28	20.5	722.8	178		
		7/13/17	7.27	20.8	736.4	184		
		1/10/18	7.25	20.5	694.3	158		
		7/12/18	7.24	20.7	730.3	181		
		1/10/19	7.16	20.4	729.9	172		
		1/10/19 DUP	7.16	20.4	729.9	175		
		7/18/19	7.15	20.5	717.9	170		
		BMO-2014-2BL	917452	11/20/14	7.34	22.8	804	210
1/29/15	7.36			20.8	1109	463		
4/15/15	7.27			21.2	1169	463		
7/29/15	7.34			22.5	1191	452		
10/7/15	7.41			20.8	1180	467		
2/4/16	7.38			19.7	1164	434		
2/4/16 DUP	7.38			19.7	1164	428		
4/6/16	7.43			21.2	1187	456		
7/14/16	7.27			21.9	1182	437		
11/2/16	7.18			20.8	1184	422		
1/24/17	7.11			21.3	1170	453		
9/6/17	7.08			20.7	1197	441		
1/10/18	7.10			20.5	1167	448		
7/12/18	7.12			20.4	1186	445		
1/10/19	7.07			20.4	1168	470		
7/18/19	7.01			20.4	1178	433		
BMO-2014-2BU	917453			12/1/14	7.35	20.8	819.2	230
				1/30/15	7.65	19.9	524	63.8
		4/15/15	7.56	20.7	536.1	64.8		
		7/29/15	7.62	22.2	538.7	58.2		
		10/7/15	7.74	20.6	541.1	62.0		
		2/4/16	7.58	19.8	528.0	56.5		
		4/6/16	7.58	21.7	539.3	58.6		
		7/14/16	7.56	21.4	536.6	59.9		
		11/2/16	7.39	20.2	535.9	55.8		
		1/24/17	7.36	20.1	531.2	61.0		
		7/13/17	7.38	20.1	536.9	60.1		
		1/10/18	7.35	19.8	525.4	57.0		
		7/12/18	7.37	20.1	537.5	55.6		
		1/10/19	7.31	19.8	534.0	55.2		
		7/18/19	7.27	19.8	544.3	54.9		
		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		
1/12/18	7.31			21.3	402.0	8.25		
1/12/18	7.31			21.3	402.0	8.25		
7/12/18	7.42			21.5	423.0	7.71		
1/10/19	7.29			21.4	412.3	7.73		
7/18/19	7.31			21.5	413.5	7.45		

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-2014-3BU	917494	2/24/15	7.64	18.2	471.4	8.22
		4/15/15	7.67	20.4	469.5	8.71
		7/29/15	7.62	21.9	471.9	7.46
		10/7/15	7.62	20.4	467.9	7.82
		2/4/16	7.64	19.7	466.4	7.68
		4/6/16	7.53	20.9	473.2	8.25
		7/14/16	7.56	21.3	465.9	8.57
		11/2/16	7.40	20.0	471.1	7.79
		1/25/17	7.36	20.0	458.1	8.06
		7/13/17	7.34	20.2	472.9	8.55
		1/12/18	7.28	20.0	457.5	8.06
		7/12/18	7.35	20.0	470.0	7.95
		1/10/19	7.28	19.9	470.2	7.54
		7/18/19	7.28	20.0	474.2	7.63
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
		1/9/18	7.39	20.3	490.9	64.7
		7/11/18	7.38	20.3	467.7	47.4
		1/9/19	7.36	20.2	490.2	62.1
		7/17/19	7.36	20.3	494.9	62.8
		BMO-2014-4BL	917619	3/1/15	7.63	21.1
4/14/15	7.63			21.4	665.1	184
7/23/15	7.66			21.9	669.7	185
7/23/15 DUP	7.66			21.9	669.7	169
10/6/15	7.71			20.9	660.4	176
2/3/16	7.69			20.1	660.2	165
4/5/16	7.53			21.2	671.7	171
7/13/16	7.51			21.5	653.5	165
11/1/16	7.47			20.9	665.8	160
1/23/17	7.37			20.6	672.1	182
7/12/17	7.42			20.7	674.4	178
1/9/18	7.36			20.5	681.5	183
7/11/18	7.32			20.6	687.8	187
1/9/19	7.36			20.4	701.1	193
7/17/19	7.3			20.5	720.3	192
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
		1/9/18	7.36	20.3	703.1	203
		7/11/18	7.39	20.3	705.9	194
		1/9/19	7.32	20.3	711.9	208
		7/17/19	7.32	20.3	726.4	203
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
		1/9/18	7.38	20.5	784.5	251
		7/11/18	7.35	20.5	791.5	253
		1/9/19	7.30	20.4	800.5	259
		7/17/19	7.29	20.4	797.7	255

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-2015-2B	917827	3/19/15	7.43	20.0	795.2	288
		4/14/15	7.41	20.7	832.4	271
		7/23/15	7.47	22.2	847.5	292
		10/6/15	7.60	20.9	844.3	262
		2/3/16	7.48	20.4	823.2	247
		4/5/16	7.44	21.4	849.8	258
		7/13/16	7.33	21.8	837.2	250
		11/1/16	7.26	20.6	848.1	247
		1/23/17	7.26	20.5	849.6	268
		7/12/17	7.27	20.4	847.9	273
		1/9/18	7.25	20.2	841.9	276
		7/11/18	7.17	20.4	856.9	261
		1/9/19	7.19	20.1	873.3	277
		7/17/19	7.16	20.3	875.0	270
BMO-2015-2BL	917828	3/26/15	7.29	22.3	887.1	280
		4/14/15	7.38	20.9	860.0	305
		7/23/15	7.43	22.1	902.3	323
		10/6/15	7.54	21.2	890.3	304
		2/3/16	7.45	20.5	884.7	278
		4/5/16	7.42	21.3	903.9	296
		4/5/16 DUP	7.42	21.3	903.9	292
		7/13/16	7.33	21.8	903.7	296
		11/1/16	7.24	20.8	905.7	282
		1/23/17	7.25	20.6	909.8	315
		7/12/17	7.23	20.7	921.0	317
		1/9/18	7.19	20.5	915.5	320
		7/11/18	7.14	20.5	923.8	307
		1/9/19	7.15	20.3	924.6	320
		7/17/19	7.11	20.5	942.6	318
		BOOTH	914931	1/5/13	7.67	18.5
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
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
7/26/18	7.51	27.4	480.8	30.5		
7/9/19	7.48	26.2	487.1	30.8		

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)
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		
7/10/19	7.27	28.0	417.7	6.88		
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
7/19/17	6.51			20.9	2474	1160
7/24/19	6.70			20.6	1793	827
5/20/08	7.32			21.2	490	40.5
COB MW-2	903984	7/30/08	7.34	20.8	511	37.6
		10/23/08	7.36	20.3	498	34.9
		2/12/09	7.35	20.2	379	35.6
		4/23/09	7.33	21.8	431	34
		7/22/09	7.36	21.3	483	33.5
		10/22/09	7.24	21.0	454	32.2
		3/3/10	7.55	19.7	450	33.5
		4/26/10	7.28	21.3	479.6	34.8
		7/13/10	6.91	21.2	479.5	30.4
		7/13/10 DUP	6.91	21.2	479.5	30.6
		1/20/11	7.47	20.7	440	29.6
		7/14/11	7.11	21.1	472.6	29.8
		1/31/12	7.53	20.3	466.6	30.0
		7/12/12	7.36	21.2	630	29.2
		1/9/13	7.48	20.0	473.5	35.8
		7/25/13	7.34	20.9	485.4	40.6
		1/6/14	7.58	19.9	487.8	40.5
		7/9/14	7.52	20.5	503.5	43.7
		2/4/15	7.38	20.3	619	40.5
		7/27/15	7.57	20.8	514.6	40.3
		7/27/15 DUP	7.57	20.8	514.6	41.6
		1/11/16	7.54	19.5	510.6	41.2
		7/20/16	7.52	20.0	523.7	41.6
		1/19/17	7.40	19.5	525.8	41.5
		7/19/17	7.29	19.5	548.6	39.6
		1/11/18	7.26	19.3	552.3	36.1
		7/17/18	7.28	19.4	572.5	32.6
		1/15/19	7.26	19.2	578.3	26.0
		7/24/19	7.19	19.2	598.4	24.6

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)
COB MW-3	906823	2/28/08	7.39	21.0	416	57.8
		3/27/08	ND	ND	ND	57.7
		4/30/08	ND	ND	ND	37
		5/20/08	7.56	22.3	473	35.8
		7/24/08	ND	ND	ND	64.9
		7/30/08	7.64	22.3	541	67.3
		10/9/08	ND	ND	ND	52.5
		10/23/08	7.43	20.8	507	76.6
		2/12/09	7.35	21.1	432	112
		4/23/09	7.35	22.6	407	43.7
		7/22/09	7.38	21.5	460	52.3
		10/22/09	7.40	21.3	466	74.2
		10/22/09 DUP	7.40	21.3	466	73.9
		3/3/10	7.36	21.1	480	102
		4/26/10	7.35	22.0	497.9	77.6
		7/13/10	7.41	21.7	456.7	46.5
		7/14/11	7.19	21.8	440.0	40.1
		7/12/12	7.34	21.4	450	39.5
		2/5/13	7.60	20.4	476.4	65.1
		2/5/13 DUP	7.60	20.4	476.4	64.7
		7/25/13	7.42	21.4	485.0	66.6
		7/9/14	7.61	21.4	525.3	90.9
		7/27/15	7.56	21.6	560.3	105
		7/20/16	7.48	20.4	507.4	72.7
7/19/17	7.34	20.2	529.5	84.1		
7/17/18	7.37	20.0	528.5	92.7		
7/24/19	7.38	19.7	498.8	68.5		
COB WL	593116	2/22/08	6.99	20.6	919	90
		3/24/08	ND	ND	ND	98.2
		4/28/08	ND	ND	ND	98.7
		5/20/08	7.30	21.9	1053	98
		7/30/08	7.17	22.0	1098	97.1
		7/30/08	ND	ND	ND	100
		10/15/08	ND	ND	ND	107
		10/23/08	7.23	21.4	1075	104
		2/12/09	6.98	20.6	814	94
		4/23/09	7.29	22.2	923	98
		7/22/09	7.17	22.5	1037	97.3
		10/22/09	7.17	22.4	988	96.1
		3/3/10	7.48	21.1	1030	97.1
		4/26/10	7.36	21.9	1038	97.7
		4/26/10 DUP	7.36	21.9	1038	97.9
		7/13/10	7.18	22.3	1013	88.7
		7/14/11	6.91	21.6	1019	87.3
		7/12/12	7.07	23.2	1060	92.0
		2/5/13	7.91	21.5	1057	98.3
		7/25/13	7.23	22.7	1074	97.6
		7/9/14	7.42	21.8	1132	81.5
		2/4/15	6.90	23.3	1488	73.7
		7/27/15	7.25	22.9	1221	69.6
		1/11/16	7.25	20.4	1195	73.5
		7/20/16	7.12	22.5	1184	74.4
		1/25/17	7.07	21.5	1167	79.8
		7/14/17	7.07	21.9	1162	80.4
		1/11/18	7.07	21.7	1169	77.3
		7/9/18	7.21	21.8	1165	73.0
		7/9/18 DUP	7.21	21.8	1165	74.5
1/7/19	6.97	21.5	1163	73.1		
1/7/19 DUP	6.97	21.5	1163	74.0		
7/15/19	7.10	22.2	1154	71.2		
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

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)
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		
1/16/18	7.45	20.8	402.8	26.1		
7/16/18	7.45	21.8	415.8	25.5		
1/16/19	7.45	20.5	412.0	23.7		
7/8/19	7.50	22.3	417.1	23.4		
COOPER C	637069	3/20/08	6.93	21.3	2081	880
		5/5/08	6.78	22.4	2139	990
		7/15/08	6.86	22.3	2162	1040
		7/15/08 DUP	6.86	22.3	2162	960
		10/16/08	6.80	21.4	2078	1020
		1/27/09	6.92	20.5	1489	950
		4/14/09	6.85	21.6	1833	930
		7/14/09	6.75	22.1	1972	910
		10/12/09	6.70	21.8	1858	830
		1/27/10	7.27	19.6	1930	620
		4/22/10	6.76	19.5	1921	884
		7/21/10	6.84	22.9	1761	921
		10/20/10	7.16	20.9	1980	829
		1/17/11	6.95	20.5	1880	756
		4/11/11	6.82	21.0	1942	834
		8/26/11	6.84	21.8	1800	847
		2/1/12	7.13	20.5	2024	867
		4/25/12	6.83	21.5	1960	817
		7/11/12	6.48	22.8	2030	834
		10/10/12	6.98	21.2	1985	863
		2/27/13	6.58	20.9	1805	821
		5/8/13	6.41	20.7	1744	798
		8/13/13	6.69	21.2	1739	756
		11/1/13	6.61	21.2	1624	738
		2/10/14	6.69	21.6	1616	715
		5/7/14	6.48	22.5	1612	686
		7/21/14	6.63	23.1	1548	671
		11/13/14	6.87	22.4	1520	638
		9/10/15	6.84	22.8	1997	641
		8/18/16	6.92	25.2	1468	647
		7/13/17	6.99	23.0	1461	639
		7/25/18	6.95	22.2	1545	661
8/19/19	7.01	21.3	1568	623		

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		
1/17/18	7.01	19.6	1922	45.4		
7/30/18	7.05	19.4	2408	39.1		
1/15/19	6.49	19.5	2322	38.9		
7/9/19	6.94	20.8	2362	35.3		
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		
7/30/18	7.26	19.8	605.9	12.4		
7/17/19	7.25	19.6	603.8	11.8		
ECHAVE	219449	2/1/12	7.39	20.7	390.0	26.7
		4/23/12	7.50	22.5	440.0	26.4
		7/17/12	7.44	22.2	430	26.1
		10/9/12	7.69	21.9	404.7	26.1
		10/9/12 DUP	7.69	21.9	404.7	26.0
		1/18/13	7.61	21.7	408.5	25.4
		5/14/13	7.74	22.2	400.2	25.2
		7/17/13	7.81	22.1	406.4	24.3
		10/8/13	7.66	21.4	404.3	24.5
		1/13/14	7.68	21.0	412.4	25.7
		4/10/14	7.67	21.4	409.3	26.4
		7/17/14	7.68	21.6	405.0	26.7
		10/22/14	7.43	21.4	406.0	25.9
		8/3/15	7.88	28.7	406.8	24.6
		7/22/16	7.86	27.5	391.5	24.7
		7/28/17	7.59	25.1	403.2	25.7
		7/17/18	7.68	24.3	397.5	24.1
		7/23/19	7.54	26.3	398.3	23.0

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		
7/31/18	7.78	21.6	558.9	17.8		
FLEMING	218386	7/15/10	6.98	24.2	1390	573
FRANCO 101	500101	2/6/08	7.47	19.6	1301	670
		5/5/08	6.93	23.1	1557	680
		7/14/08	7.00	22.7	1586	680
		10/15/08	7.20	20.5	1560	680
		1/22/09	7.19	20.1	1178	740
		4/14/09	7.24	23.1	1416	690
		7/13/09	7.30	27.3	1532	670
		10/12/09	7.16	24.2	1493	650
		1/26/10	6.91	18.5	1529	640
		4/23/10	7.43	15.8	1559	699
		7/13/10	7.48	28.6	901.6	188
		9/13/12	7.66	25.0	1005	318
		10/5/12	7.63	24.4	1002	324
11/13/12	7.67	19.8	988.2	349		
12/3/12	7.54	19.4	1001	332		
1/15/13	7.52	13.5	1010	333		
2/6/13	7.55	18.9	1004	353		
3/7/13	7.4	20.5	979.9	338		
4/10/13	7.7	20.4	1000	335		
7/10/13	7.69	25.7	1018	335		
10/16/13	7.63	21.9	1018	350		
1/14/14	7.68	20.1	1039	345		
4/8/14	7.68	24.3	1044	351		
4/8/14 DUP	7.68	24.3	1044	330		
7/14/14	7.63	26.5	1030	349		
10/8/14	7.47	23.5	954	335		
7/27/15	7.68	27.3	1047	322		
7/18/16	7.63	26.0	1040	339		
7/20/17	7.36	24.9	1056	337		
7/27/18	7.42	25.8	1063	371		
7/24/19	7.42	24.9	1085	349		

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		
7/24/18	7.48	23.9	468.1	41.7		
7/15/19	7.49	23.4	473.6	41.2		
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		
		7/1/12	6.86	21.4	1906	1110		
		10/17/12	6.74	22.0	1846	1040		
		2/15/13	6.64	20.7	1934	954		
		5/8/13	6.6	21.4	1903	1060		
		8/13/13	6.85	21.6	1925	1030		
		11/1/13	6.74	21.0	1920	1070		
		2/10/14	6.64	21.0	1950	991		
		5/7/14	6.69	21.1	1958	1030		
		7/21/14	6.69	21.6	1903	1030		
		11/13/14	6.88	21.7	1965	1020		
		9/10/15	6.82	22.1	1922	1030		
		8/18/16	6.77	22.0	1922	1050		
		7/13/17	6.77	21.7	1924	1270		
		7/13/17 DUP	6.77	21.7	1924	1050		
7/25/18	7.01	22.2	1907	998				
8/7/19	6.90	22.2	1798	923				
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		
		7/23/18	8.05	26.1	614.7	70.7		
		7/9/19	7.96	25.9	607.8	65.6		
		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				
7/9/19	6.90	20.1	1304	480				

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		
2/23/18	7.31	19.5	472.7	6.60		
7/9/18	7.35	19.9	494.4	6.25		
1/11/19	7.26	18.4	466.2	6.59		
7/10/19	7.23	19.4	495.1	7.03		
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
		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		
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
		7/17/18	7.93	24.8	446.7	28.6
		7/10/19	7.90	25.0	447.9	27.2
METZLER	35-71891	3/5/08	7.27	21.6	1055	317
		5/15/08	7.12	22.8	1051	329
		7/31/08	7.16	22.5	1078	317
		10/20/08	7.24	22.2	1080	305
		10/20/08 DUP	7.24	22.2	1080	326
		2/11/09	7.12	21.3	818	321
		4/20/09	7.22	23.2	845	313
		7/15/09	7.41	22.9	1031	293
		7/15/09 DUP	7.41	22.9	1031	309
		10/14/09	7.1	22.7	989	315
		2/1/10	7.22	21.7	1021	286
		5/18/10	7.56	21.0	1053	330
		7/16/10	7.20	24.1	1007	330
		10/19/10	7.15	22.6	1006	319
		1/19/11	7.55	21.1	930	298
		4/4/11	7.03	23.3	1018	323
		7/12/11	7.07	22.3	993.0	312
		10/12/11	7.27	22.1	910	301
		2/7/12	7.36	21.5	1019	326
		4/12/12	7.34	21.1	1009	320
MOORE	538847	2/20/08	7.69	22.2	362	7.1
		5/8/08	7.09	22.4	432	7.5
		7/16/08	7.34	23.0	482	9.8
		10/29/08	7.32	22.4	452	19.2
		1/29/09	7.11	21.7	328	6.6
		4/16/09	7.40	22.1	374	6.4
		7/15/09	7.44	23.3	439	5.8
		10/13/09	7.36	22.6	429	7.1
		1/26/10	7.54	19.6	423	6.3
		4/22/10	7.47	20.6	433	7.40
		7/15/10	7.44	24.1	431.3	7.54
		7/15/10 DUP	7.44	24.1	431.3	7.11
		10/19/10	6.79	22.1	430	7.14
		1/18/11	7.48	21.1	390	6.42
		4/6/11	7.39	21.4	426.3	6.70
		7/13/11	6.91	23.2	423.4	7.62
		10/11/11	7.31	22.5	419.0	7.31
		1/31/12	7.35	21.7	430	7.21
		4/23/12	7.34	22.8	470	6.99
		4/23/12 DUP	7.34	22.8	470	7.05
		7/17/12	7.36	22.9	430	7.01
		7/17/12 DUP	7.36	22.9	430	6.99
		10/8/12	7.64	21.4	433.2	7.51
		1/10/13	7.50	20.8	439.9	7.16
		4/19/13	7.68	21.6	434.7	7.25
		7/11/13	7.56	22.9	442.2	7.14
		10/7/13	7.59	21.5	431.8	6.99
		10/13/14	7.47	22.0	433	6.72
		8/3/15	7.61	22.9	446.7	7.12
		7/14/16	7.55	23.0	445.8	7.86
7/25/17	7.28	21.1	455.5	7.98		
8/1/18	7.24	26.9	436.8	8.10		
7/9/19	6.97	22.7	443.9	6.26		

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		
7/31/18	7.42	26.4	550.7	54.1		
7/11/19	7.03	27.1	517.3	30.5		
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		
7/24/19	6.61	22.6	1359	235		
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		
1/16/18	7.39	20.8	427.3	6.76		
7/18/18	7.34	20.7	435.3	6.50		
1/7/19	7.39	20.6	430.6	7.07		
7/9/19	7.14	21.4	442.2	5.75		
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
		1/16/18	7.30	23.4	809.6	181
		5/2/18	7.41	23.7	854.1	192
		7/18/18	7.32	23.2	863.5	195
		10/16/18	7.40	23.6	850.1	210
		10/16/18 DUP	7.40	23.6	850.1	210
		1/7/19	7.38	24.0	848.3	196
		5/14/19	7.39	23.9	845.5	190
		5/14/19 DUP	7.39	23.9	845.5	190
		7/9/19	7.06	24.9	857.2	195
10/15/19	7.38	24.3	855.4	195		
NWC-06	575700	6/9/08	ND	ND	ND	7.2
		10/27/08	7.35	23.3	414	6.4
		2/12/09	7.54	21.8	306	8
		4/23/09	7.30	24.5	354	7.3
		7/21/09	7.63	23.5	388	6.4
		10/21/09	7.26	23.2	413	8
		2/3/10	7.61	20.5	404	7.5
		2/3/10 DUP	7.61	20.5	404	7.4
		4/21/10	7.54	22.4	387	8.49
		7/20/10	7.33	26.0	388.6	8.59
		10/19/10	7.49	22.7	394.5	8.32
		1/18/11	7.45	23.4	380	8.24
		4/6/11	7.42	23.1	388.3	7.76
		4/6/11 DUP	7.42	23.1	388.3	7.73
		7/15/11	7.09	22.9	394.3	8.36
		10/13/11	7.51	22.3	340	8.48
		1/30/12	7.47	22.1	402.7	8.44
		4/25/12	7.34	22.5	410	7.11
		7/18/12	7.39	22.8	380	8.60
		10/10/12	7.62	21.9	393.6	9.33
		1/10/13	7.47	21.3	429.2	7.55
		4/17/13	7.66	21.1	404.1	8.82
		7/12/13	7.59	22.4	404.1	8.40
		10/10/13	7.56	21.6	403.3	8.38
		1/13/14	7.64	21.3	401.8	8.78
		4/7/14	7.65	21.7	403.7	8.62
		7/10/14	7.68	22.4	405.9	8.97
		7/10/14 DUP	7.68	22.4	405.9	8.99
		10/13/14	7.59	23.4	393	8.51
		2/12/15	7.60	21.2	405	8.12
		2/12/15 DUP	7.60	21.2	405	8.09
		7/30/15	7.66	22.6	406.5	8.20
		1/12/16	7.74	20.7	397.5	8.50
		7/26/16	7.58	21.8	409.1	8.69
		1/26/17	7.42	21.3	394.0	8.64
		7/18/17	7.35	21.4	405.6	8.35
1/16/18	7.45	21.1	400.4	8.85		
7/18/18	7.38	21.2	407.2	8.35		
1/7/19	7.42	21.0	405.1	8.54		
7/9/19	7.09	22.0	411.3	6.99		
OLMOS	224745	1/13/16	7.61	20.4	421.0	8.04
		7/14/16	7.58	22.5	445.9	7.97
		7/25/17	7.29	20.6	434.7	8.25
		7/13/18	7.31	20.6	446.1	7.58
		7/13/18 DUP	7.31	20.6	446.1	7.46
		7/8/19	7.07	21.5	429.7	6.55
7/8/19 DUP	7.07	21.5	429.7	7.78		

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)
OSBORN	643436	2/25/08	7.35	22.4	508	16.4
		5/13/08	7.22	22.2	576	17.2
		7/22/08	7.24	22.9	618	17.7
		7/22/08 DUP	7.24	22.9	618	17.5
		10/16/08	7.39	22.4	595	15.9
		1/20/09	7.33	22.4	469	16
		4/7/09	7.25	24.0	542	17
		8/18/09	7.16	24.6	643	17.4
		10/5/09	7.14	22.9	599	17.9
		1/21/10	7.47	19.5	591	15.6
		4/19/10	7.60	21.5	601.9	19.3
		7/12/10	7.69	24.2	594.0	18.4
		7/12/11	7.87	29.8	575.9	19.5
		2/3/12	8.15	15.3	390	19.2
		1/8/13	7.88	10.5	544.4	20.4
		7/8/13	7.56	39.2	510.3	19.2
		1/10/14	7.89	18.1	580.5	18.7
		7/7/14	7.84	29.2	496.3	18.0
		7/11/16	7.56	37.8	515.4	18.6
		7/31/17	7.74	25.6	548.4	19.3
7/31/17 DUP	7.74	25.6	548.4	18.7		
PALMER	578819	2/14/08	7.91	17.5	435	15.9
		5/13/08	7.92	22.9	508	16.6
		7/22/08	7.64	25.8	548	16.2
		10/16/08	7.61	17.0	527	15.9
		1/20/09	7.33	19.4	441	14.3
		4/8/09	7.65	19.1	475	15.4
		7/8/09	7.47	27.2	521	14.3
		10/5/09	7.81	22.2	538	16.2
		1/20/10	7.72	11.9	510	13.8
		4/22/10	7.97	13.6	520	16.7
		7/12/10	7.62	30.2	518.8	15.7
		10/18/10	8.13	22.1	511.9	16.5
		1/18/11	7.24	17.1	517.0	15.7
		4/5/11	8.04	19.0	499.2	15.8
		7/12/11	7.65	26.6	517.6	16.4
		10/11/11	7.85	22.0	510.4	17
		2/3/12	7.94	10.0	521.4	17.1
		4/11/12	7.52	18.7	519.8	17.3
		7/10/12	7.30	27.9	390	16.6
		10/3/12	8.09	25.7	526.7	17.6
		10/3/12 DUP	8.09	25.7	526.7	17.5
		1/9/13	7.9	17.5	532.8	16.8
		4/8/13	8.07	18.4	534.1	17
		7/17/13	7.74	22.3	531.0	17.2
		10/14/13	8.03	20.1	533.1	16.9
		1/6/14	7.82	11.9	517.4	17.4
		4/7/14	7.96	18.3	534.8	17.3
		7/7/14	8.07	23.9	534.4	18.3
		10/23/14	7.86	19.6	536.0	17.5
		7/20/15	7.95	25.9	540.1	17.6
		7/31/18	7.65	29.6	534.8	17.1
		7/11/19	8.16	28.0	538.6	16.7

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)
PANAGAKOS	35-76413	4/21/08	6.80	20.5	1228	410
		7/21/08	6.95	21.9	1390	444
		10/13/08	6.86	21.2	1386	480
		10/13/08 DUP	6.86	21.2	1386	500
		1/22/09	6.92	19.7	997	397
		4/9/09	6.81	21.7	1228	431
		4/9/09 DUP	6.81	21.7	1228	426
		7/9/09	6.89	22.3	1469	490
		10/6/09	6.83	21.1	1328	472
		1/21/10	7.06	18.8	1291	318
		4/20/10	7.25	21.0	1528	608
		7/20/10	6.90	24.0	1560	706
		10/18/10	6.38	22.1	1530	568
		7/14/11	6.93	23.3	1070	223
		8/25/11	7.17	23.4	1170	222
		2/6/12	6.98	20.8	1017	166
		2/29/12	7.09	20.3	1080	362
		3/15/12	7.02	21.4	1138	282
		4/12/12	6.90	20.9	1265	346
		4/12/12 DUP	6.90	20.9	1265	352
		7/9/12	6.82	22.2	1140	292
		11/27/12	7.51	20.1	1164	274
		2/6/13	7.05	19.9	1054	212
		4/9/13	7.24	19.7	1105	232
		7/10/13	7.26	21.4	1218	329
		10/15/13	7.14	20.5	1109	240
		1/10/14	7.23	19.6	1079	227
		4/16/14	7.17	20.4	1103	228
		7/17/14	7.13	21.4	1357	467
		10/16/14	6.9	22.1	1104	193
		1/26/15	7.11	19.6	1349	428
		7/27/15	7.03	22.2	1445	469
		1/11/16	7.18	18.9	1402	443
1/11/16 DUP	7.18	18.9	1402	452		
2/24/17	7.19	19.1	1270	218		
2/24/17 DUP	7.19	19.1	1270	217		
7/17/17	7.13	20.2	1219	232		
1/18/18	7.08	19.0	1151	223		
1/18/18 DUP	7.08	19.0	1151	226		
7/30/18	6.96	20.5	1389	384		
1/15/19	6.91	18.5	1464	444		
7/8/19	6.90	21.4	1480	467		
7/8/19 DUP	6.90	21.4	1480	476		
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		
7/10/19	6.83	21.6	1170	382		

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)
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
7/1/12	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
		7/1/14	7.76	23.7	388.9	14.6
		10/7/14	7.46	25.8	406	14.0
		7/22/15	7.79	23.3	392.1	13.9
		7/26/16	7.67	23.2	389.2	14.1
		7/18/17	7.44	22.5	388.7	13.2
		7/24/18	7.53	22.3	385.7	13.4
		7/11/19	7.19	23.0	393.7	13.4
		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		
8/1/18	7.47	24.2	580.9	113		
7/10/19	6.78	29.1	588.6	118		
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
		1/10/18	7.25	20.7	856.9	191
		7/25/18	7.35	20.8	814.9	205
		1/14/19	7.20	20.6	828.4	174
		7/12/19	7.16	21.7	510.4	90.8

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)
RAMIREZ	216425	2/4/08	7.47	21.7	408	7.6
		5/6/08	7.19	22.7	405	8.3
		7/17/08	7.32	24.5	439	8.8
		10/27/08	7.41	22.2	412	7.3
		1/29/09	7.24	22.2	301	8.3
		4/16/09	7.49	22.4	344	7.6
		7/10/09	7.52	23.9	411	6.4
		10/6/09	7.30	23.8	388	8.4
		1/25/10	7.48	22.4	390	7.8
		4/21/10	7.45	22.6	397	9.04
		7/21/10	7.38	25.1	420	8.98
		10/19/10	7.91	23.7	450	10.8
		1/18/11	7.52	23.1	380	8.18
		4/11/11	7.24	23.2	408.5	8.65
		7/18/11	7.27	25.4	402.6	8.44
		10/12/11	7.40	23.3	412.7	8.55
		1/30/12	7.38	22.3	412.2	8.80
		4/10/12	7.40	23.2	404.5	8.70
		7/6/12	7.32	24.2	415.7	8.97
		10/8/12	7.61	22.5	412.0	9.14
		10/8/12 DUP	7.61	22.5	412.0	9.07
		1/17/13	7.52	22.2	409.6	8.82
		4/19/13	7.6	22.1	413.9	8.63
		7/15/13	7.58	23.6	416.2	8.19
		10/7/13	7.68	22.6	412.7	8.37
		1/13/14	7.63	21.9	409.8	8.79
		4/14/14	7.55	22.2	417.5	8.67
		7/10/14	7.58	23.2	413.5	8.92
		10/17/14	7.36	23	422.0	8.67
		7/21/15	7.54	23.7	414.6	8.46
7/14/16	7.55	23.6	420.5	8.57		
7/26/17	7.37	22.0	414.5	9.00		
7/25/18	7.35	22.1	420.2	8.35		
7/9/19	6.95	22.8	432.8	6.67		
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		
7/31/18	6.89	19.8	1493	138		
7/31/18 DUP	6.89	19.8	1493	139		
7/19/19	6.86	19.7	1465	132		
ROGERS 596	573596	10/19/09	6.89	23.3	1360	590
		11/5/09	6.79	21.9	1418	540
		2/25/10	6.99	19.6	1603	520
		4/22/10	7.21	18.2	1641	710
		1/18/18	6.85	18.9	1431	655
		7/26/18	6.85	22.9	1644	735
		1/14/19	6.83	17.9	1651	757
7/22/19	6.84	25.9	1714	835		

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 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		
ROGERS E	216018	2/4/08	7.40	21.0	435	4.6
		5/7/08	7.18	22.2	415	5.9
		7/17/08	7.28	23.0	446	7.1
		10/27/08	7.38	21.4	434	15.7
		2/10/09	7.51	20.7	322	5.4
		4/16/09	7.48	22.0	361	4.9
		7/13/09	7.34	22.6	420	3.8
		10/6/09	7.31	22.3	407	5.8
		1/25/10	7.52	20.6	414	5.1
		4/21/10	7.44	21.1	421	6.04
		7/21/10	7.37	23.8	430	6.47
		10/19/10	7.80	22.8	460	5.92
		1/18/11	7.39	21.5	390	5.50
		4/11/11	7.19	22.7	427.2	6.13
		7/18/11	7.12	24.3	418.5	6.00
		10/13/11	7.52	22.2	370	5.99
		1/30/12	7.38	20.8	427.2	6.22
		4/10/12	7.37	22.1	421.8	6.31
		7/17/12	7.32	22.7	420	5.85
		10/17/12	7.55	21.7	429.0	6.04
		1/17/13	7.46	21.5	431.5	6.01
		4/18/13	7.63	21.3	433.5	6.26
		7/17/13	7.59	22.1	427.7	6.05
		7/17/13 DUP	7.59	22.1	427.7	6.28
		10/10/13	7.51	21.9	436.9	5.8
		1/7/14	7.49	21.0	434.0	6.24
		4/14/14	7.59	21.4	431.2	6.11
		7/10/14	7.54	22.4	428.5	6.41
		10/17/14	7.31	22.6	452	5.81
		7/30/15	7.57	22.9	430.3	5.90
		7/14/16	7.58	22.7	430.2	6.71
		7/26/17	7.31	21.3	429.3	6.86
		2/23/18	7.32	21.0	423.0	6.20
7/13/18	7.33	20.8	430.3	6.32		
1/11/19	7.27	20.6	418.5	6.51		
7/12/19	7.31	20.8	429.5	6.76		

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)
RUIZ	531770	2/5/08	7.73	18.2	445	263
		5/15/08	7.23	25.9	965	265
		7/30/08	6.99	22.1	999	243
		10/20/08	7.04	22.0	995	238
		2/12/09	6.94	20.9	748	254
		4/21/09	7.18	22.3	759	227
		8/3/09	7.05	22.9	1029	221
		10/28/09	7.09	20.6	920	227
		2/1/10	7.08	20.9	934	236
		4/26/10	7.01	22.5	920.1	240
		7/20/10	7.08	22.5	880	240
		10/20/10	7.52	20.7	970	231
		1/18/11	7.19	20.2	860	213
		4/8/11	7.09	19.8	923.3	236
		8/26/11	6.85	22.6	800	220
		10/13/11	7.19	21.5	810	230
		2/7/12	7.28	20.7	915.6	230
		2/7/12 DUP	7.28	20.7	915.6	228
		4/13/12	7.04	21.1	896.5	203
		7/18/12	6.87	21.6	900	214
		10/9/12	7.18	21.4	890.6	229
		1/11/13	7.21	20.7	895.8	219
		1/11/13 DUP	7.21	20.7	895.8	211
		4/11/13	7.26	21.9	876.8	229
		7/25/13	7.13	21.4	887.3	228
		10/17/13	7.23	20.8	891.9	210
		1/8/14	7.32	20.5	886.8	220
		4/15/14	7.26	21.2	873.5	215
		8/11/14	7.32	21.2	869.2	221
		10/21/14	7.09	21.4	886	209
		10/21/14 DUP	7.09	21.4	886	212
		1/27/15	7.14	21.4	853	215
		7/30/15	7.2	21.9	865.8	191
1/12/16	7.29	19.9	831.3	190		
7/25/16	7.17	21.2	854.5	183		
1/26/17	7.09	20.4	844.2	194		
7/25/17	7.06	20.5	850.8	190		
1/16/18	7.03	20.1	829.4	185		
7/24/18	7.02	20.7	827.2	180		
1/15/19	7.00	19.8	824.6	170		
7/10/19	6.86	20.9	828.4	169		

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		22.2	607	124		
		10/22/08 ¹		22.0	653	135		
		11/19/08 ¹		21.1	612	140		
		12/17/08 ¹		21.6	472	144		
		1/29/09 ¹		22.0	475	124		
		2/23/09 ¹		22.1	610	123		
		4/17/09		22.2	520	120		
		7/10/09		22.8	651	116		
		7/10/09 DUP		22.8	651	117		
		10/6/09		22.5	613	120		
		1/22/10		19.5	664	133		
		4/21/10		20.9	638	129		
		7/21/10		22.0	650	134		
		10/19/10		21.2	710	147		
		1/17/11		21.2	620	116		
		4/11/11		21.5	656.9	128		
		7/18/11		23.7	612.4	116		
		10/12/11		22.4	635.8	124		
		2/6/12		21.3	629.7	116		
		2/6/12 DUP		21.3	629.7	114		
		4/10/12		21.6	626.1	120		
		7/16/12		21.9	710	117		
		10/17/12		21.6	645	121		
		3/13/13		20.7	623.6	118		
		5/14/13		21.5	629.7	112		
		7/15/13		22.1	770.2	198		
		10/14/13		20.9	633.3	109		
		1/13/14		20.6	663.1	125		
		4/9/14		21.5	635.9	110		
		7/18/14		21.8	790.5	216		
		10/22/14		22	646.0	119		
		2/3/15		22.4	714	125		
		2/3/15 DUP		22.4	714	126		
		8/4/15		22.5	641.8	109		
1/14/16		20.6	678.3	134				
7/27/16		22.3	621.3	103				
7/27/16 DUP		22.3	621.3	102				
1/24/17		20.3	650.6	120				
7/11/17		20.6	627.0	103				
7/11/17 DUP		20.6	627.0	102				
1/9/18		20.5	619.5	97.2				
7/11/18		20.4	622.9	96.2				
1/9/19		20.4	671.2	131				
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		
		7/7/14	7.44	21.8	464.7	19.4		
		7/20/15	7.45	23.0	491.2	18.8		
		7/20/15 DUP	7.45	23.0	491.2	18.9		
		7/11/16	7.30	22.6	504.7	18.6		
		7/27/17	7.13	20.9	500.8	18.5		
		7/31/18	7.10	20.9	557.7	20.1		
		TERRY	229470	3/18/19	7.46	20.6	419.4	6.63
				7/19/19	7.31	20.1	447.3	6.25

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
		7/26/18	7.34	21.0	420.6	8.27
		7/10/19	7.15	21.7	418.3	6.44
		TM-02A	522574	3/4/08	8.67	22.6
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
8/8/19	8.02			24.4	359	19.4
TM-03	522575			5/20/08	7.51	22.2
		8/6/08	7.08	21.6	828	97
		11/12/08	7.47	20.5	590	128
		2/26/09	7.21	21.8	737	107
		2/26/09 DUP	7.21	21.8	737	102
		5/13/09	7.47	22.2	695	109
		8/18/09	7.48	22.4	822	98
		11/10/09	7.55	21.8	761	106
		3/2/10	7.56	21.6	748	99
		4/14/10	7.55	20.6	635	103
		7/7/10	7.19	21.4	566	103
		2/1/12	7.48	21.1	744	112
		2/27/08	7.44	19.6	457	13.9
		5/20/08	7.50	20.7	506	32.7
		8/4/08	7.41	20.7	529	31.3
10/29/08	7.55	20.2	531	34.5		
2/26/09	7.18	20.4	574	32.7		
5/13/09	7.35	20.9	465	30.6		
8/18/09	7.50	20.9	560	30.9		
8/18/09 DUP	7.50	20.9	560	29.9		
11/12/09	7.53	20.4	530	31.1		
4/14/10	7.35	19.4	461	29.0		
7/2/10	7.24	20.1	438	29.8		
7/21/11	7.1	20.1	516	31.7		
7/9/12	6.82	20.8	505	33.5		
2/14/13	6.92	19.6	527	31.1		
8/19/13	7.21	19.9	556	32.5		
7/21/14	7.17	19.9	551	33.0		
7/26/17	7.27	20.4	521	34.5		
7/31/19	7.40	20.5	531	35.6		
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
7/31/19	7.40	20.5	531	35.6		

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)		
TM-07	522576	3/6/08	7.54	20.8	726	22.5		
		5/22/08	6.96	20.1	385	22.9		
		8/6/08	7.04	22.8	519	22.2		
		11/4/08	7.76	20.6	347	31.2		
		2/20/09	7.77	19.9	376	22.5		
		5/13/09	7.30	22.9	559	130		
		8/17/09	7.60	22.6	442	134		
		11/3/09	7.85	21.8	441	134		
		3/2/10	7.67	21.6	422	124		
		5/25/10	7.77	21.2	398	42.6		
		7/6/10	7.58	22.0	350	44.7		
		2/11/11	6.87	20.1	393	24.9		
		7/21/11	6.90	21.4	402	41.7		
		2/9/12	7.15	23.0	670	171		
		8/13/12	6.83	21.7	415	25.4		
		2/27/13	6.81	19.9	380	25.6		
		8/28/13	7.36	21.2	369	25.0		
		2/13/14	6.99	20.4	372	27.4		
		8/21/14	7.35	20.6	358	48.5		
		2/4/15	7.58	21.0	375	102		
		9/15/15	7.36	21.5	411	91.3		
		3/14/16	7.46	21.4	419	130		
		9/15/16	7.47	21.2	638	123		
3/1/17	7.59	20.8	581	129				
8/2/17	7.56	21.5	563	129				
2/12/18	7.78	20.4	544	133				
8/6/18	7.52	21.8	586	116				
2/5/19	7.71	20.7	568	114				
8/19/19	7.50	21.1	619	94.1				
TM-08 SWAN	522817	2/13/08	7.63	24.1	511	24.1		
		5/14/08	7.44	24.4	480	12.6		
		7/23/08	7.76	28.1	522	12.6		
TM-10 USBP	522696	12/8/11	6.95	19.6	381	16.8		
		3/15/12	7.85	20.2	382.3	15.1		
		4/24/12	7.88	21.0	280	13.4		
		4/24/12 DUP	7.88	21.0	280	13.3		
		9/13/12	8.09	21.1	407	13.3		
		10/19/12	8.17	21.0	428.2	12.8		
		3/7/13	8.33	21.2	415.1	12.7		
		4/17/13	8.27	20.3	423.9	12.8		
		7/23/13	8.16	21.4	426.1	13.2		
		11/6/13	7.90	21.3	386.5	4.81		
		11/6/13 DUP	7.90	21.3	386.5	4.64		
		1/15/14	7.91	21.1	424.4	3.98		
		5/15/14	7.98	20.4	410.6	5.12		
		7/15/14	7.86	21.4	421.9	5.46		
		10/16/14	7.51	22.0	439	4.16		
		1/28/15	7.75	23.0	413	3.96		
		7/24/15	7.87	22.6	478.8	4.38		
		2/2/16	7.95	19.8	493.5	5.32		
		7/13/16	7.73	22.0	514.9	6.67		
		1/27/17	7.75	21.3	418.4	4.81		
		7/17/17	7.77	23.5	409.5	8.01		
		1/8/18	7.60	20.8	387.3	6.80		
		7/9/18	7.92	23.5	391.4	8.65		
		1/8/19	7.54	20.6	381.8	12.8		
		7/16/19	7.67	21.5	378.6	15.0		
		TM-15 MILLER	522699	2/27/08	7.66	21.9	344	14
				5/23/08	7.54	22.1	371	14.4
8/5/08	7.42			23.3	413	13.7		
10/28/08	7.63			22.6	387	18.6		
10/28/08 DUP	7.63			22.6	387	18.8		
2/26/09	7.57			22.0	373	14.6		
5/13/09	7.61			23.1	344	13.7		
8/17/09	7.73			23.2	398	14.2		
11/3/09	7.73			23.4	414	14.8		
2/24/10	7.66			22.8	381	14.4		
4/27/10	7.71			23.0	383.6	14.9		
7/20/10	7.77			23.0	324	14.3		
7/12/11	7.36			23.2	380	14.2		
7/10/12	7.04			23.7	379	14.9		
2/12/13	6.96			21.7	393	14.6		
9/4/13	7.2			22.8	412	14.8		
7/22/14	7.18			23.2	407	14.6		
9/8/15	7.19			23.0	411	14.7		
9/14/16	7.45			23.1	381	14.5		
8/1/17	7.38			22.9	384	14.8		
7/18/18	7.46			23.1	386	14.8		
8/19/19	7.59			22.7	387	14.6		

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)
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
7/30/19	7.15	21.0	1310	479		
TM-19A	522581	3/6/08	8.02	22.2	240	56.1
		5/22/08	7.36	24.0	501	64.5
		8/6/08	7.32	22.6	494	55.3
		11/18/08	7.79	24.3	365	66.3
		3/3/09	7.41	24.5	489	66.2
		4/22/09	7.44	24.3	494	62.5
		8/12/09	7.61	24.4	554	61.3
		11/4/09	7.47	24.2	522	63
		3/10/10	7.54	22.9	511	60.6
		4/9/10	6.49	23.0	435	66.5
		7/7/10	6.93	23.8	428	63.2
		2/14/11	6.69	21.4	511	61.9
		7/15/11	7.11	24.1	499	62.1
		2/2/12	7.13	22.5	498	62.2
		7/10/12	7.12	23.5	505	63.7
		2/15/13	6.74	23.2	522	60.1
		9/4/13	7.11	23.8	538	61.3
		2/12/14	6.93	23.6	548	62.8
		7/21/14	7.06	24.2	542	63.3
		9/10/15	7.31	24.0	502	61.4
		8/18/16	7.27	24.1	505	64.7
		7/26/17	7.27	24.1	505	64.6
		7/25/18	7.49	24.3	511	71.4
8/7/19	7.41	24.1	510	56.6		
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
		8/7/19	6.99	21.7	1371	527
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		
1/17/18	7.30	18.6	531.3	29.5		
7/27/18	7.22	19.3	535.8	17.5		
1/16/19	7.41	18.5	530.8	29.0		
TVI 875	568875	2/21/08	7.28	21.1	739	244
		5/7/08	7.09	21.2	833	250
		7/15/08	7.27	22.4	925	274
		10/15/08	7.26	22.1	878	245
		2/11/09	7.20	20.7	738	312
		4/17/09	7.31	21.5	690	251
		7/21/09	7.47	22.2	812	236
		10/19/09	7.23	21.9	822	247
		2/2/10	7.32	20.8	939	250
		4/23/10	7.34	20.2	930.4	294
		7/15/10	7.46	21.8	842.5	262
		10/20/10	7.79	21.9	890	242
		1/20/11	7.39	21.0	780	226
		4/11/11	7.20	21.1	820.6	235
		7/15/11	6.75	22.2	791.9	239
		10/12/11	7.35	22.7	868.5	262
		2/3/12	7.20	20.5	850	299
		4/25/12	7.19	21.3	840	267
		7/16/12	7.13	22.2	860	261
		7/16/12 DUP	7.13	22.2	860	267
		10/9/12	7.39	20.9	882.8	281
		2/6/13	7.23	20.8	946.1	335
		4/10/13	7.35	20.9	907.6	296
		7/18/13	7.31	21.4	994.2	355
		10/8/13	7.35	21.0	894.6	275
		1/9/14	7.23	20.3	917.4	305
		4/9/14	7.31	20.9	910.7	296
		7/16/14	7.30	21.6	940.2	328
		10/9/14	7.12	21.2	963	245
		7/30/15	7.35	22.1	915.4	277
		7/14/16	7.28	21.6	919.1	271
		7/13/17	7.19	20.1	920.0	303
		7/12/18	7.16	20.0	928.8	309
7/18/19	7.09	19.8	972.2	325		
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		
1/16/18	7.51	20.3	384.2	14.0		
7/16/18	7.49	20.4	385.1	13.3		
1/8/19	7.52	20.3	388.2	13.1		
7/8/19	7.02	21.3	393.5	11.1		
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		
7/23/19	6.90	21.8	1520	657		

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
		7/16/18	7.60	22.9	383.3	16.7
7/23/19	7.57	22.9	383.1	16.1		
WMD-2011-03M	913037	2/2/12	6.66	22.0	1190	391
ZANDER	205126	2/4/08	7.24	19.7	392	5.7
		5/6/08	7.26	21.2	404	6.3
		7/16/08	6.92	22.9	441	6.9
		10/28/08	7.40	21.2	415	15
		2/10/09	7.50	20.4	317	6
		4/16/09	7.47	21.7	352	5.5
		7/14/09	7.36	22.9	418	4.5
		10/13/09	7.41	21.7	407	6.3
		1/26/10	7.49	20.3	411	5.7
		4/2/10	7.55	20.0	416	6.70
		7/21/10	7.38	22.7	388.2	6.78
		10/19/10	6.78	21.3	430	6.56
		1/18/11	7.59	18.9	380	6.14
		1/18/11 DUP	7.59	18.9	380	6.06
		4/6/11	7.20	19.7	425.8	6.12
		7/13/11	7.29	22.9	410.10	6.43
		10/12/11	7.35	22.2	426.2	6.38
		1/31/12	7.29	20.3	420	6.59
		4/10/12	7.49	21.9	420.1	6.90
		4/10/12 DUP	7.49	21.9	420.1	6.65
		7/17/12	7.34	22.2	430	6.38
		10/8/12	7.58	20.8	431.4	7.03
		1/10/13	7.58	20.7	436.1	6.52
		4/18/13	7.65	20.8	436.7	6.66
		7/15/13	7.55	21.8	431.1	6.49
		10/7/13	7.59	21.5	430.2	6.41
		1/7/14	7.50	20.9	435.4	6.77
		4/9/14	7.57	21.5	434.4	6.57
		7/17/14	7.61	21.5	432.0	6.99
		10/13/14	7.52	23.8	422.0	6.24
		8/3/15	7.61	22.5	430.3	6.54
		7/15/16	7.53	22.4	434.1	7.12
		7/24/17	7.26	20.5	430.2	7.21
		7/24/18	7.28	20.7	427.0	7.12
7/16/19	7.23	20.4	426.5	6.49		

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					
1/16/18	153.89	4434.62					
7/18/18	154.61	4433.90					
1/7/19	155.18	4433.33					
7/11/19	155.70	4432.81					
ANDERSON 458	221458	601118.690	3468826.284	4585.37	9/7/12	173.76	4411.61
					10/10/12	151.82	4433.55
					1/17/13	152.17	4433.20
					4/15/13	158.42	4426.95
					7/18/13	157.56	4427.81
					10/16/13	156.24	4429.13
					1/9/14	152.58	4432.79
					4/7/14	153.54	4431.83
					7/11/14	156.66	4428.71
					10/6/14	157.31	4428.06
					5/18/15	156.79	4428.58
					7/22/15	157.03	4428.34
					7/19/16	153.02	4432.35
					7/18/17	155.93	4429.44
					7/18/18	158.55	4426.82
ASLD 435	616435	593496.865	3468879.791	4471.34	6/27/13	250.85	4220.49
					9/24/13	250.85	4220.49
					12/3/13	250.79	4220.55
					2/25/14	250.75	4220.59
					6/4/14	250.93	4220.41
					9/10/14	250.97	4220.37
					11/20/14	250.66	4220.68
					3/24/15	250.25	4221.09
					9/17/15	250.17	4221.17
					3/24/16	250.17	4221.17
					9/28/16	250.21	4221.13
					3/20/17	250.55	4220.79
					8/10/17	250.94	4220.40
					3/8/18	251.30	4220.04
					8/22/18	251.57	4219.77
2/14/19	251.93	4219.41					
9/9/19	252.42	4218.92					

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					
1/17/18	131.93	4415.71					
7/25/18	129.03	4418.61					
1/16/19	121.92	4425.72					
7/23/19	130.58	4417.06					
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 ¹	121.30	4418.22					
1/17/18 ¹	113.60	4425.92					
7/25/18 ¹	125.7	4413.82					
1/16/19 ¹	123.0	4416.52					
7/23/19 ¹	126.50	4413.02					
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					
1/17/18	125.86	4414.62					
7/25/18	120.27	4420.21					
1/16/19	115.33	4425.15					
7/23/19	126.48	4414.00					

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					
1/17/18	194.14	4348.37					
7/25/18	132.92	4409.59					
1/16/19	147.85	4394.66					
7/23/19	195.46	4347.05					
BANKS 987	647987	606981.921	3469206.175	4648.18	2/27/08	208.00	4440.18
					5/12/08	216.30	4431.88
					7/21/08	228.95	4419.23
					10/13/08	228.20	4419.98
					1/21/09	206.64	4441.54
					4/8/09	205.50	4442.68
					7/9/09	235.68	4412.50
					10/7/09	236.71	4411.47
					2/25/10	216.98	4431.20
					4/20/10	219.35	4428.83
					7/20/10	235.60	4412.58
					10/20/10	230.24	4417.94
					1/17/11	215.28	4432.90
					4/5/11	221.68	4426.50
					7/11/11	237.39	4410.79
					10/12/11	237.34	4410.84
					1/31/12	228.95	4419.23
					4/11/12	219.39	4428.79
					7/6/12	232.59	4415.59
					10/4/12	237.16	4411.02
					1/18/13	237.81	4410.37
					4/8/13	237.92	4410.26
					7/9/13	238.32	4409.86
					10/15/13	239.48	4408.70
					1/14/14	239.53	4408.65
					4/8/14	231.49	4416.69
					7/8/14	228.85	4419.33
					10/21/14	233.96	4414.22
					1/26/15	230.87	4417.31
					7/24/15	237.53	4410.65
					1/11/16	237.42	4410.76
					7/12/16	232.54	4415.64
					1/17/17	221.90	4426.28
7/26/17	233.25	4414.93					
1/15/18	237.31	4410.87					
7/30/18	237.12	4411.06					
1/15/19	237.21	4410.97					
7/11/19	237.42	4410.76					

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
					1/15/18	113.88	4578.48
7/17/18	113.95	4578.41					
1/15/19	114.27	4578.09					
7/11/19	113.72	4578.64					
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
					5/13/08	367.31	4434.74
BIMA	577927	606001.245	3471852.804	4802.05	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
					8/27/08	62.05	4743.05
					11/11/08	60.95	4744.15
					2/25/09	61.43	4743.67
					4/28/09	62.01	4743.09
8/4/09	62.96	4742.14					
10/27/09	63.61	4741.49					
2/17/10	64.51	4740.59					
4/15/10	65.05	4740.05					
7/7/10	65.83	4739.27					
2/10/11	67.74	4737.36					
7/12/11	69.37	4735.73					
2/8/12	70.33	4734.77					
8/14/12	71.73	4733.37					
2/14/13	72.95	4732.15					
8/14/13	73.82	4731.28					
2/13/14	73.79	4731.31					
7/22/14	74.14	4730.96					
2/4/15	73.70	4731.40					
9/10/15	74.12	4730.98					
3/3/16	74.30	4730.80					
8/17/16	75.02	4730.08					
3/1/17	75.62	4729.48					
7/24/17	76.16	4728.94					
2/14/18	76.97	4728.13					
7/10/18	77.70	4727.40					
2/5/19	78.44	4726.66					
7/31/19	78.42	4726.68					
BMO-2008-1G	909474	606467.681	3471723.644	4805.10	8/27/08	62.05	4743.05
					11/11/08	60.95	4744.15
					2/25/09	61.43	4743.67
					4/28/09	62.01	4743.09
					8/4/09	62.96	4742.14
					10/27/09	63.61	4741.49
					2/17/10	64.51	4740.59
					4/15/10	65.05	4740.05
					7/7/10	65.83	4739.27
					2/10/11	67.74	4737.36
					7/12/11	69.37	4735.73
					2/8/12	70.33	4734.77
					8/14/12	71.73	4733.37
					2/14/13	72.95	4732.15
					8/14/13	73.82	4731.28
					2/13/14	73.79	4731.31
					7/22/14	74.14	4730.96
					2/4/15	73.70	4731.40
					9/10/15	74.12	4730.98
					3/3/16	74.30	4730.80
8/17/16	75.02	4730.08					
3/1/17	75.62	4729.48					
7/24/17	76.16	4728.94					
2/14/18	76.97	4728.13					
7/10/18	77.70	4727.40					
2/5/19	78.44	4726.66					
7/31/19	78.42	4726.68					

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					
2/8/18	147.16	4436.81					
7/10/18	147.92	4436.05					
2/5/19	148.88	4435.09					
8/6/19	149.47	4434.50					
BMO-2008-4B	910096	601099.405	3468383.430	4573.17	12/11/08	130.77	4442.40
					2/18/09	130.58	4442.59
					4/30/09	131.24	4441.93
					8/6/09	131.96	4441.21
					10/27/09	132.04	4441.13
					2/24/10	131.82	4441.35
					4/16/10	132.65	4440.52
					7/2/10	133.20	4439.97
					2/15/11	133.78	4439.39
					7/22/11	134.80	4438.37
					2/23/12	134.64	4438.53
					9/17/12	136.15	4437.02
					1/15/13	136.13	4437.04
					4/15/13	136.78	4436.39
					9/18/13	137.04	4436.13
					1/9/14	136.96	4436.21
					7/18/14	137.49	4435.68
					1/12/16	136.54	4436.63
					9/30/17	138.68	4434.49
					1/18/18	138.71	4434.46
					7/26/18	139.42	4433.75
1/14/19	139.96	4433.21					
7/22/19	140.40	4432.77					

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					
2/8/18	151.97	4433.13					
3/8/18	152.04	4433.06					
4/11/18	152.27	4432.83					
5/29/18	152.32	4432.78					
6/19/18	152.74	4432.36					
7/25/18	152.96	4432.14					
2/4/19	153.41	4431.69					
8/7/19	153.76	4431.34					

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-2008-5M	909552	600445.071	3468994.282	4585.02	10/2/08	146.65	4438.37
					2/18/09	145.97	4439.05
					4/27/09	146.46	4438.56
					8/4/09	147.13	4437.89
					10/29/09	147.68	4437.34
					2/15/10	147.07	4437.95
					4/16/10	147.34	4437.68
					7/7/10	148.28	4436.74
					10/5/10	148.68	4436.34
					2/14/11	148.74	4436.28
					5/12/11	149.66	4435.36
					7/12/11	150.20	4434.82
					12/7/11	150.30	4434.72
					2/3/12	150.05	4434.97
					4/18/12	150.70	4434.32
					7/10/12	151.65	4433.37
					10/16/12	151.77	4433.25
					2/12/13	152.00	4433.02
					5/15/13	152.42	4432.60
					8/20/13	152.76	4432.26
					11/1/13	152.53	4432.49
					2/11/14	151.78	4433.24
					5/7/14	152.26	4432.76
					8/19/14	152.78	4432.24
					11/13/14	152.27	4432.75
					2/3/15	151.61	4433.41
					5/19/15	151.58	4433.44
					9/8/15	151.63	4433.39
					3/14/16	150.87	4434.15
					9/14/16	152.68	4432.34
3/1/17	152.84	4432.18					
8/1/17	153.27	4431.75					
2/8/18	153.03	4431.99					
7/25/18	154.19	4430.83					
2/4/19	154.54	4430.48					
8/7/19	155.00	4430.02					
BMO-2008-6B	909146	600366.523	3469820.644	4627.44	7/16/08	190.13	4437.31
					11/4/08	190.23	4437.21
					2/19/09	189.71	4437.73
					4/27/09	189.99	4437.45
					8/4/09	190.80	4436.64
					10/26/09	191.04	4436.40
					2/15/10	190.82	4436.62
					4/15/10	190.75	4436.69
					7/1/10	191.43	4436.01
					10/5/10	192.50	4434.94
					2/14/11	192.19	4435.25
					5/12/11	192.70	4434.74
					7/12/11	193.30	4434.14
					12/7/11	193.85	4433.59
					2/3/12	193.60	4433.84
					4/18/12	193.90	4433.54
					7/10/12	194.75	4432.69
					10/16/12	195.71	4431.73
					2/12/13	195.42	4432.02
					5/15/13	195.91	4431.53
					8/20/13	196.23	4431.21
					11/1/13	195.77	4431.67
					2/11/14	195.24	4432.20
					5/7/14	195.47	4431.97
					8/19/14	196.36	4431.08
					11/13/14	195.74	4431.70
					2/3/15	195.12	4432.32
					5/19/15	195.00	4432.44
					9/8/15	195.48	4431.96
					10/21/15	195.37	4432.07
3/14/16	195.00	4432.44					
9/14/16	196.36	4431.08					
3/1/17	196.33	4431.11					
7/10/17	196.88	4430.56					
2/8/18	197	4430.44					
7/10/18	197.57	4429.87					
2/4/19	197.89	4429.55					
8/6/19	198.57	4428.87					

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)
BMO-2008-6M	909019	600367.943	3469813.885	4626.90	7/10/08	191.63	4435.27
					11/4/08	190.25	4436.65
					2/20/09	190.70	4436.20
					4/28/09	190.98	4435.92
					8/4/09	191.77	4435.13
					10/26/09	192.14	4434.76
					2/15/10	191.78	4435.12
					4/15/10	191.64	4435.26
					7/1/10	192.53	4434.37
					10/5/10	192.96	4433.94
					2/14/11	193.14	4433.76
					5/12/11	193.68	4433.22
					7/12/11	194.47	4432.43
					12/7/11	194.92	4431.98
					2/3/12	194.65	4432.25
					4/18/12	195.00	4431.90
					7/10/12	196.10	4430.80
					10/16/12	196.53	4430.37
					2/12/13	196.45	4430.45
					5/15/13	196.90	4430.00
					8/20/13	197.43	4429.47
					11/1/13	196.53	4430.37
					2/11/14	196.18	4430.72
					5/7/14	196.33	4430.57
					8/19/14	197.40	4429.50
					11/13/14	196.32	4430.58
					2/3/15	195.90	4431.00
					5/19/15	195.64	4431.26
					9/8/15	196.32	4430.58
					3/14/16	195.87	4431.03
9/14/16	197.37	4429.53					
3/1/17	197.24	4429.66					
7/10/17	197.92	4428.98					
2/8/18	197.96	4428.94					
7/10/18	198.63	4428.27					
2/4/19	198.78	4428.12					
8/6/19	199.61	4427.29					

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)
BMO-2008-7M	908794	603099.165	3470029.283	4688.33	7/14/08	238.31	4450.02
					11/6/08	239.69	4448.64
					2/18/09	238.90	4449.43
					5/11/09	239.03	4449.30
					8/6/09	239.17	4449.16
					10/27/09	239.55	4448.78
					2/17/10	239.98	4448.35
					4/15/10	240.13	4448.20
					7/6/10	240.28	4448.05
					2/14/11	241.26	4447.07
					7/15/11	241.81	4446.52
					1/30/12	242.44	4445.89
					7/11/12	243.0	4445.33
					2/15/13	243.8	4444.53
					8/28/13	244.32	4444.01
					2/13/14	244.31	4444.02
					7/22/14	244.66	4443.67
					2/5/15	243.91	4444.42
					9/14/15	244.59	4443.74
					3/16/16	244.91	4443.42
8/18/16	245.23	4443.10					
3/7/17	245.44	4442.89					
7/10/17	245.73	4442.60					
2/1/18	245.82	4442.51					
7/23/18	246.18	4442.15					
2/11/19	246.46	4441.87					
8/8/19	246.80	4441.53					
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
					2/1/11	299.56	4453.69
					5/13/11	299.78	4453.47
					7/15/11	300.00	4453.25
					1/30/12	300.52	4452.73
					7/12/12	301.15	4452.10
					2/13/13	302.05	4451.20
					8/12/13	302.48	4450.77
					7/24/14	301.86	4451.39
					2/5/15	299.56	4453.69
					9/15/15	300.14	4453.11
					3/16/16	300.76	4452.49
					9/15/16	301.26	4451.99
3/7/17	301.61	4451.64					
7/10/17	301.89	4451.36					
2/1/18	301.83	4451.42					
7/23/18	302.83	4450.42					
2/11/19	302.84	4450.41					
8/8/19	303.42	4449.83					

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-2008-8M	909711	604167.912	3471127.902	4752.45	12/9/08	299.79	4452.66
					2/19/09	298.32	4454.13
					5/5/09	298.27	4454.18
					8/10/09	298.57	4453.88
					11/5/09	298.81	4453.64
					3/3/10	299.18	4453.27
					4/16/10	299.42	4453.03
					7/1/10	299.70	4452.75
					1/24/11	300.46	4451.99
					5/13/11	301.00	4451.45
					7/15/11	300.96	4451.49
					1/30/12	301.60	4450.85
					7/12/12	302.45	4450.00
					2/14/13	303.07	4449.38
					8/12/13	303.60	4448.85
					2/19/14	303.11	4449.34
					7/24/14	303.48	4448.97
					2/5/15	301.98	4450.47
					9/15/15	302.46	4449.99
					3/16/16	303.19	4449.26
					9/15/16	303.43	4449.02
					3/7/17	303.85	4448.60
					7/10/17	304.09	4448.36
2/1/18	303.94	4448.51					
7/23/18	304.20	4448.25					
2/11/19	304.09	4448.36					
8/8/19	304.8	4447.65					
BMO-2008-9M	909255	604668.669	3471121.675	4762.61	8/8/08	287.17	4475.44
					11/5/08	287.65	4474.96
					2/26/09	285.65	4476.96
					5/12/09	285.28	4477.33
					8/17/09	286.09	4476.52
					11/3/09	286.55	4476.06
					3/4/10	287.45	4475.16
					4/6/10	287.81	4474.80
					7/1/10	288.26	4474.35
					2/10/11	289.77	4472.84
					5/13/11	290.47	4472.14
					7/15/11	290.95	4471.66
					2/1/12	293.44	4469.17
					7/12/12	294.65	4467.96
					2/13/13	296.67	4465.94
					8/12/13	297.63	4464.98
					2/18/14	293.68	4468.93
					7/24/14	293.53	4469.08
					2/5/15	286.01	4476.60
					9/14/15	286.34	4476.27
					3/16/16	287.22	4475.39
					9/15/16	289.35	4473.26
					3/7/17	289.83	4472.78
7/11/17	291.03	4471.58					
2/1/18	289.66	4472.95					
7/26/18	291.78	4470.83					
2/11/19	291.42	4471.19					
8/12/19	292.67	4469.94					

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-2008-10GL	909435	605264.072	3471702.043	4792.21	8/20/08	521.75	4270.46
					11/5/08	520.50	4271.71
					2/25/09	516.72	4275.49
					5/12/09	514.68	4277.53
					8/11/09	513.23	4278.98
					11/2/09	509.43	4282.78
					3/4/10	510.88	4281.33
					4/8/10	506.31	4285.90
					7/2/10	511.80	4280.41
					7/13/11	512.16	4280.05
					2/2/12	511.34	4280.87
					7/13/12	510.90	4281.31
					2/18/13	509.91	4282.30
					8/13/13	509.32	4282.89
					8/7/14	507.21	4285.00
					2/10/15	463.22	4328.99
					9/14/15	439.93	4352.28
					3/16/16	364.33	4427.88
					8/17/16	337.26	4454.95
					3/7/17	332.86	4459.35
7/11/17	337.89	4454.32					
2/1/18	337.84	4454.37					
7/26/18	333.28	4458.93					
1/28/19	326.80	4465.41					
8/1/19	316.92	4475.29					
BMO-2008-10GU	909272	605267.551	3471731.866	4793.45	8/4/08	299.28	4494.17
					11/5/08	295.89	4497.56
					2/25/09	289.84	4503.61
					5/6/09	289.35	4504.10
					8/11/09	289.09	4504.36
					11/2/09	289.77	4503.68
					3/10/10	289.58	4503.87
					4/7/10	289.5	4503.95
					7/6/10	288.93	4504.52
					7/13/11	301.02	4492.43
					2/1/12	326.51	4466.94
					7/13/12	328.7	4464.75
					8/19/13	283.97	4509.48
					2/10/15	207.58	4585.87
					9/14/15	200.36	4593.09
					3/16/16	195.53	4597.92
					8/17/16	201.47	4591.98
					3/7/17	210.83	4582.62
					8/9/17	201.50	4591.95
					2/1/18	201.09	4592.36
7/26/18	200.53	4592.92					
1/28/19	201.56	4591.89					
8/1/19	200.43	4593.02					
BMO-2008-11G	909434	603800.995	3472626.482	4844.67	8/22/08	577.76	4266.91
					11/12/08	576.80	4267.87
					2/26/09	575.91	4268.76
					4/8/09	575.46	4269.21
					8/12/09	574.84	4269.83
					11/9/09	573.41	4271.26
					3/1/10	573.68	4270.99
					4/9/10	573.56	4271.11
					7/1/10	572.97	4271.70
					2/10/11	571.61	4273.06
					7/22/11	571.20	4273.47
					1/31/12	569.83	4274.84
					8/14/12	569.70	4274.97
					2/13/13	568.75	4275.92
					8/27/13	566.50	4278.17
					2/19/14	564.68	4279.99
					8/14/14	564.24	4280.43
					2/5/15	560.60	4284.07
					9/14/15	557.84	4286.83
					3/15/16	556.04	4288.63
8/17/16	554.94	4289.73					
3/2/17	554.27	4290.40					
7/11/17	554.02	4290.65					
2/12/18	552.11	4292.56					
7/12/18	552.20	4292.47					
1/28/19	550.72	4293.95					
8/6/19	550.89	4293.78					

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-2008-13B	909551	601657.612	3470076.358	4649.21	10/3/08	206.42	4442.79
					2/17/09	206.11	4443.10
					5/6/09	206.32	4442.89
					8/5/09	206.79	4442.42
					10/28/09	207.08	4442.13
					2/16/10	207.26	4441.95
					4/14/10	207.27	4441.94
					7/6/10	207.68	4441.53
					2/10/11	208.51	4440.70
					5/13/11	208.95	4440.26
					7/15/11	209.36	4439.85
					2/9/12	209.78	4439.43
					7/11/12	210.60	4438.61
					2/27/13	211.40	4437.81
					9/4/13	212.15	4437.06
					8/19/14	212.68	4436.53
					2/4/15	212.28	4436.93
					9/15/15	212.37	4436.84
					3/16/16	211.95	4437.26
					9/21/16	212.84	4436.37
3/7/17	213.15	4436.06					
8/2/17	213.57	4435.64					
2/1/18	213.6	4435.61					
8/6/18	214.22	4434.99					
2/1/19	214.79	4434.42					
8/20/19	215.16	4434.05					
BMO-2008-13M	909760	601650.495	3470040.455	4647.15	12/3/08	206.00	4441.15
					2/17/09	208.74	4438.41
					4/29/09	208.53	4438.62
					8/5/09	208.85	4438.30
					10/28/09	208.91	4438.24
					2/16/10	209.16	4437.99
					4/13/10	209.20	4437.95
					7/2/10	209.30	4437.85
					2/10/11	210.36	4436.79
					5/13/11	210.50	4436.65
					7/15/11	210.67	4436.48
					2/6/12	210.90	4436.25
					8/13/12	211.42	4435.73
					2/15/13	212.13	4435.02
					9/6/13	212.52	4434.63
					8/20/14	213.14	4434.01
					2/4/15	212.97	4434.18
					9/15/15	212.91	4434.24
					3/16/16	212.76	4434.39
					9/21/16	213.22	4433.93
3/7/17	213.6	4433.55					
8/15/17	213.71	4433.44					
2/1/18	214.09	4433.06					
8/6/18	214.37	4432.78					
2/1/19	214.57	4432.58					
8/20/19	215.1	4432.05					

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					
2/1/18	213.31	4505.24					
8/7/18	214.94	4503.61					
2/11/19	213.87	4504.68					
7/30/19	214.78	4503.77					
BMO-2010-2M	219958	605685.549	3470564.646	4746.16	9/7/10	264.13	4482.03
					11/11/10	263.94	4482.22
					2/10/11	264.13	4482.03
					5/13/11	266.97	4479.19
					7/14/11	268.05	4478.11
					12/13/11	270.98	4475.18
					1/30/12	271.50	4474.66
					4/18/12	272.31	4473.85
					7/9/12	273.20	4472.96
					10/17/12	274.27	4471.89
					2/13/13	275.52	4470.64
					5/8/13	276.05	4470.11
					8/15/13	278.76	4467.40
					11/4/13	273.26	4472.90
					2/12/14	271.44	4474.72
					5/8/14	270.65	4475.51
					8/14/14	270.78	4475.38
					11/12/14	263.19	4482.97
					2/5/15	259.84	4486.32
					9/14/15	260.92	4485.24
3/16/16	261.81	4484.35					
9/13/16	264.66	4481.50					
3/7/17	265.47	4480.69					
7/12/17	267.14	4479.02					
2/1/18	266.24	4479.92					
8/7/18	268.92	4477.24					
2/11/19	268.25	4477.91					
7/30/19	269.21	4476.95					

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-2010-3B	219970	599977.962	3468347.363	4550.59	7/28/10	115.38	4435.21
					11/10/10	115.80	4434.79
					1/20/11	115.46	4435.13
					4/7/11	116.11	4434.48
					7/13/11	117.30	4433.29
					10/13/11	117.72	4432.87
					2/2/12	117.18	4433.41
					4/24/12	117.92	4432.67
					7/5/12	118.84	4431.75
					10/18/12	119.13	4431.46
					1/16/13	118.89	4431.70
					4/16/13	119.36	4431.23
					7/23/13	120.02	4430.57
					10/8/13	119.63	4430.96
					1/15/14	118.96	4431.63
					5/13/14	119.40	4431.19
					7/15/14	120.06	4430.53
					10/14/14	119.16	4431.43
					1/28/15	118.46	4432.13
					5/18/15	118.49	4432.10
					7/22/15	118.81	4431.78
					10/6/15	118.06	4432.53
					2/2/16	117.39	4433.20
					7/12/16	119.21	4431.38
					1/18/17	119.89	4430.70
					7/11/17	120.51	4430.08
1/8/18	119.84	4430.75					
7/10/18	121.45	4429.14					
1/8/19	121.92	4428.67					
7/16/19	122.49	4428.10					
BMO-2010-3M	219969	599970.801	3468353.543	4550.53	7/30/10	118.63	4431.90
					11/10/10	118.75	4431.78
					1/20/11	118.32	4432.21
					4/7/11	119.09	4431.44
					8/25/11	120.74	4429.79
					10/13/11	120.67	4429.86
					2/2/12	119.91	4430.62
					4/24/12	120.93	4429.60
					7/5/12	122.05	4428.48
					10/18/12	122.06	4428.47
					1/16/13	121.86	4428.67
					4/16/13	122.26	4428.27
					7/23/13	122.97	4427.56
					10/8/13	121.91	4428.62
					1/15/14	120.91	4429.62
					5/13/14	121.90	4428.63
					7/15/14	121.92	4428.61
					10/14/14	121.87	4428.66
					1/28/15	120.63	4429.90
					5/18/15	120.48	4430.05
					7/22/15	120.42	4430.11
					10/6/15	119.44	4431.09
					2/2/16	118.65	4431.88
					7/12/16	121.56	4428.97
					1/18/17	122.27	4428.26
					7/11/17	122.85	4427.68
1/8/18	121.24	4429.29					
7/10/18	124.08	4426.45					
1/8/19	123.97	4426.56					
7/16/19	124.81	4425.72					

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)
BMO-2012-1M	221388	606097.384	3469746.747	4719.76	11/13/12	231.90	4487.86
					2/27/13	233.20	4486.56
					5/8/13	233.97	4485.79
					8/14/13	233.96	4485.80
					11/1/13	230.44	4489.32
					2/13/14	229.85	4489.91
					5/8/14	229.89	4489.87
					7/22/14	229.94	4489.82
					11/13/14	225.37	4494.39
					2/4/15	222.57	4497.19
					9/10/15	221.60	4498.16
					3/3/16	214.86	4504.90
					8/17/16	215.57	4504.19
					3/2/17	216.10	4503.66
					7/24/17	217.59	4502.17
8/21/17	217.55	4502.21					
2/13/18	217.58	4502.18					
7/16/18	219.60	4500.16					
1/29/19	218.63	4501.13					
7/31/19	220.01	4499.75					
BMO-2014-1BL	917394	600563.194	3468234.798	4558.45	11/7/14	123.03	4434.15
					1/29/15	123.53	4434.92
					4/15/15	123.45	4435.00
					5/18/15	123.93	4434.52
					7/29/15	124.22	4434.23
					10/7/15	123.58	4434.87
					2/4/16	123.17	4435.28
					4/6/16	123.61	4434.84
					7/14/16	124.85	4433.60
					11/2/16	124.93	4433.52
					1/24/17	124.57	4433.88
					7/13/17	126.19	4432.26
					1/10/18	125.47	4432.98
					7/12/18	127.11	4431.34
					1/10/19	126.62	4431.83
7/18/19	127.19	4431.26					
BMO-2014-1BU	917393	600570.805	3468231.440	4558.54	11/13/14	123.51	4433.67
					1/28/15	123.74	4434.80
					4/15/15	123.90	4434.64
					5/18/15	124.42	4434.12
					7/29/15	124.65	4433.89
					10/7/15	123.97	4434.57
					2/4/16	123.43	4435.11
					4/6/16	123.90	4434.64
					7/14/16	125.23	4433.31
					11/2/16	125.32	4433.22
					1/24/17	124.86	4433.68
					7/13/17	126.42	4432.12
					1/10/18	125.73	4432.81
					7/12/18	127.19	4431.35
					1/10/19	126.86	4431.68
7/18/19	127.48	4431.06					
BMO-2014-2BL	917452	600784.872	3468183.921	4561.80	11/20/14	126.15	4434.16
					1/29/15	126.74	4435.06
					4/15/15	126.70	4435.10
					5/18/15	127.18	4434.62
					7/29/15	127.43	4434.37
					10/7/15	126.90	4434.90
					2/4/16	126.68	4435.12
					4/6/16	126.77	4435.03
					7/14/16	127.85	4433.95
					11/2/16	128.39	4433.41
					1/24/17	127.73	4434.07
					9/6/17	128.56	4433.24
					1/10/18	129.09	4432.71
					7/12/18	129.61	4432.19
					1/10/19	129.96	4431.84
7/18/19	130.42	4431.38					

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-2014-2BU	917453	600788.520	3468192.762	4560.31	12/1/14	126.73	4433.58
				4561.85	1/30/15	126.73	4435.12
					4/15/15	126.65	4435.20
					5/18/15	127.21	4434.64
					7/29/15	127.49	4434.36
					10/7/15	126.94	4434.91
					2/4/16	126.56	4435.29
					4/6/16	126.81	4435.04
					7/14/16	127.93	4433.92
					11/2/16	128.37	4433.48
					1/24/17	127.75	4434.10
					7/13/17	129.07	4432.78
					1/10/18	129.01	4432.84
					7/12/18	129.67	4432.18
1/10/19	129.99	4431.86					
7/18/19	130.46	4431.39					
BMO-2014-3BL	917527	600822.399	3467786.416	4572.213	2/13/15	136.57	4435.64
				4573.765	4/15/15	138.35	4435.42
					5/18/15	138.64	4435.13
					7/29/15	138.86	4434.91
					10/7/15	138.51	4435.26
					2/4/16	138.14	4435.63
					4/6/16	138.39	4435.38
					7/14/16	139.44	4434.33
					11/2/16	139.66	4434.11
					1/25/17	139.54	4434.23
					7/13/17	140.74	4433.03
					1/11/18	140.48	4433.29
					1/12/18	140.56	4433.21
					7/12/18	141.74	4432.03
1/10/19	142.01	4431.76					
7/18/19	142.49	4431.28					
BMO-2014-3BU	917494	600810.534	3467787.733	4572.213	2/24/15	137.91	4434.30
				4574.887	4/15/15	139.45	4435.44
					5/18/15	139.74	4435.15
					7/29/15	140.03	4434.86
					10/7/15	139.64	4435.25
					2/4/16	139.20	4435.69
					4/6/16	139.48	4435.41
					7/14/16	140.55	4434.34
					11/2/16	140.83	4434.06
					1/25/17	140.66	4434.23
					7/13/17	140.80	4434.09
					1/11/18	141.50	4433.39
					1/12/18	141.52	4433.37
					7/12/18	141.65	4433.24
1/10/19	143.12	4431.77					
7/18/19	143.56	4431.33					
BMO-2014-4B	917620	600508.792	3468581.267	4566.453	3/4/15	132.43	4434.02
				4567.672	4/14/15	133.60	4434.07
					5/18/15	133.85	4433.82
					7/23/15	134.27	4433.40
					10/6/15	133.74	4433.93
					2/3/16	133.04	4434.63
					4/5/16	133.25	4434.42
					7/13/16	134.64	4433.03
					11/1/16	134.87	4432.80
					1/23/17	134.41	4433.26
					7/12/17	135.68	4431.99
					1/9/18	135.05	4432.62
					7/11/18	136.51	4431.16
					1/9/19	136.53	4431.14
7/17/19	137.00	4430.67					
BMO-2014-4BL	917619	600498.091	3468566.229	4566.453	3/1/15	131.89	4434.56
				4567.045	4/14/15	132.95	4434.10
					5/18/15	133.23	4433.82
					7/23/15	133.67	4433.38
					10/6/15	133.16	4433.89
					2/3/16	132.43	4434.62
					4/5/16	132.67	4434.38
					8/25/16	133.82	4433.23
					11/1/16	134.30	4432.75
					1/23/17	133.85	4433.20
					7/12/17	135.10	4431.95
					1/9/18	134.47	4432.58
					7/11/18	136.07	4430.98
					1/9/19	135.95	4431.10
7/17/19	136.44	4430.61					

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)
BMO-2015-1B	917622	600261.991	3468563.389	4561.382	3/15/15	128.05	4433.33
				4562.063	4/14/15	129.10	4432.96
					5/18/15	129.24	4432.82
					7/23/15	129.62	4432.44
					10/6/15	129.02	4433.04
					2/3/16	128.41	4433.65
					4/5/16	128.45	4433.61
					8/25/16	130.05	4432.01
					11/1/16	130.38	4431.68
					1/23/17	130.28	4431.78
					7/12/17	131.14	4430.92
					1/9/18	130.50	4431.56
					7/11/18	131.87	4430.19
					1/9/19	132.24	4429.82
7/17/19	132.79	4429.27					
BMO-2015-1BL	917621	600272.479	3468583.092	4561.382	3/12/15	129.10	4432.28
				4563.402	4/14/15	130.45	4432.95
					5/18/15	130.59	4432.81
					7/23/15	130.98	4432.42
					10/6/15	130.30	4433.10
					2/3/16	129.75	4433.65
					4/5/16	129.81	4433.59
					7/13/16	131.31	4432.09
					11/1/16	131.66	4431.74
					1/23/17	131.58	4431.82
					7/12/17	132.46	4430.94
					1/9/18	131.79	4431.61
					7/11/18	133.21	4430.19
					1/9/19	133.52	4429.88
7/17/19	134.09	4429.31					
BMO-2015-2B	917827	600267.799	3468996.635	4579.624	3/19/15	147.17	4432.45
				4582.082	4/14/15	149.05	4433.03
					5/18/15	149.18	4432.90
					7/23/15	149.47	4432.61
					10/6/15	148.94	4433.14
					2/3/16	148.45	4433.63
					4/5/16	148.37	4433.71
					7/13/16	149.88	4432.20
					11/1/16	150.30	4431.78
					1/23/17	150.12	4431.96
					7/12/17	150.99	4431.09
					1/9/18	150.43	4431.65
					7/11/18	151.72	4430.36
					1/9/19	152.10	4429.98
7/17/19	152.71	4429.37					

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					
					1/9/18	149.09	4431.55					
					7/11/18	150.39	4430.25					
					1/9/19	150.76	4429.88					
7/17/19	151.37	4429.27										
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					
					4/22/08	606.55	4249.75					
BURKE	212268	602230.087	3473029.816	4856.30	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					

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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					
1/11/18	131.72	4434.49					
7/17/18	132.56	4433.65					
1/15/19	133.13	4433.08					
7/24/19	133.54	4432.67					
COB MW-3	906823	599169.225	3468726.000	4538.63	2/28/08	120.84	4417.79
					5/20/08	125.00	4413.63
					7/30/08	118.50	4420.13
					10/23/08	117.93	4420.70
					2/12/09	110.91	4427.72
					4/23/09	125.13	4413.50
					7/22/09	124.09	4414.54
					10/22/09	118.03	4420.60
					3/3/10	120.14	4418.49
					4/26/10	123.12	4415.51
					7/13/10	128.60	4410.03
					7/14/11	132.41	4406.22
					7/12/12	133.89	4404.74
					2/5/13	123.68	4414.95
					7/25/13	129.05	4409.58
					1/6/14	127.52	4411.11
					7/9/14	124.19	4414.44
					2/4/15	115.11	4423.52
					7/27/15	118.39	4420.24
					10/7/15	114.37	4424.26
					1/11/16	112.93	4425.70
					7/20/16	120.25	4418.38
					1/27/17	126.14	4412.49
					7/19/17	120.70	4417.93
					1/11/18	116.02	4422.61
					7/17/18	125.77	4412.86
1/15/19	125.53	4413.10					
7/24/19	127.73	4410.90					

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Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
COB WL	593116	606357.506	3472502.012	4832.06	2/22/08	56.50	4775.56
					5/20/08	57.50	4774.56
					7/30/08	58.64	4773.42
					10/23/08	58.76	4773.30
					2/12/09	58.89	4773.17
					4/23/09	59.73	4772.33
					7/22/09	61.27	4770.79
					10/22/09	62.82	4769.24
					3/3/10	65.24	4766.82
					4/26/10	66.13	4765.93
					7/13/10	67.52	4764.54
					7/14/11	73.86	4758.20
					7/12/12	78.85	4753.21
					2/5/13	82.41	4749.65
					7/25/13	81.36	4750.70
					7/9/14	78.12	4753.94
					2/4/15	58.14	4773.92
					7/27/15	80.09	4751.97
					1/11/16	81.72	4750.34
					7/20/16	84.80	4747.26
1/25/17	87.06	4745.00					
7/14/17	89.96	4742.10					
1/11/18	89.87	4742.19					
7/9/18	91.48	4740.58					
1/7/19	91.73	4740.33					
7/15/19	92.89	4739.17					
COLLINS	565260	602551.286	3471341.335	4733.72	2/12/08	289.47	4444.25
					5/29/08	288.53	4445.19
					7/31/08	290.08	4443.64
					10/20/08	290.15	4443.57
					4/21/09	290.66	4443.06
					7/20/09	290.78	4442.94
					10/20/09	290.52	4443.20
					2/2/10	291.64	4442.08
					4/23/10	291.96	4441.76
					7/20/10	292.21	4441.51
COOPER C	637069	601349.987	3468913.011	4599.14	3/4/08	155.08	4444.06
					5/5/08	155.34	4443.80
					7/15/08	156.01	4443.13
					10/16/08	155.85	4443.29
					1/27/09	155.62	4443.52
					4/14/09	155.86	4443.28
					7/14/09	156.50	4442.64
					10/12/09	156.89	4442.25
					1/27/10	157.03	4442.11
					4/22/10	157.31	4441.83
					7/21/10	158.00	4441.14
					10/20/10	158.41	4440.73
					1/17/11	158.37	4440.77
					4/11/11	158.74	4440.40
					8/26/11	159.51	4439.63
					10/13/11	159.81	4439.33
					2/1/12	159.80	4439.34
					4/25/12	160.26	4438.88
					7/12/12	160.88	4438.26
					10/10/12	161.10	4438.04
					2/27/13	161.40	4437.74
					5/8/13	161.70	4437.44
					8/13/13	162.07	4437.07
					11/1/13	162.23	4436.91
					2/10/14	161.90	4437.24
					5/7/14	162.63	4436.51
					7/21/14	162.67	4436.47
					11/13/14	162.48	4436.66
					5/19/15	162.14	4437.00
					9/10/15	162.14	4437.00
10/21/15	162.17	4436.97					
3/16/16	161.76	4437.38					
8/18/16	162.78	4436.36					
7/13/17	162.68	4436.46					
2/5/18	163.66	4435.48					
7/25/18	164.42	4434.72					
1/28/19	164.72	4434.42					
8/19/19	165.43	4433.71					

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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					
1/17/18	101.44	4584.90					
7/30/18	117.18	4569.16					
1/15/19	105.08	4581.26					
7/9/19	104.16	4582.18					
DOUGLASS 791	592791	607632.993	3470222.677	4703.27	2/13/08	22.11	4681.16
					5/13/08	24.60	4678.67
					7/22/08	27.00	4676.27
					10/16/08	23.60	4679.67
					1/19/09	26.51	4676.76
					4/8/09	28.53	4674.74
					7/7/09	31.04	4672.23
					10/5/09	31.49	4671.78
					1/21/10	34.55	4668.72
					4/19/10	36.40	4666.87
					7/12/10	36.74	4666.53
					1/18/11	25.96	4677.31
					1/30/12	27.72	4675.55
					4/11/12	29.99	4673.28
					7/5/12	32.67	4670.60
					1/9/13	27.24	4676.03
					7/8/13	32.70	4670.57
					1/6/14	23.56	4679.71
					7/7/14	28.22	4675.05
					7/20/15	30.86	4672.41
					7/11/16	32.09	4671.18
7/13/17	31.58	4671.69					
8/1/18	36.48	4666.79					
7/11/19	27.35	4675.92					

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Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
DOUGLASS 792	592792	607607.541	3469829.115	4681.73	2/13/08	87.76	4593.97
					5/13/08	87.21	4594.52
					7/22/08	86.90	4594.83
					10/16/08	86.45	4595.28
					1/20/09	86.26	4595.47
					4/8/09	86.04	4595.69
					7/7/09	86.16	4595.57
					10/5/09	86.19	4595.54
					1/21/10	86.45	4595.28
					4/19/10	87.19	4594.54
					7/12/10	87.55	4594.18
					1/18/11	87.8	4593.93
					7/12/11	88.38	4593.35
					1/30/12	88.92	4592.81
					4/11/12	89.18	4592.55
					7/5/12	95.64	4586.09
					1/9/13	82.60	4599.13
					7/8/13	83.66	4598.07
					1/6/14	83.55	4598.18
					7/7/14	82.43	4599.30
7/20/15	82.57	4599.16					
7/11/16	83.48	4598.25					
7/13/17	84.43	4597.30					
8/1/18	85.76	4595.97					
7/11/19	85.39	4596.34					
EAST	599796	607076.365	3468712.215	4626.01	2/8/08	50.20	4575.81
					5/14/08	52.45	4573.56
					7/23/08	52.16	4573.85
					10/14/08	52.19	4573.82
					1/20/09	50.52	4575.49
					4/8/09	51.91	4574.10
					7/13/09	56.93	4569.08
					10/8/09	60.95	4565.06
					1/25/10	59.35	4566.66
					4/21/10	58.88	4567.13
					7/14/10	61.86	4564.15
					10/20/10	61.20	4564.81
					1/18/11	59.79	4566.22
					4/5/11	59.73	4566.28
					7/12/11	63.79	4562.22
					10/12/11	63.64	4562.37
					1/31/12	63.82	4562.19
					4/11/12	65.72	4560.29
					7/9/12	70.50	4555.51
					10/4/12	73.34	4552.67
					1/17/13	75.04	4550.97
					4/9/13	78.05	4547.96
					7/9/13	78.37	4547.64
					10/15/13	72.38	4553.63
					1/14/14	71.88	4554.13
					4/8/14	71.03	4554.98
					7/8/14	72.03	4553.98
					10/22/14	67.75	4558.26
7/24/15	74.64	4551.37					
7/12/16	65.02	4560.99					
7/27/17	67.11	4558.90					
7/30/18	77.95	4548.06					
7/17/19	79.28	4546.73					
ECHAVE	219449	599701	3470168	4648	2/1/12	216.71	4431.29
					1/18/13	218.41	4429.59
					7/28/17	220.49	4427.51
					2/23/18	219.94	4428.06
					7/17/18	220.37	4427.63
					1/15/19	220.49	4427.51
7/23/19	220.93	4427.07					

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)
EPPELE 641	805641	607165.354	3469229.942	4642.86	3/11/08	29.52	4613.34
					5/12/08	30.64	4612.22
					7/21/08	25.59	4617.27
					10/14/08	24.53	4618.33
					1/21/09	27.35	4615.51
					4/8/09	29.08	4613.78
					7/9/09	31.51	4611.35
					10/7/09	29.92	4612.94
					7/20/10	50.38	4592.48
					10/20/10	48.88	4593.98
					1/17/11	51.13	4591.73
					4/5/11	53.81	4589.05
					7/11/11	56.82	4586.04
					10/12/11	37.62	4605.24
					1/31/12	46.80	4596.06
					4/11/12	52.07	4590.79
					7/6/12	62.39	4580.47
					10/3/12	71.66	4571.20
					1/17/13	59.73	4583.13
					4/8/13	83.98	4558.88
					7/9/13	92.84	4550.02
					10/15/13	28.50	4614.36
					1/14/14	49.32	4593.54
4/8/14	52.03	4590.83					
7/8/14	66.62	4576.24					
10/21/14	24.56	4618.30					
7/24/15	41.32	4601.54					
7/12/16	38.41	4604.45					
7/27/17	48.58	4594.28					
7/31/18	62.29	4580.57					
7/19/19	29.30	4613.56					
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
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					
FRANCO 383	221383	602817.854	3468831.563	4636.88	9/13/12	195.19	4441.69
					10/5/12	195.00	4441.88
					12/3/12	196.70	4440.18
					1/15/13	196.30	4440.58
					2/6/13	195.62	4441.26
					3/7/13	196.20	4440.68
					4/10/13	196.25	4440.63
					7/10/13	196.13	4440.75
					10/16/13	196.30	4440.58
					1/14/14	196.46	4440.42
					4/8/14	196.89	4439.99
					7/14/14	196.87	4440.01
					10/8/14	196.86	4440.02
					7/27/15	198.11	4438.77
					7/18/16	197.32	4439.56
					7/20/17	198.37	4438.51
					7/27/18	198.73	4438.15
				4635.79	7/24/19	199.56	4436.23

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
GARNER 557	558557	602659.240	3468962.415	4638.45	7/14/10	119.86	4523.06
					2/21/08	191.05	4447.40
					5/5/08	191.28	4447.17
					7/15/08	191.44	4447.01
					10/16/08	191.83	4446.62
					1/28/09	191.92	4446.53
					4/15/09	192.09	4446.36
					7/16/09	192.52	4445.93
					10/14/09	192.82	4445.63
					2/2/10	193.33	4445.12
					4/22/10	193.49	4444.96
					7/20/10	193.93	4444.52
					10/19/10	194.29	4444.16
					1/19/11	194.61	4443.84
					4/6/11	194.86	4443.59
					7/15/11	195.25	4443.20
					10/11/11	195.72	4442.73
					2/2/12	196.09	4442.36
					4/13/12	196.30	4442.15
					7/11/12	196.72	4441.73
10/5/12	197.08	4441.37					
1/11/13	197.51	4440.94					
4/15/13	197.76	4440.69					
7/10/13	197.87	4440.58					
10/11/13	198.27	4440.18					
1/17/14	198.46	4439.99					
4/15/14	198.58	4439.87					
GARNER 635	587635	602665.352	3468967.902	4640.74	2/4/08	193.20	4447.54
					5/5/08	195.90	4444.84
					7/15/08	193.58	4447.16
					10/15/08	194.35	4446.39
					1/28/09	194.80	4445.94
					4/15/09	195.54	4445.20
					7/16/09	194.88	4445.86
					10/14/09	196.36	4444.38
					2/2/10	195.32	4445.42
					4/22/10	196.01	4444.73
					8/25/10	195.57	4445.17
					10/19/10	225.83	4414.91
					1/19/11	196.89	4443.85
					4/6/11	197.40	4443.34
					7/15/11	198.07	4442.67
					10/11/11	197.75	4442.99
					2/2/12	199.50	4441.24
					4/13/12	200.40	4440.34
					7/11/12	199.15	4441.59
					10/5/12	202.71	4438.03
					1/11/13	199.38	4441.36
					4/15/13	200.53	4440.21
					7/10/13	200.13	4440.61
					10/11/13	200.27	4440.47
					1/17/14	201.83	4438.91
					4/15/14	200.67	4440.07
					7/26/17	202.02	4438.72
1/16/18	202.07	4438.67					
7/24/18	205.65	4435.09					
1/15/19	203.03	4437.71					
7/15/19	208.66	4432.08					

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
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					
1/15/18	193.12	4438.01					
7/17/18	193.56	4437.57					
1/7/19	194.16	4436.97					
7/8/19	194.68	4436.45					

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
					7/1/12	169.10	4438.50
					10/17/12	169.40	4438.20
					2/15/13	169.70	4437.90
					5/8/13	169.95	4437.65
					8/13/13	170.31	4437.29
					11/1/13	170.54	4437.06
					2/10/14	170.22	4437.38
					5/7/14	170.61	4436.99
					7/21/14	170.90	4436.70
					11/13/14	170.81	4436.79
					2/4/15	170.26	4437.34
					5/19/15	170.37	4437.23
					9/10/15	170.57	4437.03
					10/21/15	170.58	4437.02
					3/16/16	170.33	4437.27
					8/18/16	171.05	4436.55
3/7/17	171.41	4436.19					
7/13/17	172.00	4435.60					
2/5/18	172.12	4435.48					
7/25/18	172.74	4434.86					
1/28/19	173.29	4434.31					
8/7/19	173.88	4433.72					
HOWARD 312	221312	601308.920	3468772.630	4594.9356	8/14/12	188.36	4406.58
					10/16/12	193.33	4401.61
					2/6/13	193.74	4401.20
					4/9/13	195.30	4399.64
					7/12/13	198.27	4396.67
					10/16/13	201.08	4393.86
					1/8/14	202.61	4392.33
					4/10/14	204.64	4390.30
					7/14/14	206.97	4387.97
					10/10/14	206.36	4388.58
					5/19/15	208.08	4386.86
					7/31/15	210.54	4384.40
					7/27/16	207.89	4387.05
					7/21/17	207.54	4387.40
					7/23/18	204.95	4389.99
7/9/19	206.58	4388.36					

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)
HOWARD NR	NR	601281.159	3468770.377	4593.91	3/4/08	150.10	4443.81
					5/8/08	150.70	4443.21
					7/14/08	150.91	4443.00
					10/15/08	150.67	4443.24
					1/28/09	150.67	4443.24
					4/15/09	151.15	4442.76
					7/15/09	151.76	4442.15
					10/12/09	152.08	4441.83
					1/27/10	152.20	4441.71
					4/21/10	152.30	4441.61
					7/19/10	153.16	4440.75
					10/18/10	153.53	4440.38
					1/17/11	153.51	4440.40
					4/11/11	154.24	4439.67
					8/26/11	154.79	4439.12
					10/11/11	155.02	4438.89
					2/1/12	155.08	4438.83
					4/13/12	155.40	4438.51
					9/13/12	156.29	4437.62
					10/16/12	156.43	4437.48
					2/6/13	156.27	4437.64
					4/9/13	156.71	4437.20
					7/12/13	157.18	4436.73
					10/16/13	157.52	4436.39
					1/8/14	157.16	4436.75
					4/10/14	157.55	4436.36
					7/14/14	157.92	4435.99
					10/10/14	157.68	4436.23
					2/2/15	157.11	4436.80
					5/19/15	157.31	4436.60
					7/31/15	157.58	4436.33
					10/8/15	157.36	4436.55
1/12/16	157.01	4436.90					
7/27/16	157.93	4435.98					
1/16/17	158.23	4435.68					
7/21/17	158.84	4435.07					
1/15/18	158.86	4435.05					
7/23/18	159.64	4434.27					
1/14/19	160.18	4433.73					
7/9/19	160.66	4433.25					

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					
2/23/18	142.25	4429.78					
7/9/18	143.46	4428.57					
1/11/19	144.10	4427.93					
7/10/19	144.82	4427.21					
3/22/13	221.32	4222.51					
6/14/13	221.78	4222.05					
9/24/13	219.6	4224.23					
12/3/13	217.44	4226.39					
2/25/14	217.59	4226.24					
6/4/14	218.27	4225.56					
9/10/14	219.04	4224.79					
11/20/14	213.58	4230.25					
3/24/15	214.18	4229.65					
9/17/15	216.39	4227.44					
3/24/16	217.85	4225.98					
9/28/16	219.8	4224.03					
3/20/17	220.91	4222.92					
8/10/17	222.12	4221.71					
3/8/18	222.94	4220.89					
8/22/18	223.64	4220.19					
2/14/19	224.29	4219.54					
9/9/19	225.05	4218.78					
LADD 251	520251	594788.933	3470348.534	4443.83	3/22/13	221.32	4222.51
					6/14/13	221.78	4222.05
					9/24/13	219.6	4224.23
					12/3/13	217.44	4226.39
					2/25/14	217.59	4226.24
					6/4/14	218.27	4225.56
					9/10/14	219.04	4224.79
					11/20/14	213.58	4230.25
					3/24/15	214.18	4229.65
					9/17/15	216.39	4227.44
					3/24/16	217.85	4225.98
					9/28/16	219.8	4224.03
					3/20/17	220.91	4222.92
					8/10/17	222.12	4221.71
					3/8/18	222.94	4220.89
					8/22/18	223.64	4220.19
2/14/19	224.29	4219.54					
9/9/19	225.05	4218.78					

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	227.4	4299.65					
3/8/18	222.4	4304.65					
8/22/18	219.90	4307.15					
2/14/19	217.80	4309.25					
9/9/19	216.22	4310.83					
LADD 635	224635	598724.834	3467541.096	4598.99	7/18/15	169.31	4429.68
					12/17/15	169.54	4429.45
					3/31/16	169.56	4429.43
					9/28/16	170.21	4428.78
					11/22/16	170.90	4428.09
					3/20/17	184.94	4414.05
					8/24/17	172.09	4426.90
					3/8/18	172.22	4426.77
					8/22/18	173.07	4425.92
					2/14/19	173.20	4425.79
					9/9/19	174.03	4424.96
LADD 837	519837	594757.700	3470817.194	4470.11	2/9/10	262.80	4207.31
					4/28/10	262.65	4207.46
					7/28/10	265.75	4204.36
					12/8/10	262.38	4207.73
					3/17/11	262.65	4207.46
					6/24/11	262.51	4207.60
					9/29/11	262.28	4207.83
					12/16/11	264.32	4205.79
					2/15/12	262.24	4207.87
					6/11/12	264.04	4206.07
					9/26/12	261.75	4208.36
					12/19/12	261.94	4208.17
					3/27/13	266.68	4203.43
					6/14/13	261.51	4208.60
					9/24/13	261.38	4208.73
					12/3/13	260.85	4209.26
					2/25/14	261.04	4209.07
					6/4/14	262.53	4207.58
					9/10/14	263.68	4206.43
					11/20/14	261.18	4208.93
					3/24/15	261.44	4208.67
					9/17/15	264.32	4205.79
					3/24/16	261.79	4208.32
					9/28/16	262.8	4207.31
					3/20/17	261.3	4208.81
					8/10/17	262.0	4208.11
					3/8/18	283.2	4186.90
8/22/18	281.46	4188.65					
2/14/19	341.04	4129.07					
9/9/19	295.40	4174.71					

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 977	642977	597619.168	3468714.011	4513.40	3/17/11	82.32	4431.08
					6/24/11	84.00	4429.40
					9/29/11	83.62	4429.78
					12/16/11	84.8	4428.60
					2/15/12	84.67	4428.73
					6/11/12	85.7	4427.70
					9/26/12	84.96	4428.44
					12/19/12	86.27	4427.13
					3/22/13	85.18	4428.22
					6/14/13	86.54	4426.86
					9/24/13	82.66	4430.74
					12/3/13	84.48	4428.92
					2/25/14	85.27	4428.13
					6/4/14	85.88	4427.52
					9/10/14	86.15	4427.25
					11/20/14	80.95	4432.45
					3/24/15	83.73	4429.67
					5/19/15	84.28	4429.12
					9/17/15	86.44	4426.96
					12/17/15	86.81	4426.59
3/24/16	87.22	4426.18					
9/28/16	86.11	4427.29					
3/20/17	86.55	4426.85					
8/10/17	87.9	4425.50					
3/8/18	87.92	4425.48					
8/22/18	88.92	4424.48					
2/14/19	87.5	4425.90					
9/9/19	89.27	4424.13					
MCCONNELL 265	539265	601463.094	3468840.139	4600.70	2/20/08	156.15	4444.55
					5/6/08	156.40	4444.30
					7/15/08	157.07	4443.63
					11/19/08	157.17	4443.53
					1/28/09	156.70	4444.00
					4/15/09	157.22	4443.48
					7/15/09	157.59	4443.11
					10/12/09	158.13	4442.57
					1/26/10	158.35	4442.35
					4/22/10	158.68	4442.02
					7/21/10	159.37	4441.33
					10/18/10	159.63	4441.07
					1/19/11	159.69	4441.01
					4/8/11	159.10	4441.60
					7/12/11	160.77	4439.93
					10/11/11	161.17	4439.53
					2/7/12	161.31	4439.39
					4/11/12	161.57	4439.13
					7/6/12	162.36	4438.34
					10/8/12	162.43	4438.27
					1/10/13	162.57	4438.13
					4/18/13	163.08	4437.62
					10/14/13	163.61	4437.09
					1/8/14	163.42	4437.28
					4/14/14	163.79	4436.91
					7/14/14	164.03	4436.67
					10/7/14	163.89	4436.81
					2/2/15	163.32	4437.38
					5/19/15	163.54	4437.16
					7/31/15	163.83	4436.87
10/8/15	163.64	4437.06					
1/11/16	163.36	4437.34					
7/26/16	167.70	4433.00					
1/16/17	164.46	4436.24					
7/20/17	165.09	4435.61					
1/15/18	165.10	4435.60					
7/17/18	165.09	4435.61					
1/9/19	166.29	4434.41					
7/10/19	166.91	4433.79					

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
7/17/18	169.08	4432.47					
7/10/19	170.81	4430.74					
METZLER	35-71891	602091.308	3471381.176	4728.53	3/5/08	288.30	4440.23
					5/15/08	286.53	4442.00
					7/31/08	286.82	4441.71
					10/20/08	287.09	4441.44
					2/11/09	287.74	4440.79
					4/20/09	287.47	4441.06
					7/15/09	287.58	4440.95
					10/14/09	287.99	4440.54
					2/1/10	288.38	4440.15
					5/18/10	288.65	4439.88
					7/16/10	288.88	4439.65
					10/19/10	289.09	4439.44
					1/19/11	289.54	4438.99
					4/4/11	289.87	4438.66
					7/12/11	289.98	4438.55
					10/12/11	290.47	4438.06
					2/7/12	290.92	4437.61
					4/12/12	291.15	4437.38
					7/18/12	291.37	4437.16
					10/4/12	291.63	4436.90
					1/11/13	292.15	4436.38
					4/11/13	292.29	4436.24
					7/17/13	292.43	4436.10
					10/17/13	292.86	4435.67
					1/16/14	293.20	4435.33
					4/15/14	293.20	4435.33
					7/21/14	293.45	4435.08
					10/8/14	293.62	4434.91
					1/27/15	293.36	4435.17
					8/3/15	293.54	4434.99
					1/12/16	293.69	4434.84
					7/25/16	293.40	4435.13
1/17/17	294.09	4434.44					
7/14/17	294.38	4434.15					
1/15/18	294.51	4434.02					
7/17/18	294.94	4433.59					
1/14/19	295.08	4433.45					
7/12/19	295.54	4432.99					
MOORE	538847	599499.9949	3468066.557	4568.49	8/1/18	155.64	4412.85
					7/9/19	157.43	4411.06
NESS	509127	607866.391	3471419.494	4761.23	7/24/08	557.90	4203.33
					10/16/08	549.30	4211.93
					2/25/09	536.40	4224.83
					5/11/09	544.64	4216.59
					8/11/09	566.87	4194.36
					11/12/09	537.34	4223.89
					2/2/10	531.85	4229.38
					4/21/10	568.11	4193.12
					7/19/10	573.02	4188.21
					1/18/11	541.80	4219.43
					7/12/11	597.71	4163.52
					2/3/12	591.24	4169.99
					1/9/13	551.35	4209.88
					1/6/14	538.84	4222.39
					7/7/14	594.42	4166.81
					7/20/15	553.54	4207.69
					7/11/16	556.90	4204.33
					7/27/17	550.36	4210.87
7/31/18	538.72	4222.51					
7/11/19	575.06	4186.17					

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					
3/26/18	106.02	4425.36					
9/24/18	106.13	4425.25					
3/18/19	105.00	4426.38					
7/30/19	112.53	4418.85					
NSD-03	527586	598070.538	3468694.259	4518.28	10/7/09	85.62	4432.66
					3/16/10	83.51	4434.77
					5/25/10	84.49	4433.79
					8/25/10	85.70	4432.58
					3/17/11	86.76	4431.52
					6/17/11	88.76	4429.52
					12/7/11	89.30	4428.98
					3/6/12	89.24	4429.04
					12/14/12	90.83	4427.45
					3/22/13	88.65	4429.63
					6/24/13	91.70	4426.58
					9/23/13	86.88	4431.40
					12/19/13	89.11	4429.17
					3/24/14	89.48	4428.80
					6/23/14	90.77	4427.51
					9/23/14	89.10	4429.18
					12/22/14	86.80	4431.48
					3/23/15	87.68	4430.60
					6/22/15	89.40	4428.88
					9/28/15	90.65	4427.63
					12/21/15	90.97	4427.31
					3/21/16	91.30	4426.98
					6/20/16	92.16	4426.12
					9/29/16	89.50	4428.78
3/16/17	89.81	4428.47					
9/30/17	90.71	4427.57					
3/26/18	91.28	4427.00					
9/24/18	92.22	4426.06					
3/18/19	91.01	4427.27					
7/30/19	93.64	4424.64					

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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-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
					1/16/18	168.50	4431.94
7/18/18	169.35	4431.09					
1/7/19	170.50	4429.94					
7/9/19	170.59	4429.85					
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					
1/16/18	121.55	4451.27					
2/23/18	124.44	4448.38					
7/18/18	119.39	4453.43					
NWC-04	551849	605829.808	3469071.959	4690.77	12/2/08	352.11	4338.66
					4/29/09 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
					1/16/18	162.78	4429.72
					7/18/18	163.77	4428.73
1/7/19	164.68	4427.82					
7/9/19	165.28	4427.22					
OLMOS	224745	599641.506	3468055.337	4576.92	1/13/16	145.84	4431.08
					1/15/18	148.47	4428.45
					7/13/18	150.28	4426.64
					1/14/19	150.75	4426.17
7/8/19	151.52	4425.40					

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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)
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
PANAGAKOS	35-76413	605304.234	3469323.140	4691.40	7/9/12	74.63	4637.32
					1/22/09	155.28	4536.12
					4/9/09	156.15	4535.25
					7/9/09	161.61	4529.79
					10/6/09	167.20	4524.20
					1/21/10	166.92	4524.48
					4/20/10	167.11	4524.29
					7/20/10	171.78	4519.62
					10/18/10	176.39	4515.01
					7/14/11	173.78	4517.62
					8/25/11	172.89	4518.51
					2/6/12	169.09	4522.31
					2/29/12	169.32	4522.08
					3/15/12	169.64	4521.76
					4/12/12	168.85	4522.55
					7/9/12	170.38	4521.02
					11/27/12	169.82	4521.58
					1/18/13	169.12	4522.28
					2/6/13	168.76	4522.64
					4/9/13	167.79	4523.61
					7/10/13	168.51	4522.89
					10/15/13	164.49	4526.91
					1/10/14	160.32	4531.08
					4/16/14	158.75	4532.65
					7/17/14	159.69	4531.71
					10/16/14	159.28	4532.12
					1/26/15	158.02	4533.38
					7/27/15	160.04	4531.36
					1/11/16	160.50	4530.90
					2/24/17	162.64	4528.76
					7/17/17	160.37	4531.03
					1/18/18	160.12	4531.28
7/30/18	161.94	4529.46					
1/15/19	167.97	4523.43					
7/8/19	166.86	4524.54					
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					
1/15/18	157.42	4434.71					
7/24/18	158.37	4433.76					
1/7/19	158.89	4433.24					
7/11/19	159.32	4432.81					
PIONKE 517	221517	600909.967	3468866.654	4587.20792	9/18/12	152.00	4435.21
					10/11/12	152.15	4435.06
					1/9/13	152.23	4434.98
					4/17/13	152.58	4434.63
					7/16/13	153.11	4434.10
					10/17/13	153.27	4433.94
					3/5/14	153.24	4433.97
					4/9/14	153.07	4434.14
					7/11/14	153.56	4433.65
					10/7/14	153.31	4433.90
					5/18/15	152.76	4434.45
					7/22/15	153.12	4434.09
					7/26/16	153.32	4433.89
					7/18/17	154.44	4432.77
					7/24/18	155.18	4432.03
7/11/19	156.16	4431.05					
POOL	509518	599683.603	3470013.823	4639.09	2/20/08	204.22	4434.87
					5/19/08	204.72	4434.37
					7/31/08	205.56	4433.53
					10/21/08	205.06	4434.03
					2/13/09	204.74	4434.35
					4/21/09	204.87	4434.22
					7/20/09	205.69	4433.40
					10/20/09	206.06	4433.03
					2/24/10	205.59	4433.50
					4/22/10	205.48	4433.61
					7/14/10	206.58	4432.51
					10/20/10	206.74	4432.35
					3/21/16	209.98	4429.11
					8/1/18	212.45	4426.64
7/10/19	212.88	4426.21					

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)
POWER 639	222639	602146.123	3471373.655	4734.38	1/16/14	294.07	4440.31
					2/5/14	294.07	4440.31
					3/5/14	294.20	4440.18
					4/15/14	294.14	4440.24
					5/13/14	294.25	4440.13
					6/23/14	294.28	4440.10
					7/17/14	294.32	4440.06
					8/11/14	294.44	4439.94
					9/9/14	294.47	4439.91
					10/8/14	294.49	4439.89
					1/27/15	294.24	4440.14
					3/10/15	294.19	4440.19
					4/28/15	294.17	4440.21
					5/14/15	249.23	4485.15
					6/11/15	294.29	4440.09
					7/30/15	294.38	4440.00
					1/14/16	294.65	4439.73
					7/27/16	294.81	4439.57
					1/26/17	295.05	4439.33
					7/12/17	295.25	4439.13
1/10/18	295.47	4438.91					
7/25/18	295.75	4438.63					
1/14/19	295.96	4438.42					
7/12/19	296.56	4437.82					
RAMIREZ	216425	599730.649	3467584.363	4596.61	10/27/08	159.45	4437.16
					1/29/09	158.74	4437.87
					4/16/09	158.66	4437.95
					7/10/09	159.64	4436.97
					10/6/09	160.36	4436.25
					1/25/10	160.10	4436.51
					4/21/10	159.96	4436.65
					7/21/10	161.05	4435.56
					10/19/10	161.23	4435.38
					1/18/11	161.22	4435.39
					4/11/11	161.48	4435.13
					7/18/11	162.39	4434.22
					10/12/11	163.04	4433.57
					4/10/12	163.22	4433.39
					7/6/12	163.85	4432.76
					10/8/12	164.38	4432.23
					4/19/13	164.96	4431.65
					1/13/14	165.26	4431.35
					4/14/14	164.85	4431.76
					2/2/15	164.33	4432.28
					5/28/15	164.39	4432.22
					7/21/15	164.65	4431.96
					10/8/15	164.72	4431.89
					1/14/16	164.15	4432.46
					7/14/16	165.52	4431.09
					7/26/17	166.81	4429.80
					1/15/18	167.59	4429.02
7/25/18	167.71	4428.90					
1/14/19	168.26	4428.35					
7/9/19	189.06	4407.55					
7/30/19	168.94	4427.67					

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					
7/31/18	54.96	4592.95					
7/19/19	55.48	4592.43					
ROGERS 596	573596	601001.503	3468491.639	4577.35	11/11/09	135.46	4441.89
					2/25/10	135.89	4441.46
					4/22/10	135.62	4441.73
					7/16/10	136.63	4440.72
					10/19/10	136.61	4440.74
					1/20/11	134.21	4443.14
					4/8/11	137.68	4439.67
					7/14/11	138.09	4439.26
					10/12/11	138.09	4439.26
					1/30/12	137.91	4439.44
					4/23/12	138.61	4438.74
					7/13/12	139.65	4437.70
					10/10/12	139.55	4437.80
					1/15/13	139.23	4438.12
					4/15/13	139.97	4437.38
					7/15/13	139.94	4437.41
					10/16/13	140.50	4436.85
					1/9/14	140.12	4437.23
					4/11/14	140.56	4436.79
					7/18/14	140.64	4436.71
					1/12/16	139.57	4437.78
					9/30/17	141.86	4435.49
					1/18/18	141.88	4435.47
					7/26/18	142.57	4434.78
					1/14/19	142.75	4434.60
					7/22/19	143.54	4433.81
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
ROGERS 803	641803	601003.273	3468480.391	4576.16	9/30/17	138.83	4437.33
					1/18/18	138.90	4437.26
					7/26/18	139.62	4436.54
					1/14/19	139.92	4436.24
7/22/19	140.39	4435.77					

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					
2/23/18	157.28	4433.38					
7/13/18	158.53	4432.13					
1/11/19	159.10	4431.56					
7/12/19	159.66	4431.00					
ROGERS 803	641803	601003.273	3468480.391	4576.16	9/30/17	138.83	4437.33
RUIZ	531770	602857.357	3471424.219	4735.18	2/5/08	293.29	4441.89
					5/15/08	293.57	4441.61
					7/30/08	293.86	4441.32
					10/20/08	294.18	4441.00
					2/12/09	294.62	4440.56
					4/21/09	294.66	4440.52
					8/3/09	294.98	4440.20
					10/28/09	295.33	4439.85
					2/1/10	295.70	4439.48
					4/26/10	295.96	4439.22
					4/8/11	297.20	4437.98
					4/13/12	298.47	4436.71
					1/11/13	299.39	4435.79
					4/11/13	299.72	4435.46
					7/25/13	300.06	4435.12
					10/17/13	300.07	4435.11
					1/8/14	300.19	4434.99
					4/15/14	300.31	4434.87
					10/21/14	300.38	4434.80
					1/27/15	299.76	4435.42
					7/30/15	299.74	4435.44
					1/12/16	300.20	4434.98
					7/24/18	301.45	4433.73
1/15/19	301.74	4433.44					
7/10/19	302.08	4433.10					

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					
1/9/18	130.46	4434.03					
7/11/18	131.96	4432.53					
1/9/19	131.50	4432.99					
5/13/08	44.94	4606.28					
8/5/08	46.61	4604.61					
10/16/08	46.60	4604.62					
1/21/09	47.19	4604.03					
4/8/09	48.45	4602.77					
7/7/09	49.41	4601.81					
10/7/09	50.33	4600.89					
1/26/10	51.13	4600.09					
4/20/10	51.24	4599.98					
7/14/10	51.91	4599.31					
1/18/11	52.98	4598.24					
7/11/11	54.44	4596.78					
1/31/12	55.65	4595.57					
7/9/12	10.69	4640.53					
1/18/13	10.50	4640.72					
7/10/13	58.16	4593.06					
1/14/14	45.51	4605.71					
7/8/14	45.39	4605.83					
1/26/15	47.91	4603.31					
7/24/15	49.71	4601.51					
1/11/16	50.88	4600.34					
7/12/16	52.64	4598.58					
1/17/17	53.09	4598.13					
7/14/17	54.15	4597.07					
1/15/18	55.74	4595.48					
7/30/18	56.02	4595.20					
1/15/19	55.85	4595.37					
7/11/19	56.20	4595.02					
STEPHENS	808560	606981.766	3469072.799	4651.22	5/13/08	44.94	4606.28
					8/5/08	46.61	4604.61
					10/16/08	46.60	4604.62
					1/21/09	47.19	4604.03
					4/8/09	48.45	4602.77
					7/7/09	49.41	4601.81
					10/7/09	50.33	4600.89
					1/26/10	51.13	4600.09
					4/20/10	51.24	4599.98
					7/14/10	51.91	4599.31
					1/18/11	52.98	4598.24
					7/11/11	54.44	4596.78
					1/31/12	55.65	4595.57
					7/9/12	10.69	4640.53
					1/18/13	10.50	4640.72
					7/10/13	58.16	4593.06
					1/14/14	45.51	4605.71
					7/8/14	45.39	4605.83
					1/26/15	47.91	4603.31
					7/24/15	49.71	4601.51
1/11/16	50.88	4600.34					
7/12/16	52.64	4598.58					
1/17/17	53.09	4598.13					
7/14/17	54.15	4597.07					
1/15/18	55.74	4595.48					
7/30/18	56.02	4595.20					
1/15/19	55.85	4595.37					
7/11/19	56.20	4595.02					

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)
SUNBELT	201531	605998.250	3471735.149	4806.52	2/6/08	352.10	4454.42
					5/15/08	356.97	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					
7/31/18	42.14	4674.45					
THOMPSON 151	612151	599543.561	3467387.294	4597.62	8/9/13	167.86	4429.76
					10/10/13	167.68	4429.94
					1/16/14	167.19	4430.43
					4/14/14	166.98	4430.64
					7/21/14	167.78	4429.84
					10/22/14	167.56	4430.06
					2/2/15	166.56	4431.06
					5/19/15	166.51	4431.11
8/3/15	167.09	4430.53					
THOMPSON 341	218341	599532.241	3467396.849	4596.73	7/28/17	168.34	4428.39
					1/16/18	168.22	4428.51
					7/26/18	169.23	4427.50
					1/11/19	169.81	4426.92
7/10/19	170.29	4426.44					

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)
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
					2/6/15	336.02	4472.41
					9/14/15	334.23	4474.20
					3/16/16	333.52	4474.91
					8/17/16	333.90	4474.53
3/7/17	335.30	4473.13					
8/1/17	336.32	4472.11					
2/1/18	337.14	4471.29					
7/26/18	337.17	4471.26					
2/1/19	337.53	4470.90					
8/5/19	338.84	4469.59					
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
					2/26/08	158.78	4549.10
TM-06 MILLER	522695	606055.975	3468376.658	4707.88	5/20/08	158.76	4549.12
					8/4/08	158.80	4549.08
					10/29/08	158.85	4549.03
					2/16/09	159.28	4548.60
					5/13/09	158.81	4549.07
					8/18/09	158.91	4548.97
					11/12/09	158.96	4548.92
					3/8/10	158.99	4548.89
					4/14/10	159.02	4548.86
					7/2/10	159.13	4548.75
					7/21/11	159.88	4548.00
					7/9/12	161.40	4546.48
					2/14/13	161.05	4546.83
					8/19/13	161.30	4546.58
					7/21/14	162.60	4545.28
					2/5/15	162.36	4545.52
					9/10/15	162.94	4544.94
					3/16/16	162.14	4545.74
					9/21/16	163.08	4544.80
					3/7/17	162.83	4545.05
					7/26/17	163.47	4544.41
					2/5/18	163.46	4544.42
					7/16/18	163.96	4543.92
1/29/19	162.32	4545.56					
7/31/19	164.23	4543.65					

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					
1/8/18	255.19	4485.99					
7/9/18	266.18	4475.00					
1/8/19	247.36	4493.82					
7/16/19	259.23	4481.95					
TM-15 MILLER	522699	599618.715	3471425.631	4729.25	3/20/17	300.54	4428.71
					8/1/17	300.76	4428.49
					7/18/18	301.32	4427.93
					8/19/19	301.92	4427.33
TM-16	522578	605588.075	3469842.199	4717.71	3/5/08	81.00	4636.71
					5/22/08	81.24	4636.47
					8/6/08	81.65	4636.06
					11/5/08	81.75	4635.96
					2/26/09	81.88	4635.83
					5/13/09	82.01	4635.70
					8/19/09	82.37	4635.34
					11/10/09	82.83	4634.88
					3/2/10	83.09	4634.62
					4/14/10	83.22	4634.49
					7/2/10	83.51	4634.20
					7/14/11	80.41	4637.30
					7/9/12	72.55	4645.16
					8/15/13	61.42	4656.29
					8/4/14	62.55	4655.16
					2/5/15	58.80	4658.91
					9/9/15	60.06	4657.65
					3/16/16	60.43	4657.28
					8/25/16	59.24	4658.47
					3/7/17	61.08	4656.63
					7/12/17	62.59	4655.12
					2/1/18	60.18	4657.53
8/7/18	62.44	4655.27					
2/1/19	58.90	4658.81					
7/30/19	61.35	4656.36					
TM-19A	522581	602458.710	3469197.426	4645.87	3/6/08	199.85	4446.02
					5/22/08	199.50	4446.37
					8/6/08	199.19	4446.68
					11/18/08	199.46	4446.41
					3/3/09	199.81	4446.06
					4/22/09	200.57	4445.30
					8/12/09	201.46	4444.41
					11/4/09	201.16	4444.71
					3/10/10	201.34	4444.53
					4/9/10	201.55	4444.32
					7/7/10	202.35	4443.52
					2/14/11	203.00	4442.87
					7/15/11	203.30	4442.57
					2/2/12	203.84	4442.03
					7/11/12	204.75	4441.12
					10/16/12	205.02	4440.85
					2/15/13	205.30	4440.57
					9/4/13	205.73	4440.14
					2/12/14	207.47	4438.40
					7/21/14	210.56	4435.31
					9/10/15	206.48	4439.39
					8/18/16	207.24	4438.63
7/26/17	207.54	4438.33					
7/25/18	208.53	4437.34					
8/7/19	209.33	4436.54					

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					
2/5/18	220.81	4445.86					
8/6/18	221.12	4445.55					
1/29/19	221.36	4445.31					
8/7/19	221.71	4444.96					
TVI 236	802236	600552.215	3467978.431	4561.98	5/7/08	123.30	4438.68
					7/15/08	121.55	4440.43
					10/15/08	122.35	4439.63
					2/11/09	121.28	4440.70
					4/17/09	122.73	4439.25
					7/21/09	123.96	4438.02
					10/19/09	123.88	4438.10
					2/2/10	122.26	4439.72
					4/23/10	122.70	4439.28
					7/15/10	125.08	4436.90
					7/15/11	127.23	4434.75
					7/16/12	127.81	4434.17
					10/9/12	128.45	4433.53
					7/18/13	127.38	4434.60
					7/16/14	129.24	4432.74
					2/2/15	126.81	4435.17
					5/19/15	128.38	4433.60
					7/30/15	128.31	4433.67
					10/7/15	127.26	4434.72
					1/12/16	126.49	4435.49
7/20/16	128.90	4433.08					
9/26/16	128.26	4433.72					
1/27/17	128.57	4433.41					
7/31/17	128.59	4433.39					
1/17/18	129.66	4432.32					
7/27/18	130.16	4431.82					
1/16/19	130.67	4431.31					
7/24/19	130.87	4431.11					

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)
TVI 713	567713	600729.095	3468412.946	4567.22	5/7/08	127.10	4440.12
					7/14/08	126.30	4440.92
					10/15/08	130.00	4437.22
					2/11/09	149.87	4417.35
					4/17/09	126.73	4440.49
					7/21/09	127.36	4439.86
					10/19/09	127.79	4439.43
					2/2/10	126.71	4440.51
					4/23/10	127.53	4439.69
					7/15/10	129.14	4438.08
					10/20/10	130.84	4436.38
					1/20/11	134.36	4432.86
					4/11/11	135.72	4431.50
					7/15/11	131.61	4435.61
					10/12/11	130.33	4436.89
					2/3/12	130.01	4437.21
					4/25/12	131.33	4435.89
					7/16/12	131.97	4435.25
					10/9/12	132.16	4435.06
					2/6/13	131.14	4436.08
					4/10/13	132.08	4435.14
					7/18/13	131.72	4435.50
					10/8/13	133.10	4434.12
					1/9/14	132.37	4434.85
					4/9/14	132.93	4434.29
					7/16/14	132.57	4434.65
					10/9/14	132.29	4434.93
					1/29/15	132.01	4435.21
					5/18/15	132.34	4434.88
					7/30/15	132.71	4434.51
10/7/15	132.00	4435.22					
1/12/16	131.34	4435.88					
7/14/16	133.11	4434.11					
1/27/17	132.88	4434.34					
7/13/17	134.08	4433.14					
1/10/18	134.24	4432.98					
7/12/18	134.83	4432.39					
1/10/19	134.87	4432.35					
7/18/19	135.59	4431.63					

TABLE 4
Compilation of Groundwater Elevation Data

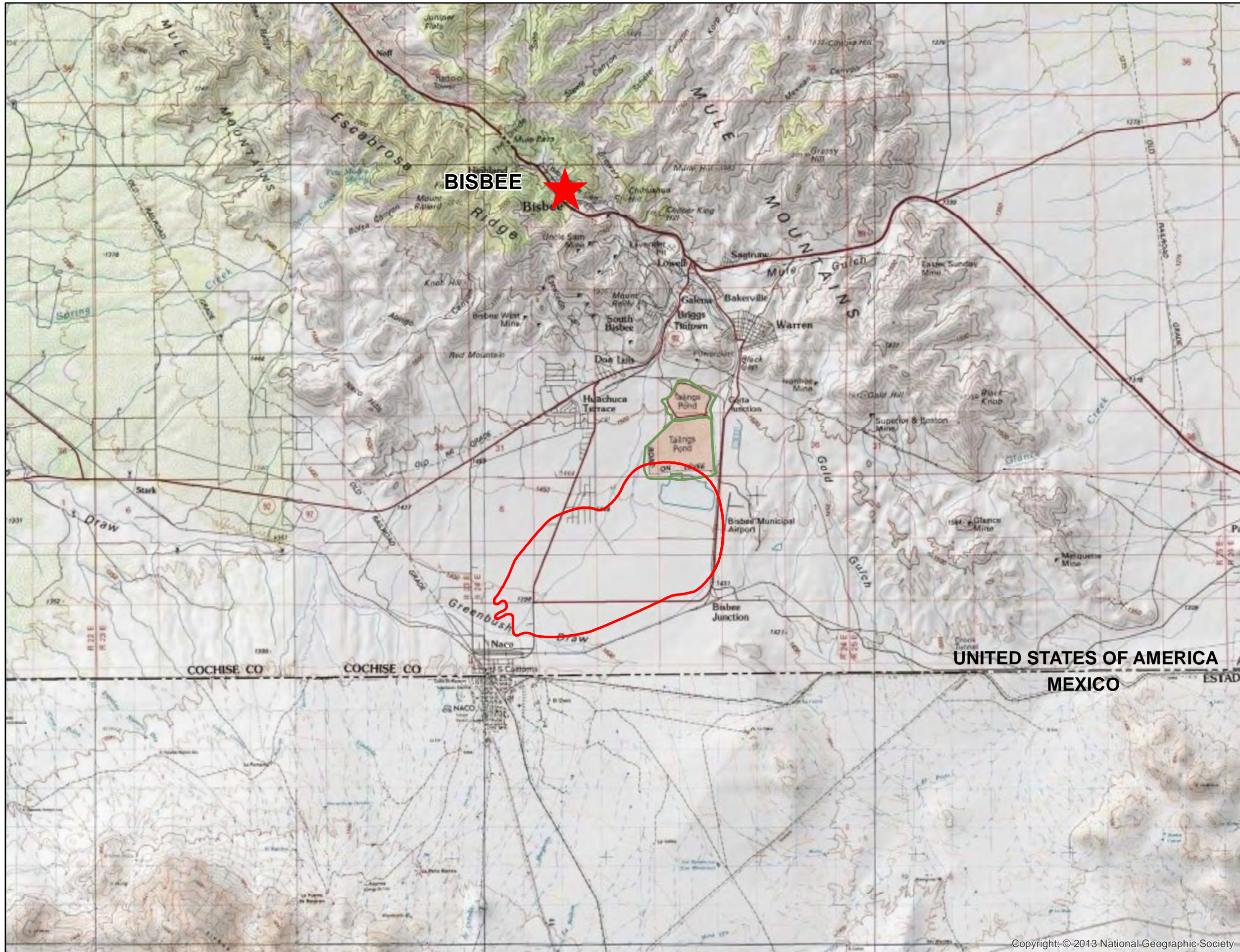
Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
WEISKOPF 802	641802	601154.951	3468658.855	4586.89	2/15/08	143.31	4443.58
					5/7/08	143.90	4442.99
					7/16/08	144.22	4442.67
					10/28/08	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					
1/12/18	152.06	4434.83					
7/16/18	152.74	4434.15					
1/14/19	153.39	4433.50					
7/23/19	153.77	4433.12					
WEISKOPF 897	220897	601096.780	3468647.358	4585.70	12/6/12	149.27	4436.43
					1/16/13	148.70	4437.00
					4/17/13	149.80	4435.90
					7/18/13	150.15	4435.55
					10/17/13	150.38	4435.32
					1/16/14	149.78	4435.92
					4/11/14	150.50	4435.20
					7/18/14	150.55	4435.15
					10/9/14	150.34	4435.36
					5/18/15	149.95	4435.75
					8/4/15	150.31	4435.39
					7/26/16	150.63	4435.07
					7/24/17	151.52	4434.18
					7/16/18	152.37	4433.33
					7/23/19	153.41	4432.29
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					
1/16/18	152.03	4428.91					
7/24/18	153.67	4427.27					
1/11/19	154.15	4426.79					
7/16/19	154.82	4426.12					

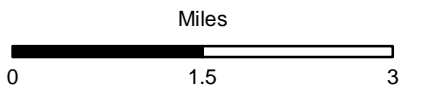
Notes:
35-71891 = ADWR 35 Database
ADWR = Arizona Department of Water Resources
ft amsl = feet above mean sea level
NR = No Record
UTM = Universal Transverse Mercator Zone 12, North American Datum 1983 (NAD83)
¹ Depth to water measurement provided by Arizona Water Company
² Preliminary data will be updated when well survey is conducted
³ Depth to water measurement provided by Naco Water Company
⁴ Well previously identified as ROGERS 803

FIGURES





Legend

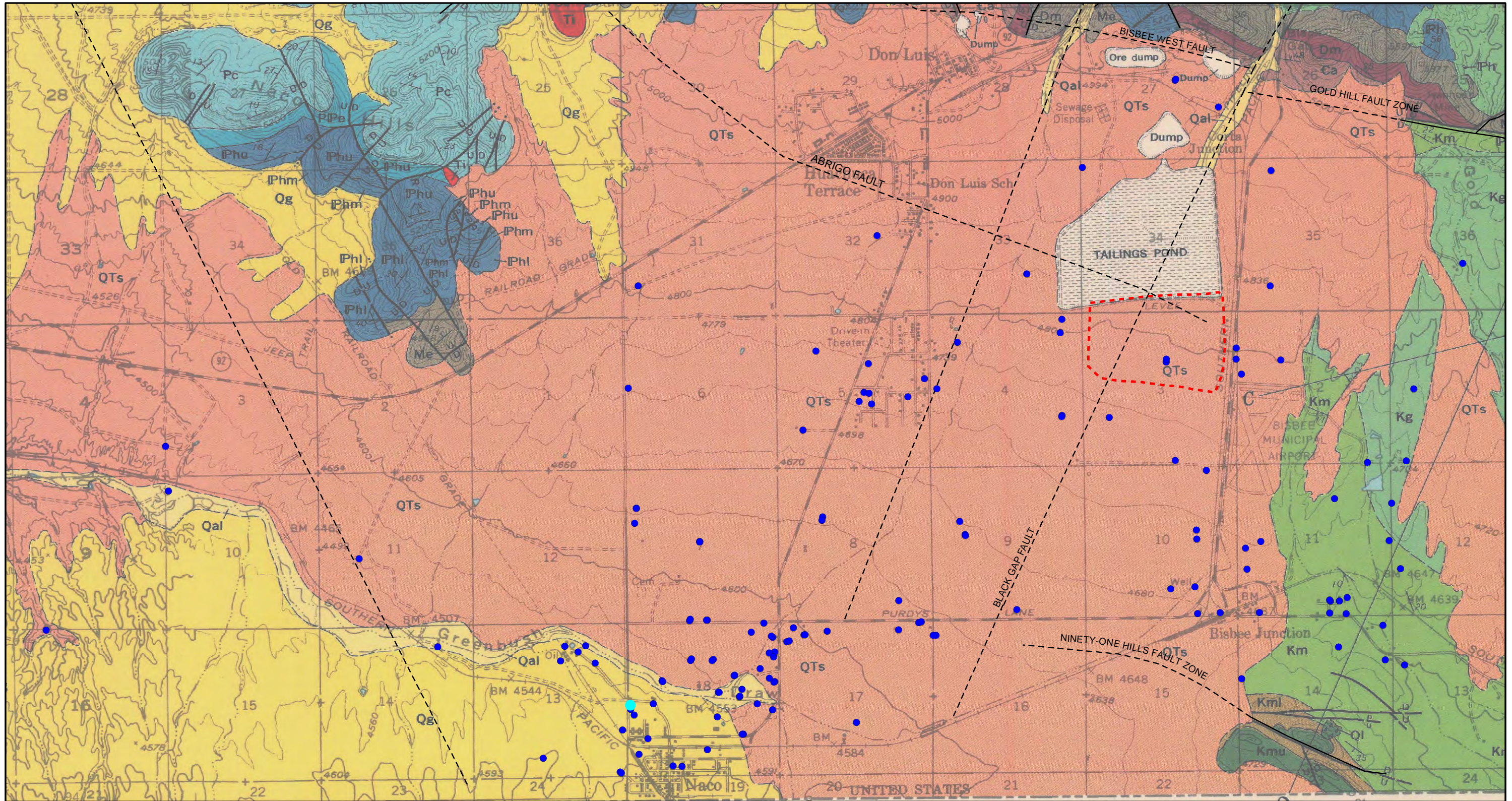
-  CTSA Facility
-  Estimated 250 mg/L Sulfate Concentration Contour for Third Quarter 2019



Notes:
 Projection: UTM Zone 12N NAD83

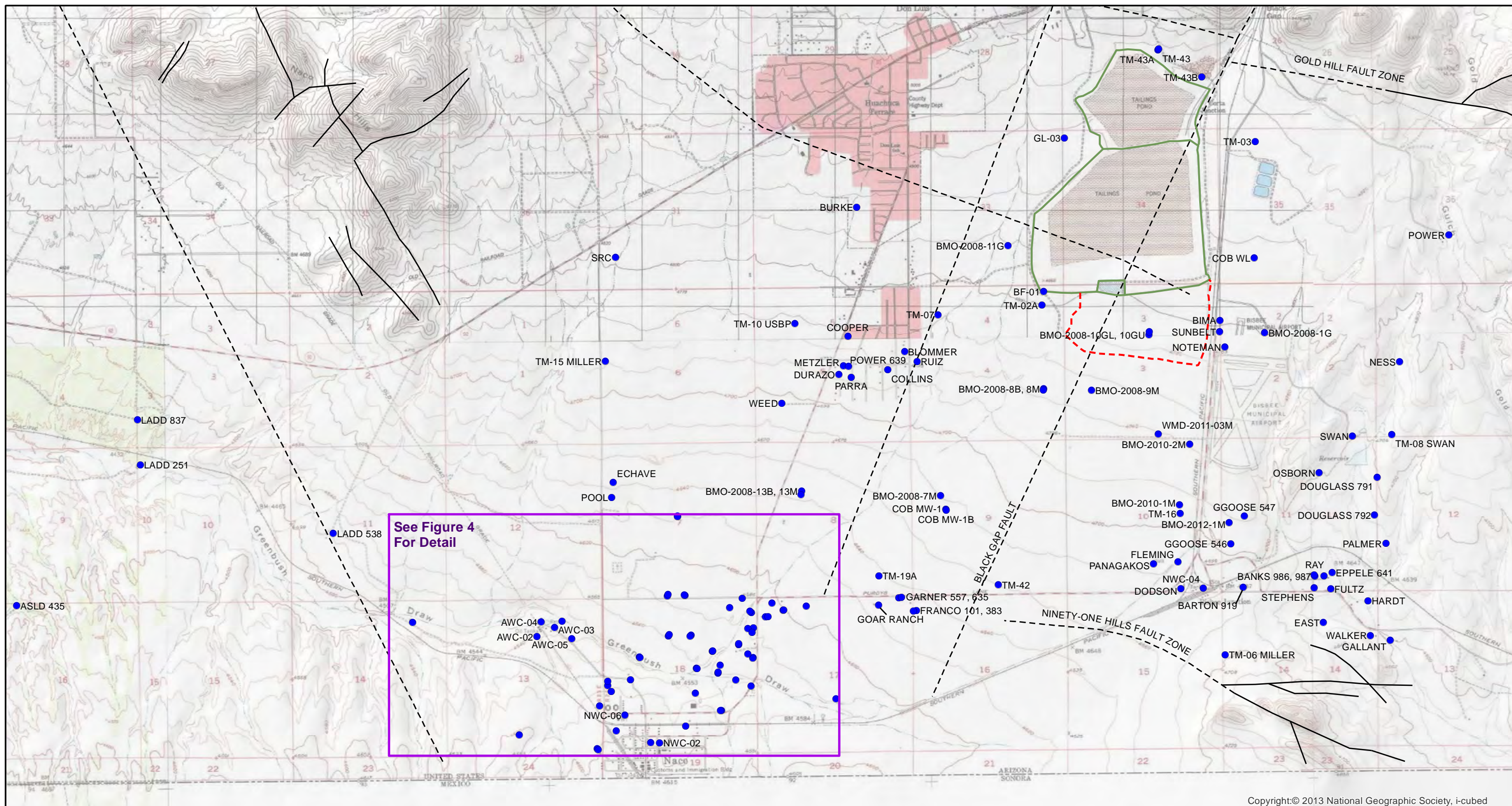
Date	12/26/18	File ID	055038-526
			

**FIGURE 1
 PROJECT LOCATION MAP**



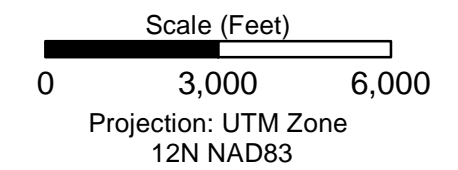
Legend <ul style="list-style-type: none"> ● Monitoring Location — Fault (dashed where inferred) Former Evaporation Ponds 	Basin Fill <ul style="list-style-type: none"> Qal - Quaternary Alluvium Qg - Quaternary Gravel QTs - Quaternary Tertiary sediment Ti - Tertiary Intrusive 	Bisbee Group <ul style="list-style-type: none"> Kc - Cintura Formation (not shown) Kmu - Upper Mural Limestone Kml - Lower Mural Limestone Km - Morita Formation Kg - Glance Conglomerate 	Geologic Unit - Hayes and Landis (1964) <ul style="list-style-type: none"> Pc - Colina Limestone PPe - Earp Formation Phu, Phm, Phl - Horquilla Limestone Me - Escabrosa Limestone Dm - Martin Limestone Ca - Abrigo Limestone 	Paleozoic Sedimentary Formations <ul style="list-style-type: none"> Me - Escabrosa Limestone Dm - Martin Limestone Ca - Abrigo Limestone 	Scale (Feet) 0 3,000 6,000	Date: 11/8/19 File ID: 055038-537
	See Figure 3 for Monitoring Location Names					Projection: UTM Zone 12N NAD83 Geology reprinted from Hayes and Landis (1964) USGS Miscellaneous Geologic Investigations I-418

FIGURE 2
GEOLOGIC MAP
WITH MONITORING LOCATIONS



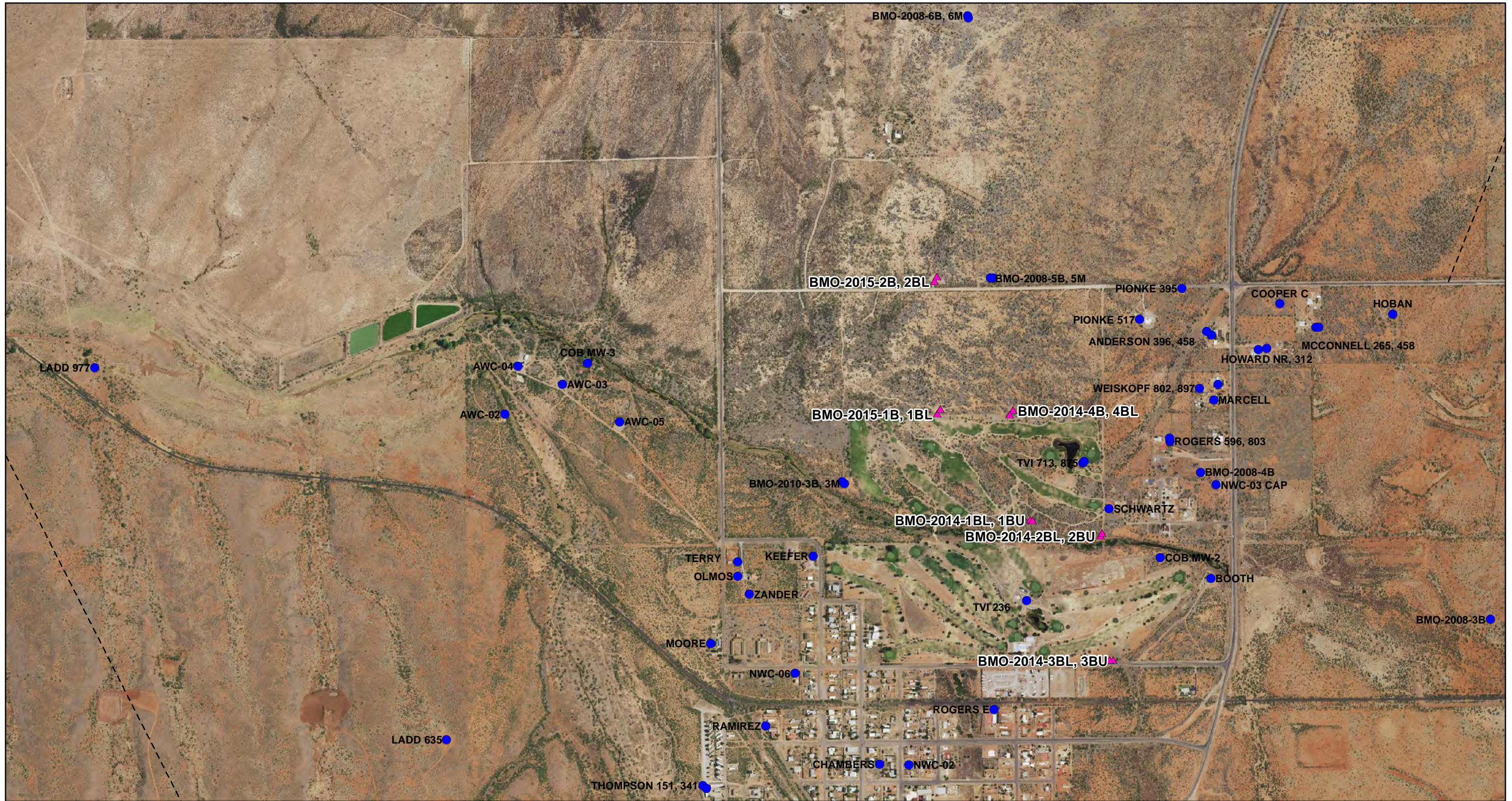
Copyright:© 2013 National Geographic Society, i-cubed

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



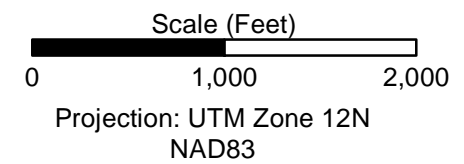
Date	11/8/19	File ID	055038-538

FIGURE 3
GROUNDWATER
MONITORING LOCATIONS



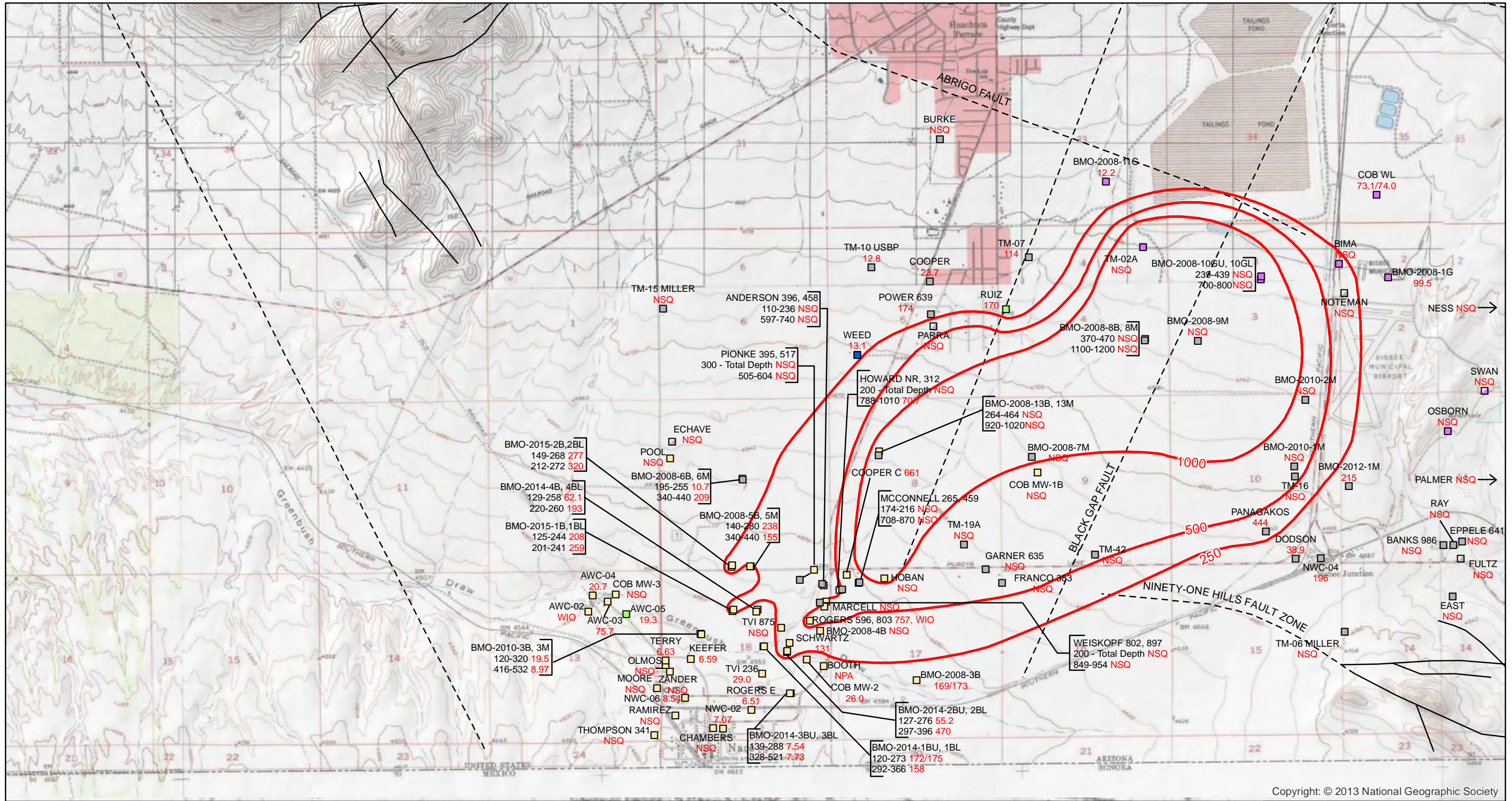
Legend

- ▲ Expanded Goundwater Monitoring Program Well
- Existing Well



Date 11/8/2019	File ID 055038-539

FIGURE 4
NACO AREA
WELL SITES



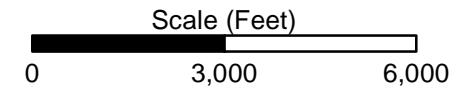
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Legend

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

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

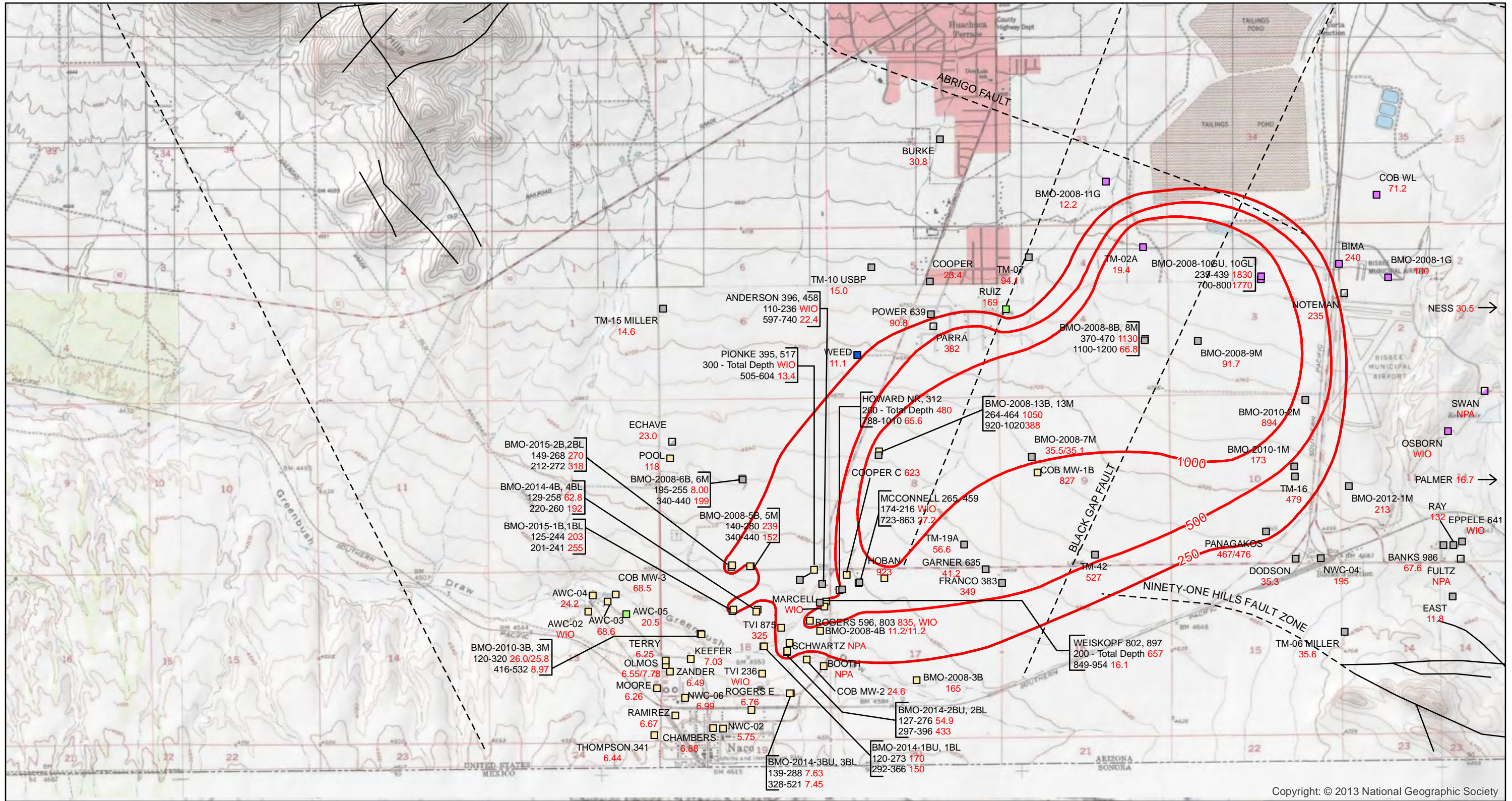
NPA = No Property Access
 NSQ = Not Scheduled for Quarter
 WIO = Well Inoperable
 mg/L = milligrams per liter
 ft bls = feet below land surface
 Sulfate contours are based on represented and historical data.



Date	8/19/19	File ID	055038-529

Projection: UTM Zone 12N NAD83

FIGURE 5
 SULFATE CONCENTRATIONS IN SITE-WIDE GROUNDWATER SAMPLES FOR FIRST QUARTER 2019

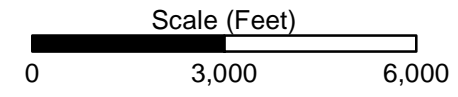


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- Legend**
- NWC-02 Well ID
 - 5.75 SO4 Concentration (mg/L)
 - Duplicate results separated by "/"
 - SO4 Concentration Contour
 - - - Fault (dashed where inferred)
 - Co-located Wells
 - Well ID
 - Screen (ft bls): Sulfate Levels (mg/L)

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

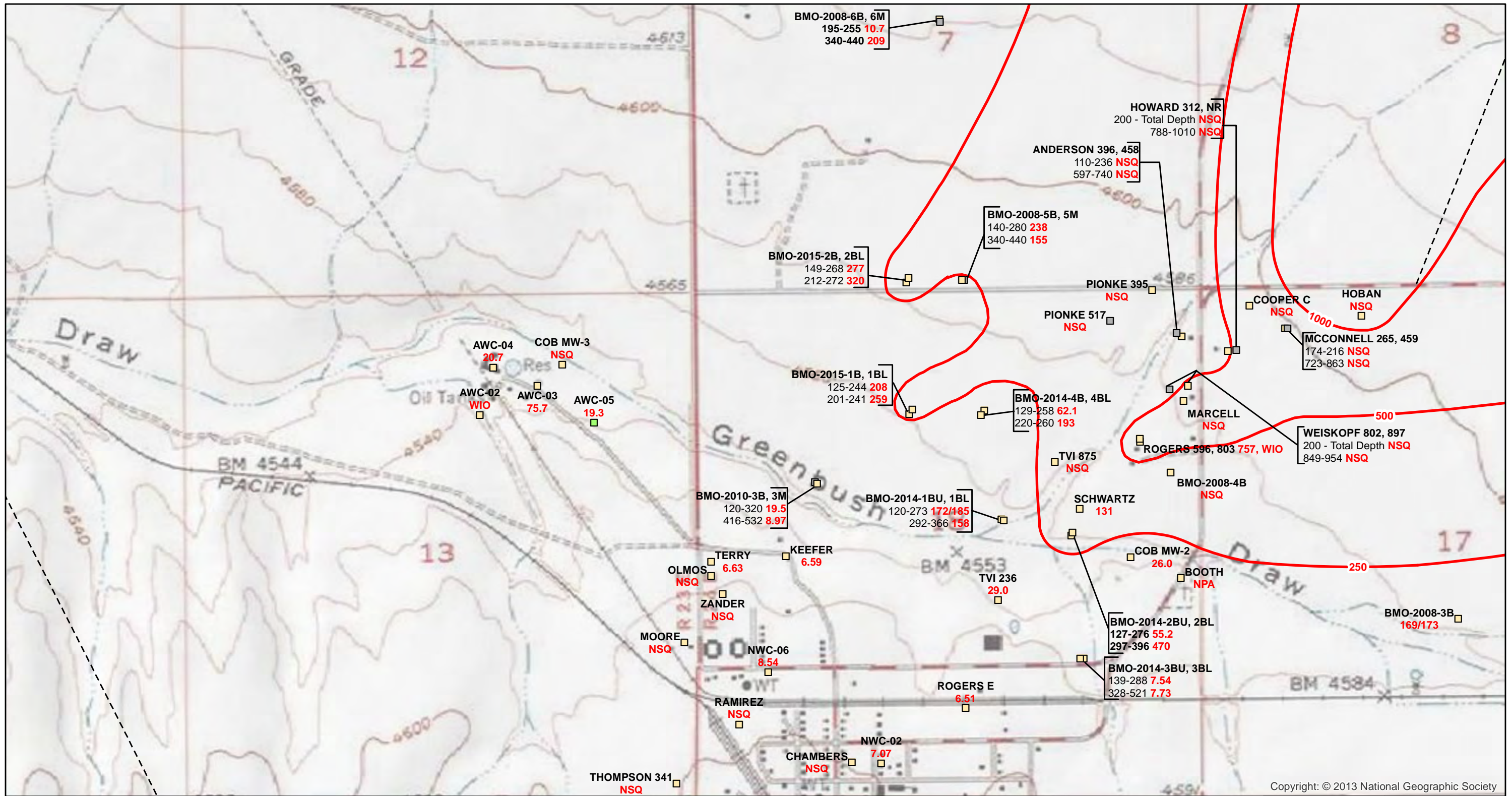
NPA = No Property Access
 WIO = Well Inoperable
 mg/L = milligrams per liter
 ft bls = feet below land surface
 Sulfate contours are based on represented and historical data.



Date	10/1/19	File ID	055038-533

Projection: UTM Zone 12N NAD83

FIGURE 6
 SULFATE CONCENTRATIONS IN SITE-WIDE GROUNDWATER SAMPLES FOR THIRD QUARTER 2019



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Legend

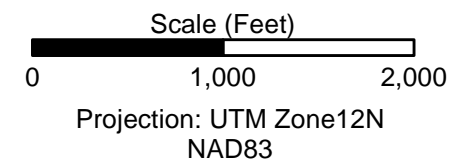
- NWC-02 Well ID
- 7.07 Sulfate Concentration (mg/L)
- Duplicate results separated by "/"
- Sulfate Concentration Contour
- - - Fault (Inferred)
- Co-located Wells
- Well ID
- Screen (ft bls): Sulfate Levels (mg/L)

Screened Formation

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

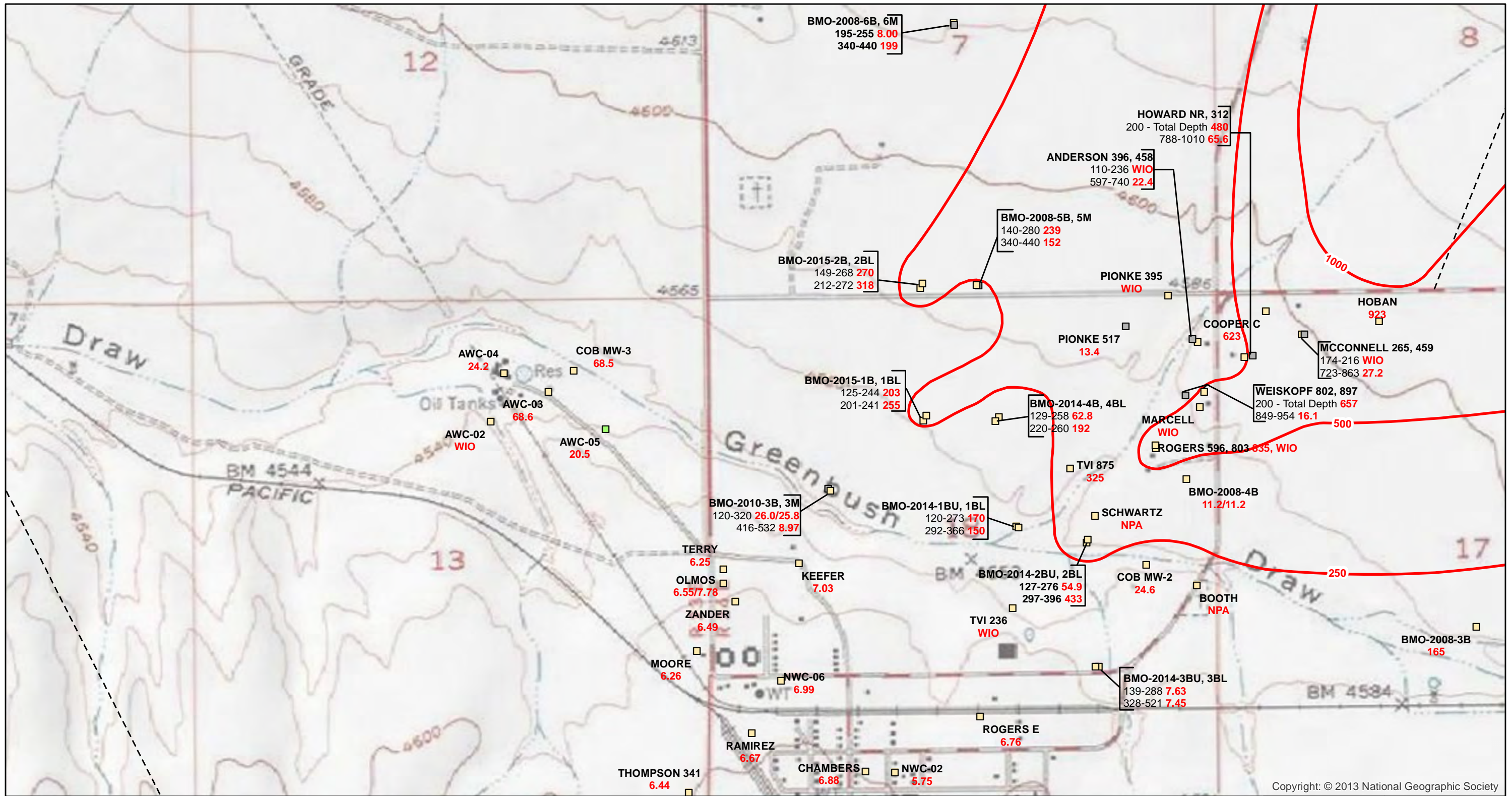
Undifferentiated Bisbee Group: Cintura, Mural Limestone, and Morita Formations

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



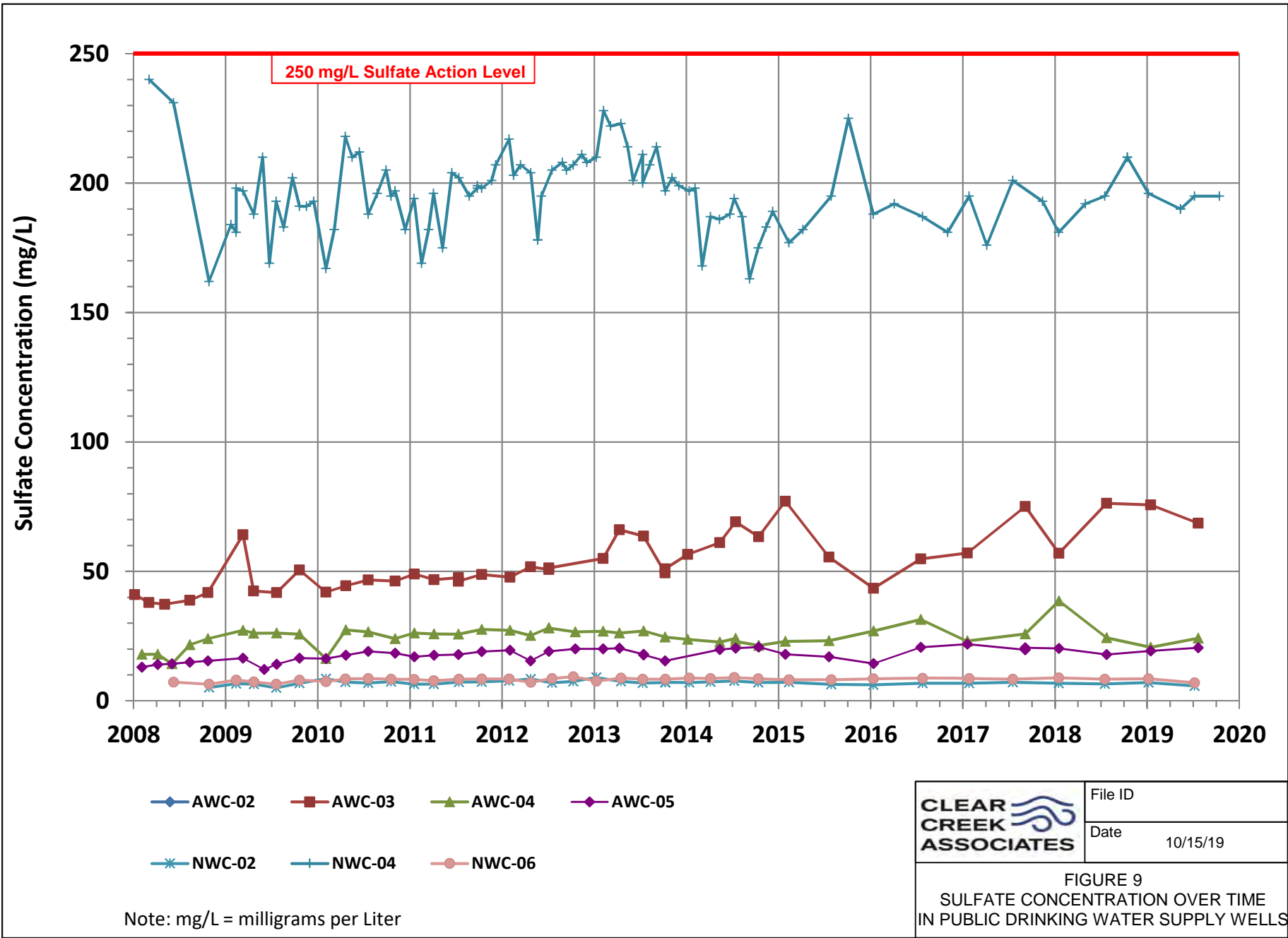
Date 1/29/2020	File ID 055038-530

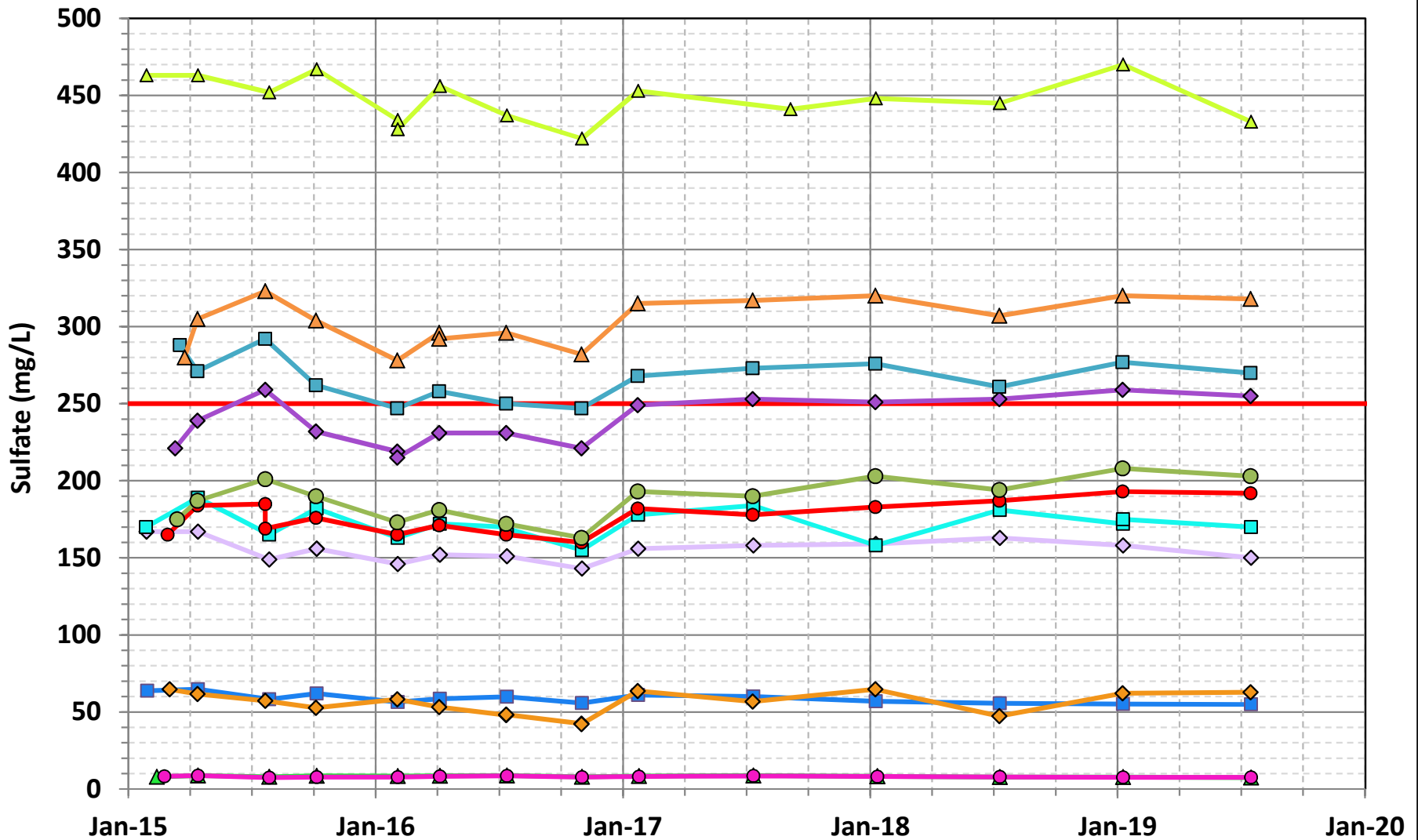
FIGURE 7
 SULFATE CONCENTRATIONS AT THE WEST EDGE OF THE PLUME FOR FIRST QUARTER 2019



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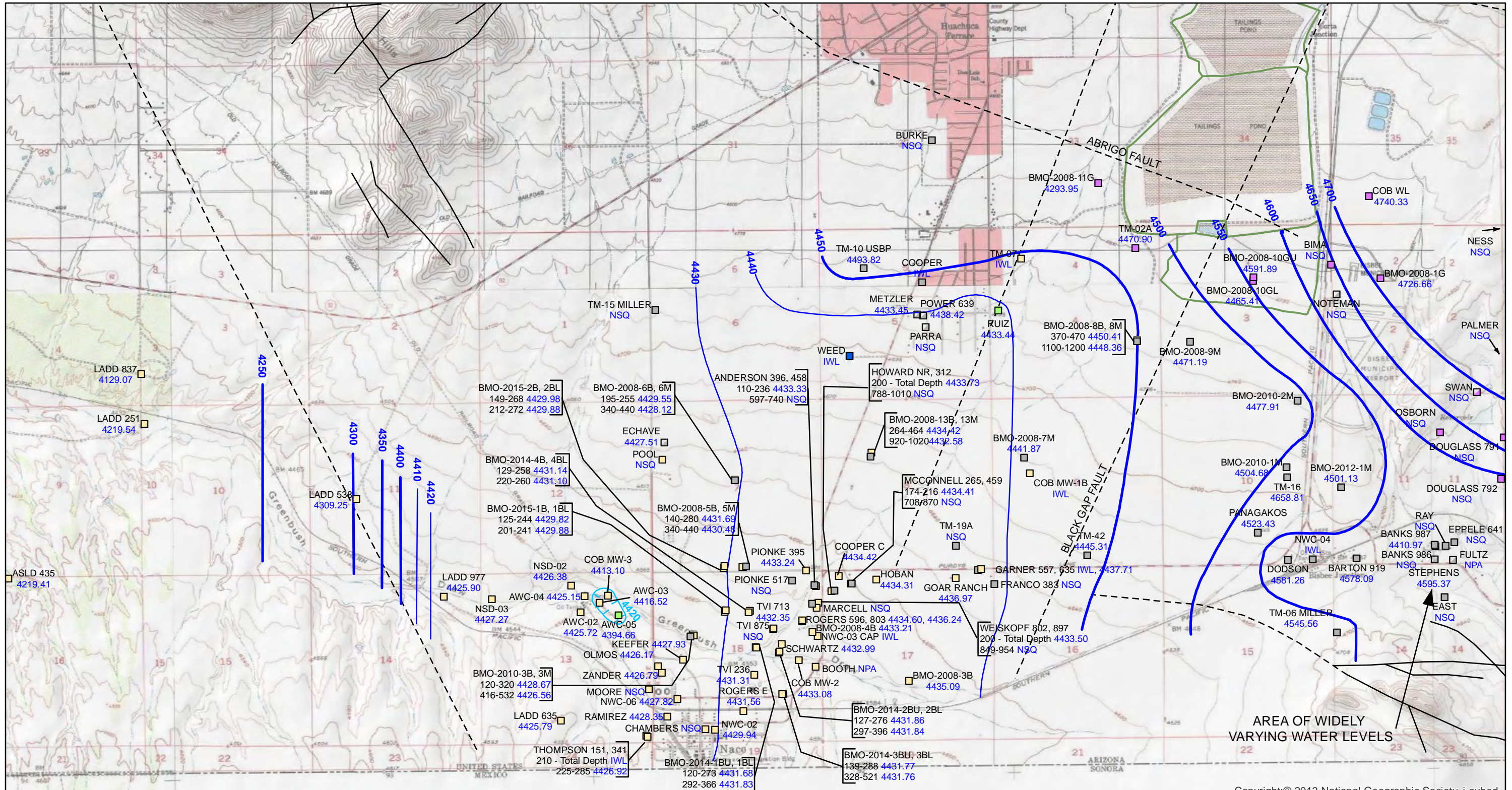
<p>Legend</p> <ul style="list-style-type: none"> □ NWC-02 Well ID 5.75 Sulfate Concentration (mg/L) Duplicate results separated by "/" — Sulfate Concentration Contour - - - Fault (Inferred) <p>Co-located Wells</p> <ul style="list-style-type: none"> □ Well ID □ Screen (ft bls): Sulfate Levels (mg/L) 		<p>Screened Formation</p> <ul style="list-style-type: none"> □ Basin Fill □ Basin Fill and Undifferentiated Bisbee Group □ Undifferentiated Bisbee Group □ Undifferentiated Bisbee Group - Estimated ■ Undifferentiated Bisbee Group and Gance Conglomerate ■ Gance Conglomerate ■ Gance Conglomerate - Estimated <p>Undifferentiated Bisbee Group: Cintura, Mural Limestone, and Morita Formations</p>		<p>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.</p>		<p>Scale (Feet)</p> <p>0 1,000 2,000</p> <p>Projection: UTM Zone12N NAD83</p>		<p>Date 10/14/19</p> <p>File ID 055038-534</p>	
<p>FIGURE 8 SULFATE CONCENTRATIONS AT THE WEST EDGE OF THE PLUME FOR THIRD QUARTER 2019</p>									





Note: mg/L = milligrams per Liter

	File ID
	Date 10/1/19
FIGURE 10 SULFATE CONCENTRATIONS OVER TIME IN EXPANDED GROUNDWATER MONITORING PROGRAM WELLS	

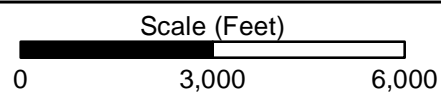


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Legend

- AWC-05 Well ID
- 4394.66 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

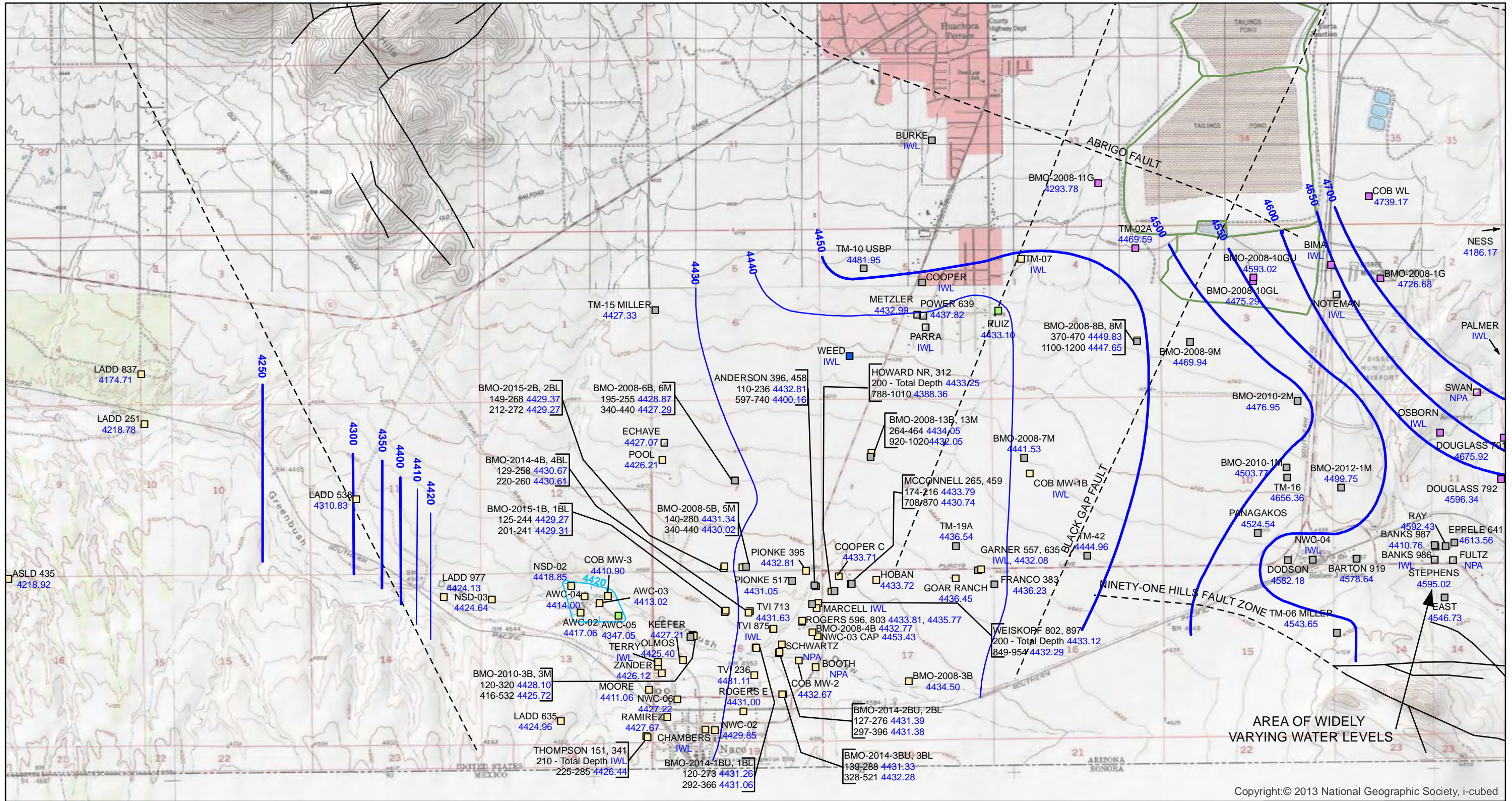
IWL = Inaccessible for Water Level
 NPA = No Property Access
 NSQ = Not Scheduled for Quarter
 ft amsl = feet above mean sea level
 ft bls = feet below land surface
 LADD 635 and NWC-03 CAP were not used for contouring



Projection: UTM Zone 12N NAD83

Date 4/22/19	File ID 055038-531

FIGURE 11
 SITE-WIDE
 GROUNDWATER ELEVATIONS
 FOR FIRST QUARTER 2019



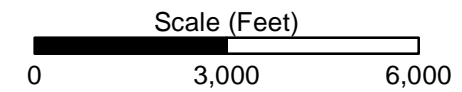
Copyright:© 2013 National Geographic Society, i-cubed

Legend

- AWC-05 Well ID
- 4347.05 Groundwater Elevation (ft amsl)
- Groundwater Elevation Contours (10 ft)
- Groundwater Elevation Contours (50 ft) (dashed where inferred)
- Groundwater Depression
- Faults (dashed where inferred)
- C TSA Facility
- Co-located Wells
 - Well ID
 - Screen (ft bls): Water Elevation (ft amsl)

- Screened Formation**
- Basin Fill
 - Basin Fill and Undifferentiated
 - Bisbee Group
 - Undifferentiated Bisbee Group
 - Undifferentiated Bisbee Group - Estimated
 - Undifferentiated Bisbee Group and Glance Conglomerate
 - Glance Conglomerate
 - Glance Conglomerate-Estimated

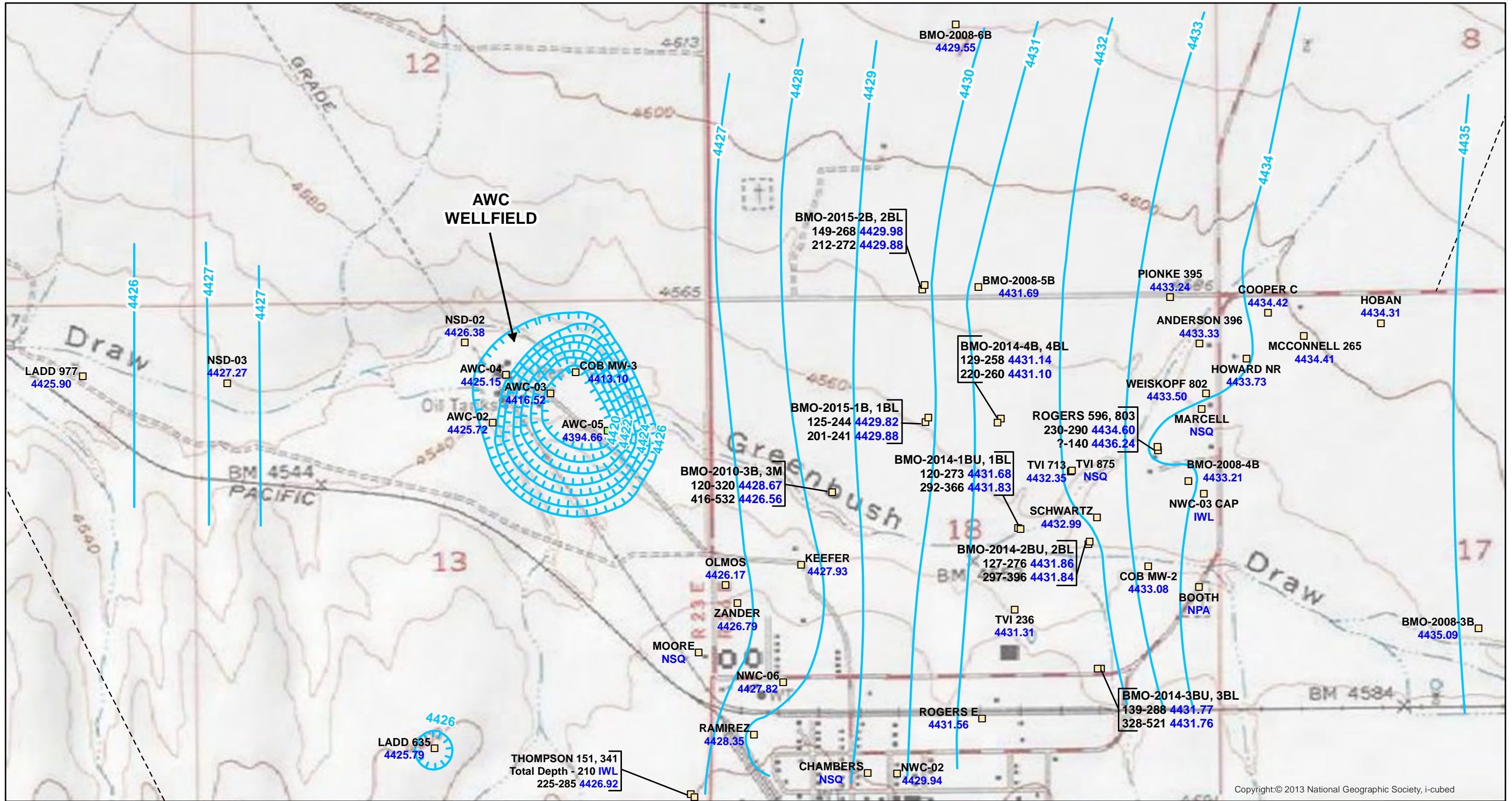
IWL = Inaccessible for Water Level
 NPA = No Property Access
 ft amsl = feet above mean sea level
 ft bls = feet below land surface
 NWC-03 CAP was not used for contouring.



Date	11/21/19	File ID	055038-535

Projection: UTM Zone 12N NAD83

FIGURE 12
SITE-WIDE
GROUNDWATER ELEVATIONS
FOR THIRD QUARTER 2019



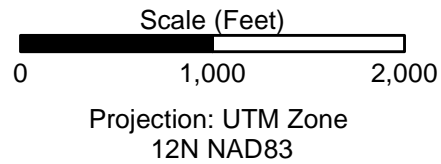
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Legend

- AWC-02 Well ID
- 4425.72 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)

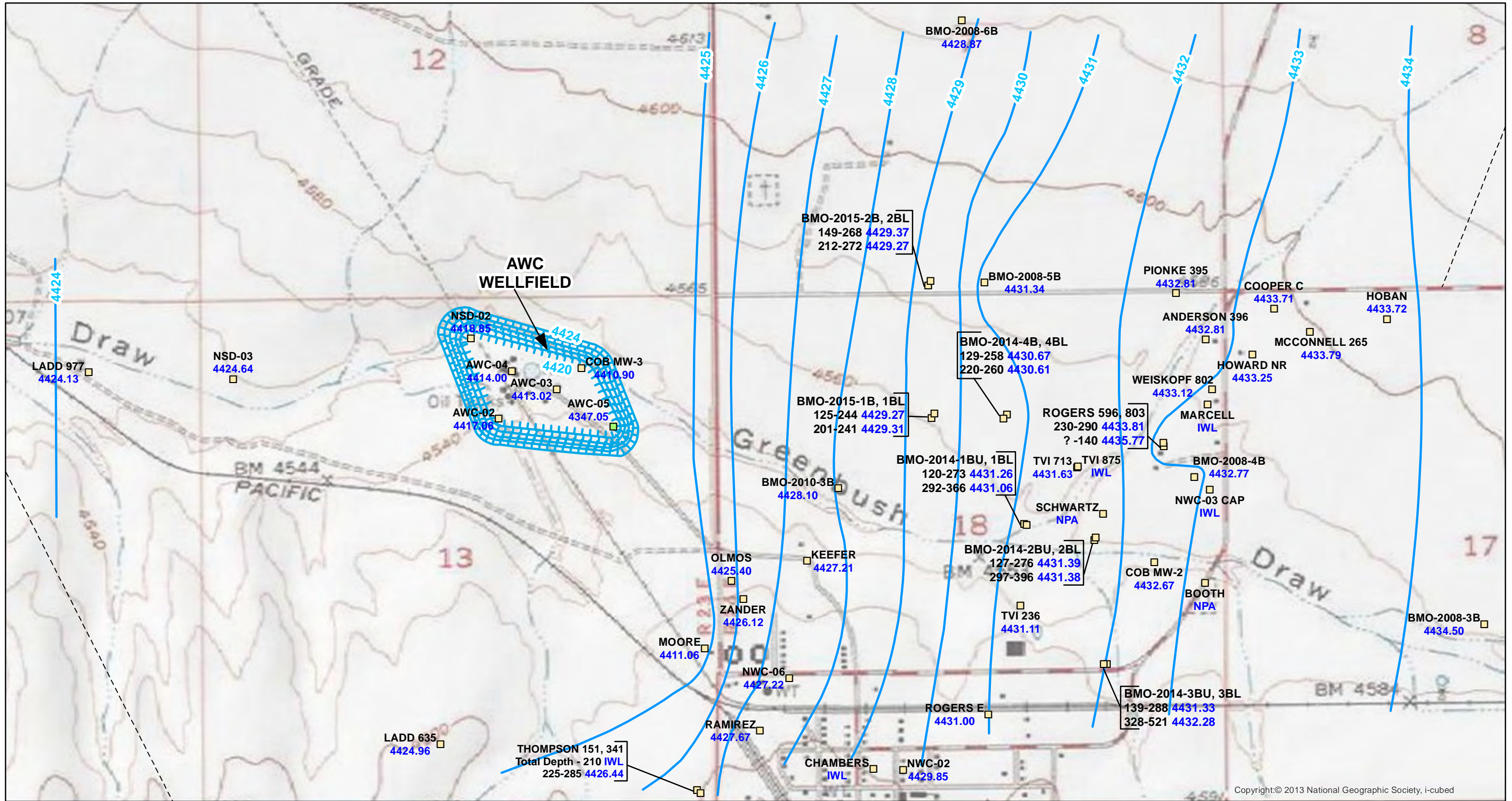
- Screened Formation
- Basin Fill
- Basin Fill and Undifferentiated
- Bisbee Group
- Undifferentiated Bisbee Group
- Undifferentiated Bisbee Group - Estimated
- Undifferentiated Bisbee Group and Gance Conglomerate
- Gance Conglomerate
- Gance Conglomerate-Estimated

Notes:
 IWL = Inaccessible for Water Level
 NPA = No Property Access
 NSQ = Not Scheduled for Quarter
 ft amsl = feet above mean sea level
 ft bls = feet below land surface
 LADD 635 and NWC-03 CAP were not used for contouring



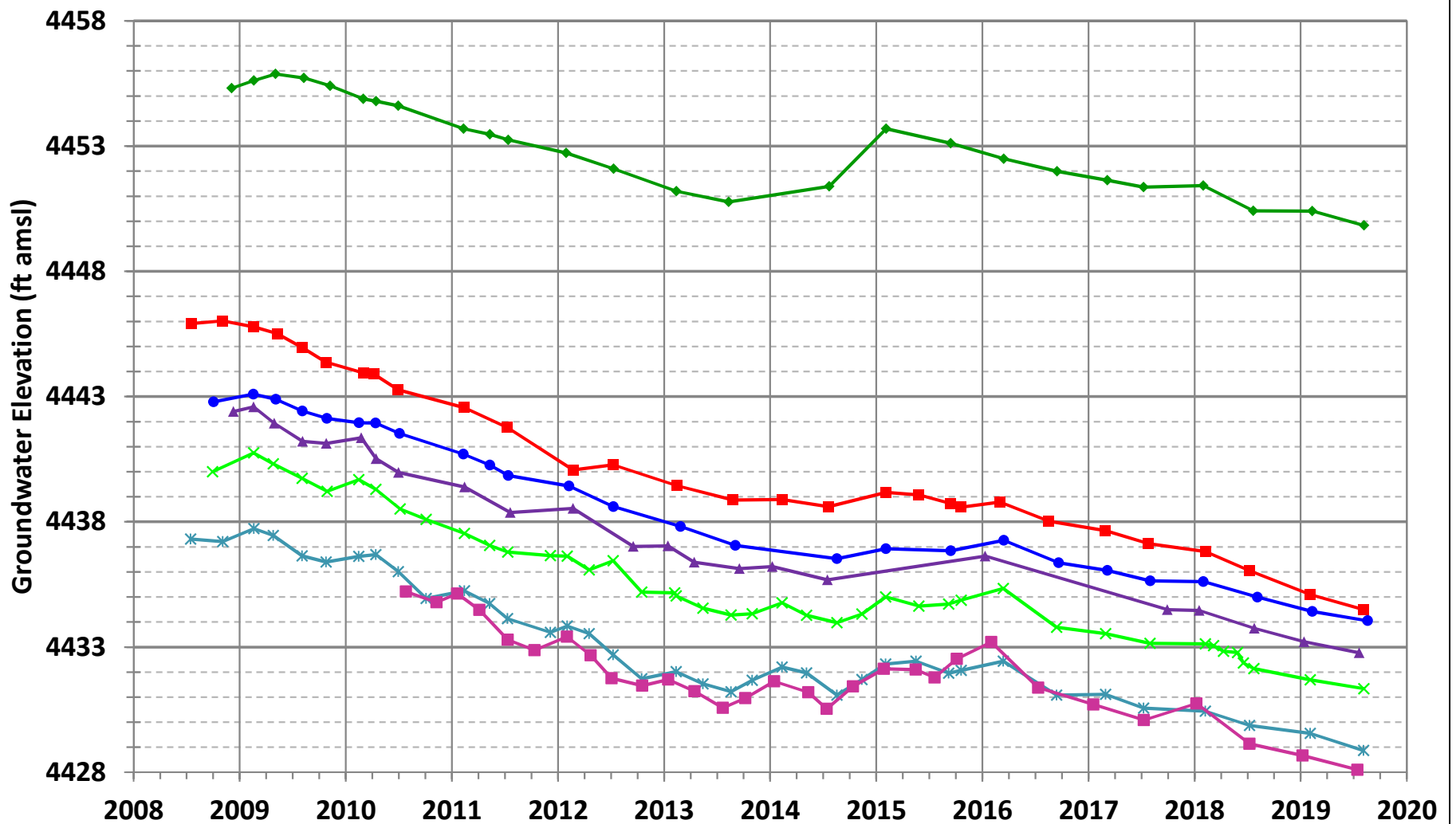
Date	5/30/19	File ID	055038-532

FIGURE 13
 BASIN FILL
 GROUNDWATER ELEVATIONS
 AT THE WEST EDGE OF THE PLUME
 FOR FIRST QUARTER 2019



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<p>Legend</p> <ul style="list-style-type: none"> □ AWC-02 Well ID 4417.06 Groundwater Elevation (ft amsl) Groundwater Elevation Contour (ft amsl) Groundwater Elevation Depression Contour (ft amsl) Faults (dashed where inferred) Co-located Wells <ul style="list-style-type: none"> □ Well ID Screen (ft bls): Water Elevation (ft amsl) 		<p>Screened Formation</p> <ul style="list-style-type: none"> □ 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 		<p>IWL = Inaccessible for Water Level NPA = No Property Access ft amsl = feet above mean sea level ft bls = feet below land surface</p>		<p>Scale (Feet)</p> <p>0 1,000 2,000</p>		<p>Date: 11/20/19</p> <p>File ID: 055038-536</p>	
						<p>Projection: UTM Zone 12N NAD83</p>			
						<p>FIGURE 14 BASIN FILL GROUNDWATER ELEVATIONS AT THE WEST EDGE OF THE PLUME FOR THIRD QUARTER 2019</p>			



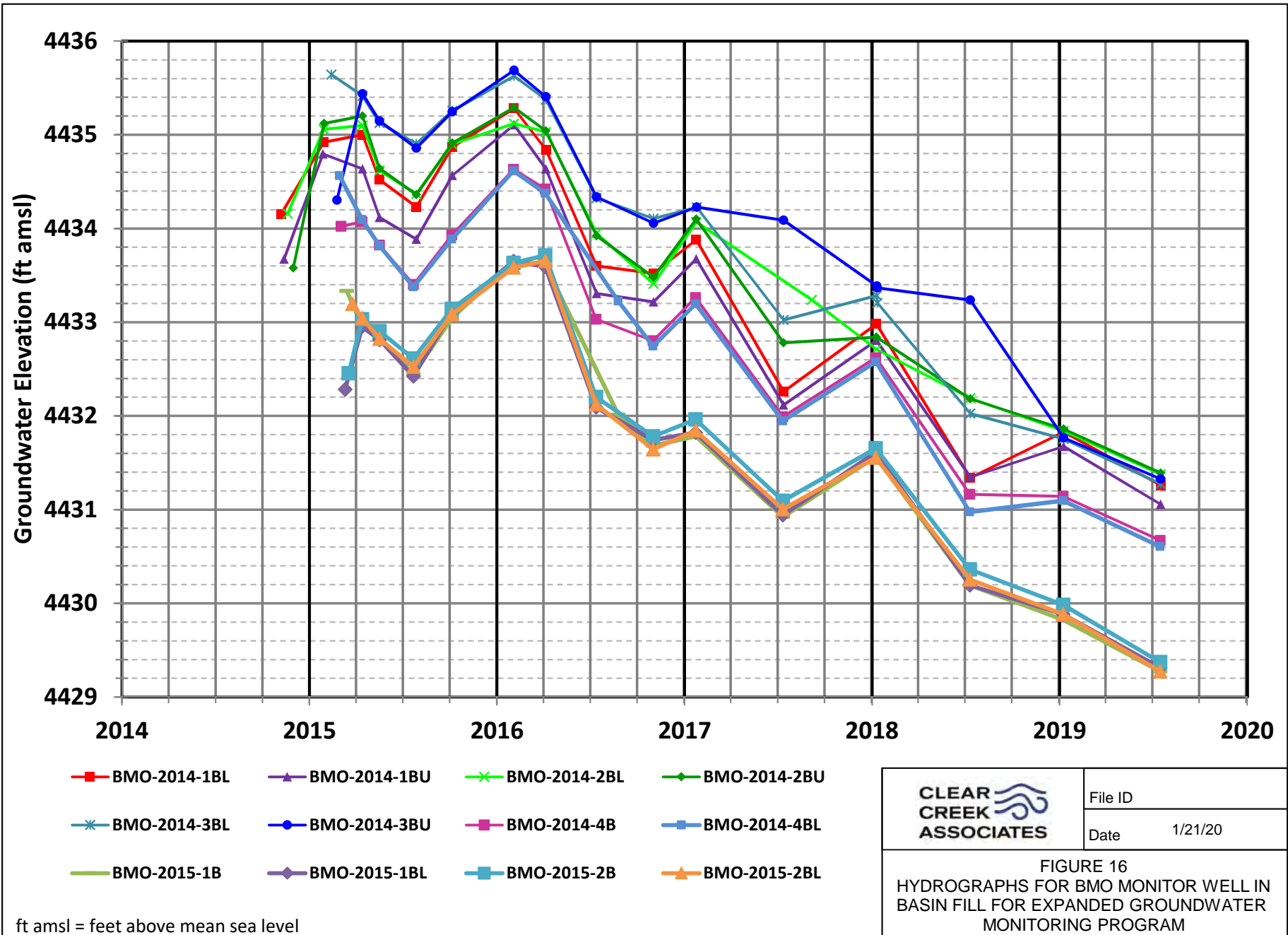
Note: ft amsl = feet above mean sea level

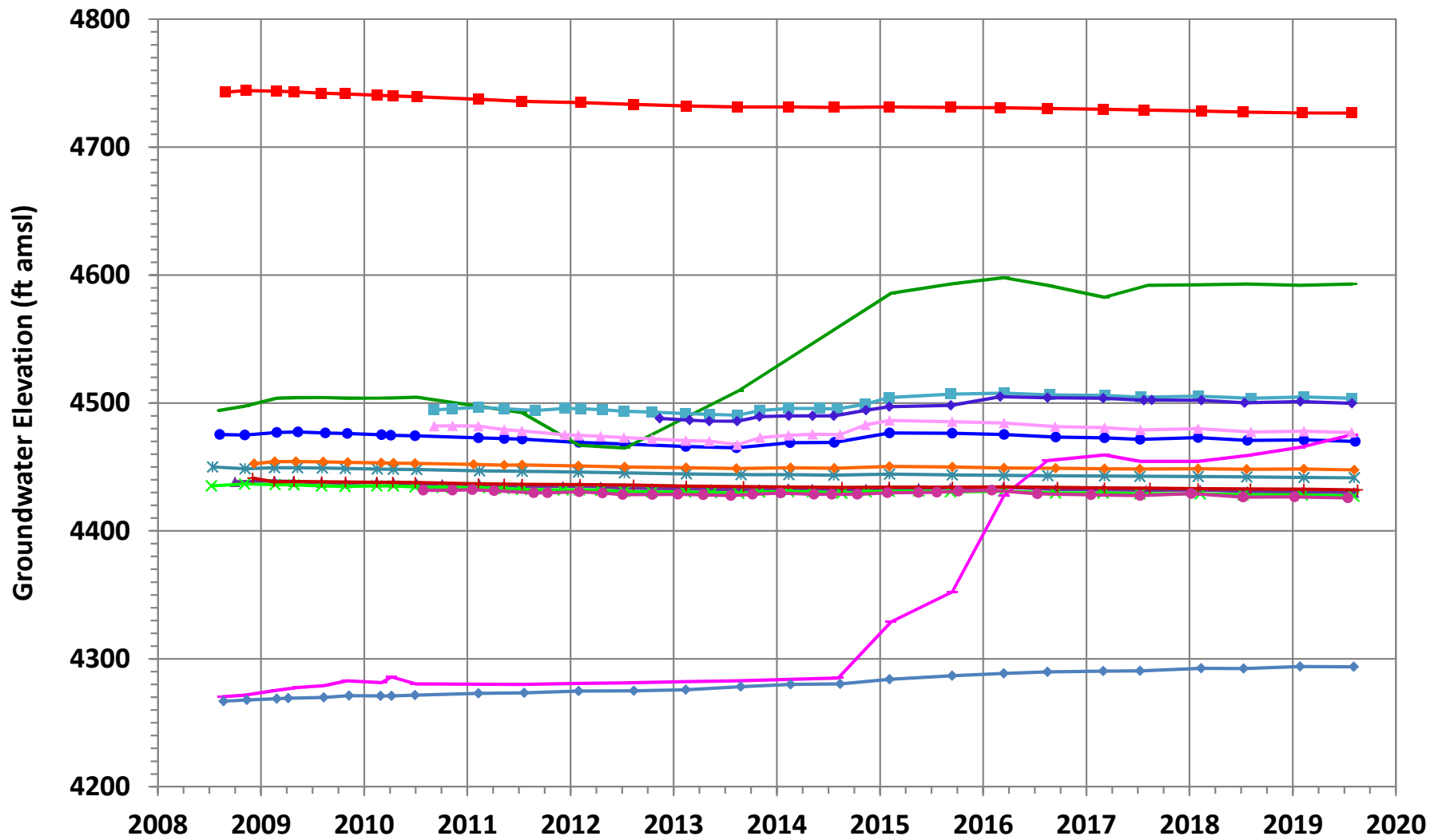
- BMO-2008-3B ▲ BMO-2008-4B ✕ BMO-2008-5B ✱ BMO-2008-6B
- ◆ BMO-2008-8B ● BMO-2008-13B ■ BMO-2010-3B




File ID	
Date	10/1/19

FIGURE 15
HYDROGRAPHS FOR SELECTED BMO
MONITOR WELLS IN BASIN FILL





Note: ft amsl = feet above mean sea level

	File ID
	Date 10/1/19
FIGURE 17 HYDROGRAPHS FOR BMO MONITOR WELLS IN BEDROCK	

APPENDICES

APPENDIX A
GROUNDWATER SAMPLING FORMS

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-7-19
 Well ID: ANDERSON 396 Weather: Mostly Clear, 52°
 ADWR No: 613396 Sampler: SA

WELL DATA			
Well Depth (ft bls):	<u>285</u>	Casing Capacity	
Casing Diameter (in):	<u>8</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>155.18</u>	2	0.16
Casing Volume (gal):	<u>x3 =</u>	4	0.65
Total Volume Purged (gal):		5	1.02
		6	1.47
		Ⓢ	2.61
		10	4.08
		16	10.44
		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
	Pump On						
		<u>W</u>	<u>L</u>	<u>0</u>			
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: WLO

Additional Comments: _____

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-16-19
 Well ID: AWC-02 Weather: Part Cloudy, 40s
 ADWR No: 616 586 Sampler: JH

WELL DATA		
Well Depth (ft bls): <u>333</u>	Casing Capacity	
Casing Diameter (in): <u>20</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>121.92</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	(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
							Pump On
							Inoperable Pump
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Inoperable Pump							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: Pump not functioning

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-16-19
 Well ID: AWC-Ø3 Weather: pt cloudy, 40s
 ADWR No: 616585 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>270</u>	Casing Capacity	
Casing Diameter (in): <u>16</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>123.0*</u>	2	0.16
Casing Volume (gal): <u>1,535 x3 = 4604</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>0923</u>	<u>Pump On</u>						
<u>0926</u>	<u>3</u>	<u>820</u>	<u>2,460</u>	<u>7.31</u>	<u>20.0</u>	<u>507.9</u>	
<u>0929</u>	<u>6</u>	<u>820</u>	<u>4,920</u>	<u>7.33</u>	<u>20.0</u>	<u>505.0</u>	
<u>0932</u>	<u>9</u>	<u>820</u>	<u>7,380</u>	<u>7.33</u>	<u>20.1</u>	<u>500.8</u>	
<u>0939</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>AWC-Ø3</u>	<u>09:34</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments: * used AWC's spigot for water level

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-16-19
 Well ID: AWC-04 Weather: Pt. cloudy, 40s
 ADWR No: 616584 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>337</u>	Casing Capacity	
Casing Diameter (in): <u>16</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>115.33</u>	2	0.16
Casing Volume (gal): <u>2,314</u> x3 = <u>6943</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>0955</u>	<u>Pump On</u>						
<u>0958</u>	<u>3</u>	<u>780</u>	<u>2,340</u>	<u>6.96</u>	<u>19.3</u>	<u>707.6</u>	
<u>1001</u>	<u>8</u>	<u>780</u>	<u>4,680</u>	<u>7.01</u>	<u>19.4</u>	<u>706.4</u>	
<u>1004</u>	<u>9</u>	<u>780</u>	<u>7,020</u>	<u>6.99</u>	<u>19.4</u>	<u>706.8</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>AWC-04</u>	<u>10:06</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-16-19
 Well ID: AWC-05 Weather: Pt Cloudy, 30s
 ADWR No: 590 620 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>1183</u>	Casing Capacity	
Casing Diameter (in): <u>16</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>147.85</u>	2	0.16
Casing Volume (gal): <u>10,807 x3 = 32,421</u>	4	0.65
Total Volume Purged (gal): <u>40,150</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	<u>16</u>	<u>10.44</u>
	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
<u>0811</u>	<u>Pump On</u>						
<u>0826</u>	<u>15</u>	<u>730</u>	<u>10,950</u>	<u>7.34</u>	<u>20.2</u>	<u>449.5</u>	
<u>0841</u>	<u>30</u>	<u>730</u>	<u>21,900</u>	<u>7.38</u>	<u>20.8</u>	<u>443.7</u>	
<u>0856</u>	<u>45</u>	<u>730</u>	<u>32,850</u>	<u>7.39</u>	<u>21.0</u>	<u>441.6</u>	
<u>0906</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>AWC-05</u>	<u>0858</u>	<u>poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-15-19
 Well ID: BANKS 987 Weather: Pt. Cloudy, 60s
 ADWR No: 647 987 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>339</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>6</u>	2	0.16
Static Water Level (ft bmp): <u>237.21</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>x3 =</u>	⑥	1.47
	8	2.61
Total Volume Purged (gal):	10	4.08
	16	10.44
	20	16.31
<small>Casing Volume = gallons/foot * water column (feet)</small>		

FIELD SAMPLING DATA							
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (μS/cm)	Comments
							Pump On
							<u>WCO</u>
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WCO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WCO</u>

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-15-19
 Well ID: BARTOV 919 Weather: Pt. Cloudy, 60s
 ADWR No: 644 919 Sampler: SA

WELL DATA		
Well Depth (ft bls):	<u>130</u>	Casing Capacity
Casing Diameter (in):	<u>6</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>114.27</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>x3 =</u>	2
Total Volume Purged (gal):		4
		5
		⑥
		8
		10
		16
		20
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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: WLO

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-14-19
 Well ID: BMO-2008-4B Weather: PT. Cloudy, 50s
 ADWR No: 910096 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>610</u>	Casing Capacity	
Casing Diameter (in): <u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>139.96</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	Pump On						
	✓	L	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLU</u>							

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 parameters stabilized.
 Purged well until field parameters stabilized.
 Other: WLU

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-8-19
 Well ID: BMO-2010-3B Weather: pt. cloudy, 40°
 ADWR No: 219970 Sampler: JA

WELL DATA			Casing Capacity	
Well Depth (ft bls):			Nominal Size (inches)	Gallons per Linear Foot
Well Depth (ft bls):	<u>330</u>		2	0.16
Casing Diameter (in):	<u>5</u>		4	0.65
Static Water Level (ft bmp):	<u>121.92</u>		(5)	(1.02)
Casing Volume (gal):	<u>212</u> x3 = <u>637</u>		6	1.47
Total Volume Purged (gal):	<u>763</u>		8	2.61
			10	4.08
			16	10.44
			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
<u>0810</u>	<u>Pump On</u>						
<u>0825</u>	<u>15</u>	<u>7</u>	<u>105</u>	<u>7.42</u>	<u>20.1</u>	<u>421.6</u>	
<u>0840</u>	<u>30</u>	<u>7</u>	<u>210</u>	<u>7.46</u>	<u>20.2</u>	<u>417.4</u>	
<u>0855</u>	<u>45</u>	<u>7</u>	<u>315</u>	<u>7.42</u>	<u>20.1</u>	<u>419.7</u>	
<u>0910</u>	<u>60</u>	<u>7</u>	<u>420</u>	<u>7.40</u>	<u>20.2</u>	<u>419.4</u>	
<u>0925</u>	<u>75</u>	<u>7</u>	<u>525</u>	<u>7.42</u>	<u>20.2</u>	<u>417.9</u>	
<u>0940</u>	<u>90</u>	<u>7</u>	<u>630</u>	<u>7.40</u>	<u>20.2</u>	<u>417.3</u>	
<u>0955</u>	<u>105</u>	<u>7</u>	<u>735</u>	<u>7.42</u>	<u>20.2</u>	<u>418.6</u>	
<u>0959</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2010-3B</u>	<u>0957</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:	

WELL PURGING INFORMATION	
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:	

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-8-19
 Well ID: BMO-2010-3M Weather: Pt. cloudy, 70s
 ADWR No: 219969 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>532</u>	Casing Capacity	
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>123.97</u>	2	0.16
Casing Volume (gal):	<u>416</u> <u>x3 = 1249</u>	4	0.65
Total Volume Purged (gal):	<u>1288</u>	(5)	(1.02)
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>1005</u>	<u>Pump On</u>						
<u>1035</u>	<u>30</u>	<u>7</u>	<u>210</u>	<u>7.60</u>	<u>21.1</u>	<u>367.1</u>	
<u>1105</u>	<u>60</u>	<u>7</u>	<u>420</u>	<u>7.53</u>	<u>21.7</u>	<u>383.1</u>	
<u>1135</u>	<u>90</u>	<u>7</u>	<u>630</u>	<u>7.47</u>	<u>21.8</u>	<u>380.7</u>	
<u>1205</u>	<u>120</u>	<u>7</u>	<u>840</u>	<u>7.43</u>	<u>21.9</u>	<u>380.4</u>	
<u>1235</u>	<u>150</u>	<u>7</u>	<u>1050</u>	<u>7.43</u>	<u>21.9</u>	<u>379.1</u>	
<u>1305</u>	<u>180</u>	<u>7</u>	<u>1260</u>	<u>7.42</u>	<u>22.0</u>	<u>378.4</u>	
<u>1309</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2010-3M</u>	<u>1307</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-10-19
 Well ID: BMO-2014-1BL Weather: Rain, 50s
 ADWR No: 917394 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>366</u>	Casing Capacity	
Casing Diameter (in): <u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>126.62</u>	2	0.16
Casing Volume (gal): <u>244 x3 = 733</u>	4	0.65
Total Volume Purged (gal): <u>756</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>13 43</u>	<u>Pump On</u>						
<u>13 58</u>	<u>15</u>	<u>7*</u>	<u>105</u>	<u>7.17</u>	<u>21.5</u>	<u>690.7</u>	
<u>14 13</u>	<u>30</u>	<u>7</u>	<u>210</u>	<u>7.17</u>	<u>21.5</u>	<u>684.2</u>	
<u>14 28</u>	<u>45</u>	<u>7</u>	<u>315</u>	<u>7.17</u>	<u>21.7</u>	<u>684.4</u>	
<u>14 43</u>	<u>60</u>	<u>7</u>	<u>420</u>	<u>7.15</u>	<u>21.8</u>	<u>685.5</u>	
<u>14 58</u>	<u>75</u>	<u>7</u>	<u>525</u>	<u>7.15</u>	<u>21.8</u>	<u>686.4</u>	
<u>15 13</u>	<u>90</u>	<u>7</u>	<u>630</u>	<u>7.15</u>	<u>21.8</u>	<u>684.1</u>	
<u>15 28</u>	<u>105</u>	<u>7</u>	<u>735</u>	<u>7.15</u>	<u>21.8</u>	<u>683.6</u>	
<u>15 31</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-1BL</u>	<u>15:30</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: * Pump only operating at half normal gpm, possible electrical or pump issue.



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-10-19
 Well ID: BMO-2014-1BU Weather: Rain, 50%
 ADWR No: 917393 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>273</u>	Casing Capacity
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>126.86</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>149</u> x3 = <u>447</u>	2 0.16
Total Volume Purged (gal):	<u>602</u>	4 0.65
		5 <u>1.02</u>
		6 1.47
		8 2.61
		10 4.08
		16 10.44
		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
<u>12:55</u>	<u>Pump On</u>						
<u>13:05</u>	<u>10</u>	<u>14</u>	<u>140</u>	<u>7.16</u>	<u>20.5</u>	<u>747.0</u>	
<u>13:15</u>	<u>20</u>	<u>14</u>	<u>280</u>	<u>7.17</u>	<u>20.5</u>	<u>746.5</u>	
<u>13:25</u>	<u>30</u>	<u>14</u>	<u>420</u>	<u>7.17</u>	<u>20.4</u>	<u>736.7</u>	
<u>13:30</u>	<u>35</u>	<u>14</u>	<u>490</u>	<u>7.16</u>	<u>20.4</u>	<u>729.9</u>	
<u>13:38</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-1BU</u>	<u>13:32</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>
<u>DUP20190110</u>	<u>12:00</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-10-19
 Well ID: BMO-2014-2BL Weather: Overcast, 50s, rain
 ADWR No: 917452 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>396</u>	Casing Capacity	
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>129.96</u>	2	0.16
Casing Volume (gal):	<u>271</u> x3 = <u>814</u>	4	0.65
Total Volume Purged (gal):	<u>910</u>	5	<u>1.02</u>
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>10:35</u>	<u>Pump On</u>						
<u>10:50</u>	<u>15</u>	<u>14</u>	<u>210</u>	<u>7.07</u>	<u>20.4</u>	<u>1170</u>	
<u>11:05</u>	<u>30</u>	<u>14</u>	<u>420</u>	<u>7.07</u>	<u>20.4</u>	<u>1171</u>	
<u>11:20</u>	<u>45</u>	<u>14</u>	<u>630</u>	<u>7.09</u>	<u>20.4</u>	<u>1169</u>	
<u>11:35</u>	<u>60</u>	<u>14</u>	<u>840</u>	<u>7.07</u>	<u>20.4</u>	<u>1168</u>	
<u>11:40</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-2BL</u>	<u>11:37</u>	<u>poly</u>	<u>250ml</u>	<u>1</u>	<u>3000</u>	<u>MP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:
WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-10-19
 Well ID: BMO-2014-2BU Weather: Overcast, 50s
 ADWR No: 917 453 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>276</u>	Casing Capacity	
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>129.99</u>	2	0.16
Casing Volume (gal):	<u>179</u> x3 = <u>447</u>	4	0.65
Total Volume Purged (gal):	<u>546</u>	5	1.02
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>1147</u>	<u>Pump On</u>						
<u>1157</u>	<u>10</u>	<u>14</u>	<u>140</u>	<u>7.34</u>	<u>19.7</u>	<u>535.0</u>	
<u>1207</u>	<u>20</u>	<u>14</u>	<u>280</u>	<u>7.31</u>	<u>19.8</u>	<u>536.5</u>	
<u>1217</u>	<u>30</u>	<u>14</u>	<u>420</u>	<u>7.30</u>	<u>19.8</u>	<u>534.1</u>	
<u>1222</u>	<u>35</u>	<u>14</u>	<u>490</u>	<u>7.31</u>	<u>19.8</u>	<u>534.0</u>	
<u>1226</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-2BU</u>	<u>12:24</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:	
WELL PURGING INFORMATION	
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:	

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-10-19
 Well ID: BMO-2014-3BL Weather: Overcast, 40s, 40s
 ADWR No: 917527 Sampler: SA

WELL DATA		
Well Depth (ft bls):	<u>521</u>	Casing Capacity
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>142.01</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>387 x3 = 1160</u>	2 0.16
Total Volume Purged (gal):	<u>1272</u>	4 0.65
		5 <u>1.02</u>
		6 1.47
		8 2.61
		10 4.08
		16 10.44
		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
<u>0735</u>	<u>Pump On</u>						
<u>0755</u>	<u>20</u>	<u>12</u>	<u>240</u>	<u>7.31</u>	<u>21.1</u>	<u>423.4</u>	
<u>0815</u>	<u>40</u>	<u>12</u>	<u>480</u>	<u>7.36</u>	<u>21.2</u>	<u>416.9</u>	
<u>0835</u>	<u>60</u>	<u>12</u>	<u>720</u>	<u>7.38</u>	<u>21.4</u>	<u>413.9</u>	
<u>0855</u>	<u>80</u>	<u>12</u>	<u>960</u>	<u>7.35</u>	<u>21.3</u>	<u>412.1</u>	
<u>0915</u>	<u>100</u>	<u>12</u>	<u>1200</u>	<u>7.29</u>	<u>21.4</u>	<u>412.3</u>	
<u>0921</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-3BL</u>	<u>0917</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-10-19
 Well ID: BMO-2014-384 Weather: Overcast, 40s
 ADWR No: 917 494 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>288</u>	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	<u>5</u>	2	0.16
		4	0.65
Static Water Level (ft bmp):	<u>143.12</u>	<u>5</u>	<u>1.02</u>
		6	1.47
Casing Volume (gal):	<u>148 x3 = 443</u>	8	2.61
		10	4.08
Total Volume Purged (gal):		16	10.44
		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
<u>0925</u>	<u>Pump On</u>						
<u>0935</u>	<u>10</u>	<u>12</u>	<u>120</u>	<u>7.29</u>	<u>20.1</u>	<u>471.5</u>	
<u>0945</u>	<u>20</u>	<u>12</u>	<u>240</u>	<u>7.32</u>	<u>19.9</u>	<u>471.3</u>	
<u>0955</u>	<u>30</u>	<u>12</u>	<u>360</u>	<u>7.29</u>	<u>19.9</u>	<u>471.0</u>	
<u>1005</u>	<u>40</u>	<u>12</u>	<u>480</u>	<u>7.28</u>	<u>19.9</u>	<u>470.2</u>	
<u>1009</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-384</u>	<u>10:07</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-9-19
 Well ID: BMO-2014-48 Weather: Pt. Cloudy, 50s
 ADWR No: 917020 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>258</u>	Casing Capacity
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>136.53</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>124 x3 = 372</u>	2
Total Volume Purged (gal):	<u>492</u>	4
		5
		6
		8
		10
		16
		20
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
<u>10:20</u>	<u>Pump On</u>						
<u>10:25</u>	<u>5</u>	<u>12</u>	<u>60</u>	<u>7.38</u>	<u>20.1</u>	<u>489.5</u>	
<u>10:30</u>	<u>10</u>	<u>12</u>	<u>120</u>	<u>7.37</u>	<u>20.2</u>	<u>489.6</u>	
<u>10:40</u>	<u>20</u>	<u>12</u>	<u>240</u>	<u>7.36</u>	<u>20.3</u>	<u>488.2</u>	
<u>10:50</u>	<u>30</u>	<u>12</u>	<u>360</u>	<u>7.36</u>	<u>20.3</u>	<u>487.9</u>	
<u>10:55</u>	<u>35</u>	<u>12</u>	<u>420</u>	<u>7.36</u>	<u>20.2</u>	<u>490.2</u>	
<u>11:01</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-48</u>	<u>1057</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300-d</u>	<u>NP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:
WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-9-19
 Well ID: BMO-2014-4BL Weather: Pt cloudy, 50s
 ADWR No: 917619 Sampler: JA

WELL DATA			
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
<u>261</u>	<u>5</u>	2	0.16
		4	0.65
		<u>5</u>	<u>1.02</u>
		6	1.47
Static Water Level (ft bmp): <u>135.95</u>		8	2.61
Casing Volume (gal): <u>128</u> x3 = <u>383</u>		10	4.08
Total Volume Purged (gal): <u>480</u>		16	10.44
		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
<u>09:30</u>	<u>Pump On</u>						
<u>09:40</u>	<u>10</u>	<u>12</u>	<u>120</u>	<u>7.36</u>	<u>20.4</u>	<u>685.6</u>	
<u>09:50</u>	<u>20</u>	<u>12</u>	<u>240</u>	<u>7.34</u>	<u>20.4</u>	<u>695.5</u>	
<u>10:00</u>	<u>30</u>	<u>12</u>	<u>360</u>	<u>7.34</u>	<u>20.4</u>	<u>700.0</u>	
<u>10:05</u>	<u>35</u>	<u>12</u>	<u>420</u>	<u>7.36</u>	<u>20.4</u>	<u>701.1</u>	
<u>10:10</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-4BL</u>	<u>09:57</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>WP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-9-19
 Well ID: BMO-2015-1B Weather: cloudy, 50s
 ADWR No: 917 622 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>244</u>	Casing Capacity	
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>132.24</u>	2	0.16
Casing Volume (gal):	<u>114</u> x3 = <u>342</u>	4	0.65
Total Volume Purged (gal):	<u>480</u>	5	1.02
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>11:30</u>	<u>Pump On</u>						
<u>11:40</u>	<u>10</u>	<u>12</u>	<u>120</u>	<u>7.31</u>	<u>20.1</u>	<u>741.4</u>	
<u>11:50</u>	<u>20</u>	<u>12</u>	<u>240</u>	<u>7.32</u>	<u>20.2</u>	<u>729.1</u>	
<u>12:00</u>	<u>30</u>	<u>12</u>	<u>360</u>	<u>7.31</u>	<u>20.2</u>	<u>714.3</u>	
<u>12:05</u>	<u>35</u>	<u>12</u>	<u>420</u>	<u>7.32</u>	<u>20.3</u>	<u>711.9</u>	
<u>12:10</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2015-1B</u>	<u>12:07</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:	

WELL PURGING INFORMATION	
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:	

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-9-19
 Well ID: BMO-2015-1BL Weather: cloudy, 60s
 ADWR No: 917621 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>241</u>	Casing Capacity	
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>133.52</u>	2	0.16
Casing Volume (gal):	<u>110</u> x3 = <u>329</u>	4	0.65
Total Volume Purged (gal):	<u>420</u>	5	1.02
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>1225</u>	<u>Pump On</u>						
<u>1235</u>	<u>10</u>	<u>12</u>	<u>120</u>	<u>7.27</u>	<u>20.4</u>	<u>800.8</u>	
<u>1245</u>	<u>20</u>	<u>12</u>	<u>240</u>	<u>7.27</u>	<u>20.4</u>	<u>801.3</u>	
<u>1255</u>	<u>30</u>	<u>12</u>	<u>360</u>	<u>7.30</u>	<u>20.4</u>	<u>800.5</u>	
<u>1300</u>	<u>Pump Off</u>						

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2015-1BL</u>	<u>12:57</u>	<u>Poly</u>	<u>250 ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-9-19
 Well ID: BM0-2015-2B Weather: cloudy, 40s
 ADWR No: 917 827 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>268</u>	Casing Capacity	
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>152.10</u>	2	0.16
Casing Volume (gal):	<u>118</u> x3 = <u>355</u>	4	0.65
Total Volume Purged (gal):	<u>396</u>	5	1.02
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>0733</u>	<u>Pump On</u>						
<u>0738</u>	<u>5</u>	<u>12</u>	<u>60</u>	<u>7.15</u>	<u>19.8</u>	<u>913.0</u>	
<u>0743</u>	<u>10</u>	<u>12</u>	<u>120</u>	<u>7.21</u>	<u>20.1</u>	<u>886.6</u>	
<u>0753</u>	<u>20</u>	<u>12</u>	<u>240</u>	<u>7.19</u>	<u>20.0</u>	<u>879.9</u>	
<u>0803</u>	<u>30</u>	<u>12</u>	<u>360</u>	<u>7.19</u>	<u>20.1</u>	<u>873.3</u>	
<u>0806</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BM0-2015-2BL</u>	<u>0805</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300 d</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-9-19
 Well ID: BM0-2015-2RL Weather: cloudy, 40s
 ADWR No: 917828 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>272</u>	Casing Capacity	
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>150.76</u>	2	0.16
Casing Volume (gal):	<u>124 x3 = 371</u>	4	0.65
Total Volume Purged (gal):	<u>504</u>	5	1.02
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>0818</u>	<u>Pump On</u>						
<u>0823</u>	<u>5</u>	<u>12</u>	<u>60</u>	<u>7.19</u>	<u>19.9</u>	<u>962.0</u>	
<u>0828</u>	<u>10</u>	<u>12</u>	<u>120</u>	<u>7.14</u>	<u>20.2</u>	<u>949.3</u>	
<u>0838</u>	<u>20</u>	<u>12</u>	<u>240</u>	<u>7.14</u>	<u>20.4</u>	<u>919.6</u>	
<u>0848</u>	<u>30</u>	<u>12</u>	<u>360</u>	<u>7.15</u>	<u>20.3</u>	<u>930.4</u>	
<u>0853</u>	<u>35</u>	<u>12</u>	<u>420</u>	<u>7.15</u>	<u>20.3</u>	<u>924.6</u>	
<u>0900</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BM0-2015-2RL</u>	<u>0855</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:	

WELL PURGING INFORMATION	
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:	

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-7-19
 Well ID: COB MW-1B Weather: Pt Cloudy, 40s
 ADWR No: 225906 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>500</u>	Casing Capacity
Casing Diameter (in):	<u>6</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>IWL</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>x3 =</u>	2 0.16
Total Volume Purged (gal):		4 0.65
		5 1.02
		6 1.47
		8 2.61
		10 4.08
		16 10.44
		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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input checked="" type="checkbox"/> Other: <u>NO WL per owner request</u>
WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>

Additional Comments: Per well owner - multiple samplers have been stuck & pieces left down well - samplers never installed, does not want well damaged, NO WL's.



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-15-19
 Well ID: COB MW-2 Weather: clear, 40s
 ADWR No: 903 984 Sampler: JH

WELL DATA		
Well Depth (ft bls): <u>162</u>	Casing Capacity	
Casing Diameter (in): <u>4</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>133.13</u>	2	0.16
Casing Volume (gal): <u>19</u> x3 = <u>56</u>	④	0.65
Total Volume Purged (gal): <u>126</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>0924</u>	<u>Pump On</u>						
<u>0929</u>	<u>5</u>	<u>6</u>	<u>30</u>	<u>7.20</u>	<u>19.1</u>	<u>578.1</u>	
<u>0934</u>	<u>10</u>	<u>6</u>	<u>60</u>	<u>7.26</u>	<u>19.2</u>	<u>578.0</u>	
<u>0939</u>	<u>15</u>	<u>6</u>	<u>90</u>	<u>7.26</u>	<u>19.2</u>	<u>578.3</u>	
<u>0945</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>COB MW-2</u>	<u>09:41</u>	<u>poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-15-19
 Well ID: COB MW-3 Weather: clear 40s
 ADWR No: 906F23 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>300</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>4</u>	2	0.16
Static Water Level (ft bmp): <u>125.53</u>	④	0.65
	5	1.02
Casing Volume (gal): <u>x3 =</u>	6	1.47
	8	2.61
Total Volume Purged (gal):	10	4.08
	16	10.44
	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
	Pump On						
	<u>W</u>	<u>L</u>	<u>O</u>				
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>

Additional Comments: _____

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-7-19
 Well ID: COB WL Weather: Pt. Cloudy, 50s
 ADWR No: 593116 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>150</u>	Casing Capacity
Casing Diameter (in):	<u>4</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>91.73</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>38</u> x3 = <u>114</u>	2 0.16
Total Volume Purged (gal):	<u>127</u>	④ 0.65
		5 1.02
		6 1.47
		8 2.61
		10 4.08
		16 10.44
		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
<u>12:07</u>	<u>Pump On</u>						
<u>12:12</u>	<u>5</u>	<u>7</u>	<u>35</u>	<u>6.74</u>	<u>19.9</u>	<u>1151</u>	
<u>12:17</u>	<u>10</u>	<u>1</u>	<u>40</u>	<u>6.88</u>	<u>19.7</u>	<u>1151</u>	
<u>12:37</u>	<u>30</u>	<u>1</u>	<u>60</u>	<u>7.18</u>	<u>21.1</u>	<u>1163</u>	
<u>12:57</u>	<u>50</u>	<u>1</u>	<u>80</u>	<u>7.11</u>	<u>21.4</u>	<u>1162</u>	
<u>13:17</u>	<u>70</u>	<u>1</u>	<u>100</u>	<u>7.04</u>	<u>21.6</u>	<u>1167</u>	
<u>13:37</u>	<u>90</u>	<u>1</u>	<u>120</u>	<u>6.97</u>	<u>21.5</u>	<u>1163</u>	
<u>13:44</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead		Other: <u>PVC adapter pipe at wellhead</u>			
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>COB WL</u>	<u>13:40</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>3000</u>	<u>NP</u>	<u>Y</u>
<u>DUP20190107</u>	<u>12:00</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>3000</u>	<u>NP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments: Hand filtered sample



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-16-19
 Well ID: COOPER Weather: pt. cloudy, 50°
 ADWR No: 623564 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>325</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>NA (IWL)</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal): <u>125</u>	5	1.02
	⑥	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>1205</u>	<u>Pump On</u>						
<u>1210</u>	<u>5</u>	<u>8</u>	<u>40</u>	<u>7.49</u>	<u>19.3</u>	<u>410.9</u>	
<u>1215</u>	<u>10</u>	<u>5</u>	<u>65</u>	<u>7.46</u>	<u>20.1</u>	<u>413.5</u>	
<u>1220</u>	<u>15</u>	<u>5</u>	<u>90</u>	<u>7.46</u>	<u>20.4</u>	<u>411.3</u>	
<u>1225</u>	<u>20</u>	<u>5</u>	<u>115</u>	<u>7.45</u>	<u>20.5</u>	<u>412.0</u>	
<u>1227</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other: <u>spigot on hose South of wellhead</u>		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>COOPER</u>	<u>1227</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input checked="" type="checkbox"/> Other: <u>Port cap frozen in place, cut remove without damaging it.</u>	
WELL PURGING INFORMATION	
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:	

Additional Comments: _____



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-15-19
 Well ID: DODSON Weather: clear, 50s
 ADWR No: 644 927 Sampler: JA

WELL DATA			
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
<u>200</u>	<u>6</u>	2	0.16
		4	0.65
		5	1.02
Static Water Level (ft bmp):	<u>105-08</u>	<u>6</u>	<u>1.47</u>
		8	2.61
Casing Volume (gal):	<u>140 x3 = 419</u>	10	4.08
		16	10.44
Total Volume Purged (gal):	<u>546</u>	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
<u>10:09</u>	<u>Pump On</u>						
<u>10:19</u>	<u>10</u>	<u>13</u>	<u>130</u>	<u>7.05</u>	<u>19.6</u>	<u>2368</u>	
<u>10:29</u>	<u>20</u>	<u>13</u>	<u>260</u>	<u>7.01</u>	<u>19.7</u>	<u>2350</u>	
<u>10:39</u>	<u>30</u>	<u>13</u>	<u>390</u>	<u>7.01</u>	<u>19.5</u>	<u>2340</u>	
<u>10:49</u>	<u>40</u>	<u>13</u>	<u>520</u>	<u>6.99</u>	<u>19.5</u>	<u>2322</u>	
<u>10:51</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point: <u>Spigot at / near wellhead</u>				Other:			
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>DODSON</u>	<u>10:51</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-15-19
 Well ID: ECHAVE Weather: Cloudy, 60s
 ADWR No: 219449 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>345</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>220.49</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-15-19
 Well ID: GARNER 557 Weather: pt. cloudy, 60s
 ADWR No: 558557 Sampler: JA

WELL DATA		
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity
		Nominal Size (inches) Gallons per Linear Foot
<u>300</u>	<u>6</u>	2 0.16
		4 0.65
		5 1.02
Static Water Level (ft bmp):	<u>IWL</u>	6 1.47
		8 2.61
Casing Volume (gal):	<u>x3 =</u>	10 4.08
		16 10.44
Total Volume Purged (gal):		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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>wl0</u>							

- | WATER LEVEL MEASUREMENT COLLECTION |
|---|
| <input type="checkbox"/> Water level measurement collected.
<input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead
<input type="checkbox"/> No water level measurement collected. Obstruction in well.
<input type="checkbox"/> No water level measurement collected. Well is pumping.
<input type="checkbox"/> Other: |

- | WELL PURGING INFORMATION |
|--|
| <input type="checkbox"/> Purged 3 well volumes and field parameters stabilized.
<input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized.
<input type="checkbox"/> Purged well until field parameters stabilized.
<input checked="" type="checkbox"/> Other: <u>wl0</u> |

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-15-19
 Well ID: GARNER 635 Weather: pt. cloudy, 60s
 ADWR No: 587635 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>680</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>5</u>	2	0.16
Static Water Level (ft bmp): <u>203.03</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>x3 =</u>	6	1.47
	8	2.61
Total Volume Purged (gal):	10	4.08
	16	10.44
	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
	Pump On						
	<u>W</u>	<u>L</u>	<u>0</u>				
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-7-19
 Well ID: GOAR RANCH Weather: Mostly clear, 50s
 ADWR No: 610695 Sampler: SA

WELL DATA		
Well Depth (ft bls):	<u>250</u>	Casing Capacity
Casing Diameter (in):	<u>7</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>194.16</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>x3 =</u>	2
Total Volume Purged (gal):		4
		5
		6
		8
		10
		16
		20
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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-14-19
 Well ID: HOWARD MR Weather: Pt cloudy, 50s
 ADWR No: MR Sampler: JA

WELL DATA			
Well Depth (ft bls):		Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
220		2	0.16
Casing Diameter (in):	6	4	0.65
Static Water Level (ft bmp):	160.18	5	1.02
Casing Volume (gal):	x3 =	6	1.47
Total Volume Purged (gal):		8	2.61
		10	4.08
		16	10.44
		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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: WLO

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-11-19
 Well ID: KEEPER Weather: Foggy 40s
 ADWR No: 209744 Sampler: JA

WELL DATA			
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
<u>245</u>	<u>6</u>	2	0.16
		4	0.65
		5	1.02
Static Water Level (ft bmp): <u>144.10</u>		<u>6</u>	<u>1.47</u>
		8	2.61
Casing Volume (gal): <u>148</u> x3 = <u>445</u>		10	4.08
		16	10.44
Total Volume Purged (gal): <u>468</u>		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
<u>09:35</u>	<u>Pump On</u>						
<u>09:45</u>	<u>10</u>	<u>9</u>	<u>90</u>	<u>7.25</u>	<u>19.2</u>	<u>453.2</u>	
<u>09:55</u>	<u>20</u>	<u>9</u>	<u>180</u>	<u>7.28</u>	<u>19.2</u>	<u>465.5</u>	
<u>10:05</u>	<u>30</u>	<u>9</u>	<u>270</u>	<u>7.29</u>	<u>19.2</u>	<u>467.9</u>	
<u>10:15</u>	<u>40</u>	<u>9</u>	<u>360</u>	<u>7.29</u>	<u>18.1</u>	<u>462.9</u>	
<u>10:25</u>	<u>50</u>	<u>9</u>	<u>450</u>	<u>7.26</u>	<u>18.4</u>	<u>466.2</u>	
<u>10:27</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point: <u>Spigot at / near wellhead</u>				Other:			
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>KEEPER</u>	<u>10:27</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>30.0</u>	<u>NP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-9-19
 Well ID: MCCONNELL 265 Weather: Pt cloudy, 60s
 ADWR No: 539 265 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>216</u>	Casing Capacity
Casing Diameter (in):	<u>6</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>166.29</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>x3 =</u>	2
Total Volume Purged (gal):		4
		5
		⊙
		8
		10
		16
		20
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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-14-19
 Well ID: METZLER Weather: cloudy, 60s
 ADWR No: 35-71891 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>351</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>295.08</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	Pump On						
	<u>WLO</u>						
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>

Additional Comments:

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: Quarterly monitoring Date: 3/18/19
 Well ID: N50-02 Weather: SUNNY 60S
 ADWR No: _____ Sampler: B50

WELL DATA		
Well Depth (ft bls):		Casing Capacity
Casing Diameter (in):		Nominal Size (inches) Gallons per Linear Foot
Static Water Level (ft bmp):	<u>105.00</u>	2 0.16
Casing Volume (gal):	<u>x3</u>	4 0.65
Total Volume Purged (gal):		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 parameters stabilized.
 - Purged well until field parameters stabilized.
 - Other: _____

Additional Comments: WLO. Well was sampled and running upon arrival. off for 7 min prior to lilo measurement



Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: Quarterly monitoring Date: 3-18-19
 Well ID: NSD-03 Weather: Sunny 60s
 ADWR No: _____ Sampler: B52

WELL DATA		
Well Depth (ft bls):	_____	Casing Capacity
		Nominal Size (inches) Gallons per Linear Foot
Casing Diameter (in):	_____	2 0.16
		4 0.65
Static Water Level (ft bmp):	<u>91.01</u>	5 1.02
		6 1.47
Casing Volume (gal):	<u>x3</u>	8 2.61
		10 4.08
Total Volume Purged (gal):	_____	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 parameters stabilized.
 Purged well until field parameters stabilized.
 Other: _____

Additional Comments: WLO



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-7-19
 Well ID: NWC-02 Weather: Foggy, 40°
 ADWR No: 562944 Sampler: SA

WELL DATA		
Well Depth (ft bls): <u>312</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>170.50</u>	2	0.16
Casing Volume (gal): <u>201 x3 = 603</u>	4	0.65
Total Volume Purged (gal): <u>1520</u>	5	1.02
	6	1.42
	8	2.61
	10	4.08
	16	10.44
	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
<u>1002</u>	<u>Pump On</u>						
<u>1007</u>	<u>5</u>	<u>95</u>	<u>475</u>	<u>7.39</u>	<u>20.6</u>	<u>436.1</u>	
<u>1012</u>	<u>10</u>	<u>95</u>	<u>950</u>	<u>7.41</u>	<u>20.6</u>	<u>433.5</u>	
<u>1017</u>	<u>15</u>	<u>95</u>	<u>1425</u>	<u>7.39</u>	<u>20.6</u>	<u>430.6</u>	
<u>1018</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>NWC-02</u>	<u>10 19</u>	<u>8017</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:
WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: Hand filtered sample

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1/7/19
 Well ID: VWL-03 CAP Weather: Foggy, 40s
 ADWR No: 627684 Sampler: JA

WELL DATA		
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity
		Nominal Size (inches) Gallons per Linear Foot
179	8	2 0.16
Static Water Level (ft bmp):	IWL	4 0.65
Casing Volume (gal):	x3 =	5 1.02
		6 1.47
		8 2.61
		10 4.08
		16 10.44
Total Volume Purged (gal):		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
	Pump On						
		✓	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
VLO							

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. *Obstruction at ~140' bls*
 No water level measurement collected. Well is pumping.
 Other: *well may be dry*

WELL PURGING INFORMATION

Purged 3 well volumes and field parameters stabilized.
 Purged 3 well volumes based on previous water level and field parameters stabilized.
 Purged well until field parameters stabilized.
 Other: *VLO*

Additional Comments: *Leak near well repaired in July 2018. Well had been producing anomalously high water levels prior. Mud was found in probe*



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1/7/19
 Well ID: NWC-04 Weather: Foggy, 30s
 ADWR No: 551849 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>462</u>	Casing Capacity
Casing Diameter (in):	<u>10</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>IWL</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>x3 =</u>	2
Total Volume Purged (gal):	<u>126</u>	4
		5
		6
		8
		10
		16
		20
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
<u>0852</u>	<u>Pump On</u>						
<u>0857</u>	<u>5</u>	<u>7</u>	<u>35</u>	<u>7.26</u>	<u>24.0</u>	<u>851.6</u>	
<u>0902</u>	<u>10</u>	<u>7</u>	<u>70</u>	<u>7.36</u>	<u>24.0</u>	<u>843.0</u>	
<u>0907</u>	<u>15</u>	<u>7</u>	<u>105</u>	<u>7.38</u>	<u>24.0</u>	<u>848.3</u>	
<u>0910</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point: <u>Spigot at / near wellhead</u>				Other:			
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>NWC-04</u>	<u>09:09</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>3000</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: Hand filtered sample



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-7-18
 Well ID: NWC-86 Weather: Foggy, 40°
 ADWR No: 575700 Sampler: JA

WELL DATA			
Well Depth (ft bls):		Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
	<u>340</u>	2	0.16
Casing Diameter (in):	<u>8</u>	4	0.65
Static Water Level (ft bmp):	<u>164.68</u>	5	1.02
		6	1.47
Casing Volume (gal):	<u>458 x3 = 1373</u>	8	(2.61)
		10	4.08
Total Volume Purged (gal):	<u>2175 +</u>	16	10.44
		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
<u>1038</u>	<u>Pump On</u>						
<u>1043</u>	<u>5</u>	<u>145</u>	<u>725</u>	<u>7.46</u>	<u>21.1</u>	<u>404.6</u>	
<u>1048</u>	<u>10</u>	<u>145</u>	<u>1450</u>	<u>7.42</u>	<u>21.2</u>	<u>407.1</u>	
<u>1053</u>	<u>15</u>	<u>145</u>	<u>2175</u>	<u>7.42</u>	<u>21.0</u>	<u>405.1</u>	
<u>NA</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>NWC-86</u>	<u>10:53</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: Hand filtered sample



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-14-19
 Well ID: OLMOS Weather: Cloudy, 50s
 ADWR No: 224745 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>306</u>	Casing Capacity
Casing Diameter (in):	<u>6</u>	Nominal Size (inches) Gallons per Linear Foot
Static Water Level (ft bmp):	<u>150.75</u>	2 0.16
Casing Volume (gal):	<u>x3 =</u>	4 0.65
Total Volume Purged (gal):		5 1.02
		Ⓢ 1.47
		8 2.61
		10 4.08
		16 10.44
		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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-15-19
 Well ID: PANAGAKOS Weather: Cloudy, 60s
 ADWR No: 35-76413 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>200</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>8</u>	2	0.16
Static Water Level (ft bmp): <u>167.97</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>84 x3 = 251</u>	6	1.47
	8	2.61
Total Volume Purged (gal): <u>282</u>	10	4.68
	16	10.44
	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
<u>1328</u>	<u>Pump On</u>						
<u>1343</u>	<u>15</u>	<u>6</u>	<u>90</u>	<u>6.98</u>	<u>18.4</u>	<u>1487</u>	
<u>1358</u>	<u>30</u>	<u>6</u>	<u>180</u>	<u>6.92</u>	<u>18.5</u>	<u>1462</u>	
<u>1413</u>	<u>45</u>	<u>6</u>	<u>270</u>	<u>6.91</u>	<u>18.5</u>	<u>1464</u>	
<u>1415</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead <u>Other: spigot on East side of house</u>					
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>PANAGAKOS</u>	<u>1415</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300-0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: _____



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-7-19
 Well ID: PLONKF 395 Weather: cloudy, 40s
 ADWR No: 613395 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>330</u>	Casing Capacity
Casing Diameter (in):	<u>8</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>158.89</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>x3 =</u>	2
Total Volume Purged (gal):		4
		5
		6
		8
		10
		16
		20
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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-14-19
 Well ID: POWER 639 Weather: cloudy, 60s
 ADWR No: 222 639 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>480</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>295.96</u>	2	0.16
Casing Volume (gal): <u>271</u> x3 = <u>812</u>	4	0.65
Total Volume Purged (gal): <u>920</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>13:15</u>	<u>Pump On</u>						
<u>13:30</u>	<u>15</u>	<u>10</u>	<u>150</u>	<u>7.58</u>	<u>20.9</u>	<u>419.1</u>	
<u>13:45</u>	<u>30</u>	<u>10</u>	<u>300</u>	<u>7.38</u>	<u>20.8</u>	<u>613.4</u>	
<u>14:00</u>	<u>45</u>	<u>10</u>	<u>450</u>	<u>7.30</u>	<u>20.7</u>	<u>699.1</u>	
<u>14:15</u>	<u>60</u>	<u>10</u>	<u>600</u>	<u>7.25</u>	<u>20.7</u>	<u>757.9</u>	
<u>14:30</u>	<u>75</u>	<u>10</u>	<u>750</u>	<u>7.21</u>	<u>20.7</u>	<u>797.5</u>	
<u>14:45</u>	<u>90</u>	<u>10</u>	<u>900</u>	<u>7.20</u>	<u>20.6</u>	<u>828.4</u>	
<u>14:47</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point: <u>Spigot at / near wellhead</u>		Other:					
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>POWER 639</u>	<u>14:47</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: _____



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-14-19
 Well ID: RAMEREZ Weather: cloudy, 50
 ADWR No: 216425 Sampler: SA

WELL DATA			
Well Depth (ft bls):		Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
300		2	0.16
Casing Diameter (in):	6	4	0.65
Static Water Level (ft bmp):	168.26	5	1.02
Casing Volume (gal):	x3 =	8	1.47
Total Volume Purged (gal):		10	2.61
		16	4.08
		20	10.44
		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
							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:		Spigot at / near wellhead			Other:		
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 parameters stabilized.
 Purged well until field parameters stabilized.
 Other: WLO

Additional Comments: _____



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-14-19
 Well ID: ROGERS 596 Weather: PT. Cloudy, 50s
 ADWR No: 573596 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>290</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>142.75</u>	2	0.16
Casing Volume (gal): <u>217 x3 = 649</u>	4	0.65
Total Volume Purged (gal): <u>672</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>10:00</u>	<u>Pump On</u>						
<u>10:20</u>	<u>20</u>	<u>6</u>	<u>120</u>	<u>6.80</u>	<u>15.8</u>	<u>1712</u>	
<u>10:40</u>	<u>40</u>	<u>6</u>	<u>240</u>	<u>6.83</u>	<u>16.7</u>	<u>1712</u>	
<u>11:00</u>	<u>60</u>	<u>6</u>	<u>360</u>	<u>6.83</u>	<u>17.6</u>	<u>1691</u>	
<u>11:20</u>	<u>80</u>	<u>6</u>	<u>480</u>	<u>6.83</u>	<u>18.0</u>	<u>1655</u>	
<u>11:40</u>	<u>100</u>	<u>6</u>	<u>600</u>	<u>6.83</u>	<u>18.0</u>	<u>1653</u>	
<u>11:50</u>	<u>110</u>	<u>6</u>	<u>660</u>	<u>6.83</u>	<u>17.9</u>	<u>1651</u>	
<u>11:52</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other: <u>Spigot "T" in driveway</u>		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>ROGERS 596</u>	<u>11:52</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-14-19
 Well ID: ROGERS 803 Weather: pt cloudy, 30s
 ADWR No: 641803 Sampler: JA

WELL DATA			
Well Depth (ft bls):		Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
140		2	0.16
Casing Diameter (in):	6	4	0.65
Static Water Level (ft bmp):	139.92	5	1.02
Casing Volume (gal):	x3 =	6	1.47
Total Volume Purged (gal):		8	2.61
		10	4.08
		16	10.44
		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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
wlo							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>wlo</u>

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-11-19
 Well ID: ROGERS E Weather: clear, 50s
 ADWR No: 216 018 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>285</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>159.10</u>	2	0.16
Casing Volume (gal): <u>185 x3 = 555</u>	4	0.65
Total Volume Purged (gal): <u>620</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>11:15</u>	<u>Pump On</u>						
<u>11:30</u>	<u>15</u>	<u>10</u>	<u>150</u>	<u>7.27</u>	<u>19.2</u>	<u>418.8</u>	
<u>11:45</u>	<u>30</u>	<u>10</u>	<u>300</u>	<u>7.25</u>	<u>20.9</u>	<u>420.0</u>	
<u>12:00</u>	<u>45</u>	<u>10</u>	<u>450</u>	<u>7.25</u>	<u>20.6</u>	<u>418.1</u>	
<u>12:15</u>	<u>60</u>	<u>10</u>	<u>600</u>	<u>7.27</u>	<u>20.6</u>	<u>418.5</u>	
<u>12:17</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>ROGERS E</u>	<u>12:17</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: _____



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-15-19
 Well ID: RUIZ Weather: cloudy, 60s
 ADWR No: 531770 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>312</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>301.74</u>	2	0.16
Casing Volume (gal): <u>15</u> x3 = <u>45</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>1244</u>	Pump On						
<u>1249</u>	<u>5</u>	<u>3</u>	<u>15</u>	<u>6.91</u>	<u>19.6</u>	<u>825.9</u>	
<u>1254</u>	<u>10</u>	<u>3</u>	<u>30</u>	<u>7.00</u>	<u>19.9</u>	<u>823.5</u>	
<u>1259</u>	<u>15</u>	<u>3</u>	<u>45</u>	<u>7.00</u>	<u>19.8</u>	<u>824.6</u>	
<u>1301</u>							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:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>RUIZ</u>	<u>1301</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>y</u>

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 parameters stabilized.
 Purged well until field parameters stabilized.
 Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-27-19
 Well ID: SCHWARTZ Weather: pt. cloudy, 60s
 ADWR No: 210 865 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>305</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>131.50</u>	2	0.16
Casing Volume (gal): <u>255</u> x3 = <u>765</u>	4	0.65
Total Volume Purged (gal): <u>820</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>13:25</u>	<u>Pump On</u>						
<u>13:40</u>	<u>15</u>	<u>10</u>	<u>150</u>	<u>7.26</u>	<u>20.4</u>	<u>684.1</u>	
<u>13:55</u>	<u>30</u>	<u>10</u>	<u>300</u>	<u>7.24</u>	<u>20.4</u>	<u>677.5</u>	
<u>14:10</u>	<u>45</u>	<u>10</u>	<u>450</u>	<u>7.23</u>	<u>20.4</u>	<u>670.1</u>	
<u>14:25</u>	<u>60</u>	<u>10</u>	<u>600</u>	<u>7.23</u>	<u>20.4</u>	<u>670.7</u>	
<u>14:40</u>	<u>75</u>	<u>10</u>	<u>750</u>	<u>7.24</u>	<u>20.4</u>	<u>670.1</u>	
<u>14:45</u>	<u>80</u>	<u>10</u>	<u>800</u>	<u>7.24</u>	<u>20.4</u>	<u>671.2</u>	
<u>14:47</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>SCHWARTZ</u>	<u>14:47</u>	<u>Poly</u>	<u>350ml</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-15-19
 Well ID: STEPHENS Weather: Pt. Cloudy, 60r
 ADWR No: 808 560 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>N/A</u>	Casing Capacity
Casing Diameter (in):	<u>N/A</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>55.85</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>x3 =</u>	2
Total Volume Purged (gal):		4
		5
		6
		8
		10
		16
		20
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						
	<u>W</u>	<u>L</u>	<u>O</u>				
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>wlo</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>wlo</u>

Additional Comments:



Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: quarterly monitoring Date: 3/18/19
 Well ID: TERRY Weather: Sunny 60s
 ADWR No: _____ Sampler: BJD

WELL DATA		
Well Depth (ft bls): <u>?</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>6-inch</u>	2	0.16
Static Water Level (ft bmp): <u>Ø</u>	4	0.65
Casing Volume (gal): <u>Ø</u> x3 =	5	1.02
	6	1.47
	8	2.61
	10	4.08
Total Volume Purged (gal): <u>Ø</u>	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
<u>11:00</u>	<u>Pump On</u>						
<u>11:05</u>	<u>5</u>	<u>3</u>	<u>15</u>	<u>7.31</u>	<u>21.4</u>	<u>433.1</u>	
<u>11:10</u>	<u>10</u>	<u>3</u>	<u>30</u>	<u>7.39</u>	<u>19.8</u>	<u>439.2</u>	
<u>11:15</u>	<u>5</u>	<u>3</u>	<u>45</u>	<u>7.46</u>	<u>20.6</u>	<u>419.4</u>	
<u>11:20</u>							<u>Pump Off</u>

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)
<u>TERRY</u>	<u>11:20</u>	<u>poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>Ø</u>	<u>y</u>

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 parameters stabilized.
 Purged well until field parameters stabilized.
 Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-11-19
 Well ID: THOMPSON 151 Weather: clear, 50s
 ADWR No: 612151 Sampler: JA

WELL DATA		
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity
		Nominal Size (inches) Gallons per Linear Foot
<u>210</u>	<u>7</u>	2 0.16
Static Water Level (ft bmp):	<u>IWL</u>	4 0.65
		5 1.02
Casing Volume (gal):	<u>x3 =</u>	6 1.47
		8 2.61
Total Volume Purged (gal):		10 4.08
		16 10.44
		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
	Pump On						
	<u>WLO</u>						
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION	
<input type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input checked="" type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:	

WELL PURGING INFORMATION	
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>	

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-11-19
 Well ID: THOMPSON 341 Weather: Clear, 50s
 ADWR No: 218 341 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>285</u>	Casing Capacity	
Casing Diameter (in): <u>7</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>169.81</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: WLO

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-8-19
 Well ID: TM-10 USBP Weather: PT Cloudy, 60s
 ADWR No: _____ Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>290</u>	Casing Capacity
Casing Diameter (in):	<u>4</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>247.36</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>28 x3 = 84</u>	2 0.16
Total Volume Purged (gal):	<u>224</u>	4 0.65
		5 1.02
		6 1.47
		8 2.61
		10 4.08
		16 10.44
		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
<u>1343</u>	<u>Pump On</u>						
<u>1348</u>	<u>5</u>	<u>8</u>	<u>40</u>	<u>7.23</u>	<u>20.6</u>	<u>387.1</u>	
<u>1353</u>	<u>10</u>	<u>8</u>	<u>80</u>	<u>7.53</u>	<u>20.7</u>	<u>385.1</u>	
<u>1403</u>	<u>20</u>	<u>8</u>	<u>160</u>	<u>7.54</u>	<u>20.6</u>	<u>381.5</u>	
<u>1408</u>	<u>25</u>	<u>8</u>	<u>200</u>	<u>7.54</u>	<u>20.6</u>	<u>381.8</u>	
<u>1411</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other: <u>Spout PVC at wellhead</u>		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>TM-10 USBP</u>	<u>14:10</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments: Hand filtered sample



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-16-19
 Well ID: TVI 236 Weather: PT cloudy, 50s
 ADWR No: 802236 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>222</u>	Casing Capacity	
Casing Diameter (in): <u>12</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>130.67</u>	2	0.16
Casing Volume (gal): <u>537 x3 = 1611</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>11:01</u>	<u>Pump On</u>						
<u>11:13</u>				<u>7.41</u>	<u>18.5</u>	<u>530.8</u>	
<u>11:14</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other: <u>pipe outlet at pond</u>		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>TVI 236</u>	<u>11:15</u>	<u>poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: Run for 15 min to clear drop pipe, collected sample

Additional Comments: Hand Filtered Sample

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-10-19
 Well ID: TVI-713 Weather: Overcast, 50s
 ADWR No: 567713 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>200</u>	Casing Capacity	
Casing Diameter (in): <u>8</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>134.87</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-8-19
 Well ID: WEED Weather: PT cloudy, 60s
 ADWR No: 544535 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>320</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>IWL</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>1429</u>	<u>Pump On</u>						
<u>1434</u>	<u>5</u>	<u>3*</u>		<u>7.49</u>	<u>20.3</u>	<u>389.9</u>	
<u>1438</u>	<u>4</u>	<u>3</u>		<u>7.49</u>	<u>20.3</u>	<u>388.6</u>	
<u>1440</u>	<u>2</u>	<u>3</u>		<u>7.52</u>	<u>20.3</u>	<u>388.2</u>	
<u>1442</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WEED</u>	<u>1442</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: * 3gpm from spigot, much more flow into tank, cutoff valve taped over. Tank over flowed slightly - readily resealed cut back.



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-14-19
 Well ID: WEISKOPF 802 Weather: P.H. cloudy, 50s
 ADWR No: 641802 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>200</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>153.39</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

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 parameters stabilized.
 Purged well until field parameters stabilized.
 Other: WLO

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 1-11-19
 Well ID: ZANDER Weather: Clear, 50s
 ADWR No: 205126 Sampler: JA

WELL DATA

Well Depth (ft bls): <u>280</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>154.15</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	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:	Spigot at / near wellhead			Other:			
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>wlo</u>							

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 parameters stabilized.
 Purged well until field parameters stabilized.
 Other: wlo

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 5/14/19
 Well ID: NWC-Ø4 Weather: clear, 70s
 ADWR No: 551849 Sampler: SA/RT

WELL DATA		
Well Depth (ft bls): <u>462</u> Casing Diameter (in): <u>10</u> Static Water Level (ft bmp): Casing Volume (gal): <u> </u> x3 = Total Volume Purged (gal): <u> </u>	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
	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
<u>0706</u>	<u>Pump On</u>						
<u>0711</u>	<u>5</u>	<u>7</u>	<u>855.9^{JA}</u>	<u>7.20</u>	<u>23.7</u>	<u>853.9</u>	
<u>0718</u>	<u>12</u>	<u>7</u>		<u>7.35</u>	<u>23.9</u>	<u>851.8</u>	
<u>0721</u>	<u>15</u>	<u>7</u>		<u>7.39</u>	<u>23.9</u>	<u>845.5</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		<u>Spigot at / near wellhead</u>			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>NWC-Ø4</u>	<u>0727</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>
<u>DUP2Ø19Ø514</u>	<u>0727</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

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 parameters stabilized.
 Purged well until field parameters stabilized.
 Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-11-19
 Well ID: ANDERSON 396 Weather: pt cloudy, 90s
 ADWR No: 6 13396 Sampler: SA

WELL DATA		
Well Depth (ft bls):	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
285	2	0.16
Casing Diameter (in): 8	4	0.65
Static Water Level (ft bmp): 155 - 70' bmp	5	1.02
Casing Volume (gal): x3 =	6	1.47
Total Volume Purged (gal): Inoperable pump	(8)	2.61
	10	4.08
	16	10.44
	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
	Pump On						
/							
w/o Inoperable pump							
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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
w/o Inoperable pump							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: Inoperable pump

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-11-19
 Well ID: ANDERSON 458 Weather: pt (6-24), 90%
 ADWR No: 221458 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>734</u>	Casing Capacity
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>185.21</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>560</u> x3 = <u>1680</u>	2
Total Volume Purged (gal):	<u>1760</u>	4
		5
		6
		8
		10
		16
		20
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
<u>09:35</u>	<u>Pump On</u>						
<u>09:50</u>	<u>15</u>	<u>10</u>	<u>150</u>	<u>7.79</u>	<u>24.0</u>	<u>397.2</u>	
<u>10:05</u>	<u>30</u>	<u>10</u>	<u>300</u>	<u>7.86</u>	<u>23.9</u>	<u>395.6</u>	
<u>10:50</u>	<u>75</u>	<u>10</u>	<u>750</u>	<u>7.91</u>	<u>24.0</u>	<u>395.8</u>	
<u>11:35</u>	<u>120</u>	<u>10</u>	<u>1200</u>	<u>7.86</u>	<u>24.0</u>	<u>395.4</u>	
<u>12:20</u>	<u>165</u>	<u>10</u>	<u>1650</u>	<u>7.89</u>	<u>24.1</u>	<u>393.7</u>	
<u>12:25</u>	<u>170</u>	<u>10</u>	<u>1700</u>	<u>7.89</u>	<u>24.1</u>	<u>396.2</u>	
<u>12:31</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>ANDERSON 458</u>	<u>12:29</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>3000</u>	<u>NP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:



Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 9-9-19
 Well ID: ASLD-435 Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls):	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
_____	2	0.16
Casing Diameter (in): _____	4	0.65
Static Water Level (ft bmp): <u>252.42</u>	5	1.02
Casing Volume (gal): _____ x3 = _____	6	1.47
	8	2.61
	10	4.08
Total Volume Purged (gal): _____	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: _____

Additional Comments: SWL only

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-23-19
 Well ID: AWC-02 Weather: Overcast, 70s
 ADWR No: 616580 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>333</u>	Casing Capacity
Casing Diameter (in):	<u>20</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>130.58</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>x3 =</u>	2 0.16
Total Volume Purged (gal):		4 0.65
		5 1.02
		6 1.47
		8 2.61
		10 4.08
		16 10.44
		<u>20</u> <u>16.317</u>
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
							<div style="font-size: 2em; color: blue; opacity: 0.5;">Inoperable Pump</div>
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Inoperable Pump</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>Inoperable Pump</u>

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-23-19
 Well ID: AWC-03 Weather: Overcast, 70s
 ADWR No: 616585 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>270</u>	Casing Capacity	
Casing Diameter (in): <u>16</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>126.50*</u>	2	0.16
Casing Volume (gal): <u>1,498</u> x3 = <u>4,494</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>09:58</u>	<u>Pump On</u>						
<u>09:01</u>	<u>3</u>	<u>760</u>	<u>2280</u>	<u>7.28</u>	<u>20.1</u>	<u>515.9</u>	
<u>09:04</u>	<u>6</u>	<u>760</u>	<u>4560</u>	<u>7.29</u>	<u>20.1</u>	<u>510.9</u>	
<u>09:07</u>	<u>9</u>	<u>760</u>	<u>6840</u>	<u>7.29</u>	<u>20.0</u>	<u>506.7</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>AWC-03</u>	<u>09:38</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments: * (WL from AWC's sonde reading)



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-23-19
 Well ID: AWC-04 Weather: (6.2) 80
 ADWR No: 616584 Sampler: JA

WELL DATA		
Well Depth (ft bls):	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
337	2	0.16
Casing Diameter (in): 16	4	0.65
Static Water Level (ft bmp): 126.48	5	1.02
Casing Volume (gal): 2,193 x3 = 6,578	6	1.47
Total Volume Purged (gal):	8	2.61
	10	4.08
	16	10.44
	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
09:23	Pump On						
09:26	3	770	2,310	7.06	19.9	568.5	
09:29	6	770	4,620	7.07	19.6	574.2	
09:32	9	770	6,930	7.06	19.5	571.8	
							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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-04	09:34	Poly	250mL	1	300.0	MP	Y

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-23-19
 Well ID: AWC-05 Weather: Overcast, 70
 ADWR No: 590620 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>1183</u>	Casing Capacity	
Casing Diameter (in): <u>16</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>195.46</u>	2	0.16
Casing Volume (gal): <u>10,310 x3 = 30,930</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	<u>16</u>	<u>10.44</u>
	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
<u>07:38</u>	<u>Pump On</u>						
<u>07:53</u>	<u>15</u>	<u>640</u>	<u>9,600</u>	<u>7.29</u>	<u>20.1</u>	<u>449.2</u>	
<u>08:08</u>	<u>30</u>	<u>640</u>	<u>19,200</u>	<u>7.29</u>	<u>20.3</u>	<u>447.5</u>	
<u>08:18</u>	<u>40</u>	<u>640</u>	<u>25,600</u>	<u>7.30</u>	<u>20.5</u>	<u>446.4</u>	
<u>08:28</u>	<u>50</u>	<u>640</u>	<u>32,000</u>	<u>7.33</u>	<u>20.7</u>	<u>445.2</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>AWC-05</u>	<u>08:30</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-11-19
 Well ID: BANKS 986 Weather: Cloudy, 100's
 ADWR No: 647986 Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>435</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>6</u>	2	0.16
Static Water Level (ft bmp): * <u>237.42 FE BMP</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>290</u> x3 = <u>870</u>	6	<u>1.47</u>
	8	2.61
Total Volume Purged (gal):	10	4.08
	16	10.44
	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
<u>1325</u>	<u>Pump On</u>						
<u>1340</u>	<u>15</u>	<u>10</u>	<u>150</u>	<u>7.21</u>	<u>76.6</u>	<u>1030</u>	
<u>1355</u>	<u>30</u>	<u>10</u>	<u>300</u>	<u>7.28</u>	<u>71.8</u>	<u>982.5</u>	
<u>1410</u>	<u>45</u>	<u>10</u>	<u>450</u>	<u>7.29</u>	<u>71.4</u>	<u>950.4</u>	
<u>1425</u>	<u>60</u>	<u>10</u>	<u>600</u>	<u>7.28</u>	<u>71.3</u>	<u>943.5</u>	
<u>1440</u>	<u>75</u>	<u>10</u>	<u>750</u>	<u>7.28</u>	<u>71.5</u>	<u>977.2</u>	
<u>1455</u>	<u>90</u>	<u>10</u>	<u>900</u>	<u>7.27</u>	<u>72.0</u>	<u>933.8</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BANKS 986</u>	<u>1502</u>	<u>POLY</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

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 * Measurement from BANKS 987

WELL PURGING INFORMATION

Purged 3 well volumes and field parameters stabilized.

Purged 3 well volumes based on previous water level and field parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-11-19
 Well ID: BANKS 987 Weather: cloudy, 100's
 ADWR No: 647987 Sampler: RT

WELL DATA				
Well Depth (ft bls):	Casing Diameter (in):	339	Casing Capacity	
			Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):		6	2	0.16
		237.42	4	0.65
			5	1.02
Casing Volume (gal):	x3 =		6	1.47
Total Volume Purged (gal):			8	2.61
			10	4.08
			16	10.44
			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
							Pump On
<i>WLO</i>							
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<i>WLO</i>							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: *No way to purge well.*

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-11-19
 Well ID: BARTON 919 Weather: cloudy, 90s
 ADWR No: 644919 Sampler: DA

WELL DATA		
Well Depth (ft bls):	<u>130</u>	Casing Capacity
Casing Diameter (in):	<u>6</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>113.72</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>x3 =</u>	2
Total Volume Purged (gal):		4
		5
		6
		8
		10
		16
		20
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						
	<u>W</u>	<u>L</u>	<u>O</u>				
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: WLO

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-11-19
 Well ID: BEMA Weather: Cloudy 100s
 ADWR No: 577 927 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>460</u>	Casing Capacity	
Casing Diameter (in): <u>4</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal): <u>No Purge</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>1448</u>	<u>Pump On</u>						
<u>1449</u>				<u>6.75</u>	<u>28.2</u>	<u>1514</u>	
<u>1450</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BEMA</u>	<u>1450</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>3000</u>	<u>VP</u>	<u>Y</u>

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 parameters stabilized.
 Purged well until field parameters stabilized.
 Other:

Additional Comments:

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 7-31-19
 Well ID: BMO-2008-16 Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Shuram

WELL DATA

Well Depth (ft bls): <u>310</u> Casing Diameter (in): <u>5"</u> Static Water Level (ft bmp): <u>78.42</u> Casing Volume (gal): <u>236.1 x3 = 708.3</u> Total Volume Purged (gal): <u>747</u>	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
<u>0730</u>	<u>Pump On</u>						
<u>0800</u>	<u>30</u>	<u>8.3</u>	<u>249</u>	<u>7.13</u>	<u>22.4</u>	<u>901</u>	
<u>0820</u>	<u>50</u>	<u>8.3</u>	<u>415</u>	<u>7.16</u>	<u>22.1</u>	<u>903</u>	
<u>0840</u>	<u>70</u>	<u>8.3</u>	<u>581</u>	<u>7.18</u>	<u>22.1</u>	<u>905</u>	
<u>0900</u>	<u>90</u>	<u>8.3</u>	<u>747</u>	<u>7.15</u>	<u>22.2</u>	<u>907</u>	
							<u>Pump Off</u>

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)
<u>BMO-2008-16</u>	<u>0900</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>Ice</u>	<u>Y</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 231.5

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-6-19
 Well ID: BMO-2008-3B Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Sloman

WELL DATA

Well Depth (ft bls): <u>260</u> Casing Diameter (in): <u>.5</u> Static Water Level (ft bmp): <u>149.47</u> Casing Volume (gal): <u>113</u> x3 = <u>339</u> Total Volume Purged (gal): <u>540</u>	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
<u>1300</u>	<u>Pump On</u>						
<u>1310</u>	<u>10</u>	<u>27</u>	<u>135</u>	<u>7.26</u>	<u>22.3</u>	<u>731</u>	
<u>1315</u>	<u>15</u>	<u>27</u>	<u>405</u>	<u>7.28</u>	<u>22.2</u>	<u>729</u>	
<u>1320</u>	<u>20</u>	<u>27</u>	<u>540</u>	<u>7.29</u>	<u>22.2</u>	<u>727</u>	
							<u>Pump Off</u>

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)
<u>BMO-2008-3B</u>	<u>1320</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Lu</u>	<u>Y</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 110.6

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7/22/19
 Well ID: BMO-2008-4B Weather: cloudy, 90s
 ADWR No: 910096 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>610</u>	Casing Capacity
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>140.40</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>479</u> $\times 3 = 1437$	2 0.16
Total Volume Purged (gal):	<u>1540</u>	4 0.65
		5 1.02
		6 1.47
		8 2.61
		10 4.08
		16 10.44
		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
<u>11:50</u>	<u>Pump On</u>						
<u>12:20</u>	<u>30</u>	<u>14</u>	<u>420</u>	<u>7.63</u>	<u>22.6</u>	<u>374.5</u>	
<u>12:50</u>	<u>60</u>	<u>14</u>	<u>840</u>	<u>7.56</u>	<u>22.6</u>	<u>375.2</u>	
<u>13:20</u>	<u>90</u>	<u>14</u>	<u>1260</u>	<u>7.55</u>	<u>23.0</u>	<u>375.2</u>	
<u>13:35</u>	<u>105</u>	<u>14</u>	<u>1470</u>	<u>7.53</u>	<u>22.8</u>	<u>377.1</u>	
<u>13:40</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead		Other:			
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-4B</u>	<u>13:39</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>
<u>DUP20190722</u>	<u>13:39</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments: _____

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-7-19
 Well ID: BMO-2008-5B Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Shorne

WELL DATA		Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Well Depth (ft bls): <u>285</u>		2	0.16
Casing Diameter (in): <u>5</u>		4	0.65
Static Water Level (ft bmp): <u>153.76</u>		5	1.02
Casing Volume (gal): <u>134 x3 = 402</u>		6	1.47
Total Volume Purged (gal): <u>675</u>		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
<u>1300</u>	<u>Pump On</u>						
<u>1305</u>	<u>5</u>	<u>27</u>	<u>135</u>	<u>7.09</u>	<u>22.3</u>	<u>815</u>	
<u>1315</u>	<u>15</u>	<u>27</u>	<u>405</u>	<u>7.07</u>	<u>22.4</u>	<u>812</u>	
<u>1325</u>	<u>25</u>	<u>27</u>	<u>675</u>	<u>7.07</u>	<u>22.3</u>	<u>814</u>	
							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)
<u>BMO-2008-5B</u>	<u>1325</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Te</u>	<u>X</u>

- 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 parameters stabilized.
 - Purged well until field parameters stabilized.
 - Other:

Additional Comments: 1363

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-7-19
 Well ID: BMD-2008-5M Weather: Partly Cloudy
 ADWR No: _____ Sampler: Christopher L Skuman

WELL DATA

Well Depth (ft bls): <u>450</u> Casing Diameter (in): <u>5</u> Static Water Level (ft bmp): <u>155-</u> Casing Volume (gal): <u>301 x3 = 903</u> Total Volume Purged (gal): <u>990</u>	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
<u>1145</u>	<u>Pump On</u>						
<u>1200</u>	<u>25</u>	<u>18</u>	<u>450</u>	<u>7.34</u>	<u>23.0</u>	<u>659</u>	
<u>1230</u>	<u>45</u>	<u>18</u>	<u>810</u>	<u>7.35</u>	<u>23.1</u>	<u>655</u>	
<u>1240</u>	<u>55</u>	<u>18</u>	<u>990</u>	<u>7.32</u>	<u>23.0</u>	<u>659</u>	
							<u>Pump Off</u>

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)
<u>BMD-2008-5M</u>	<u>1240</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>IC</u>	<u>X</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 295

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-6-19
 Well ID: BMO-2008-6B Weather: Sunny
 ADWR No: _____ Sampler: Christopher L. Slawson

WELL DATA

Well Depth (ft bls): <u>265</u> Casing Diameter (in): <u>5</u> Static Water Level (ft bmp): <u>198.57</u> Casing Volume (gal): <u>67.8 x3 = 203.5</u> Total Volume Purged (gal): <u>225</u>	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
<u>1010</u>	<u>Pump On</u>						
<u>1025</u>	<u>15</u>	<u>5.1</u>	<u>75</u>	<u>7.42</u>	<u>22.3</u>	<u>233</u>	
<u>1040</u>	<u>30</u>	<u>5.1</u>	<u>150</u>	<u>7.45</u>	<u>22.2</u>	<u>236</u>	
<u>1055</u>	<u>45</u>	<u>5.1</u>	<u>225</u>	<u>7.64</u>	<u>22.1</u>	<u>237</u>	
							<u>Pump Off</u>

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)
<u>BMO-2008-6B</u>	<u>1055</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ice</u>	<u>Y</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 16.5

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-6-19
 Well ID: BMO-2008-6M Weather: Partly Cloudy
 ADWR No: _____ Sampler: Christopher L Skarman

WELL DATA

Well Depth (ft bls): <u>450</u> Casing Diameter (in): <u>5</u> Static Water Level (ft bmp): <u>199.61</u> Casing Volume (gal): <u>255.3 x 3 = 766</u> Total Volume Purged (gal): <u>840</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
	2	0.16
	4	0.65
	5	1.02
	6	1.47
	8	2.81
	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
<u>0920</u>	<u>Pump On</u>						
<u>0930</u>	<u>10</u>	<u>21</u>	<u>210</u>	<u>7.10</u>	<u>22.2</u>	<u>752</u>	
<u>0940</u>	<u>20</u>	<u>21</u>	<u>420</u>	<u>7.17</u>	<u>22.4</u>	<u>750</u>	
<u>0950</u>	<u>30</u>	<u>21</u>	<u>630</u>	<u>7.19</u>	<u>22.5</u>	<u>754</u>	
<u>1000</u>	<u>40</u>	<u>21</u>	<u>840</u>	<u>7.18</u>	<u>22.4</u>	<u>755</u>	
							<u>Pump Off</u>

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)
<u>BMO-2008-6M</u>	<u>1000</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>IL-1</u>	<u>Y</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: _____

Additional Comments: 250.3

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-8-19
 Well ID: BMO-2008-7M Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Shuman

WELL DATA

Well Depth (ft bis): <u>670</u> Casing Diameter (in): <u>5</u> Static Water Level (ft bmp): <u>246.80</u> Casing Volume (gal): <u>431.6</u> x3 = <u>1,295</u> Total Volume Purged (gal): <u>1365</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
	2	0.18
	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
<u>0930</u>	Pump On						
<u>0955</u>	<u>25</u>	<u>21</u>	<u>525</u>	<u>7.74</u>	<u>23.6</u>	<u>480</u>	
<u>1015</u>	<u>45</u>	<u>21</u>	<u>945</u>	<u>7.76</u>	<u>23.5</u>	<u>479</u>	
<u>1035</u>	<u>65</u>	<u>21</u>	<u>1365</u>	<u>7.77</u>	<u>23.6</u>	<u>478</u>	
							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)
<u>BMO-2008-7M</u>	<u>1035</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Eu</u>	<u>X</u>
<u>Dup-080819</u>	<u>1035</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Eu</u>	<u>X</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: _____

Additional Comments: 423.2

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-8-19
 Well ID: BMO-2008-8B Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Slawson

WELL DATA		
Well Depth (ft bls):	<u>480</u>	Casing Capacity
Casing Diameter (in):	<u>5"</u>	Nominal Size (inches) Gallons per Linear Foot
Static Water Level (ft bmp):	<u>303.42</u>	2 0.16
Casing Volume (gal):	<u>180.1 x3 = 540</u>	4 0.65
Total Volume Purged (gal):	<u>550</u>	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
<u>0710</u>	<u>Pump On</u>						
<u>0740</u>	<u>30</u>	<u>5</u>	<u>150</u>	<u>6.45</u>	<u>22.3</u>	<u>2610</u>	
<u>0810</u>	<u>60</u>	<u>5</u>	<u>300</u>	<u>6.52</u>	<u>22.2</u>	<u>2620</u>	
<u>0840</u>	<u>90</u>	<u>5</u>	<u>450</u>	<u>6.48</u>	<u>22.4</u>	<u>2630</u>	
<u>0900</u>	<u>110</u>	<u>5</u>	<u>550</u>	<u>6.50</u>	<u>22.2</u>	<u>2640</u>	
							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)
<u>BMO-2008-8B</u>	<u>0900</u>	<u>1L</u>	<u>250</u>	<u>1</u>	<u>307</u>	<u>Ice</u>	<u>X</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: 176.6

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-8-19
 Well ID: BMP-2008-8M Weather: Sunny
 ADWR No: _____ Sampler: Christy L Skarman

WELL DATA

Well Depth (ft bls): <u>1210</u> Casing Diameter (in): <u>5"</u> Static Water Level (ft bmp): <u>304.8</u> Casing Volume (gal): <u>923.3 x3 = 2,770</u> Total Volume Purged (gal): <u>2816</u>	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
<u>0530</u>	<u>Pump On</u>						
<u>0630</u>	<u>60</u>	<u>17.6</u>	<u>1056</u>	<u>7.62</u>	<u>25.0</u>	<u>543</u>	
<u>0730</u>	<u>120</u>	<u>17.6</u>	<u>2112</u>	<u>7.65</u>	<u>25.2</u>	<u>541</u>	
<u>0800</u>	<u>150</u>	<u>17.6</u>	<u>2640</u>	<u>7.64</u>	<u>25.1</u>	<u>543</u>	
<u>0810</u>	<u>160</u>	<u>17.6</u>	<u>2816</u>	<u>7.63</u>	<u>25.2</u>	<u>542</u>	
							<u>Pump Off</u>

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)
<u>BMP-2008-8M</u>	<u>0810</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Fe</u>	<u>y</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 905.2

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-12-19
 Well ID: BMD-2008-9M Weather: Sunny
 ADWR No: _____ Sampler: Christopher L. Shuman

WELL DATA

Well Depth (ft bls): <u>775</u> Casing Diameter (In): <u>5</u> Static Water Level (ft bmp): <u>292.67</u> Casing Volume (gal): <u>492 x3 = 1,476</u> Total Volume Purged (gal): <u>1504</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
	2	0.16
	4	0.85
	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
<u>0600</u>	<u>Pump On</u>						
<u>0620</u>	<u>20</u>	<u>18.8</u>	<u>376</u>	<u>7.44</u>	<u>24.6</u>	<u>585</u>	
<u>0640</u>	<u>40</u>	<u>18.8</u>	<u>752</u>	<u>7.56</u>	<u>24.5</u>	<u>587</u>	
<u>0700</u>	<u>60</u>	<u>18.8</u>	<u>1128</u>	<u>7.58</u>	<u>24.6</u>	<u>583</u>	
<u>0720</u>	<u>80</u>	<u>18.8</u>	<u>1504</u>	<u>7.59</u>	<u>24.5</u>	<u>584</u>	
							<u>Pump Off</u>

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)
<u>BMD-2008-9M</u>	<u>0720</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>3000</u>	<u>LC</u>	<u>Y</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 482.7

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-1-19
 Well ID: BMO-2008-106L Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Slarman

WELL DATA

Well Depth (ft bls): <u>810</u> Casing Diameter (in): <u>5</u> Static Water Level (ft bmp): <u>316.92</u> Casing Volume (gal): <u>503 x3 = 1509</u> Total Volume Purged (gal): <u>1524</u>	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
<u>0600</u>	<u>Pump On</u>						
<u>0700</u>	<u>60</u>	<u>6.25</u>	<u>372</u>	<u>6.20</u>	<u>25.7</u>	<u>3820</u>	
<u>0800</u>	<u>120</u>	<u>6.2</u>	<u>744</u>	<u>6.25</u>	<u>25.3</u>	<u>3850</u>	
<u>0900</u>	<u>180</u>	<u>5</u>	<u>1,044</u>	<u>6.22</u>	<u>25.4</u>	<u>3840</u>	
<u>1000</u>	<u>240</u>	<u>4</u>	<u>1284</u>	<u>6.21</u>	<u>25.6</u>	<u>3840</u>	
<u>1100</u>	<u>300</u>	<u>4</u>	<u>1524</u>	<u>6.20</u>	<u>25.7</u>	<u>3860</u>	
							<u>Pump Off</u>

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)
<u>BMO-2008-106L</u>	<u>1100</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>None</u>	<u>X</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 493.1

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-1-19
 Well ID: BMO-2008-106U Weather: Sunny
 ADWR No: _____ Sampler: Christopher L. Sherman

WELL DATA

Well Depth (ft bls): <u>449</u> Casing Diameter (in): <u>5</u> Static Water Level (ft bmp): <u>200.43</u> Casing Volume (gal): <u>253.5 x3 = 760.7</u> Total Volume Purged (gal): <u>792</u>	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
<u>1130</u>	<u>Pump On</u>						
<u>1145</u>	<u>15</u>	<u>8.8</u>	<u>132</u>	<u>6.05</u>	<u>21.7</u>	<u>3860</u>	
<u>1200</u>	<u>30</u>	<u>8.8</u>	<u>264</u>	<u>6.08</u>	<u>21.3</u>	<u>3900</u>	
<u>1230</u>	<u>60</u>	<u>8.8</u>	<u>528</u>	<u>6.10</u>	<u>21.4</u>	<u>3870</u>	
<u>1300</u>	<u>90</u>	<u>8.8</u>	<u>792</u>	<u>6.11</u>	<u>21.3</u>	<u>3900</u>	
							<u>Pump Off</u>

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)
<u>BMO-2008-106U</u>	<u>1300</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Yes</u>	<u>Y</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 248.6

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-6-19
 Well ID: BMO-2008-116 Weather: Partly Cloudy
 ADWR No: _____ Sampler: Christopher L. Swarna

WELL DATA

Well Depth (ft bls): <u>760</u> Casing Diameter (In): <u>5</u> Static Water Level (ft bmp): <u>550.89</u> Casing Volume (gal): <u>213.2 x3 = 639.8</u> Total Volume Purged (gal): <u>720</u>	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
<u>0530</u>	Pump On						
<u>0540</u>	<u>10</u>	<u>8</u>	<u>80</u>	<u>7.20</u>	<u>25.2</u>	<u>340</u>	
<u>0600</u>	<u>30</u>	<u>8</u>	<u>240</u>	<u>7.87</u>	<u>25.4</u>	<u>339</u>	
<u>0630</u>	<u>60</u>	<u>8</u>	<u>480</u>	<u>7.89</u>	<u>25.3</u>	<u>338</u>	
<u>0700</u>	<u>90</u>	<u>8</u>	<u>720</u>	<u>7.88</u>	<u>25.4</u>	<u>338</u>	
							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)
<u>BMO-2008-116</u>	<u>0700</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>ICSA</u>	<u>X</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-20-19
 Well ID: BMO-2008-13B Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Sherrin

WELL DATA

Well Depth (ft bls): <u>475</u> Casing Diameter (in): <u>5</u> Static Water Level (ft bmp): <u>215.16</u> Casing Volume (gal): <u>265 x3 = 795.2</u> Total Volume Purged (gal): <u>900</u>	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
<u>0600</u>	<u>Pump On</u>						
<u>0610</u>	<u>10</u>	<u>20</u>	<u>200</u>	<u>6.69</u>	<u>21.4</u>	<u>2170</u>	
<u>0625</u>	<u>25</u>	<u>20</u>	<u>500</u>	<u>6.67</u>	<u>21.5</u>	<u>2190</u>	
<u>0635</u>	<u>35</u>	<u>20</u>	<u>700</u>	<u>6.69</u>	<u>21.5</u>	<u>2200</u>	
<u>0645</u>	<u>45</u>	<u>20</u>	<u>900</u>	<u>6.68</u>	<u>21.5</u>	<u>2190</u>	
							<u>Pump Off</u>

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)
<u>BMO-2008-13B</u>	<u>0645</u>	<u>PL</u>	<u>750</u>	<u>1</u>	<u>300.</u>	<u>Ja</u>	<u>X</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: _____

Additional Comments: 257.9

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-20-19
 Well ID: BMO-2008-13M Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Sherman

WELL DATA		
Well Depth (ft bis): <u>1030</u>	Casing Capacity	
Casing Diameter (in): <u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>215.1</u>	2	0.16
Casing Volume (gal): <u>931.1 x3 = 2,493</u>	4	0.65
Total Volume Purged (gal): <u>2604</u>	5	1.02
	6	1.47
	8	2.81
	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
<u>0500</u>	<u>Pump On</u>						
<u>0720</u>	<u>140</u>	<u>5.7</u>	<u>798</u>	<u>9.89</u>	<u>22.9</u>	<u>1191</u>	
<u>0820</u>	<u>200</u>	<u>4.6</u>	<u>1140</u>	<u>9.83</u>	<u>22.8</u>	<u>1195</u>	
<u>0920</u>	<u>260</u>	<u>3.8</u>	<u>1416</u>	<u>8.88</u>	<u>23.0</u>	<u>1246</u>	
<u>1120</u>	<u>380</u>	<u>3.8</u>	<u>1872</u>	<u>8.83</u>	<u>23.4</u>	<u>1289</u>	
<u>1220</u>	<u>440</u>	<u>2.8</u>	<u>2100</u>	<u>8.80</u>	<u>24.0</u>	<u>1295</u>	
<u>1520</u>	<u>620</u>	<u>2.8</u>	<u>2604</u>	<u>8.78</u>	<u>23.9</u>	<u>1299</u>	
							<u>Pump Off</u>

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)
<u>BMO-2008-13M</u>	<u>1520</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>FG</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: 814.9

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 7-30-19
 Well ID: BMO-2010-1M Weather: Sunny
 ADWR No: _____ Sampler: Christopher J. Sturman

WELL DATA

Well Depth (ft bls): <u>550</u> Casing Diameter (in): <u>5</u> Static Water Level (ft bmp): <u>214.78</u> Casing Volume (gal): <u>342 x3 = 1026</u> Total Volume Purged (gal): <u>1035</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
	2	0.16
	4	0.65
	5	1.02
	6	1.47
	8	2.81
	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
<u>0630</u>	Pump On						
<u>0645</u>	<u>15</u>	<u>10</u>	<u>150</u>	<u>7.48</u>	<u>23.5</u>	<u>722</u>	
<u>0730</u>	<u>60</u>	<u>5</u>	<u>375</u>	<u>7.37</u>	<u>23.6</u>	<u>734</u>	
<u>0830</u>	<u>120</u>	<u>3</u>	<u>555</u>	<u>7.55</u>	<u>23.7</u>	<u>732</u>	
<u>0930</u>	<u>180</u>	<u>3</u>	<u>735</u>	<u>7.52</u>	<u>24.0</u>	<u>726</u>	
<u>1030</u>	<u>240</u>	<u>3</u>	<u>915</u>	<u>7.50</u>	<u>23.9</u>	<u>730</u>	
<u>1110</u>	<u>280</u>	<u>3</u>	<u>1035</u>	<u>7.54</u>	<u>24.0</u>	<u>732</u>	
							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)
<u>BMO-2010-1M</u>	<u>1110</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>Ice</u>	<u>Y</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 335.3

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 7-30-19
 Well ID: BMO-2010-2M Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls): <u>380</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>5</u>	2	0.16
Static Water Level (ft bmp): <u>269.21</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>113 x3 = 339</u>	6	1.47
	8	2.61
Total Volume Purged (gal): <u>810</u>	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
<u>1140</u>	Pump On						
<u>1150</u>	<u>10</u>	<u>27</u>	<u>270</u>	<u>6.64</u>	<u>22.1</u>	<u>2170</u>	
<u>1200</u>	<u>20</u>	<u>27</u>	<u>540</u>	<u>6.65</u>	<u>22.0</u>	<u>2180</u>	
<u>1210</u>	<u>30</u>	<u>27</u>	<u>810</u>	<u>6.67</u>	<u>23.1</u>	<u>2190</u>	
							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)
<u>BMO-2010-2M</u>	<u>1210</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ice</u>	<u>X</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 110.8

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-16-19
 Well ID: BMO-2010-3B Weather: clear, 90s
 ADWR No: 219970 Sampler: SI

WELL DATA			
Well Depth (ft bls):	<u>330</u>	Casing Capacity	
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>122.49</u>	2	0.16
Casing Volume (gal):	<u>214</u> x3 = <u>642</u>	4	0.65
Total Volume Purged (gal):	<u>776</u>	5	1.02
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>07:35</u>	<u>Pump On</u>						
<u>07:50</u>	<u>15</u>	<u>8</u>	<u>120</u>	<u>7.45</u>	<u>20.5</u>	<u>428.5</u>	
<u>08:05</u>	<u>30</u>	<u>8</u>	<u>240</u>	<u>7.47</u>	<u>20.4</u>	<u>425.9</u>	
<u>08:20</u>	<u>45</u>	<u>8</u>	<u>360</u>	<u>7.47</u>	<u>20.5</u>	<u>424.6</u>	
<u>08:35</u>	<u>60</u>	<u>8</u>	<u>480</u>	<u>7.42</u>	<u>20.5</u>	<u>423.8</u>	
<u>08:50</u>	<u>75</u>	<u>8</u>	<u>600</u>	<u>7.41</u>	<u>20.5</u>	<u>423.7</u>	
<u>09:05</u>	<u>90</u>	<u>8</u>	<u>720</u>	<u>7.41</u>	<u>20.5</u>	<u>424.5</u>	
<u>09:12</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2010-3B</u>	<u>09:09</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>
<u>D4920190716</u>	<u>09:09</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-16-19
 Well ID: BMO-2010-3M Weather: clear, 90s
 ADWR No: 219964 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>532</u>	Casing Capacity	
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>124.81</u>	2	0.16
Casing Volume (gal):	<u>415</u> $\times 3 = 1,246$	4	0.65
Total Volume Purged (gal):	<u>1352</u>	<u>5</u>	<u>1.02</u>
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>09:20</u>	<u>Pump On</u>						
<u>09:50</u>	<u>30</u>	<u>8</u>	<u>240</u>	<u>7.56</u>	<u>21.7</u>	<u>385.3</u>	
<u>10:20</u>	<u>60</u>	<u>8</u>	<u>480</u>	<u>7.54</u>	<u>22.1</u>	<u>386.2</u>	
<u>10:50</u>	<u>90</u>	<u>8</u>	<u>720</u>	<u>7.54</u>	<u>22.2</u>	<u>385.7</u>	
<u>11:20</u>	<u>120</u>	<u>8</u>	<u>960</u>	<u>7.49</u>	<u>22.3</u>	<u>385.8</u>	
<u>11:50</u>	<u>150</u>	<u>8</u>	<u>1200</u>	<u>7.50</u>	<u>22.4</u>	<u>385.7</u>	
<u>12:00</u>	<u>160</u>	<u>8</u>	<u>1280</u>	<u>7.53</u>	<u>22.4</u>	<u>385.6</u>	
<u>12:09</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2010-3M</u>	<u>1208</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:	

WELL PURGING INFORMATION	
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:	

Additional Comments:



Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 7-31-19
 Well ID: BMO-2012-1M Weather: Sunny
 ADWR No: _____ Sampler: Christopher S. Sherman

WELL DATA

Well Depth (ft bis): <u>405</u> Casing Diameter (in): <u>5</u> Static Water Level (ft bmp): <u>220.01</u> Casing Volume (gal): <u>188.7 x3 = 566.1</u> Total Volume Purged (gal): <u>600</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
	2	0.16
	4	0.65
	5	1.02
	6	1.47
	8	2.81
	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
<u>0930</u>	Pump On						
<u>0940</u>	<u>10</u>	<u>6</u>	<u>60</u>	<u>7.16</u>	<u>23.4</u>	<u>959</u>	
<u>1000</u>	<u>30</u>	<u>6</u>	<u>180</u>	<u>7.19</u>	<u>23.3</u>	<u>960</u>	
<u>1030</u>	<u>60</u>	<u>6</u>	<u>360</u>	<u>7.20</u>	<u>23.3</u>	<u>962</u>	
<u>1110</u>	<u>100</u>	<u>6</u>	<u>600</u>	<u>7.22</u>	<u>23.3</u>	<u>959</u>	
							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)
<u>BMO-2012-1M</u>	<u>1110</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>ILW</u>	<u>Y</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 185

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-18-19
 Well ID: BMO-2014-1BL Weather: pt. cloudy, 90s
 ADWR No: 917394 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>366</u>	Casing Capacity
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>127.19</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>244</u> x3 = <u>732</u>	2 0.16
Total Volume Purged (gal):	<u>432</u>	4 0.65
		5 <u>1.02</u>
		6 1.47
		8 2.61
		10 4.08
		16 10.44
		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
<u>10:28</u>	<u>Pump On</u>						
<u>10:52</u>	<u>24</u>	<u>6</u>	<u>144</u>	<u>7.17</u>	<u>22.4</u>	<u>688.5</u>	
<u>10:58</u>	<u>30</u>	<u>6</u>	<u>180</u>	<u>7.15</u>	<u>22.5</u>	<u>689.3</u>	
<u>11:13</u>	<u>45</u>	<u>6</u>	<u>270</u>	<u>7.14</u>	<u>22.5</u>	<u>691.9</u>	
<u>11:28</u>	<u>60</u>	<u>6</u>	<u>360</u>	<u>7.15</u>	<u>22.5</u>	<u>691.5</u>	
<u>11:40</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-1BL</u>	<u>11:36</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>3000</u>	<u>NP</u>	<u>y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments: Pump discharge at half normal rate, Purged until field parameters stable to make sample shipment cutoff time.



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-18-19
 Well ID: BMO-2014-18U Weather: cloudy, 90F
 ADWR No: 917393 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>273</u>	Casing Capacity	
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>127.48</u>	2	0.16
Casing Volume (gal):	<u>148</u> x3 = <u>445</u>	4	0.65
Total Volume Purged (gal):	<u>540</u>	⑤	1.02
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>09:47</u>	<u>Pump On</u>						
<u>09:58</u>	<u>10</u>	<u>15</u>	<u>150</u>	<u>7.17</u>	<u>20.3</u>	<u>746.3</u>	
<u>10:08</u>	<u>20</u>	<u>15</u>	<u>300</u>	<u>7.18</u>	<u>20.5</u>	<u>733.1</u>	
<u>10:18</u>	<u>30</u>	<u>15</u>	<u>450</u>	<u>7.15</u>	<u>20.5</u>	<u>717.9</u>	
<u>10:24</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-18U</u>	<u>10:20</u>	<u>Poly</u>	<u>300.0</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7/18/19
 Well ID: BMO-2014-2BL Weather: cloudy, 90s
 ADWR No: 917452 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>396</u>	Casing Capacity
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>130.42</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>271</u> x3 = <u>813</u>	2 0.16
Total Volume Purged (gal):	<u>6,040</u>	4 0.65
		5 1.02
		6 1.47
		8 2.61
		10 4.08
		16 10.44
		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
<u>07:20</u>	<u>Pump On</u>						
<u>07:35</u>	<u>15</u>	<u>16</u>	<u>240</u>	<u>6.95</u>	<u>20.4</u>	<u>1187</u>	
<u>07:50</u>	<u>30</u>	<u>16</u>	<u>480</u>	<u>6.99</u>	<u>20.4</u>	<u>1183</u>	
<u>08:05</u>	<u>45</u>	<u>16</u>	<u>720</u>	<u>7.02</u>	<u>20.4</u>	<u>1178</u>	
<u>08:11</u>	<u>51</u>	<u>16</u>	<u>816</u>	<u>7.01</u>	<u>20.4</u>	<u>1178</u>	
<u>08:25</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-2BL</u>	<u>08:12</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: _____

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-18-19
 Well ID: BMO-2014-2B4 Weather: cloudy, 90s
 ADWR No: 917453 Sampler: JA

WELL DATA		
Well Depth (ft bls):	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
276	2	0.16
Casing Diameter (in): 5	4	0.65
Static Water Level (ft bmp): 130.46	5	1.02
Casing Volume (gal): 149 x3 = 447	6	1.47
Total Volume Purged (gal): 560	8	2.61
	10	4.08
	16	10.44
	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
08:28	Pump On						
08:38	10	16	160	7.26	19.8	541.4	
08:48	20	16	320	7.27	19.8	543.5	
08:58	30	16	480	7.27	19.8	544.3	
09:03	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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-2B4	08:59	Poly	250mL	1	300.0	MP	Y

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-18-19
 Well ID: BMO-2014-3BL Weather: pt cloudy 90s
 ADWR No: 917527 Sampler: SA

WELL DATA		
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity
		Nominal Size (inches) Gallons per Linear Foot
<u>521</u>	<u>5</u>	2 4 5 6 8 10 16 20
Static Water Level (ft bmp): <u>142.49</u>		0.16 0.65 1.02 1.47 2.61 4.08 10.44 16.31
Casing Volume (gal): <u>386</u> x3 = <u>1,158</u>		
Total Volume Purged (gal): <u>1470</u>		
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
<u>12:10</u>	<u>Pump On</u>						
<u>12:30</u>	<u>20</u>	<u>14</u>	<u>280</u>	<u>7.34</u>	<u>21.3</u>	<u>425.1</u>	
<u>12:50</u>	<u>40</u>	<u>14</u>	<u>560</u>	<u>7.31</u>	<u>21.4</u>	<u>422.2</u>	
<u>13:10</u>	<u>60</u>	<u>14</u>	<u>840</u>	<u>7.30</u>	<u>21.3</u>	<u>420.5</u>	
<u>13:30</u>	<u>80</u>	<u>14</u>	<u>1,120</u>	<u>7.30</u>	<u>21.3</u>	<u>418.5</u>	
<u>13:50</u>	<u>100</u>	<u>14</u>	<u>1400</u>	<u>7.31</u>	<u>21.5</u>	<u>413.5</u>	
<u>13:55</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-3BL</u>	<u>13:52</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-18-19
 Well ID: BM0-2014-3BU Weather: Cloudy, 90s
 ADWR No: 917494 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>288</u>	Casing Capacity	
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>143.56</u>	2	0.16
Casing Volume (gal):	<u>147</u> x3 = <u>442</u>	4	0.65
Total Volume Purged (gal):	<u>588</u>	5	1.02
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>14:00</u>	<u>Pump On</u>						
<u>14:10</u>	<u>10</u>	<u>14</u>	<u>140</u>	<u>7.29</u>	<u>20.0</u>	<u>474.7</u>	
<u>14:20</u>	<u>20</u>	<u>14</u>	<u>280</u>	<u>7.27</u>	<u>20.0</u>	<u>475.0</u>	
<u>14:30</u>	<u>30</u>	<u>14</u>	<u>420</u>	<u>7.29</u>	<u>20.0</u>	<u>475.9</u>	
<u>14:35</u>	<u>35</u>	<u>14</u>	<u>490</u>	<u>7.28</u>	<u>20.0</u>	<u>474.2</u>	
<u>14:42</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BM0-2014-3BU</u>	<u>14:37</u>	<u>Poly</u>	<u>200mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-17-19
 Well ID: BMO-2014-4B Weather: cloudy, 90s
 ADWR No: 917020 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>258</u>	Casing Capacity	
Casing Diameter (in): <u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>137.00</u>	2	0.16
Casing Volume (gal): <u>123</u> x3 = <u>370</u>	4	0.65
Total Volume Purged (gal):	<u>5</u>	<u>1.02</u>
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>0950</u>	Pump On						
<u>10:00</u>	<u>10</u>	<u>15</u>	<u>150</u>	<u>7.37</u>	<u>20.3</u>	<u>499.8</u>	
<u>10:10</u>	<u>20</u>	<u>15</u>	<u>300</u>	<u>7.37</u>	<u>20.3</u>	<u>496.3</u>	
<u>10:20</u>	<u>30</u>	<u>15</u>	<u>450</u>	<u>7.36</u>	<u>20.3</u>	<u>494.9</u>	
<u>10:24</u>							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-4B</u>	<u>10:21</u>	<u>P017</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-17-19
 Well ID: BMO-2014-4BL Weather: cloudy, 90s
 ADWR No: 917 619 Sampler: JA

WELL DATA			
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
<u>261</u>	<u>5</u>	2	0.16
		4	0.65
		<u>5</u>	<u>1.02</u>
		6	1.47
Static Water Level (ft bmp):	<u>136.44</u>	8	2.61
		10	4.08
Casing Volume (gal):	<u>127</u> x3 = <u>381</u>	16	10.44
		20	16.31
Total Volume Purged (gal):	<u>518</u>	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
<u>09:08</u>	Pump On						
<u>09:18</u>	<u>10</u>	<u>14</u>	<u>140</u>	<u>7.31</u>	<u>20.5</u>	<u>706.3</u>	
<u>09:28</u>	<u>20</u>	<u>14</u>	<u>280</u>	<u>7.31</u>	<u>20.5</u>	<u>718.4</u>	
<u>09:38</u>	<u>30</u>	<u>14</u>	<u>420</u>	<u>7.30</u>	<u>20.5</u>	<u>720.3</u>	
<u>09:45</u>							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-4BL</u>	<u>09:40</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NR</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-17-19
 Well ID: BMO-2815-1B Weather: Cloudy, 90s
 ADWR No: 917622 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>244</u>	Casing Capacity	
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>132.79</u>	2	0.16
Casing Volume (gal):	<u>113</u> x3 = <u>340</u>	4	0.65
Total Volume Purged (gal):	<u>504</u>	5	<u>4.02</u>
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>10:58</u>	<u>Pump On</u>						
<u>11:08</u>	<u>10</u>	<u>14</u>	<u>140</u>	<u>7.25</u>	<u>20.3</u>	<u>754.6</u>	
<u>11:18</u>	<u>20</u>	<u>14</u>	<u>280</u>	<u>7.35</u>	<u>20.3</u>	<u>741.0</u>	
<u>11:28</u>	<u>30</u>	<u>14</u>	<u>420</u>	<u>7.32</u>	<u>20.3</u>	<u>726.4</u>	
<u>11:34</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2815-1B</u>	<u>11:30</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>3000</u>	<u>MP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-17-19
 Well ID: BMO-2015-1BL Weather: cloudy, 90s
 ADWR No: 917621 Sampler: JA

WELL DATA			
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
<u>241</u>	<u>5</u>	2	0.16
		4	0.65
		⑤	①.02
		6	1.47
Static Water Level (ft bmp): <u>134.09</u>		8	2.61
Casing Volume (gal): <u>109</u> x3 = <u>327</u>		10	4.08
		16	10.44
Total Volume Purged (gal): <u>504</u>		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
<u>11:40</u>	<u>Pump On</u>						
<u>11:50</u>	<u>10</u>	<u>14</u>	<u>140</u>	<u>7.27</u>	<u>20.4</u>	<u>800.1</u>	
<u>12:00</u>	<u>20</u>	<u>14</u>	<u>280</u>	<u>7.28</u>	<u>20.4</u>	<u>800.3</u>	
<u>12:10</u>	<u>30</u>	<u>14</u>	<u>420</u>	<u>7.29</u>	<u>20.4</u>	<u>797.7</u>	
<u>12:16</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2015-1BL</u>	<u>12:12</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-17-19
 Well ID: BM0-2015-28 Weather: cloudy, 80s
 ADWR No: 917 827 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>268</u>	Casing Capacity
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>152.71</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>118</u> x3 = <u>354</u>	2 0.16
Total Volume Purged (gal):	<u>504</u>	4 0.65
		5 1.02
		6 1.47
		8 2.61
		10 4.08
		16 10.44
		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
<u>07:24</u>	<u>Pump On</u>						
<u>07:34</u>	<u>10</u>	<u>14</u>	<u>140</u>	<u>7.05</u>	<u>20.2</u>	<u>908.7</u>	
<u>07:44</u>	<u>20</u>	<u>14</u>	<u>280</u>	<u>7.11</u>	<u>20.3</u>	<u>885.1</u>	
<u>07:54</u>	<u>30</u>	<u>14</u>	<u>420</u>	<u>7.16</u>	<u>20.3</u>	<u>875.0</u>	
<u>08:00</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BM0-2015-28</u>	<u>07:57</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-17-19
 Well ID: BMC-2015-2BL Weather: cloudy, 90s
 ADWR No: 917828 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>272</u>	Casing Capacity
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>151.37</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>123</u> x3 = <u>369</u>	2
Total Volume Purged (gal):	<u>434</u>	4
		5
		6
		8
		10
		16
		20
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
<u>08:08</u>	Pump On						
<u>08:18</u>	<u>10</u>	<u>14</u>	<u>140</u>	<u>7.09</u>	<u>20.4</u>	<u>964.5</u>	
<u>08:28</u>	<u>20</u>	<u>14</u>	<u>280</u>	<u>7.10</u>	<u>20.4</u>	<u>952.2</u>	
<u>08:38</u>	<u>30</u>	<u>14</u>	<u>420</u>	<u>7.11</u>	<u>20.5</u>	<u>942.6</u>	
<u>08:44</u>							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMC-2015-2BL</u>	<u>08:39</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-9-19
 Well ID: BURKE Weather: pt. cloudy, 90s
 ADWR No: 212268 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>781</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>use 587.06 from 8/3/15</u>	2	0.16
Casing Volume (gal): <u>285 x3 = 855</u>	4	0.65
Total Volume Purged (gal): <u>480</u>	5	1.02
	6	<u>1.47</u>
	8	2.61
	10	4.08
	16	10.44
	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
<u>14:35</u>	<u>Pump On</u>						
<u>14:48</u>	<u>13</u>	<u>13</u>	<u>169</u>	<u>7.44</u>	<u>26.0</u>	<u>486.7</u>	
<u>14:55</u>	<u>20</u>	<u>13</u>	<u>260</u>	<u>7.48</u>	<u>26.2</u>	<u>486.0</u>	
<u>15:05</u>	<u>30</u>	<u>13</u>	<u>390</u>	<u>7.48</u>	<u>26.2</u>	<u>488.9</u>	
<u>15:15</u>	<u>40</u>	<u>13</u>	<u>520</u>	<u>7.48</u>	<u>26.2</u>	<u>487.1</u>	
<u>15:20</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BURKE</u>		<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>3000</u>	<u>VP</u>	<u>Y</u>

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 per owner request

WELL PURGING INFORMATION

Purged 3 well volumes and field parameters stabilized.
 Purged 3 well volumes based on previous water level and field parameters stabilized.
 Purged well until field parameters stabilized.
 Other: collected sample from spigot at pressure tank / storage tank

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-10-19
 Well ID: CHAMBERS Weather: Clear, 90's
 ADWR No: 629807 Sampler: RT

WELL DATA			Casing Capacity	
Well Depth (ft bls):	<u>245</u>		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	<u>6</u>		2	0.16
Static Water Level (ft bmp):	<u>N/A</u>		4	0.65
Casing Volume (gal):	<u>x3 =</u>		5	1.02
Total Volume Purged (gal):	<u>90</u>		<u>6</u>	<u>1.47</u>
			8	2.61
			10	4.08
			16	10.44
			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
<u>1231</u>	Pump On						
<u>1235</u>	<u>4</u>	<u>6</u>	<u>24</u>	<u>7.28</u>	<u>82.6</u>	<u>416.2</u>	
<u>1240</u>	<u>9</u>	<u>6</u>	<u>54</u>	<u>7.28</u>	<u>82.6</u>	<u>417.3</u>	
<u>1245</u>	<u>14</u>	<u>6</u>	<u>84</u>	<u>7.27</u>	<u>82.4</u>	<u>417.7</u>	
<u>1246</u>	<u>15</u>		<u>90</u>				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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>CHAMBERS</u>	<u>1248</u>	<u>POLY</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:
WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: No access to take SWL reading, Vines covering door.



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-24-19
 Well ID: COB MW-1B Weather: pt. Cloudy, 90s
 ADWR No: 225906 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>500</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>use 240.27 from 7/19/17</u>	2	0.16
Casing Volume (gal): <u>382</u> x3 = <u>1,146</u>	4	0.65
Total Volume Purged (gal): <u>1,235</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>09:55</u>	<u>Pump On</u>						
<u>10:10</u>	<u>15</u>	<u>13</u>	<u>195</u>	<u>6.95</u>	<u>20.8</u>	<u>1442</u>	
<u>10:25</u>	<u>30</u>	<u>13</u>	<u>390</u>	<u>6.86</u>	<u>20.7</u>	<u>1767</u>	
<u>10:40</u>	<u>45</u>	<u>13</u>	<u>585</u>	<u>6.77</u>	<u>20.6</u>	<u>1797</u>	
<u>10:55</u>	<u>60</u>	<u>13</u>	<u>780</u>	<u>6.89</u>	<u>20.5</u>	<u>1745</u>	
<u>11:10</u>	<u>75</u>	<u>13</u>	<u>975</u>	<u>6.77</u>	<u>20.6</u>	<u>1800</u>	
<u>11:25</u>	<u>90</u>	<u>13</u>	<u>1,170</u>	<u>6.70</u>	<u>20.6</u>	<u>1793</u>	
<u>11:30</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>COB MW-1B</u>	<u>11:26</u>	<u>poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

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 per owner request due to multiple sandstone getting stuck in well

WELL PURGING INFORMATION

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

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-24-19
 Well ID: LOB MW-2 Weather: pt cloudy, 80s
 ADWR No: 903984 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>162</u>	Casing Capacity	
Casing Diameter (in):	<u>4</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>133.54</u>	2	0.16
Casing Volume (gal):	<u>19</u> x3 = <u>57</u>	④	0.65
Total Volume Purged (gal):	<u>150</u>	5	1.02
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>09:08</u>	<u>Pump On</u>						
<u>09:13</u>	<u>5</u>	<u>6</u>	<u>30</u>	<u>7.21</u>	<u>19.1</u>	<u>593.8</u>	
<u>09:18</u>	<u>10</u>	<u>6</u>	<u>60</u>	<u>7.20</u>	<u>19.2</u>	<u>596.6</u>	
<u>09:23</u>	<u>15</u>	<u>6</u>	<u>90</u>	<u>7.19</u>	<u>19.2</u>	<u>598.4</u>	
<u>09:33</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>LOB MW-2</u>	<u>09:25</u>	<u>poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-24-19
 Well ID: COB MW-3 Weather: pt cloudy, 80s
 ADWR No: 906823 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>300</u>	Casing Capacity	
Casing Diameter (in):	<u>4</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>127.73</u>	2	0.16
Casing Volume (gal):	<u>112</u> x3 = <u>336</u>	<u>4</u>	<u>0.65</u>
Total Volume Purged (gal):	<u>494</u>	5	1.02
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>0823</u>	Pump On						
<u>0828</u>	<u>5</u>	<u>19</u>	<u>95</u>	<u>7.29</u>	<u>19.6</u>	<u>474.2</u>	
<u>0833</u>	<u>10</u>	<u>19</u>	<u>190</u>	<u>7.40</u>	<u>19.7</u>	<u>488.7</u>	
<u>0838</u>	<u>15</u>	<u>19</u>	<u>285</u>	<u>7.39</u>	<u>19.7</u>	<u>494.3</u>	
<u>0843</u>	<u>20</u>	<u>19</u>	<u>380</u>	<u>7.38</u>	<u>19.7</u>	<u>798.8</u>	
<u>0849</u>							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>COB MW-3</u>	<u>08:45</u>	<u>poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-15-19
 Well ID: COB WL Weather: Clear, 90s
 ADWR No: 593116 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>150</u>	Casing Capacity	
Casing Diameter (in): <u>4</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>92.89</u>	2	0.16
Casing Volume (gal): <u>37</u> x3 = <u>111</u>	④	①0.65
Total Volume Purged (gal): <u>120</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>1035</u>	<u>Pump On</u>						
<u>1040</u>	<u>5</u>	<u>7</u>	<u>35</u>	<u>6.98</u>	<u>20.2</u>	<u>1155</u>	
<u>1045</u>	<u>10</u>	<u>1</u>	<u>45</u>	<u>7.01</u>	<u>20.2</u>	<u>1156</u>	
<u>11:00</u>	<u>25</u>	<u>1</u>	<u>55</u>	<u>7.11</u>	<u>21.8</u>	<u>1150</u>	
<u>11:15</u>	<u>40</u>	<u>1</u>	<u>70</u>	<u>7.18</u>	<u>22.0</u>	<u>1158</u>	
<u>11:30</u>	<u>55</u>	<u>1</u>	<u>85</u>	<u>7.14</u>	<u>22.0</u>	<u>1157</u>	
<u>11:45</u>	<u>70</u>	<u>1</u>	<u>100</u>	<u>7.12</u>	<u>22.2</u>	<u>1158</u>	
<u>12:00</u>	<u>85</u>	<u>1</u>	<u>115</u>	<u>7.10</u>	<u>22.2</u>	<u>1154</u>	
<u>12:05</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other: <u>pipe at well head - PVC</u>		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>COB WL</u>	<u>12:05</u>	<u>poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-8-19
 Well ID: COOPER Weather: clear, 90°
 ADWR No: 623564 Sampler: JA

WELL DATA		
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity
		Nominal Size (inches) Gallons per Linear Foot
<u>325</u>	<u>6</u>	2 0.16
		4 0.65
		5 1.02
Static Water Level (ft bmp):	<u>NA IWL</u>	6 <u>(1.47)</u>
		8 2.61
Casing Volume (gal):	<u>x3 =</u>	10 4.08
		16 10.44
Total Volume Purged (gal):	<u>184</u>	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
<u>1305</u>	Pump On						
<u>1315</u>	<u>10</u>	<u>4</u>	<u>40</u>	<u>7.37</u>	<u>22.2</u>	<u>418.4</u>	
<u>1325</u>	<u>20</u>	<u>4</u>	<u>80</u>	<u>7.45</u>	<u>22.3</u>	<u>417.8</u>	
<u>1335</u>	<u>30</u>	<u>4</u>	<u>120</u>	<u>7.46</u>	<u>22.3</u>	<u>419.8</u>	
<u>1345</u>	<u>40</u>	<u>4</u>		<u>7.50</u>	<u>22.3</u>	<u>417.1</u>	
<u>1348</u>							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 at / near wellhead		Other: <u>spigot on house</u>			
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>COOPER</u>	<u>1348</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>3000</u>	<u>VP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead - <u>port cap frozen on</u> <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:	

WELL PURGING INFORMATION	
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:	

Additional Comments:



Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-19-15
 Well ID: Cooper C Weather: Partly Cloudy
 ADWR No: _____ Sampler: Christopher L Skum

WELL DATA

Well Depth (ft bls): <u>220</u> Casing Diameter (in): <u>6</u> Static Water Level (ft bmp): <u>165.43</u> Casing Volume (gal): <u>80.2 x3 = 240.6</u> Total Volume Purged (gal): <u>270</u>	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
<u>0645</u>	Pump On						
<u>0655</u>	<u>10</u>	<u>9</u>	<u>90</u>	<u>7.04</u>	<u>21.3</u>	<u>1564</u>	
<u>0705</u>	<u>20</u>	<u>9</u>	<u>180</u>	<u>7.02</u>	<u>21.2</u>	<u>1565</u>	
<u>0715</u>	<u>30</u>	<u>9</u>	<u>270</u>	<u>7.01</u>	<u>21.3</u>	<u>1568</u>	
							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)
<u>Cooper C</u>	<u>0715</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>Ja</u>	<u>Y</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 546

Olmstead

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-09-19
 Well ID: DODSON Weather: Clear Sunny Windy
 ADWR No: 644927 Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>200</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>6</u>	2	0.16
Static Water Level (ft bmp): <u>104.16</u>	4	0.65
	5 <u>6</u>	1.02 <u>1.47</u>
Casing Volume (gal): <u>140.88</u> x3 = <u>422.65 = 423</u>	8	2.61
Total Volume Purged (gal): <u>506</u>	10	4.08
	16	10.44
	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
<u>1414</u>	Pump On						
<u>1427</u>	<u>13</u>	<u>11</u>	<u>143</u>	<u>6.84</u>	<u>69.5</u>	<u>2399</u>	
<u>1442</u>	<u>28</u>	<u>11</u>	<u>308</u>	<u>6.94</u>	<u>69.2</u>	<u>2393</u>	
<u>1458</u>	<u>44</u>	<u>11</u>	<u>484</u>	<u>6.94</u>	<u>69.4</u>	<u>2362</u>	
<u>1500</u>	<u>46</u>	<u>11</u>	<u>506</u>				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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>DODSON</u>	<u>1502</u>	<u>POLY</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-11-19
 Well ID: DOUGLASS 791 Weather: Overcast, 90s
 ADWR No: 592791 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>200</u>	Casing Capacity	
Casing Diameter (in): <u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>27.35</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	20	16.31
<small>Casing Volume = gallons/foot * water column (feet)</small>		

FIELD SAMPLING DATA							
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
	<u>WLO</u>						
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: WLO

Additional Comments: _____

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-11-19
 Well ID: DOUGLASS 792 Weather: Overcast, 90s
 ADWR No: 592792 Sampler: JA

WELL DATA		
Well Depth (ft bis): <u>200</u>	Casing Capacity	
Casing Diameter (in): <u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>85.39</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	Pump On						
	<u>W</u>	<u>C</u>	<u>O</u>				
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WCO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WCO</u>

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-17-19
 Well ID: EAST Weather: Rain, 90s
 ADWR No: 599796 Sampler: JA

WELL DATA		
Well Depth (ft bis): <u>125</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>79.28</u>	2	0.16
Casing Volume (gal): <u>67</u> x3 = <u>201</u>	4	0.65
Total Volume Purged (gal): <u>280</u>	5	1.02
	<u>6</u>	<u>1.47</u>
	8	2.61
	10	4.08
	16	10.44
	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
<u>14:10</u>	<u>Pump On</u>						
<u>14:20</u>	<u>10</u>	<u>10</u>	<u>100</u>	<u>7.27</u>	<u>19.6</u>	<u>603.7</u>	
<u>14:25</u>	<u>15</u>	<u>10</u>	<u>150</u>	<u>7.22</u>	<u>19.6</u>	<u>609.1</u>	
<u>14:30</u>	<u>20</u>	<u>10</u>	<u>200</u>	<u>7.24</u>	<u>19.6</u>	<u>602.7</u>	
<u>14:35</u>	<u>25</u>	<u>10</u>	<u>250</u>	<u>7.25</u>	<u>19.6</u>	<u>602.8</u>	
<u>14:38</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>EAST</u>	<u>14:38</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>Y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-23-19
 Well ID: ECHAVE Weather: Pt. cloudy, 80s
 ADWR No: 219449 Sampler: JA

WELL DATA			Casing Capacity	
Well Depth (ft bls):	<u>345</u>	Nominal Size (inches)	Gallons per Linear Foot	
Casing Diameter (in):	<u>6</u>	2	0.16	
Static Water Level (ft bmp):	<u>220.93</u>	4	0.65	
Casing Volume (gal):	<u>182</u> x3 = <u>547</u>	5	1.02	
Total Volume Purged (gal):	<u>160</u>	<u>6</u>	<u>1.47</u>	
		8	2.61	
		10	4.08	
		16	10.44	
		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
<u>10:07</u>	<u>Pump On</u>						
<u>10:12</u>	<u>5</u>	<u>8</u>	<u>40</u>	<u>7.58</u>	<u>26.2</u>	<u>399.1</u>	
<u>10:17</u>	<u>10</u>	<u>8</u>	<u>80</u>	<u>7.55</u>	<u>26.5</u>	<u>399.1</u>	
<u>10:22</u>	<u>15</u>	<u>8</u>	<u>120</u>	<u>7.54</u>	<u>26.3</u>	<u>398.3</u>	
<u>10:27</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other: <u>Spigot on surge by storage tank</u>		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>ECHAVE</u>	<u>10:24</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: Sampled storage tank filled by well - no full purge

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-19-19
 Well ID: EPPELE Weather: cloudy, 90°
 ADWR No: 805641 Sampler: JA

WELL DATA		
Well Depth (ft bis): <u>265</u>	Casing Capacity	
Casing Diameter (in): <u>8</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>29.30</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
							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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Inoperable Pump</u>							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: Inoperable Pump

Additional Comments: Property unoccupied - power to well shut off & power box locked

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-24-19
 Well ID: FRANCO 383 Weather: pt. cloudy, 90s
 ADWR No: 221383 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>711</u>	Casing Capacity
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>199.56*</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>522 x3 = 1566</u>	2 0.16
Total Volume Purged (gal):	<u>1,710</u>	4 0.65
		5 <u>9.02</u>
		6 1.47
		8 2.61
		10 4.08
		16 10.44
		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
<u>12:00</u>	<u>Pump On</u>						
<u>12:15</u>	<u>15</u>	<u>18</u>	<u>270</u>	<u>7.42</u>	<u>24.8</u>	<u>1083</u>	
<u>12:30</u>	<u>30</u>	<u>18</u>	<u>540</u>	<u>7.45</u>	<u>24.8</u>	<u>1082</u>	
<u>12:45</u>	<u>45</u>	<u>18</u>	<u>810</u>	<u>7.43</u>	<u>24.8</u>	<u>1082</u>	
<u>13:00</u>	<u>60</u>	<u>18</u>	<u>1,080</u>	<u>7.45</u>	<u>24.9</u>	<u>1081</u>	
<u>13:15</u>	<u>75</u>	<u>18</u>	<u>1,350</u>	<u>7.43</u>	<u>24.8</u>	<u>1080</u>	
<u>13:30</u>	<u>90</u>	<u>18</u>	<u>1,620</u>	<u>7.42</u>	<u>24.9</u>	<u>1085</u>	
<u>13:35</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>FRANCO 383</u>	<u>13:31</u>	<u>poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>MP</u>	<u>y</u>

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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments: * Well measured from top of casing. Apparently sanding tube was removed during a pump replacement & not re-installed



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-15-19
 Well ID: GARNER 557 Weather: Cloudy, 100s
 ADWR No: 558557 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>300</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>IWL</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION	
<input type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input checked="" type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input checked="" type="checkbox"/> Other: <u>Case in opening in wellhead</u>	

WELL PURGING INFORMATION	
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>	

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-15-19
 Well ID: GARNER 635 Weather: cloudy, 100s
 ADWR No: 587 635 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>680</u>	Casing Capacity
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>208.66</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>481</u> x3 = <u>1443</u>	2
Total Volume Purged (gal):	<u>1526</u>	4
		5
		6
		8
		10
		16
		20
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
<u>13:05</u>	<u>Pump On</u>						
<u>13:20</u>	<u>15</u>	<u>14</u>	<u>210</u>	<u>7.43</u>	<u>23.4</u>	<u>473.3</u>	
<u>13:35</u>	<u>30</u>	<u>14</u>	<u>420</u>	<u>7.48</u>	<u>23.5</u>	<u>475.5</u>	
<u>13:50</u>	<u>45</u>	<u>14</u>	<u>630</u>	<u>7.48</u>	<u>23.4</u>	<u>477.0</u>	
<u>14:05</u>	<u>60</u>	<u>14</u>	<u>840</u>	<u>7.46</u>	<u>23.5</u>	<u>473.7</u>	
<u>14:20</u>	<u>75</u>	<u>14</u>	<u>1050</u>	<u>7.49</u>	<u>23.5</u>	<u>476.3</u>	
<u>14:35</u>	<u>90</u>	<u>14</u>	<u>1260</u>	<u>7.48</u>	<u>23.4</u>	<u>474.3</u>	
<u>14:50</u>	<u>105</u>	<u>14</u>	<u>1470</u>	<u>7.49</u>	<u>23.4</u>	<u>473.8</u>	
<u>14:54</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>GARNER 635</u>	<u>14:54</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-8-19
 Well ID: GOAR RANCH Weather: clear, 90s
 ADWR No: 610 645 Sampler: JA

WELL DATA			
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
<u>250</u>	<u>7</u>	2	0.16
Static Water Level (ft bmp):	<u>194.68</u>	4	0.65
Casing Volume (gal):	<u>x3 =</u>	5	1.02
Total Volume Purged (gal):		6	1.47
		8	2.61
		10	4.08
		16	10.44
		20	16.31
<small>Casing Volume = gallons/foot * water column (feet)</small>			

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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>wld</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>wld</u>

Additional Comments:

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-7-19
 Well ID: Hoban Weather: partly cloudy
 ADWR No: _____ Sampler: Christopher L Skirant

WELL DATA

Well Depth (ft bls): <u>300</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>5</u>	2	0.16
Static Water Level (ft bmp): <u>173.88</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>128.7 x 3 = 386.1</u>	6	1.47
Total Volume Purged (gal): <u>528</u>	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
<u>0800</u>	Pump On						
<u>0810</u>	<u>10</u>	<u>17.6</u>	<u>176</u>	<u>6.95</u>	<u>22.2</u>	<u>1791</u>	
<u>0820</u>	<u>20</u>	<u>17.6</u>	<u>352</u>	<u>6.91</u>	<u>22.1</u>	<u>1796</u>	
<u>0830</u>	<u>30</u>	<u>17.6</u>	<u>528</u>	<u>6.90</u>	<u>22.2</u>	<u>1798</u>	
							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)
<u>Hoban</u>	<u>0830</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Flu</u>	<u>X</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 126.2

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-9-19
 Well ID: HOWARD 312 Weather: Clear, 90s
 ADWR No: 221312 Sampler: SA

WELL DATA		
Well Depth (ft bls): <u>980</u>	Casing Capacity	
Casing Diameter (in): <u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>206.58</u>	2	0.16
Casing Volume (gal): <u>789</u> x3 = <u>2367</u>	4	0.65
Total Volume Purged (gal): <u>2430</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>09:05</u>	<u>Pump On</u>						
<u>09:20</u>	<u>15</u>	<u>10</u>	<u>150</u>	<u>8.01</u>	<u>22.0</u>	<u>607.6</u>	
<u>09:35</u>	<u>30</u>	<u>10</u>	<u>300</u>	<u>7.98</u>	<u>22.8</u>	<u>606.9</u>	
<u>10:20</u>	<u>75</u>	<u>10</u>	<u>750</u>	<u>8.00</u>	<u>25.7</u>	<u>611.9</u>	
<u>11:05</u>	<u>120</u>	<u>10</u>	<u>1,200</u>	<u>7.99</u>	<u>25.9</u>	<u>612.2</u>	
<u>11:50</u>	<u>165</u>	<u>10</u>	<u>1,650</u>	<u>7.97</u>	<u>26.2</u>	<u>611.4</u>	
<u>12:35</u>	<u>210</u>	<u>10</u>	<u>2,100</u>	<u>7.97</u>	<u>26.1</u>	<u>607.2</u>	
<u>13:05</u>	<u>240</u>	<u>10</u>	<u>2,400</u>	<u>7.96</u>	<u>25.9</u>	<u>607.8</u>	
<u>1308</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>HOWARD 312</u>	<u>1308</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/>	Water level measurement collected.
<input type="checkbox"/>	No water level measurement collected. No access to wellhead/No port in wellhead
<input type="checkbox"/>	No water level measurement collected. Obstruction in well.
<input type="checkbox"/>	No water level measurement collected. Well is pumping.
<input type="checkbox"/>	Other:

WELL PURGING INFORMATION	
<input checked="" type="checkbox"/>	Purged 3 well volumes and field parameters stabilized.
<input type="checkbox"/>	Purged 3 well volumes based on previous water level and field parameters stabilized.
<input type="checkbox"/>	Purged well until field parameters stabilized.
<input type="checkbox"/>	Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-9-19
 Well ID: HOWARD NR Weather: clear, 90s
 ADWR No: NR Sampler: JA

WELL DATA			
Well Depth (ft bls):		Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
220		2	0.16
Casing Diameter (in):	6	4	0.65
Static Water Level (ft bmp):	160.66	5	1.02
Casing Volume (gal):	87 x3 = 262	6	1.47
Total Volume Purged (gal):	440	8	2.61
		10	4.08
		16	10.44
		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
1327	Pump On						
1337	10	11	110	7.10	20.2	1135	
1347	20	11	220	6.95	20.1	1244	
1357	30	11	330	6.90	20.1	1284	
1402	35	11	385	6.90	20.1	1304	
1406							pump off
1416							pump on
1417							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
HOWARD NR	1417	Poly	250ml	1	3000.0	VP	Y

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-10-19
 Well ID: KEEFER Weather: Clear, 90s
 ADWR No: 209744 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>245</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>144.82</u>	2	0.16
Casing Volume (gal): <u>147</u> x3 = <u>442</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	<u>6</u>	<u>1.47</u>
	8	2.61
	10	4.08
	16	10.44
	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
<u>08:45</u>	Pump On						
<u>08:55</u>	<u>10</u>	<u>10</u>	<u>100</u>	<u>7.24</u>	<u>19.4</u>	<u>489.6</u>	
<u>09:05</u>	<u>20</u>	<u>20</u>	<u>200</u>	<u>7.23</u>	<u>19.9</u>	<u>485.7</u>	
<u>09:15</u>	<u>30</u>	<u>10</u>	<u>300</u>	<u>7.23</u>	<u>19.9</u>	<u>489.1</u>	
<u>09:25</u>	<u>40</u>	<u>10</u>	<u>400</u>	<u>7.23</u>	<u>19.4</u>	<u>494.9</u>	
<u>09:35</u>	<u>50</u>	<u>10</u>	<u>500</u>	<u>7.23</u>	<u>19.4</u>	<u>495.1</u>	
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>KEEFER</u>		<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:	

WELL PURGING INFORMATION	
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:	

Additional Comments:



Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 9-9-19
 Well ID: LADD-251 Weather: Sunny
 ADWR No: _____ Sampler: Christopher L. Sturman

WELL DATA

Well Depth (ft bls): _____	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): _____	2	0.16
Static Water Level (ft bmp): <u>225.05</u>	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						

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: _____

Additional Comments: _____

SWL only

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 9-9-19
 Well ID: LADD-538 Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls): _____	Casing Capacity	
	Nominal Size (Inches)	Gallons per Linear Foot
Casing Diameter (in): _____	2	0.16
Static Water Level (ft bmp): <u>216.22</u>	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						

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: _____

Additional Comments: SWL only

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 9-9-19
 Well ID: LADD-635 Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Sluman

WELL DATA

Well Depth (ft bls): _____	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): _____	2	0.16
Static Water Level (ft bmp): <u>174.03</u>	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						

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: _____

Additional Comments: SWL only



Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 9-9-19
 Well ID: LADD-837 Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Slavin

WELL DATA

Well Depth (ft bis): _____	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): _____	2	0.16
Static Water Level (ft bmp): <u>295.40</u>	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

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: _____

Additional Comments: SWL only



Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 9-9-19
 Well ID: LADD-977 Weather: Sunny
 ADWR No: _____ Sampler: Christopher L. Shannon

WELL DATA

Well Depth (ft bls): _____	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): _____	2	0.16
Static Water Level (ft bmp): <u>89.27</u>	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						

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: _____

Additional Comments: SWL only



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-22-19
 Well ID: MARCELL Weather: cloudy, 90s
 ADWR No: NR Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>~220</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>IWL</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
							Pump On
							<div style="font-size: 2em; color: blue; opacity: 0.5;"> Unavailable to Sample Inoperable Pump </div>
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Inoperable Pump							

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input checked="" type="checkbox"/> Other: <u>Port plug rusted on, unable to remove w/ tools</u>
WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>Inoperable Pump</u>

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-10-19
 Well ID: MCCONNELL 265 Weather: (Clear, 90)
 ADWR No: 539 265 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>216</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>166.91</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
							Pump On
							<div style="font-size: 2em; color: blue; opacity: 0.5;">Inoperable pump</div>
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Inoperable Pump							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: pump not functioning - per owner no plans to fix it.

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-10-19
 Well ID: MCCONWELL 459 Weather: Clear 90s
 ADWR No: 221459 Sampler: SA

WELL DATA		
Well Depth (ft bls): <u>803</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>5</u>	2	0.16
Static Water Level (ft bmp): <u>170.81</u>	4	0.65
	⑤	1.02
Casing Volume (gal): <u>706</u> x3 = <u>2,118</u>	6	1.47
	8	2.61
Total Volume Purged (gal): <u>2,200</u>	10	4.08
	16	10.44
	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
<u>11:05</u>	<u>Pump On</u>						
<u>11:20</u>	<u>15</u>	<u>10</u>	<u>150</u>	<u>7.89</u>	<u>23.7</u>	<u>442.3</u>	
<u>11:35</u>	<u>30</u>	<u>10</u>	<u>300</u>	<u>7.90</u>	<u>24.4</u>	<u>441.5</u>	
<u>12:20</u>	<u>75</u>	<u>10</u>	<u>750</u>	<u>7.89</u>	<u>24.8</u>	<u>448.9</u>	
<u>13:05</u>	<u>120</u>	<u>10</u>	<u>1200</u>	<u>7.90</u>	<u>24.8</u>	<u>447.1</u>	
<u>13:50</u>	<u>165</u>	<u>10</u>	<u>1650</u>	<u>7.89</u>	<u>24.9</u>	<u>449.4</u>	
<u>14:35</u>	<u>210</u>	<u>10</u>	<u>2100</u>	<u>7.91</u>	<u>24.9</u>	<u>447.7</u>	
<u>14:40</u>	<u>215</u>	<u>10</u>	<u>2150</u>	<u>7.90</u>	<u>25.0</u>	<u>447.9</u>	
<u>14:45</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>MCCONWELL 459</u>	<u>14:41</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: _____

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-12-19
 Well ID: METZLER Weather: Cloudy 80's
 ADWR No: _____ Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>351</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>295.54</u>	2	0.16
Casing Volume (gal): _____ x3 = _____	4	0.65
Total Volume Purged (gal): _____	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: WLO

Additional Comments: _____

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-09-09
 Well ID: M00 RE Weather: Clear Warm
 ADWR No: 538947 Sampler: RT

WELL DATA		
Well Depth (ft bls):	<u>220 ft</u>	Casing Capacity
Casing Diameter (in):	<u>6</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>157.43 ft</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>92</u> x3 = <u>276</u>	2 0.16
Total Volume Purged (gal):	<u>310</u>	4 0.65
		5 1.02
		<u>6</u> <u>1.47</u>
		8 2.61
		10 4.08
		16 10.44
		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
<u>0921</u>	<u>Pump On</u>						
<u>0930</u>	<u>9</u>	<u>7</u>	<u>63</u>	<u>6.94</u>	<u>72</u>	<u>445.6</u>	
<u>0945</u>	<u>24</u>	<u>7</u>	<u>168</u>	<u>6.96</u>	<u>72.8</u>	<u>446.4</u>	
<u>1001</u>	<u>40</u>	<u>7</u>	<u>280</u>	<u>6.97</u>	<u>72.8</u>	<u>443.9</u>	
<u>1006</u>	<u>45</u>						<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>M00 RE</u>	<u>1006</u>	<u>POLY</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/>	Water level measurement collected.
<input type="checkbox"/>	No water level measurement collected. No access to wellhead/No port in wellhead
<input type="checkbox"/>	No water level measurement collected. Obstruction in well.
<input type="checkbox"/>	No water level measurement collected. Well is pumping.
<input type="checkbox"/>	Other:

WELL PURGING INFORMATION	
<input checked="" type="checkbox"/>	Purged 3 well volumes and field parameters stabilized.
<input type="checkbox"/>	Purged 3 well volumes based on previous water level and field parameters stabilized.
<input type="checkbox"/>	Purged well until field parameters stabilized.
<input type="checkbox"/>	Other:

Additional Comments: Well now has a cover on it, which was put on when their new pump was installed

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Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: Precast 90's
 Well ID: NESS Weather: 07-11-19
 ADWR No: 504127 Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>812</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>6</u>	2	0.16
Static Water Level (ft bmp): <u>575.06</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>x3 =</u>	<u>6</u>	<u>1.47</u>
	8	2.61
Total Volume Purged (gal):	10	4.08
	16	10.44
	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 °F (°C)	Specific Conductance (µS/cm)	Comments
<u>1617</u>	Pump On						
<u>1619</u>	<u>2</u>			<u>6.82</u>	<u>81.5</u>	<u>518.5</u>	
<u>1621</u>	<u>4</u>			<u>6.97</u>	<u>80.8</u>	<u>518.5</u>	
<u>1623</u>	<u>6</u>			<u>7.03</u>	<u>80.8</u>	<u>517.3</u>	
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>NESS</u>	<u>1628</u>	<u>POLY</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>Took 3 parameters and sampled</u>

Additional Comments: Owner doesn't want purge or gpm.



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-24-19
 Well ID: NOTE MAN Weather: pt. cloudy, 90s
 ADWR No: 212 483 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>470</u>	Casing Capacity	
Casing Diameter (in): <u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>Use 327.54 from 2/25/09</u>	2	0.16
Casing Volume (gal): <u>145 x3 = 435</u>	4	0.65
Total Volume Purged (gal): <u>468</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>13:55</u>	<u>Pump On</u>						
<u>14:05</u>	<u>10</u>	<u>9</u>	<u>90</u>	<u>6.62</u>	<u>22.5</u>	<u>1364</u>	
<u>14:15</u>	<u>20</u>	<u>9</u>	<u>180</u>	<u>6.60</u>	<u>22.9</u>	<u>1360</u>	
<u>14:25</u>	<u>30</u>	<u>9</u>	<u>270</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>Break at well power box top</u>
<u>14:35</u>	<u>40</u>	<u>9</u>	<u>360</u> <u>324</u>	<u>6.65</u>	<u>22.7</u>	<u>1363</u>	<u>4 min w/ water off</u>
<u>14:45</u>	<u>50</u>	<u>9</u>	<u>450</u> <u>414</u>	<u>6.61</u>	<u>22.6</u>	<u>1358</u>	
<u>14:50</u>	<u>55</u>	<u>9</u>	<u>459</u>	<u>6.61</u>	<u>22.6</u>	<u>1359</u>	
<u>14:51</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other: <u>Spigot in front yard</u>		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>NOTE MAN</u>	<u>14:51</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

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 parameters stabilized.
 Purged well until field parameters stabilized.
 Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-30-19
 Well ID: NSD-02 Weather: Partly Cloudy, 80's
 ADWR No: 527587 Sampler: RT

WELL DATA		
Well Depth (ft bls):	<u>120</u>	Casing Capacity
Casing Diameter (in):	<u>12</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>112.53</u>	Gallons per Linear Foot
Casing Volume (gal):	x3 =	2
Total Volume Purged (gal):		4
		5
		6
		8
		10
		16
		20
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						
	<u>WLO</u>						
	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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-30-19
 Well ID: NSD-03 Weather: Partly Cloudy - 80's
 ADWR No: 527586 Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>100'</u>	Casing Capacity	
Casing Diameter (in): <u>12"</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>93.64 ft</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
W100							

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/>	Water level measurement collected.
<input type="checkbox"/>	No water level measurement collected. No access to wellhead/No port in wellhead
<input type="checkbox"/>	No water level measurement collected. Obstruction in well.
<input type="checkbox"/>	No water level measurement collected. Well is pumping.
<input type="checkbox"/>	Other:

WELL PURGING INFORMATION	
<input type="checkbox"/>	Purged 3 well volumes and field parameters stabilized.
<input type="checkbox"/>	Purged 3 well volumes based on previous water level and field parameters stabilized.
<input type="checkbox"/>	Purged well until field parameters stabilized.
<input checked="" type="checkbox"/>	Other: <u>W10 only.</u>

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-09-19
 Well ID: NWC-82 Weather: Sunny, cool
 ADWR No: 582944 Sampler: RT

WELL DATA		
Well Depth (ft bls):	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
312	2	0.16
Casing Diameter (in):	4	0.65
6	5	1.02
Static Water Level (ft bmp):	6	1.47
170.59	8	2.61
Casing Volume (gal):	10	4.08
208 x3 = 624	16	10.44
Total Volume Purged (gal):	20	16.31
1680	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
0729	Pump On						
0733	4	105	420	7.20	20.5	449.4	
0735	6	105	630	7.19	20.4	442.7	
0738	9	105	945	7.14	20.5	442.2	
0745	16						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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-02	0744	Poly	250ml	1	308.00	NP	Y

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-09-19
 Well ID: NWC-03-CAP Weather: clear sunny
 ADWR No: _____ Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>179</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): _____	2	0.16
	4	0.65
Static Water Level (ft bmp): <u>IWL</u>	5	1.02
	6	1.47
Casing Volume (gal): _____ x3 = _____	8	2.61
	10	4.08
Total Volume Purged (gal): _____	16	10.44
	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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other: _____

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>WLO</u>

Additional Comments: Went passed well depth w/out signal

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-09-19
 Well ID: MWC-04 Weather: Sunny, Cool
 ADWR No: 551849 Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>462</u>	Casing Capacity	
Casing Diameter (in): <u>10</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	<u>10</u>	<u>4.08</u>
	16	10.44
	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
<u>0609</u>	Pump On						
<u>0619</u>	<u>10</u>	<u>7</u>	<u>70</u>	<u>6.85</u>	<u>76.8</u>	<u>859.9</u>	
<u>0624</u>	<u>15</u>	<u>7</u>	<u>105</u>	<u>7.00</u>	<u>76.9</u>	<u>859.2</u>	
<u>0630</u>	<u>21</u>	<u>7</u>	<u>147</u>	<u>7.06</u>	<u>76.8</u>	<u>857.2</u>	
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>MWC-04</u>	<u>0648</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.8</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input checked="" type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-29-19
 Well ID: NWC-06 Weather: Clear / Warm
 ADWR No: 575700 Sampler: RT

WELL DATA			
Well Depth (ft bls):	<u>348</u>	Casing Capacity	
Casing Diameter (in):	<u>8</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>165.28</u>	2	0.16
Casing Volume (gal):	<u>456</u> x3 = <u>(368)</u>	4	0.65
Total Volume Purged (gal):		5	1.02
		6	1.47
		<u>8</u>	<u>2.61</u>
		10	4.08
		16	10.44
		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
<u>0809</u>	Pump On						
<u>0815</u>	<u>6</u>	<u>138</u>	<u>828</u>	<u>7.11</u>	<u>71.7</u>	<u>409.7</u>	
<u>0820</u>	<u>11</u>	<u>138</u>	<u>1518</u>	<u>7.09</u>	<u>71.7</u>	<u>411.4</u>	
<u>0825</u>	<u>16</u>	<u>138</u>	<u>2208</u>	<u>7.09</u>	<u>71.6</u>	<u>411.3</u>	
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>NWC-06</u>	<u>0831</u>	<u>POLY</u>	<u>250ml</u>	<u>1</u>	<u>300.00</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: NWC left on for another hour by SWC

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: ~~7-8-19~~ 7-8-19
 Well ID: OLMOS Weather: Sunny 80's
 ADWR No: 224745 Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>351.52 306</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>145.74 151.52 ft</u>	2	0.16
Casing Volume (gal): <u>227 x3 = 681</u>	4	0.65
Total Volume Purged (gal): <u>780</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>10:45</u>	<u>Pump On</u>						
<u>11:00</u>	<u>15</u>	<u>10</u>	<u>150</u>	<u>6.74</u>	<u>76.5</u>	<u>539.5</u>	
<u>11:15</u>	<u>30</u>	<u>10</u>	<u>300</u>	<u>7.13</u>	<u>70.9</u>	<u>416.3</u>	
<u>11:30</u>	<u>45</u>	<u>10</u>	<u>450</u>	<u>7.10</u>	<u>70.8</u>	<u>420.6</u>	
<u>11:45</u>	<u>60</u>	<u>10</u>	<u>600</u>	<u>7.05</u>	<u>71.5</u>	<u>427.8</u>	
<u>11:55</u>	<u>70</u>	<u>10</u>	<u>700</u>	<u>7.07</u>	<u>70.7</u>	<u>429.7</u>	
<u>12:03</u>			<u>780</u>				<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>OLMOS</u>	<u>1203</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>
<u>DUP 20190708</u>	<u>1202</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/>	Water level measurement collected.
<input type="checkbox"/>	No water level measurement collected. No access to wellhead/No port in wellhead
<input type="checkbox"/>	No water level measurement collected. Obstruction in well.
<input type="checkbox"/>	No water level measurement collected. Well is pumping.
<input type="checkbox"/>	Other:

WELL PURGING INFORMATION	
<input checked="" type="checkbox"/>	Purged 3 well volumes and field parameters stabilized.
<input type="checkbox"/>	Purged 3 well volumes based on previous water level and field parameters stabilized.
<input type="checkbox"/>	Purged well until field parameters stabilized.
<input type="checkbox"/>	Other:

Additional Comments: Take FB and EQB

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-28-19
 Well ID: OSBORN Weather: pt. cloudy, 80s
 ADWR No: 643436 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>258</u>	Casing Capacity	
Casing Diameter (in): <u>8</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>IWL</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
							Pump On
							<div style="font-size: 2em; color: blue; opacity: 0.5;"> Inoperable Pump Unable to Sample </div>
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Inoperable Pump							

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>IOP (Inoperable Pump)</u>

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-11-19
 Well ID: PALMER Weather: Overcast, 90s
 ADWR No: 578819 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>220</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>IWL</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	Pump On						
<u>15:52</u>				<u>8.16</u>	<u>28.0</u>	<u>538.6</u>	
	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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>PALMER</u>	<u>15:53</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>308.8</u>	<u>VP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>Grab sample from kediba sink</u>

Additional Comments: Sample collected from kediba sink

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-08-19
 Well ID: PANAGAKOS Weather: Sunny Hot
 ADWR No: ~~35-76-9B~~ 35-76-9B Sampler: RT

WELL DATA			
Well Depth (ft bls):	<u>268</u>	Casing Capacity	
Casing Diameter (in):	<u>8</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>166.86</u>	2	0.16
Casing Volume (gal):	<u>87</u> x3 = <u>261</u>	4	0.65
Total Volume Purged (gal):	<u>306</u>	5	1.02
		6	1.47
		<u>8</u>	<u>2.61</u>
		10	4.08
		16	10.44
		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
<u>1344</u>	Pump On						
<u>1358</u>	<u>14</u>	<u>6</u>	<u>84</u>	<u>6.93</u>	<u>71.0</u>	<u>1475</u>	
<u>1418</u>	<u>26</u>	<u>6</u>	<u>156</u>	<u>6.89</u>	<u>70.3</u>	<u>1480</u>	
<u>1424</u>	<u>40</u>	<u>6</u>	<u>240</u>	<u>6.89</u>	<u>70.8</u>	<u>1479</u>	
<u>1432</u>	<u>48</u>	<u>6</u>	<u>288</u>	<u>6.90</u>	<u>70.5</u>	<u>1480</u>	
<u>1435</u>	<u>51</u>	<u>6</u>					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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>PANAGAKOS</u>	<u>1437</u>	<u>Poly</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>
<u>DUP 2090708</u>	<u>1438</u>	<u>Poly</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: Initially used spigot by well, but gpm @ 1.5 and too low.

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 8-18-19
 Well ID: PARRA Weather: 100's, Partly Cloudy
 ADWR No: 576415 Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>355</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>use 288.99 BMP from 7/28/99</u>	2	0.16
Casing Volume (gal): <u>109</u> x3 = <u>327</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>1530</u>	<u>Pump On</u>						
<u>1537</u>	<u>7</u>	<u>10 gpm</u>	<u>70</u>	<u>6.83</u>	<u>70.6</u>	<u>1173</u>	
<u>1547</u>	<u>17</u>	<u>10 gpm</u>	<u>170</u>	<u>6.86</u>	<u>70.7</u>	<u>1171</u>	
<u>1557</u>	<u>27</u>	<u>10 gpm</u>	<u>270</u>	<u>6.87</u>	<u>70.8</u>	<u>1165</u>	
<u>1607</u>	<u>37</u>	<u>10 gpm</u>	<u>370</u>	<u>6.89</u>	<u>70.8</u>	<u>1170</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>PARRA</u>	<u>1618</u>	<u>POLY</u>	<u>250mL</u>	<u>1</u>	<u>300.c</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: Used historic swl data and purged. The owners estimate they have been on Arizonan water for 5-6 years.

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-11-19
 Well ID: PIONKE 395 Weather: Clear, 90's
 ADWR No: 613395 Sampler: RT

WELL DATA		
Well Depth (ft bls):	<u>330</u>	Casing Capacity
Casing Diameter (in):	<u>8</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>159.32</u>	Gallons per Linear Foot
Casing Volume (gal):	x3 =	2
Total Volume Purged (gal):		4
		5
		6
		8
		10
		16
		20
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							
<i>WLO</i>							
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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<i>WLO</i>							

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/>	Water level measurement collected.
<input type="checkbox"/>	No water level measurement collected. No access to wellhead/No port in wellhead
<input type="checkbox"/>	No water level measurement collected. Obstruction in well.
<input type="checkbox"/>	No water level measurement collected. Well is pumping.
<input type="checkbox"/>	Other:

WELL PURGING INFORMATION	
<input type="checkbox"/>	Purged 3 well volumes and field parameters stabilized.
<input type="checkbox"/>	Purged 3 well volumes based on previous water level and field parameters stabilized.
<input type="checkbox"/>	Purged well until field parameters stabilized.
<input checked="" type="checkbox"/>	Other: <u>WLO; pump non-functional</u>

Additional Comments: Spigot has vacuum sound when opened.

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-11-19
 Well ID: PIONKE-517 Weather: Clear, 90's
 ADWR No: 221517 Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>604</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>5</u>	2	0.16
Static Water Level (ft bmp): <u>156.16</u>	4	0.65
Casing Volume (gal): 1584 <u>446</u> x3 = <u>1338</u>	<u>5</u>	<u>1.02</u>
	6	1.47
Total Volume Purged (gal): <u>1584</u>	8	2.61
	10	4.08
	16	10.44
	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
<u>1011</u>	Pump On						
<u>1031</u>	<u>20</u>	<u>12</u>	<u>240</u>	<u>6.98</u>	<u>73.2</u>	<u>394.2</u>	
<u>1057</u>	<u>40</u>	<u>12</u>	<u>480</u>	<u>7.21</u>	<u>73.3</u>	<u>392.1</u>	
<u>1111</u>	<u>60</u>	<u>12</u>	<u>720</u>	<u>7.20</u>	<u>73.3</u>	<u>392.0</u>	
<u>1131</u>	<u>80</u>	<u>12</u>	<u>960</u>	<u>7.18</u>	<u>73.6</u>	<u>393.6</u>	
<u>1151</u>	<u>100</u>	<u>12</u>	<u>1200</u>	<u>7.18</u>	<u>73.7</u>	<u>392.7</u>	
<u>1211</u>	<u>120</u>	<u>12</u>	<u>1440</u>	<u>7.19</u>	<u>73.4</u>	<u>393.7</u>	
<u>1217</u>	<u>132</u>	<u>12</u>	<u>1584</u>				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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>PIONKE 517</u>	<u>1216</u>	<u>POLY</u>	<u>20mL</u>	<u>1</u>	<u>300.D</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 8-18-19
 Well ID: POOL Weather: Clear, 90's
 ADWR No: 509518 Sampler: RT

WELL DATA		
Well Depth (ft bls):	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	2	0.16
Static Water Level (ft bmp): 212.88 <u>212.88</u>	4	0.65
	5	1.02
	6	1.47
	8	2.61
	10	4.08
Casing Volume (gal):	16	10.44
Total Volume Purged (gal):	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
	Pump On						
<u>0925</u>				<u>6.78</u>	<u>84.3</u>	<u>888.6</u>	
	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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>POOLF</u>	<u>0941</u>	<u>POLY</u>	<u>250ml</u>	<u>1</u>	<u>300-0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>one parameter and sample.</u>

Additional Comments: Resident home but non-~~conversative~~ ^{conversative}. She doesn't want water left on for gpm or purge.

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-12-19
 Well ID: POWER 639 Weather: Cloudy 80's
 ADWR No: 222639 Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>480</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>296.56</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>1810</u>	<u>Pump On</u>						
<u>1024</u>	<u>15</u>	<u>6</u>		<u>7.13</u>	<u>21.6</u>	<u>433.5</u>	
<u>1025</u>	<u>16</u>	<u>6</u>		<u>7.16</u>	<u>71.4</u>	<u>429.5</u>	
<u>1026</u>	<u>17</u>	<u>6</u>		<u>7.17</u>	<u>71.3</u>	<u>444.4</u>	
<u>1027</u>	<u>18</u>	<u>6</u>		<u>7.16</u>	<u>71.3</u>	<u>467.6</u>	
<u>1028</u>	<u>19</u>	<u>6</u>		<u>7.16</u>	<u>71.1</u>	<u>510.4</u>	
<u>1045</u>		<u>6</u>					<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>POWER639</u>	<u>1047</u>	<u>POLY</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: They have been on AZ Water for about one year.
-NO full purge due to leak in pressure tank pipe

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-09-19
 Well ID: RAMIREZ Weather: Sunny / Warm
 ADWR No: 216425 Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>300</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>189.06</u>	2	0.16
Casing Volume (gal): <u>163</u> x3 = <u>489</u>	4	0.65
Total Volume Purged (gal): <u>590</u>	5	1.02
	<u>6</u>	<u>1.47</u>
	8	2.61
	10	4.08
	16	10.44
	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
<u>1135</u>	<u>Pump On</u>						
<u>1145</u>	<u>10</u>	<u>18</u>	<u>180</u>	<u>6.61</u>	<u>73.2</u>	<u>443.9</u>	
<u>1200</u>	<u>25</u>	<u>10</u>	<u>250</u>	<u>6.84</u>	<u>73.2</u>	<u>447.3</u>	
<u>1215</u>	<u>40</u>	<u>10</u>	<u>400</u>	<u>6.93</u>	<u>73.1</u>	<u>435.7</u>	<u>.32 over for pH</u>
<u>1230</u>	<u>55</u>	<u>10</u>	<u>550</u>	<u>6.95</u>	<u>73.1</u>	<u>432.8</u>	
<u>1234</u>	<u>59</u>	<u>10</u>	<u>590</u>				<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>RAMIREZ</u>	<u>1236</u>	<u>POLY</u>	<u>250mL</u>	<u>1</u>	<u>300-0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: Water pressure builds over a few minutes. Recommend waiting 2-3 min before gpm test



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07/30/19
 Well ID: RAMIREZ Weather: Partly Cloudy - 85°F
 ADWR No: 216425 Sampler: RT

WELL DATA		
Well Depth (ft bls):	<u>300</u>	Casing Capacity
Casing Diameter (in):	<u>6</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>168.94</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>x3 =</u>	2
Total Volume Purged (gal):		4
		5
		6
		8
		10
		16
		20
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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

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 parameters stabilized.
 Purged well until field parameters stabilized.
 Other: WLO only.

Additional Comments: Verification for anomalous water level on 07-09-19

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-19-19
 Well ID: RAY Weather: pt cloudy, 90s
 ADWR No: 803 772 Sampler: JH

WELL DATA			
Well Depth (ft bls):	<u>100</u>	Casing Capacity	
Casing Diameter (in):	<u>8</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>55.48</u>	2	0.16
Casing Volume (gal):	<u>116</u> <u>x3 = 349</u>	4	0.65
Total Volume Purged (gal):	<u>378</u>	5	1.02
		6	1.47
		<u>8</u>	<u>2.61</u>
		10	4.08
		16	10.44
		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
<u>10:00</u>	<u>Pump On</u>						
<u>10:15</u>	<u>15</u>	<u>6</u>	<u>90</u>	<u>6.84</u>	<u>17.8</u>	<u>1463</u>	
<u>10:30</u>	<u>30</u>	<u>6</u>	<u>180</u>	<u>6.88</u>	<u>20.0</u>	<u>1468</u>	
<u>10:45</u>	<u>45</u>	<u>6</u>	<u>270</u>	<u>6.86</u>	<u>19.9</u>	<u>1468</u>	
<u>11:00</u>	<u>60</u>	<u>6</u>	<u>360</u>	<u>6.86</u>	<u>19.7</u>	<u>1465</u>	
<u>11:03</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>RAY</u>	<u>11:02</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-22-19
 Well ID: ROGERS 596 Weather: pt. cloudy, 90c
 ADWR No: 573 596 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>290</u>	Casing Capacity
Casing Diameter (in):	<u>6</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>143.54</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>215</u> x3 = <u>646</u>	2
Total Volume Purged (gal):	<u>763</u>	4
		5
		<u>6</u>
		8
		10
		16
		20
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
<u>09:50</u>	<u>Pump On</u>						
<u>10:05</u>	<u>15</u>	<u>7</u>	<u>105</u>	<u>6.82</u>	<u>23.5</u>	<u>1729</u>	
<u>10:20</u>	<u>30</u>	<u>7</u>	<u>210</u>	<u>6.83</u>	<u>26.2</u>	<u>1731</u>	
<u>10:35</u>	<u>45</u>	<u>7</u>	<u>315</u>	<u>6.83</u>	<u>26.2</u>	<u>1727</u>	
<u>10:50</u>	<u>60</u>	<u>7</u>	<u>420</u>	<u>6.84</u>	<u>25.8</u>	<u>1713</u>	
<u>11:05</u>	<u>75</u>	<u>7</u>	<u>525</u>	<u>6.83</u>	<u>25.8</u>	<u>1716</u>	
<u>11:20</u>	<u>90</u>	<u>7</u>	<u>630</u>	<u>6.82</u>	<u>25.7</u>	<u>1717</u>	
<u>11:35</u>	<u>105</u>	<u>7</u>	<u>735</u>	<u>6.84</u>	<u>25.9</u>	<u>1714</u>	
<u>11:39</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>ROGERS 596</u>	<u>1139</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-22-19
 Well ID: ROGERS 803 Weather: pt. clouds, 90s
 ADWR No: 641803 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>140* or 300*</u>	Casing Capacity
Casing Diameter (in):	<u>6</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>140.39</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>x3 =</u>	2 0.16
Total Volume Purged (gal):		4 0.65
		5 1.02
		6 <u>1.47</u>
		8 2.61
		10 4.08
		16 10.44
		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
							Pump On
							<div style="font-size: 2em; font-weight: bold; margin-bottom: 10px;">WLO</div> <div style="font-size: 1.2em; font-weight: bold; margin-bottom: 10px;">Inoperable pump</div>
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: WLO - Inoperable pump

Additional Comments: * well depth records conflicting

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-12-19
 Well ID: ROGERS E Weather: cloudy, 90s
 ADWR No: 216018 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>285</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>159.66</u>	2	0.16
Casing Volume (gal): <u>184</u> x3 = <u>553</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	8	2.61
	10	4.08
	16	10.44
	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
<u>10:00</u>	Pump On						
<u>10:15</u>	<u>15</u>	<u>13</u>	<u>195</u>	<u>7.14</u>	<u>20.7</u>	<u>433.9</u>	
<u>10:30</u>	<u>30</u>	<u>13</u>	<u>390</u>	<u>7.32</u>	<u>26.1</u>	<u>430.8</u>	
<u>10:45</u>	<u>45</u>	<u>13</u>	<u>585</u>	<u>7.31</u>	<u>20.8</u>	<u>429.5</u>	
<u>10:47</u>							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>ROGERS E</u>	<u>10:47</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-10-19
 Well ID: RUIZ Weather: Clear, 90's
 ADWR No: 531770 Sampler: RT

WELL DATA		
Well Depth (ft bls):	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
312	2	0.16
Casing Diameter (in): <u>6</u>	4	0.65
Static Water Level (ft bmp): 299.74 (2015) <u>302.88</u>	5	1.02
Casing Volume (gal): 15 x3 = 45 <u>45</u>	<input checked="" type="radio"/> 6	4.47
Total Volume Purged (gal):	8	2.61
	10	4.08
	16	10.44
	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
<u>1414</u>	Pump On						
<u>1419</u>	<u>5</u>	<u>4</u>	<u>20</u>	<u>6.59</u>	<u>69.3</u>	<u>826.4</u>	
<u>1424</u>	<u>10</u>	<u>4</u>	<u>40</u>	<u>6.79</u>	<u>70.2</u>	<u>825.2</u>	
<u>1429</u>	<u>15</u>	<u>4</u>	<u>60</u>	<u>6.86</u>	<u>69.7</u>	<u>828.4</u>	
<u>1433</u>							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>RUIZ</u>	<u>1435</u>	<u>POLY</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-11-19
 Well ID: STEPHENS Weather: cloudy, 90s
 ADWR No: 808560 Sampler: JA

WELL DATA		
Well Depth (ft bls):	<u>NA</u>	Casing Capacity
Casing Diameter (in):		Nominal Size (inches) Gallons per Linear Foot
Static Water Level (ft bmp):	<u>56.20</u>	2 0.16
Casing Volume (gal):	x3 =	4 0.65
Total Volume Purged (gal):		5 1.02
		6 1.47
		8 2.61
		10 4.08
		16 10.44
		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
							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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WLO</u>							

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: WLO

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-19-19
 Well ID: TERRY Weather: pt. cloudy, 80s
 ADWR No: 229470 Sampler: JA

WELL DATA		
Well Depth (ft bbs): <u>NA</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>IWL</u>	2	0.16
Casing Volume (gal): _____ x3 = _____	4	0.65
Total Volume Purged (gal): <u>180</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>09:08</u>	<u>Pump On</u>						
<u>09:13</u>	<u>5</u>	<u>10</u>	<u>50</u>	<u>7.29</u>	<u>20.2</u>	<u>440.7</u>	
<u>09:18</u>	<u>10</u>	<u>10</u>	<u>100</u>	<u>7.29</u>	<u>20.3</u>	<u>445.3</u>	
<u>09:23</u>	<u>15</u>	<u>10</u>	<u>150</u>	<u>7.31</u>	<u>20.1</u>	<u>447.3</u>	
<u>09:26</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>TERRY</u>	<u>09:25</u>	<u>POLY</u>	<u>200ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:	

WELL PURGING INFORMATION	
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:	

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-10-19
 Well ID: THOMPSON-151 Weather: Clear, 80's
 ADWR No: 612151 Sampler: RT

WELL DATA		
Well Depth (ft bls): <u>210 210</u>	Casing Capacity	
Casing Diameter (in): <u>7</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>IWL</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
	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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>IWL</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input checked="" type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>No spigot, IWL</u>

Additional Comments: Sounds, got stuck after 36 ft BMP, Well is de-scaling and a large chunk wedged solarizer tip, bending tape ~ 90°

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-10-19
 Well ID: THOMPSON-341 Weather: Clear, 80's
 ADWR No: 218341 Sampler: RT

WELL DATA		
Well Depth (ft bbs):	<u>285</u>	Casing Capacity
Casing Diameter (in):	<u>7</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>170.29</u>	Gallons per Linear Foot
Casing Volume (gal):	x3 =	2
Total Volume Purged (gal):		4
		5
		6
		8
		10
		16
		20
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
<u>1141</u>	Pump On						
<u>1144</u>	<u>3</u>			<u>7.25</u>	<u>74.2</u>	<u>419.5</u>	
<u>1146</u>	<u>5</u>			<u>7.18</u>	<u>71.1</u>	<u>409.1</u>	
<u>1149</u>	<u>8</u>			<u>7.15</u>	<u>71.1</u>	<u>418.3</u>	
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>THOMPSON-341</u>	<u>1155</u>	<u>POLY</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-5-19 - 8-8-19
 Well ID: TM-2A Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Shrumm

WELL DATA		Casing Capacity	
Well Depth (ft bls):	Nominal Size (inches)	Gallons per Linear Foot	
<u>925</u>	2	0.16	
Casing Diameter (in):	4	0.65	
Static Water Level (ft bmp):	5	1.02	
Casing Volume (gal):	6	1.47	
<u>381 x3 = 1143</u>	8	2.61	
Total Volume Purged (gal):	10	4.08	
<u>1264</u>	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
<u>0530</u>	<u>Pump On</u>						
<u>0535</u>	<u>5</u>	<u>7.5</u>	<u>32</u>	<u>7.68</u>	<u>25.7</u>	<u>338</u>	
<u>0630</u>	<u>60</u>	<u>5.5</u>	<u>450</u>	<u>8.10</u>	<u>25.3</u>	<u>340</u>	
<u>0710</u>	<u>100</u>	<u>3.2</u>	<u>670</u>	<u>8.13</u>	<u>25.3</u>	<u>342</u>	
<u>0810</u>	<u>160</u>	<u>1.8</u>	<u>862</u>	<u>8.09</u>	<u>25.5</u>	<u>341</u>	
<u>0850</u>	<u>200</u>	<u>1.2</u>	<u>934</u>	<u>8.06</u>	<u>25.4</u>	<u>343</u>	<u>B.S. @ 0925</u>
<u>0900</u>							<u>8-8-19 SWL 404.75</u>
<u>0620</u>	<u>200</u>	<u>5.5</u>	<u>1044</u>	<u>8.02</u>	<u>24.2</u>	<u>355</u>	
<u>0640</u>	<u>40</u>	<u>5.5</u>	<u>1154</u>	<u>8.00</u>	<u>24.3</u>	<u>357</u>	
<u>0700</u>	<u>60</u>	<u>5.5</u>	<u>1264</u>	<u>8.02</u>	<u>24.4</u>	<u>359</u>	<u>Pump Off</u>

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)
<u>TM-2A</u>	<u>0700</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Flu</u>	<u>X</u>

- 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 parameters stabilized.
 - Purged well until field parameters stabilized.
 - Other:

Additional Comments: 586L Broke suction after 3 hrs 20 min let well recover and sampled

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 7-31-19
 Well ID: TM-6 Weather: Cloudy
 ADWR No: _____ Sampler: Christopher L Sloman

WELL DATA

Well Depth (ft bls): <u>200'</u> Casing Diameter (in): <u>4</u> Static Water Level (ft bmp): <u>164.23</u> Casing Volume (gal): <u>23.2 x3 = 69.8</u> Total Volume Purged (gal): <u>172</u>	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
<u>1300</u>	<u>Pump On</u>						
<u>1305</u>	<u>5</u>	<u>11.5</u>	<u>57</u>	<u>7.37</u>	<u>20.5</u>	<u>531</u>	
<u>1310</u>	<u>10</u>	<u>11.5</u>	<u>115</u>	<u>7.39</u>	<u>20.5</u>	<u>530</u>	
<u>1315</u>	<u>15</u>	<u>11.5</u>	<u>172</u>	<u>7.40</u>	<u>20.5</u>	<u>531</u>	
							<u>Pump Off</u>

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)
<u>TM-6</u>	<u>1315</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Tea</u>	<u>X</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: _____

Additional Comments: 35.8

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-19-19
 Well ID: TM-7 Weather: Partly Cloudy
 ADWR No: _____ Sampler: Christophane & Sherman

WELL DATA

Well Depth (ft bis): <u>350</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>4</u>	2	0.16
Static Water Level (ft bmp): <u>NA</u>	4	0.65
Casing Volume (gal): <u>NA</u> x3 =	5	1.02
Total Volume Purged (gal): <u>NA</u>	6	1.47
	8	2.81
	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
<u>0800</u>	<u>Pump On</u>						
<u>0802</u>	<u>2</u>	<u>10</u>	<u>20</u>	<u>7.50</u>	<u>20.9</u>	<u>625</u>	
<u>0812</u>	<u>-</u>						
<u>0814</u>	<u>4</u>	<u>10</u>	<u>40</u>	<u>7.52</u>	<u>20.8</u>	<u>621</u>	
<u>0824</u>	<u>-</u>						
<u>0826</u>	<u>6</u>	<u>10</u>	<u>60</u>	<u>7.51</u>	<u>21.0</u>	<u>620</u>	
<u>0836</u>	<u>-</u>						
<u>0838</u>	<u>8</u>	<u>10</u>	<u>80</u>	<u>7.50</u>	<u>21.1</u>	<u>619</u>	
							<u>Pump Off</u>

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)
<u>TM-7</u>	<u>0838</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>LA</u>	<u>Y</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Sampled per Clear Creek method

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-16-19
 Well ID: TM-10 USBP Weather: cloudy, 100s
 ADWR No: 522696 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>290</u>	Casing Capacity	
Casing Diameter (in):	<u>4</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>259.23</u>	2	0.16
Casing Volume (gal):	<u>20</u> x3 = <u>60</u>	4	0.65
Total Volume Purged (gal):	<u>110</u>	5	1.02
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
<u>12:47</u>	<u>Pump On</u>						
<u>12:52</u>	<u>5</u>	<u>10</u>	<u>50</u>	<u>7.52</u>	<u>20.9</u>	<u>374.6</u>	
<u>12:57</u>	<u>10</u>	<u>3</u>	<u>65</u>	<u>7.71</u>	<u>21.2</u>	<u>378.5</u>	
<u>13:02</u>	<u>15</u>	<u>3</u>	<u>80</u>	<u>7.68</u>	<u>21.4</u>	<u>378.6</u>	
<u>13:07</u>	<u>20</u>	<u>3</u>	<u>95</u>	<u>7.67</u>	<u>21.5</u>	<u>378.6</u>	
<u>13:12</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other: <u>PVC discharge pipe at well head</u>		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>TM-10 USBP</u>	<u>13:11</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:
WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: Hand filtered sample



Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-19-19
 Well ID: TM-15 Weather: Partly Cloudy
 ADWR No: _____ Sampler: Christopher L Sherman

WELL DATA

Well Depth (ft bls): <u>325</u> Casing Diameter (in): <u>4</u> Static Water Level (ft bmp): <u>301.92</u> Casing Volume (gal): <u>15 x3 = 45</u> Total Volume Purged (gal): <u>270</u>	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
<u>0530</u>	<u>Pump On</u>						
<u>0540</u>	<u>10</u>	<u>9</u>	<u>90</u>	<u>7.55</u>	<u>22.7</u>	<u>386</u>	
<u>0550</u>	<u>20</u>	<u>9</u>	<u>180</u>	<u>7.58</u>	<u>22.8</u>	<u>385</u>	
<u>0600</u>	<u>30</u>	<u>9</u>	<u>270</u>	<u>7.59</u>	<u>22.7</u>	<u>387</u>	
							<u>Pump Off</u>

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)
<u>TM-15</u>	<u>0600</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>ILM</u>	<u>X</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 23.1

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 7-30-19
 Well ID: TM-16 Weather: Sunny
 ADWR No: _____ Sampler: Christopher L Skermy

WELL DATA

Well Depth (ft bis): <u>115</u> Casing Diameter (In): <u>4"</u> Static Water Level (ft bmp): <u>61.35</u> Casing Volume (gal): <u>35</u> x3 = <u>105</u> Total Volume Purged (gal): <u>315</u>	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
<u>0545</u>	<u>Pump On</u>						
<u>0550</u>	<u>5</u>	<u>21</u>	<u>105</u>	<u>7.14</u>	<u>21.0</u>	<u>1309</u>	
<u>0555</u>	<u>10</u>	<u>21</u>	<u>210</u>	<u>7.13</u>	<u>21.0</u>	<u>1311</u>	
<u>0600</u>	<u>15</u>	<u>21</u>	<u>315</u>	<u>7.15</u>	<u>21.0</u>	<u>1310</u>	
							<u>Pump Off</u>

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)
<u>TM-16</u>	<u>0600</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ice</u>	<u>Y</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 53.7

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-7-19
 Well ID: TM-19A Weather: Partly Cloudy
 ADWR No: _____ Sampler: Christopher L Skovron

WELL DATA

Well Depth (ft bis): <u>700</u> Casing Diameter (in): <u>4"</u> Static Water Level (ft bmp): <u>209.33</u> Casing Volume (gal): <u>319 x3 = 957</u> Total Volume Purged (gal): <u>1000</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
	2	0.16
	4	0.65
	5	1.02
	6	1.47
	8	2.81
	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
<u>0645</u>	<u>Pump On</u>						
<u>0700</u>	<u>15</u>	<u>25</u>	<u>375</u>	<u>7.38</u>	<u>24.0</u>	<u>509</u>	
<u>0710</u>	<u>25</u>	<u>25</u>	<u>625</u>	<u>7.40</u>	<u>24.1</u>	<u>508</u>	
<u>0725</u>	<u>40</u>	<u>25</u>	<u>1000</u>	<u>7.41</u>	<u>24.1</u>	<u>510</u>	
							<u>Pump Off</u>

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)
<u>TM-19A</u>	<u>0725</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>DC</u>	<u>X</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 490.7

Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch
 Task No: _____ Date: 8-7-19
 Well ID: TM-42 Weather: Partly Cloudy
 ADWR No: _____ Sampler: Christopher L Skuman

WELL DATA

Well Depth (ft bls): <u>250</u> Casing Diameter (in): <u>5</u> Static Water Level (ft bmp): <u>221.71</u> Casing Volume (gal): <u>28.8 x3 = 86.5</u> Total Volume Purged (gal): <u>150</u>	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
<u>0540</u>	<u>Pump On</u>						
<u>0550</u>	<u>10</u>	<u>5</u>	<u>50</u>	<u>6.95</u>	<u>21.7</u>	<u>1367</u>	
<u>0600</u>	<u>20</u>	<u>5</u>	<u>100</u>	<u>6.97</u>	<u>21.6</u>	<u>1370</u>	
<u>0610</u>	<u>30</u>	<u>5</u>	<u>150</u>	<u>6.99</u>	<u>21.7</u>	<u>1371</u>	
							<u>Pump Off</u>

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)
<u>TM-42</u>	<u>0610</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Io</u>	<u>X</u>

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 283

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-18-19
 Well ID: TVI 713 Weather: pt cloudy 90+
 ADWR No: 567713 Sampler: JA

WELL DATA			
Well Depth (ft bls):	<u>200</u>	Casing Capacity	
Casing Diameter (in):	<u>8</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp):	<u>135.59</u>	2	0.16
Casing Volume (gal):	<u>x3 =</u>	4	0.65
Total Volume Purged (gal):		5	1.02
		6	1.47
		8	2.61
		10	4.08
		16	10.44
		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
							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:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>wc0</u>							

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input checked="" type="checkbox"/> Other: <u>wc0</u>

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-18-19
 Well ID: TVI-875 Weather: cloudy, 90s
 ADWR No: 568875 Sampler: DA

WELL DATA		
Well Depth (ft bls): <u>330</u>	Casing Capacity	
Casing Diameter (in): _____	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): _____	2	0.16
Casing Volume (gal): _____ x3 = _____	4	0.65
Total Volume Purged (gal): <u>3,000</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>0915</u>	<u>Pump On</u>						
<u>0917</u>	<u>2</u>	<u>500</u>	<u>1000</u>	<u>7.12</u>	<u>19.9</u>	<u>937.6</u>	
<u>0919</u>	<u>4</u>	<u>500</u>	<u>2000</u>	<u>7.09</u>	<u>19.8</u>	<u>971.0</u>	
<u>0921</u>	<u>6</u>	<u>500</u>	<u>3000</u>	<u>7.09</u>	<u>19.8</u>	<u>972.2</u>	
<u>0924</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at /near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>TVI-875</u>	<u>09.24</u>	<u>poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other: _____

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other: _____

Additional Comments: _____



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 07-08-19
 Well ID: WEED Weather: Sunny Hot 90's
 ADWR No: 544535 Sampler: RT

WELL DATA			
Well Depth (ft bls):		Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
320		2	0.16
Casing Diameter (in):	6	4	0.65
Static Water Level (ft bmp):	IWL	5	1.02
Casing Volume (gal):	x3 =	8	2.61
Total Volume Purged (gal):		10	4.08
		16	10.44
		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
1535	Pump On						
1537	2	4	8	6.92	70.7	398.7	Flow rate from bucket
1540	5	4	20 20	6.95	70.4	393.5	
1543	8	4	32	7.02	70.4	393.5	
1548	13	4	52				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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WEED	1547	POLY	250 mL	1	300.0	NP	Y
FB 2019 07 08	1524	POLY	250 mL	1	300.0	NP	Y

FB 2019 07 08 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-23-19
 Well ID: WEISKOPF 802 Weather: Pt. Cloudy, 90s
 ADWR No: 841802 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>200</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>153.77</u>	2	0.16
Casing Volume (gal): <u>68</u> x3 = <u>204</u>	4	0.65
Total Volume Purged (gal): <u>230</u>	5	1.02
	8	2.61
	10	4.08
	16	10.44
	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
<u>10:50</u>	<u>Pump On</u>						
<u>11:05</u>	<u>15</u>	<u>5</u>	<u>75</u>	<u>6.93</u>	<u>22.2</u>	<u>1525</u>	
<u>11:20</u>	<u>30</u>	<u>5</u>	<u>150</u>	<u>6.91</u>	<u>21.9</u>	<u>1527</u>	
<u>11:35</u>	<u>45</u>	<u>5</u>	<u>225</u>	<u>6.90</u>	<u>21.8</u>	<u>1520</u>	
<u>11:50</u>	<u>60</u>	<u>5</u>	<u>300</u> <u>OP</u>				
<u>11:36</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WEISKOPF 802</u>	<u>11:36</u>	<u>poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>VP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-23-19
 Well ID: WEISKOPF 897 Weather: PT. Cloudy, 80s
 ADWR No: 220897 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>1030</u>	Casing Capacity	
Casing Diameter (in): <u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>153.41</u>	2	0.16
Casing Volume (gal): <u>894</u> x3 = <u>2,682</u>	4	0.65
Total Volume Purged (gal): <u>2,760</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>11:45</u>	<u>Pump On</u>						
<u>12:15</u>	<u>30</u>	<u>15</u>	<u>450</u>	<u>7.63</u>	<u>22.8</u>	<u>384.4</u>	
<u>12:45</u>	<u>60</u>	<u>15</u>	<u>900</u>	<u>7.59</u>	<u>22.9</u>	<u>383.9</u>	
<u>13:15</u>	<u>90</u>	<u>15</u>	<u>1,350</u>	<u>7.58</u>	<u>22.9</u>	<u>383.8</u>	
<u>13:45</u>	<u>120</u>	<u>15</u>	<u>1,800</u>	<u>7.56</u>	<u>22.9</u>	<u>383.2</u>	
<u>14:15</u>	<u>150</u>	<u>15</u>	<u>2,250</u>	<u>7.57</u>	<u>22.8</u>	<u>383.4</u>	
<u>14:45</u>	<u>180</u>	<u>15</u>	<u>2,700</u>	<u>7.57</u>	<u>22.9</u>	<u>383.1</u>	
<u>14:49</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>WEISKOPF 897</u>	<u>1447</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>3000</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:	

WELL PURGING INFORMATION	
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:	

Additional Comments:



Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 7-16-19
 Well ID: ZANDER Weather: cloudy 100%
 ADWR No: 205/26 Sampler: JA

WELL DATA		
Well Depth (ft bls): <u>280</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>154.82</u>	2	0.16
Casing Volume (gal): <u>184</u> x3 = <u>552</u>	4	0.65
Total Volume Purged (gal): <u>780</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>13:55</u>	<u>Pump On</u>						
<u>14:10</u>	<u>15</u>	<u>12</u>	<u>180</u>	<u>7.22</u>	<u>20.6</u>	<u>425.2</u>	
<u>14:25</u>	<u>30</u>	<u>12</u>	<u>360</u>	<u>7.27</u>	<u>20.5</u>	<u>427.2</u>	
<u>14:40</u>	<u>45</u>	<u>12</u>	<u>540</u>	<u>7.26</u>	<u>20.5</u>	<u>426.8</u>	
<u>14:55</u>	<u>60</u>	<u>12</u>	<u>720</u>	<u>7.23</u>	<u>20.4</u>	<u>426.5</u>	
<u>15:00</u>							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:		Spigot at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>ZANDER</u>	<u>15:00</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:
WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

Groundwater Sampling Form

Project No: CC18.1080.00 Client: Freeport Copper Queen Branch
 Task No: 2 Date: 10-15-19
 Well ID: NWC-84 Weather: Mostly Sunny, 70s
 ADWR No: 551849 Sampler: SA

WELL DATA		
Well Depth (ft bls): <u>462</u>	Casing Capacity	
Casing Diameter (in): <u>10</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>IWL</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal): <u>108</u>	5	1.02
	6	1.47
	8	2.61
	10	4.08
	16	10.44
	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
<u>0925</u>	Pump On						
<u>0927</u>	<u>2</u>	<u>6</u>	<u>12</u>	<u>7.40</u>	<u>24.2</u>	<u>851.8</u>	
<u>0930</u>	<u>5</u>	<u>1</u>	<u>30</u>	<u>7.37</u>	<u>24.2</u>	<u>850.2</u>	
<u>0935</u>	<u>10</u>	<u>1</u>	<u>60</u>	<u>7.39</u>	<u>24.3</u>	<u>841.7</u>	
<u>0940</u>	<u>15</u>	<u>1</u>	<u>90</u>	<u>7.38</u>	<u>24.3</u>	<u>855.4</u>	
							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 at / near wellhead			Other:		
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>NWC-84</u>	<u>0943</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: Hand filtered sample

APPENDIX B
ANALYTICAL REPORTS



August 14, 2019

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 19A0288
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 29 sample(s) on 01/11/2019 for the analyses presented in the following report.

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

Elizabeth Kasik
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Date Received: 01/11/2019

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
19A0288-01	NWC-04	Ground Water	01/07/2019 0909
19A0288-02	NWC-02	Ground Water	01/07/2019 1019
19A0288-03	NWC-06	Ground Water	01/07/2019 1055
19A0288-04	COB WL	Ground Water	01/07/2019 1340
19A0288-05	FB20190107	Ground Water	01/07/2019 1240
19A0288-06	EQB20190107	Ground Water	01/07/2019 1330
19A0288-07	DUP20190107	Ground Water	01/07/2019 1200
19A0288-08	BMO-2010-3B	Ground Water	01/08/2019 0957
19A0288-09	BMO-2010-3M	Ground Water	01/08/2019 1307
19A0288-10	TM-10 USBP	Ground Water	01/08/2019 1410
19A0288-11	WEED	Ground Water	01/08/2019 1442
19A0288-12	BMO-2015-2B	Ground Water	01/09/2019 0805
19A0288-13	BMO-2015-2BL	Ground Water	01/09/2019 0855
19A0288-14	BMO-2014-4BL	Ground Water	01/09/2019 0957
19A0288-15	BMO-2014-4B	Ground Water	01/09/2019 1057
19A0288-16	BMO-2015-1B	Ground Water	01/09/2019 1207
19A0288-17	BMO-2015-1BL	Ground Water	01/09/2019 1257
19A0288-18	SCHWARTZ	Ground Water	01/09/2019 1447
19A0288-19	BMO-2014-3BL	Ground Water	01/10/2019 0917
19A0288-20	BMO-2014-3BU	Ground Water	01/10/2019 1007
19A0288-21	BMO-2014-2BL	Ground Water	01/10/2019 1137
19A0288-22	BMO-2014-2BU	Ground Water	01/10/2019 1224
19A0288-23	FB20190110	Ground Water	01/10/2019 1200
19A0288-24	EQB20190110	Ground Water	01/10/2019 1200
19A0288-25	DUP20190110	Ground Water	01/10/2019 1200
19A0288-26	BMO-2014-1BU	Ground Water	01/10/2019 1332
19A0288-27	BMO-2014-1BL	Ground Water	01/10/2019 1530
19A0288-28	KEEFER	Ground Water	01/11/2019 1027
19A0288-29	ROGERS E	Ground Water	01/11/2019 1217

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Date Received: 01/11/2019

Case Narrative

This report has been revised to report Sulfate to the MDL and to three significant figures.

E4 Concentration estimated. Analyte was detected below laboratory Minimum Reporting Limit (MRL) but above MDL.

M2 Matrix spike recovery was low; the associated LCS/LCSD was acceptable.

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: 19A0288
Lab Sample ID: 19A0288-01

Client Sample ID: NWC-04
Collection Date/Time: 01/07/2019 0909
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	196	1.27	50.0		mg/L	10	01/18/2019 1600	01/18/2019 2045	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-02

Client Sample ID: NWC-02
Collection Date/Time: 01/07/2019 1019
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	7.07	0.127	5.00		mg/L	1	01/14/2019 1240	01/14/2019 1349	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-03

Client Sample ID: NWC-06
Collection Date/Time: 01/07/2019 1055
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	8.54	0.127	5.00		mg/L	1	01/14/2019 1240	01/14/2019 1407	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-04

Client Sample ID: COB WL
Collection Date/Time: 01/07/2019 1340
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	73.1	0.635	25.0		mg/L	5	01/18/2019 1600	01/18/2019 2103	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-05

Client Sample ID: FB20190107
Collection Date/Time: 01/07/2019 1240
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	1.24	0.127	5.00	E4	mg/L	1	01/14/2019 1240	01/14/2019 1444	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-06

Client Sample ID: EQB20190107
Collection Date/Time: 01/07/2019 1330
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	1.29	0.127	5.00	E4	mg/L	1	01/14/2019 1240	01/14/2019 1502	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-07

Client Sample ID: DUP20190107
Collection Date/Time: 01/07/2019 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	74.0	0.635	25.0		mg/L	5	01/18/2019 1600	01/18/2019 2122	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-08

Client Sample ID: BMO-2010-3B
Collection Date/Time: 01/08/2019 0957
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	19.5	0.127	5.00		mg/L	1	01/14/2019 1240	01/14/2019 1539	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-09

Client Sample ID: BMO-2010-3M
Collection Date/Time: 01/08/2019 1307
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	8.97	0.127	5.00		mg/L	1	01/14/2019 1240	01/14/2019 1558	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-10

Client Sample ID: TM-10 USBP
Collection Date/Time: 01/08/2019 1410
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	12.8	0.127	5.00		mg/L	1	01/14/2019 1240	01/14/2019 1616	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-11

Client Sample ID: WEED
Collection Date/Time: 01/08/2019 1442
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	13.1	0.127	5.00		mg/L	1	01/14/2019 1240	01/14/2019 1807	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-12

Client Sample ID: BMO-2015-2B
Collection Date/Time: 01/09/2019 0805
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	277	1.27	50.0		mg/L	10	01/18/2019 1600	01/18/2019 2140	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-13

Client Sample ID: BMO-2015-2BL
Collection Date/Time: 01/09/2019 0855
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	320	1.27	50.0		mg/L	10	01/18/2019 1600	01/18/2019 2159	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-14

Client Sample ID: BMO-2014-4BL
Collection Date/Time: 01/09/2019 0957
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	1.27	50.0		mg/L	10	01/18/2019 1600	01/18/2019 2313	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-15

Client Sample ID: BMO-2014-4B
Collection Date/Time: 01/09/2019 1057
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	62.1	0.254	10.0		mg/L	2	01/18/2019 1600	01/18/2019 2331	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-16

Client Sample ID: BMO-2015-1B
Collection Date/Time: 01/09/2019 1207
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	208	1.27	50.0		mg/L	10	01/18/2019 1600	01/18/2019 2349	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-17

Client Sample ID: BMO-2015-1BL
Collection Date/Time: 01/09/2019 1257
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	259	1.27	50.0		mg/L	10	01/18/2019 1600	01/19/2019 0008	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-18

Client Sample ID: SCHWARTZ
Collection Date/Time: 01/09/2019 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	131	1.27	50.0		mg/L	10	01/18/2019 1600	01/19/2019 0026	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-19

Client Sample ID: BMO-2014-3BL
Collection Date/Time: 01/10/2019 0917
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	7.73	0.127	5.00		mg/L	1	01/15/2019 0806	01/15/2019 1035	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-20

Client Sample ID: BMO-2014-3BU
Collection Date/Time: 01/10/2019 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	7.54	0.127	5.00		mg/L	1	01/15/2019 0806	01/15/2019 1054	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-21

Client Sample ID: BMO-2014-2BL
Collection Date/Time: 01/10/2019 1137
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	470	2.54	100		mg/L	20	01/18/2019 1600	01/19/2019 0045	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-22

Client Sample ID: BMO-2014-2BU
Collection Date/Time: 01/10/2019 1224
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	0.254	10.0		mg/L	2	01/18/2019 1600	01/19/2019 0103	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-23

Client Sample ID: FB20190110
Collection Date/Time: 01/10/2019 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	1.25	0.127	5.00	E4	mg/L	1	01/15/2019 0806	01/15/2019 1149	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-24

Client Sample ID: EQB20190110
Collection Date/Time: 01/10/2019 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	1.19	0.127	5.00	E4	mg/L	1	01/15/2019 0806	01/15/2019 1208	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-25

Client Sample ID: DUP20190110
Collection Date/Time: 01/10/2019 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	175	1.27	50.0		mg/L	10	01/18/2019 1600	01/19/2019 0122	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-26

Client Sample ID: BMO-2014-1BU
Collection Date/Time: 01/10/2019 1332
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	172	1.27	50.0		mg/L	10	01/18/2019 1600	01/19/2019 0140	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-27

Client Sample ID: BMO-2014-1BL
Collection Date/Time: 01/10/2019 1530
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	158	1.27	50.0		mg/L	10	01/18/2019 1600	01/19/2019 0159	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-28

Client Sample ID: KEEFER
Collection Date/Time: 01/11/2019 1027
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	6.59	0.127	5.00		mg/L	1	01/15/2019 0806	01/15/2019 1321	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Lab Sample ID: 19A0288-29

Client Sample ID: ROGERS E
Collection Date/Time: 01/11/2019 1217
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	6.51	0.127	5.00		mg/L	1	01/15/2019 0806	01/15/2019 1531	EJ

Client: Freeport McMoran - Copper Queen Branch
 Project: CQB
 Work Order: 19A0288
 Date Received: 01/11/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1901125 - E300.0 (2.1)										
Blank (1901125-BLK1)				Prepared & Analyzed: 01/14/2019						
Sulfate	ND	5.00	mg/L							
LCS (1901125-BS1)				Prepared & Analyzed: 01/14/2019						
Sulfate	12	5.00	mg/L	12.50		94	90-110			
LCS Dup (1901125-BSD1)				Prepared & Analyzed: 01/14/2019						
Sulfate	12	5.00	mg/L	12.50		96	90-110	1	10	
Matrix Spike (1901125-MS1)				Source: 19A0288-02		Prepared & Analyzed: 01/14/2019				
Sulfate	17	5.00	mg/L	12.50	7.1	81	80-120			
Matrix Spike (1901125-MS2)				Source: 19A0288-03		Prepared: 01/14/2019 Analyzed: 01/15/2019				
Sulfate	20	5.00	mg/L	12.50	8.5	95	80-120			
Matrix Spike (1901125-MS3)				Source: 19A0288-05		Prepared: 01/14/2019 Analyzed: 01/15/2019				
Sulfate	12	5.00	mg/L	12.50	1.2	85	80-120			
Matrix Spike Dup (1901125-MSD1)				Source: 19A0288-02		Prepared & Analyzed: 01/14/2019				
Sulfate	17	5.00	mg/L	12.50	7.1	80	80-120	0.9	10	M2
Matrix Spike Dup (1901125-MSD2)				Source: 19A0288-03		Prepared: 01/14/2019 Analyzed: 01/15/2019				
Sulfate	19	5.00	mg/L	12.50	8.5	85	80-120	6	10	
Matrix Spike Dup (1901125-MSD3)				Source: 19A0288-05		Prepared: 01/14/2019 Analyzed: 01/15/2019				
Sulfate	12	5.00	mg/L	12.50	1.2	85	80-120	0.6	10	
Batch 1901146 - E300.0 (2.1)										
Blank (1901146-BLK1)				Prepared & Analyzed: 01/15/2019						
Sulfate	ND	5.00	mg/L							
LCS (1901146-BS1)				Prepared & Analyzed: 01/15/2019						
Sulfate	12	5.00	mg/L	12.50		94	90-110			
LCS Dup (1901146-BSD1)				Prepared & Analyzed: 01/15/2019						
Sulfate	12	5.00	mg/L	12.50		96	90-110	2	10	
Matrix Spike (1901146-MS1)				Source: 19A0288-23		Prepared & Analyzed: 01/15/2019				
Sulfate	12	5.00	mg/L	12.50	1.3	85	80-120			
Matrix Spike (1901146-MS2)				Source: 19A0288-24		Prepared & Analyzed: 01/15/2019				
Sulfate	12	5.00	mg/L	12.50	1.2	85	80-120			
Matrix Spike (1901146-MS3)				Source: 19A0288-28		Prepared & Analyzed: 01/15/2019				
Sulfate	18	5.00	mg/L	12.50	6.6	94	80-120			
Matrix Spike Dup (1901146-MSD1)				Source: 19A0288-23		Prepared & Analyzed: 01/15/2019				
Sulfate	12	5.00	mg/L	12.50	1.3	84	80-120	1	10	
Matrix Spike Dup (1901146-MSD2)				Source: 19A0288-24		Prepared & Analyzed: 01/15/2019				
Sulfate	12	5.00	mg/L	12.50	1.2	84	80-120	1	10	

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19A0288
Date Received: 01/11/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1901146 - E300.0 (2.1)										
Matrix Spike Dup (1901146-MSD3)		Source: 19A0288-28			Prepared & Analyzed: 01/15/2019					
Sulfate	17	5.00	mg/L	12.50	6.6	86	80-120	6	10	



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 19A0288 DATE 1/11/19 PAGE 1 OF 3

PROJECT NAME <u>CQB Quarterly</u> # <u>CC18.10080.00</u>					CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																								
CONTACT NAME : <u>Chris Sherman</u>					NUMBER OF CONTAINERS <u>504 - 300.0</u> <u>Unfiltered</u>																								
COMPANY NAME : <u>Freeport McMoran CQB</u>																													
ADDRESS : <u>36 Highway 92</u>																													
CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u>																													
PHONE <u>520-508-7063</u> FAX <u>520-432-1395</u>																													
SAMPLER'S SIGNATURE <u>[Signature]</u>																													
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*																									
<u>NWC-04</u>	<u>1-7-19</u>	<u>09:09</u>		<u>GW</u>																									
<u>NWC-02</u>	<u>1-7-19</u>	<u>10:19</u>		<u>GW</u>																									
<u>NWC-06</u>	<u>1-7-19</u>	<u>10:55</u>		<u>GW</u>																									
<u>COB WL</u>	<u>1-7-19</u>	<u>13:40</u>		<u>GW</u>																									
<u>FB20190107</u>	<u>1-7-19</u>	<u>12:40</u>		<u>GW</u>																									
<u>EQB20190107</u>	<u>1-7-19</u>	<u>13:30</u>		<u>GW</u>																									
<u>DUP20190107</u>	<u>1-7-19</u>	<u>12:00</u>		<u>GW</u>																									
<u>RM0-2010-3B</u>	<u>1-8-19</u>	<u>09:57</u>		<u>GW</u>																									
<u>BM0-2010-3M</u>	<u>1-8-19</u>	<u>13:07</u>		<u>GW</u>																									
<u>TM-10 USBP</u>	<u>1-8-19</u>	<u>14:10</u>		<u>GW</u>																									
<u>WEED</u>	<u>1-8-19</u>	<u>14:42</u>		<u>GW</u>																									
1. RELINQUISHED BY: <u>[Signature]</u> Signature <u>Steve Alder</u> Printed Name <u>Clear Creek Associates</u> Firm <u>1-11-19 11:10</u> 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: <input type="checkbox"/> I. Routine Report <input type="checkbox"/> II. Report (includes DUP,MS,MSD, as required, may be charged as samples) <input type="checkbox"/> III. Date Validation Report (Includes All Raw Data) Add 10% to invoice					INVOICE INFORMATION: Account <input checked="" type="checkbox"/> X ___ Y ___ N P.O. # _____ Bill to: <u>CQB</u>					SAMPLE RECEIPT: Total Containers <u>29</u> Temperature <u>0.5</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice				
3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____					4. RECEIVED BY: <u>Leandra X Marshall</u> Signature <u>Leandra X Marshall</u> Printed Name TURNER LABORATORIES, INC. Firm <u>1/11/19 15:10</u> Date/Time					*LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER					SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seals <input type="checkbox"/> Preservation Confirmation <input checked="" type="checkbox"/> ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Container Intact <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No COC/Labels Agree <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/> All samples filtered with a 0.45µm filter, unless noted. Copy results to Ben Daigneau & Fernando Alday.														



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 19A0288 DATE 1/11/19 PAGE 2 OF 3

PROJECT NAME <u>CQB Quarterly</u> # <u>CC18.10080.00</u>		CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																			
CONTACT NAME : <u>Chris Sherman</u>																					
COMPANY NAME : <u>Freeport McMoran CQB</u>																					
ADDRESS : <u>36 Highway 92</u>																					
CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u>																					
PHONE <u>520-508-7063</u> FAX <u>520-432-1395</u>		NUMBER OF CONTAINERS <u>504 - 380.9</u>																			
SAMPLER'S SIGNATURE <u>[Signature]</u>																					
SAMPLE I.D.	DATE		TIME	LAB I.D.	SAMPLE MATRIX*																
<u>BMO-2015-2B</u>	<u>1-9-19</u>		<u>08:05</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>BMO-2015-2BL</u>	<u>1-9-19</u>		<u>08:55</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>BMO-2014-4BL</u>	<u>1-9-19</u>		<u>09:57</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>BMO-2014-4B</u>	<u>1-9-19</u>		<u>10:57</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>BMO-2015-1B</u>	<u>1-9-19</u>		<u>12:07</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>BMO-2015-1BL</u>	<u>1-9-19</u>		<u>12:57</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>SCHWARTZ</u>	<u>1-9-19</u>		<u>14:47</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>BMO-2014-2BL</u>	<u>1-10-19</u>	<u>09:17</u>		<u>GW</u>	<u>1</u>	<u>X</u>															
<u>BMO-2014-2BL</u>	<u>1-10-19</u>	<u>10:07</u>		<u>GW</u>	<u>1</u>	<u>X</u>															
<u>BMO-2014-2BL</u>	<u>1-10-19</u>	<u>11:37</u>		<u>GW</u>	<u>1</u>	<u>X</u>															
<u>BMO-2014-2BL</u>	<u>1-10-19</u>	<u>12:24</u>		<u>GW</u>	<u>1</u>	<u>X</u>															
1. RELINQUISHED BY: Signature <u>[Signature]</u> Printed Name <u>Clear Creek Associates</u> Firm <u>1-11-19 15:10</u> 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 <u>X</u> Y ___ N P.O. # _____ Bill to: <u>CQB</u>		SAMPLE RECEIPT: Total Containers <u>29</u> Temperature <u>0.5</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice											
3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____		4. RECEIVED BY: Signature <u>[Signature]</u> Printed Name <u>Leandria Marshall</u> Firm <u>TURNER LABORATORIES, INC.</u> Date/Time <u>1/11/19 15:10</u>		*LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER		SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seals <input type="checkbox"/> Preservation Confirmation <input checked="" type="checkbox"/> ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Container Intact <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No COC/Labels Agree <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/> All samples filtered with a 0.45µm filter, unless noted. Copy results to Ben Daigneau & Fernando Alday.															



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 19A0288 DATE 1/11/19 PAGE 3 OF 3

PROJECT NAME <u>CQB Quarterly</u> # <u>CC18.10080.00</u>		CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																			
CONTACT NAME : <u>Chris Sherman</u>		NUMBER OF CONTAINERS <u>504 - 300.0</u> <u>Un Filtered</u>																			
COMPANY NAME : <u>Freeport McMoRan CQB</u>																					
ADDRESS : <u>36 Highway 92</u>																					
CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u>																					
PHONE <u>520-508-7063</u> FAX <u>520-432-1395</u>																					
SAMPLER'S SIGNATURE <u>[Signature]</u>																					
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*																	
<u>FB20190110</u>	<u>1-10-19</u>	<u>12:00</u>		<u>GW</u>	<u>1</u>	<u>X</u>	<u>X</u>														
<u>EQB20190110</u>	<u>1-10-19</u>	<u>12:00</u>		<u>GW</u>	<u>1</u>	<u>X</u>	<u>X</u>														
<u>DUP20190110</u>	<u>1-10-19</u>	<u>12:00</u>		<u>GW</u>	<u>1</u>	<u>X</u>	<u>X</u>														
<u>BMO2019-1B4</u>	<u>1-10-19</u>	<u>13:32</u>		<u>GW</u>	<u>1</u>	<u>X</u>															
<u>BMO2019-1BL</u>	<u>1-10-19</u>	<u>15:30</u>		<u>GW</u>	<u>1</u>	<u>X</u>															
<u>KEEFER</u>	<u>1-11-19</u>	<u>10:27</u>		<u>GW</u>	<u>1</u>	<u>X</u>															
<u>ROGERS E</u>	<u>1-11-19</u>	<u>12:17</u>		<u>GW</u>	<u>1</u>	<u>X</u>															
				<u>GW</u>																	
				<u>GW</u>																	
				<u>GW</u>																	
				<u>GW</u>																	
1. RELINQUISHED BY: Signature <u>[Signature]</u> Printed Name <u>Clear Creek Associates</u> Firm <u>1-11-19 15:10</u> 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 <u>X</u> Y ___ N P.O. # _____ Bill to: <u>CQB</u>		SAMPLE RECEIPT: Total Containers <u>29</u> Temperature <u>0.5</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice											
3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____		4. RECEIVED BY: Signature <u>Leandra X Marshall</u> Printed Name <u>Leandra X Marshall</u> Firm <u>TURNER LABORATORIES, INC.</u> Date/Time <u>1/11/19 15:10</u>		*LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER		SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seals <input type="checkbox"/> Preservation Confirmation <input checked="" type="checkbox"/> ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Container Intact <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No COC/Labels Agree <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/> All samples filtered with a 0.45µm filter, unless noted. Copy results to Ben Daigneau & Fernando Alday.															



January 29, 2019

Ben Daigneau
Clear Creek Associates
221 N. Court Ave., Suite 101
Tucson, AZ 85701

TEL (520) 622-3222
FAX (520) 622-4040

Work Order No.: 19A0433
Order Name: CC18.10080.00

RE: CQB Quarterly Monitoring

Dear Ben Daigneau,

Turner Laboratories, Inc. received 11 sample(s) on 01/16/2019 for the analyses presented in the following report.

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

Elizabeth Kasik
Laboratory Director

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Date Received: 01/16/2019

Order: CC18.10080.00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
19A0433-01	ROGERS 596	Ground Water	01/14/2019 1152
19A0433-02	POWER 639	Ground Water	01/14/2019 1447
19A0433-03	COB MW-2	Ground Water	01/15/2019 0941
19A0433-04	DODSON	Ground Water	01/15/2019 1051
19A0433-05	RUIZ	Ground Water	01/15/2019 1301
19A0433-06	PANAGAKOS	Ground Water	01/15/2019 1415
19A0433-07	AWC-05	Ground Water	01/16/2019 0858
19A0433-08	AWC-03	Ground Water	01/16/2019 0934
19A0433-09	AWC-04	Ground Water	01/16/2019 1000
19A0433-10	TVI 236	Ground Water	01/16/2019 1115
19A0433-11	COOPER	Ground Water	01/16/2019 1227

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Date Received: 01/16/2019

Case Narrative

This report was revised to correct the dilution factor for Sulfate for 19A0433-10.

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: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Lab Sample ID: 19A0433-01

Client Sample ID: ROGERS 596
Collection Date/Time: 01/14/2019 1152
Matrix: Ground Water
Order Name: CC18.10080.00

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	757		250		mg/L	50	01/24/2019 1710	01/24/2019 1712	EJ

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Lab Sample ID: 19A0433-02

Client Sample ID: POWER 639
Collection Date/Time: 01/14/2019 1447
Matrix: Ground Water
Order Name: CC18.10080.00

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	174		50.0		mg/L	10	01/24/2019 1710	01/24/2019 1731	EJ

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Lab Sample ID: 19A0433-03

Client Sample ID: COB MW-2
Collection Date/Time: 01/15/2019 0941
Matrix: Ground Water
Order Name: CC18.10080.00

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	26.0		5.00		mg/L	1	01/25/2019 1650	01/25/2019 2141	EJ

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Lab Sample ID: 19A0433-04

Client Sample ID: DODSON
Collection Date/Time: 01/15/2019 1051
Matrix: Ground Water
Order Name: CC18.10080.00

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	38.9		5.00		mg/L	1	01/25/2019 1650	01/25/2019 2159	EJ

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Lab Sample ID: 19A0433-05

Client Sample ID: RUIZ
Collection Date/Time: 01/15/2019 1301
Matrix: Ground Water
Order Name: CC18.10080.00

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	170		50.0		mg/L	10	01/24/2019 1710	01/24/2019 1826	EJ

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Lab Sample ID: 19A0433-06

Client Sample ID: PANAGAKOS
Collection Date/Time: 01/15/2019 1415
Matrix: Ground Water
Order Name: CC18.10080.00

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	444		50.0		mg/L	10	01/24/2019 1710	01/24/2019 1844	EJ

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Lab Sample ID: 19A0433-07

Client Sample ID: AWC-05
Collection Date/Time: 01/16/2019 0858
Matrix: Ground Water
Order Name: CC18.10080.00

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	19.3		5.00		mg/L	1	01/25/2019 1650	01/25/2019 2218	EJ

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Lab Sample ID: 19A0433-08

Client Sample ID: AWC-03
Collection Date/Time: 01/16/2019 0934
Matrix: Ground Water
Order Name: CC18.10080.00

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	75.7		50.0		mg/L	10	01/24/2019 1710	01/24/2019 1921	EJ

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Lab Sample ID: 19A0433-09

Client Sample ID: AWC-04
Collection Date/Time: 01/16/2019 1000
Matrix: Ground Water
Order Name: CC18.10080.00

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	20.7		5.00		mg/L	1	01/25/2019 1650	01/25/2019 2236	EJ

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Lab Sample ID: 19A0433-10

Client Sample ID: TVI 236
Collection Date/Time: 01/16/2019 1115
Matrix: Ground Water
Order Name: CC18.10080.00

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	29.0		5.00		mg/L	1	01/25/2019 1650	01/25/2019 2255	EJ

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19A0433
Lab Sample ID: 19A0433-11

Client Sample ID: COOPER
Collection Date/Time: 01/16/2019 1227
Matrix: Ground Water
Order Name: CC18.10080.00

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
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Anions by Ion Chromatography-E300.0 (2.1)

Sulfate	23.7		5.00		mg/L	1	01/25/2019 1226	01/25/2019 1418	EJ
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Client: Clear Creek Associates
 Project: CQB Quarterly Monitoring
 Work Order: 19A0433
 Date Received: 01/16/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1901261 - E300.0 (2.1)										
Blank (1901261-BLK1)				Prepared & Analyzed: 01/24/2019						
Sulfate	ND	5.00	mg/L							
LCS (1901261-BS1)				Prepared & Analyzed: 01/24/2019						
Sulfate	12	5.00	mg/L	12.50		98	90-110			
LCS Dup (1901261-BSD1)				Prepared & Analyzed: 01/24/2019						
Sulfate	12	5.00	mg/L	12.50		97	90-110	1	10	
Matrix Spike (1901261-MS1)				Source: 19A0595-01		Prepared & Analyzed: 01/24/2019				
Sulfate	12	5.00	mg/L	12.50	1.8	85	80-120			
Matrix Spike (1901261-MS2)				Source: 19A0595-02		Prepared & Analyzed: 01/24/2019				
Sulfate	13	5.00	mg/L	12.50	2.0	90	80-120			
Matrix Spike (1901261-MS3)				Source: 19A0451-01		Prepared: 01/24/2019 Analyzed: 01/25/2019				
Sulfate	12	5.00	mg/L	12.50	ND	97	80-120			
Matrix Spike Dup (1901261-MSD1)				Source: 19A0595-01		Prepared & Analyzed: 01/24/2019				
Sulfate	12	5.00	mg/L	12.50	1.8	84	80-120	0.8	10	
Matrix Spike Dup (1901261-MSD2)				Source: 19A0595-02		Prepared & Analyzed: 01/24/2019				
Sulfate	13	5.00	mg/L	12.50	2.0	89	80-120	0.5	10	
Matrix Spike Dup (1901261-MSD3)				Source: 19A0451-01		Prepared: 01/24/2019 Analyzed: 01/25/2019				
Sulfate	12	5.00	mg/L	12.50	ND	97	80-120	0.008	10	
Batch 1901284 - E300.0 (2.1)										
Blank (1901284-BLK1)				Prepared & Analyzed: 01/25/2019						
Sulfate	ND	5.00	mg/L							
LCS (1901284-BS1)				Prepared & Analyzed: 01/25/2019						
Sulfate	12	5.00	mg/L	12.50		96	90-110			
LCS Dup (1901284-BSD1)				Prepared & Analyzed: 01/25/2019						
Sulfate	12	5.00	mg/L	12.50		97	90-110	0.3	10	
Matrix Spike (1901284-MS1)				Source: 19A0451-03		Prepared & Analyzed: 01/25/2019				
Sulfate	12	5.00	mg/L	12.50	1.3	88	80-120			
Matrix Spike (1901284-MS2)				Source: 19A0433-11		Prepared: 01/25/2019 Analyzed: 01/26/2019				
Sulfate	34	5.00	mg/L	12.50	24	83	80-120			
Matrix Spike Dup (1901284-MSD1)				Source: 19A0451-03		Prepared & Analyzed: 01/25/2019				
Sulfate	12	5.00	mg/L	12.50	1.3	86	80-120	1	10	
Matrix Spike Dup (1901284-MSD2)				Source: 19A0433-11		Prepared: 01/25/2019 Analyzed: 01/26/2019				
Sulfate	34	5.00	mg/L	12.50	24	82	80-120	0.6	10	



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 Tucson, Arizona 85745
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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 19A0433 DATE 1/16/19 PAGE 1 OF 1

PROJECT NAME CQB Quarterly # CC18.10080.00

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]

NUMBER OF CONTAINERS	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX											
504 - 300.0												

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*
ROGERS 596	1-14-19	11:52		GW
POWER 639	1-14-19	14:47		GW
COB MW-2	1-15-19	09:41		GW
DODSON	1-15-19	10:51		GW
RUIZ	1-15-19	13:01		GW
PANAGAROS	1-15-19	14:15		GW
AWC-05	1-16-19	08:58		GW
AWC-03	1-16-19	09:34		GW
AWC-04	1-16-19	10:06		GW
TVE 236	1-16-19	11:15		GW
COOPER	1-16-19	12:27		GW

1. RELINQUISHED BY:

Signature [Signature]

Printed Name Clear Creek Associates

Firm 1-16-19 15:45

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 X Y N

P.O. # _____

Bill to: CQB

SAMPLE RECEIPT:

Total Containers 11

Temperature 1.4

Wet Ice Blue Ice

3. RELINQUISHED BY:

Signature _____

Printed Name _____

Firm _____

Date/Time _____

4. RECEIVED BY:

Signature Leandra X. Marshall

Printed Name Leandra X. Marshall

Firm TURNER LABORATORIES, INC.

Date/Time 1/16/19 15:45

*LEGEND

DW = DRINKING WATER

GW = GROUNDWATER

SD = SOLID

SG = SLUDGE

SL = SOIL

ST = STORMWATER

WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis: Yes No

ADEQ Forms: Yes No

Mail ADEQ Forms: Yes No

Custody Seals Preservation Confirmation

Container Intact Appropriate Head Space

COC/Labels Agree Received Within Hold Time

All samples filtered with a 0.45µm filter, unless noted.

Copy results to Ben Daigneau & Fernando Alday.



August 14, 2019

Ben Daigneau
Clear Creek Associates
221 N. Court Ave., Suite 101
Tucson, AZ 85701

TEL (520) 622-3222
FAX (520) 622-4040

RE: CQB Quarterly Monitoring

Work Order No.: 19C0418
Order Name: Well Expansion
sulfates 20+ samples

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 03/18/2019 for the analyses presented in the following report.

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

Elizabeth Kasik
Laboratory Director

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19C0418
Date Received: 03/18/2019

Order: Well Expansion sulfates 20+ samples

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
19C0418-01	Terry	Ground Water	03/18/2019 1120

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19C0418
Date Received: 03/18/2019

Case Narrative

This report has been revised to report Sulfate to three 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

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19C0418
Lab Sample ID: 19C0418-01

Client Sample ID: Terry
Collection Date/Time: 03/18/2019 1120
Matrix: Ground Water
Order Name: Well Expansion sulfates 20+ sample

Analyses	Result	MDL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Sulfate	6.63	0.127	5.00		mg/L	1	03/18/2019 1525	03/18/2019 1529	EJ

Client: Clear Creek Associates
Project: CQB Quarterly Monitoring
Work Order: 19C0418
Date Received: 03/18/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1903188 - E300.0 (2.1)										
Blank (1903188-BLK1)				Prepared & Analyzed: 03/18/2019						
Sulfate	ND	5.00	mg/L							
LCS (1903188-BS1)				Prepared & Analyzed: 03/18/2019						
Sulfate	13	5.00	mg/L	12.50		100	90-110			
LCS Dup (1903188-BSD1)				Prepared & Analyzed: 03/18/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110	1	10	
Matrix Spike (1903188-MS1)				Source: 19C0418-01		Prepared: 03/18/2019 Analyzed: 03/20/2019				
Sulfate	18	5.00	mg/L	12.50	6.6	91	80-120			
Matrix Spike Dup (1903188-MSD1)				Source: 19C0418-01		Prepared: 03/18/2019 Analyzed: 03/20/2019				
Sulfate	18	5.00	mg/L	12.50	6.6	89	80-120	1	10	



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 3/18/2019 DATE 19C0418 PAGE 1 OF 1

PROJECT NAME <u>CQ B Court-ship monitoring</u>					NUMBER OF CONTAINERS	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																	
CONTACT NAME <u>Chris Sherman</u>						<input type="checkbox"/> Base Neutrals 625/8270	<input type="checkbox"/> Volatile Organics 624	<input type="checkbox"/> TTHMS	<input type="checkbox"/> Chloride	<input type="checkbox"/> NO ₂	<input type="checkbox"/> NO ₃	<input type="checkbox"/> TPH	<input type="checkbox"/> YOA	<input type="checkbox"/> TCLP	<input type="checkbox"/> Dissolved	<input type="checkbox"/> Total	<input type="checkbox"/> Cyanide	<input type="checkbox"/> SDWA-INORGANICS	<input type="checkbox"/> MPN	<input type="checkbox"/> pH	<input type="checkbox"/> COD	7 sulfate (dissolve) 300.0	
COMPANY NAME <u>CQ B</u>						<input type="checkbox"/> Acids	<input type="checkbox"/> 8260	<input type="checkbox"/> HAA5	<input type="checkbox"/> Sulfate	<input type="checkbox"/> Resistivity	<input type="checkbox"/> TKN	<input type="checkbox"/> 1664	<input type="checkbox"/> Oil & Grease	<input type="checkbox"/> TCLP Analysis	<input type="checkbox"/> Metals	<input type="checkbox"/> RCRAB	<input type="checkbox"/> WAD	<input type="checkbox"/> SECONDARY	<input type="checkbox"/> Coliform	<input type="checkbox"/> Fecal	<input type="checkbox"/> Turb		<input type="checkbox"/> BOD
ADDRESS <u>36 W Highway 92</u>						<input type="checkbox"/> 524.2	<input type="checkbox"/> 8260	<input type="checkbox"/> HAA5	<input type="checkbox"/> Chloride	<input type="checkbox"/> Sulfate	<input type="checkbox"/> Resistivity	<input type="checkbox"/> TKN	<input type="checkbox"/> 1664	<input type="checkbox"/> Oil & Grease	<input type="checkbox"/> TCLP Analysis	<input type="checkbox"/> Metals	<input type="checkbox"/> RCRAB	<input type="checkbox"/> WAD	<input type="checkbox"/> SECONDARY	<input type="checkbox"/> Coliform	<input type="checkbox"/> Fecal		<input type="checkbox"/> Turb
ZIP <u>85603</u> PHONE <u>508-7013</u> EMAIL <u>cs Sherman@TurnerLabs.com</u>						<input type="checkbox"/> Chloride	<input type="checkbox"/> Sulfate	<input type="checkbox"/> Resistivity	<input type="checkbox"/> NO ₂	<input type="checkbox"/> NO ₃	<input type="checkbox"/> TPH	<input type="checkbox"/> YOA	<input type="checkbox"/> TCLP Analysis	<input type="checkbox"/> Metals	<input type="checkbox"/> Dissolved	<input type="checkbox"/> Total	<input type="checkbox"/> Cyanide	<input type="checkbox"/> SDWA-INORGANICS	<input type="checkbox"/> MPN	<input type="checkbox"/> pH	<input type="checkbox"/> COD		<input type="checkbox"/> BOD
SAMPLER'S SIGNATURE <u>[Signature]</u>					<input type="checkbox"/> Base Neutrals 625/8270	<input type="checkbox"/> Volatile Organics 624	<input type="checkbox"/> TTHMS	<input type="checkbox"/> Chloride	<input type="checkbox"/> NO ₂	<input type="checkbox"/> NO ₃	<input type="checkbox"/> TPH	<input type="checkbox"/> YOA	<input type="checkbox"/> TCLP Analysis	<input type="checkbox"/> Metals	<input type="checkbox"/> Dissolved	<input type="checkbox"/> Total	<input type="checkbox"/> Cyanide	<input type="checkbox"/> SDWA-INORGANICS	<input type="checkbox"/> MPN	<input type="checkbox"/> pH	<input type="checkbox"/> COD		
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*																			
<u>TERRY</u>	<u>3/18/19</u>	<u>11:20</u>		<u>GW</u>	<u>1</u>																		

1. RELINQUISHED BY: <u>[Signature]</u> Signature <u>Brian Dalgren</u> Printed Name <u>Clear Creek</u> Firm <u>3/18/19 13:28</u> Date/Time	2. RECEIVED BY: <u>[Signature]</u> Signature <u>Joseph Catalano</u> Printed Name TURNER LABORATORIES, INC. Firm <u>3/18/19 13:28</u> Date/Time	TURNAROUND REQUIREMENTS: <input checked="" type="checkbox"/> Standard (approx. 10 days)* <input type="checkbox"/> Next Day <input type="checkbox"/> 2 Day <input type="checkbox"/> 5 Day* <input type="checkbox"/> Email Preliminary Results * Working Days	REPORT REQUIREMENTS: <input checked="" type="checkbox"/> I. Routine Report <input type="checkbox"/> II. Report (includes DUP, MS, MSD, as required, may be charged as samples) <input type="checkbox"/> III. Date Validation Report (Includes All Raw Data) Add 10% to invoice	INVOICE INFORMATION: Account <u>Y</u> <u>N</u> P.O. # _____ Bill to: _____	SAMPLE RECEIPT: Total Containers <u>1</u> Temperature <u>4.4</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Ambient <input type="checkbox"/> Blue Ice
3. RELINQUISHED BY: Signature Printed Name Firm Date/Time	4. RECEIVED BY: <u>[Signature]</u> Signature <u>Joseph Catalano</u> Printed Name TURNER LABORATORIES, INC. Firm <u>3/18/19 13:28</u> Date/Time	* LEGEND SAMPLE MATRIX DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER	Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No SPECIAL INSTRUCTIONS/COMMENTS:	Custody Seals <input type="checkbox"/> Container Intact <input type="checkbox"/> COC / Labels Agree <input type="checkbox"/>	Preservation Confirmation <input type="checkbox"/> Appropriate Head Space <input type="checkbox"/> Received Within Hold Time <input type="checkbox"/>



Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9B0126**

Reported: 22-Feb-19 15:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BMO-2008-11G	X9B0126-01	Ground Water	28-Jan-19 10:00	CLS	07-Feb-2019	
BMO-2012-1M	X9B0126-02	Ground Water	29-Jan-19 09:10	CLS	07-Feb-2019	
BMO-2008-5M	X9B0126-03	Ground Water	04-Feb-19 08:55	CLS	07-Feb-2019	
BMO-2008-5B	X9B0126-04	Ground Water	04-Feb-19 09:35	CLS	07-Feb-2019	
BMO-2008-6M	X9B0126-05	Ground Water	04-Feb-19 11:00	CLS	07-Feb-2019	
BMO-2008-6B	X9B0126-06	Ground Water	04-Feb-19 12:00	CLS	07-Feb-2019	
BMO-2008-1G	X9B0126-07	Ground Water	05-Feb-19 11:00	CLS	07-Feb-2019	
BMO-2008-3B	X9B0126-08	Ground Water	05-Feb-19 12:05	CLS	07-Feb-2019	
DUP-020519	X9B0126-09	Ground Water	05-Feb-19 12:05	CLS	07-Feb-2019	
TM-7	X9B0126-10	Ground Water	05-Feb-19 14:06	CLS	07-Feb-2019	

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.

Analyses were performed in accordance with SVL standard operating procedures and calibrations were performed and met SVL internal QC criteria.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9B0126**

Reported: 22-Feb-19 15:07

Client Sample ID: **BMO-2008-11G**

Sampled: 28-Jan-19 10:00

SVL Sample ID: **X9B0126-01 (Ground Water)**

Received: 07-Feb-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	12.2	mg/L	0.30	0.18		X908109	DJS	02/21/19 09:59	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9B0126**

Reported: 22-Feb-19 15:07

Client Sample ID: **BMO-2012-1M**

Sampled: 29-Jan-19 09:10

SVL Sample ID: **X9B0126-02 (Ground Water)**

Received: 07-Feb-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	215	mg/L	3.00	1.80	10	X908109	DJS	02/21/19 10:39	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9B0126**

Reported: 22-Feb-19 15:07

Client Sample ID: **BMO-2008-5M**

Sampled: 04-Feb-19 08:55

SVL Sample ID: **X9B0126-03 (Ground Water)**

Received: 07-Feb-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	155	mg/L	1.50	0.90	5	X908109	DJS	02/21/19 10:53	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9B0126**

Reported: 22-Feb-19 15:07

Client Sample ID: **BMO-2008-5B**

Sampled: 04-Feb-19 09:35

SVL Sample ID: **X9B0126-04 (Ground Water)**

Received: 07-Feb-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	238	mg/L	3.00	1.80	10	X908109	DJS	02/21/19 11:06	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Kellogg, ID 83837-0929

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9B0126**

Reported: 22-Feb-19 15:07

Client Sample ID: **BMO-2008-6M**

Sampled: 04-Feb-19 11:00

SVL Sample ID: **X9B0126-05 (Ground Water)**

Received: 07-Feb-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	209	mg/L	3.00	1.80	10	X908109	DJS	02/21/19 11:19	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9B0126**

Reported: 22-Feb-19 15:07

Client Sample ID: **BMO-2008-6B**

Sampled: 04-Feb-19 12:00

SVL Sample ID: **X9B0126-06 (Ground Water)**

Received: 07-Feb-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	10.7	mg/L	0.30	0.18		X908109	DJS	02/21/19 11:59	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9B0126**

Reported: 22-Feb-19 15:07

Client Sample ID: **BMO-2008-1G**

Sampled: 05-Feb-19 11:00

SVL Sample ID: **X9B0126-07 (Ground Water)**

Received: 07-Feb-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	99.5	mg/L	1.50	0.90	5	X908109	DJS	02/21/19 12:13	D2
-----------	----------------	------	------	------	------	---	---------	-----	----------------	----

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9B0126**

Reported: 22-Feb-19 15:07

Client Sample ID: **BMO-2008-3B**

Sampled: 05-Feb-19 12:05

SVL Sample ID: **X9B0126-08 (Ground Water)**

Received: 07-Feb-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	169	mg/L	1.50	0.90	5	X908109	DJS	02/21/19 12:26	D2
-----------	----------------	-----	------	------	------	---	---------	-----	----------------	----

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9B0126**

Reported: 22-Feb-19 15:07

Client Sample ID: **DUP-020519**

Sampled: 05-Feb-19 12:05

SVL Sample ID: **X9B0126-09 (Ground Water)**

Received: 07-Feb-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	173	mg/L	3.00	1.80	10	X908109	DJS	02/21/19 12:39	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9B0126**

Reported: 22-Feb-19 15:07

Client Sample ID: **TM-7**

Sampled: 05-Feb-19 14:06

SVL Sample ID: **X9B0126-10 (Ground Water)**

Received: 07-Feb-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	114	mg/L	1.50	0.90	5	X908109	DJS	02/21/19 12:53	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



Freeport McMoRan - Bisbee
 36 West Hwy 92
 Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9B0126**
 Reported: 22-Feb-19 15:07

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.18	0.30	X908109	21-Feb-19	
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Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	9.85	10.0	98.5	90 - 110	X908109	21-Feb-19	
-----------	----------------	------	------	------	------	----------	---------	-----------	--

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Recovery	Acceptance Limits	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	22.5	12.2	10.0	103	90 - 110	X908109	21-Feb-19	
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Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	% Rec.	RPD	RPD Limit	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	22.4	22.5	10.0	103	0.1	20	X908109	21-Feb-19	
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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
- 0.30R>S % recovery not applicable; spike level is less than 30% of the sample concentration
- <RL A result is less than the reporting limit
- MRL Method Reporting Limit
- MDL Method Detection Limit
- N/A Not Applicable



May 21, 2019

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 19E0340
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 2 sample(s) on 05/14/2019 for the analyses presented in the following report.

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

Elizabeth Kasik
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19E0340
Date Received: 05/14/2019

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
19E0340-01	NWC-04	Ground Water	05/14/2019 0727
19E0340-02	Dup20190514	Ground Water	05/14/2019 0730

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19E0340
Date Received: 05/14/2019

Case Narrative

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: 19E0340
Lab Sample ID: 19E0340-01

Client Sample ID: NWC-04
Collection Date/Time: 05/14/2019 0727
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	186	1.27	50.0		mg/L	10	05/14/2019 1150	05/14/2019 1202	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19E0340
Lab Sample ID: 19E0340-02

Client Sample ID: Dup20190514
Collection Date/Time: 05/14/2019 0730
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	191	1.27	50.0		mg/L	10	05/14/2019 1210	05/14/2019 1258	EJ

Client: Freeport McMoran - Copper Queen Branch
 Project: CQB
 Work Order: 19E0340
 Date Received: 05/14/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1905158 - E300.0 (2.1)										
Blank (1905158-BLK1)				Prepared & Analyzed: 05/14/2019						
Sulfate	ND	5.00	mg/L							
LCS (1905158-BS1)				Prepared & Analyzed: 05/14/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110			
LCS Dup (1905158-BSD1)				Prepared & Analyzed: 05/14/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110	0.1	10	
Matrix Spike (1905158-MS1)				Source: 19E0337-01		Prepared & Analyzed: 05/14/2019				
Sulfate	33	5.00	mg/L	12.50	21	96	80-120			
Matrix Spike Dup (1905158-MSD1)				Source: 19E0337-01		Prepared & Analyzed: 05/14/2019				
Sulfate	33	5.00	mg/L	12.50	21	95	80-120	0.7	10	



July 22, 2019

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 19G0398
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 10 sample(s) on 07/12/2019 for the analyses presented in the following report.

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

Elizabeth Kasik
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0398
Date Received: 07/12/2019

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
19G0398-01	Cooper	Ground Water	07/08/2019 1548
19G0398-02	Howard 312	Ground Water	07/09/2019 1508
19G0398-03	Howard NR	Ground Water	07/09/2019 1417
19G0398-04	BURKE	Ground Water	07/09/2019 1520
19G0398-05	KEEPER	Ground Water	07/10/2019 0937
19G0398-06	MC Connell 459	Ground Water	07/10/2019 1441
19G0398-07	Anderson 458	Ground Water	07/11/2019 1229
19G0398-08	BIMA	Ground Water	07/11/2019 1450
19G0398-09	PALMER	Ground Water	07/11/2019 1553
19G0398-10	Rogers E	Ground Water	07/12/2019 1047

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0398
Date Received: 07/12/2019

Case Narrative

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: 19G0398
Lab Sample ID: 19G0398-01

Client Sample ID: Cooper
Collection Date/Time: 07/08/2019 1548
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	23.4	0.127	5.00		mg/L	1	07/12/2019 1530	07/12/2019 2316	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0398
Lab Sample ID: 19G0398-02

Client Sample ID: Howard 312
Collection Date/Time: 07/09/2019 1508
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	65.6	0.254	10.0		mg/L	2	07/15/2019 1145	07/17/2019 0059	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0398
Lab Sample ID: 19G0398-03

Client Sample ID: Howard NR
Collection Date/Time: 07/09/2019 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	480	2.54	100		mg/L	20	07/15/2019 1145	07/17/2019 0118	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0398
Lab Sample ID: 19G0398-04

Client Sample ID: BURKE
Collection Date/Time: 07/09/2019 1520
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	30.8	0.127	5.00		mg/L	1	07/12/2019 1530	07/13/2019 0106	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0398
Lab Sample ID: 19G0398-05

Client Sample ID: KEEPER
Collection Date/Time: 07/10/2019 0937
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	7.03	0.127	5.00		mg/L	1	07/12/2019 1530	07/13/2019 0125	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0398
Lab Sample ID: 19G0398-06

Client Sample ID: MC Connell 459
Collection Date/Time: 07/10/2019 1441
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	27.2	0.127	5.00		mg/L	1	07/12/2019 1530	07/13/2019 0143	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0398
Lab Sample ID: 19G0398-07

Client Sample ID: Anderson 458
Collection Date/Time: 07/11/2019 1229
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	22.4	0.127	5.00		mg/L	1	07/12/2019 1530	07/13/2019 0202	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0398
Lab Sample ID: 19G0398-08

Client Sample ID: BIMA
Collection Date/Time: 07/11/2019 1450
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	240	1.27	50.0		mg/L	10	07/15/2019 1145	07/17/2019 0136	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0398
Lab Sample ID: 19G0398-09

Client Sample ID: PALMER
Collection Date/Time: 07/11/2019 1553
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	16.7	0.127	5.00		mg/L	1	07/12/2019 1530	07/13/2019 0239	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0398
Lab Sample ID: 19G0398-10

Client Sample ID: Rogers E
Collection Date/Time: 07/12/2019 1047
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	6.76	0.127	5.00		mg/L	1	07/12/2019 1530	07/13/2019 0257	EJ

Client: Freeport McMoran - Copper Queen Branch
 Project: CQB
 Work Order: 19G0398
 Date Received: 07/12/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1907132 - E300.0 (2.1)										
Blank (1907132-BLK1)				Prepared & Analyzed: 07/12/2019						
Sulfate	ND	5.00	mg/L							
LCS (1907132-BS1)				Prepared & Analyzed: 07/12/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110			
LCS Dup (1907132-BSD1)				Prepared & Analyzed: 07/12/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110	0.2	10	
Matrix Spike (1907132-MS1)				Source: 19G0388-01		Prepared & Analyzed: 07/12/2019				
Sulfate	25	5.00	mg/L	12.50	14	86	80-120			
Matrix Spike (1907132-MS2)				Source: 19G0333-02		Prepared: 07/12/2019 Analyzed: 07/13/2019				
Sulfate	170	50.0	mg/L	125.0	60	85	80-120			
Matrix Spike (1907132-MS3)				Source: 19G0333-03		Prepared: 07/12/2019 Analyzed: 07/13/2019				
Sulfate	250	50.0	mg/L	125.0	150	86	80-120			
Matrix Spike Dup (1907132-MSD1)				Source: 19G0388-01		Prepared & Analyzed: 07/12/2019				
Sulfate	25	5.00	mg/L	12.50	14	86	80-120	0.008	10	
Matrix Spike Dup (1907132-MSD2)				Source: 19G0333-02		Prepared: 07/12/2019 Analyzed: 07/13/2019				
Sulfate	170	50.0	mg/L	125.0	60	86	80-120	1	10	
Matrix Spike Dup (1907132-MSD3)				Source: 19G0333-03		Prepared: 07/12/2019 Analyzed: 07/13/2019				
Sulfate	250	50.0	mg/L	125.0	150	86	80-120	0.09	10	



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 # 1960398 DATE 7-12-19 PAGE 1 OF 1

PROJECT NAME CQB Quarterly # CC18.10080.00

CONTACT NAME : Chris Sherman

COMPANY NAME : Freepoint 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]

NUMBER OF CONTAINERS

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX												
300.0 - 504												

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*
COOPER	7-8-19	13:48		GW
HOWARD 312	7-9-19	15:08		GW
HOWARD KR	7-9-19	14:07		GW
BURKE	7-9-19	15:20		GW
KEEFER	7-10-19	09:37		GW
MCCONWELL 454	7-10-19	14:41		GW
ANDERSON 458	7-11-19	12:29		GW
BTMA	7-11-19	14:50		GW
PALMER	7-11-19	15:53		GW
ROGERJE	7-12-19	10:47		GW
				GW

1. RELINQUISHED BY: [Signature]

Signature Ben Alday

Printed Name Clear Creek Associates

Firm 7-12-19 14:00

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 X Y ___ N

P.O. # _____

Bill to: CQB

SAMPLE RECEIPT:

Total Containers 10

Temperature 2.4

Wet Ice Blue Ice

3. RELINQUISHED BY:

Signature _____

Printed Name _____

Firm _____

Date/Time _____

4. RECEIVED BY:

Signature [Signature]

Printed Name _____

Firm TURNER LABORATORIES, INC.

Date/Time 7/12/19 14:00

*LEGEND

DW = DRINKING WATER

GW = GROUNDWATER

SD = SOLID

SG = SLUDGE

SL = SOIL

ST = STORMWATER

WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seals <input type="checkbox"/>	Preservation Confirmation <input checked="" type="checkbox"/>
ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No	Container Intact <input checked="" type="checkbox"/>	Appropriate Head Space <input checked="" type="checkbox"/>
Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No	COC/Labels Agree <input checked="" type="checkbox"/>	Received Within Hold Time <input checked="" type="checkbox"/>

All samples filtered with a 0.45µm filter, unless noted.

Copy results to Ben Daigneau & Fernando Alday.



July 22, 2019

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 19G0399
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 25 sample(s) on 07/12/2019 for the analyses presented in the following report.

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

Elizabeth Kasik
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Date Received: 07/12/2019

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
19G0399-01	POWER 639	Ground Water	07/12/2019 1047
19G0399-02	NESS	Ground Water	07/11/2019 1628
19G0399-03	BANKS 986	Ground Water	07/11/2019 1502
19G0399-04	PIONKE 517	Ground Water	07/11/2019 1216
19G0399-05	PARRA	Ground Water	07/10/2019 1610
19G0399-06	RUIZ	Ground Water	07/10/2019 1435
19G0399-07	CHAMBERS	Ground Water	07/12/2019 1248
19G0399-08	THOMPSON 341	Ground Water	07/12/2019 1155
19G0399-09	POOL	Ground Water	07/10/2019 0941
19G0399-10	DODSON	Ground Water	07/09/2019 1502
19G0399-11	RAMIREZ	Ground Water	07/09/2019 1236
19G0399-12	MOORE	Ground Water	07/09/2019 1006
19G0399-13	NWC-06	Ground Water	07/09/2019 0831
19G0399-14	NWC-02	Ground Water	07/09/2019 0744
19G0399-15	NWC-04	Ground Water	07/08/2019 0648
19G0399-16	WEED	Ground Water	07/08/2019 1547
19G0399-17	FB20190708	Ground Water	07/08/2019 1524
19G0399-18	PANAGAKOS	Ground Water	07/08/2019 1438
19G0399-19	DUP20190708	Drinking Water	07/08/2019 1437
19G0399-20	EB 20190708	Ground Water	07/08/2019 1422
19G0399-21	FB20190708	Ground Water	07/08/2019 1417
19G0399-22	OLMOS	Ground Water	07/08/2019 1203
19G0399-23	DUP20190708	Ground Water	07/08/2019 1202
19G0399-24	EB 20190708	Ground Water	07/08/2019 1111
19G0399-25	FB20190708	Ground Water	07/08/2019 1106

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Date Received: 07/12/2019

Case Narrative

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: 19G0399
Lab Sample ID: 19G0399-01

Client Sample ID: POWER 639
Collection Date/Time: 07/12/2019 1047
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	90.8	1.27	50.0		mg/L	10	07/16/2019 1645	07/17/2019 0327	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-02

Client Sample ID: NESS
Collection Date/Time: 07/11/2019 1628
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	30.5	0.127	5.00		mg/L	1	07/15/2019 1430	07/15/2019 1451	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-03

Client Sample ID: BANKS 986
Collection Date/Time: 07/11/2019 1502
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	67.6	0.635	25.0		mg/L	5	07/16/2019 1645	07/17/2019 0345	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-04

Client Sample ID: PIONKE 517
Collection Date/Time: 07/11/2019 1216
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	13.4	0.127	5.00		mg/L	1	07/15/2019 1525	07/15/2019 1558	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-05

Client Sample ID: PARRA
Collection Date/Time: 07/10/2019 1610
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	382	2.54	100		mg/L	20	07/16/2019 1645	07/17/2019 0404	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-06

Client Sample ID: RUIZ
Collection Date/Time: 07/10/2019 1435
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	169	1.27	50.0		mg/L	10	07/16/2019 1645	07/17/2019 0422	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-07

Client Sample ID: CHAMBERS
Collection Date/Time: 07/12/2019 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	6.88	0.127	5.00		mg/L	1	07/15/2019 1525	07/15/2019 1844	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-08

Client Sample ID: THOMPSON 341
Collection Date/Time: 07/12/2019 1155
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	6.44	0.127	5.00		mg/L	1	07/15/2019 1525	07/15/2019 1902	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-09

Client Sample ID: POOL
Collection Date/Time: 07/10/2019 0941
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	118	1.27	50.0		mg/L	10	07/16/2019 1645	07/17/2019 0441	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-10

Client Sample ID: DODSON
Collection Date/Time: 07/09/2019 1502
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	35.3	0.127	5.00		mg/L	1	07/15/2019 1525	07/15/2019 1939	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-11

Client Sample ID: RAMIREZ
Collection Date/Time: 07/09/2019 1236
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	6.67	0.127	5.00		mg/L	1	07/15/2019 1525	07/15/2019 1957	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-12

Client Sample ID: MOORE
Collection Date/Time: 07/09/2019 1006
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	6.26	0.127	5.00		mg/L	1	07/15/2019 1525	07/15/2019 2016	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-13

Client Sample ID: NWC-06
Collection Date/Time: 07/09/2019 0831
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	6.99	0.127	5.00		mg/L	1	07/15/2019 1525	07/15/2019 2034	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-14

Client Sample ID: NWC-02
Collection Date/Time: 07/09/2019 0744
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	5.75	0.127	5.00		mg/L	1	07/15/2019 1525	07/15/2019 2053	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-15

Client Sample ID: NWC-04
Collection Date/Time: 07/08/2019 0648
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	195	1.27	50.0		mg/L	10	07/16/2019 1645	07/17/2019 0459	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-16

Client Sample ID: WEED
Collection Date/Time: 07/08/2019 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	11.1	0.127	5.00		mg/L	1	07/15/2019 1525	07/15/2019 2130	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-17

Client Sample ID: FB20190708
Collection Date/Time: 07/08/2019 1524
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	0.799	0.127	5.00	E4	mg/L	1	07/15/2019 1525	07/15/2019 2320	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-18

Client Sample ID: PANAGAKOS
Collection Date/Time: 07/08/2019 1438
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	467	2.54	100		mg/L	20	07/16/2019 1645	07/17/2019 0517	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-19

Client Sample ID: DUP20190708
Collection Date/Time: 07/08/2019 1437
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	476	2.54	100		mg/L	20	07/16/2019 1645	07/17/2019 0536	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-20

Client Sample ID: EB 20190708
Collection Date/Time: 07/08/2019 1422
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	1.10	0.127	5.00	E4	mg/L	1	07/15/2019 1525	07/16/2019 0016	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-21

Client Sample ID: FB20190708
Collection Date/Time: 07/08/2019 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	0.816	0.127	5.00	E4	mg/L	1	07/15/2019 1525	07/16/2019 0034	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-22

Client Sample ID: OLMOS
Collection Date/Time: 07/08/2019 1203
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	6.55	0.127	5.00		mg/L	1	07/15/2019 1525	07/16/2019 0053	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-23

Client Sample ID: DUP20190708
Collection Date/Time: 07/08/2019 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	7.78	0.127	5.00		mg/L	1	07/15/2019 1525	07/16/2019 0111	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-24

Client Sample ID: EB 20190708
Collection Date/Time: 07/08/2019 1111
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	0.827	0.127	5.00	E4	mg/L	1	07/15/2019 1525	07/16/2019 0129	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0399
Lab Sample ID: 19G0399-25

Client Sample ID: FB20190708
Collection Date/Time: 07/08/2019 1106
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	0.793	0.127	5.00	E4	mg/L	1	07/15/2019 1525	07/16/2019 0148	EJ

Client: Freeport McMoran - Copper Queen Branch
 Project: CQB
 Work Order: 19G0399
 Date Received: 07/12/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1907155 - E300.0 (2.1)										
Blank (1907155-BLK1)				Prepared & Analyzed: 07/15/2019						
Sulfate	ND	5.00	mg/L							
LCS (1907155-BS1)				Prepared & Analyzed: 07/15/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110			
LCS Dup (1907155-BSD1)				Prepared & Analyzed: 07/15/2019						
Sulfate	12	5.00	mg/L	12.50		98	90-110	0.4	10	
Matrix Spike (1907155-MS1)				Source: 19G0408-01		Prepared & Analyzed: 07/15/2019				
Sulfate	22	5.00	mg/L	12.50	11	94	80-120			
Matrix Spike (1907155-MS2)				Source: 19G0399-02		Prepared & Analyzed: 07/15/2019				
Sulfate	42	5.00	mg/L	12.50	30	92	80-120			
Matrix Spike (1907155-MS3)				Source: 19G0399-04		Prepared: 07/15/2019 Analyzed: 07/16/2019				
Sulfate	24	5.00	mg/L	12.50	13	88	80-120			
Matrix Spike (1907155-MS4)				Source: 19G0421-01		Prepared: 07/15/2019 Analyzed: 07/16/2019				
Sulfate	13	5.00	mg/L	12.50	1.3	93	80-120			
Matrix Spike Dup (1907155-MSD1)				Source: 19G0408-01		Prepared & Analyzed: 07/15/2019				
Sulfate	22	5.00	mg/L	12.50	11	92	80-120	1	10	
Matrix Spike Dup (1907155-MSD2)				Source: 19G0399-02		Prepared & Analyzed: 07/15/2019				
Sulfate	42	5.00	mg/L	12.50	30	94	80-120	0.6	10	
Matrix Spike Dup (1907155-MSD3)				Source: 19G0399-04		Prepared: 07/15/2019 Analyzed: 07/16/2019				
Sulfate	24	5.00	mg/L	12.50	13	88	80-120	0.004	10	
Matrix Spike Dup (1907155-MSD4)				Source: 19G0421-01		Prepared: 07/15/2019 Analyzed: 07/16/2019				
Sulfate	13	5.00	mg/L	12.50	1.3	93	80-120	0.08	10	



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1960399 DATE _____ PAGE _____ OF _____

PROJECT NAME <u>CQB Quarterly</u> # <u>CC18.10080.00</u>					CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX															
CONTACT NAME : <u>Chris Sherman</u>					NUMBER OF CONTAINERS <u>30x.8 - 504</u>															
COMPANY NAME : <u>Freeport McMoRan CQB</u>																				
ADDRESS : <u>36 Highway 92</u>																				
CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u>																				
PHONE <u>520-508-7063</u> FAX <u>520-432-1395</u>																				
SAMPLER'S SIGNATURE _____																				
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*																
<u>POWER639</u>	<u>07/12/19</u>	<u>1647</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>NESS</u>	<u>07/11/19</u>	<u>1628</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>BANKS 986</u>	<u>07/11/19</u>	<u>1502</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>PIONKE 517</u>	<u>07/11/19</u>	<u>1216</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>PARRA</u>	<u>07/10/19</u>	<u>1610</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>RUIZ</u>	<u>07/16/19</u>	<u>1435</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>CHAMBERS</u>	<u>07/10/19</u>	<u>1248</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>THOMPSON 94</u>	<u>07/10/19</u>	<u>1155</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>POOL</u>	<u>07/10/19</u>	<u>0941</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>DEWSON</u>	<u>07/09/19</u>	<u>1502</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
<u>RAMIREZ</u>	<u>07/09/19</u>	<u>1236</u>		<u>GW</u>	<u>1</u>	<u>X</u>														
1. RELINQUISHED BY: <u>William R. Tinnell Jr</u> Signature <u>William R Tinnell Jr</u> Printed Name <u>Clear Creek Associates</u> Firm <u>07-12-191</u> Date/Time <u>1434</u>		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: <input type="checkbox"/> I. Routine Report <input type="checkbox"/> II. Report (includes DUP,MS,MSD, as required, may be charged as samples) <input type="checkbox"/> III. Date Validation Report (Includes All Raw Data) Add 10% to invoice		INVOICE INFORMATION: Account <u>X</u> Y ___ N P.O. # _____ Bill to: <u>CQB</u>		SAMPLE RECEIPT: Total Containers <u>10</u> Temperature <u>3.4</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice										
3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____		4. RECEIVED BY: <u>Joseph Cote</u> Signature <u>Joseph Cote</u> Printed Name <u>TURNER LABORATORIES, INC.</u> Firm <u>7/12/19 1434</u> Date/Time		* LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER		SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seals <input type="checkbox"/> Preservation Confirmation <input checked="" type="checkbox"/> ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Container Intact <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No COC/Labels Agree <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/> All samples filtered with a 0.45µm filter, unless noted. Copy results to Ben Daigneau & Fernando Alday.														



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 19G0399 DATE _____ PAGE _____ OF _____

PROJECT NAME <u>CQB Quarterly</u> # <u>CC18.10080.00</u> CONTACT NAME : <u>Chris Sherman</u> COMPANY NAME : <u>Freeport McMoRan CQB</u> ADDRESS : <u>36 Highway 92</u> CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u> PHONE <u>520-508-7063</u> FAX <u>520-432-1395</u> SAMPLER'S SIGNATURE _____		CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																																																																																																																																																																																																																																																																							
NUMBER OF CONTAINERS <u>700.0</u>																																																																																																																																																																																																																																																																									
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3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____		4. RECEIVED BY: Signature <u>Joseph Catala</u> Printed Name _____ Firm <u>TURNER LABORATORIES, INC.</u> <u>7/12/19 1434</u> Date/Time _____		*LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER		SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seals <input type="checkbox"/> Preservation Confirmation <input checked="" type="checkbox"/> ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Container Intact <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No COC/Labels Agree <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/> All samples filtered with a 0.45µm filter, unless noted. Copy results to Ben Daigneau & Fernando Alday.																																																																																																																																																																																																																																																																			



August 13, 2019

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 19G0564
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 25 sample(s) on 07/19/2019 for the analyses presented in the following report.

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

Elizabeth Kasik
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Date Received: 07/19/2019

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
19G0564-01	COB WL	Ground Water	07/15/2019 1205
19G0564-02	Garner 635	Ground Water	07/15/2019 1454
19G0564-03	FB20190716	Ground Water	07/16/2019 1200
19G0564-04	EQB20190716	Ground Water	07/16/2019 1200
19G0564-05	BMO-2010-3B	Ground Water	07/16/2019 0909
19G0564-06	BMO-2010-3M	Ground Water	07/16/2019 1208
19G0564-07	DUP20190716	Drinking Water	07/16/2019 1200
19G0564-08	TM-10 USBP	Ground Water	07/16/2019 1311
19G0564-09	Zander	Ground Water	07/16/2019 1500
19G0564-10	BMO-2015-2B	Ground Water	07/17/2019 0757
19G0564-11	BMO-2015-2BL	Ground Water	07/17/2019 0839
19G0564-12	BMO-2014-4BL	Ground Water	07/17/2019 0940
19G0564-13	BMO-2014-4B	Ground Water	07/17/2019 1021
19G0564-14	BMO-2015-1B	Ground Water	07/17/2019 1130
19G0564-15	BMO-2015-1BL	Ground Water	07/17/2019 1212
19G0564-16	EAST	Ground Water	07/17/2019 1438
19G0564-17	BMO-2014-2BL	Ground Water	07/18/2019 0812
19G0564-18	BMO-2014-2BU	Ground Water	07/18/2019 0859
19G0564-19	TVI-875	Ground Water	07/18/2019 0924
19G0564-20	BMO-2014-1BU	Ground Water	07/18/2019 1020
19G0564-21	BMO-2014-1BL	Ground Water	07/18/2019 1136
19G0564-22	BMO-2014-3BL	Ground Water	07/18/2019 1352
19G0564-23	BMO-2014-3BU	Ground Water	07/18/2019 1457
19G0564-24	Terry	Ground Water	07/19/2019 0925
19G0564-25	RAY	Ground Water	07/19/2019 1102

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Date Received: 07/19/2019

Case Narrative

- E8 Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
- M1 Matrix spike recovery was high; the associated LCS/LCSD was acceptable.
- M7 Matrix spike recovery was low. Data reported per ADEQ policy 0154.000. Matrix interference was confirmed.
- R13 MS/MSD RPD exceeded method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.

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: 19G0564
Lab Sample ID: 19G0564-01

Client Sample ID: COB WL
Collection Date/Time: 07/15/2019 1205
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	71.2	2.60	50.0		mg/L	10	07/24/2019 1550	07/24/2019 2347	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-02

Client Sample ID: Garner 635
Collection Date/Time: 07/15/2019 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	41.2	1.30	25.0		mg/L	5	08/03/2019 1125	08/03/2019 1834	MH

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-03

Client Sample ID: FB20190716
Collection Date/Time: 07/16/2019 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	1.50	5.00	E8	mg/L	1	08/03/2019 1125	08/09/2019 0702	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-04

Client Sample ID: EQB20190716
Collection Date/Time: 07/16/2019 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	1.50	5.00	E8	mg/L	1	08/03/2019 1125	08/09/2019 0721	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-05

Client Sample ID: BMO-2010-3B
Collection Date/Time: 07/16/2019 0909
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	26.0	1.30	25.0		mg/L	5	08/03/2019 1125	08/03/2019 2104	MH

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-06

Client Sample ID: BMO-2010-3M
Collection Date/Time: 07/16/2019 1208
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	8.97	1.50	5.00		mg/L	1	08/03/2019 1125	08/09/2019 0740	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-07

Client Sample ID: DUP20190716
Collection Date/Time: 07/16/2019 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	25.8	1.30	25.0		mg/L	5	08/03/2019 1125	08/03/2019 2142	MH

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-08

Client Sample ID: TM-10 USBP
Collection Date/Time: 07/16/2019 1311
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	15.0	1.50	5.00		mg/L	1	08/03/2019 1125	08/09/2019 1251	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-09

Client Sample ID: Zander
Collection Date/Time: 07/16/2019 1500
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	6.49	1.50	5.00		mg/L	1	08/03/2019 1125	08/09/2019 1310	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-10

Client Sample ID: BMO-2015-2B
Collection Date/Time: 07/17/2019 0757
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	270	15.0	50.0		mg/L	10	08/03/2019 1125	08/09/2019 1328	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-11

Client Sample ID: BMO-2015-2BL
Collection Date/Time: 07/17/2019 0839
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	318	15.0	50.0		mg/L	10	08/03/2019 1125	08/09/2019 1347	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-12

Client Sample ID: BMO-2014-4BL
Collection Date/Time: 07/17/2019 0940
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	192	2.60	50.0		mg/L	10	08/05/2019 1220	08/05/2019 2025	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-13

Client Sample ID: BMO-2014-4B
Collection Date/Time: 07/17/2019 1021
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	62.8	2.60	50.0		mg/L	10	08/05/2019 1220	08/05/2019 2043	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-14

Client Sample ID: BMO-2015-1B
Collection Date/Time: 07/17/2019 1130
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	83.9	2.60	50.0		mg/L	10	08/05/2019 1220	08/05/2019 2102	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-15

Client Sample ID: BMO-2015-1BL
Collection Date/Time: 07/17/2019 1212
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	255	2.60	50.0		mg/L	10	08/05/2019 1220	08/05/2019 2121	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-16

Client Sample ID: EAST
Collection Date/Time: 07/17/2019 1438
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	11.8	1.50	5.00		mg/L	1	08/07/2019 1800	08/08/2019 0416	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-17

Client Sample ID: BMO-2014-2BL
Collection Date/Time: 07/18/2019 0812
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	433	30.0	100		mg/L	20	08/07/2019 1800	08/08/2019 0434	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-18

Client Sample ID: BMO-2014-2BU
Collection Date/Time: 07/18/2019 0859
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	54.9	1.30	25.0		mg/L	5	08/06/2019 1605	08/06/2019 1757	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-19

Client Sample ID: TVI-875
Collection Date/Time: 07/18/2019 0924
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	325	15.0	50.0		mg/L	10	08/07/2019 1800	08/08/2019 0550	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-20

Client Sample ID: BMO-2014-1BU
Collection Date/Time: 07/18/2019 1020
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	170	1.30	25.0		mg/L	5	08/06/2019 1605	08/06/2019 1834	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-21

Client Sample ID: BMO-2014-1BL
Collection Date/Time: 07/18/2019 1136
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	150	15.0	50.0		mg/L	10	08/09/2019 1210	08/09/2019 1406	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-22

Client Sample ID: BMO-2014-3BL
Collection Date/Time: 07/18/2019 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	7.45	1.50	5.00		mg/L	1	08/09/2019 1555	08/09/2019 1907	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-23

Client Sample ID: BMO-2014-3BU
Collection Date/Time: 07/18/2019 1457
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	7.63	1.50	5.00		mg/L	1	08/12/2019 1220	08/12/2019 1529	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-24

Client Sample ID: Terry
Collection Date/Time: 07/19/2019 0925
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	6.25	1.50	5.00		mg/L	1	08/12/2019 1220	08/12/2019 1548	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-25

Client Sample ID: RAY
Collection Date/Time: 07/19/2019 1102
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	132	15.0	50.0		mg/L	10	08/09/2019 1210	08/09/2019 1714	EJ

Client: Freeport McMoran - Copper Queen Branch
 Project: CQB
 Work Order: 19G0564
 Date Received: 07/19/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1907297 - E300.0 (2.1)										
Blank (1907297-BLK1)				Prepared & Analyzed: 07/24/2019						
Sulfate	1.2	5.00	mg/L							
LCS (1907297-BS1)				Prepared & Analyzed: 07/24/2019						
Sulfate	12	5.00	mg/L	12.50		98	90-110			
LCS Dup (1907297-BSD1)				Prepared & Analyzed: 07/24/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110	0.7	10	
Matrix Spike (1907297-MS1)				Source: 19G0476-07		Prepared: 07/24/2019 Analyzed: 07/25/2019				
Sulfate	13	5.00	mg/L	12.50	2.6	85	80-120			
Matrix Spike (1907297-MS3)				Source: 19G0476-04		Prepared: 07/24/2019 Analyzed: 07/26/2019				
Sulfate	29		mg/L	12.50	24	35	80-120			M7
Matrix Spike Dup (1907297-MSD1)				Source: 19G0476-07		Prepared: 07/24/2019 Analyzed: 07/25/2019				
Sulfate	13	5.00	mg/L	12.50	2.6	81	80-120	4	10	
Matrix Spike Dup (1907297-MSD3)				Source: 19G0476-04		Prepared: 07/24/2019 Analyzed: 07/26/2019				
Sulfate	29		mg/L	12.50	24	37	80-120	0.6	10	M7
Batch 1908032 - E300.0 (2.1)										
Blank (1908032-BLK1)				Prepared & Analyzed: 08/03/2019						
Sulfate	ND	5.00	mg/L							
LCS (1908032-BS1)				Prepared & Analyzed: 08/03/2019						
Sulfate	13	5.00	mg/L	12.50		105	90-110			
LCS Dup (1908032-BSD1)				Prepared & Analyzed: 08/03/2019						
Sulfate	13	5.00	mg/L	12.50		105	90-110	0.4	10	
Matrix Spike (1908032-MS1)				Source: 19G0564-02		Prepared & Analyzed: 08/03/2019				
Sulfate	20		mg/L	12.50	8.2	93	80-120			
Matrix Spike Dup (1908032-MSD1)				Source: 19G0564-02		Prepared & Analyzed: 08/03/2019				
Sulfate	20		mg/L	12.50	8.2	97	80-120	3	10	
Batch 1908033 - E300.0 (2.1)										
Blank (1908033-BLK1)				Prepared & Analyzed: 08/05/2019						
Sulfate	ND	5.00	mg/L							
LCS (1908033-BS1)				Prepared & Analyzed: 08/05/2019						
Sulfate	12	5.00	mg/L	12.50		100	90-110			
LCS Dup (1908033-BSD1)				Prepared & Analyzed: 08/05/2019						
Sulfate	13	5.00	mg/L	12.50		100	90-110	0.4	10	
Matrix Spike (1908033-MS2)				Source: 19H0106-01		Prepared & Analyzed: 08/05/2019				
Sulfate	18	5.00	mg/L	12.50	6.1	96	80-120			
Matrix Spike Dup (1908033-MSD2)				Source: 19H0106-01		Prepared & Analyzed: 08/05/2019				
Sulfate	18	5.00	mg/L	12.50	6.1	97	80-120	1	10	

Client: Freeport McMoran - Copper Queen Branch
 Project: CQB
 Work Order: 19G0564
 Date Received: 07/19/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1908051 - E300.0 (2.1)										
Blank (1908051-BLK1)				Prepared & Analyzed: 08/06/2019						
Sulfate	0.55	5.00	mg/L							
LCS (1908051-BS1)				Prepared & Analyzed: 08/06/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110			
LCS Dup (1908051-BSD1)				Prepared & Analyzed: 08/06/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110	0.7	10	
Matrix Spike (1908051-MS1)				Source: 19H0123-07		Prepared & Analyzed: 08/06/2019				
Sulfate	13	5.00	mg/L	12.50	0.72	95	80-120			
Matrix Spike Dup (1908051-MSD1)				Source: 19H0123-07		Prepared & Analyzed: 08/06/2019				
Sulfate	13	5.00	mg/L	12.50	0.72	95	80-120	0.3	10	
Batch 1908125 - E300.0 (2.1)										
Blank (1908125-BLK1)				Prepared & Analyzed: 08/09/2019						
Sulfate	ND	5.00	mg/L							
LCS (1908125-BS1)				Prepared & Analyzed: 08/09/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110			
LCS Dup (1908125-BSD1)				Prepared & Analyzed: 08/09/2019						
Sulfate	12	5.00	mg/L	12.50		98	90-110	0.4	10	
Matrix Spike (1908125-MS1)				Source: 19H0198-01		Prepared & Analyzed: 08/09/2019				
Sulfate	13	5.00	mg/L	12.50	ND	102	80-120			
Matrix Spike (1908125-MS2)				Source: 19G0564-22RE1		Prepared & Analyzed: 08/09/2019				
Sulfate	20	5.00	mg/L	12.50	7.5	97	80-120			
Matrix Spike (1908125-MS3)				Source: 19G0564-21		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	420	50.0	mg/L	125.0	150	213	80-120			M1
Matrix Spike (1908125-MS4)				Source: 19G0569-02RE1		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	190	50.0	mg/L	125.0	64	98	80-120			
Matrix Spike (1908125-MS5)				Source: 19G0570-04RE1		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	280	50.0	mg/L	125.0	160	99	80-120			
Matrix Spike Dup (1908125-MSD1)				Source: 19H0198-01		Prepared & Analyzed: 08/09/2019				
Sulfate	13	5.00	mg/L	12.50	ND	104	80-120	2	10	
Matrix Spike Dup (1908125-MSD2)				Source: 19G0564-22RE1		Prepared & Analyzed: 08/09/2019				
Sulfate	20	5.00	mg/L	12.50	7.5	97	80-120	0.07	10	
Matrix Spike Dup (1908125-MSD3)				Source: 19G0564-21		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	270	50.0	mg/L	125.0	150	97	80-120	42	10	R13
Matrix Spike Dup (1908125-MSD4)				Source: 19G0569-02RE1		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	190	50.0	mg/L	125.0	64	99	80-120	0.8	10	
Matrix Spike Dup (1908125-MSD5)				Source: 19G0570-04RE1		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	280	50.0	mg/L	125.0	160	95	80-120	2	10	



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1960564 DATE _____ PAGE 1 OF 5

PROJECT NAME <u>CQB Quarterly</u> # <u>CC18.10080.00</u> CONTACT NAME : <u>Chris Sherman</u> COMPANY NAME : <u>Freeport McMoran CQB</u> ADDRESS : <u>36 Highway 92</u> CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u> PHONE <u>520-508-7063</u> FAX <u>520-432-1395</u> SAMPLER'S SIGNATURE _____		CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																																																																																																																																																																																																																																																																																		
		NUMBER OF CONTAINERS <u>300.0 - 504</u>	<table border="1" style="width:100%; height: 150px;"> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>																																																																																																																																																																																																																																																																																	
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1. RELINQUISHED BY: Signature _____ <u>Jake Alda</u> Printed Name <u>Clear Creek Associates</u> Firm <u>7-19-19 11:30</u> 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 <u>X</u> Y ___ N P.O. # _____ Bill to: <u>CQB</u>		SAMPLE RECEIPT: Total Containers <u>11</u> Temperature <u>1.6</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice																																																																																																																																																																																																																																																																										
3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____		4. RECEIVED BY: Signature _____ <u>Joseph Cotate</u> Printed Name _____ Firm <u>TURNER LABORATORIES, INC.</u> <u>7/19/19 1430</u> Date/Time _____		*LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER		SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seals <input type="checkbox"/> Container Intact <input checked="" type="checkbox"/> COC/Labels Agree <input checked="" type="checkbox"/> Preservation Confirmation <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/> All samples filtered with a 0.45µm filter, unless noted. Copy results to Ben Daigneau & Fernando Alday.																																																																																																																																																																																																																																																																														



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 19G0564 DATE _____ PAGE 1 OF 3

PROJECT NAME <u>CQB Quarterly</u> # <u>CC18.10080.00</u>				CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX												
CONTACT NAME : <u>Chris Sherman</u>				NUMBER OF CONTAINERS <u>3000 - 504</u>												
COMPANY NAME : <u>Freeport McMoran CQB</u>																
ADDRESS : <u>36 Highway 92</u>																
CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u>																
PHONE <u>520-508-7063</u> FAX <u>520-432-1395</u>																
SAMPLER'S SIGNATURE <u>[Signature]</u>																
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*												
<u>BMO-2014-4BL</u>	<u>7-17-14</u>	<u>09:40</u>		<u>GW</u>												
<u>BMO-2014-4B</u>	<u>7-17-14</u>	<u>10:21</u>		<u>GW</u>												
<u>BMO-2015-1B</u>	<u>7-17-14</u>	<u>11:30</u>		<u>GW</u>												
<u>BMO-2015-1BL</u>	<u>7-17-14</u>	<u>12:12</u>		<u>GW</u>												
<u>EAST</u>	<u>7-17-14</u>	<u>14:38</u>		<u>GW</u>												
<u>BMO-2014-2BL</u>	<u>7-18-14</u>	<u>08:12</u>		<u>GW</u>												
<u>BMO-2014-2B4</u>	<u>7-18-14</u>	<u>08:59</u>		<u>GW</u>												
<u>TVI-875</u>	<u>7-18-14</u>	<u>09:24</u>		<u>GW</u>												
<u>BMO-2014-1B4</u>	<u>7-18-14</u>	<u>10:20</u>		<u>GW</u>												
<u>BMO-2014-1BL</u>	<u>7-18-14</u>	<u>11:36</u>		<u>GW</u>												
<u>BMO-2014-3BL</u>	<u>7-18-14</u>	<u>13:52</u>		<u>GW</u>												
1. RELINQUISHED BY: Signature <u>[Signature]</u> Printed Name <u>Clear Creek Associates</u> Firm <u>7-19-14 11:30</u> 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 <u>X</u> Y ___ N P.O. # _____ Bill to: <u>CQB</u>		SAMPLE RECEIPT: Total Containers <u>11</u> Temperature <u>1.6</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice						
3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____		4. RECEIVED BY: Signature <u>[Signature]</u> Printed Name _____ Firm <u>TURNER LABORATORIES, INC.</u> <u>7/19/14 1430</u> Date/Time		*LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER		SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seals <input type="checkbox"/> Preservation Confirmation <input checked="" type="checkbox"/> ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Container Intact <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No COC/Labels Agree <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/> All samples filtered with a 0.45µm filter, unless noted. Copy results to Ben Daigneau & Fernando Alday.										



October 10, 2019

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 19G0564
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 25 sample(s) on 07/19/2019 for the analyses presented in the following report.

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

Elizabeth Kasik
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Date Received: 07/19/2019

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
19G0564-01	COB WL	Ground Water	07/15/2019 1205
19G0564-02	Garner 635	Ground Water	07/15/2019 1454
19G0564-03	FB20190716	Ground Water	07/16/2019 1200
19G0564-04	EQB20190716	Ground Water	07/16/2019 1200
19G0564-05	BMO-2010-3B	Ground Water	07/16/2019 0909
19G0564-06	BMO-2010-3M	Ground Water	07/16/2019 1208
19G0564-07	DUP20190716	Drinking Water	07/16/2019 1200
19G0564-08	TM-10 USBP	Ground Water	07/16/2019 1311
19G0564-09	Zander	Ground Water	07/16/2019 1500
19G0564-10	BMO-2015-2B	Ground Water	07/17/2019 0757
19G0564-11	BMO-2015-2BL	Ground Water	07/17/2019 0839
19G0564-12	BMO-2014-4BL	Ground Water	07/17/2019 0940
19G0564-13	BMO-2014-4B	Ground Water	07/17/2019 1021
19G0564-14	BMO-2015-1B	Ground Water	07/17/2019 1130
19G0564-15	BMO-2015-1BL	Ground Water	07/17/2019 1212
19G0564-16	EAST	Ground Water	07/17/2019 1438
19G0564-17	BMO-2014-2BL	Ground Water	07/18/2019 0812
19G0564-18	BMO-2014-2BU	Ground Water	07/18/2019 0859
19G0564-19	TVI-875	Ground Water	07/18/2019 0924
19G0564-20	BMO-2014-1BU	Ground Water	07/18/2019 1020
19G0564-21	BMO-2014-1BL	Ground Water	07/18/2019 1136
19G0564-22	BMO-2014-3BL	Ground Water	07/18/2019 1352
19G0564-23	BMO-2014-3BU	Ground Water	07/18/2019 1457
19G0564-24	Terry	Ground Water	07/19/2019 0925
19G0564-25	RAY	Ground Water	07/19/2019 1102

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Date Received: 07/19/2019

Case Narrative

N1 = The sample was re-analyzed outside of holding time to confirm the initial result. The re-analysis has been reported per the client's request. This report has been revised to include the re-analysis result for 19G0564-14.

- E8 Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
- M1 Matrix spike recovery was high; the associated LCS/LCSD was acceptable.
- M7 Matrix spike recovery was low. Data reported per ADEQ policy 0154.000. Matrix interference was confirmed.
- N1 See case narrative.
- R13 MS/MSD RPD exceeded method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.

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: 19G0564
Lab Sample ID: 19G0564-01

Client Sample ID: COB WL
Collection Date/Time: 07/15/2019 1205
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	71.2	2.60	50.0		mg/L	10	07/24/2019 1550	07/24/2019 2347	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-02

Client Sample ID: Garner 635
Collection Date/Time: 07/15/2019 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	41.2	1.30	25.0		mg/L	5	08/03/2019 1125	08/03/2019 1834	MH

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-03

Client Sample ID: FB20190716
Collection Date/Time: 07/16/2019 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	1.50	5.00	E8	mg/L	1	08/03/2019 1125	08/09/2019 0702	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-04

Client Sample ID: EQB20190716
Collection Date/Time: 07/16/2019 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	1.50	5.00	E8	mg/L	1	08/03/2019 1125	08/09/2019 0721	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-05

Client Sample ID: BMO-2010-3B
Collection Date/Time: 07/16/2019 0909
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	26.0	1.30	25.0		mg/L	5	08/03/2019 1125	08/03/2019 2104	MH

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-06

Client Sample ID: BMO-2010-3M
Collection Date/Time: 07/16/2019 1208
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	8.97	1.50	5.00		mg/L	1	08/03/2019 1125	08/09/2019 0740	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-07

Client Sample ID: DUP20190716
Collection Date/Time: 07/16/2019 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	25.8	1.30	25.0		mg/L	5	08/03/2019 1125	08/03/2019 2142	MH

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-08

Client Sample ID: TM-10 USBP
Collection Date/Time: 07/16/2019 1311
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	15.0	1.50	5.00		mg/L	1	08/03/2019 1125	08/09/2019 1251	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-09

Client Sample ID: Zander
Collection Date/Time: 07/16/2019 1500
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	6.49	1.50	5.00		mg/L	1	08/03/2019 1125	08/09/2019 1310	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-10

Client Sample ID: BMO-2015-2B
Collection Date/Time: 07/17/2019 0757
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	270	15.0	50.0		mg/L	10	08/03/2019 1125	08/09/2019 1328	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-11

Client Sample ID: BMO-2015-2BL
Collection Date/Time: 07/17/2019 0839
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	318	15.0	50.0		mg/L	10	08/03/2019 1125	08/09/2019 1347	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-12

Client Sample ID: BMO-2014-4BL
Collection Date/Time: 07/17/2019 0940
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	192	2.60	50.0		mg/L	10	08/05/2019 1220	08/05/2019 2025	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-13

Client Sample ID: BMO-2014-4B
Collection Date/Time: 07/17/2019 1021
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	62.8	2.60	50.0		mg/L	10	08/05/2019 1220	08/05/2019 2043	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-14

Client Sample ID: BMO-2015-1B
Collection Date/Time: 07/17/2019 1130
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	203	15.0	50.0	N1	mg/L	10	10/07/2019 1640	10/07/2019 2052	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-15

Client Sample ID: BMO-2015-1BL
Collection Date/Time: 07/17/2019 1212
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	255	2.60	50.0		mg/L	10	08/05/2019 1220	08/05/2019 2121	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-16

Client Sample ID: EAST
Collection Date/Time: 07/17/2019 1438
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	11.8	1.50	5.00		mg/L	1	08/07/2019 1800	08/08/2019 0416	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-17

Client Sample ID: BMO-2014-2BL
Collection Date/Time: 07/18/2019 0812
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	433	30.0	100		mg/L	20	08/07/2019 1800	08/08/2019 0434	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-18

Client Sample ID: BMO-2014-2BU
Collection Date/Time: 07/18/2019 0859
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	54.9	1.30	25.0		mg/L	5	08/06/2019 1605	08/06/2019 1757	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-19

Client Sample ID: TVI-875
Collection Date/Time: 07/18/2019 0924
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	325	15.0	50.0		mg/L	10	08/07/2019 1800	08/08/2019 0550	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-20

Client Sample ID: BMO-2014-1BU
Collection Date/Time: 07/18/2019 1020
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	170	1.30	25.0		mg/L	5	08/06/2019 1605	08/06/2019 1834	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-21

Client Sample ID: BMO-2014-1BL
Collection Date/Time: 07/18/2019 1136
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	150	15.0	50.0		mg/L	10	08/09/2019 1210	08/09/2019 1406	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-22

Client Sample ID: BMO-2014-3BL
Collection Date/Time: 07/18/2019 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	7.45	1.50	5.00		mg/L	1	08/09/2019 1555	08/09/2019 1907	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-23

Client Sample ID: BMO-2014-3BU
Collection Date/Time: 07/18/2019 1457
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	7.63	1.50	5.00		mg/L	1	08/12/2019 1220	08/12/2019 1529	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-24

Client Sample ID: Terry
Collection Date/Time: 07/19/2019 0925
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	6.25	1.50	5.00		mg/L	1	08/12/2019 1220	08/12/2019 1548	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0564
Lab Sample ID: 19G0564-25

Client Sample ID: RAY
Collection Date/Time: 07/19/2019 1102
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	132	15.0	50.0		mg/L	10	08/09/2019 1210	08/09/2019 1714	EJ

Client: Freeport McMoran - Copper Queen Branch
 Project: CQB
 Work Order: 19G0564
 Date Received: 07/19/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1907297 - E300.0 (2.1)										
Blank (1907297-BLK1)				Prepared & Analyzed: 07/24/2019						
Sulfate	1.2	5.00	mg/L							
LCS (1907297-BS1)				Prepared & Analyzed: 07/24/2019						
Sulfate	12	5.00	mg/L	12.50		98	90-110			
LCS Dup (1907297-BSD1)				Prepared & Analyzed: 07/24/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110	0.7	10	
Matrix Spike (1907297-MS1)				Source: 19G0476-07		Prepared: 07/24/2019 Analyzed: 07/25/2019				
Sulfate	13	5.00	mg/L	12.50	2.6	85	80-120			
Matrix Spike (1907297-MS3)				Source: 19G0476-04		Prepared: 07/24/2019 Analyzed: 07/26/2019				
Sulfate	29		mg/L	12.50	24	35	80-120			M7
Matrix Spike Dup (1907297-MSD1)				Source: 19G0476-07		Prepared: 07/24/2019 Analyzed: 07/25/2019				
Sulfate	13	5.00	mg/L	12.50	2.6	81	80-120	4	10	
Matrix Spike Dup (1907297-MSD3)				Source: 19G0476-04		Prepared: 07/24/2019 Analyzed: 07/26/2019				
Sulfate	29		mg/L	12.50	24	37	80-120	0.6	10	M7
Batch 1908032 - E300.0 (2.1)										
Blank (1908032-BLK1)				Prepared & Analyzed: 08/03/2019						
Sulfate	ND	5.00	mg/L							
LCS (1908032-BS1)				Prepared & Analyzed: 08/03/2019						
Sulfate	13	5.00	mg/L	12.50		105	90-110			
LCS Dup (1908032-BSD1)				Prepared & Analyzed: 08/03/2019						
Sulfate	13	5.00	mg/L	12.50		105	90-110	0.4	10	
Matrix Spike (1908032-MS1)				Source: 19G0564-02		Prepared & Analyzed: 08/03/2019				
Sulfate	20		mg/L	12.50	8.2	93	80-120			
Matrix Spike Dup (1908032-MSD1)				Source: 19G0564-02		Prepared & Analyzed: 08/03/2019				
Sulfate	20		mg/L	12.50	8.2	97	80-120	3	10	
Batch 1908033 - E300.0 (2.1)										
Blank (1908033-BLK1)				Prepared & Analyzed: 08/05/2019						
Sulfate	ND	5.00	mg/L							
LCS (1908033-BS1)				Prepared & Analyzed: 08/05/2019						
Sulfate	12	5.00	mg/L	12.50		100	90-110			
LCS Dup (1908033-BSD1)				Prepared & Analyzed: 08/05/2019						
Sulfate	13	5.00	mg/L	12.50		100	90-110	0.4	10	
Matrix Spike (1908033-MS2)				Source: 19H0106-01		Prepared & Analyzed: 08/05/2019				
Sulfate	18	5.00	mg/L	12.50	6.1	96	80-120			
Matrix Spike Dup (1908033-MSD2)				Source: 19H0106-01		Prepared & Analyzed: 08/05/2019				
Sulfate	18	5.00	mg/L	12.50	6.1	97	80-120	1	10	

Client: Freeport McMoran - Copper Queen Branch
 Project: CQB
 Work Order: 19G0564
 Date Received: 07/19/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1908051 - E300.0 (2.1)										
Blank (1908051-BLK1)				Prepared & Analyzed: 08/06/2019						
Sulfate	0.55	5.00	mg/L							
LCS (1908051-BS1)				Prepared & Analyzed: 08/06/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110			
LCS Dup (1908051-BSD1)				Prepared & Analyzed: 08/06/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110	0.7	10	
Matrix Spike (1908051-MS1)				Source: 19H0123-07		Prepared & Analyzed: 08/06/2019				
Sulfate	13	5.00	mg/L	12.50	0.72	95	80-120			
Matrix Spike Dup (1908051-MSD1)				Source: 19H0123-07		Prepared & Analyzed: 08/06/2019				
Sulfate	13	5.00	mg/L	12.50	0.72	95	80-120	0.3	10	
Batch 1908125 - E300.0 (2.1)										
Blank (1908125-BLK1)				Prepared & Analyzed: 08/09/2019						
Sulfate	ND	5.00	mg/L							
LCS (1908125-BS1)				Prepared & Analyzed: 08/09/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110			
LCS Dup (1908125-BSD1)				Prepared & Analyzed: 08/09/2019						
Sulfate	12	5.00	mg/L	12.50		98	90-110	0.4	10	
Matrix Spike (1908125-MS1)				Source: 19H0198-01		Prepared & Analyzed: 08/09/2019				
Sulfate	13	5.00	mg/L	12.50	ND	102	80-120			
Matrix Spike (1908125-MS2)				Source: 19G0564-22RE1		Prepared & Analyzed: 08/09/2019				
Sulfate	20	5.00	mg/L	12.50	7.5	97	80-120			
Matrix Spike (1908125-MS3)				Source: 19G0564-21		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	420	50.0	mg/L	125.0	150	213	80-120			M1
Matrix Spike (1908125-MS4)				Source: 19G0569-02RE1		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	190	50.0	mg/L	125.0	64	98	80-120			
Matrix Spike (1908125-MS5)				Source: 19G0570-04RE1		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	280	50.0	mg/L	125.0	160	99	80-120			
Matrix Spike Dup (1908125-MSD1)				Source: 19H0198-01		Prepared & Analyzed: 08/09/2019				
Sulfate	13	5.00	mg/L	12.50	ND	104	80-120	2	10	
Matrix Spike Dup (1908125-MSD2)				Source: 19G0564-22RE1		Prepared & Analyzed: 08/09/2019				
Sulfate	20	5.00	mg/L	12.50	7.5	97	80-120	0.07	10	
Matrix Spike Dup (1908125-MSD3)				Source: 19G0564-21		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	270	50.0	mg/L	125.0	150	97	80-120	42	10	R13
Matrix Spike Dup (1908125-MSD4)				Source: 19G0569-02RE1		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	190	50.0	mg/L	125.0	64	99	80-120	0.8	10	
Matrix Spike Dup (1908125-MSD5)				Source: 19G0570-04RE1		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	280	50.0	mg/L	125.0	160	95	80-120	2	10	



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1960564 DATE _____ PAGE 1 OF 5

PROJECT NAME <u>CQB Quarterly</u> # <u>CC18.10080.00</u>					CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																								
CONTACT NAME : <u>Chris Sherman</u>					NUMBER OF CONTAINERS <u>3000 - 504</u>																								
COMPANY NAME : <u>Freeport McMoran CQB</u>																													
ADDRESS : <u>36 Highway 92</u>																													
CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u>																													
PHONE <u>520-508-7063</u> FAX <u>520-432-1395</u>																													
SAMPLER'S SIGNATURE <u>[Signature]</u>																													
SAMPLE I.D. DATE TIME LAB I.D. SAMPLE MATRIX*																													
<u>CQB WL</u> <u>7-15-19</u> <u>12:05</u> <u>GW</u>																													
<u>GARVER 635</u> <u>7-15-19</u> <u>14:54</u> <u>GW</u>																													
<u>FR20190716</u> <u>7-16-19</u> <u>12:00</u> <u>GW</u>																													
<u>EQ20190716</u> <u>7-16-19</u> <u>12:00</u> <u>GW</u>																													
<u>BMO-2018-3B</u> <u>7-16-19</u> <u>09:09</u> <u>GW</u>																													
<u>BMO-2018-3M</u> <u>7-16-19</u> <u>12:08</u> <u>GW</u>																													
<u>DUP20190716</u> <u>7-16-19</u> <u>12:00</u> <u>GW</u>																													
<u>TM-20 USBP</u> <u>7-16-19</u> <u>13:11</u> <u>GW</u>																													
<u>ZANDER</u> <u>7-16-19</u> <u>15:00</u> <u>GW</u>																													
<u>BMO-2015-2B</u> <u>7-17-19</u> <u>07:57</u> <u>GW</u>																													
<u>BMO-2015-2BL</u> <u>7-17-19</u> <u>07:34</u> <u>GW</u>																													
1. RELINQUISHED BY: Signature <u>[Signature]</u> Printed Name <u>Clear Creek Associates</u> Firm <u>7-19-19 11:30</u> 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 <u>X</u> Y ___ N P.O. # _____ Bill to: <u>CQB</u>					SAMPLE RECEIPT: Total Containers <u>11</u> Temperature <u>1.6</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice				
3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____					4. RECEIVED BY: Signature <u>[Signature]</u> Printed Name _____ Firm <u>TURNER LABORATORIES, INC.</u> <u>7/19/19 1430</u> Date/Time _____					*LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER					SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seals <input type="checkbox"/> Preservation Confirmation <input checked="" type="checkbox"/> ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Container Intact <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No COC/Labels Agree <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/> All samples filtered with a 0.45µm filter, unless noted. Copy results to Ben Daigneau & Fernando Alday.														



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 19G0564 DATE _____ PAGE 1 OF 3

PROJECT NAME <u>CQB Quarterly</u> # <u>CC18.10080.00</u>				CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX												
CONTACT NAME : <u>Chris Sherman</u>				NUMBER OF CONTAINERS <u>3000 - 504</u>												
COMPANY NAME : <u>Freeport McMoran CQB</u>																
ADDRESS : <u>36 Highway 92</u>																
CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u>																
PHONE <u>520-508-7063</u> FAX <u>520-432-1395</u>																
SAMPLER'S SIGNATURE <u>[Signature]</u>																
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*												
<u>BMO-2014-4BL</u>	<u>7-17-14</u>	<u>09:40</u>		<u>GW</u>												
<u>BMO-2014-4B</u>	<u>7-17-14</u>	<u>10:21</u>		<u>GW</u>												
<u>BMO-2015-1B</u>	<u>7-17-14</u>	<u>11:30</u>		<u>GW</u>												
<u>BMO-2015-1BL</u>	<u>7-17-14</u>	<u>12:12</u>		<u>GW</u>												
<u>EAST</u>	<u>7-17-14</u>	<u>14:38</u>		<u>GW</u>												
<u>BMO-2014-2BL</u>	<u>7-18-14</u>	<u>08:12</u>		<u>GW</u>												
<u>BMO-2014-2B4</u>	<u>7-18-14</u>	<u>08:59</u>		<u>GW</u>												
<u>TVI-875</u>	<u>7-18-14</u>	<u>09:24</u>		<u>GW</u>												
<u>BMO-2014-1B4</u>	<u>7-18-14</u>	<u>10:20</u>		<u>GW</u>												
<u>BMO-2014-1BL</u>	<u>7-18-14</u>	<u>11:36</u>		<u>GW</u>												
<u>BMO-2014-3BL</u>	<u>7-18-14</u>	<u>13:52</u>		<u>GW</u>												
1. RELINQUISHED BY: Signature <u>[Signature]</u> Printed Name <u>Clear Creek Associates</u> Firm <u>7-19-14 11:30</u> 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 <u>X</u> Y ___ N P.O. # _____ Bill to: <u>CQB</u>		SAMPLE RECEIPT: Total Containers <u>11</u> Temperature <u>1.6</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice						
3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____		4. RECEIVED BY: Signature <u>[Signature]</u> Printed Name <u>Joseph Kotaw</u> Firm <u>TURNER LABORATORIES, INC.</u> <u>7/19/14 1430</u> Date/Time _____		*LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER		SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seals <input type="checkbox"/> Preservation Confirmation <input checked="" type="checkbox"/> ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Container Intact <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No COC/Labels Agree <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/> All samples filtered with a 0.45µm filter, unless noted. Copy results to Ben Daigneau & Fernando Alday.										



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1960564 DATE _____ PAGE 3 OF 3

PROJECT NAME <u>CQB Quarterly</u> # <u>CC18.10080.00</u>			CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																					
CONTACT NAME : <u>Chris Sherman</u>			NUMBER OF CONTAINERS	<u>300.0 - 504</u>																				
COMPANY NAME : <u>Freeport McMoran CQB</u>																								
ADDRESS : <u>36 Highway 92</u>																								
CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u>																								
PHONE <u>520-508-7063</u> FAX <u>520-432-1395</u>																								
SAMPLER'S SIGNATURE _____																								
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*																				
<u>BMO-2014-384</u>	<u>7-18-19</u>	<u>14:57</u>		<u>GW</u>	<u>1</u>	<u>X</u>																		
<u>TERRY</u>	<u>7-19-19</u>	<u>09:25</u>		<u>GW</u>	<u>1</u>	<u>X</u>																		
<u>RAY</u>	<u>7-19-19</u>	<u>11:02</u>		<u>GW</u>	<u>1</u>	<u>X</u>																		
				<u>GW</u>																				
				<u>GW</u>																				
				<u>GW</u>																				
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				<u>GW</u>																				
1. RELINQUISHED BY: Signature _____ <u>SGKE Alden</u> Printed Name <u>Clear Creek Associates</u> Firm <u>7-19-19 14:30</u> 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 <u>X</u> ___ Y ___ N P.O. # _____ Bill to: <u>CQB</u>		SAMPLE RECEIPT: Total Containers <u>3</u> Temperature <u>1.6</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice														
3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____		4. RECEIVED BY: Signature _____ <u>Joseph Alden</u> Printed Name _____ Firm <u>TURNER LABORATORIES, INC.</u> <u>7/19/19 1430</u> Date/Time _____		*LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER		SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seals <input type="checkbox"/> Preservation Confirmation <input checked="" type="checkbox"/> ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Container Intact <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No COC/Labels Agree <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/> All samples filtered with a 0.45µm filter, unless noted. Copy results to Ben Daigneau & Fernando Alday.																		



August 14, 2019

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 19G0667
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 16 sample(s) on 07/25/2019 for the analyses presented in the following report.

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

Elizabeth Kasik
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Date Received: 07/25/2019

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
19G0667-01	ROGERS 596	Ground Water	07/22/2019 1139
19G0667-02	BMO-2008-4B	Ground Water	07/22/2019 1334
19G0667-03	EQB20190722	Ground Water	07/22/2019 1300
19G0667-04	FB20190722	Ground Water	07/22/2019 1300
19G0667-05	DUP20190722	Ground Water	07/22/2019 1200
19G0667-06	AWC-05	Ground Water	07/23/2019 0830
19G0667-07	AWC-03	Ground Water	07/23/2019 0908
19G0667-08	AWC-04	Ground Water	07/23/2019 0934
19G0667-09	Echave	Ground Water	07/23/2019 1024
19G0667-10	Weiskopf 802	Ground Water	07/24/2019 1136
19G0667-11	Weiskopf 897	Ground Water	07/23/2019 1447
19G0667-12	COB MW-3	Ground Water	07/24/2019 0845
19G0667-13	COB MW-2	Ground Water	07/24/2019 0925
19G0667-14	COB MW-1B	Ground Water	07/24/2019 1126
19G0667-15	FRANCO 383	Ground Water	07/24/2019 1331
19G0667-16	Noteman	Ground Water	07/24/2019 1451

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Date Received: 07/25/2019

Case Narrative

E8 Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

M1 Matrix spike recovery was high; the associated LCS/LCSD was acceptable.

R13 MS/MSD RPD exceeded method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.

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: 19G0667
Lab Sample ID: 19G0667-01

Client Sample ID: ROGERS 596
Collection Date/Time: 07/22/2019 1139
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	835	150	500		mg/L	100	08/12/2019 1600	08/13/2019 0114	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-02

Client Sample ID: BMO-2008-4B
Collection Date/Time: 07/22/2019 1334
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	11.2	1.50	5.00		mg/L	1	08/12/2019 1600	08/13/2019 0133	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-03

Client Sample ID: EQB20190722
Collection Date/Time: 07/22/2019 1300
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	1.50	5.00	E8	mg/L	1	08/12/2019 1600	08/13/2019 0151	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-04

Client Sample ID: FB20190722
Collection Date/Time: 07/22/2019 1300
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	1.50	5.00	E8	mg/L	1	08/12/2019 1600	08/13/2019 0210	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-05

Client Sample ID: DUP20190722
Collection Date/Time: 07/22/2019 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	11.2	1.50	5.00		mg/L	1	08/12/2019 1600	08/13/2019 0229	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-06

Client Sample ID: AWC-05
Collection Date/Time: 07/23/2019 0830
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	20.5	1.50	5.00		mg/L	1	08/12/2019 1600	08/13/2019 0248	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-07

Client Sample ID: AWC-03
Collection Date/Time: 07/23/2019 0908
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	68.6	15.0	50.0		mg/L	10	08/09/2019 1650	08/10/2019 0643	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-08

Client Sample ID: AWC-04
Collection Date/Time: 07/23/2019 0934
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	24.2	1.50	5.00		mg/L	1	08/12/2019 1600	08/13/2019 0307	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-09

Client Sample ID: Echave
Collection Date/Time: 07/23/2019 1024
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	23.0	1.50	5.00		mg/L	1	08/12/2019 1600	08/13/2019 0422	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-10

Client Sample ID: Weiskopf 802
Collection Date/Time: 07/24/2019 1136
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	657	75.0	250		mg/L	50	08/12/2019 1230	08/13/2019 0441	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-11

Client Sample ID: Weiskopf 897
Collection Date/Time: 07/23/2019 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	16.1	1.50	5.00		mg/L	1	08/12/2019 1230	08/13/2019 0500	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-12

Client Sample ID: COB MW-3
Collection Date/Time: 07/24/2019 0845
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	68.5	3.00	10.0		mg/L	2	08/12/2019 1230	08/13/2019 0518	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-13

Client Sample ID: COB MW-2
Collection Date/Time: 07/24/2019 0925
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	24.6	1.50	5.00		mg/L	1	08/12/2019 1230	08/13/2019 0537	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-14

Client Sample ID: COB MW-1B
Collection Date/Time: 07/24/2019 1126
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	827	150	500		mg/L	100	08/12/2019 1230	08/13/2019 0556	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-15

Client Sample ID: FRANCO 383
Collection Date/Time: 07/24/2019 1331
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	349	30.0	100		mg/L	20	08/13/2019 1550	08/13/2019 1730	EJ

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Lab Sample ID: 19G0667-16

Client Sample ID: Noteman
Collection Date/Time: 07/24/2019 1451
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	235	15.0	50.0		mg/L	10	08/12/2019 1230	08/13/2019 0634	EJ

Client: Freeport McMoran - Copper Queen Branch
 Project: CQB
 Work Order: 19G0667
 Date Received: 07/25/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1908125 - E300.0 (2.1)										
Blank (1908125-BLK1)				Prepared & Analyzed: 08/09/2019						
Sulfate	ND	5.00	mg/L							
LCS (1908125-BS1)				Prepared & Analyzed: 08/09/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110			
LCS Dup (1908125-BSD1)				Prepared & Analyzed: 08/09/2019						
Sulfate	12	5.00	mg/L	12.50		98	90-110	0.4	10	
Matrix Spike (1908125-MS1)				Source: 19H0198-01		Prepared & Analyzed: 08/09/2019				
Sulfate	13	5.00	mg/L	12.50	ND	102	80-120			
Matrix Spike (1908125-MS2)				Source: 19G0564-22RE1		Prepared & Analyzed: 08/09/2019				
Sulfate	20	5.00	mg/L	12.50	7.5	97	80-120			
Matrix Spike (1908125-MS3)				Source: 19G0564-21		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	420	50.0	mg/L	125.0	150	213	80-120			M1
Matrix Spike (1908125-MS4)				Source: 19G0569-02RE1		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	190	50.0	mg/L	125.0	64	98	80-120			
Matrix Spike (1908125-MS5)				Source: 19G0570-04RE1		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	280	50.0	mg/L	125.0	160	99	80-120			
Matrix Spike Dup (1908125-MSD1)				Source: 19H0198-01		Prepared & Analyzed: 08/09/2019				
Sulfate	13	5.00	mg/L	12.50	ND	104	80-120	2	10	
Matrix Spike Dup (1908125-MSD2)				Source: 19G0564-22RE1		Prepared & Analyzed: 08/09/2019				
Sulfate	20	5.00	mg/L	12.50	7.5	97	80-120	0.07	10	
Matrix Spike Dup (1908125-MSD3)				Source: 19G0564-21		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	270	50.0	mg/L	125.0	150	97	80-120	42	10	R13
Matrix Spike Dup (1908125-MSD4)				Source: 19G0569-02RE1		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	190	50.0	mg/L	125.0	64	99	80-120	0.8	10	
Matrix Spike Dup (1908125-MSD5)				Source: 19G0570-04RE1		Prepared: 08/09/2019 Analyzed: 08/12/2019				
Sulfate	280	50.0	mg/L	125.0	160	95	80-120	2	10	
Batch 1908137 - E300.0 (2.1)										
Blank (1908137-BLK1)				Prepared & Analyzed: 08/12/2019						
Sulfate	ND	5.00	mg/L							
LCS (1908137-BS1)				Prepared & Analyzed: 08/12/2019						
Sulfate	12	5.00	mg/L	12.50		99	90-110			
LCS Dup (1908137-BSD1)				Prepared & Analyzed: 08/12/2019						
Sulfate	12	5.00	mg/L	12.50		100	90-110	0.6	10	
Matrix Spike (1908137-MS1)				Source: 19H0330-01		Prepared & Analyzed: 08/12/2019				
Sulfate	19	5.00	mg/L	12.50	6.5	101	80-120			

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19G0667
Date Received: 07/25/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1908137 - E300.0 (2.1)										
Matrix Spike Dup (1908137-MSD1)		Source: 19H0330-01			Prepared & Analyzed: 08/12/2019					
Sulfate	18	5.00	mg/L	12.50	6.5	95	80-120	4	10	



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 # 1960667 DATE _____ PAGE 1 OF 2

PROJECT NAME <u>CQB Quarterly</u> # <u>CC18.10080.00</u>					CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX														
CONTACT NAME : <u>Chris Sherman</u>					<div style="display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-right: 10px;">NUMBER OF CONTAINERS</div> <div style="font-size: 2em; font-weight: bold;">3000 - 504</div> </div>														
COMPANY NAME : <u>Freeport McMoRan CQB</u>																			
ADDRESS : <u>36 Highway 92</u>																			
CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u>																			
PHONE <u>520-508-7063</u> FAX <u>520-432-1395</u>																			
SAMPLER'S SIGNATURE <u>[Signature]</u>																			
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*															
ROGERS 596	7-22-19	11:39		GW															
BMO-2008-4B	7-22-19	13:39		GW															
EQB20190722	7-22-19	13:00		GW															
FB20190722	7-22-19	13:00		GW															
DUP20190722	7-22-19	12:00		GW															
AWC-05	7-23-19	09:30		GW															
AWC-03	7-23-19	09:08		GW															
AWC-04	7-23-19	09:34		GW															
ECHAIVE	7-23-19	10:24		GW															
WEISKOPF 802	7-23-19	11:36		GW															
WEISKOPF 897	7-23-19	14:47		GW															
1. RELINQUISHED BY: <u>[Signature]</u> Signature <u>Jake Alda</u> Printed Name <u>Clear Creek Associates</u> Firm <u>7-25-19 10:30</u> Date/Time		2. RECEIVED BY: Signature Printed Name Firm Date/Time		TURNAROUND REQUIREMENTS: <input checked="" type="checkbox"/> 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 <input checked="" type="checkbox"/> Y ___ N P.O. # _____ Bill to: <u>CQB</u>			SAMPLE RECEIPT: Total Containers <u>11</u> Temperature <u>10.4</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice						
3. RELINQUISHED BY: Signature Printed Name Firm Date/Time		4. RECEIVED BY: <u>[Signature]</u> Signature <u>Joseph C. Felu</u> Printed Name <u>TURNER LABORATORIES, INC.</u> Firm <u>7/25/19 09:30</u> Date/Time		*LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER			SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seals <input type="checkbox"/> Preservation Confirmation <input checked="" type="checkbox"/> ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Container Intact <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No COC/Labels Agree <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/> All samples filtered with a 0.45µm filter, unless noted. Copy results to Ben Daigneau & Fernando Alday.												



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 19E0667 DATE _____ PAGE 2 OF 2

PROJECT NAME <u>CQB Quarterly</u> # <u>CC18.10080.00</u>					CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																																																																																																																																																																																																																																																																																														
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1. RELINQUISHED BY: Signature <u>Mike Allen</u> Printed Name <u>Clear Creek Associates</u> Firm <u>7-25-19 109:30</u> Date/Time _____					2. RECEIVED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____					TURNAROUND REQUIREMENTS: <input checked="" type="checkbox"/> Standard (approx. 10 days)* <input type="checkbox"/> Next day <input type="checkbox"/> 2 Day <input type="checkbox"/> 5 Day* Email Preliminary Results To: _____ * Working Days					REPORT REQUIREMENTS: <input checked="" type="checkbox"/> I. Routine Report <input type="checkbox"/> II. Report (includes DUP,MS,MSD, as required, may be charged as samples) <input type="checkbox"/> III. Date Validation Report (Includes All Raw Data) Add 10% to invoice					INVOICE INFORMATION: Account <input checked="" type="checkbox"/> Y <input type="checkbox"/> N P.O. # _____ Bill to: <u>CQB</u>					SAMPLE RECEIPT: Total Containers <u>5</u> Temperature <u>1.4</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice																																																																																																																																																																																																																																																																										
3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____					4. RECEIVED BY: Signature <u>Joseph Catala</u> Printed Name _____ Firm <u>TURNER LABORATORIES, INC.</u> <u>7/25/19 0931</u> Date/Time _____					*LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER					SPECIAL INSTRUCTIONS/COMMENTS: <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td>Custody Seals <input type="checkbox"/></td> <td>Preservation Confirmation <input checked="" type="checkbox"/></td> </tr> <tr> <td>ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td>Container Intact <input checked="" type="checkbox"/></td> <td>Appropriate Head Space <input checked="" type="checkbox"/></td> </tr> <tr> <td>Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td>COC/Labels Agree <input checked="" type="checkbox"/></td> <td>Received Within Hold Time <input checked="" type="checkbox"/></td> </tr> </table> <p>All samples filtered with a 0.45µm filter, unless noted. Copy results to Ben Daigneau & Fernando Alday.</p>															Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seals <input type="checkbox"/>	Preservation Confirmation <input checked="" type="checkbox"/>	ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No	Container Intact <input checked="" type="checkbox"/>	Appropriate Head Space <input checked="" type="checkbox"/>	Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No	COC/Labels Agree <input checked="" type="checkbox"/>	Received Within Hold Time <input checked="" type="checkbox"/>																																																																																																																																																																																																																																																													
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0109**

Reported: 22-Aug-19 15:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
TM-16	X9H0109-01	Ground Water	30-Jul-19 06:00	CLS	07-Aug-2019	
BMO-2010-1M	X9H0109-02	Ground Water	30-Jul-19 11:10	CLS	07-Aug-2019	
BMO-2010-2M	X9H0109-03	Ground Water	30-Jul-19 12:10	CLS	07-Aug-2019	
BMO-2008-1G	X9H0109-04	Ground Water	31-Jul-19 09:00	CLS	07-Aug-2019	
BMO-2012-1M	X9H0109-05	Ground Water	31-Jul-19 11:10	CLS	07-Aug-2019	
TM-6	X9H0109-06	Ground Water	31-Jul-19 13:15	CLS	07-Aug-2019	
BMO-2008-10GL	X9H0109-07	Ground Water	01-Aug-19 11:00	CLS	07-Aug-2019	
BMO-2008-10GU	X9H0109-08	Ground Water	01-Aug-19 13:00	CLS	07-Aug-2019	
BMO-2008-11G	X9H0109-09	Ground Water	06-Aug-19 07:00	CLS	07-Aug-2019	

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.

Analyses were performed in accordance with SVL standard operating procedures and calibrations were performed and met SVL internal QC criteria.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0109**

Reported: 22-Aug-19 15:28

Client Sample ID: **TM-16**

Sampled: 30-Jul-19 06:00

SVL Sample ID: **X9H0109-01 (Ground Water)**

Received: 07-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	479	mg/L	7.50	4.50	25	X933026	DT	08/12/19 15:50	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0109**

Reported: 22-Aug-19 15:28

Client Sample ID: **BMO-2010-1M**

Sampled: 30-Jul-19 11:10

SVL Sample ID: **X9H0109-02 (Ground Water)**

Received: 07-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	173	mg/L	3.00	1.80	10	X933026	DT	08/12/19 16:06	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0109**

Reported: 22-Aug-19 15:28

Client Sample ID: **BMO-2010-2M**

SVL Sample ID: **X9H0109-03 (Ground Water)**

Sampled: 30-Jul-19 12:10

Received: 07-Aug-19

Sampled By: CLS

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	894	mg/L	15.0	9.00	50	X933026	DT	08/12/19 16:22	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0109**

Reported: 22-Aug-19 15:28

Client Sample ID: **BMO-2008-1G**

Sampled: 31-Jul-19 09:00

SVL Sample ID: **X9H0109-04 (Ground Water)**

Received: 07-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	100	mg/L	3.00	1.80	10	X933026	DT	08/12/19 16:38	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0109**

Reported: 22-Aug-19 15:28

Client Sample ID: **BMO-2012-1M**

Sampled: 31-Jul-19 11:10

SVL Sample ID: **X9H0109-05 (Ground Water)**

Received: 07-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	213	mg/L	3.00	1.80	10	X933026	DT	08/12/19 17:26	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0109**

Reported: 22-Aug-19 15:28

Client Sample ID: **TM-6**

Sampled: 31-Jul-19 13:15

SVL Sample ID: **X9H0109-06 (Ground Water)**

Received: 07-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	35.6	mg/L	0.30	0.18		X933026	DT	08/12/19 17:42	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0109**

Reported: 22-Aug-19 15:28

Client Sample ID: **BMO-2008-10GL**

Sampled: 01-Aug-19 11:00

SVL Sample ID: **X9H0109-07 (Ground Water)**

Received: 07-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	1770	mg/L	15.0	9.00	50	X933026	DT	08/12/19 17:58	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0109**

Reported: 22-Aug-19 15:28

Client Sample ID: **BMO-2008-10GU**

Sampled: 01-Aug-19 13:00

SVL Sample ID: **X9H0109-08 (Ground Water)**

Received: 07-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	1830	mg/L	15.0	9.00	50	X933026	DT	08/12/19 18:14	D2
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0109**

Reported: 22-Aug-19 15:28

Client Sample ID: **BMO-2008-11G**

Sampled: 06-Aug-19 07:00

SVL Sample ID: **X9H0109-09 (Ground Water)**

Received: 07-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	12.2	mg/L	0.30	0.18		X933026	DT	08/12/19 18:30	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0109**
Reported: 22-Aug-19 15:28

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.18	0.30	X933026	12-Aug-19	
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Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	10.2	10.0	102	90 - 110	X933026	12-Aug-19	
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Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Recovery	Acceptance Limits	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	62.9	54.3	10.0	0.30R>S	90 - 110	X933026	13-Aug-19	D2,M4
EPA 300.0	Sulfate as SO4	mg/L	105	96.1	10.0	92.7	90 - 110	X933026	15-Aug-19	D2

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	% Rec.	RPD	RPD Limit	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	95.2	105	10.0	0.30R>S	10.2	20	X933026	15-Aug-19	D2,M4
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Notes and Definitions

- D2 Sample required dilution due to high concentration of target analyte.
- M4 The analysis of the spiked sample required a dilution such that the spike recovery calculation does not provide useful information. The LCS recovery was acceptable.
- LCS Laboratory Control Sample (Blank Spike)
- RPD Relative Percent Difference
- UDL A result is less than the detection limit
- 0.30R>S % recovery not applicable; spike level is less than 30% of the sample concentration
- <RL A result is less than the reporting limit
- MRL Method Reporting Limit
- MDL Method Detection Limit
- N/A Not Applicable



Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BM0-2008-6M	X9H0267-01	Ground Water	06-Aug-19 10:00	CLS	14-Aug-2019	
BM0-2008-6B	X9H0267-02	Ground Water	06-Aug-19 10:55	CLS	14-Aug-2019	
BM0-2008-3B	X9H0267-03	Ground Water	06-Aug-19 13:20	CLS	14-Aug-2019	
TM-42	X9H0267-04	Ground Water	07-Aug-19 06:10	CLS	14-Aug-2019	
TM-19A	X9H0267-05	Ground Water	07-Aug-19 07:25	CLS	14-Aug-2019	
HOBAN	X9H0267-06	Ground Water	07-Aug-19 08:30	CLS	14-Aug-2019	
BM0-2008-5M	X9H0267-07	Ground Water	07-Aug-19 12:40	CLS	14-Aug-2019	
BM0-2008-5B	X9H0267-08	Ground Water	07-Aug-19 13:25	CLS	14-Aug-2019	
TM-2A	X9H0267-09	Ground Water	08-Aug-19 07:00	CLS	14-Aug-2019	
BM0-2008-8M	X9H0267-10	Ground Water	08-Aug-19 08:10	CLS	14-Aug-2019	
BM0-2008-8B	X9H0267-11	Ground Water	08-Aug-19 09:00	CLS	14-Aug-2019	
DUP-080819	X9H0267-12	Ground Water	08-Aug-19 10:35	CLS	14-Aug-2019	
BM0-2008-7M	X9H0267-13	Ground Water	08-Aug-19 10:35	CLS	14-Aug-2019	
EQB-081219	X9H0267-14	Ground Water	12-Aug-19 06:30	CLS	14-Aug-2019	
FB-081219	X9H0267-15	Ground Water	12-Aug-19 06:35	CLS	14-Aug-2019	
BM0-2008-9M	X9H0267-16	Ground Water	12-Aug-19 07:20	CLS	14-Aug-2019	

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.

Analyses were performed in accordance with SVL standard operating procedures and calibrations were performed and met SVL internal QC criteria.

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: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **BM0-2008-6M**

Sampled: 06-Aug-19 10:00

SVL Sample ID: **X9H0267-01 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	199	mg/L	3.00	1.80	10	X934070	RS	08/22/19 11:36	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **BM0-2008-6B**

Sampled: 06-Aug-19 10:55

SVL Sample ID: **X9H0267-02 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	8.00	mg/L	0.30	0.18		X934070	RS	08/22/19 12:18	
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Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **BM0-2008-3B**

Sampled: 06-Aug-19 13:20

SVL Sample ID: **X9H0267-03 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	165	mg/L	3.00	1.80	10	X934070	RS	08/22/19 13:11	D2
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Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **TM-42**

Sampled: 07-Aug-19 06:10

SVL Sample ID: **X9H0267-04 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	527	mg/L	7.50	4.50	25	X934070	RS	08/22/19 13:28	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **TM-19A**

Sampled: 07-Aug-19 07:25

SVL Sample ID: **X9H0267-05 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	56.6	mg/L	3.00	1.80	10	X934070	RS	08/22/19 14:21	D2
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Dianne Gardner
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **HOBAN**

Sampled: 07-Aug-19 08:30

SVL Sample ID: **X9H0267-06 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	417	mg/L	15.0	9.00	50	X934070	RS	08/22/19 14:38	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **BM0-2008-5M**

Sampled: 07-Aug-19 12:40

SVL Sample ID: **X9H0267-07 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	152	mg/L	3.00	1.80	10	X934070	RS	08/22/19 14:56	D2
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Dianne Gardner
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Freeport McMoRan - Bisbee
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **BM0-2008-5B**

Sampled: 07-Aug-19 13:25

SVL Sample ID: **X9H0267-08 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	239	mg/L	3.00	1.80	10	X934070	RS	08/22/19 15:13	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **TM-2A**

Sampled: 08-Aug-19 07:00

SVL Sample ID: **X9H0267-09 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	19.4	mg/L	0.30	0.18		X934070	RS	08/22/19 15:31	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **BM0-2008-8M**

Sampled: 08-Aug-19 08:10

SVL Sample ID: **X9H0267-10 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	66.8	mg/L	3.00	1.80	10	X934070	RS	08/22/19 16:06	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



One Government Gulch - PO Box 929

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **BM0-2008-8B**

Sampled: 08-Aug-19 09:00

SVL Sample ID: **X9H0267-11 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	1130	mg/L	15.0	9.00	50	X934070	RS	08/22/19 16:24	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
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Freeport McMoRan - Bisbee
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **DUP-080819**

Sampled: 08-Aug-19 10:35

SVL Sample ID: **X9H0267-12 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

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	14.9	mg/L	3.00	1.80	10	X934070	RS	08/22/19 16:41	D1
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Dianne Gardner
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **BM0-2008-7M**

Sampled: 08-Aug-19 10:35

SVL Sample ID: **X9H0267-13 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	35.5	mg/L	0.30	0.18		X934070	RS	08/22/19 17:00	
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Dianne Gardner
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **EQB-081219**

Sampled: 12-Aug-19 06:30

SVL Sample ID: **X9H0267-14 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	0.43	mg/L	0.30	0.18		X934070	RS	08/22/19 17:52	
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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **FB-081219**

Sampled: 12-Aug-19 06:35

SVL Sample ID: **X9H0267-15 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	0.49	mg/L	0.30	0.18		X934070	RS	08/22/19 18:10	
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Freeport McMoRan - Bisbee
36 West Hwy 92
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 28-Aug-19 17:42

Client Sample ID: **BM0-2008-9M**

Sampled: 12-Aug-19 07:20

SVL Sample ID: **X9H0267-16 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	91.7	mg/L	3.00	1.80	10	X934070	RS	08/22/19 18:27	D2
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Dianne Gardner
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**
Reported: 28-Aug-19 17:42

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.18	0.30	X934070	22-Aug-19	
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Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	9.49	10.0	94.9	90 - 110	X934070	22-Aug-19	
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Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Recovery	Acceptance Limits	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	17.7	8.00	10.0	96.8	90 - 110	X934070	22-Aug-19	
EPA 300.0	Sulfate as SO4	mg/L	30.0	19.4	10.0	107	90 - 110	X934070	22-Aug-19	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	% Rec.	RPD	RPD Limit	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	17.4	17.7	10.0	93.9	1.6	20	X934070	22-Aug-19	
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Notes and Definitions

- D1 Sample required dilution due to matrix.
- 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
- 0.30R>S % recovery not applicable; spike level is less than 30% of the sample concentration
- <RL A result is less than the reporting limit
- MRL Method Reporting Limit
- MDL Method Detection Limit
- N/A Not Applicable



Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BM0-2008-6M	X9H0267-01	Ground Water	06-Aug-19 10:00	CLS	14-Aug-2019	
BM0-2008-6B	X9H0267-02	Ground Water	06-Aug-19 10:55	CLS	14-Aug-2019	
BM0-2008-3B	X9H0267-03	Ground Water	06-Aug-19 13:20	CLS	14-Aug-2019	
TM-42	X9H0267-04	Ground Water	07-Aug-19 06:10	CLS	14-Aug-2019	
TM-19A	X9H0267-05	Ground Water	07-Aug-19 07:25	CLS	14-Aug-2019	
HOBAN	X9H0267-06	Ground Water	07-Aug-19 08:30	CLS	14-Aug-2019	
BM0-2008-5M	X9H0267-07	Ground Water	07-Aug-19 12:40	CLS	14-Aug-2019	
BM0-2008-5B	X9H0267-08	Ground Water	07-Aug-19 13:25	CLS	14-Aug-2019	
TM-2A	X9H0267-09	Ground Water	08-Aug-19 07:00	CLS	14-Aug-2019	
BM0-2008-8M	X9H0267-10	Ground Water	08-Aug-19 08:10	CLS	14-Aug-2019	
BM0-2008-8B	X9H0267-11	Ground Water	08-Aug-19 09:00	CLS	14-Aug-2019	
DUP-080819	X9H0267-12	Ground Water	08-Aug-19 10:35	CLS	14-Aug-2019	
BM0-2008-7M	X9H0267-13	Ground Water	08-Aug-19 10:35	CLS	14-Aug-2019	
EQB-081219	X9H0267-14	Ground Water	12-Aug-19 06:30	CLS	14-Aug-2019	
FB-081219	X9H0267-15	Ground Water	12-Aug-19 06:35	CLS	14-Aug-2019	
BM0-2008-9M	X9H0267-16	Ground Water	12-Aug-19 07:20	CLS	14-Aug-2019	

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.

Analyses were performed in accordance with SVL standard operating procedures and calibrations were performed and met SVL internal QC criteria.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

Case Narrative: X9H0267

10/1/19 DG Report is reissued with client requested reanalysis results on sample 12. The original results were not confirmed. The reanalysis is reported in duplicate.



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **BM0-2008-6M**

Sampled: 06-Aug-19 10:00

SVL Sample ID: **X9H0267-01 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	199	mg/L	3.00	1.80	10	X934070	RS	08/22/19 11:36	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **BM0-2008-6B**

Sampled: 06-Aug-19 10:55

SVL Sample ID: **X9H0267-02 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

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	8.00	mg/L	0.30	0.18		X934070	RS	08/22/19 12:18	
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **BM0-2008-3B**

Sampled: 06-Aug-19 13:20

SVL Sample ID: **X9H0267-03 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	165	mg/L	3.00	1.80	10	X934070	RS	08/22/19 13:11	D2
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Dianne Gardner
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **TM-42**

Sampled: 07-Aug-19 06:10

SVL Sample ID: **X9H0267-04 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	527	mg/L	7.50	4.50	25	X934070	RS	08/22/19 13:28	D2
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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **TM-19A**

Sampled: 07-Aug-19 07:25

SVL Sample ID: **X9H0267-05 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	56.6	mg/L	3.00	1.80	10	X934070	RS	08/22/19 14:21	D2
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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **HOBAN**

Sampled: 07-Aug-19 08:30

SVL Sample ID: **X9H0267-06 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	417	mg/L	15.0	9.00	50	X934070	RS	08/22/19 14:38	D2
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **BM0-2008-5M**

Sampled: 07-Aug-19 12:40

SVL Sample ID: **X9H0267-07 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	152	mg/L	3.00	1.80	10	X934070	RS	08/22/19 14:56	D2
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **BM0-2008-5B**

Sampled: 07-Aug-19 13:25

SVL Sample ID: **X9H0267-08 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	239	mg/L	3.00	1.80	10	X934070	RS	08/22/19 15:13	D2
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **TM-2A**

Sampled: 08-Aug-19 07:00

SVL Sample ID: **X9H0267-09 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	19.4	mg/L	0.30	0.18		X934070	RS	08/22/19 15:31	
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **BM0-2008-8M**

Sampled: 08-Aug-19 08:10

SVL Sample ID: **X9H0267-10 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	66.8	mg/L	3.00	1.80	10	X934070	RS	08/22/19 16:06	D2
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **BM0-2008-8B**

Sampled: 08-Aug-19 09:00

SVL Sample ID: **X9H0267-11 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

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	1130	mg/L	15.0	9.00	50	X934070	RS	08/22/19 16:24	D2
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **DUP-080819**

SVL Sample ID: **X9H0267-12 (Ground Water)**

Sampled: 08-Aug-19 10:35

Received: 14-Aug-19

Sampled By: CLS

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
--------	---------	--------	-------	----	-----	----------	-------	---------	----------	-------

Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	35.1	mg/L	0.30	0.18		X934070	RS	10/01/19 10:25	H3
EPA 300.0	Sulfate as SO4	35.1	mg/L	0.30	0.18		X934070	RS	10/01/19 10:42	H3

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **BM0-2008-7M**

Sampled: 08-Aug-19 10:35

SVL Sample ID: **X9H0267-13 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	35.5	mg/L	0.30	0.18		X934070	RS	08/22/19 17:00	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **EQB-081219**

Sampled: 12-Aug-19 06:30

SVL Sample ID: **X9H0267-14 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	0.43	mg/L	0.30	0.18		X934070	RS	08/22/19 17:52	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **FB-081219**

Sampled: 12-Aug-19 06:35

SVL Sample ID: **X9H0267-15 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	0.49	mg/L	0.30	0.18		X934070	RS	08/22/19 18:10	
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Dianne Gardner
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 01-Oct-19 14:26

Client Sample ID: **BM0-2008-9M**

Sampled: 12-Aug-19 07:20

SVL Sample ID: **X9H0267-16 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	91.7	mg/L	3.00	1.80	10	X934070	RS	08/22/19 18:27	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**
Reported: 01-Oct-19 14:26

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.18	0.30	X934070	22-Aug-19	
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Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	9.49	10.0	94.9	90 - 110	X934070	22-Aug-19	
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Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Recovery	Acceptance Limits	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	17.7	8.00	10.0	96.8	90 - 110	X934070	22-Aug-19	
EPA 300.0	Sulfate as SO4	mg/L	30.0	19.4	10.0	107	90 - 110	X934070	22-Aug-19	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	% Rec.	RPD	RPD Limit	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	17.4	17.7	10.0	93.9	1.6	20	X934070	22-Aug-19	
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Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
H3	Sample was received and/or analysis requested past holding time.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
0.30R>S	% recovery not applicable; spike level is less than 30% of the sample concentration
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable



Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BM0-2008-6M	X9H0267-01	Ground Water	06-Aug-19 10:00	CLS	14-Aug-2019	
BM0-2008-6B	X9H0267-02	Ground Water	06-Aug-19 10:55	CLS	14-Aug-2019	
BM0-2008-3B	X9H0267-03	Ground Water	06-Aug-19 13:20	CLS	14-Aug-2019	
TM-42	X9H0267-04	Ground Water	07-Aug-19 06:10	CLS	14-Aug-2019	
TM-19A	X9H0267-05	Ground Water	07-Aug-19 07:25	CLS	14-Aug-2019	
HOBAN	X9H0267-06	Ground Water	07-Aug-19 08:30	CLS	14-Aug-2019	
BM0-2008-5M	X9H0267-07	Ground Water	07-Aug-19 12:40	CLS	14-Aug-2019	
BM0-2008-5B	X9H0267-08	Ground Water	07-Aug-19 13:25	CLS	14-Aug-2019	
TM-2A	X9H0267-09	Ground Water	08-Aug-19 07:00	CLS	14-Aug-2019	
BM0-2008-8M	X9H0267-10	Ground Water	08-Aug-19 08:10	CLS	14-Aug-2019	
BM0-2008-8B	X9H0267-11	Ground Water	08-Aug-19 09:00	CLS	14-Aug-2019	
DUP-080819	X9H0267-12	Ground Water	08-Aug-19 10:35	CLS	14-Aug-2019	
BM0-2008-7M	X9H0267-13	Ground Water	08-Aug-19 10:35	CLS	14-Aug-2019	
EQB-081219	X9H0267-14	Ground Water	12-Aug-19 06:30	CLS	14-Aug-2019	
FB-081219	X9H0267-15	Ground Water	12-Aug-19 06:35	CLS	14-Aug-2019	
BM0-2008-9M	X9H0267-16	Ground Water	12-Aug-19 07:20	CLS	14-Aug-2019	

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.

Analyses were performed in accordance with SVL standard operating procedures and calibrations were performed and met SVL internal QC criteria.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

Case Narrative: X9H0267

10/7/19 DG Report is reissued with client requested reanalysis results on sample 6. The original result was not confirmed. The reanalysis is reported in duplicate.

10/1/19 DG Report is reissued with client requested reanalysis results on sample 12. The original results were not confirmed. The reanalysis is reported in duplicate.



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **BM0-2008-6M**

Sampled: 06-Aug-19 10:00

SVL Sample ID: **X9H0267-01 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	199	mg/L	3.00	1.80	10	X934070	RS	08/22/19 11:36	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **BM0-2008-6B**

Sampled: 06-Aug-19 10:55

SVL Sample ID: **X9H0267-02 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	8.00	mg/L	0.30	0.18		X934070	RS	08/22/19 12:18	
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Dianne Gardner
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **BM0-2008-3B**

Sampled: 06-Aug-19 13:20

SVL Sample ID: **X9H0267-03 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	165	mg/L	3.00	1.80	10	X934070	RS	08/22/19 13:11	D2
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Dianne Gardner
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **TM-42**

Sampled: 07-Aug-19 06:10

SVL Sample ID: **X9H0267-04 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	527	mg/L	7.50	4.50	25	X934070	RS	08/22/19 13:28	D2
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Dianne Gardner
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **TM-19A**

Sampled: 07-Aug-19 07:25

SVL Sample ID: **X9H0267-05 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	56.6	mg/L	3.00	1.80	10	X934070	RS	08/22/19 14:21	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **HOBAN**

Sampled: 07-Aug-19 08:30

SVL Sample ID: **X9H0267-06 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	923	mg/L	15.0	9.00	50	X934070	RS	10/02/19 22:51	D2,H1
EPA 300.0	Sulfate as SO4	930	mg/L	30.0	18.0	100	X934070	RS	10/02/19 23:06	D2,H1

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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **BM0-2008-5M**

Sampled: 07-Aug-19 12:40

SVL Sample ID: **X9H0267-07 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	152	mg/L	3.00	1.80	10	X934070	RS	08/22/19 14:56	D2
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Dianne Gardner
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **BM0-2008-5B**

Sampled: 07-Aug-19 13:25

SVL Sample ID: **X9H0267-08 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	239	mg/L	3.00	1.80	10	X934070	RS	08/22/19 15:13	D2
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Dianne Gardner
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **TM-2A**

Sampled: 08-Aug-19 07:00

SVL Sample ID: **X9H0267-09 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	19.4	mg/L	0.30	0.18		X934070	RS	08/22/19 15:31	
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Dianne Gardner
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **BM0-2008-8M**

Sampled: 08-Aug-19 08:10

SVL Sample ID: **X9H0267-10 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	66.8	mg/L	3.00	1.80	10	X934070	RS	08/22/19 16:06	D2
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Dianne Gardner
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Freeport McMoRan - Bisbee
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **BM0-2008-8B**

Sampled: 08-Aug-19 09:00

SVL Sample ID: **X9H0267-11 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	1130	mg/L	15.0	9.00	50	X934070	RS	08/22/19 16:24	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **DUP-080819**

Sampled: 08-Aug-19 10:35

SVL Sample ID: **X9H0267-12 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	35.1	mg/L	0.30	0.18		X934070	RS	10/01/19 10:25	H1
EPA 300.0	Sulfate as SO4	35.1	mg/L	0.30	0.18		X934070	RS	10/01/19 10:42	H1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
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Freeport McMoRan - Bisbee
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **BM0-2008-7M**

Sampled: 08-Aug-19 10:35

SVL Sample ID: **X9H0267-13 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	35.5	mg/L	0.30	0.18		X934070	RS	08/22/19 17:00	
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Dianne Gardner
Project Manager



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36 West Hwy 92
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Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **EQB-081219**

Sampled: 12-Aug-19 06:30

SVL Sample ID: **X9H0267-14 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	0.43	mg/L	0.30	0.18		X934070	RS	08/22/19 17:52	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **FB-081219**

Sampled: 12-Aug-19 06:35

SVL Sample ID: **X9H0267-15 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

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	0.49	mg/L	0.30	0.18		X934070	RS	08/22/19 18:10	
-----------	----------------	------	------	------	------	--	---------	----	----------------	--

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**

Reported: 07-Oct-19 11:04

Client Sample ID: **BM0-2008-9M**

Sampled: 12-Aug-19 07:20

SVL Sample ID: **X9H0267-16 (Ground Water)**

Received: 14-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	91.7	mg/L	3.00	1.80	10	X934070	RS	08/22/19 18:27	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0267**
Reported: 07-Oct-19 11:04

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.18	0.30	X934070	22-Aug-19	
-----------	----------------	------	-------	------	------	---------	-----------	--

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	9.49	10.0	94.9	90 - 110	X934070	22-Aug-19	
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Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Recovery	Acceptance Limits	Batch ID	Analyzed	Notes
--------	---------	-------	--------------	-------------------	-----------------	------------	-------------------	----------	----------	-------

Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	17.7	8.00	10.0	96.8	90 - 110	X934070	22-Aug-19	
EPA 300.0	Sulfate as SO4	mg/L	30.0	19.4	10.0	107	90 - 110	X934070	22-Aug-19	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	% Rec.	RPD	RPD Limit	Batch ID	Analyzed	Notes
--------	---------	-------	------------	--------------	-------------	--------	-----	-----------	----------	----------	-------

Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	17.4	17.7	10.0	93.9	1.6	20	X934070	22-Aug-19	
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Notes and Definitions

- D2 Sample required dilution due to high concentration of target analyte.
- H1 Sample analysis performed past holding time.
- LCS Laboratory Control Sample (Blank Spike)
- RPD Relative Percent Difference
- UDL A result is less than the detection limit
- 0.30R>S % recovery not applicable; spike level is less than 30% of the sample concentration
- <RL A result is less than the reporting limit
- MRL Method Reporting Limit
- MDL Method Detection Limit
- N/A Not Applicable



Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0540**

Reported: 09-Sep-19 17:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
TM-15	X9H0540-01	Ground Water	19-Aug-19 06:00	CLS	22-Aug-2019	
COOPER C	X9H0540-02	Ground Water	19-Aug-19 07:15	CLS	22-Aug-2019	
TM-7	X9H0540-03	Ground Water	19-Aug-19 08:38	CLS	22-Aug-2019	
BMO-2008-13B	X9H0540-04	Ground Water	20-Aug-19 06:45	CLS	22-Aug-2019	
BMO-2008-13M	X9H0540-05	Ground Water	20-Aug-19 15:20	CLS	22-Aug-2019	

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.

Analyses were performed in accordance with SVL standard operating procedures and calibrations were performed and met SVL internal QC criteria.

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: **X9H0540**

Reported: 09-Sep-19 17:36

Client Sample ID: **TM-15**

Sampled: 19-Aug-19 06:00

SVL Sample ID: **X9H0540-01 (Ground Water)**

Received: 22-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	14.6	mg/L	3.00	1.80	10	X936219	RS	09/07/19 17:57	D1
-----------	----------------	------	------	------	------	----	---------	----	----------------	----

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0540**

Reported: 09-Sep-19 17:36

Client Sample ID: **COOPER C**

Sampled: 19-Aug-19 07:15

SVL Sample ID: **X9H0540-02 (Ground Water)**

Received: 22-Aug-19

Sample Report Page 1 of 1

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	623	mg/L	15.0	9.00	50	X936219	RS	09/07/19 18:11	D2
-----------	----------------	-----	------	------	------	----	---------	----	----------------	----

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0540**

Reported: 09-Sep-19 17:36

Client Sample ID: **TM-7**

Sampled: 19-Aug-19 08:38

SVL Sample ID: **X9H0540-03 (Ground Water)**

Received: 22-Aug-19

Sample Report Page 1 of 1

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	94.1	mg/L	3.00	1.80	10	X936219	RS	09/07/19 18:26	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0540**

Reported: 09-Sep-19 17:36

Client Sample ID: **BMO-2008-13B**

Sampled: 20-Aug-19 06:45

SVL Sample ID: **X9H0540-04 (Ground Water)**

Received: 22-Aug-19

Sample Report Page 1 of 1

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	1050	mg/L	15.0	9.00	50	X936219	RS	09/07/19 18:41	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0540**

Reported: 09-Sep-19 17:36

Client Sample ID: **BMO-2008-13M**

SVL Sample ID: **X9H0540-05 (Ground Water)**

Sampled: 20-Aug-19 15:20

Received: 22-Aug-19

Sampled By: CLS

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	388	mg/L	15.0	9.00	50	X936219	RS	09/07/19 18:56	D2
-----------	----------------	-----	------	------	------	----	---------	----	----------------	----

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dianne Gardner
Project Manager



Freeport McMoRan - Bisbee
 36 West Hwy 92
 Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **X9H0540**
 Reported: 09-Sep-19 17:36

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	0.18	0.30	X936219	07-Sep-19	
-----------	----------------	------	-------	------	------	---------	-----------	--

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	X936219	07-Sep-19	
-----------	----------------	------	------	------	-----	----------	---------	-----------	--

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Recovery	Acceptance Limits	Batch ID	Analyzed	Notes
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Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	19.2	8.89	10.0	103	90 - 110	X936219	07-Sep-19	
EPA 300.0	Sulfate as SO4	mg/L	20.5	10.5	10.0	100	90 - 110	X936219	07-Sep-19	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	% Rec.	RPD	RPD Limit	Batch ID	Analyzed	Notes
--------	---------	-------	------------	--------------	-------------	--------	-----	-----------	----------	----------	-------

Filtered Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	mg/L	19.2	19.2	10.0	103	0.2	20	X936219	07-Sep-19	
-----------	----------------	------	------	------	------	-----	-----	----	---------	-----------	--

Notes and Definitions

- D1 Sample required dilution due to matrix.
- 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
- 0.30R>S % recovery not applicable; spike level is less than 30% of the sample concentration
- <RL A result is less than the reporting limit
- MRL Method Reporting Limit
- MDL Method Detection Limit
- N/A Not Applicable



October 25, 2019

Chris Sherman
Freeport McMoran - Copper Queen Branch
36 W Highway 92
Bisbee, AZ 85603-1047

TEL (520) 432-6206
FAX

Work Order No.: 19J0424
Order Name: CQB

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 1 sample(s) on 10/15/2019 for the analyses presented in the following report.

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

Elizabeth Kasik
Laboratory Director

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19J0424
Date Received: 10/15/2019

Order: CQB

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
19J0424-01	NWC-04	Ground Water	10/15/2019 0943

Client: Freeport McMoran - Copper Queen Branch
Project: CQB
Work Order: 19J0424
Date Received: 10/15/2019

Case Narrative

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: 19J0424
Lab Sample ID: 19J0424-01

Client Sample ID: NWC-04
Collection Date/Time: 10/15/2019 0943
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	195	15.0	50.0		mg/L	10	10/15/2019 1600	10/17/2019 0437	EJ

Client: Freeport McMoran - Copper Queen Branch
 Project: CQB
 Work Order: 19J0424
 Date Received: 10/15/2019

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1910200 - E300.0 (2.1)										
Blank (1910200-BLK1)				Prepared & Analyzed: 10/15/2019						
Sulfate	ND	5.00	mg/L							
LCS (1910200-BS1)				Prepared & Analyzed: 10/15/2019						
Sulfate	13	5.00	mg/L	12.50		106	90-110			
LCS Dup (1910200-BSD1)				Prepared & Analyzed: 10/15/2019						
Sulfate	13	5.00	mg/L	12.50		105	90-110	1	10	
Matrix Spike (1910200-MS2)				Source: 19J0427-01		Prepared: 10/15/2019 Analyzed: 10/17/2019				
Sulfate	22	5.00	mg/L	12.50	11	90	80-120			
Matrix Spike Dup (1910200-MSD2)				Source: 19J0427-01		Prepared: 10/15/2019 Analyzed: 10/17/2019				
Sulfate	22	5.00	mg/L	12.50	11	91	80-120	0.4	10	

APPENDIX C

DATA VERIFICATION REPORT

APPENDIX C
DATA VERIFICATION REPORT
ANNUAL GROUNDWATER MONITORING REPORT
FOR 2019

Prepared for:

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

Prepared by:

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

March 10 2020

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1. INTRODUCTION

This report summarizes the data verification review of field measurements, groundwater sampling, and laboratory analyses conducted during 2019 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 recommended by the annual performance review (e.g. Clear Creek Associates, 2019). Analytical results for groundwater samples collected for this project during 2019 were reported to Clear Creek Associates by SVL Analytical, Inc. (SVL) of Kellogg, Idaho and Turner Laboratories, Inc. (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 2019 groundwater samples are in Appendix B of this 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 160 samples collected by Clear Creek Associates and CQB in 2019 are contained in 13 reports with the SVL and Turner laboratory identification numbers listed in the following tables.

LAB ID	Q1 WELLS REPORTED
Number of wells sampled: 44 Number of well samples collected (including duplicates and multiple samples from one well): 47 Number of duplicate samples collected: 3 Number of field and equipment blanks collected: 4 Total number of samples collected: 51	
19A0288	NWC-04, NWC-02, NWC-06, COB WL, FB20190107, EQB20190107, DUP20190107, BMO-2010-3B, BMO-2010-3M, TM-10 USBP, WEED, BMO-2015-2B, BMO-2015-2BL, BMO-2014-4BL, BMO-2014-4B, BMO-2015-1B, BMO-2015-1BL, SCHWARTZ, BMO-2014-3BL, BMO-2014-3BU, BMO-2014-2BL, BMO-2014-2BU, FB20190110, EQB20190110, DUP20190110, BMO-2014-1BU, BMO-2014-1BL, KEEFER, ROGERS E,
19A0433	ROGERS 596, POWER 639, COB MW-2, DODSON, RUIZ, PANAGAKOS, AWC-05, AWC-03, AWC-04, TVI 236, COOPER
19C0418	TERRY
X9B0126	BMO-2008-11G, BMO-2012-1M, BMO-2008-5M, BMO-2008-5B, BMO-2008-6M, BMO-2008-6B, BMO-2008-1G, BMO-2008-3B, DUP-020519, TM-7
LAB ID	Q2 WELLS REPORTED
Number of wells sampled: 1 Number of well samples collected (including duplicates and multiple samples from one well): 2 Number of duplicate samples collected: 1 Number of field and equipment blanks collected: 0 Total number of samples collected: 2	
19E0340	NWC-04, DUP20190514
LAB ID	Q3 WELLS REPORTED
Number of wells sampled: 90 Number of well samples collected (including duplicates and multiple samples from one well): 95 Number of duplicate samples collected: 5 Number of field and equipment blanks collected: 11 Total number of samples collected: 106	
19G0398	COOPER, HOWARD 312, HOWARD NR, BURKE, KEEFER, MCCONNELL 459, ANDERSON 458, BIMA, PALMER, ROGERS E
19G0399	POWER 639, NESS, BANKS 986, PIONKE 517, PARRA, RUIZ, CHAMBERS, THOMPSON 341, POOL, DODSON, RAMIREZ, MOORE, NWC-06, NWC-02, NWC-04, WEED, FB20190708-17, PANGAKOS, DUP20190708-19, EB20190708-20, FB20190708-21, OLMOS, DUP20190708-23, EB20190708-24, FB20190708-25
19G0564	COB WL, GARNER 635, FB20190716, EQB20190716 BMO-2010-3B, BMO-2010-3M, DUP20190716, TM-10 USBP, ZANDER, BMO-2015-2B, BMO-2015-2BL, BMO-2014-4BL, BMO-2014-4B, BMO-2015-1B, BMO-2015-1BL, EAST, BMO-2014-2BL, BMO-2014-2BU, TVI-875, BMO-2014-1BU, BMO-2014-1B, BMO-2014-3BL, BMO-2014-3BU, TERRY, RAY
19G0667	ROGERS 596, BMO-2008-4B, EQB20190722, FB20190722, DUP20190722, AWC-05, AWC-03, AWC-04, ECHAVE, WEISKOPF 802, WEISKOPF 897, COB MW-3, COB MW-2, COB MW-1B, FRANCO 383, NOTEMAN
X9H0109	TM-16, BMO-2010-1M, BMO-2010-2M, BMO-2008-1G, BMO-2012-1M, TM-6, BMO-2008-10GL, BMO-2008-10GU, BMO-2008-11G
X9H0267	BMO-2008-6M, BMO-2008-6B, BMO-2008-3B, TM-42, TM-19A, HOBAN, BMO-2008-5M, BMO-2008-5B, TM-2A, BMO-2008-8M, BMO-2008-8B, DUP-080819, BMO-2008-7M, EQB-081219, FB-081219, BMO-2008-9M
X9H0540	TM-15, COOPER C, TM-7, BMO-2008-13B, BMO-2008-13M
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	
19J0424	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 [$\mu\text{S}/\text{cm}$], and temperature in degrees Celsius [$^{\circ}\text{C}$]),
- 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 pH¹ and SC² 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 2019, 145 groundwater samples (duplicate and multiple samples included) were collected for analysis from 93 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 was 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 2019 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 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 1 to 10 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 the use of licensed laboratories, 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	0.18	0.30	10
Turner	EPA 300.0	0.13-1.5	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. 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 0.30 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 all SVL analyses were between 90 and 110 percent. Flags are used in instances in which analytical spike recoveries were high (“M1”), low (“M2”), or unusable (“M3” and “M4”). The “M1”, “M2”, and “M3” flags were not used in an SVL report in 2019. The “M4” flag was used on SVL report X9H0109. In the one case 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 most samples analyzed by Turner were between 80 and 120 percent. There were no “M3” or “M4” flags reported by Turner in 2019. The “M1” flag was used in Turner reports 19G0564 and 19G0667. The “M2” flag was used in Turner report 19A0288. In addition an “M7” flag was used in Turner report 19G0564 and an “R13” flag was used in Turner reports 19G0564 and 19G0667. The “M7” flag is used in instances where the analytical spike recovery is low but the source of the error is determined to be matrix interference. The “R13” flag is used in instances where the analytical spike duplicate does not correlate with the initial analytical spike sample. The two reports where the “R13” flag was used are for the same analytical spike duplicate. The analytical spike duplicate result was within the range expected based on the spike concentration but the initial sample was in error which created a disparity between the initial sample and the duplicated sample. In all cases where a flag was used in the 2019 Turner reports, the precision and accuracy of the batch were determined to be acceptable based on their QA plan using other criteria.

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

During 2019, one sample was re-analyzed by Turner and two samples were re-analyzed by SVL at the request of Clear Creek based on comparison with historical results. The original and re-analysis results are shown in the table below. In each case the original results were not confirmed and the re-analysis was in line with historical results. The re-analysis results for each sample were used in Table 3 and Figures 6 and 9 of the main report.

SVL Project No.	Well ID	Original Result (mg/L)	Re-Analysis (mg/L)	RPD
X9H0267	DUP-080819	14.9	35	80.80%
19G0564	BMO-2015-1B	83.9	203	83.03%
X9H0267	HOBAN	417	923	75.52%

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.

During 2019, 15 blank samples were collected, including eight field blanks (FB20190107, FB20190110, FB20190708-17, FB20190708-21, FB20190708-25, FB20190716, FB20190722, and FB-081219) and seven field equipment blanks (EQB20190107, EQB20190110, EQB20190708-20, EB20190708-24, EQB20190716, EQB20190722, and EQB-081219). None of the blank samples collected in 2019 had sulfate concentrations above the SVL RL of 0.30 mg/L, or the Turner PQL of 5.0 mg/L. The results demonstrate that the sulfate concentrations reported in 2019 were not affected by sample collection and sample handling procedures. The collection of eight field blanks and seven equipment blanks meets the requirement for the collection of one of each type of blank for every 20 samples for 2019.

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 2019.

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, 9 field-filtered duplicate samples (DUP20190107, DUP20190110, DUP-020519, DUP20190514, DUP20190708-19, DUP20190708-23, DUP20190716, DUP20190722, and DUP-080819) were collected for analysis. The collection of 9 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 0.0 and 17.17 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
19A0288	COB-WL	DUP20190107	73.1	74.0	1.22%
19A0288	BMO-2014-1BU	DUP20190110	172	175	1.73%
X9B0126	BMO-2008-3B	DUP-020519	169	173	2.34%
19E0340	NWC-04	DUP20190514	186	191	2.65%
19G0399	OLMOS	DUP20190708-23	6.55	7.78	17.17%
19G0399	PANAGAKOS	DUP20190708-19	467	476	1.91%
19G0564	BMO-2010-3B	DUP20190716	26.0	25.8	0.77%
19G0667	BMO-2008-4B	DUP20190722	11.2	11.2	0.00%
X9H0267	BMO-2008-7M	DUP-080819	35.5	35.1	1.13%

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 DQI 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 reported here are judged to provide a reliable representation of groundwater conditions at the sampled locations for 2019.

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. 2019. Mitigation Performance Review for 2018, Mitigation Order on Consent No. P-121-07. March 28, 2019.
- 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 2019

Prepared for:

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221 North Court Avenue Suite 101
Tucson, Arizona 85701

March 10, 2020

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D.1. Well Records Review Summary

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D.2. Well Search Area and New Well Registrations

APPENDIX

D.1. Imaged Records

1. INTRODUCTION

1.1 Scope and Objectives

This report describes a review of the Arizona Department of Water Resources (ADWR) 55 Well Registry Database (WRD) to identify new registered wells installed since January 2019 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 (MO) 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). Annual well records reviews were submitted as part of the Annual Groundwater Reports for 2015, 2016, 2017, and 2018 (Clear Creek, 2016, 2017, 2018, and 2019). The last well records review (Clear Creek, 2019) used WRD information available as of January 2019.

The well records review reported herein discusses only new WRD records added to the WRD between January 2019 and January 2020. The WRD was downloaded from the ADWR website (<https://gisdata2016-11-18t150447874z-azwater.opendata.arcgis.com/datasets/well-registry-wells55-1>) on January 17, 2020 as a shapefile for use with ESRI ArcMap software. The website indicated that the shapefile was last updated on January 17, 2020, the day the file was downloaded.

1.2 Monitoring of Drinking Water Supplies

The MO set the action level for the 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 2,000 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 2019. The January 2020 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 2019 search area was compared to the list of wells reported in the Well Records Review for 2018 to identify new records. Table D.1 lists the one new records added to the WRD between January 2019 and January 2020. The location of the new well record is shown on Figure D.2.

3. RESULTS

3.1 New Records Identified

The well records review identified one new record for a well within a mile of the plume (Table D.1 and Figure D.2). The well registry number is 55-810080. The ADWR imaged record for the well is attached as Appendix D.1.

The well record is a Late Registration of a Well. The well owner is listed as Cynthia Osborn. The registration indicates the well is not used and has no pump. A photo included in the imaged record shows an open well casing with no capping plate or pump equipment. In a phone call with Ms. Osborn on January 21, 2020, Clear Creek confirmed that the well has no pump and is not currently used for any purpose. The well was not added to the mitigation order sampling schedule because it is not operational and the water is not being used as a drinking source.

4. REFERENCES

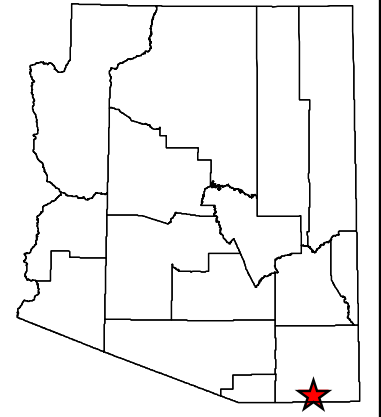
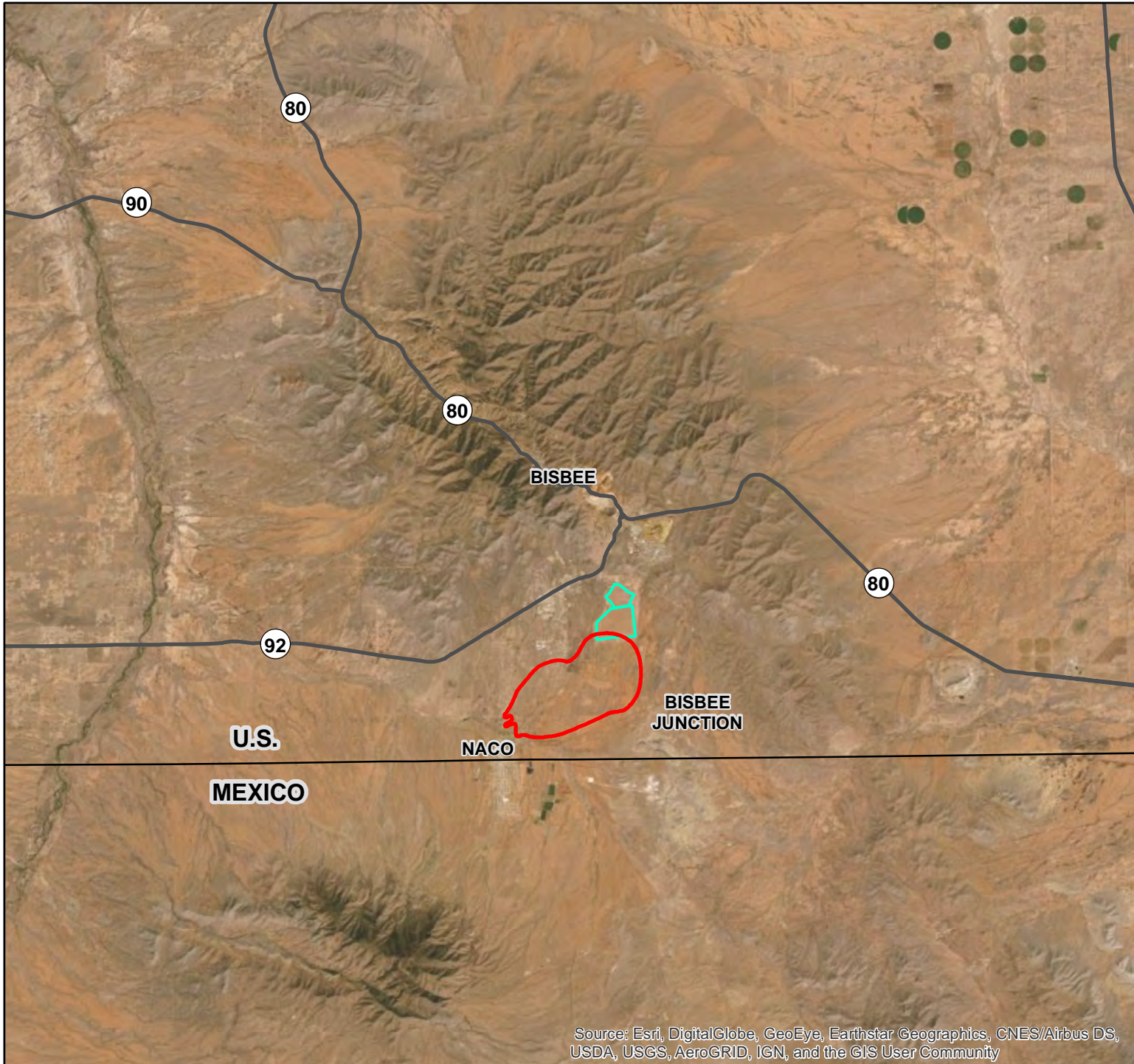
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- Clear Creek Associates. 2018. Annual Groundwater Monitoring Report for 2017, Mitigation Order on Consent Docket No. P-121-07, Cochise County, Arizona. February 23, 2018.
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- Hydro Geo Chem. 2008. 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 Record Review Summary**

Well Registry Number	Owner Name	Well Name	Category	MO Groundwater Monitoring Frequency	Operational	Usage
Domestic Water Supply Well						
810080	Cynthia Osborn	OSBORN	Domestic	None	No	None

FIGURES



Legend

- Third Quarter 2019 250 mg/L Sulfate Plume
- CTSA
- Highway
- International Border

Notes:

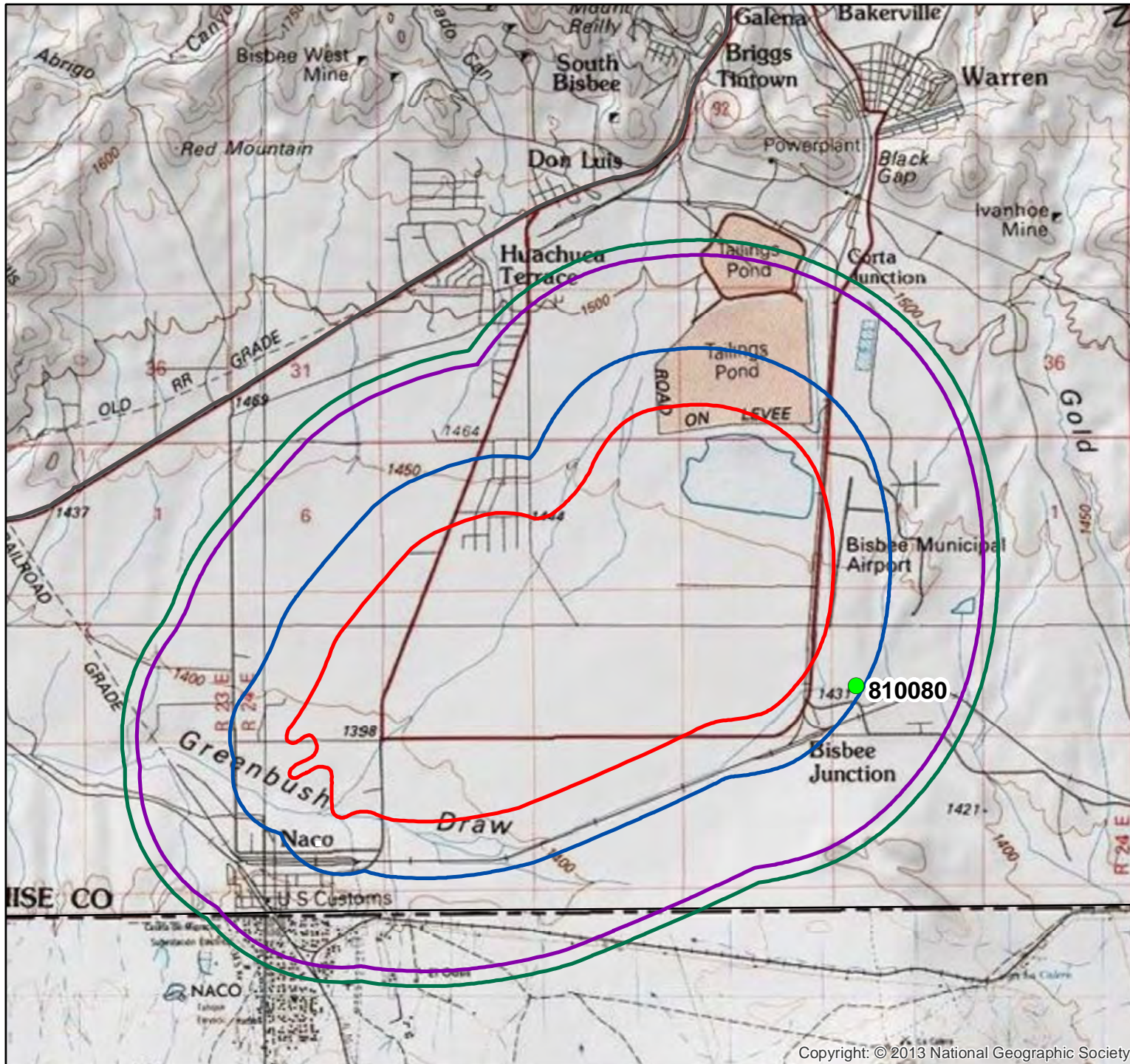
Projection: UTM Zone
12N NAD83

Date	1/20/20	File ID	055038-541
------	---------	---------	------------



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

FIGURE D.1.
Project Location Map



Legend

- Third Quarter 2019 250 mg/L Sulfate Plume
- ▭ 2,000 Feet from Sulfate Plume
- ▭ 1 Mile from Sulfate Plume
- ▭ 1.1 Mile Search Area
- New Well Record

Notes:

Projection: UTM Zone
12N NAD83

Date 1/20/20

File ID 055038-540



FIGURE D.2
Well Search Area
and New Well Registrations

APPENDIX D.1

IMAGED RECORDS

Run Date: 06/14/2019

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

Location	D 24.0 24.0 11 C B D	Well Reg.No	55 - 810080	AMA	NOT WITHIN ANY AMA OR INA
-----------------	----------------------	--------------------	-------------	------------	---------------------------

Registered Name	CYNTHIA A. OSBORN PO BOX 967 BISBEE	File Type	LATE REGISTRATION
	AZ 85603	Application/Issue Date	06/07/2019

Owner	OWNER	Well Type	EXEMPT
Driller No.	0	SubBasin	SIERRA VISTA
Driller Name		Watershed	SAN PEDRO RIVER
Driller Phone		Registered Water Uses	DOMESTIC
County	COCHISE	Registered Well Uses	
Parcel No.	101-43-004B	Discharge Method	NO DISCHARGE METHOD LISTED
Intended Capacity GPM	0.00	Power	NO POWER CODE LISTED

Well Depth	0.00	Case Diam	7.00	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: GRIC Maintenance area

Comments Well is currently not in use. Applicant stated it is capped with a weighted bucket. Recommend a proper cap be installed. -ct 6/14/2019

Places Of Use

D 24 0 24 0 11 C B D

Current Action

6/14/2019 101 LATE REGISTRATION APPROVED
 Action Comment: ct

Action History

6/7/2019 100 LATE REGISTRATION RECEIVED
 Action Comment: ct

RECEIVED



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

FEE \$60.00

Late Registration of a Well

- 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
RECEIVED DATE WS
ISSUED DATE WQARF CERCLA

FILE NUMBER
WELL REGISTRATION NUMBER

** PLEASE PRINT CLEARLY **

SECTION 1. REGISTRY INFORMATION
Well Type Fee Location of Well
CHECK ONE
Exempt Non-Exempt
ORIGINAL WELL DRILLING FIRM (IF KNOWN)
ORIGINAL WELL DRILL DATE (ESTIMATE IF NOT KNOWN)
PROPERTY OWNER WHEN WELL WAS DRILLED (IF KNOWN)

SECTION 2. OWNER INFORMATION
Land Owner Well Owner
FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL
MAILING ADDRESS
CITY / STATE / ZIP CODE
CONTACT PERSON NAME AND TITLE
TELEPHONE NUMBER FAX

ps 99

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?
2. Is there another well name or identification number associated with this well?
3. If this well is an exempt well, is it the second exempt well on this parcel for the same use?

SECTION 4. WATER/SITE INFORMATION		
Principal Use of Water CHECK ONE <input type="checkbox"/> Irrigation (# of acres _____) <input type="checkbox"/> Commercial <input type="checkbox"/> Domestic <input type="checkbox"/> Industrial <input type="checkbox"/> Drainage <input type="checkbox"/> Monitoring <input type="checkbox"/> Municipal <input type="checkbox"/> Stock <input type="checkbox"/> Dewatering <input checked="" type="checkbox"/> Other (please specify): <i>not currently in use</i>	Other Uses of Water CHECK ALL THAT APPLY <input type="checkbox"/> Irrigation (# of acres _____) <input type="checkbox"/> Commercial <input type="checkbox"/> Domestic <input type="checkbox"/> Industrial <input type="checkbox"/> Drainage <input type="checkbox"/> Monitoring <input type="checkbox"/> Municipal <input type="checkbox"/> Stock <input type="checkbox"/> Dewatering <input type="checkbox"/> Other (please specify):	MAXIMUM PUMP CAPACITY <i>No Pump</i> Gallons Per Minute TOTAL DEPTH OF WELL <i>unknown</i> Feet Below Land Surface STATIC WATER LEVEL <i>unknown</i> Feet Below Land Surface

SECTION 5. EXISTING WELL CONSTRUCTION DESIGN (attach additional page if needed)																
Borehole			Existing Casing (to the best of your knowledge)													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (T)				PERFORATION TYPE (T)					SLOT SIZE IF ANY (inches)	
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED		IF OTHER TYPE, DESCRIBE
					7-8"	X										

Existing Annular Material (to the best of your knowledge)														
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (T)								FILTER PACK				
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT-GROUT	BENTONITE GROUT	BENTONITE CHIPS	BENTONITE PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE			SAND	GRAVEL	SIZE	

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 <i>Cynthia Osborn owner</i>	SIGNATURE OF WELL OWNER OR LANDOWNER <i>Cynthia Osborn</i>	DATE <i>6/2/19</i>
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6-7"

Find address or place



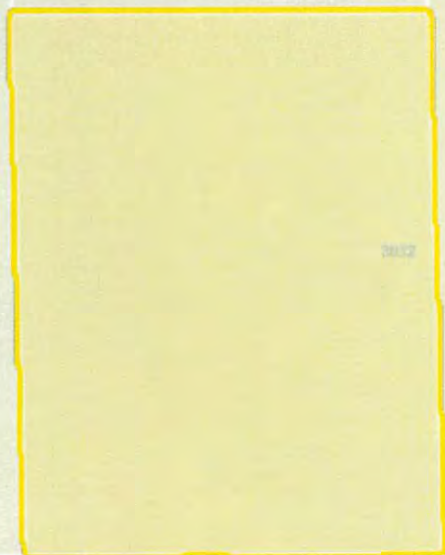
Zoom to

Parcel 101-43-004B



Find by APN:

APN	10143004B
Book	101
Map	43
Parcel	004B
ESN	347
Precinct Number	6
Reference	ASSESSOR LEGAL
Acres	0.91
Full Cash Value CY	\$75,446
Owner Name	OSBORN CYNTHIA A
Mailing Address	P O BOX 967
City	BISBEE
State	AZ
Zip Code	85603
Category Designation	C-NEIGHBORHOOD CONSERVATION
Use Code	0123
Tax Area Code	0271
Market Area	02
Market Sub Area	05
Zoning	R-36
County Board of Supervisors	ANN ENGLISH - DIST 2
Cochise College Board	DENNIS L. NELSON - PCT 5



aro Ln



Arizona Department of Water Resources

1110 West Washington Street, Suite 310

Phoenix AZ 85007

Customer:

CINDY OSBORN
PO BOX 967
BISBEE, AZ 85603

Receipt #: 19-66388
Office: GW Permitting
Receipt Date: 06/07/2019
Sale Type: Mail
Cashier: WRCDT

Item No.	Function Code	AOBJ	Description	Ref ID	Qty	Unit Price	Ext Price
67482	WRFREV	4439-TT	Late registration of well		1	60.00	60.00
RECEIPT TOTAL:							60.00

Payment type: CHECK

Amount Paid: \$60.00

Payment Received Date: 06/07/2019

Check #	5359
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Notes: