FOURTH QUARTER 2012
GROUNDWATER MONITORING REPORT

TASKS 1.0 AND 2.2 OF AQUIFER CHARACTERIZATION PLAN
MITIGATION ORDER ON CONSENT DOCKET NO. P-121-07
COCHISE COUNTY, ARIZONA

Prepared for:

FREEPORT-MCMORAN CORPORATION
COPPER QUEEN BRANCH
36 West Highway 92
Bisbee, Arizona 85603

Prepared by:

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January 18, 2013

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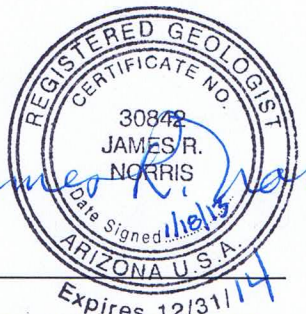

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January 18, 2013

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1. INTRODUCTION

This report provides the results of groundwater monitoring conducted by Freeport-McMoRan Corporation Copper Queen Branch (CQB) in the fourth quarter 2012 in the vicinity of the Concentrator Tailing Storage Area (CTSA). Groundwater monitoring is conducted pursuant to Tasks 1.0 (well inventory of drinking water wells) and 2.2 (groundwater monitoring) of the Work Plan (Hydro Geo Chem, Inc. [HGC], 2008) to characterize sulfate in the vicinity of the CTSA and subsequent modifications. The Work Plan was initially submitted to Arizona Department of Environmental Quality (ADEQ) on December 17, 2007 pursuant to the Mitigation Order on Consent Docket No. P-121-07 (ADEQ, 2007). CQB initiated water sampling prior to work plan approval while ADEQ was commenting on the Work Plan and CQB was responding to their comments. Revision 1 of the Work Plan was submitted to ADEQ on July 3, 2008 and ADEQ approved the Work Plan on August 3, 2008. On January 25, 2010 CQB proposed a revised groundwater monitoring program (CQB, 2010). The revised monitoring program was approved by ADEQ in April 2010 (ADEQ, 2010). Clear Creek Associates (Clear Creek) prepared this groundwater monitoring report on behalf of CQB.

1.1 Scope of Groundwater Monitoring

The objectives of groundwater monitoring are:

- Determination of the sulfate concentration in drinking water supply (DWS) wells outside of and within one mile of the sulfate plume for the purposes of identifying the need for mitigation actions and tracking the plume margin,
- Identification of the plume margin for ongoing delineation of the plume extent and migration,
- Documentation of the sulfate concentration in the plume and at areas distal to the plume to monitor long-term concentration trends, and
- Measurement of water levels in the vicinity of the plume to document potentiometric conditions (CQB, 2010).

The groundwater sulfate plume consists of groundwater with sulfate in excess of 250 milligrams per liter (mg/L) attributable to the CTSA. The sample collection and analysis specifications of the Work Plan have been retained throughout the groundwater monitoring program. Table 1 provides the schedule for the groundwater monitoring program. Dissolved sulfate is the only constituent monitored.

Figure 1 presents a generalized geologic map of the study area and well locations where data reported herein have been collected. Table 2 lists wells scheduled under the groundwater monitoring program, their availability for sampling, and their sampling status in the fourth quarter 2012. The collection of groundwater samples was conducted by CQB and Clear Creek personnel. Groundwater sampling and analysis methods used by CQB and Clear Creek are described in the Quality Assurance Project Plan (QAPP) contained in Appendix F of the Work Plan (HGC, 2008). Results of groundwater monitoring are presented in Section 2.

One new domestic drinking water supply well, WEISKOPF 897, and one new monitoring well, BMO-2012-1M, were installed and became operational during the fourth quarter. The new wells were added to the groundwater monitoring schedule as they became operational. WEISKOPF 897 was installed as a mitigation action (Clear Creek, 2012). The well name for the pre-existing well on the property has been changed to WEISKOPF 802 on tables and figures to differentiate between the new well and the old well. BMO-2012-1M was installed to replace GGOOSE 547 and delineate the southeast edge of the sulfate plume. Survey data for the new wells can be found in Appendix A.

2. GROUNDWATER MONITORING RESULTS

2.1 Results of Monitoring

Analytical results and groundwater elevation data for the fourth quarter 2012 are tabulated in Tables 3 and 4, respectively, along with information previously collected under the Mitigation Order. Figure 2 shows the concentrations of dissolved sulfate in the wells sampled in the fourth quarter 2012. The highest sulfate concentration measured at co-located wells was used for concentration contouring. Figure 3 shows groundwater elevations in the fourth quarter 2012. Groundwater elevations were calculated using depth to water measurements made under static (nonpumping) conditions for all wells shown on Figure 3. At wells where multiple samples or water levels were collected during the fourth quarter 2012, the most recent data are shown on the figures.

2.2 Quality Assurance/Quality Control Review

Pursuant to Section 6.4 of the QAPP, a data verification report was prepared for quality assurance and quality control purposes. The data verification report, analytical laboratory reports, and groundwater sampling forms for samples collected by Clear Creek and CQB during the fourth quarter 2012 are included in Appendices B, C, and D, respectively. As determined by the data verification review, the analytical results for samples collected in the fourth quarter 2012 by Clear Creek and CQB are of acceptable quality for use in the groundwater monitoring being conducted pursuant to the Mitigation Order.

3. FINDINGS

This report provides the results of groundwater monitoring conducted within the vicinity of the CTSA for the fourth quarter 2012. Groundwater samples were collected from 57 wells and depth to water measurements were collected in 43 wells. The December 2010 Aquifer Characterization Report (Clear Creek, 2010) provides detailed descriptions of the hydrogeology, water quality, and sulfate plume. Findings based on the fourth quarter 2012 groundwater monitoring are described below.

- Water quality samples have been collected from wells completed in three principal water bearing units in the area: basin fill, undifferentiated Bisbee Group, and Glance Conglomerate. The undifferentiated Bisbee Group consists, from youngest to oldest, of the Cintura Formation, Upper Mural Limestone, Lower Mural Limestone and Morita Formation. Figures 2 and 3 provide the screened lithology of the wells sampled.

- Sulfate concentration data indicate that the plume extends to the southwest from the vicinity of the former evaporation pond (Figure 1) to the vicinity of Naco and to the south to the vicinity of Bisbee Junction (Figure 2). The groundwater monitoring data indicate that the sulfate plume extends over an oblong area of approximately 2 miles by 3.9 miles and is contained primarily in the basin fill and undifferentiated Bisbee Group except near the former evaporation pond where wells in the Glance Conglomerate have sulfate concentrations greater than 250 mg/L. The extent of the sulfate plume and the sulfate contours as drawn on Figure 2 are based on both historic and current sulfate concentration data. Historic data are available in this report and in the Aquifer Characterization Report (Clear Creek, 2010).

- Comparison of the fourth quarter 2012 sulfate concentrations with previous quarters indicates no large scale change in the plume geometry since the Mitigation Order sampling began in 2008, although concentration contours within the plume have been modified to reflect current concentrations.

- Figure 4 shows sulfate concentrations through time at public drinking water supply wells that are not receiving mitigation actions. Sulfate concentrations have remained relatively stable over time, although NWC-04 displays the greatest variability in concentration.

- Groundwater elevations decrease from east to west across the study area, indicating westerly groundwater flow (Figure 3).

- Figures 5 and 6 show groundwater elevations over time for BMO monitor wells with screened intervals in basin fill and bedrock, respectively. Groundwater elevations in BMO monitor wells screened in basin fill have decreased over time. The maximum rate of decline measured in the basin fill through the most recent quarter sampled is 1.68 feet per year in

BMO-2010-3B, which has declined 3.75 feet between July 2010 and October 2012. Groundwater elevations in most BMO monitor wells screened in bedrock have also declined over time. The maximum rate of decline measured in the bedrock through the most recent quarter sampled is 7.46 feet per year in BMO-2008-10GU, which has declined 29.42 feet between August 2008 and July 2012. Water level declines of up to 9 feet have been measured in BMO-2008-1G, BMO-2008-5M, BMO-2008-6M, BMO-2008-7M, BMO-2008-8M, BMO-2008-9M, BMO-2008-13M, BMO-2010-2M, and BMO-2010-3M from the time the wells were put into service through the fourth quarter 2012. The groundwater elevations in bedrock wells BMO-2008-10GL and BMO-2008-11G display increasing trends. The groundwater elevation in bedrock well BMO-2010-1M is relatively steady over time.

4. REFERENCES

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Hydro Geo Chem, Inc. (HGC). 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
Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	ADWR 55 Registry No.	Semiannual Sampling First Quarter	Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
ANDERSON 396	613396	✓	✓	✓	✓
ANDERSON 458	221458	✓	✓	✓	✓
AWC-02	616586	✓	✓	✓	✓
AWC-03	616585	✓	✓	✓	✓
AWC-04	616584	✓	✓	✓	✓
AWC-05	590620	✓	✓	✓	✓
BANKS 986	647986	✓	✓	✓	✓
BANKS 987	647987	WLO		WLO	
BARTON 919	644919	WLO		WLO	
BF-01	539783			✓	
BIMA	577927	✓	✓	✓	✓
BMO-2008-1G	909474	✓		✓	
BMO-2008-3B	909147	✓		✓	
BMO-2008-4B	910096	✓		✓	
BMO-2008-5B	909653	✓	✓	✓	✓
BMO-2008-5M	909552	✓	✓	✓	✓
BMO-2008-6B	909146	✓	✓	✓	✓
BMO-2008-6M	909019	✓	✓	✓	✓
BMO-2008-7M	908794	✓		✓	
BMO-2008-8B	910097			✓	
BMO-2008-8M	909711	✓		✓	
BMO-2008-9M	909255	✓		✓	
BMO-2008-10GL	909435			✓	
BMO-2008-10GU	909272			✓	
BMO-2008-11G	909434	✓		✓	
BMO-2008-13B	909551			✓	
BMO-2008-13M	909760			✓	
BMO-2010-1M	219957	✓	✓	✓	✓
BMO-2010-2M	219958	✓	✓	✓	✓
BMO-2010-3B	219970	✓	✓	✓	✓
BMO-2010-3M	219969	✓	✓	✓	✓
BMO-2012-1M	221388	✓	✓	✓	✓
CHAMBERS	629807	✓	✓	✓	✓
COB MW-1	903992			✓	
COB MW-2	903984	✓		✓	
COB MW-3	906823			✓	
COB WL	593116			✓	
COOPER	623564	✓	✓	✓	✓
COOPER C	637069	✓	✓	✓	✓

TABLE 1
Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	ADWR 55 Registry No.	Semiannual Sampling First Quarter	Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
DODSON	644927	✓	✓	✓	✓
DOUGLASS 791	592791	WLO		WLO	
DOUGLASS 792	592792	WLO		WLO	
DURAZO	NR	✓	✓	✓	✓
EAST	599796	✓	✓	✓	✓
ECHAVE	219449	✓	✓	✓	✓
EPPELE 641	805641	✓	✓	✓	✓
FLEMING	218386	WLO		WLO	
FRANCO 101	500101	✓	✓	✓	✓
FRANCO 383	221383	✓	✓	✓	✓
FULTZ	212447	✓	✓	✓	✓
GARNER 557	558557	WLO		WLO	
GARNER 635	587635	✓	✓	✓	✓
GGOOSE 547	628547	✓		✓	
GOAR RANCH	610695	WLO		WLO	
HOBAN	805290	✓	✓	✓	✓
HOWARD NR	NR	✓	✓	✓	✓
HOWARD 312	221312	✓	✓	✓	✓
KEEFER	209744	✓	✓	✓	✓
MARCELL	NR	✓	✓	✓	✓
MCCONNELL 265	539265	✓	✓	✓	✓
MCCONNELL 459	221459	✓	✓	✓	✓
METZLER	35-71891	✓	✓	✓	✓
MOORE	538847	✓	✓	✓	✓
NESS	509127	✓		✓	
NOTEMAN	212483	✓	✓	✓	✓
NWC-02	562944	✓	✓	✓	✓
NWC-03	203321	✓	✓	✓	✓
NWC-03 CAP	627684	WLO		WLO	
NWC-04	551849	✓	✓	✓	✓
NWC-06	575700	✓	✓	✓	✓
OSBORN	643436	✓		✓	
PALMER	578819	✓	✓	✓	✓
PANAGAKOS	35-76413			✓	
PARRA	576415	✓	✓	✓	✓
PIONKE 395	613395	✓	✓	✓	✓
PIONKE 517	221517	✓	✓	✓	✓
POOL	509518	✓	✓	✓	✓
RAMIREZ	216425	✓	✓	✓	✓

TABLE 1
Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	ADWR 55 Registry No.	Semiannual Sampling First Quarter	Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
RAY	803772	✓	✓	✓	✓
ROGERS 596/803	573596	✓	✓	✓	✓
ROGERS E	216018	✓	✓	✓	✓
RUIZ	531770	✓	✓	✓	✓
SCHWARTZ	210865	✓	✓	✓	✓
STEPHENS	808560	WLO		WLO	
SUNBELT	201531	WLO		WLO	
SWAN	NR	✓		✓	
TM-02A	522574	✓		✓	
TM-06 MILLER	522695			✓	
TM-07	522576	✓		✓	
TM-15 MILLER	522699			✓	
TM-16	522578			✓	
TM-19A	522580	✓		✓	
TM-42	562554			✓	
TVI 236	802236			✓	
TVI 713	567713	WLO		WLO	
TVI 875	568875	✓	✓	✓	✓
WEED	544535	✓	✓	✓	✓
WEISKOPF 802	641802	✓	✓	✓	✓
WEISKOPF 897	221897	✓	✓	✓	✓
ZANDER	205126	✓	✓	✓	✓

Notes:

ADWR = Arizona Department of Water Resources

WLO = Water Level Only

NR = No Record

TABLE 2
Summary of Groundwater Monitoring Program for Fourth Quarter 2012

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
ANDERSON 396	613396	Anderson	Well Inventory	236	Y	Y	Water quality sample collected in October 2012
ANDERSON 458	221458	Anderson	Plume	734	Y	Y	Water quality sample collected in October 2012
AWC-02	616586	Arizona Water Company	Plume	330	N	Y	Water quality sample collected in October 2012. Unable to collect water level because well was pumping.
AWC-03	616585	Arizona Water Company	Plume	269	N	Y	Water quality sample collected in October 2012. Unable to collect water level because well was pumping.
AWC-04	616584	Arizona Water Company	Plume	250	N	Y	Water quality sample collected in October 2012. Unable to collect water level because well was pumping.
AWC-05	590620	Arizona Water Company	Plume	1183	N	Y	Water quality sample collected in October 2012. Unable to collect water level because well was pumping.
BANKS 986	647986	Banks	Well Inventory	435	N	Y	Water quality sample collected in October 2012. Unable to collect water level because wellhead is not accessible.
BANKS 987	647987	Banks	Well Inventory	339	Y	N	Water level collected in October 2012.
BARTON 919	644919	Barton	Plume	130	N	N	Well is not scheduled for fourth quarter sampling.
BF-01	539783	Copper Queen Branch	Plume	400	N	N	Well is not scheduled for fourth quarter sampling.
BIMA	577927	Bisbee Municipal Airport	Plume	465	N	Y	Water quality sample collected in November 2012. Unable to collect water level due to obstruction in well.
BMO-2008-1G	909474	Copper Queen Branch	Plume	310	N	N	Well is not scheduled for fourth quarter sampling.
BMO-2008-3B	909147	Copper Queen Branch	Plume	260	N	N	Well is not scheduled for fourth quarter sampling.
BMO-2008-4B	910096	Copper Queen Branch	Plume	610	N	N	Well is not scheduled for fourth quarter sampling.
BMO-2008-5B	909653	Copper Queen Branch	Plume	285	Y	Y	Water quality sample collected in October 2012
BMO-2008-5M	909552	Copper Queen Branch	Plume	450	Y	Y	Water quality sample collected in October 2012
BMO-2008-6B	909146	Copper Queen Branch	Plume	265	Y	Y	Water quality sample collected in October 2012
BMO-2008-6M	909019	Copper Queen Branch	Plume	450	Y	Y	Water quality sample collected in October 2012
BMO-2008-7M	908794	Copper Queen Branch	Plume	670	N	N	Well is not scheduled for fourth quarter sampling.
BMO-2008-8B	910097	Copper Queen Branch	Plume	480	N	N	Well is not scheduled for fourth quarter sampling.
BMO-2008-8M	909711	Copper Queen Branch	Plume	1210	N	N	Well is not scheduled for fourth quarter sampling.
BMO-2008-9M	909255	Copper Queen Branch	Plume	775	N	N	Well is not scheduled for fourth quarter sampling.
BMO-2008-10GL	909435	Copper Queen Branch	Plume	810	N	N	Well is not scheduled for fourth quarter sampling.
BMO-2008-10GU	909272	Copper Queen Branch	Plume	449	N	N	Well is not scheduled for fourth quarter sampling.
BMO-2008-11G	909434	Copper Queen Branch	Plume	760	N	N	Well is not scheduled for fourth quarter sampling.

TABLE 2
Summary of Groundwater Monitoring Program for Fourth Quarter 2012

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
BMO-2008-13B	909551	Copper Queen Branch	Plume	474	N	N	Well is not scheduled for fourth quarter sampling.
BMO-2008-13M	909760	Copper Queen Branch	Plume	1030	N	N	Well is not scheduled for fourth quarter sampling.
BMO-2010-1M	219957	Copper Queen Branch	Plume	540	Y	Y	Water quality sample collected in October 2012
BMO-2010-2M	219958	Copper Queen Branch	Plume	370	Y	Y	Water quality sample collected in October 2012
BMO-2010-3B	219970	Copper Queen Branch	Plume	330	Y	Y	Water quality sample collected in October 2012
BMO-2010-3M	219969	Copper Queen Branch	Plume	532	Y	Y	Water quality sample collected in October 2012
BMO-2012-1M	221388	Copper Queen Branch	Plume	396	Y	Y	Water quality sample collected in November 2012
CHAMBERS	629807	Chambers	Well Inventory	245	N	Y	Water quality sample collected in October 2012. Unable to collect water level because wellhead is not accessible.
COB MW-1	903992	City of Bisbee	Plume	420	N	N	Well is not scheduled for fourth quarter sampling.
COB MW-2	903984	City of Bisbee	Plume	170	N	N	Well is not scheduled for fourth quarter sampling.
COB MW-3	906823	City of Bisbee	Plume	269	N	N	Well is not scheduled for fourth quarter sampling.
COB WL	593116	City of Bisbee	Plume	150	N	N	Well is not scheduled for fourth quarter sampling.
COOPER	623564	Cooper	Plume	325	N	Y	Water quality sample collected in October 2012. Unable to collect water because wellhead was not accessible.
COOPER C	637069	Hutson	Plume	220	Y	Y	Water quality sample collected in October 2012
DODSON	644927	Dodson	Plume	200	Y	Y	Water quality sample collected in October 2012
DOUGLASS 791	592791	Douglass	Well Inventory	200	N	N	Well identified for water level measurement only. Well is not scheduled for fourth quarter sampling.
DOUGLASS 792	592792	Douglass	Well Inventory	200	N	N	Well identified for water level measurement only. Well is not scheduled for fourth quarter sampling.
DURAZO	NR	Durazo	Well Inventory	ND	N	N	Unable to collect water level or water quality sample because well is not operational.
EAST	599796	East	Well Inventory	125	Y	Y	Water quality sample collected in October 2012
ECHAVE	219449	Echave	Well Inventory	345	N	Y	Water quality sample collected in October 2012
EPPELE 641	805641	Eppele	Well Inventory	265	Y	Y	Water quality sample collected in October 2012
FLEMING	218386	Fleming	Well Inventory	400	N	N	Well is not scheduled for fourth quarter sampling.
FRANCO 101	500101	Franco	Well Inventory	200	N	N	Well is not currently operational.
FRANCO 383	221383	Franco	Plume	711	Y	Y	Water quality sample collected in October, November, and December 2012
FULTZ	212447	Fultz	Well Inventory	300	N	N	Water quality sample not collected per owner request. Unable to collect water level due to obstruction in well.

TABLE 2
Summary of Groundwater Monitoring Program for Fourth Quarter 2012

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
GARNER 557	558557	Garner	Plume	300	Y	N	Well identified for water level measurements only. Water level measurement taken in October 2012.
GARNER 635	587635	Garner	Plume	680	Y	Y	Water quality sample collected in October 2012.
GGOOSE 547	628547	Copper Queen Branch	Plume	800	N	N	Well abandoned October 2012.
GOAR RANCH	610695	Goar	Well Inventory	250	N	N	Well is not scheduled for fourth quarter sampling.
HOBAN	805290	Copper Queen Branch	Well Inventory	316	Y	Y	Water quality sample collected in October 2012.
HOWARD NR	NR	Howard	Well Inventory	200	Y	Y	Water quality sample collected in October 2012.
HOWARD 312	221312	Howard	Plume	980	Y	Y	Water quality sample collected in October 2012.
KEEFER	209744	Keefer	Well Inventory	245	Y	Y	Water quality sample collected in October 2012.
MARCELL	NR	Marcell	Well Inventory	220	N	Y	Water quality sample collected in October 2012. Unable to collect water level because wellhead was not accessible.
MCCONNELL 265	539265	McConnell	Well Inventory	216	Y	Y	Water quality sample collected in October 2012.
MCCONNELL 459	221459	McConnell	Plume	863	Y	Y	Water quality sample collected in October 2012.
METZLER	35-71891	Metzler	Well Inventory	351	Y	N	Water level measurement collected October 2012. Unable to collect water quality sample because well is not operational.
MOORE	538847	Moore	Well Inventory	220	N	Y	Water quality sample collected in October 2012. Unable to collect water level because wellhead is not accessible.
NESS	509127	Ness	Well Inventory	812	N	N	Well is not scheduled for fourth quarter sampling.
NOTEMAN	212483	Bailey	Well Inventory	400	N	Y	Water quality sample collected in October 2012. Unable to collect water level due to obstruction in well.
NWC-02	562944	Naco Water Company	Plume	312	N	Y	Water quality sample collected in October 2012. Unable to collect water level because the well was pumping.
NWC-03	203321	Naco Water Company	Plume	312	N	Y	Water quality sample collected in October 2012. Unable to collect water level because the well was pumping.
NWC-03 CAP	627684	Naco Water Company	Plume	179	Y	N	Well identified for water level measurements only. Water level measurement taken in October 2012.
NWC-04	551849	Naco Water Company	Well Inventory Sulfate Trend	795	N	Y	Water quality sample collected in December 2012. Unable to collect water level because the well was pumping.
NWC-06	575700	Naco Water Company	Well Inventory	410	N	Y	Water quality sample collected in October 2012. Unable to collect water level because the well was pumping.
OSBORN	643436	Osborn	Plume	258	N	N	Well is not scheduled for fourth quarter sampling.
PALMER	578819	Palmer	Well Inventory	220	N	Y	Water quality sample collected in October 2012. Unable to collect water level because wellhead is inaccessible.

TABLE 2
Summary of Groundwater Monitoring Program for Fourth Quarter 2012

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
PANAGAKOS	35-76413	Panagakos	Well Inventory	200	Y	Y	Water quality sample collected in November 2012.
PARRA	576415	Parra	Plume	355	N	Y	Water quality sample collected in October 2012. Unable to collect water level because wellhead was not accessible.
PIONKE 395	613395	Pionke	Well Inventory	300	Y	Y	Water quality sample collected in October 2012.
PIONKE 517	221517	Pionke	Plume	604	Y	Y	Water quality sample collected in October 2012.
POOL	509518	Pool	Well Inventory	313	N	N	Unable to access well. Unable to contact well owner.
RAMIREZ	216425	Ramirez	Well Inventory	300	Y	Y	Water quality sample collected in October 2012.
RAY	803772	Ray	Well Inventory	100	Y	Y	Water quality sample collected in October 2012.
ROGERS 596	573596	Rogers, David	Plume	290	Y	N	Well is turned off. Rogers residence uses ROGERS 803. Water level measurement collected in October 2012.
ROGERS 803	641803	Rogers, Ernest M	Plume	140	N	Y	Water quality sample collected in October 2012. Unable to collect water level due to obstruction in well.
ROGERS E	216018	Rogers, Ernest M	Well Inventory	290	N	Y	Water quality sample collected in October 2012.
RUIZ	531770	Ruiz	Well Inventory	312	N	Y	Water quality sample collected in October 2012. Unable to collect water level due to obstruction in well.
SCHWARTZ	210865	Schwartz	Well Inventory	305	Y	Y	Water quality sample collected in October 2012.
STEPHENS	808560	Stephens	Well Inventory	NR	N	N	Well identified for water level measurements only. Well is not scheduled for fourth quarter sampling.
SUNBELT	201531	Sunbelt Marketing, Inc.	Well Inventory	380	N	N	Well identified for water level measurements only. Well is not scheduled for fourth quarter sampling.
SWAN	NR	Swan	Well Inventory	NR	N	N	Well is not scheduled for fourth quarter sampling.
TM-02A	522574	Copper Queen Branch	Plume	925	N	N	Well is not scheduled for fourth quarter sampling.
TM-06 MILLER	522695	Miller	Plume	200	N	N	Well is not scheduled for fourth quarter sampling.
TM-07	522576	Copper Queen Branch	Plume	350	N	N	Well is not scheduled for fourth quarter sampling.
TM-10 USBP	522696	U.S. Border Patrol	Well Inventory	290	Y	Y	Water quality sample collected in October 2012.
TM-15 MILLER	522699	Miller	Well Inventory	325	N	N	Well is not scheduled for fourth quarter sampling.
TM-16	522578	Copper Queen Branch	Plume	115	N	N	Well is not scheduled for fourth quarter sampling.
TM-19A	522580	Copper Queen Branch	Plume	700	N	N	Well is not scheduled for fourth quarter sampling.
TM-42	562554	Copper Queen Branch	Plume	250	N	N	Well is not scheduled for fourth quarter sampling.
TVI 236	802236	Turquoise Valley, Inc.	Well Inventory	222	Y	Y	Water quality sample collected in October 2012.

TABLE 2
Summary of Groundwater Monitoring Program for Fourth Quarter 2012

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
TVI 713	567713	Turquoise Valley, Inc.	Well Inventory	200	Y	N	Well identified for water level measurements only. Water level measurement taken in October 2012.
TVI 875	568875	Turquoise Valley, Inc.	Plume	330	N	Y	Water quality sample collected in October 2012. Unable to collect water level because wellhead was not accessible.
WEED	544535	Weed	Plume	320	N	Y	Water quality sample collected in October 2012. Unable to collect water level because wellhead was not accessible.
WEISKOPF 802	641802	Weiskopf	Well Inventory	200	Y	Y	Water quality sample collected in October 2012.
WEISKOPF 897	221897	Weiskopf	Plume	947	Y	Y	Water quality sample collected in December 2012.
ZANDER	205126	Zander	Well Inventory	280	Y	Y	Water quality sample collected in October 2012.

ADWR = Arizona Department of Water Resources

bls = below land surface

NR = No Record

35-71891 = ADWR 35 Database

Y = Yes

N = No

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	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
ANDERSON 458	221458	9/9/12	8.34	25.9	406.3	31
		10/10/12	8.13	23.8	412.3	30.3
AWC-02	616586	1/7/08	ND	ND	ND	14
		3/3/08	ND	ND	ND	16
		5/5/08	ND	ND	ND	13.3
		8/12/08	7.01	22.3	630	14.3
		10/23/08	7.31	23.1	464	15.9
		3/11/09	7.19	21.8	420	15.5
		4/22/09	7.17	22.6	430	14.7
		7/22/09	7.24	22.7	444	14.2
		10/21/09	7.19	21.3	468	16.8
		2/3/10	7.44	19.7	449	18.6
		4/23/10	7.56	19.7	526	18.3
		7/20/10	7.27	23.9	450	18.2
		11/4/10	7.72	21.3	465.9	18.8
		1/19/11	7.84	19.0	500	18.4
		4/7/11	7.27	20.3	488.5	17.3
		7/13/11	5.93	23.9	431.5	12.9
		10/13/11	6.72	25.1	464.6	17.4
		10/13/11 DUP	6.72	25.1	464.6	17.4
		2/2/12	7.20	20.8	479.5	19.4
		4/24/12	7.23	23.0	430	15.5
		7/5/12	7.25	22.1	437.1	10.1
		10/18/12	7.48	21.6	448.9	13.0
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	49.0
		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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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	24.0
		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
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	17.0
		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
BANKS 986	647986	2/27/08	7.53	21.8	980	44
		5/12/08	7.40	22.1	1021	65.2
		7/21/08	7.43	22.9	1034	82.2
		10/13/08	7.28	21.7	980	53
		1/21/09	7.66	21.6	872	164
		4/8/09	7.56	22.7	933	47
		7/9/09	7.59	23.1	871	70.9
		10/7/09	7.50	22.2	838	67.7
		2/25/10	7.56	21.1	1020	50.5
		4/20/10	7.71	22.8	1013	53.9
		7/20/10	7.70	23.2	828.3	71.5
		10/20/10	7.60	22.4	948.7	73.4
		1/17/11	7.73	20.6	1038	53.5
		4/5/11	7.66	21.5	965.0	64.5
		7/11/11	7.72	25.4	890.0	68.8
		10/12/11	7.88	21.2	1551	172
		1/31/12	7.69	20.2	1017	64.3
		1/31/2012 DUP	7.69	20.2	1017	64.9
		4/11/12	7.77	22.0	1025	64.0
		7/6/12	7.66	23.7	940	78.6
		7/6/12 DUP	7.66	23.7	940	77.9
		10/4/12	7.73	22.0	845.4	62.6

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BF-01	539783	3/4/08	6.46	21.9	2745	1320
		5/23/08	6.41	18.3	2698	1450
		8/5/08	6.11	22.4	3095	1330
		11/5/08	6.33	19.9	3027	1490
		2/20/09	6.42	19.2	1477	1330
		5/6/09	5.98	23.9	2632	1280
		8/17/09	6.21	29.7	2948	1250
		11/4/09	6.24	23.0	2846	1280
		3/1/10	6.34	21.1	2945	1260
		4/7/10	5.83	20.4	1853	1450
		7/6/10	5.93	22.6	1403	1310
		7/13/11	6.26	21.3	2960	1350
		2/1/12	6.18	19.8	2910	1480
		8/14/12	6.00	21.5	3000	1500
BIMA	577927	2/6/08	6.69	22.2	1335	210
		4/25/2008[1]	6.37	23.1	1521	190
		5/13/2008[1]	6.58	22.7	1489	195
		6/23/2008[1]	6.30	23.3	1572	225
		6/23/08 DUP	6.30	23.3	1572	196
		7/29/2008[1]	6.44	23.0	1647	204
		8/28/2008[1]	M	23.0	1776	256
		9/23/2008[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
BLOMMER	633472	2/5/08	7.43	20.2	714	206
		4/21/2008[1]	7.06	21.9	753	201
		5/15/2008[1]	7.16	22.2	845	211
		6/23/2008[1]	6.93	21.5	903	193
		7/29/2008[1]	7.21	22.2	921	203
		8/27/2008[1]	7.12	22.1	864	189
		9/23/2008[1]	7.16	22.3	818	193
		10/22/08	7.17	21.3	873	200
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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	6.95	173
		7/10/12	7.02	21.5	651	150
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	9.50
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	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
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
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
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
		2/1/12	7.54	22.4	516	67.4
		7/12/12	7.68	24.2	513	68.9
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
BMO-2008-10GU	909272	8/4/08	6.41	23.6	3660	2210
		11/5/08	6.15	20.2	3343	1890
		2/25/09	5.96	22.7	3426	1740
		5/6/09	5.99	23.2	3359	1710
		8/11/09	6.28	22.5	3348	1690
		11/2/09	6.27	21.8	3157	1730
		3/10/10	6.67	19.1	3951	1700
		4/7/10	5.96	20.4	3210	1510
		7/6/10	5.90	21.8	1610	1670
		7/13/11	6.12	22.3	3890	1670
		2/1/12	6.09	19.2	3820	1870
BMO-2008-11G	909434	8/22/08	8.02	28.2	359	14.2
		11/12/08	7.96	24.2	257	13.9
		2/26/09	7.92	25.1	319	12.3
		4/28/09	8.14	25.5	273	11.8
		8/12/09	8.24	25.3	365	11.2
		11/9/09	8.03	25.5	339	13.9
		3/1/10	8.37	23.2	338	13.0
		4/9/10	6.88	24.5	301	13.0
		7/1/10	6.97	25.4	298	12.3
		2/10/11	6.99	24.0	327	11.7
		7/22/11	7.26	24.6	331	12.1
		7/22/11 DUP	7.26	24.6	331	12.0
		1/31/12	7.41	24.1	328	11.9
		8/14/12	7.35	24.6	337	12.3
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
BMO-2010-1M	219957	9/9/10	7.82	24.6	727.0	150
		11/11/10	8.68	19.9	570	98
		2/11/11	8.15	20.8	589	138
		5/12/11	7.74	23.0	710	129
		8/31/11	7.74	23.2	562	154
		12/13/11	7.63	21.3	713	149
		2/8/12	7.69	22.0	605	158
		4/24/12	7.08	23.4	701	150
		7/9/12	6.37	24.3	715	161
		10/17/12	7.40	23.9	699	154
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
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
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
BMO-2012-1M	221388	11/13/12	7.55	21.3	933.7	231
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	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
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
COB MW-2	903984	5/20/08	7.32	21.2	490	40.5
		7/30/08	7.34	20.8	511	37.6
		10/23/08	7.36	20.3	498	34.9
		2/12/09	7.35	20.2	379	35.6
		4/23/09	7.33	21.8	431	34
		7/22/09	7.36	21.3	483	33.5
		10/22/09	7.24	21.0	454	32.2
		3/3/10	7.55	19.7	450	33.5
		4/26/10	7.28	21.3	479.6	34.8
		7/13/10	6.91	21.2	479.5	30.4
		7/13/10 DUP	6.91	21.2	479.5	30.6
		1/20/11	7.47	20.7	440	29.6
		7/14/11	7.11	21.1	472.6	29.8
		1/31/12	7.53	20.3	466.6	30.0
		7/12/12	7.36	21.2	630	29.2
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
COB WL	593116	2/22/08	6.99	20.6	919	90
		3/24/08	ND	ND	ND	98.2
		4/28/08	ND	ND	ND	98.7
		5/20/08	7.30	21.9	1053	98
		7/30/08	7.17	22.0	1098	97.1
		7/30/08	ND	ND	ND	100
		10/15/08	ND	ND	ND	107
		10/23/08	7.23	21.4	1075	104
		2/12/09	6.98	20.6	814	94
		4/23/09	7.29	22.2	923	98
		7/22/09	7.17	22.5	1037	97.3
		10/22/09	7.17	22.4	988	96.1
		3/3/10	7.48	21.1	1030	97.1
		4/26/10	7.36	21.9	1038	97.7
		4/26/10 DUP	7.36	21.9	1038	97.9
		7/13/10	7.18	22.3	1013	88.7
		7/14/11	6.91	21.6	1019	87.3
		7/12/12	7.07	23.2	1060	92.0
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
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	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
DURAZO	NR	2/10/09	7.22	18.8	848	386
		4/20/09	7.37	22.7	901	367
		7/15/09	7.57	22.8	1102	332
		10/14/09	7.17	21.9	1048	377
		2/1/10	7.30	21.1	1105	344
		4/26/10	7.22	23.1	1099	388
		7/20/10	7.28	23.0	1070	405
		10/19/10	7.28	21.9	1112	398
		1/19/11	7.94	21.6	1050	360
		4/4/11	7.20	21.9	1119	383
		7/14/11	7.01	23.6	1101	409
		10/12/11	7.23	24.9	1000	396
		2/7/12	7.26	25.3	1152	404
		4/12/12	7.41	21.8	1101	407
EAST	599796	2/8/08	7.45	19.9	423	10.6
		5/14/08	7.31	20.9	595	14.8
		7/23/08	7.34	20.8	605	11.8
		10/14/08	7.33	20.3	531	8.9
		1/20/09	7.33	20.0	482	12.5
		4/8/09	7.32	20.6	555	15.9
		7/13/09	7.33	21.2	613	13.8
		10/8/09	7.29	20.8	593	13.4
		1/25/10	7.08	19.0	585	10.7
		4/21/10	7.42	20.5	616	14.4
		4/21/10 DUP	7.42	20.5	616	13.9
		7/14/10	7.45	22.2	577.1	12.1
		10/20/10	7.64	21.2	650	12.1
		1/18/11	7.44	21.0	615.9	13.1
		4/5/11	7.19	20.8	612.5	13.8
		7/12/11	7.23	21.7	595.1	12.7
		10/12/11	7.31	21.4	599.7	15.1
		10/12/11 DUP	7.31	21.4	599.7	15.1
		1/31/12	7.24	20.0	610	12.8
		4/11/12	7.53	20.6	609.3	14.6
		7/9/12	7.20	21.1	580	14.2
		10/4/12	7.49	20.4	623.8	15.0
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	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
		4/11/2012 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
FLEMING	218386	7/15/10	6.98	24.2	1390	573
FRANCO 101	500101	2/6/08	7.47	19.6	1301	670
		5/5/08	6.93	23.1	1557	680
		7/14/08	7.00	22.7	1586	680
		10/15/08	7.20	20.5	1560	680
		1/22/09	7.19	20.1	1178	740
		4/14/09	7.24	23.1	1416	690
		7/13/09	7.30	27.3	1532	670
		10/12/09	7.16	24.2	1493	650
		1/26/10	6.91	18.5	1529	640
		4/23/10	7.43	15.8	1559	699
		7/13/10	7.48	28.6	901.6	188
FRANCO 383	221383	9/13/12	7.66	25.0	1005	318
		10/5/12	7.63	24.4	1002	324
		11/13/12	7.67	19.8	988.2	349
		12/3/12	7.54	19.4	1001	332
FULTZ	212447	2/27/08	6.76	21.1	1827	152
		4/21/2008[1]	6.74	22.0	1739	137
		5/14/2008[1]	6.88	22.3	1532	131
		6/23/2008[1]	6.74	22.0	1788	111
		7/29/2008[1]	6.74	22.2	1989	152
		8/28/2008[1]	M	21.6	1889	137
		9/23/2008[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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
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
		3/2/2010 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
HOBAN	805290	2/27/08	6.93	22.1	1359	510
		5/7/08	6.88	22.3	1532	670
		7/14/08	6.88	23.1	1719	690
		10/16/08	6.98	22.4	1624	692
		1/28/09	6.82	21.3	1220	580
		4/15/09	7.07	21.7	1423	700
		7/14/09	6.78	22.6	1551	670
		10/15/09	6.75	22.7	1487	670
		10/15/09 DUP	6.75	22.7	1487	780
		3/2/10	7.12	19.8	1575	580
		8/31/11	6.64	22.3	1772	893
		12/14/11	6.68	20.2	1870	944
		2/1/12	6.74	20.9	1900	993
		4/19/12	6.81	21.5	1805	868
		7/11/12	6.86	21.4	1906	1110
		10/17/12	6.74	22.0	1846	1040

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
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
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
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
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
MCCONNELL 459	221459	7/27/12	8.25	26.5	510.0	41
		10/8/12	8.12	25.3	517.3	43.4

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
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	44
NSD-03	527586	2/5/08	ND	ND	ND	70.7
		7/7/08	7.64	21.0	570	58.9
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	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
		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
NWC-06	575700	3/4/08	ND	ND	ND	7.9
		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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	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
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
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
		4/12/2012 DUP	6.90	20.9	1265	352
		7/9/12	6.82	22.2	1140	292
		11/27/2012	7.51	20.1	1164	274

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
PARRA	576415	2/11/08	7.08	21.8	1067	360
		5/15/08	7.10	21.8	1200	405
		7/31/08	7.00	22.4	1248	423
		7/31/08 DUP	7.00	22.4	1248	404
		10/20/08	7.07	22.9	1246	387
		2/13/09	7.24	22.1	965	405
		4/20/09	7.10	22.6	971	372
		7/20/09	7.17	23.9	1174	375
		10/20/09	6.80	22.5	1188	388
		2/1/10	7.07	21.5	1197	353
		4/22/10	6.91	20.3	1219	417
		7/14/10	7.13	22.2	1201	403
		7/14/10 DUP	7.13	22.2	1201	391
		10/20/10	7.51	21.4	1270	411
		1/19/11	7.49	20.8	1130	391
		4/4/11	6.90	22.6	1207	382
		7/12/11	6.76	23.7	1156	404
		10/12/11	7.44	22.3	1070	406
		2/7/12	7.64	21.4	1212	428
		4/13/12	7.49	21.1	1204	402
		4/13/12 DUP	7.49	21.1	1204	390
		7/18/12	7.03	22.6	1210	418
		7/18/12 DUP	7.03	22.6	1210	419
		10/9/12	7.30	21.3	1209	428
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
		2/1/2012 DUP	7.25	17.5	1230	495
		4/12/12	7.17	22.1	1218	508
		7/11/12	6.59	22.9	1280	439
		10/17/12	7.16	22.3	1136	419
PIONKE 517	221517	9/18/12	7.91	23.4	395.8	14
		10/11/12	7.75	22.8	394.7	14.9
POOL	509518	2/20/08	7.95	20.9	497	134
		5/19/08	7.40	22.2	585	122
		7/31/08	7.47	22.3	599	117
		10/21/08	7.51	21.4	598	120
		2/13/09	7.62	20.8	473	141
		4/21/09	7.73	22.6	470	124
		7/20/09	7.76	22.9	579	122
		10/20/09	7.22	21.2	577	122
		2/24/10	7.56	22.4	577	110
		4/22/10	7.75	20.2	606.5	130
		7/14/10	7.38	21.7	580.9	117
		10/20/10	7.79	21.3	620	115
		1/20/11	7.71	20.5	530	112
		1/20/11 DUP	7.71	20.5	530	114
		4/6/11	7.37	21.6	567.4	114
POWER	624535	2/12/08	7.11	18.9	428	15.5
		7/22/08	7.10	21.7	795	20.2

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	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
		10/8/2012 DUP	7.61	22.5	412.0	9.07
RAY	803772	2/15/08	7.30	19.1	1540	159
		4/21/2008[1]	6.92	21.3	1418	125
		5/13/2008[1]	7.05	20.9	1418	123
		6/23/2008[1]	6.87	21.1	1593	130
		7/29/2008[1]	6.98	21.8	1411	120
		8/28/2008[1]	M	21.1	1519	129
		9/23/2008[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
ROGERS 596	573596	10/19/09	6.89	23.3	1360	590
		11/5/09	6.79	21.9	1418	540
		2/25/10	6.99	19.6	1603	520
		4/22/10	7.21	18.2	1641	710
ROGERS 803	641803	2/7/08	7.45	18.6	601	138
		4/21/2008[1]	7.32	21.4	552	128
		5/8/2008[1]	7.14	21.2	622	141
		6/23/2008[1]	7.06	22.9	660	129
		7/29/2008[1]	6.78	23.1	339	134
		8/28/2008[1]	7.18	21.6	635	128
		9/23/2008[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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
ROGERS E	216018	2/4/08	7.40	21.0	435	4.6
		5/7/08	7.18	22.2	415	5.9
		7/17/08	7.28	23.0	446	7.1
		10/27/08	7.38	21.4	434	15.7
		2/10/09	7.51	20.7	322	5.4
		4/16/09	7.48	22.0	361	4.9
		7/13/09	7.34	22.6	420	3.8
		10/6/09	7.31	22.3	407	5.8
		1/25/10	7.52	20.6	414	5.1
		4/21/10	7.44	21.1	421	6.04
		7/21/10	7.37	23.8	430	6.47
		10/19/10	7.80	22.8	460	5.92
		1/18/11	7.39	21.5	390	5.50
		4/11/11	7.19	22.7	427.2	6.13
		7/18/11	7.12	24.3	418.5	6.00
		10/13/11	7.52	22.2	370	5.99
		1/30/12	7.38	20.8	427.2	6.22
		4/10/12	7.37	22.1	421.8	6.31
		7/17/12	7.32	22.7	420	5.85
		10/17/12	7.55	21.7	429.0	6.04
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
SCHWARTZ	210865	2/8/08	7.52	21.5	506	158
		4/21/2008[1]	7.23	21.7	563	122
		5/19/2008[1]	7.38	22.4	629	130
		6/23/2008[1]	7.02	22.1	674	129
		7/29/2008[1]	7.25	22.4	955	245
		8/28/2008[1]	M	22.3	669	131
		9/23/2008[1]	7.27	22.2	607	124
		10/22/2008[1]	7.31	22.0	653	135
		11/19/2008[1]	7.38	21.1	612	140
		12/17/2008[1]	6.78	21.6	472	144
		1/29/2009[1]	7.08	22.0	475	124
		2/23/2009[1]	7.33	22.1	610	123
		4/17/09	7.46	22.2	520	120
		7/10/09	7.52	22.8	651	116
		7/10/09 DUP	7.52	22.8	651	117
		10/6/09	7.27	22.5	613	120
		1/22/10	7.79	19.5	664	133
		4/21/10	7.50	20.9	638	129
		7/21/10	7.43	22.0	650	134
		10/19/10	7.76	21.2	710	147
		1/17/11	7.15	21.2	620	116
		4/11/11	7.20	21.5	656.9	128
		7/18/11	7.36	23.7	612.4	116
		10/12/11	7.35	22.4	635.8	124
		2/6/12	7.32	21.3	629.7	116
		2/6/2012 DUP	7.32	21.3	629.7	114
		4/10/12	7.48	21.6	626.1	120
		7/16/12	7.31	21.9	710	117
		10/17/12	7.48	21.6	645.0	121
SRC	211345	4/23/08	7.57	25.8	380	19
		8/5/08	7.40	27.2	452	15.4

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/3/2012 DUP	7.40	20.5	484.5	19.5
		7/10/12	7.00	22.7	370	19.4
TM-02A	522574	3/4/08	8.67	22.6	302	12.3
		5/23/08	7.75	22.9	321	14.7
		8/15/08	7.84	26.4	369	14.4
		10/30/08	8.07	23.9	375	21.9
		2/24/09	8.10	24.8	340	20.3
		5/6/09	8.06	26.7	320	18.7
		8/12/09	8.34	26.9	398	20
		11/4/09	8.16	26.3	381	21.8
		3/10/10	8.13	25.2	351	21.4
		3/10/10 DUP	8.13	25.2	351	21.3
		4/6/10	6.96	24.6	363	25.6
		7/6/10	7.38	24.6	343	22.1
		2/10/11	6.93	20.2	359	22.9
		7/13/11	7.92	24.8	349	22.5
		2/2/12	7.89	22.2	360	23.0
		8/14/12	7.65	24.6	366	23.4
TM-03	522575	5/20/08	7.51	22.2	778	110
		8/6/08	7.08	21.6	828	97
		11/12/08	7.47	20.5	590	128
		2/26/09	7.21	21.8	737	107
		2/26/09 DUP	7.21	21.8	737	102
		5/13/09	7.47	22.2	695	109
		8/18/09	7.48	22.4	822	98
		11/10/09	7.55	21.8	761	106
		3/2/10	7.56	21.6	748	99
		4/14/10	7.55	20.6	635	103
		7/7/10	7.19	21.4	566	103
		2/1/12	7.48	21.1	744	112
TM-06 MILLER	522695	2/27/08	7.44	19.6	457	13.9
		5/20/08	7.50	20.7	506	32.7
		8/4/08	7.41	20.7	529	31.3
		10/29/08	7.55	20.2	531	34.5
		2/26/09	7.18	20.4	574	32.7
		5/13/09	7.35	20.9	465	30.6
		8/18/09	7.50	20.9	560	30.9
		8/18/09 DUP	7.50	20.9	560	29.9
		11/12/09	7.53	20.4	530	31.1
		4/14/10	7.35	19.4	461	29.0
		7/2/10	7.24	20.1	438	29.8
		7/21/11	7.1	20.1	516	31.7
		7/9/12	6.82	20.8	505	33.5
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		4/24/2012 DUP	7.88	21.0	280	13.3
		9/13/12	8.09	21.1	407.0	13.3
		10/19/12	8.17	21.0	428.2	12.8
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
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
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
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
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
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
WALKER	200393	2/13/08	7.05	20.2	650	20
		7/23/08	7.25	20.7	740	45.4
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

TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
WEISKOPF 897	221897	12/6/12	7.93	23.6	398.3	18.5
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
		4/10/2012 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

ADWR = Arizona Department of Water Resources
deg C = degrees Celsius
M = Multi-Meter Malfunction
NR = No Record
ND = No Data
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
mg/L = milligrams per liter
DUP = Blind duplicate

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	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
ANDERSON 458	221458	601118.690	3468826.284	4585.37	9/7/12	173.76	4411.61
					10/10/12	151.82	4433.55
AWC-02	616586	598907.911	3468549.357	4547.64	8/27/08	121.12	4426.52
					4/8/08[1]	116	4431.64
					10/23/08[2]	115	4432.64
					4/22/09[2]	118	4429.64
					10/9/09[2]	117	4430.64
					4/23/10[2]	119	4428.64
AWC-03	616585	599090.322	3468681.898	4539.52	8/27/08	119.40	4420.12
					4/8/2008[1]	112	4427.52
					10/23/08[2]	106	4433.52
					4/22/09[2]	114	4425.52
					10/9/09[2]	116	4423.52
					4/23/10[2]	116	4423.52
AWC-04	616584	598949.929	3468717.084	4540.48	8/18/08	112.56	4427.92
					4/8/2008[1]	108	4432.48
					10/23/08[2]	111.31	4429.17
					4/22/09[2]	110	4430.48
					10/9/09[2]	110	4430.48
					4/23/10[2]	109	4431.48
AWC-05	590620	599269.904	3468541.692	4542.51	8/27/08	299.65	4242.86
					4/8/08	284	4258.51
					10/23/08	284	4258.51
					4/22/09	286	4256.51
					6/3/09	125	4417.51
					10/9/09[2]	289	4253.51
					4/23/10[2]	278	4264.51

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
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
BF-01	539783	604169.077	3472151.593	4835.23	3/4/08	348.99	4486.24
					5/23/08	348.80	4486.43
					8/5/08	348.66	4486.57
					11/5/08	348.94	4486.29
					2/20/09	348.78	4486.45
					5/6/09	348.73	4486.50
					8/17/09	348.73	4486.50
					11/4/09	348.65	4486.58
					3/1/10	348.84	4486.39
					4/7/10	348.70	4486.53
					7/6/10	348.69	4486.54
					7/13/11	348.67	4486.56
					2/1/12	347.84	4487.39
					8/13/12	343.95	4491.28
BIMA	577927	606001.245	3471852.804	4802.05	5/13/08	367.31	4434.74
					8/18/08	370.24	4431.81
					10/23/08	353.96	4448.09
					1/20/09	353.07	4448.98
					4/7/09	357.76	4444.29
					7/8/09	365.44	4436.61
					10/5/09	370.11	4431.94
					4/19/10	382.25	4419.80
					7/21/10	386.89	4415.16
					10/18/10	387.39	4414.66
					1/19/11	391.47	4410.58
					4/4/11	395.22	4406.83

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
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
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
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	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
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
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	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
BMO-2008-8B	910097	604171.347	3471141.719	4753.25	12/5/08	297.94	4455.31
					2/19/09	297.63	4455.62
					5/5/09	297.37	4455.88
					8/10/09	297.53	4455.72
					11/9/09	297.85	4455.40
					3/3/10	298.37	4454.88
					4/16/10	298.46	4454.79
					7/1/10	298.64	4454.61
					2/11/11	299.56	4453.69
					5/13/11	299.78	4453.47
					7/15/11	300.00	4453.25
					1/30/12	300.52	4452.73
					7/12/12	301.15	4452.10
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
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	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
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
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
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
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
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
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
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
BMO-2012-1M	221388	606097.384	3469746.747	4719.76	11/13/12	231.90	4487.86

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BURKE	212268	602230.087	3473029.816	4856.30	4/22/08	606.55	4249.75
					8/5/08	605.86	4250.44
					10/28/08	604.88	4251.42
					2/19/09	603.91	4252.39
					4/28/09	603.70	4252.60
					8/19/09	602.66	4253.64
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
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
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	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
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	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
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
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
ECHAVE	219449	599701	3470168	4648	2/1/12	216.71	4431.29
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
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
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
FULTZ	212447	607153.306	3469063.892	4642.92	10/22/08	40.59	4602.33
					1/21/09	40.66	4602.26
					4/9/09	42.88	4600.04
					7/13/09	54.94	4587.98
					10/8/09	56.16	4586.76
					1/25/10	53.45	4589.47
					4/20/10	63.82	4579.10
					7/14/10	119.86	4523.06
GARNER 557	558557	602659.240	3468962.415	4638.45	2/21/08	191.05	4447.40
					5/5/08	191.28	4447.17
					7/15/08	191.44	4447.01
					10/16/08	191.83	4446.62
					1/28/09	191.92	4446.53
					4/15/09	192.09	4446.36
					7/16/09	192.52	4445.93
					10/14/09	192.82	4445.63
					2/2/10	193.33	4445.12
					4/22/10	193.49	4444.96
					7/20/10	193.93	4444.52
					10/19/10	194.29	4444.16
					1/19/11	194.61	4443.84
					4/6/11	194.86	4443.59
					7/15/11	195.25	4443.20
					10/11/11	195.72	4442.73
					2/2/12	196.09	4442.36
					4/13/12	196.30	4442.15
					7/11/12	196.72	4441.73
					10/5/12	197.08	4441.37
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
GGOOSE 547	628547	606256.657	3469820.260	4717.11	5/21/08	220.91	4496.20
					8/15/08	238.48	4478.63
					10/29/08	235.90	4481.21
					2/24/09	236.13	4480.98
					5/14/09	236.17	4480.94
					8/19/09	236.01	4481.10
					8/19/09	236.01	4481.10
					11/11/09	237.66	4479.45
					3/9/10	238.84	4478.27
					4/27/10	239.17	4477.94
GL-03	539782	604386.940	3473747.943	4924.31	5/22/08	660.15	4264.16
					8/4/08	659.79	4264.52
					12/2/08	658.25	4266.06
					2/26/09	658.62	4265.69
					5/5/09	657.23	4267.08
					8/12/09	656.56	4267.75
					8/12/09	656.56	4267.75
					11/10/09	655.31	4269.00
					3/2/10	655.52	4268.79
					4/9/10	655.35	4268.96
					7/7/10	655.05	4269.26
					2/1/12	651.72	4272.59
GOAR RANCH	610695	602454.751	3468892.471	4631.13	2/21/08	183.90	4447.23
					5/5/08	188.11	4443.02
					7/16/08	184.41	4446.72
					10/22/08	184.68	4446.45
					1/27/09	184.87	4446.26
					4/15/09	184.96	4446.17
					7/7/09	185.36	4445.77
					10/12/09	185.72	4445.41
					2/2/10	186.25	4444.88
					4/22/10	186.44	4444.69
					7/13/10	186.76	4444.37
					1/19/11	187.52	4443.61
					7/12/11	188.24	4442.89
					2/6/12	189.02	4442.11
					9/13/12	190.08	4441.05
HOBAN[3]	805290	601705.848	3468880.329	4607.60	2/27/08	163.05	4444.55
					5/7/08	163.28	4444.32
					7/14/08	163.87	4443.73
					10/16/08	163.95	4443.65
					1/28/09	163.82	4443.78
					4/15/09	164.16	4443.44
					7/14/09	164.59	4443.01
					10/15/09	165.00	4442.60
					3/2/10	165.32	4442.28
					5/18/10	165.71	4441.89
					7/20/10	166.17	4441.43
					10/19/10	166.45	4441.15
					8/31/11	167.76	4439.84
					12/14/11	168.13	4439.47
					2/1/12	168.09	4439.51
					4/19/12	168.32	4439.28
					7/11/12	169.10	4438.50
					10/17/12	169.40	4438.20

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
HOWARD NR[4]	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
HOWARD 312	221312	601308.920	3468772.630	4594.9356	8/14/12	188.36	4406.58
					10/16/12	193.33	4401.61
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
MCCONNELL 459	221459	601471.708	3468840.682	4601.55	7/27/12	170.50	4431.05
					10/8/12	166.81	4434.74
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
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	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
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
NWC-02	562944	600177.435	3467474.673	4600.44	10/27/08	160.51	4439.93
					4/29/09[5]	160.5	4439.94
					9/10/09[5]	155	4445.44
					4/2010[5]	131	4469.44
NWC-03	203321	601153.857	3468350.838	4574.99	11/3/08	131.48	4443.51
					4/29/09[5]	130	4444.99
					9/10/09[5]	126	4448.99
					10/9/09[5]	125	4449.99
NWC-03 CAP[6]	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
NWC-04	551849	605829.808	3469071.959	4690.77	12/2/08	352.11	4338.66
					4/29/09[5]	328	4362.77
					9/10/09[5]	324	4366.77
					4/2010[5]	216	4474.77
NWC-06	575700	599822.821	3467749.954	4592.50	4/29/09[5]	156	4436.50
					9/10/09[5]	155	4437.50
					10/9/09[5]	148	4444.50
					4/2010[5]	140	4452.50

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Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	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
					7/9/12	74.63	4637.32
PANAGAKOS	35-76413	605304.234	3469323.140	4691.40	1/22/09	155.28	4536.12
					4/9/09	156.15	4535.25
					7/9/09	161.61	4529.79
					10/6/09	167.20	4524.20
					1/21/10	166.92	4524.48
					4/20/10	167.11	4524.29
					7/20/10	171.78	4519.62
					10/18/10	176.39	4515.01
					7/14/11	173.78	4517.62
					8/25/11	172.89	4518.51
					2/6/12	169.09	4522.31
					2/29/12	169.32	4522.08
					3/15/12	169.64	4521.76
					4/12/12	168.85	4522.55
					7/9/12	170.38	4521.02
					11/27/12	169.82	4521.58
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
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
PIONKE 517	221517	600909.967	3468866.654	4587.20792	9/18/12	152.00	4435.21
					10/11/12	152.15	4435.06

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
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
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
ROGERS 750[7]	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 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
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
SCHWARTZ[8]	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
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
SUNBELT	201531	605998.250	3471735.149	4806.52	2/6/08	352.10	4454.42
					5/15/08	358.97	4447.55
					8/5/08	Dry	<4426
					10/16/08	347.00	4459.52
					1/21/09	344.78	4461.74
					4/10/09	349.64	4456.88
					7/8/09	356.99	4449.53
					10/5/09	Dry	<4426
					1/21/10	Dry	<4426
					4/19/10	Dry	<4426
					7/12/10	Dry	<4426
					1/19/11	Dry	<4426
					8/25/11	Dry	<4426
					2/3/12	Dry	<4426
					7/9/12	Dry	<4426
					9/13/12	Dry	<4426

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
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
TM-03	522575	606366.130	3473711.046	4897.85	3/12/08	127.14	4770.71
					5/20/08	127.40	4770.45
					8/6/08	128.02	4769.83
					11/12/08	128.00	4769.85
					2/26/09	126.94	4770.91
					5/13/09	113.86	4783.99
					8/18/09	128.80	4769.05
					11/10/09	125.38	4772.47
					3/2/10	128.02	4769.83
					4/14/10	130.56	4767.29
					7/7/10	131.25	4766.60
					2/1/12	135.04	4762.81
TM-06 MILLER	522695	606055.975	3468376.658	4707.88	2/26/08	158.78	4549.10
					5/20/08	158.76	4549.12
					8/4/08	158.80	4549.08
					10/29/08	158.85	4549.03
					2/16/09	159.28	4548.60
					5/13/09	158.81	4549.07
					8/18/09	158.91	4548.97
					11/12/09	158.96	4548.92
					3/8/10	158.99	4548.89
					4/14/10	159.02	4548.86
					7/2/10	159.13	4548.75
					7/21/11	159.88	4548.00
					7/9/12	161.40	4546.48

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	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
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
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
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

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
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
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
WEISKOPF 897	221897	601096.780	3468647.358	4585.70	12/6/12	149.27	4436.43

TABLE 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
WMD-2011-03M	913037	605360.830	3470671.273	4746.28	2/2/12	226.66	4519.62
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

Notes:

ADWR = Arizona Department of Water Resources

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

ft amsl = feet above mean sea level

NR = No Record

[1] Measuring point elevation for third quarter 2008 changed to reflect well survey completed on September 18, 2008

[2] Depth to Water measurement provided by Arizona Water Company

[3] Measuring point elevation changed to reflect survey results June 2012 and applied to all measurements collected

[4] Measuring point elevation changed to reflect survey results September 10, 2010 and applied to all measurements collected

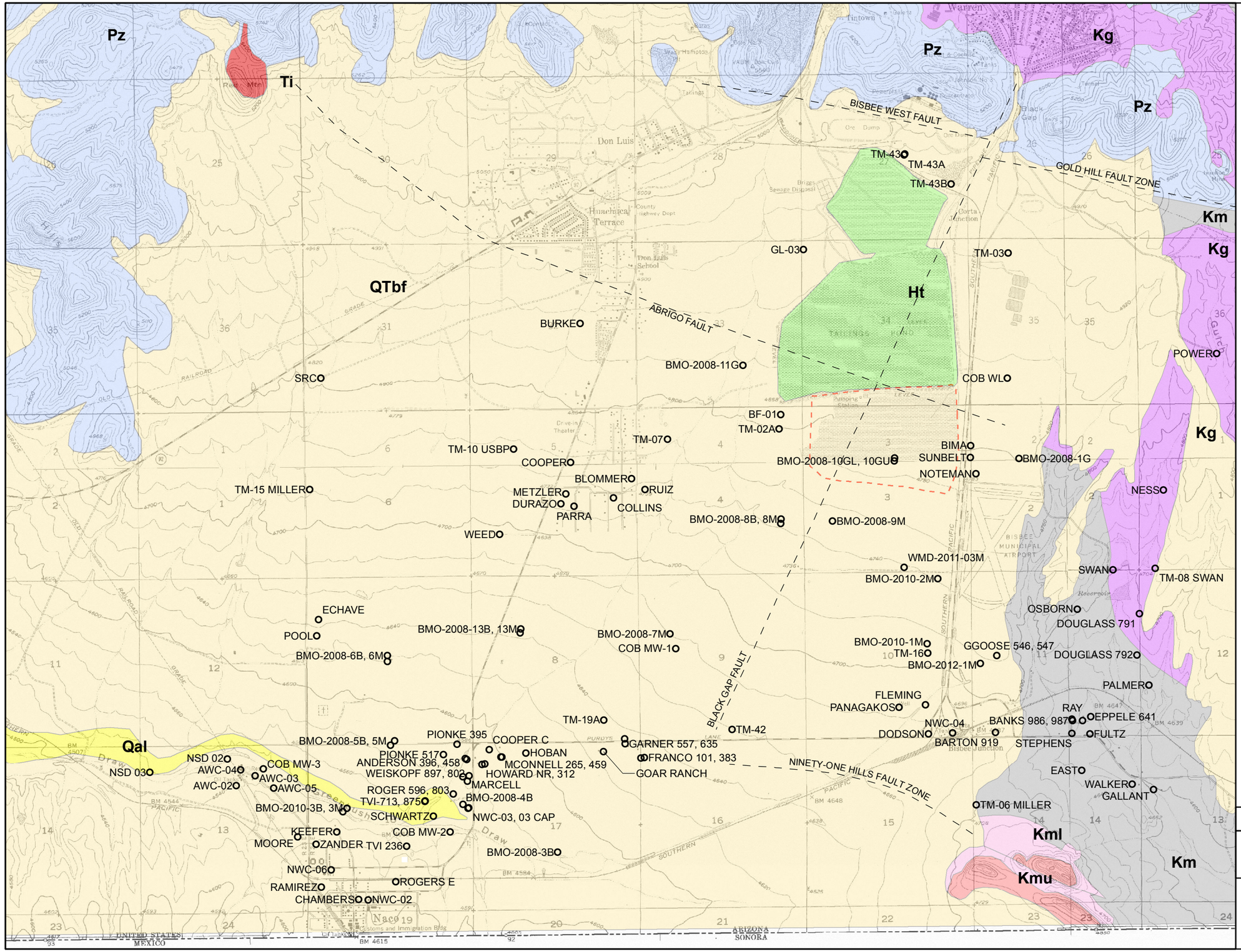
[5] Depth to Water measurement provided by Naco Water Company

[6] Measuring point elevation for second quarter 2009 changed to reflect well survey completed on April 27, 2009

[7] Well previously identified as ROGERS 803

[8] Measuring point elevation changed to reflect survey results September 10, 2010 and applied to all measurements collected

FIGURES



Legend

- Sampling / Water Level Location
  Not all wells shown are currently sampled. Current sampling locations are based on the Revised Monitoring Program approved by ADEQ in 2010.
- Former Evaporation Pond

Geologic Unit

- Ht - Holocene Tailings
- Qal - Quaternary Alluvium
- QTbf - Quaternary-Tertiary Basin Fill
- Ti - Tertiary Intrusive
- Undifferentiated Bisbee Group
  - Kc - Cintura Formation
  - Kmu - Upper Mural Limestone
  - Kml - Lower Mural Limestone
  - Km - Morita Formation
- Kg - Glance Conglomerate
- Pz - Paleozoic Sedimentary Formations

Scale

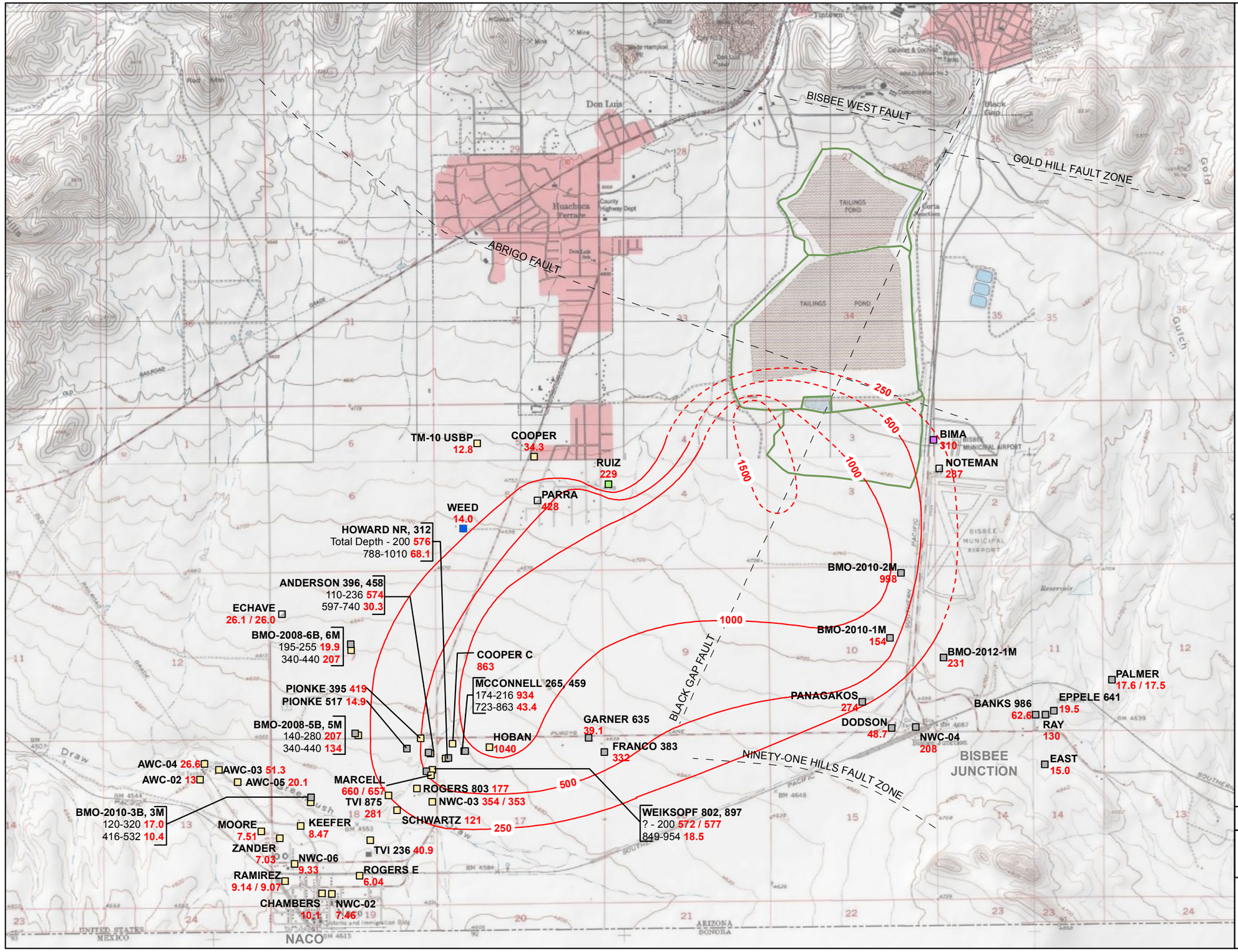
0 1,500 3,000 6,000 Feet

Notes:
Projection: UTM Zone 12N NAD83

Date	File ID
10/1/12	055038-009J

CLEAR CREEK ASSOCIATES

FIGURE 1
Generalized Geology and Well Locations



Legend

- RAY — Well ID
- 130 — Sulfate Concentration (mg/L)
- Sulfate Elevation Contours (dashed where inferred)
- Faults (inferred)
- CTSA Facility

Co-located Wells
- Well ID
- Screen (ft bgs): 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

Scale (Feet)

0 3,000 6,000

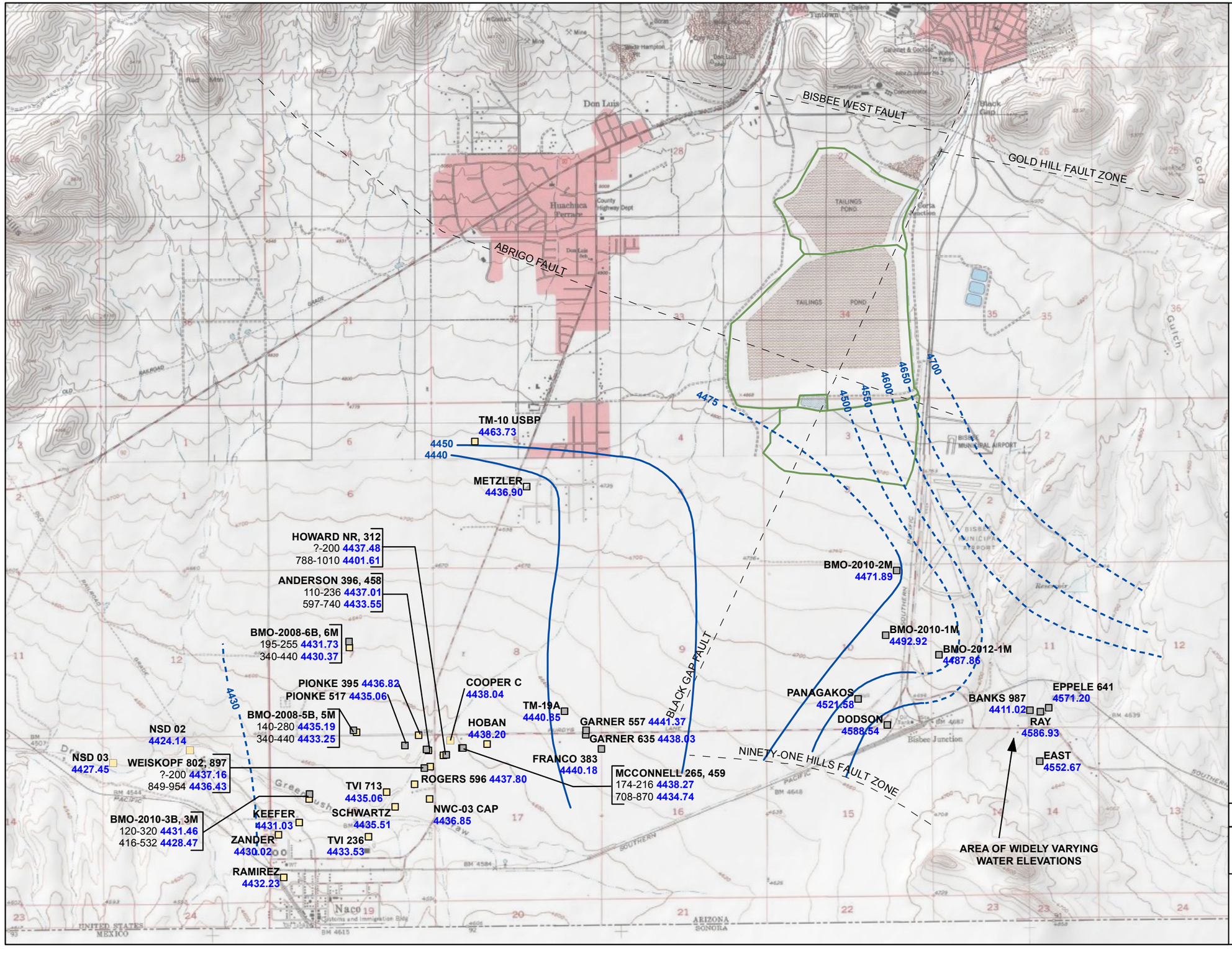
Notes:

Projection: UTM Zone 12N NAD83
mg/L = milligrams per liter
In areas where no data were collected in the fourth quarter, contours are based on on third quarter 2012 data.

Date	File ID
12/19/12	055038-230

CLEAR CREEK ASSOCIATES

FIGURE 2
Sulfate Concentrations in Groundwater for Fourth Quarter 2012



Legend

- RAY — Well ID
- 4586.93 — Groundwater Elevation (ft amsl)
- Groundwater Elevation Contours (dashed where inferred)
- Faults (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

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

Scale (Feet)

0 3,000 6,000

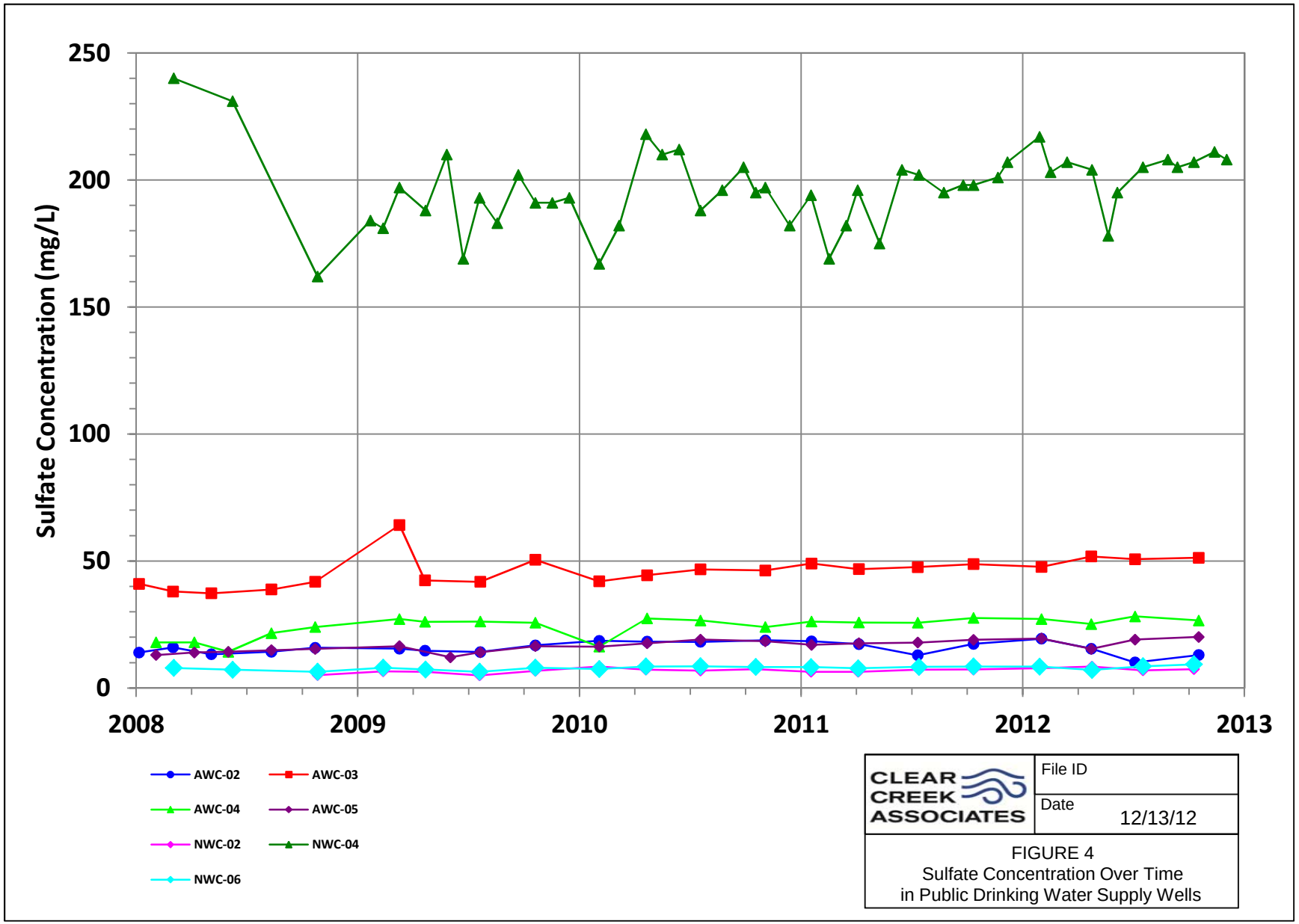
Notes:

Projection: UTM Zone 12N NAD83
amsl = above mean sea level
bls = below land surface
Groundwater elevation contour intervals are irregular. The intervals were chosen to show hydraulic gradient across the study area while maintaining the legibility of the data.
In areas where no date were collected in the fourth quarter 2012, groundwater elevations are based on third quarter 2012 data.

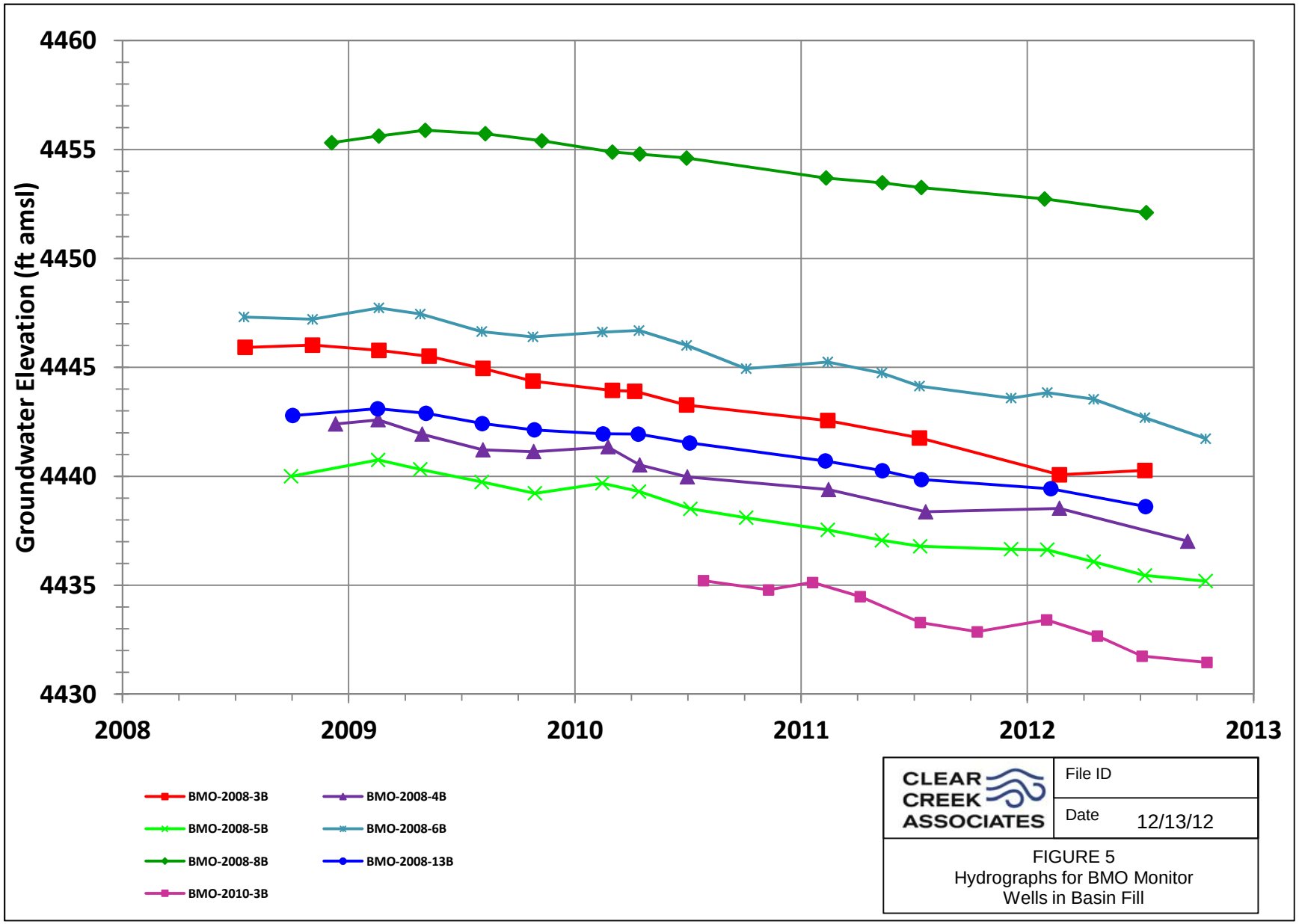
Date	File ID
12/19/12	055038-231

CLEAR CREEK ASSOCIATES

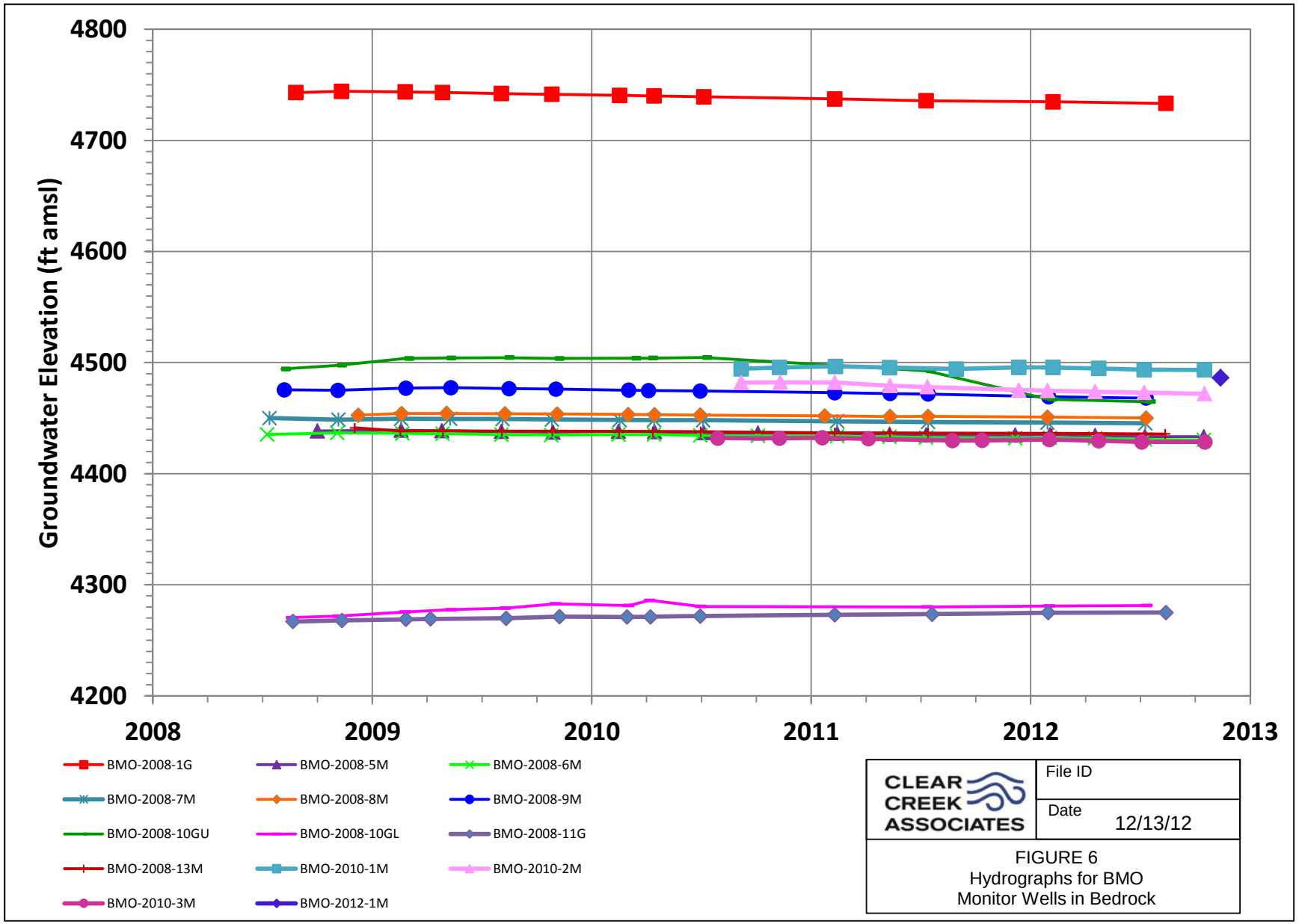
FIGURE 3
Groundwater Elevations for Fourth Quarter 2012



N:\Projects\G & K\055038_Copper Queen Branch Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2012 Q4 CQB Groundwater Monitoring Report\SO4 and GW elev Time Series for Select Q4 2012



N:\Projects\G & K\055038_Copper Queen Branch Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2012 Q4 CQB Groundwater Monitoring Report\SO4 and GW elev Time Series for Select Q4 2012



N:\Projects\G & K\055038_Copper Queen Branch Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2012 Q4 CQB Groundwater Monitoring Report\SO4 and GW elev Time Series for Select Q4 2012

APPENDIX A

SURVEY DATA

APPENDIX A

Survey Results for New Wells

Point ID	Survey Location	Northing (UTM meters)	Easting (UTM meters)	Elevation (meters)
BMO-2012-1M	Top of Well Pad	3469746.484	606097.322	1438.144
BMO-2012-1M	Top of Sounding Tube	3469746.747	606097.384	1438.587
WEISKOPF 897	Top of Well Pad	3468647.620	601096.918	1397.112
WEISKOPF 897	Top of Sounding Tube	3468647.358	601096.780	1397.724

All coordinates listed in UTM Zone 12n WGS84 Geoid 09 (Meters)
Data Provided by CQB

APPENDIX B

DATA VERIFICATION REPORT

APPENDIX B

DATA VERIFICATION REPORT

FOURTH QUARTER 2012
GROUNDWATER MONITORING REPORT

Prepared for:

FREEPORT-MCMORAN CORPORATION
COPPER QUEEN BRANCH
36 West Highway 92
Bisbee, Arizona 85603

Prepared by:

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

January 18, 2013

TABLE OF CONTENTS

1. INTRODUCTION

This report summarizes the data verification review of groundwater samples collected and analyzed during the fourth quarter 2012 by Clear Creek Associates (Clear Creek) and Freeport-McMoRan Corporation Copper Queen Branch (CQB) pursuant to Mitigation Order on Consent Docket No. P-121-07 (ADEQ, 2007). Clear Creek and CQB collected groundwater samples pursuant to the groundwater monitoring program approved by ADEQ in April 2010 (CQB, 2010 and ADEQ, 2010). Analytical results for groundwater samples collected for this project during the fourth quarter 2012 were provided to Clear Creek by SVL Analytical, Inc. (SVL) of Kellogg, Idaho for preparation of the fourth quarter 2012 Groundwater Monitoring Report.

Quality assurance (QA) and quality control (QC) procedures are specified in the *Quality Assurance Project Plan for Aquifer Characterization Plan* (QAPP) (Appendix F of HGC, 2008) for field sampling, chain-of-custody (COC) documentation, laboratory analysis, and reporting. This report reviews field sampling for samples collected by Clear Creek and CQB. Additionally, sample handling and laboratory QA/QC data are evaluated according to the data quality indicators (DQIs) given in the QAPP.

The laboratory reports for the fourth quarter 2012 samples including COC forms, laboratory correspondence, QC summaries, data qualifiers, internal QA/QC tests performed by the laboratory are presented with the laboratory reports included in Appendix C. Based on the results of laboratory control samples, matrix spike/recovery and blank spikes, SVL did not advise that any modifications be made regarding the usability and data validation status of the laboratory test results. The analytical results for all 81 samples collected by Clear Creek and CQB are contained in 13 reports having the Laboratory Project numbers identified in the following table.

SVL ID	WELLS REPORTED
Number of wells sampled: 57 Number of groundwater samples collected (including duplicates): 67 Number of duplicate samples collected: 6 Number of field and equipment blanks collected: 14 Total number of samples collected: 81	
W2J0162	BANKS 986, EAST, EPPELE 641, PALMER, DUP10032012, RAY, NOTEMAN, EB10032012, FB10032012
W2J0299	FRANCO 383, GARNER 635, FB10042012, EQB10042012
W2J0369	MCCONNEL 265, MCCONNELL 459, CHAMBERS, RAMIREZ, DUP10082012, MOORE, ZANDER, KEEFER, TVI 236, TVI 875, ECHAVE, DUP10092012, WEED, RUIZ, PARRA, COOPER, NWC-04, NWC-03, DUP10102012, NWC-06
W2J0370	NWC-02, ROGERS 803, COOPER C, ANDERSON 396, ANDERSON 458, FB10082012, EQB10082012 , FB10092012, EQB10092012,FB10102012, EQB10102012, FB10112012, EQB10112012, PIONKE 517, WEISKOPF 802, DUP10112012
W2J0426	BMO-2008-5M, BMO-2008-5B, BMO-2008-6M, BMO-2008-6B, BMO-2010-1M, BMO-2010-2M, (NOTE: BMO-2010-1M and BMO-2010-2M were incorrectly logged by the laboratory as BMO-2008-1M and BMO-2008-2M), HOBAN
W2J0432	HOWARD NR,HOWARD 312, ROGERS E, SCHWARTZ, PIONKE 395, MARCELL NR, FB20121017,EQB20121017, DUP20121017
W2J0528	BMO-2010-3B, BMO-2010-3M, AWC-05, AWC-03, AWC-02, AWC-04, TM-10 USBP, DODSON
W2K0329	BMO-2012-1M
W2K0330	NWC-04, FRANCO 383
W2K0556	PANGAKOS
W2L0026	BIMA
W2l0027	NWC-04, FRANCO 383
W2L0122	WEISKOPF 897

2. FIELD OPERATIONS

Field operations for this project consisted of the following for all monitoring wells sampled by Clear Creek and CQB:

- Static water level measurement if possible,
- Well purging,
- Collection of water quality field parameters (pH in standard units [SU], specific conductance [SC] in microSiemens per centimeter [µS/cm], and temperature in degrees Celsius [°C]),
- Collection of groundwater samples for water quality analysis,
- Collection of groundwater QA and QC samples, and
- Equipment decontamination.

Documentation of the field activities was evaluated for quality assurance and has been deemed to have 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 monitoring was conducted by Clear Creek and CQB. Water levels 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 water level measurements (for wells equipped with pumps), 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. Each measurement was collected and verified by measuring the depth to water multiple times in order to obtain a consistent reading and accurate measurement.

2.2 Groundwater Sampling

During this monitoring period, an attempt was made to collect groundwater samples from wells designated in the groundwater monitoring program approved by ADEQ (ADEQ, 2010). Construction and location information for the wells sampled for water quality and water level measurements is listed in Tables 2 and 4 of the main text.

2.2.1 Pre-Sampling Field Activities

On each day of sampling, the pH[1] and SC[2] multipurpose meter was calibrated. 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 probe to ensure accurate measurement. In addition to calibrating the instruments each day, 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 deionized 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 deionized 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 D) at each well for which this was the case. Purge water was discharged to the ground surface.

Field measurements 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 0.2 standard units for pH, 2 degrees Celsius for temperature and 200 microSiemens/centimeter for specific conductance as described in Section 4.2.1.2 of the QAPP.

During this monitoring period 67 groundwater samples (duplicate and multiple samples included) were collected for analysis from 57 wells. Groundwater samples were collected by filtering the sample into a 250 milliliter bottle using clean filtration apparatus and one disposable 0.45-micron filter. All bottles were provided by the laboratory 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 a 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 a small amount of Alconox® detergent and deionized water. After washing, the equipment was rinsed with deionized water.

After sample collection, samples from each well were placed into a plastic bag and stored on ice until they could be packed securely for shipping to SVL. In addition, the sample collected from each well was placed in a bag without ice to prevent the label from getting soaked with water and rubbing off or becoming illegible.

3. SAMPLE HANDLING

All samples collected by Clear Creek and CQB were shipped to SVL. Chain of Custody (COC) documentation accompanied all samples submitted and included the sample name, collection date and time. Laboratory reports include the date and time the samples were received by the laboratory. As noted on the analytical data reports from each laboratory, all of the sample bottles were received intact, properly preserved, and in good condition except for the 36 samples included in SVL Work Order W2J0369 and W2J0370, which arrived outside of published United States Environmental Protection Agency (EPA) guidelines for preservation temperatures (0-6°C). All samples were shipped within one to four days of sample collection and the time between sample collection and receipt of samples by the laboratory was one to eight days. Samples in work order W2J0369 and W2J0370 were shipped on a Thursday and not received by the laboratory until the following Monday. The shipping service (FedEx) indicated by phone that the truck carrying the samples, was delayed by traffic and that the overnight shipping request was not fulfilled. Clear Creek reviewed the sample handling procedures used for the fourth quarter 2012 sampling and found the procedures to meet protocols established in the QAPP. No modification of sample handling procedures will be made at this time. The samples were collected, shipped, and received by the laboratory within the established holding time for dissolved sulfate analysis in accordance with EPA Method 300.0.

The results for the samples that were received outside of published temperature guidelines were compared to historical results. The samples were in line with historical results and it is believed the samples results are usable for all 36 samples.

4. LABORATORY QUALITY CONTROL

As specified in the QAPP, laboratory QC was maintained for all analyses through proper licensure, the use of approved analytical methods, QC measurements, appropriate turn-around-time for analysis (timeliness), method detection limits (MDLs), 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.

4.2 Analytical Method

EPA method 300.0 was used for sulfate analysis during this monitoring period.

4.3 Method Detection Limit (MDL) and Reporting Limit (RL)

The MDL and RL of the analytical method used by SVL are shown in the following table. The MDL for analyses of samples was equal to or less than the target MDL identified in the QAPP.

Method	MDL (mg/L)	RL (mg/L)	Target MDL[1] (mg/L)
EPA 300.0	0.07	0.30	10

mg/L = milligrams per liter
[1] Target MDL from Table F.2 of QAPP

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 no detections of the target analyte. 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 QA Plan and the QAPP.

4.5.2 Analytical Spike

Analytical spike samples were analyzed for the EPA Method 300.0. The spike samples were prepared by adding a sulfate spike to randomly chosen samples. Instances in which analytical spike recoveries were unusable were qualified with an "M3" flag indicating that the analyte concentration was disproportionate to the spike level or an "M1" flag indicating that the spike level was too high. In each case where an M1 or M3 qualifier was used the laboratory control sample recovery was acceptable and no corrective action was required. The laboratory control samples were prepared by adding a sulfate spike to de-ionized water.

4.5.3 Laboratory Duplicate Samples

Analyses of laboratory duplicate samples were reviewed as part of this quality data verification report. Field duplicate samples are discussed in Section 5.1. 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.

4.5.4 Sample Re-Analysis

No samples required re-analysis for the fourth quarter 2012.

4.5.5 Blank Samples

During the third quarter 2012, 14 blank samples were collected, including seven field blanks (FB10032012, FB10042012, FB10082012, FB10092012, FB10102012, FB10112012, FB20121017) and seven field equipment blanks (EB10032012, EQB10042012, EQB10082012, EQB10092012, EQB10102012, EQB10112012, EQB20121017). None of the blank samples collected in the fourth quarter 2012 had sulfate concentrations above the reporting limit of 0.30 mg/L. The results demonstrate that the sulfate concentrations reported in the fourth quarter 2012 were not affected by sample collection and sample handling procedures. 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. As required by Section 4.2.1.5 of the QAPP, a minimum of one field blank and one equipment blank sample was collected for every twenty samples.

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 fourth quarter 2012 groundwater sampling and analysis conducted by Clear Creek and CQB.

5.1 Precision

Precision indicates how well a measurement can be reproduced. Precision is quantified by calculating the RPD between duplicate samples. For the purposes of QA/QC, 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 6 field filtered duplicate samples (DUP10032012, DUP10082012, DUP10092012, DUP10102012, DUP10112012, DUP20121017) were collected by Clear Creek for analysis. The collection of 6 duplicate samples meets the QA/QC method and quantity goal stated in Section 4.2.1.5 of the QAPP.

Sulfate results for the 6 duplicate samples collected are provided in the table below. The range of RPD values was between 0.28 and 0.87 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 deemed to be met.

SVL Project No.	Well ID	Duplicate ID	Sample (mg/l)	Duplicate (mg/l)	RPD
W2J0162	PALMER	DUP10032012	17.6	17.5	0.57%
W2J0369	RAMIREZ	DUP10082012	9.14	9.07	0.77%
W2J0369	ECHAVE	DUP10092012	26.1	26	0.38%
W2J0369	NWC-03	DUP10102012	354	353	0.28%
W2J0370	WEISKOPF 802	DUP10112012	572	577	0.87%
W2J0432	MARCELL NR	DUP20121017	660	657	0.46%

mg/L = milligrams per liter
RPD = Relative Percent Difference

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 contribute sulfate to the results. Based on this information, the overall accuracy of the data is judged sufficient for the purpose of aquifer characterization.

5.4 Representativeness

All samples were taken from locations specified in the revised groundwater monitoring program (ADEQ, 2010) following sampling procedures specified in the QAPP. Therefore, the samples are

judged to provide a good representation of groundwater quality at the sampled locations. The sampling procedures are judged to be representative of groundwater quality at the sampled locations because no sulfate was detected in the field or equipment blanks. The analytical data are judged to be representative of groundwater conditions because the analyses used standard procedures and methods that met QA/QC guidelines of the QAPP.

5.5 Comparability

All samples were collected using standardized procedures (HGC, 2008) and were analyzed by SVL 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 are judged to satisfy the QA/QC criteria for this project. The completeness of analytical results is 100 percent, which exceeds the minimum 90 percent completeness in Section 3.3.6 of the QAPP.

5.7 Sensitivity

The analytical method used to analyze the samples meet the MDL requirements specified in Table F.2 of the QAPP. Therefore, the analytical sensitivity is considered acceptable for use in aquifer characterization.

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.

ADEQ. 2010. Correspondence from Cynthia Campbell, ADEQ, to Rebecca Sawyer, CQB, Re: Request to Modify Groundwater Monitoring Program, Mitigation Order on Consent No. P-127-07, Your Letter Dated January 25, 2010. April 22, 2010.

Freeport McMoRan Copper Queen Branch (CQB). 2010. Correspondence from Rebecca Sawyer, CQB, to Cynthia Campbell, ADEQ, Re: Request to Modify Groundwater Monitoring Program Mitigation Order on Consent No. P-121-07. January 25, 2010.

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 C

ANALYTICAL REPORTS

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0162**
Reported: 16-Oct-12 12:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BANKS 986	W2J0162-01	Ground Water	04-Oct-12 11:52	05-Oct-2012
EAST	W2J0162-02	Ground Water	04-Oct-12 09:15	05-Oct-2012
EPPELE 641	W2J0162-03	Ground Water	03-Oct-12 11:31	05-Oct-2012
PALMER	W2J0162-04	Ground Water	03-Oct-12 08:57	05-Oct-2012
DUP10032012	W2J0162-05	Ground Water	03-Oct-12 08:57	05-Oct-2012
RAY	W2J0162-06	Ground Water	03-Oct-12 14:22	05-Oct-2012
NOTEMAN	W2J0162-07	Ground Water	04-Oct-12 13:02	05-Oct-2012
EB10032012	W2J0162-08	Water	03-Oct-12 17:33	05-Oct-2012
FB10032012	W2J0162-09	Water	03-Oct-12 17:35	05-Oct-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0162**
Reported: 16-Oct-12 12:51

Client Sample ID: **BANKS 986**
SVL Sample ID: **W2J0162-01 (Ground Water)**

Sampled: 04-Oct-12 11:52
Received: 05-Oct-12
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	62.6	mg/L	1.50	0.24	5	W241223	AEW	10/11/12 18:40	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0162**
Reported: 16-Oct-12 12:51

Client Sample ID: **EAST**
SVL Sample ID: **W2J0162-02 (Ground Water)**

Sampled: 04-Oct-12 09:15
Received: 05-Oct-12
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	15.0	mg/L	0.30	0.05		W241223	AEW	10/11/12 18:50	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0162**
Reported: 16-Oct-12 12:51

Client Sample ID: **EPPELE 641**
SVL Sample ID: **W2J0162-03 (Ground Water)**

Sampled: 03-Oct-12 11:31
Received: 05-Oct-12
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	19.5	mg/L	0.30	0.05		W241223	AEW	10/11/12 19:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0162**
Reported: 16-Oct-12 12:51

Client Sample ID: **PALMER**
SVL Sample ID: **W2J0162-04 (Ground Water)**

Sampled: 03-Oct-12 08:57
Received: 05-Oct-12
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	17.6	mg/L	0.30	0.05		W241223	AEW	10/11/12 19:32	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0162**
Reported: 16-Oct-12 12:51

Client Sample ID: **DUP10032012**
SVL Sample ID: **W2J0162-05 (Ground Water)**

Sampled: 03-Oct-12 08:57
Received: 05-Oct-12
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	17.5	mg/L	0.30	0.05		W241223	AEW	10/11/12 19:42	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0162**
Reported: 16-Oct-12 12:51

Client Sample ID: **RAY**
SVL Sample ID: **W2J0162-06 (Ground Water)**

Sampled: 03-Oct-12 14:22
Received: 05-Oct-12
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	130	mg/L	1.50	0.24	5	W241223	AEW	10/11/12 19:53	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0162**
Reported: 16-Oct-12 12:51

Client Sample ID: **NOTEMAN**
SVL Sample ID: **W2J0162-07 (Ground Water)**

Sampled: 04-Oct-12 13:02
Received: 05-Oct-12
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	287	mg/L	3.00	0.47	10	W241223	AEW	10/11/12 20:03	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0162**
Reported: 16-Oct-12 12:51

Client Sample ID: **EB10032012**
SVL Sample ID: **W2J0162-08 (Water)**

Sampled: 03-Oct-12 17:33
Received: 05-Oct-12
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W241294	AEW	10/15/12 11:21	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0162**
Reported: 16-Oct-12 12:51

Client Sample ID: **FB10032012**
SVL Sample ID: **W2J0162-09 (Water)**

Sampled: 03-Oct-12 17:35
Received: 05-Oct-12
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W241294	AEW	10/15/12 11:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0162**
Reported: 16-Oct-12 12:51

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W241294	12-Oct-12	
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W241223	11-Oct-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.2	10.0	102	90 - 110	W241294	12-Oct-12	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.4	10.0	104	90 - 110	W241223	11-Oct-12	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	2240	2300	2.3	20	W241294	12-Oct-12	D2
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	29.4	29.6	0.5	20	W241223	11-Oct-12	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	2240	2300	10.0	R > 4S	90 - 110	W241294	12-Oct-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	11.4	<0.30	10.0	113	90 - 110	W241294	12-Oct-12	M1
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	40.6	29.6	10.0	110	90 - 110	W241223	11-Oct-12	
EPA 300.0	Sulfate as SO4	mg/L	40.8	29.5	10.0	113	90 - 110	W241223	11-Oct-12	M1

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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0162**
Reported: 16-Oct-12 12:51

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M1	Matrix spike recovery was high, but the LCS recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0299**
Reported: 23-Oct-12 10:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
FRANCO 383	W2J0299-01	Ground Water	05-Oct-12 10:05	BD	11-Oct-2012
GARNER 635	W2J0299-02	Ground Water	04-Oct-12 12:55	BD	11-Oct-2012
FB10042012	W2J0299-03	Ground Water	04-Oct-12 17:44	BD	11-Oct-2012
EQB10042012	W2J0299-04	Ground Water	04-Oct-12 17:43	BD	11-Oct-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0299**
Reported: 23-Oct-12 10:01

Client Sample ID: **FRANCO 383**
SVL Sample ID: **W2J0299-01 (Ground Water)**

Sampled: 05-Oct-12 10:05
Received: 11-Oct-12
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	324	mg/L	7.50	1.18	25	W242256	AEW	10/18/12 16:21	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0299**
Reported: 23-Oct-12 10:01

Client Sample ID: **GARNER 635**
SVL Sample ID: **W2J0299-02 (Ground Water)**

Sampled: 04-Oct-12 12:55
Received: 11-Oct-12
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	39.1	mg/L	0.30	0.05		W242256	AEW	10/18/12 16:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0299**
Reported: 23-Oct-12 10:01

Client Sample ID: **FB10042012**
SVL Sample ID: **W2J0299-03 (Ground Water)**

Sampled: 04-Oct-12 17:44
Received: 11-Oct-12
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W242238	AEW	10/18/12 21:23	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0299**
Reported: 23-Oct-12 10:01

Client Sample ID: **EQB10042012**
SVL Sample ID: **W2J0299-04 (Ground Water)**

Sampled: 04-Oct-12 17:43
Received: 11-Oct-12
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W242256	AEW	10/18/12 16:42	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0299**
Reported: 23-Oct-12 10:01

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W242238	18-Oct-12	
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W242256	18-Oct-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.1	10.0	101	90 - 110	W242238	18-Oct-12	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	9.99	10.0	99.9	90 - 110	W242256	18-Oct-12	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	19.3	19.3	0.1	20	W242238	18-Oct-12	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	162	164	1.3	20	W242256	18-Oct-12	D2

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	30.1	19.3	10.0	108	90 - 110	W242238	18-Oct-12	
EPA 300.0	Sulfate as SO4	mg/L	222	212	10.0	98.4	90 - 110	W242238	18-Oct-12	D2,M3
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	171	164	10.0	R > 4S	90 - 110	W242256	18-Oct-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	14.5	3.58	10.0	109	90 - 110	W242256	18-Oct-12	

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0299**
Reported: 23-Oct-12 10:01

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
MCCONNELL 265	W2J0369-01	Ground Water	08-Oct-12 09:21	VH	15-Oct-2012
MCCONNELL 459	W2J0369-02	Ground Water	08-Oct-12 12:38	VH	15-Oct-2012
CHAMBERS	W2J0369-03	Ground Water	08-Oct-12 13:34	VH	15-Oct-2012
RAMIREZ	W2J0369-04	Ground Water	08-Oct-12 15:04	VH	15-Oct-2012
DUP10082012	W2J0369-05	Ground Water	08-Oct-12 15:05	VH	15-Oct-2012
MOORE	W2J0369-06	Ground Water	08-Oct-12 15:47	VH	15-Oct-2012
ZANDER	W2J0369-07	Ground Water	08-Oct-12 16:49	VH	15-Oct-2012
KEEFER	W2J0369-08	Ground Water	09-Oct-12 09:37	VH	15-Oct-2012
TVI 236	W2J0369-09	Ground Water	09-Oct-12 10:36	VH	15-Oct-2012
TVI 875	W2J0369-10	Ground Water	09-Oct-12 11:24	VH	15-Oct-2012
ECHAVE	W2J0369-11	Ground Water	09-Oct-12 13:27	VH	15-Oct-2012
DUP10092012	W2J0369-12	Ground Water	09-Oct-12 13:28	VH	15-Oct-2012
WEED	W2J0369-13	Ground Water	09-Oct-12 14:12	VH	15-Oct-2012
RUIZ	W2J0369-14	Ground Water	09-Oct-12 15:14	VH	15-Oct-2012
PARRA	W2J0369-15	Ground Water	09-Oct-12 15:50	VH	15-Oct-2012
COOPER	W2J0369-16	Ground Water	09-Oct-12 16:32	VH	15-Oct-2012
NWC-04	W2J0369-17	Ground Water	10-Oct-12 08:58	VH	15-Oct-2012
NWC-03	W2J0369-18	Ground Water	10-Oct-12 09:44	VH	15-Oct-2012
DUP10102012	W2J0369-19	Ground Water	10-Oct-12 09:44	VH	15-Oct-2012
NWC-06	W2J0369-20	Ground Water	10-Oct-12 10:12	VH	15-Oct-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

(Q6) SVL received the following containers outside of published EPA guidelines for preservation temperatures (0-6°C).
The guidelines do not pertain to nitric-preserved metals.

Default Cooler (Received Temperature: 14.2°C)

Labnumber	Container	Client ID	Labnumber	Container	Client ID
W2J0369-01 A	Filtered Raw HDPE	MCCONNELL 265	W2J0369-02 A	Filtered Raw HDPE	MCCONNELL 459
W2J0369-03 A	Filtered Raw HDPE	CHAMBERS	W2J0369-04 A	Filtered Raw HDPE	RAMIREZ
W2J0369-05 A	Filtered Raw HDPE	DUP10082012	W2J0369-06 A	Filtered Raw HDPE	MOORE
W2J0369-07 A	Filtered Raw HDPE	ZANDER	W2J0369-08 A	Filtered Raw HDPE	KEEFER
W2J0369-09 A	Filtered Raw HDPE	TVI 236	W2J0369-10 A	Filtered Raw HDPE	TVI 875
W2J0369-11 A	Filtered Raw HDPE	ECHAVE	W2J0369-12 A	Filtered Raw HDPE	DUP10092012
W2J0369-13 A	Filtered Raw HDPE	WEED	W2J0369-14 A	Filtered Raw HDPE	RUIZ
W2J0369-15 A	Filtered Raw HDPE	PARRA	W2J0369-16 A	Filtered Raw HDPE	COOPER
W2J0369-17 A	Filtered Raw HDPE	NWC-04	W2J0369-18 A	Filtered Raw HDPE	NWC-03
W2J0369-19 A	Filtered Raw HDPE	DUP10102012	W2J0369-20 A	Filtered Raw HDPE	NWC-06

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **MCCONNELL 265**
SVL Sample ID: **W2J0369-01 (Ground Water)**

Sampled: 08-Oct-12 09:21
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	934	mg/L	15.0	2.35	50	W243167	AEW	10/24/12 13:55	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **MCCONNELL 459**
SVL Sample ID: **W2J0369-02 (Ground Water)**

Sampled: 08-Oct-12 12:38
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	43.4	mg/L	1.50	0.24	5	W243167	AEW	10/24/12 14:25	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **CHAMBERS**
SVL Sample ID: **W2J0369-03 (Ground Water)**

Sampled: 08-Oct-12 13:34
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	10.1	mg/L	0.30	0.05		W243167	AEW	10/24/12 14:35	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **RAMIREZ**
SVL Sample ID: **W2J0369-04 (Ground Water)**

Sampled: 08-Oct-12 15:04
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	9.14	mg/L	0.30	0.05		W243167	AEW	10/24/12 14:45	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **DUP10082012**
SVL Sample ID: **W2J0369-05 (Ground Water)**

Sampled: 08-Oct-12 15:05
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	9.07	mg/L	0.30	0.05		W243167	AEW	10/24/12 14:55	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **MOORE**
SVL Sample ID: **W2J0369-06 (Ground Water)**

Sampled: 08-Oct-12 15:47
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	7.51	mg/L	0.30	0.05		W243167	AEW	10/24/12 15:05	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **ZANDER**
SVL Sample ID: **W2J0369-07 (Ground Water)**

Sampled: 08-Oct-12 16:49
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	7.03	mg/L	0.30	0.05		W243167	AEW	10/25/12 11:16	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **KEEFER**
SVL Sample ID: **W2J0369-08 (Ground Water)**

Sampled: 09-Oct-12 09:37
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	8.47	mg/L	0.30	0.05		W243167	AEW	10/25/12 14:47	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **TVI 236**
SVL Sample ID: **W2J0369-09 (Ground Water)**

Sampled: 09-Oct-12 10:36
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	40.9	mg/L	0.30	0.05		W243167	AEW	10/25/12 14:57	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **TVI 875**
SVL Sample ID: **W2J0369-10 (Ground Water)**

Sampled: 09-Oct-12 11:24
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	281	mg/L	3.00	0.47	10	W243167	AEW	10/25/12 19:55	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **ECHAVE**
SVL Sample ID: **W2J0369-11 (Ground Water)**

Sampled: 09-Oct-12 13:27
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	26.1	mg/L	0.30	0.05		W243167	AEW	10/25/12 20:05	

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Freeport McMoRan - Bisbee
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **DUP10092012**
SVL Sample ID: **W2J0369-12 (Ground Water)**

Sampled: 09-Oct-12 13:28
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	26.0	mg/L	0.30	0.05		W243167	AEW	10/25/12 20:25	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **WEED**
SVL Sample ID: **W2J0369-13 (Ground Water)**

Sampled: 09-Oct-12 14:12
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	14.0	mg/L	0.30	0.05		W243167	AEW	10/25/12 15:27	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **RUIZ**
SVL Sample ID: **W2J0369-14 (Ground Water)**

Sampled: 09-Oct-12 15:14
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	229	mg/L	3.00	0.47	10	W243167	AEW	10/25/12 15:37	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **PARRA**
SVL Sample ID: **W2J0369-15 (Ground Water)**

Sampled: 09-Oct-12 15:50
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	428	mg/L	7.50	1.18	25	W243167	AEW	10/25/12 15:47	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **COOPER**
SVL Sample ID: **W2J0369-16 (Ground Water)**

Sampled: 09-Oct-12 16:32
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	34.3	mg/L	0.30	0.05		W243167	AEW	10/25/12 15:57	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Bisbee
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **NWC-04**
SVL Sample ID: **W2J0369-17 (Ground Water)**

Sampled: 10-Oct-12 08:58
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	207	mg/L	7.50	1.18	25	W243167	AEW	10/25/12 16:07	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **NWC-03**
SVL Sample ID: **W2J0369-18 (Ground Water)**

Sampled: 10-Oct-12 09:44
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	354	mg/L	7.50	1.18	25	W243167	AEW	10/25/12 16:17	D2

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **DUP10102012**
SVL Sample ID: **W2J0369-19 (Ground Water)**

Sampled: 10-Oct-12 09:44
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	353	mg/L	7.50	1.18	25	W243167	AEW	10/25/12 16:27	D2

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Client Sample ID: **NWC-06**
SVL Sample ID: **W2J0369-20 (Ground Water)**

Sampled: 10-Oct-12 10:12
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	9.33	mg/L	0.30	0.05		W243167	AEW	10/25/12 16:36	

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0369**
Reported: 26-Oct-12 14:43

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W243167	24-Oct-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.6	10.0	106	90 - 110	W243167	24-Oct-12	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	921	934	1.3	20	W243167	24-Oct-12	D2

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	925	934	10.0	R > 4S	90 - 110	W243167	24-Oct-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	37.3	26.1	10.0	112	90 - 110	W243167	25-Oct-12	M1

Notes and Definitions

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
M1	Matrix spike recovery was high, but the LCS recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-02	W2J0370-01	Ground Water	10-Oct-12 10:43	VH	15-Oct-2012
ROGERS 803	W2J0370-02	Ground Water	10-Oct-12 12:38	VH	15-Oct-2012
COOPER C	W2J0370-03	Ground Water	10-Oct-12 14:17	VH	15-Oct-2012
ANDERSON 396	W2J0370-04	Ground Water	10-Oct-12 15:21	VH	15-Oct-2012
ANDERSON 458	W2J0370-05	Ground Water	10-Oct-12 18:31	VH	15-Oct-2012
FB10082012	W2J0370-06	Water	08-Oct-12 14:23	VH	15-Oct-2012
EQB10082012	W2J0370-07	Water	08-Oct-12 14:25	VH	15-Oct-2012
FB10092012	W2J0370-08	Water	09-Oct-12 12:55	VH	15-Oct-2012
EQB10092012	W2J0370-09	Water	09-Oct-12 12:56	VH	15-Oct-2012
FB10102012	W2J0370-10	Water	10-Oct-12 14:25	VH	15-Oct-2012
EQB10102012	W2J0370-11	Water	10-Oct-12 14:24	VH	15-Oct-2012
FB10112012	W2J0370-12	Water	11-Oct-12 12:57	VH	15-Oct-2012
EQB10112012	W2J0370-13	Water	11-Oct-12 13:00	VH	15-Oct-2012
PIONKE 517	W2J0370-14	Ground Water	11-Oct-12 11:49	VH	15-Oct-2012
WEISKOPF 802	W2J0370-15	Ground Water	11-Oct-12 13:16	VH	15-Oct-2012
DUP10112012	W2J0370-16	Ground Water	11-Oct-12 13:17	VH	15-Oct-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

(Q6) SVL received the following containers outside of published EPA guidelines for preservation temperatures (0-6°C).
The guidelines do not pertain to nitric-preserved metals.

Default Cooler (Received Temperature: 14.2°C)

Labnumber	Container	Client ID	Labnumber	Container	Client ID
W2J0370-01 A	Filtered Raw HDPE	NWC-02	W2J0370-02 A	Filtered Raw HDPE	ROGERS 803
W2J0370-03 A	Filtered Raw HDPE	COOPER C	W2J0370-04 A	Filtered Raw HDPE	ANDERSON 396
W2J0370-05 A	Filtered Raw HDPE	ANDERSON 458	W2J0370-06 B	Raw HDPE	FB10082012
W2J0370-07 B	Raw HDPE	EQB10082012	W2J0370-08 B	Raw HDPE	FB10092012
W2J0370-09 B	Raw HDPE	EQB10092012	W2J0370-10 B	Raw HDPE	FB10102012
W2J0370-11 B	Raw HDPE	EQB10102012	W2J0370-12 B	Raw HDPE	FB10112012
W2J0370-13 B	Raw HDPE	EQB10112012	W2J0370-14 A	Filtered Raw HDPE	PIONKE 517
W2J0370-15 A	Filtered Raw HDPE	WEISKOPF 802	W2J0370-16 A	Filtered Raw HDPE	DUP10112012

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **NWC-02**
SVL Sample ID: **W2J0370-01 (Ground Water)**

Sampled: 10-Oct-12 10:43
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	7.46	mg/L	0.30	0.05		W242256	AEW	10/18/12 18:26	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **ROGERS 803**
SVL Sample ID: **W2J0370-02 (Ground Water)**

Sampled: 10-Oct-12 12:38
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	177	mg/L	3.00	0.47	10	W243168	AEW	10/24/12 16:49	D2

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: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **COOPER C**
SVL Sample ID: **W2J0370-03 (Ground Water)**

Sampled: 10-Oct-12 14:17
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	863	mg/L	15.0	2.35	50	W242256	AEW	10/18/12 18:36	D2

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: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **ANDERSON 396**
SVL Sample ID: **W2J0370-04 (Ground Water)**

Sampled: 10-Oct-12 15:21
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	574	mg/L	15.0	2.35	50	W242256	AEW	10/18/12 18:47	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **ANDERSON 458**
SVL Sample ID: **W2J0370-05 (Ground Water)**

Sampled: 10-Oct-12 18:31
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	30.3	mg/L	0.30	0.05		W242256	AEW	10/18/12 18:57	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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36 West Hwy 92
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **FB10082012**
SVL Sample ID: **W2J0370-06 (Water)**

Sampled: 08-Oct-12 14:23
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W243117	AEW	10/23/12 21:29	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **EQB10082012**
SVL Sample ID: **W2J0370-07 (Water)**

Sampled: 08-Oct-12 14:25
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W243117	AEW	10/23/12 21:39	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **FB10092012**
SVL Sample ID: **W2J0370-08 (Water)**

Sampled: 09-Oct-12 12:55
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W243117	AEW	10/23/12 21:49	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **EQB10092012**
SVL Sample ID: **W2J0370-09 (Water)**

Sampled: 09-Oct-12 12:56
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W243117	AEW	10/23/12 21:59	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **FB10102012**
SVL Sample ID: **W2J0370-10 (Water)**

Sampled: 10-Oct-12 14:25
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W243117	AEW	10/23/12 22:29	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **EQB10102012**
SVL Sample ID: **W2J0370-11 (Water)**

Sampled: 10-Oct-12 14:24
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W243117	AEW	10/23/12 22:39	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **FB10112012**
SVL Sample ID: **W2J0370-12 (Water)**

Sampled: 11-Oct-12 12:57
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W243117	AEW	10/23/12 22:49	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **EQB10112012**
SVL Sample ID: **W2J0370-13 (Water)**

Sampled: 11-Oct-12 13:00
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W243117	AEW	10/23/12 22:59	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **PIONKE 517**
SVL Sample ID: **W2J0370-14 (Ground Water)**

Sampled: 11-Oct-12 11:49
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	14.9	mg/L	0.30	0.05		W242256	AEW	10/18/12 19:08	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **WEISKOPF 802**
SVL Sample ID: **W2J0370-15 (Ground Water)**

Sampled: 11-Oct-12 13:16
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	572	mg/L	15.0	2.35	50	W242256	AEW	10/18/12 19:18	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Client Sample ID: **DUP10112012**
SVL Sample ID: **W2J0370-16 (Ground Water)**

Sampled: 11-Oct-12 13:17
Received: 15-Oct-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	577	mg/L	15.0	2.35	50	W242256	AEW	10/18/12 19:29	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0370**
Reported: 26-Oct-12 14:45

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W243117	23-Oct-12	
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W242256	18-Oct-12	
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W243168	24-Oct-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.0	10.0	100	90 - 110	W243117	23-Oct-12	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	9.99	10.0	99.9	90 - 110	W242256	18-Oct-12	
EPA 300.0	Sulfate as SO4	mg/L	9.99	10.0	99.9	90 - 110	W243168	24-Oct-12	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	2050	2090	1.6	20	W243117	23-Oct-12	D2
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	162	164	1.3	20	W242256	18-Oct-12	D2
EPA 300.0	Sulfate as SO4	mg/L	4.61	4.59	0.3	20	W243168	24-Oct-12	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	2030	2090	10.0	R > 4S	90 - 110	W243117	23-Oct-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	788	809	10.0	R > 4S	90 - 110	W243117	23-Oct-12	D2,M3
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	171	164	10.0	R > 4S	90 - 110	W242256	18-Oct-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	14.5	3.58	10.0	109	90 - 110	W242256	18-Oct-12	
EPA 300.0	Sulfate as SO4	mg/L	15.4	4.59	10.0	108	90 - 110	W243168	24-Oct-12	
EPA 300.0	Sulfate as SO4	mg/L	71.6	62.7	10.0	R > 4S	90 - 110	W243168	25-Oct-12	D2,M3

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Freeport McMoRan - Bisbee	**Project Name: Copper Queen Branch Sulfate Mitigation Order**
36 West Hwy 92	Work Order: **W2J0370**
Bisbee, AZ 85603	Reported: 26-Oct-12 14:45

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0426**
Reported: 29-Oct-12 09:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMD-2008-5M	W2J0426-01	Ground Water	16-Oct-12 08:25	CLS	18-Oct-2012
BMD-2008-5B	W2J0426-02	Ground Water	16-Oct-12 11:25	CLS	18-Oct-2012
BMD-2008-6M	W2J0426-03	Ground Water	16-Oct-12 13:10	CLS	18-Oct-2012
BMD-2008-6B	W2J0426-04	Ground Water	16-Oct-12 14:00	CLS	18-Oct-2012
BMD-2008-1M	W2J0426-05	Ground Water	17-Oct-12 10:50	CLS	18-Oct-2012
BMD-2008-2M	W2J0426-06	Ground Water	17-Oct-12 11:30	CLS	18-Oct-2012
HOBAN	W2J0426-07	Ground Water	17-Oct-12 12:20	CLS	18-Oct-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0426**
Reported: 29-Oct-12 09:06

Client Sample ID: **BMD-2008-5M**
SVL Sample ID: **W2J0426-01 (Ground Water)**

Sampled: 16-Oct-12 08:25
Received: 18-Oct-12
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	134	mg/L	3.00	0.47	10	W243168	AEW	10/24/12 18:43	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0426**
Reported: 29-Oct-12 09:06

Client Sample ID: **BMD-2008-5B**
SVL Sample ID: **W2J0426-02 (Ground Water)**

Sampled: 16-Oct-12 11:25
Received: 18-Oct-12
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	207	mg/L	7.50	1.18	25	W243168	AEW	10/24/12 18:54	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0426**
Reported: 29-Oct-12 09:06

Client Sample ID: **BMD-2008-6M**
SVL Sample ID: **W2J0426-03 (Ground Water)**

Sampled: 16-Oct-12 13:10
Received: 18-Oct-12
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	207	mg/L	3.00	0.47	10	W243168	AEW	10/24/12 19:04	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0426**
Reported: 29-Oct-12 09:06

Client Sample ID: **BMD-2008-6B**
SVL Sample ID: **W2J0426-04 (Ground Water)**

Sampled: 16-Oct-12 14:00
Received: 18-Oct-12
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	19.9	mg/L	1.50	0.24	5	W243168	AEW	10/24/12 19:15	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0426**
Reported: 29-Oct-12 09:06

Client Sample ID: **BMD-2008-1M**
SVL Sample ID: **W2J0426-05 (Ground Water)**

Sampled: 17-Oct-12 10:50
Received: 18-Oct-12
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	154	mg/L	3.00	0.47	10	W243168	AEW	10/24/12 19:25	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0426**
Reported: 29-Oct-12 09:06

Client Sample ID: **BMD-2008-2M**
SVL Sample ID: **W2J0426-06 (Ground Water)**

Sampled: 17-Oct-12 11:30
Received: 18-Oct-12
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	998	mg/L	15.0	2.35	50	W243168	AEW	10/24/12 19:35	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0426**
Reported: 29-Oct-12 09:06

Client Sample ID: **HOBAN**
SVL Sample ID: **W2J0426-07 (Ground Water)**

Sampled: 17-Oct-12 12:20
Received: 18-Oct-12
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	1040	mg/L	15.0	2.35	50	W243168	AEW	10/24/12 19:46	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0426**
Reported: 29-Oct-12 09:06

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W243168	24-Oct-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	9.99	10.0	99.9	90 - 110	W243168	24-Oct-12	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	4.61	4.59	0.3	20	W243168	24-Oct-12	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	15.4	4.59	10.0	108	90 - 110	W243168	24-Oct-12	
EPA 300.0	Sulfate as SO4	mg/L	71.6	62.7	10.0	R > 4S	90 - 110	W243168	25-Oct-12	D2,M3

Notes and Definitions

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

SVL holds the following certifications:
AZ:0538, **CA**:2080, **FL**(**NELAC**):E87993, **ID**:ID00019 & ID00965 (Microbiology), **NV**:ID000192007A, **WA**:1268

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0432**
Reported: 29-Oct-12 09:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
HOWARD NR	W2J0432-01	Ground Water	16-Oct-12 12:05	ML	18-Oct-2012
HOWARD 312	W2J0432-02	Ground Water	16-Oct-12 16:53	ML	18-Oct-2012
ROGERS E	W2J0432-03	Ground Water	17-Oct-12 09:27	ML	18-Oct-2012
SCHWARTZ	W2J0432-04	Ground Water	17-Oct-12 11:26	ML	18-Oct-2012
PIONKE 395	W2J0432-05	Ground Water	17-Oct-12 14:45	ML	18-Oct-2012
MARCELL NR	W2J0432-06	Ground Water	17-Oct-12 15:26	ML	18-Oct-2012
FB20121017	W2J0432-07	Ground Water	17-Oct-12 14:18	ML	18-Oct-2012
EQB20121017	W2J0432-08	Ground Water	17-Oct-12 14:23	ML	18-Oct-2012
DUP20121017	W2J0432-09	Ground Water	17-Oct-12 18:00	ML	18-Oct-2012

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.
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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 - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0432**
Reported: 29-Oct-12 09:08

Client Sample ID: **HOWARD NR**
SVL Sample ID: **W2J0432-01 (Ground Water)**

Sampled: 16-Oct-12 12:05
Received: 18-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	576	mg/L	15.0	2.35	50	W243168	AEW	10/24/12 19:56	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0432**
Reported: 29-Oct-12 09:08

Client Sample ID: **HOWARD 312**
SVL Sample ID: **W2J0432-02 (Ground Water)**

Sampled: 16-Oct-12 16:53
Received: 18-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	68.1	mg/L	1.50	0.24	5	W243168	AEW	10/24/12 20:07	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0432**
Reported: 29-Oct-12 09:08

Client Sample ID: **ROGERS E**
SVL Sample ID: **W2J0432-03 (Ground Water)**

Sampled: 17-Oct-12 09:27
Received: 18-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	6.04	mg/L	0.30	0.05		W243168	AEW	10/24/12 20:38	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0432**
Reported: 29-Oct-12 09:08

Client Sample ID: **SCHWARTZ**
SVL Sample ID: **W2J0432-04 (Ground Water)**

Sampled: 17-Oct-12 11:26
Received: 18-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	121	mg/L	3.00	0.47	10	W243168	AEW	10/24/12 20:48	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0432**
Reported: 29-Oct-12 09:08

Client Sample ID: **PIONKE 395**
SVL Sample ID: **W2J0432-05 (Ground Water)**

Sampled: 17-Oct-12 14:45
Received: 18-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	419	mg/L	15.0	2.35	50	W243168	AEW	10/24/12 20:59	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0432**
Reported: 29-Oct-12 09:08

Client Sample ID: **MARCELL NR**
SVL Sample ID: **W2J0432-06 (Ground Water)**

Sampled: 17-Oct-12 15:26
Received: 18-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	660	mg/L	15.0	2.35	50	W243168	AEW	10/24/12 21:09	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0432**
Reported: 29-Oct-12 09:08

Client Sample ID: **FB20121017**
SVL Sample ID: **W2J0432-07 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 17-Oct-12 14:18
Received: 18-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W243241	AEW	10/25/12 17:41	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0432**
Reported: 29-Oct-12 09:08

Client Sample ID: **EQB20121017**
SVL Sample ID: **W2J0432-08 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 17-Oct-12 14:23
Received: 18-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W243241	AEW	10/25/12 17:51	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0432**
Reported: 29-Oct-12 09:08

Client Sample ID: **DUP20121017**
SVL Sample ID: **W2J0432-09 (Ground Water)**

Sampled: 17-Oct-12 18:00
Received: 18-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	657	mg/L	15.0	2.35	50	W243168	AEW	10/24/12 21:20	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0432**
Reported: 29-Oct-12 09:08

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W243241	25-Oct-12	
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W243168	24-Oct-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	9.34	10.0	93.4	90 - 110	W243241	25-Oct-12	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	9.99	10.0	99.9	90 - 110	W243168	24-Oct-12	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	15.0	14.9	0.6	20	W243241	25-Oct-12	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	4.61	4.59	0.3	20	W243168	24-Oct-12	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	25.7	14.9	10.0	108	90 - 110	W243241	25-Oct-12	
EPA 300.0	Sulfate as SO4	mg/L	61.9	52.7	10.0	91.2	90 - 110	W243241	26-Oct-12	D2,M3
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	15.4	4.59	10.0	108	90 - 110	W243168	24-Oct-12	
EPA 300.0	Sulfate as SO4	mg/L	71.6	62.7	10.0	R > 4S	90 - 110	W243168	25-Oct-12	D2,M3

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2J0432**
Reported: 29-Oct-12 09:08

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order / 055038
Work Order: **W2J0528**
Reported: 29-Oct-12 09:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2010-3B	W2J0528-01	Ground Water	18-Oct-12 10:07	ML	23-Oct-2012
BMO-2010-3M	W2J0528-02	Ground Water	18-Oct-12 13:00	ML	23-Oct-2012
AWC-05	W2J0528-03	Ground Water	18-Oct-12 13:32	ML	23-Oct-2012
AWC-03	W2J0528-04	Ground Water	18-Oct-12 13:46	ML	23-Oct-2012
AWC-02	W2J0528-05	Ground Water	18-Oct-12 14:05	ML	23-Oct-2012
AWC-04	W2J0528-06	Ground Water	18-Oct-12 14:26	ML	23-Oct-2012
TM-10 USBP	W2J0528-07	Ground Water	19-Oct-12 09:46	ML	23-Oct-2012
DODSON	W2J0528-08	Ground Water	04-Oct-12 13:28	ML	23-Oct-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order / 055038
Work Order: **W2J0528**
Reported: 29-Oct-12 09:21

Client Sample ID: **BMO-2010-3B**
SVL Sample ID: **W2J0528-01 (Ground Water)**

Sampled: 18-Oct-12 10:07
Received: 23-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	17.0	mg/L	1.50	0.24	5	W243202	AEW	10/25/12 18:16	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order / 055038
Work Order: **W2J0528**
Reported: 29-Oct-12 09:21

Client Sample ID: **BMO-2010-3M**
SVL Sample ID: **W2J0528-02 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 18-Oct-12 13:00
Received: 23-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	10.4	mg/L	1.50	0.24	5	W243202	AEW	10/25/12 18:26	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order / 055038
Work Order: **W2J0528**
Reported: 29-Oct-12 09:21

Client Sample ID: **AWC-05**
SVL Sample ID: **W2J0528-03 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 18-Oct-12 13:32
Received: 23-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	20.1	mg/L	1.50	0.24	5	W243202	AEW	10/25/12 18:35	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order / 055038
Work Order: **W2J0528**
Reported: 29-Oct-12 09:21

Client Sample ID: **AWC-03**
SVL Sample ID: **W2J0528-04 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 18-Oct-12 13:46
Received: 23-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	51.3	mg/L	1.50	0.24	5	W243202	AEW	10/25/12 19:05	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order / 055038
Work Order: **W2J0528**
Reported: 29-Oct-12 09:21

Client Sample ID: **AWC-02**
SVL Sample ID: **W2J0528-05 (Ground Water)**

Sampled: 18-Oct-12 14:05
Received: 23-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	13.0	mg/L	1.50	0.24	5	W243202	AEW	10/25/12 19:15	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order / 055038
Work Order: **W2J0528**
Reported: 29-Oct-12 09:21

Client Sample ID: **AWC-04**
SVL Sample ID: **W2J0528-06 (Ground Water)**

Sampled: 18-Oct-12 14:26
Received: 23-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	26.6	mg/L	1.50	0.24	5	W243202	AEW	10/25/12 19:25	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order / 055038
Work Order: **W2J0528**
Reported: 29-Oct-12 09:21

Client Sample ID: **TM-10 USBP**
SVL Sample ID: **W2J0528-07 (Ground Water)**

Sampled: 19-Oct-12 09:46
Received: 23-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	12.8	mg/L	1.50	0.24	5	W243202	AEW	10/25/12 19:35	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order / 055038
Work Order: **W2J0528**
Reported: 29-Oct-12 09:21

Client Sample ID: **DODSON**
SVL Sample ID: **W2J0528-08 (Ground Water)**

Sampled: 04-Oct-12 13:28
Received: 23-Oct-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	48.7	mg/L	1.50	0.24	5	W243202	AEW	10/25/12 19:45	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order / 055038
Work Order: **W2J0528**
Reported: 29-Oct-12 09:21

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W243202	25-Oct-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.4	10.0	104	90 - 110	W243202	25-Oct-12	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	26.3	26.2	0.2	20	W243202	25-Oct-12	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	37.8	26.2	10.0	116	90 - 110	W243202	25-Oct-12	M1

Notes and Definitions

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
M1	Matrix spike recovery was high, but the LCS recovery was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2K0329**
Reported: 21-Nov-12 10:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO 2012 1M	W2K0329-01	Ground Water	13-Nov-12 14:08	VH	15-Nov-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2K0329**
Reported: 21-Nov-12 10:27

Client Sample ID: **BMO 2012 1M**
SVL Sample ID: **W2K0329-01 (Ground Water)**

Sampled: 13-Nov-12 14:08
Received: 15-Nov-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	231	mg/L	7.50	1.75	25	W246294	AEW	11/16/12 15:17	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2K0329**
Reported: 21-Nov-12 10:27

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.07	0.30	W246294	16-Nov-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.4	10.0	104	90 - 110	W246294	16-Nov-12	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	0.95	0.96	1.4	20	W246294	16-Nov-12	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	12.2	0.96	10.0	113	90 - 110	W246294	16-Nov-12	M1

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M1	Matrix spike recovery was high, but the LCS recovery was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2K0330**
Reported: 27-Nov-12 15:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W2K0330-01	Ground Water	13-Nov-12 08:36	VH	15-Nov-2012
FRANCO 383	W2K0330-02	Ground Water	13-Nov-12 16:02	VH	15-Nov-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2K0330**
Reported: 27-Nov-12 15:11

Client Sample ID: **NWC-04**
SVL Sample ID: **W2K0330-01 (Ground Water)**

Sampled: 13-Nov-12 08:36
Received: 15-Nov-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	211	mg/L	3.00	0.70	10	W247181	AEW	11/21/12 12:32	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2K0330**
Reported: 27-Nov-12 15:11

Client Sample ID: **FRANCO 383**
SVL Sample ID: **W2K0330-02 (Ground Water)**

Sampled: 13-Nov-12 16:02
Received: 15-Nov-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	349	mg/L	3.00	0.70	10	W247181	AEW	11/21/12 12:41	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2K0330**
Reported: 27-Nov-12 15:11

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.07	0.30	W247181	21-Nov-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.7	10.0	107	90 - 110	W247181	21-Nov-12	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	2.65	2.69	1.6	20	W247181	21-Nov-12	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	14.5	2.69	10.0	118	90 - 110	W247181	21-Nov-12	M1
EPA 300.0	Sulfate as SO4	mg/L	26.4	14.6	10.0	117	90 - 110	W247181	21-Nov-12	M1

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M1	Matrix spike recovery was high, but the LCS recovery was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2K0556**
Reported: 11-Dec-12 10:04

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
PANAGAKOS	W2K0556-01	Ground Water	27-Nov-12 16:34	VH	29-Nov-2012

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.
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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: **W2K0556**
Reported: 11-Dec-12 10:04

Client Sample ID: **PANAGAKOS**
SVL Sample ID: **W2K0556-01 (Ground Water)**

Sampled: 27-Nov-12 16:34
Received: 29-Nov-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	274	mg/L	7.50	1.75	25	W249101	AEW	12/04/12 20:35	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2K0556**
Reported: 11-Dec-12 10:04

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.07	0.30	W249101	04-Dec-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	W249101	04-Dec-12	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	9.39	9.38	0.0	20	W249101	04-Dec-12	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	20.6	9.38	10.0	112	90 - 110	W249101	04-Dec-12	M1
EPA 300.0	Sulfate as SO4	mg/L	34.5	23.4	10.0	111	90 - 110	W249101	04-Dec-12	M1

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M1	Matrix spike recovery was high, but the LCS recovery was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2L0026**
Reported: 10-Dec-12 12:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BIMA	W2L0026-01	Ground Water	29-Nov-12 16:30	VH	04-Dec-2012

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.
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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: **W2L0026**
Reported: 10-Dec-12 12:50

Client Sample ID: **BIMA**
SVL Sample ID: **W2L0026-01 (Ground Water)**

Sampled: 29-Nov-12 16:30
Received: 04-Dec-12
Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	310	mg/L	3.00	0.70	10	W249166	AEW	12/06/12 20:48	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2L0026**
Reported: 10-Dec-12 12:50

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.07	0.30	W249166	06-Dec-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.1	10.0	101	90 - 110	W249166	06-Dec-12	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	0.51	0.49	5.4	20	W249166	06-Dec-12	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	11.1	0.49	10.0	106	90 - 110	W249166	06-Dec-12	

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2L0027**
Reported: 10-Dec-12 12:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
FRANCO-383	W2L0027-01	Ground Water	03-Dec-12 09:25	ML	04-Dec-2012
NWC-04	W2L0027-02	Ground Water	03-Dec-12 08:43	ML	04-Dec-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2L0027**
Reported: 10-Dec-12 12:51

Client Sample ID: **FRANCO-383**
SVL Sample ID: **W2L0027-01 (Ground Water)**

Sampled: 03-Dec-12 09:25
Received: 04-Dec-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	332	mg/L	3.00	0.70	10	W249166	AEW	12/06/12 20:57	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2L0027**
Reported: 10-Dec-12 12:51

Client Sample ID: **NWC-04**
SVL Sample ID: **W2L0027-02 (Ground Water)**

Sampled: 03-Dec-12 08:43
Received: 04-Dec-12
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	208	mg/L	3.00	0.70	10	W249166	AEW	12/06/12 21:25	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2L0027**
Reported: 10-Dec-12 12:51

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.07	0.30	W249166	06-Dec-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.1	10.0	101	90 - 110	W249166	06-Dec-12	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	0.51	0.49	5.4	20	W249166	06-Dec-12	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	11.1	0.49	10.0	106	90 - 110	W249166	06-Dec-12	

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2L0122**
Reported: 11-Dec-12 09:16

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
WEISKOPF 897	W2L0122-01	Ground Water	06-Dec-12 13:35	ML/BD	07-Dec-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2L0122**
Reported: 11-Dec-12 09:16

Client Sample ID: **WEISKOPF 897**
SVL Sample ID: **W2L0122-01 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 06-Dec-12 13:35
Received: 07-Dec-12
Sampled By: ML/BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	18.5	mg/L	0.30	0.07		W249277	AEW	12/10/12 12:05	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray

Kirby Gray
Technical Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2L0122**
Reported: 11-Dec-12 09:16

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.07	0.30	W249277	07-Dec-12	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	9.98	10.0	99.8	90 - 110	W249277	07-Dec-12	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	19.9	8.76	10.0	111	90 - 110	W249277	07-Dec-12	M1

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	20.0	19.9	10.0	0.9	20	W249277	07-Dec-12	M1

Notes and Definitions

M1	Matrix spike recovery was high, but the LCS recovery was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

APPENDIX D

GROUNDWATER SAMPLING FORMS

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/10/12

Well ID: Anderson 396 (old) Weather: Sunny, 70's

ADWR No: Sampler: VNH + JCG

WELL DATA

Well Depth (ft bls):	285'
Casing Diameter (in):	8"
Static Water Level (ft bmp):	151.50'
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	—

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1517	Pump On						
1520	3	—	—	7.40	24.0	1414	TDS=1001ppm
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Anderson 396	1521	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: Took 1 grab sample from tank

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/10/12

Well ID: Anderson 458 (new) Weather: Sunny, 70's

ADWR No: Sampler: VNH + JCJ

WELL DATA

Well Depth (ft bls): 734'

Casing Diameter (in): 5"

Static Water Level (ft bmp): 151.82

Casing Volume (gal): 594 x3 = 1782

Total Volume Purged (gal): 1620

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
1529	Pump On						
1559	30	9	270	8.18	24.0	430.2	
1629	60	9	540	8.14	24.3	418.9	
1659	90	9	810	8.19	23.9	414.0	
1729	120	9	1080	8.14	23.8	410.9	
1759	150	9	1350	8.20	23.7	409.0	
1829	180	9	1620	8.13	23.8	412.3	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Anderson 458	1831	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/18/12

Well ID: AWC-02 Weather: Sunny 80

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): N/A

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
1402				7.48	21.6	448.9	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-02	1405	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/18/12

Well ID: AWC-03 Weather: Sunny 80

ADWR No: Sampler: MML

WELL DATA

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

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
1344				7.44	21.3	477.4	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-03	1346	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/18/12

Well ID: AWC-04 Weather: Sunny 80

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): N/A

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
1424				7.20	20.8	606.7	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-04	1426	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: AWC-05 Date: 10/18/12

Well ID: ↳ Weather: Sunny 80

ADWR No: Sampler: MML

WELL DATA

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

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
1329				7.66	22.6	436.1	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-05	1332	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 10 Date: 10/4/12

Well ID: Banks 986 Weather: Sunny, 80s

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls): 435'

Casing Diameter (in): 6"

Static Water Level (ft bmp):

Casing Volume (gal): 291 x3 = 873

Total Volume Purged (gal):

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0951	Pump On						
1001	10	8	80	7.68	22.0	876.4	
1011	20	8	160	7.71	21.8	864.6	
1031	40	7.5	310	7.71	21.9	857.6	
1051	60	7.5	460	7.74	22.0	859.3	Water is cloudy brown
1111	80	7.5	610	7.73	21.8	852.9	Water is cloudy brown.
1131	100	7.5	760	7.74	22.0	846.7	Water is clearer, but not clear
1146	115	7.5	872.5	7.73	22.0	845.4	Water is cloudy brown
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Banks 986	1152	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☑ Other: Purged 3 well volumes based on SWL @ Banks 987

Additional Comments: SWL @ Banks 987 = 237.16

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/4/12

Well ID: Banks 987 Weather: Sunny 80's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 237.16

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

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

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

SAMPLE INFORMATION

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

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Water Level Only

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 11/29/12

Well ID: Bima Weather: Sunny, 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls): 465'

Casing Diameter (in): 4"

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
1627	—	—		6.51	20.6	1664	TDS: 1200
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Bima	1630	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: One Field parameter then sample. * No purge per owner request *

Additional Comments: VNH was able to get sounder to 400ft bls, there was no water from 0-400.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	10-16-12
Well ID:	BMO-2008-5B	Weather:	Sunny
ADWR No:		Sampler:	Christopher L Sturman

WELL DATA

Well Depth (ft bls):	285
Casing Diameter (in):	5"
Static Water Level (ft bmp):	149.91
Casing Volume (gals):	138
3 Casing Volumes (gals):	414

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1100							
1105	5	27	135	6.52	21.7	707	
1115	15	27	405	6.66	21.9	710	
1125	25	27	675	6.68	21.4	712	712

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMO-2008-5B	1125	plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

135.0

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	10-16-12
Well ID:	BMQ-2008-5M	Weather:	
ADWR No:		Sampler:	

WELL DATA

Well Depth (ft bls):	450
Casing Diameter (in):	5"
Static Water Level (ft bmp):	151.77
Casing Volume (gals):	304.1
3 Casing Volumes (gals):	912.3

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0730							
0740	10	18	180	6.64	22.1	584	
0755	25	18	450	6.82	21.8	590	
0815	45	18	810	6.84	22.0	587	
0825	55	18	990	6.86	21.9	591	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMQ-2008-5M	0825	plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

298.2

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	10-16-12
Well ID:	BMO-2008 6B	Weather:	Sunny
ADWR No:		Sampler:	Christopher L Sloan

WELL DATA

Well Depth (ft bls):	265
Casing Diameter (in):	5"
Static Water Level (ft bmp):	195.71
Casing Volume (gals):	70.6
3 Casing Volumes (gals):	212

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1315							
1330	15	5.1	75	6.76	21.8	335	
1345	30	5.1	150	6.74	21.6	340	
1400	45	5.1	225	6.79	21.5	342	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMO-2008-6B	1400	plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

Bart Sample ~~8 gallons~~ ~~8 min~~

51 gallon 10 min

19.3

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	10-16-12
Well ID:	BMO-2008-6M	Weather:	Sunny
ADWR No:		Sampler:	Christopher L Sherman

WELL DATA

Well Depth (ft bls):	450
Casing Diameter (in):	5"
Static Water Level (ft bmp):	196.53
Casing Volume (gals):	2585
3 Casing Volumes (gals):	776

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1230							
1240	10	21	210	6.80	21.7	707	
1250	20	21	420	6.85	22.8	708	
1300	30	21	630	6.89	21.9	706	
1310	40	21	840	6.89	21.8	708	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMO-2008-6M	1310	plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

2547

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	10-17-12
Well ID:	BMO-2010-LM	Weather:	Sunny
ADWR No:		Sampler:	Chastain / L Shannon

WELL DATA

Well Depth (ft bls):	550
Casing Diameter (in):	5"
Static Water Level (ft bmp):	225.63
Casing Volume (gals):	331
3 Casing Volumes (gals):	993

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
0620							
0630	10	10	100	7.62	21.8	545	
0635	15	10	150	7.67	21.7	535	
0720	60	5	375	7.70	22.0	567	
0820	120	3	555	7.28	240	683	
0920	180	3	735	7.35	23.5	690	
1020	240	3	915	7.38	23.8	696	
1050	270	3	1005	7.40	23.9	699	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
		plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

324.37

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	10-17-12
Well ID:	BMO-2010-2M	Weather:	Sunny
ADWR No:		Sampler:	Christopher L Sturmon

WELL DATA

Well Depth (ft bls):	380
Casing Diameter (in):	5"
Static Water Level (ft bmp):	274.27
Casing Volume (gals):	108
3 Casing Volumes (gals):	324

273

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1100							
1110	10	27	270	6.53	21.7	2.25	
1120	20	27	540	6.59	21.4	2.21	
1130	30	27	810	6.60	21.3	2.20	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
		plastic	250 ml	1	EPA 300.0	none	

Additional Comments: Bart sample taken at 8 mi.

105.7

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: | Date: 10/18/12

Well ID: BMO-2010-3B | Weather: Sunny 70's

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls): 330

Casing Diameter (in): 5

Static Water Level (ft bmp): 119.13

Casing Volume (gal): 215 x3 = 645

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0842	Pump On						orangy-brown water No odor
0902	20	8	160	7.62	21.7	410.2	clear, odorless
0912	30		240	7.59	21.6	423.7	
0922	40		320	7.60	21.6	410.0	
0932	50		400	7.59	21.7	410.5	
0942	60		480	7.58	21.6	410.9	
0952	70		560	7.58	21.7	411.1	
1005	83		664	7.58	21.6	411.9	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2010-3B	1007	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: | Date: 10/18/12

Well ID: BMO-2010-3M | Weather: Sunny, breezy

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls):	531
Casing Diameter (in):	5
Static Water Level (ft bmp):	122.06
Casing Volume (gal):	417 x3 = 1252
Total Volume Purged (gal):	

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1018	Pump On						
1038	20	8	160	7.87	22.3	344.0	clear w/ orange-yellow tint w/a faint smell
1058	40		320	7.74	22.8	381.7	Yellow tinted, faint odor
1118	60		480	7.74	23.1	379.9	clear very faint tint
1138	80		640	7.72	23.0	379.4	clear, very faint odor
1158	100		800	7.71	23.1	379.5	"
1218	120		960	7.73	23.2	379.7	
1238	140		1120	7.71	23.2	379.9	clear, very faint odor.
1258	160		1280	7.71	23.3	379.9	"
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2010-3M	1300	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: discharge began w/orange-brown color, cloudiness, at then cleared to yellowish tint. Approximately 5min after starting pump discharge became greenish black with strong odor. This lasted 2/min and discharge returned to yellow tint.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: | Date: 11/13/12

Well ID: BMO 2012 1M | Weather: Sunny, 60s

ADWR No: 55- 221388 | Sampler: VNH

WELL DATA

Well Depth (ft bls):	405'
Casing Diameter (in):	5"
Static Water Level (ft bmp):	231.90'
Casing Volume (gal):	177 gal x3 = 531 gal
Total Volume Purged (gal):	538

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
1203	Pump On						
1223	20	5	100	7.58	21.6	882.2	Slightly cloudy, brown tinge
1243	40	4.5	190	7.59	21.9	888.6	Water is clear, odorless
1303	60	4	270	7.56	21.5	917.1	" "
1323	80	4	350	7.55	21.4	920.0	" "
1343	100	4	430	7.56	21.5	938.8	" "
1403	120	4	510	7.55	21.3	933.7	" "
1410	127	—	538	~	~	~	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO 2012 1M	1408	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/8/12

Well ID: Chambers Weather: Sunny, 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls): 245'

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal): 19.5

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
1314	Pump On						
1319	5	~1.3	6.5	7.43	22.5	431.4	
1324	10	~1.3	13	7.44	22.5	431.6	
1329	15	~1.3	19.5	7.44	22.4	430.0	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Chambers	1334	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: From sink in garden.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/9/12

Well ID: Cooper Weather: Sunny, 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls): 325

Casing Diameter (in): 6"

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal): 157.5

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
1614	Pump On						
1619	5	10.5	52.5	7.55	22.1	435.3	
1624	10	10.5	105	7.70	21.9	434.7	
1629	15	10.5	157.5	7.70	22.1	432.8	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Cooper	1632	Poly	250mL	1	300.0	NA	N

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: 2191 S Naco Hwy

Sample from spigot on N side of house

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/10/12

Well ID: Cooper C. Weather: Sunny 70's

ADWR No: Sampler: VNH & TCJ

WELL DATA

Well Depth (ft bls):	220'
Casing Diameter (in):	6"
Static Water Level (ft bmp):	161.10'
Casing Volume (gal):	87 x3 = 261
Total Volume Purged (gal):	330

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
1342	Pump On						
1352	10	11	110	6.96	21.2	2025	TDS = 1478 ppm
1402	20	11	220	6.97	21.2	1994	TDS = 1455 ppm
1412	30	11	330	6.98	21.2	1985	TDS = 1450 ppm
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Coopes C	1417	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/4/12

Well ID: Dodson | Weather: Sunny, slight breeze, 80's

ADWR No: | Sampler: VNH

WELL DATA

Well Depth (ft bls): 200'

Casing Diameter (in): 6"

Static Water Level (ft bmp): 97.80

Casing Volume (gal): 150 x3 = 450

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1446	Pump On						
1451	5	14	70	~~7.28~~	21.0	1728	TDS= 1243 ppm
1456	10	14	140	7.31	20.9	16917	TDS= 1220 ppm
1501	15	14	210	7.30	20.6	16888	TDS= 1209 ppm
1506	20	14	280	7.29	20.9	16675	TDS= 1200 ppm
1511	25	14	350	7.27	20.6	16653	TDS= 1189 ppm
1516	30	14	420	7.29	20.6	16633	TDS= 1172 ppm
1521	35	14	490	7.27	20.6	16626	TDS= 1167 ppm
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Dodson	1327	Poly	250mL	1	300.0	NA	Y
~~DUP 10042012~~	~~1328~~	~~Poly~~	~~250mL~~	~~1~~	~~300.0~~	~~NA~~	~~Y~~

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: SWL, & Sample taken from well head in white brick shed. Well is on E. side of backyard.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/4/12

Well ID: Duraz0 Weather: Sunny, 80's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

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

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

SAMPLE INFORMATION

Sample 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: No access to well, sounding port is rusted shut

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: No purge, well & pump are disconnected.

Additional Comments: Well is disconnected, no longer in use, & sounding port is rusted shut. See pics

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/4/12

Well ID: East Weather: Sunny, 80's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bis): 125'

Casing Diameter (in): 6"

Static Water Level (ft bmp): 73.34

Casing Volume (gal): 76 x3 = 228

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0846	Pump On						
0851	5	10	50	7.51	20.3	621.9	
0856	10	10	100	7.51	20.3	623.3	
0901	15	10	150	7.49	20.3	624.0	
0906	20	10	200	7.50	20.3	623.4	
0911	25	10	250	7.49	20.4	623.8	Pump Off
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
East	0915	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/9/12

Well ID: Echave Weather: Sunny, 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls): 345'

Casing Diameter (in): 6"

Static Water Level (ft bmp): 216.71' From 02/01/12

Casing Volume (gal): 188 x3 = 564

Total Volume Purged (gal): 560

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1202	Pump On						
1222	20	7	140	7.59	22.4	402.8	
1242	40	7	280	7.72	22.2	403.8	
1302	60	7	420	7.73	22.2	403.4	
1322	80	7	560	7.69	21.9	404.7	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Echave	1327	Poly	250mL	1	300.0	NA	Y
DUP 10092012	1328	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: #520 236 6154

Use SWL from 02/01/2012, Obstruction in well

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/3/12

Well ID: EPPELE 641 Weather: Sunny, slight breeze, 70's

ADWR No: Sampler: VNH + JCT

WELL DATA

Well Depth (ft bls): 265 ft

Casing Diameter (in): 8"

Static Water Level (ft bmp): 71.66'

Casing Volume (gal): 505 x3 = 1515

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1016	Pump On						
1026	10	10	100	7.71	20.8	561.1	
1036	20	11	210	7.74	20.6	559.2	
1046	30	11	320	7.77	20.7	563.9	
1056	40	11	430	7.84	20.7	558.8	
1100	44	-	474	-	-	-	Pump off
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
EPPELE 641	1131	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Well went dry @ 44min, or 474 gal discharge. Wait 30min for recharge.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/5/12

Well ID: FRANCO 101 Weather: Sunny, 70s

ADWR No: Sampler: VAH

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): DRY

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

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

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

SAMPLE INFORMATION

Sample 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 is Dry

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: No purge due to dry well

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/5/12

Well ID: FRANCO 383 Weather: Sunny, 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 195.00

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0926	Pump On						
0931	5	7.5	37.5	7.61	24.2	1004	
0936	10	7.5	75	7.72	24.0	1003	
0941	15	7.5	112.5	7.69	24.0	1007	
0946	20	7.5	150	7.69	23.3	1009	
0951	25	7.5	187.5	7.65	24.2	1001	Booster pump on
0956	30	7.5	225	7.63	24.3	1001	Booster pump off
1001	35	7.5	262.5	7.63	24.4	1002	Booster pump on
1003	-	-	-	-	-	-	pump off
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Franco 383	1005	Poly	250ml	1	300.0	Nt	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Top of sounding tube is 3.11' above land surface. Attach hose to spigot near Pressure tanks inside well shed. Use 2 hoses to discharge to ditch on W side of FRANCO loop.

Those on site in grass directly W of shed.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 11/13/12

Well ID: FRANCO 383 Weather: Sunny, 60's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls): 711'

Casing Diameter (in): 5"

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal): 234

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
1523	Pump On						
1528	5	6	30	7.48	19.3	986.7	
1538	15	6	90	7.63	19.4	1004	
1548	25	6	150	7.65	19.8	1008	
1558	35	6	210	7.67	19.9	988.2	
1602	39	—	234	—	—	—	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
FRANCO 383	1602	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Well was pumping upon arrival

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 12/3/12

Well ID: Franco 383 Weather: Sunny 60

ADWR No: 55-221383 Sampler: MML

WELL DATA

Well Depth (ft bls): 711

Casing Diameter (in): 5

Static Water Level (ft bmp): 196.70

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0915	Pump On						
0919		10		7.66	18.5	1001	
0923				7.54	19.4	1001	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Franco383	09:25	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Purge until pumphouse pump turns on (0920)

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/5/12

Well ID: Garner 557 Weather: Sunny. 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 197.08'

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

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

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

SAMPLE INFORMATION

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

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/5 12

Well ID: Garner 635 Weather: Sunny, 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls): 680'

Casing Diameter (in): 5"

Static Water Level (ft bmp): 202.71'

Casing Volume (gal): 487 x3 = 1461

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1100	Pump On						
1120	20	12	240	7.91	24.0	466.1	
1140	40	13	500	7.86	24.0	472.0	
1200	60	13	760	7.84	24.0	465.1	
1220	80	13	1020	7.89	23.7	464.6	
1240	100	13.5	1290	8.09	23.8	465.6	
1250	110	13.5	1425	8.09	23.1	472.9	Pump Off
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Garner 635	1255	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Water trees to S. of well

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	10-17-12
Well ID:	Hoban	Weather:	Sunny
ADWR No:		Sampler:	Christopher L. Shannon

WELL DATA

Well Depth (ft bls):	300
Casing Diameter (in):	5"
Static Water Level (ft bmp):	169.40
Casing Volume (gals):	133.2
3 Casing Volumes (gals):	400

169

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1150							
1200	10	17.6	176	6.72	22.6	1855	
1210	20	17.6	352	6.69	22.2	1854	
1220	30	17.6	528	6.74	22.0	1846	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
		plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments: Bart taken @ 88 gpm 1155

130.6

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 10/16/12

Well ID: HOWARD NR Weather: 70's overcast

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 200

Casing Diameter (in): 6

Static Water Level (ft bmp): 156.43

Casing Volume (gal): 64 x3 = 192

Total Volume Purged (gal): ~240

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
1143	Pump On						
1153	10	11	110	7.12	21.6	1325	Water was yellow-brown to start, clear w/in 10 min.
1158	15		165	7.07	21.5	1382	
1203	20		220	7.06	21.1	1417	
1206							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
HOWARD NR	12:05	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Hand pumped, field filtered.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 10/16/12

Well ID: HOWARD 312 Weather: 70s partly cloudy

ADWR No: 221312 Sampler: MML

WELL DATA

Well Depth (ft bls): 980

Casing Diameter (in): 5

Static Water Level (ft bmp): 193.33

Casing Volume (gal): 803 x3 = 2409

Total Volume Purged (gal): ~2500

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1214	Pump On						
1224	10	7	70	8.22	22.8	680.5	
1259	45	8	350	8.22	24.8	685.4	
1334	80	8	630	8.20	26.4	679.7	
1359	115	8	910	8.19	26.5	671.8	
1439	155	8	1230	8.19	26.6	665.3	
1519	195	8	1550	8.18	26.5	659.8	
1559	235	10	1950	8.18	26.5	655.1	
1649	285	10	2450	8.18	26.6	648.3	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
HOWARD 312	1653	POLY	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

☒ Water level measurement collected.

☐ No water level measurement collected. No access to wellhead/No port in wellhead

☐ No water level measurement collected. Obstruction in well.

☐ No water level measurement collected. Well is pumping.

☐ Other:

WELL PURGING INFORMATION

☒ Purged 3 well volumes and field parameters stabilized.

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

☐ Purged well until field parameters stabilized.

☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/9/12

Well ID: Keefer Weather: Sunny, 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):	245'
Casing Diameter (in):	6"
Static Water Level (ft bmp):	141.00'
Casing Volume (gal):	153 x3 = 459
Total Volume Purged (gal):	462

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
0853	Pump On						
0903	10	11	110	7.55	20.2	480.3	
0913	20	11	220	7.57	20.3	488.8	
0923	30	11	330	7.48	20.3	499.6	
0933	40	11	440	7.58	20.1	506.6	
0935	42	11	462	—	—	—	Off
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Keefer	0937	Poly	250ml	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/17/12

Well ID: MARCELL Weather: Sunny 80

ADWR No: Sampler: MMC

WELL DATA

Well Depth (ft bls):	~220
Casing Diameter (in):	6"
Static Water Level (ft bmp):	~180
Casing Volume (gal):	60 x3 = 180
Total Volume Purged (gal):	~360

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
1451	Pump On						
1501	10	10	100	7.26	21.7	1559	
1511	20	10	200	7.22	21.4	1549	
1521	30	10	300	7.18	21.3	1546	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
MARCELL NR	1526	Poly	250	1	300.0	N	Y
DUP20121017	"1800"	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/8/12

Well ID: McConnell 265 (DD) | Weather: Sunny, 80's

ADWR No: | Sampler: VNH

WELL DATA

Well Depth (ft bls):	216'
Casing Diameter (in):	7"
Static Water Level (ft bmp):	162.43
Casing Volume (gal):	79 x3 = 237
Total Volume Purged (gal):	260

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
0858	Pump On						
0903	5	13	65	7.15	21.0	1907	Water is brown
0908	10	13	130	7.30	20.8	1885	Water has cleared, sulfur odor
0913	15	13	195	7.11	20.9	1864	Water is clear, slight odor
0918	20	13	260	7.07	20.9	1862	" "
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
McConnell 265	0921	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/8/12

Well ID: McConnell 459 (new) | Weather: Sunny, 80's

ADWR No: | Sampler: VNH

WELL DATA

Well Depth (ft bls):	963'
Casing Diameter (in):	5"
Static Water Level (ft bmp):	166.81
Casing Volume (gal):	710 x3 = 2130
Total Volume Purged (gal):	2340

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0930	Pump On						
0940	10	13	130	8.07	23.0	546.1	VERY strong sulfur odor
1000	30	13	390	8.08	24.4	546.6	" "
1030	60	13	780	8.06	25.0	550.9	" "
1100	90	13	1170	8.07	25.1	541.0	Moderate sulphur odor
1130	120	13	1560	8.14	24.4	531.5	" "
1200	150	13	1950	8.14	25.0	528.7	Slight Sulphur odor
1230	180	13	2340	8.12	25.3	517.3	" "
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
McConnell 459	1238	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Connect hose to pressure tanks spigot, discharge to S of shed

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/4/12

Well ID: Metzler Weather: Sunny, 60's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 291.63' bmp

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

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

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

SAMPLE INFORMATION

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

WATER LEVEL MEASUREMENT COLLECTION

☒ Water level measurement collected.

☐ No water level measurement collected. No access to wellhead/No port in wellhead

☐ No water level measurement collected. Obstruction in well.

☐ No water level measurement collected. Well is pumping.

☐ Other:

WELL PURGING INFORMATION

☐ Purged 3 well volumes and field parameters stabilized.

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

☐ Purged well until field parameters stabilized.

☒ Other: Well & pump disconnected.

Additional Comments: Mrs. Metzler says they are on AWC water, & haven't used the well in a while.

Z:\Data\Projects\G & K\055038_Copper Queen Branch Mitigation Order\Groundwater Monitoring\Forms\Groundwater Sampling Sheet

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/8/12

Well ID: Moore Weather: Sunny, 70's

ADWR No: Sampler: VNN

WELL DATA

Well Depth (ft bls): 220'

Casing Diameter (in): 6"

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal): 250

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
1522	Pump On						
1527	5	12.5	62.5	7.65	21.8	429.0	
1532	10	12.5	125	7.64	21.7	431.3	
1537	15	12.5	187.5	7.55	21.8	433.1	
1542	20	12.5	250	7.64	21.4	433.2	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Moore	1547	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/4/12

Well ID: Noteman Weather: Sunny, 80's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls): 470'

Casing Diameter (in): 5"

Static Water Level (ft bmp): NA. use 327.54 from 2/25/09

Casing Volume (gal): 145 x3 = 436

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1218	Pump On						
1228	10	11	110	6.88	23.6	1413	
1238	20	11	220	6.89	23.6	1414	
1248	30	10	320	6.86	23.7	1413	
1258	40	9	410	6.80	23.6	1412	
1300	42	9	428	-	-	-	Pump off
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Noteman	1302	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Use SWL = 327.54' from 2/25/09

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 2.1 Date: 12-14-12

Well ID: ~~NSD-03~~ NSD-02 Weather: 30's Cloudy

ADWR No: BD Sampler: BJD

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 107.24

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

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

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

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

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 2.1 | Date: 12-14-12

Well ID: ~~NJD-02~~ NJD-03 | Weather: 30's cloudy

ADWR No: | Sampler: BJD

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 90.83

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

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

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

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

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/10/12

Well ID: NWC-02 Weather: Sunny, 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
1026				7.52	21.6	426.2	
1032				7.61	21.5	424.6	
1037				7.58	21.7	423.9	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-02	1043	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: Well has been pumping all morning

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/10/12

Well ID: NWC-03 Weather: Sunny 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
0925				7.30	21.1	1054	
0930				7.31	21.1	1033	
0935				7.31	21.1	1029	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-03	0944	Poly	250mL	1	300.0	NA	Y
DUP 10102012	0944	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Well was been pumping

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date:

Well ID: NWC-03 eAP Weather:

ADWR No: Sampler:

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 135.97'

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

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

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

SAMPLE INFORMATION

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

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/10/12

Well ID: NWC-04 Weather: Sunny, 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
0824				7.52	22.1	867.8	
0829				7.68	23.7	854.5	
0834				7.55	23.1	861.8	
0839				7.49	23.2	869.8	
0844				7.48	23.2	883.6	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-04	0858	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: No purge

Additional Comments: Pump is off & on

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 11/13/12

Well ID: NWC-04 Weather: Sunny, 40's

ADWR No: Sampler: VNH

WELL DATA

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

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
0821				7.73	19.7	883.4	TDS = 619.1 ppm
0826				7.55	21.4	848.1	
0831				7.49	21.9	849.2	TDS = 587.0 ppm
0836				7.56	21.7	849.8	TDS = 591.0 ppm
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-04	0836	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Well has been pumped on & off all morning

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 12/3/12

Well ID: NWC-04 Weather: Sunny 50's

ADWR No: Sampler: MMC

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
0830				7.33	22.4	899.6	
0835				7.39	22.8	894.1	
0840				7.40	23.0	898.6	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-04	0843	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/10/12

Well ID: NWC-06 | Weather: Sunny 70's

ADWR No: | Sampler: VNH

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
0957				7.55	21.9	391.2	
1002				7.64	22.0	390.7	
1007				7.62	21.9	393.6	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-06	1012	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 30CT12

Well ID: Palmer Weather: Sunny, ~ 70°F

ADWR No: Sampler: WH + JCJ

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
0852				8.09	25.7	526.7	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Palmer	0857	Poly	250mL	1	300.0	NA	Y
DUP 10032012	0857	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: Quick grab @ spigot on E side of house

Additional Comments: Water pressure decreased rapidly (w/in 1min) of discharge. Took grab sample after purging 5gal

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 11/27/12

Well ID: Panaga2os Weather: Sunny, 70's

ADWR No: Sampler: VJH

WELL DATA

Well Depth (ft bls): 200'

Casing Diameter (in): 6"

Static Water Level (ft bmp): 169.82'

Casing Volume (gal): 44 x3 = 132

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1603	Pump On						
1608	5	7	35	7.02	20.7	1214	Clear, brown tint
1613	10	7	70	7.11	20.3	1072	Clear, v/ brown tint
1618	15	7	105	7.13	20.3	1106	Clear
1623	20	7	140	7.18	20.1	1143	"
1628	25	7	175	7.51	20.1	1164	"
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Panaga2os	1634	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/9/12

Well ID: Parra Weather: Sunny 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):	355'
Casing Diameter (in):	6"
Static Water Level (ft bmp):	
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	240

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
1528	Pump On						
1533	5	16	80	7.42	21.8	1208	
1538	10	16	160	7.27	21.6	1205	
1543	15	16	240	7.30	21.3	1209	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Parra	1550	Poly	250mL	1	300	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/17/12

Well ID: PIONKE 395 Weather: sunny, 80s

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 300

Casing Diameter (in): 6"

Static Water Level (ft bmp): 155.31

Casing Volume (gal): 213 x3 = 638

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1210	Pump On						water is orange brown potent S smell
1240	30	3.5	105	7.18	21.8	1186	same but slighly clearer
1310	60	2.5	180	7.21	22.3	1141	"
1340	90	2.5	255	7.17	22.5	1102	"
1410	120	7	447	7.19	22.3	1112	4min@2.5, 8@7 orangy color → clearer → fainter smell
1430	140	7	587	7.20	22.2	1130	yellowish brown, clearer
1440	150	7	657	7.16	22.3	1136	yellow-brown tint / faint smell / sulfur smell.
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
PIONKE 395	1445	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Turn on breakers behind (north of) pumphouse

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/11/2012

Well ID: Pionke 517 Weather: Sunny, 70's

ADWR No: Sampler: VNH + JCJ

WELL DATA

Well Depth (ft bls):	1004'
Casing Diameter (in):	5"
Static Water Level (ft bmp):	152.15
Casing Volume (gal):	461 x3 = 1383
Total Volume Purged (gal):	1326

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1005	Pump On						
1025	20	13	260	7.80	22.7	401.3	
1045	40	13	520	7.79	22.9	398.8	
1105	60	13	780	7.76	22.8	396.1	
1125	80	13	1040	7.75	23.0	396.3	
1145	100	13	1300	7.75	22.8	394.7	
1147	102	13	1326	—	—	—	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Pionke 517	1149	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/8/12

Well ID: Ramirez | Weather: Sunny, 70's

ADWR No: | Sampler: VNH

WELL DATA

Well Depth (ft bls):	300'
Casing Diameter (in):	6"
Static Water Level (ft bmp):	164.38'
Casing Volume (gal):	200 x3 = 600
Total Volume Purged (gal):	605

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
1406	Pump On						
1416	10	11	110	7.50	22.6	409.1	
1426	20	11	220	7.57	22.7	410.3	
1436	30	11	330	7.61	22.7	411.9	
1446	40	11	440	7.67	22.6	411.9	
1456	50	11	550	7.57	22.6	411.6	
1501	55	11	605	7.61	22.5	412.0	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Ramirez	1504	Poly	250mL	1	300.0	NA	Y
DUP 10082012	1505	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: well is in shed between big house & trailer. Go through N-facing door.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/3/12

Well ID: RAY | Weather: Sunny, breezy, 80's

ADWR No: | Sampler: VNH & JCJ

WELL DATA

Well Depth (ft bls): 100'

Casing Diameter (in): 6"

Static Water Level (ft bmp): 60.98'

Casing Volume (gal): 57 x3 = 172

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1353	Pump On						
1358	5	7	35	7.10	20.7	1457	
1403	10	7	70	7.10	20.6	1456	
1408	15	7	105	7.07	20.6	1445	
1413	20	7	140	7.10	21.1	1462	
1418	25	7	175	7.12	21.1	1464	Pump Off
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Ray	1422	Poly	250mL	1	306.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Watered Tree on S. side of yard per owner request

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/17/17

Well ID: ROGERS E Weather: sunny, 70

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 290

Casing Diameter (in): 6"

Static Water Level (ft bmp): N/A (153.79 from 10/13/11)

Casing Volume (gal): 200 x3 = 601

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0835	Pump On						
0845	10	13	130	7.53	21.9	429.5	
0855	20		260	7.53	21.8	429.2	
0905	30		390	7.50	21.9	438.4	
0915	40		520	7.54	21.8	429.6	
0925	50		650	7.55	21.7	429.0	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
ROGERS E	0927	POLY	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Sounder nearly stuck at ~ 49.5ft, finally came free.

Use (10/13/11) WL = 153.79' bmp

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.6 Date: 10/10/12

Well ID: Rogers 596 Weather: Sunny, 70's

ADWR No: Sampler: VNH & JCT

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 139.55

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

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

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

SAMPLE INFORMATION

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

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/10/12

Well ID: Rogers 803 | Weather: Sunny, 70's

ADWR No: | Sampler: VNH & JCJ

WELL DATA

Well Depth (ft bls):	140'
Casing Diameter (in):	
Static Water Level (ft bmp):	139.55'
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	~40

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
1224	Pump On						
1227	3	11.5	34.5	7.52	24.1	670.7	Discharge dropped
1230	6	≤1	~37	7.46	24.2	673.1	Air in discharge
1233	9	≤1	~40	7.41	24.3	671.4	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Rogers 803	1238	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Discharge dropped significantly after 3 min of pumping.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/9/12

Well ID: Ruiz Weather: Sunny, 70s

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):	312'
Casing Diameter (in):	6"
Static Water Level (ft bmp):	297.20' from 4/11/11
Casing Volume (gal):	22 x3 = 66
Total Volume Purged (gal):	66

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
1456	Pump On						
1459	3	4.4	13.2	7.19	21.4	888.6	
1504	8	4.4	35.2	7.18	21.3	891.9	
1509	13	4.4	57.2	7.19	21.4	891.8	
1511	15	4.4	66	7.18	21.4	890.6	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Ruiz	1514	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Use SWL from 4/11/11 297.20'

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: | Date: 10/17/12

Well ID: SCHWARTZ | Weather: Sunny, 80

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls): 305

Casing Diameter (in): 6"

Static Water Level (ft bmp): 128.98

Casing Volume (gal): 259 x3 = 777

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1002	Pump On						
1013	10	10	100	7.50	21.8	630.5	
1023	20		200	7.48	21.6	631.7	
1033	30		300	7.52	21.5	633.5	
1043	40		400	7.49	21.5	636.3	
1053	50		500	7.47	21.5	639.0	
1103	60		600	7.48	21.6	642.1	
1113	70		700	7.49	21.6	643.8	
1123	80	↓	800	7.48	21.6	645.0	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
SCHWARTZ	1126	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

☑ Water level measurement collected.

☐ No water level measurement collected. No access to wellhead/No port in wellhead

☐ No water level measurement collected. Obstruction in well.

☐ No water level measurement collected. Well is pumping.

☐ Other:

WELL PURGING INFORMATION

☑ Purged 3 well volumes and field parameters stabilized.

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

☐ Purged well until field parameters stabilized.

☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/19/12

Well ID: TM-10 USBP Weather: Sunny 70's

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 277.45

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
0846				8.20	20.0	414.9	clear, brown tint.
0856				8.16	20.3	416.5	"
0906				8.14	20.3	419.6	clear
0916				8.43	20.8	405.7	water is light brown
0926				8.20	20.9	428.2	brown. some amber black particulates also seen sediment settles quickly
0936				8.18	20.9	427.6	mostly clear, still some large dark particulat
0946				8.17	21.0	428.2	"
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-10 USBP	0946	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Well dry with each run, allow recharge for 10 minutes

1st run ~ 30 sec

2nd run ~ 20 sec

3rd ~ 15/20

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	10-16-12
Well ID:	TM-19A	Weather:	Partly Cloudy
ADWR No:		Sampler:	Christopher L Sherman

WELL DATA

Well Depth (ft bls):	700
Casing Diameter (in):	4"
Static Water Level (ft bmp):	205.02
Casing Volume (gals):	321.7
3 Casing Volumes (gals):	

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
~~1445~~							
1500 ~~1510~~	~~20~~ 10	25	250	7.15	22.7	500	
				7.15			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
		plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

Bart Sample only

295

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/9/12

Well ID: TVI 236 Weather: Sunny 70s

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):	222'
Casing Diameter (in):	12"
Static Water Level (ft bmp):	128.45'
Casing Volume (gal):	~397 x3 = 1191
Total Volume Purged (gal):	1500

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1013	Pump On						
1018	5	100	500	7.52	20.3	510.3	
1023	10	100	1000	7.64	20.5	512.3	
1028	15	100	1500	7.56	20.4	513.7	Pump off
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TVI 236	1036	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: SWL inside old windmill bldg, pump & sample near pond uphill. Take field parameters @ spigot. Collect sample, & filter w/ vaccuum pump. EASIER

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/9/12

Well ID: TVI 713 Weather: Sunny 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 132.16

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

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

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

SAMPLE INFORMATION

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

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: WLO. tiny stick-up pipe E. of shed

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/9/12

Well ID: TvI 875 Weather: Sunny, 70's

ADWR No: Sampler: VNH

WELL DATA

Well Depth (ft bls): 330'

Casing Diameter (in): 8"

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal): 6000

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1110	Pump On						
1115	5	500	2500	7.24	21.5	885.6	
1120	10	500	5000	7.37	21.3	881.2	
1122	12	500	6000	7.39	20.9	882.8	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TvI 875	1124	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/9/12

Well ID: Weed | Weather: Sunny, 70's

ADWR No: | Sampler: WNH

WELL DATA

Well Depth (ft bls): 320

Casing Diameter (in):

Static Water Level (ft bmp): NA

Casing Volume (gal): x3 =

Total Volume Purged (gal): 606

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
1400	Pump On						
1405	5	6	30	7.68	21.7	383.7	
1409	9	6	54	7.67	21.5	385.0	
1411	11	6	66	7.66	21.5	385.1	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Weed	1412	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Use metal nipple in 'COB' box. Pull ball valve

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/11/12

Well ID: Weiskopf 802 | Weather: Partly cloudy, windy

ADWR No: | Sampler: VNH

WELL DATA

Well Depth (ft bls):	200'
Casing Diameter (in):	6"
Static Water Level (ft bmp):	149.73'
Casing Volume (gal):	74 x3 = 222
Total Volume Purged (gal):	220

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
1233	Pump On						
1243	10	5.5	55	7.25	21.1	1265	
1253	20	5.5	110	7.22	21.3	1374	
1303	30	5.5	165	7.25	21.4	1370	
1313	40	5.5	220	7.26	21.3	1369	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Weiskopf 802	1316	Poly	250 mL	1	300.0	NA	Y
DUP 10/1/2012	1317	Poly	250mL	1	300.0	NA	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 11/6/12

Well ID: WEISKOPF 897 Weather: Sunny

ADWR No: Sampler: MML/BTD

WELL DATA

Well Depth (ft bls): 1030

Casing Diameter (in): 5

Static Water Level (ft bmp): 149.27

Casing Volume (gal): 899 x3 = 2700

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1111	Pump On						
1131	20	20	400	8.18	23.6	397.1	
1151	40		800	8.06	23.1	409.1	
1211	60		1200	7.94	23.4	403.9	
1231	80		1600	7.92	23.3	400.1	
1251	100		2000	7.89	23.7	403.8	
1311	120		2400	7.92	23.5	396.5	
1331	140		2800	7.93	23.6	398.3	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WEISKOPF 897	1335	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/8/12

Well ID: Zander | Weather: Sunny, 70's

ADWR No: | Sampler: VNH

WELL DATA

Well Depth (ft bls):	280
Casing Diameter (in):	6"
Static Water Level (ft bmp):	150.92'
Casing Volume (gal):	190 x3 = 570
Total Volume Purged (gal):	526.5

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
1610	Pump On						
1620	10	12.5	125	7.58	21.3	428.4	
1630	20	12.5	250	7.61	21.2	431.8	
1640	30	12.5	375	7.64	20.9	431.2	
1650	40	12.5	500	7.59	21.2	433.2	
1655	45	12.5	562.5	7.58	20.8	431.4	
							Pump Off

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

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Zander	1659	Poly	250mL	1	300.0	NP	Y

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments: Please send all future reports to: Patty + Lee Hayes
PO Box 4035
Bisbee AZ 85603

CLEAR CREEK ASSOCIATES