SECOND 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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June 27, 2012

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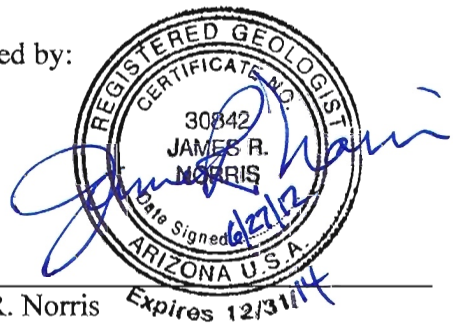

James R. Norris
Arizona Registered Geologist No. 30842

June 27, 2012

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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 second 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 second 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. In June 2012, a measuring point elevation survey was completed for the private well HOBAN. The measuring point for HOBAN was updated based on the results of the most recent survey.

2. GROUNDWATER MONITORING RESULTS

2.1 Results of Monitoring

Analytical results and groundwater elevation data for the second 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 second quarter 2012. The most recent sample results are shown at wells where multiple samples were collected during the quarter. The highest sulfate concentration measured at co-located wells was used for concentration contouring. Figure 3 shows groundwater elevations in the second quarter 2012. Groundwater elevations were calculated using depth to water measurements made under static (nonpumping) conditions for all wells shown on Figure 3. The revised elevation datum for HOBAN eliminated an apparent groundwater depression shown on maps in previous monitoring reports.

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 second quarter 2012 are included in Appendices A, B, and C, respectively. As determined by the data verification review, the analytical sampling data for samples collected in the second 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 second quarter 2012. Groundwater samples were collected from 51 wells and depth to water measurements were collected in 37 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 second 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.

- Comparison of the first quarter 2012 sulfate concentrations with previous quarters indicates no large scale change in the plume geometry since the Mitigation Order sampling began in the fourth quarter 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 decrease measured to date in the basin fill has been 5.85 feet since July 2008 in BMO-2008-3B or a rate of decline of approximately 1.7 feet per year. Groundwater elevations in most BMO monitor wells screened in bedrock have also declined over time. The maximum decrease measured to date in the bedrock has been 27.23 feet since August 2008 in BMO-2008-GU;

although the range of declines in other bedrock wells is approximately 1 to 8 feet. The groundwater elevations in bedrock wells BMO-2008-10GL and BMO-2008-11G display increasing trends. The water elevation in bedrock well BMO-2010-1M is relatively steady over time.

4. 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.

Clear Creek Associates (Clear Creek). 2010. Revision I Aquifer Characterization Report, Task 4.0 of Aquifer Characterization Plan, Mitigation Order on Consent Docket No. P-121-07, Cochise County, Arizona, Volumes I and II. December 15, 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. (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	613396	✓	✓	✓	✓
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	✓	✓	✓	✓
CHAMBERS	629807	✓	✓	✓	✓
COB MW-1	903992			✓	
COB MW-2	903984	✓		✓	
COB MW-3	906823			✓	
COB WL	593116			✓	
COOPER	623564	✓	✓	✓	✓
COOPER C	637069	✓	✓	✓	✓
DODSON	644927	✓	✓	✓	✓
DOUGLASS 791	592791	WLO		WLO	

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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
DOUGLASS 792	592792	WLO		WLO	
DURAZO	NR	✓	✓	✓	✓
EAST	599796	✓	✓	✓	✓
EPPELE 641	805641	✓	✓	✓	✓
FLEMING	218386	WLO		WLO	
FRANCO	500101	✓	✓	✓	✓
FULTZ	212447	✓	✓	✓	✓
GARNER 557	558557	WLO		WLO	
GARNER 635	587635	✓	✓	✓	✓
GGOOSE 547	628547	✓		✓	
GOAR RANCH	610695	WLO		WLO	
HOBAN	805290	✓	✓	✓	✓
HOWARD	NR	✓	✓	✓	✓
KEEFER	209744	✓	✓	✓	✓
MCCONNELL 265	539265	✓	✓	✓	✓
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	613395	✓	✓	✓	✓
POOL	509518	✓	✓	✓	✓
RAMIREZ	216425	✓	✓	✓	✓
RAY	803772	✓	✓	✓	✓
ROGERS 596/803	573596	✓	✓	✓	✓
ROGERS E	216018	✓	✓	✓	✓
RUIZ	531770	✓	✓	✓	✓
SCHWARTZ	210865	✓	✓	✓	✓
STEPHENS	808560	WLO		WLO	
SUNBELT	201531	WLO		WLO	
SWAN	NR	✓		✓	

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
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	641802	✓	✓	✓	✓
ZANDER	205126	✓	✓	✓	✓

Notes:

ADWR = Arizona Department of Water Resources

WLO = Water Level Only

NR = No Record

Table 2
Summary of Groundwater Monitoring Program for Second Quarter 2012

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
ANDERSON	613396	Anderson	Well Inventory	236	Y	Y	Water quality sample collected in April 2012
AWC-02	616586	Arizona Water Company	Plume	330	N	Y	Water quality sample collected in April 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 April 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 April 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 April 2012. Unable to collect water level because well was pumping.
BANKS 986	647986	Banks	Well Inventory	435	N	Y	Water quality sample collected in April 2012. Unable to collect water level because wellhead is not accessible.
BANKS 987	647987	Banks	Well Inventory	339	Y	N	Water level collected in April 2012.
BARTON 919	644919	Barton	Plume	130	N	N	Well not scheduled for second quarter 2012 sampling.
BF-01	539783	Copper Queen Branch	Plume	400	Y	Y	Well not scheduled for second quarter 2012 sampling.
BIMA	577927	Bisbee Municipal Airport	Plume	465	N	Y	Water quality sample collected in April 2012. Water level not collected, could not get sounder down well.
BMO-2008-1G	909474	Copper Queen Branch	Plume	310	N	N	Well not scheduled for second quarter 2012 sampling.
BMO-2008-3B	909147	Copper Queen Branch	Plume	260	N	N	Well not scheduled for second quarter 2012 sampling.
BMO-2008-4B	910096	Copper Queen Branch	Plume	610	N	N	Well not scheduled for second quarter 2012 sampling.
BMO-2008-5B	909653	Copper Queen Branch	Plume	285	Y	Y	Water quality sample collected in April 2012.
BMO-2008-5M	909552	Copper Queen Branch	Plume	450	Y	Y	Water quality sample collected in April 2012.
BMO-2008-6B	909146	Copper Queen Branch	Plume	265	Y	Y	Water quality sample collected in April 2012.
BMO-2008-6M	909019	Copper Queen Branch	Plume	450	Y	Y	Water quality sample collected in April 2012.
BMO-2008-7M	908794	Copper Queen Branch	Plume	670	N	N	Well not scheduled for second quarter 2012 sampling.
BMO-2008-8B	910097	Copper Queen Branch	Plume	480	N	N	Well not scheduled for second quarter 2012 sampling.
BMO-2008-8M	909711	Copper Queen Branch	Plume	1210	N	N	Well not scheduled for second quarter 2012 sampling.
BMO-2008-9M	909255	Copper Queen Branch	Plume	775	N	N	Well not scheduled for second quarter 2012 sampling.
BMO-2008-10GL	909435	Copper Queen Branch	Plume	810	N	N	Well not scheduled for second quarter 2012 sampling.
BMO-2008-10GU	909272	Copper Queen Branch	Plume	449	N	N	Well not scheduled for second quarter 2012 sampling.
BMO-2008-11G	909434	Copper Queen Branch	Plume	760	N	N	Well not scheduled for second quarter 2012 sampling.
BMO-2008-13B	909551	Copper Queen Branch	Plume	474	N	N	Well not scheduled for second quarter 2012 sampling.
BMO-2008-13M	909760	Copper Queen Branch	Plume	1030	N	N	Well not scheduled for second quarter 2012 sampling.
BMO-2010-1M	219957	Copper Queen Branch	Plume	540	Y	Y	Water quality sample collected in April 2012.
BMO-2010-2M	219958	Copper Queen Branch	Plume	370	Y	Y	Water quality sample collected in April 2012.
BMO-2010-3B	219970	Copper Queen Branch	Plume	330	Y	Y	Water quality sample collected in April 2012.

Table 2
Summary of Groundwater Monitoring Program for Second Quarter 2012

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
BMO-2010-3M	219969	Copper Queen Branch	Plume	532	Y	Y	Water quality sample collected in April 2012.
CHAMBERS	629807	Chambers	Well Inventory	245	N	Y	Water quality sample collected in April 2012. Unable to collect water level because wellhead is not accessible.
COB MW-1	903992	City of Bisbee	Plume	420	N	N	Well not scheduled for second quarter 2012 sampling.
COB MW-2	903984	City of Bisbee	Plume	170	N	N	Well not scheduled for second quarter 2012 sampling.
COB MW-3	906823	City of Bisbee	Plume	269	N	N	Well not scheduled for second quarter 2012 sampling.
COB WL	593116	City of Bisbee	Plume	150	N	N	Well not scheduled for second quarter 2012 sampling.
COOPER	623564	Cooper	Plume	325	N	Y	Water quality sample collected in April 2012. Unable to collect water level because wellhead is not accessible.
COOPER C	637069	Hutson	Plume	220	Y	Y	Water quality sample collected in April 2012.
DODSON	644927	Dodson	Plume	200	Y	Y	Water quality sample collected in April 2012.
DOUGLASS 791	592791	Douglass	Well Inventory	200	Y	N	Well identified for water level measurements only. Water level measurement taken in April 2012
DOUGLASS 792	592792	Douglass	Well Inventory	200	Y	N	Well identified for water level measurements only. Water level measurement taken in April 2012.
DURAZO	NR	Durazo	Well Inventory	ND	N	Y	Water quality sample collected in April 2012. Unable to collect water level because wellhead is not accessible.
EAST	599796	East	Well Inventory	125	Y	Y	Water quality sample collected in April 2012.
EPPELE 641	805641	Eppele	Well Inventory	265	Y	Y	Water quality sample collected in April 2012.
FLEMING	218386	Fleming	Well Inventory	400	N	N	Well not scheduled for second quarter 2012 sampling.
FRANCO	500101	Franco	Well Inventory	200	N	N	Well is not currently operational; believed to be dry.
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.
GARNER 557	558557	Garner	Plume	300	Y	N	Well identified for water level measurements only. Water level measurement taken in April 2012.
GARNER 635	587635	Garner	Plume	680	Y	Y	Water quality sample collected in April 2012.
GGOOSE 547	628547	Copper Queen Branch	Plume	800	N	N	Well not operational. Unable to collect water level due to obstruction.
GOAR RANCH	610695	Goar	Well Inventory	250	N	N	Well not scheduled for second quarter 2012 sampling.
HOBAN	805290	Copper Queen Branch	Well Inventory	316	Y	Y	Water quality sample collected in April 2012.
HOWARD	NR	Howard	Well Inventory	200	Y	Y	Water quality sample collected in April 2012.
KEEFER	209744	Keefer	Well Inventory	245	Y	Y	Water quality sample collected in April 2012.
MCCONNELL 265	539265	McConnell	Well Inventory	216	Y	Y	Water quality sample collected in April 2012.
METZLER	35-71891	Metzler	Well Inventory	351	Y	Y	Water quality sample collected in April 2012.
MOORE	538847	Moore	Well Inventory	220	N	Y	Water quality sample collected in April 2012. Unable to collect water level because wellhead is not accessible.

Table 2
Summary of Groundwater Monitoring Program for Second Quarter 2012

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
NESS	509127	Ness	Well Inventory	812	N	N	Well not scheduled for second quarter 2012 sampling.
NOTEMAN	212483	Noteman	Well Inventory	400	N	Y	Water quality sample collected in April 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 April 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 April 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 April 2012.
NWC-04	551849	Naco Water Company	Well Inventory Sulfate Trend	795	N	Y	Water quality sample collected in April, May and June 2012. Unable to collect water levels because sounder is currently stuck in the well.
NWC-06	575700	Naco Water Company	Well Inventory	410	N	Y	Water quality sample collected in April 2012. Unable to collect water level because the well was pumping.
OSBORN	643436	Osborn	Plume	258	N	N	Well not scheduled for second quarter 2012 sampling.
PALMER	578819	Palmer	Well Inventory	220	N	Y	Water quality sample collected in April 2012. Unable to collect water level because wellhead is inaccessible.
PANAGAKOS	35-76413	Panagakos	Well Inventory	200	Y	Y	Water quality samples collected in April 2012.
PARRA	576415	Parra	Plume	355	N	Y	Water quality sample collected in April 2012. Unable to collect water level because of obstruction in well.
PIONKE	613395	Pionke	Well Inventory	300	Y	Y	Water quality sample collected in April 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 April 2012.
RAY	803772	Ray	Well Inventory	100	Y	Y	Water quality sample collected in April 2012.
ROGERS 596	573596	Rogers, Ernest D	Plume	290	Y	N	Well is turned off. Rogers residence uses ROGERS 803. Water level measurement collected in April 2012.
ROGERS 803	641803	Rogers, Ernest D	Plume	140	N	Y	Water quality sample collected in April 2012. Unable to collect water level measurement because wellhead is not accessible.
ROGERS E	216018	Rogers, Ernest M	Well Inventory	290	Y	Y	Water quality sample collected in April 2012.
RUIZ	531770	Ruiz	Well Inventory	312	Y	Y	Water quality sample collected in April 2012.
SCHWARTZ	210865	Schwartz	Well Inventory	305	Y	Y	Water quality sample collected in April 2012.
STEPHENS	808560	Stephens	Well Inventory	NR	N	N	Well not scheduled for second quarter 2012 sampling.
SUNBELT	201531	Sunbelt Marketing, Inc.	Well Inventory	380	N	N	Well not scheduled for second quarter 2012 sampling.
SWAN	NR	Swan	Well Inventory	NR	N	N	Well not scheduled for second quarter 2012 sampling.
TM-02A	522574	Copper Queen Branch	Plume	925	N	N	Well not scheduled for second quarter 2012 sampling.

Table 2
Summary of Groundwater Monitoring Program for Second Quarter 2012

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
TM-03	522575	Copper Queen Branch	Well Inventory	200	N	N	Well not scheduled for second quarter 2012 sampling.
TM-06 MILLER	522695	Miller	Plume	200	N	N	Well not scheduled for second quarter 2012 sampling.
TM-07	522576	Copper Queen Branch	Plume	350	N	N	Well not scheduled for second quarter 2012 sampling.
TM-15 MILLER	522699	Miller	Well Inventory	325	N	N	Well not scheduled for second quarter 2012 sampling.
TM-16	522578	Copper Queen Branch	Plume	115	N	N	Well not scheduled for second quarter 2012 sampling.
TM-19A	522580	Copper Queen Branch	Plume	700	N	N	Well not scheduled for second quarter 2012 sampling.
TM-42	562554	Copper Queen Branch	Plume	250	N	N	Well not scheduled for second quarter 2012 sampling.
TVI 236	802236	Turquoise Valley, Inc.	Well Inventory	222	N	N	Well not scheduled for second quarter 2012 sampling.
TVI 713	567713	Turquoise Valley, Inc.	Well Inventory	200	Y	N	Well identified for water level measurements only. Water level measurement taken in April 2012.
TVI 875	568875	Turquoise Valley, Inc.	Plume	330	N	Y	Water quality sample collected in April 2012. Unable to collect water level because well head is not accessible.
WEED	544535	Weed	Plume	320	N	Y	Water quality sample collected in April 2012. Unable to collect water level because well head is not accessible.
WEISKOPF	641802	Weiskopf	Plume	200	Y	Y	Water quality sample collected in April 2012.
ZANDER	205126	Zander	Well Inventory	280	Y	Y	Water quality sample collected in April 2012.

ADWR = Arizona Department of Water Resources

ft bls = feet 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	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
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
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

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
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
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

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
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
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

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
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
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
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

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
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
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
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

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
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
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
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
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

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
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
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
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
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
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
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
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
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

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
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
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

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
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
ECHAVE	219449	2/1/12	7.39	20.7	390.0	26.7
		4/23/12	7.50	22.5	440.0	26.4

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)
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
FLEMING	218386	7/15/10	6.98	24.2	1390	573
FRANCO	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
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
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

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	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
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
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
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

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
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

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
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
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
		4/25/2012 DUP	7.17	21.6	920	347

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
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

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
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

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
PIONKE	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
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
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
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

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
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
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
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
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
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
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

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
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
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
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
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

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
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
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

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	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
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

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 evaluatior
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[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
ANDERSON	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
AWC-02	616586	598907.911	3468549.357	4547.64	8/27/08	121.12	4426.52
					4/8/08[2]	116	4431.64
					10/23/08[3]	115	4432.64
					4/22/09[3]	118	4429.64
					10/9/09[3]	117	4430.64
					4/23/10[3]	119	4428.64
AWC-03	616585	599090.322	3468681.898	4539.52	8/27/08	119.40	4420.12
					4/8/2008[2]	112	4427.52
					10/23/08[3]	106	4433.52
					4/22/09[3]	114	4425.52
					10/9/09[3]	116	4423.52
					4/23/10[3]	116	4423.52
AWC-04	616584	598949.929	3468717.084	4540.48	8/18/08	112.56	4427.92
					4/8/2008[2]	108	4432.48
					10/23/08[3]	111.31	4429.17
					4/22/09[3]	110	4430.48
					10/9/09[3]	110	4430.48
					4/23/10[3]	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[3]	289	4253.51
					4/23/10[3]	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[1] (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
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
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[1] (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
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
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
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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (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
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
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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (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
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
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
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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (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
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
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
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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (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
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
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
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
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
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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
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
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
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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
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	87.80	4593.93
					7/12/11	88.38	4593.35
					1/30/12	88.92	4592.81
					4/11/12	89.18	4592.55
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
ECHAVE	219449	599701	3470168	4648	2/1/12	216.71	4431.29

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
EPPELE 641	805641	607165.354	3469229.942	4642.86	3/11/08	29.52	4613.34
					5/12/08	30.64	4612.22
					7/21/08	25.59	4617.27
					10/14/08	24.53	4618.33
					1/21/09	27.35	4615.51
					4/8/09	29.08	4613.78
					7/9/09	31.51	4611.35
					10/7/09	29.92	4612.94
					7/20/10	50.38	4592.48
					10/20/10	48.88	4593.98
					1/17/11	51.13	4591.73
					4/5/11	53.81	4589.05
					7/11/11	56.82	4586.04
					10/12/11	37.62	4605.24
					1/31/12	46.80	4596.06
					4/11/12	52.07	4590.79
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
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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
HOBAN[4]	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
HOWARD[5]	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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
KEEFER	209744	599879.175	3468119.015	4572.03	2/6/08	134.67	4437.36
					5/6/08	135.28	4436.75
					7/16/08	136.24	4435.79
					10/28/08	135.87	4436.16
					1/28/09	134.88	4437.15
					4/16/09	135.00	4437.03
					7/14/09	136.07	4435.96
					10/13/09	136.67	4435.36
					1/26/10	136.26	4435.77
					4/20/10	136.26	4435.77
					7/15/10	137.29	4434.74
					10/19/10	137.68	4434.35
					1/18/11	137.42	4434.61
					4/6/11	137.91	4434.12
					7/18/11	140.39	4431.64
					10/11/11	141.68	4430.35
					2/6/12	139.27	4432.76
					4/23/12	139.76	4432.27
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
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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
NESS	509127	607866.391	3471419.494	4761.23	7/24/08	557.90	4203.33
					10/16/08	549.30	4211.93
					2/25/09	536.40	4224.83
					5/11/09	544.64	4216.59
					8/11/09	566.87	4194.36
					11/12/09	537.34	4223.89
					2/2/10	531.85	4229.38
					4/21/10	568.11	4193.12
					7/19/10	573.02	4188.21
					1/18/11	541.80	4219.43
					7/12/11	597.71	4163.52
					2/3/12	591.24	4169.99
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
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
NWC-02	562944	600177.435	3467474.673	4600.44	10/27/08	160.51	4439.93
					4/29/09[6]	160.5	4439.94
					9/10/09[6]	155	4445.44
					4/2010[6]	131	4469.44
NWC-03	203321	601153.857	3468350.838	4574.99	11/3/08	131.48	4443.51
					4/29/09[6]	130	4444.99
					9/10/09[6]	126	4448.99
					10/9/09[6]	125	4449.99
NWC-03 CAP[7]	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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
NWC-04	551849	605829.808	3469071.959	4690.77	12/2/08	352.11	4338.66
					4/29/09[6]	328	4362.77
					9/10/09[6]	324	4366.77
					4/2010[6]	216	4474.77
NWC-06	575700	599822.821	3467749.954	4592.50	4/29/09[6]	156	4436.50
					9/10/09[6]	155	4437.50
					10/9/09[6]	148	4444.50
					4/2010[6]	140	4452.50
OSBORN	643436	607031.823	3470270.548	4711.95	5/13/08	68.65	4643.30
					8/5/08	69.53	4642.42
					10/16/08	69.83	4642.12
					1/20/09	69.23	4642.72
					4/7/09	69.60	4642.35
					7/8/09	96.61	4615.34
					10/5/09	75.09	4636.86
					1/21/10	75.37	4636.58
					4/19/10	81.59	4630.36
					7/12/10	83.00	4628.95
					7/12/11	74.60	4637.35
					2/3/12	74.57	4637.38
PANAGAKOS	35-76413	605304.234	3469323.140	4691.40	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
PARRA	576415	602170.716	3471263.549	4727.21	5/15/08	279.78	4447.43
					8/18/08	280.06	4447.15
					11/3/08	280.39	4446.82
					2/13/09	280.75	4446.46
					4/28/09	280.88	4446.33
					7/20/09	280.99	4446.22

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
PIONKE	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
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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
RAY	803772	607083.422	3469195.147	4647.91	2/15/08	40.85	4607.06
					5/13/08	43.82	4604.09
					7/29/08	45.25	4602.66
					10/22/08	44.54	4603.37
					1/20/09	44.31	4603.60
					4/8/09	44.68	4603.23
					7/9/09	48.99	4598.92
					10/7/09	49.87	4598.04
					1/26/10	47.61	4600.30
					4/20/10	49.78	4598.13
					7/14/10	51.36	4596.55
					10/20/10	49.85	4598.06
					1/17/11	50.51	4597.40
					4/5/11	51.84	4596.07
					7/11/11	55.74	4592.17
					10/12/11	53.63	4594.28
					1/31/12	53.21	4594.70
					4/11/12	54.50	4593.41
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
ROGERS 750[8]	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

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
SCHWARTZ[9]	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
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

Table 4
Compilation of Groundwater Elevation Data

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

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Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
TM-10 USBP	522696	601586.268	3471816.397	4741.18	3/15/12	279.30	4461.88
					4/24/12	279.03	4462.15
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
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
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

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Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (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
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
WEISKOPF	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
WMD-2011-03M	913037	605360.830	3470671.273	4746.28	2/2/12	226.66	4519.62

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Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
ZANDER	205126	599678.880	3467998.486	4580.94	2/4/08	144.85	4436.09
					5/6/08	145.33	4435.61
					7/16/08	146.40	4434.54
					10/28/08	146.01	4434.93
					2/10/09	144.83	4436.11
					4/16/09	144.94	4436.00
					7/14/09	146.14	4434.80
					10/13/09	146.77	4434.17
					1/26/10	146.34	4434.60
					4/22/10	146.27	4434.67
					7/21/10	147.81	4433.13
					10/19/10	147.80	4433.14
					1/18/11	147.52	4433.42
					4/6/11	147.84	4433.10
					7/13/11	148.91	4432.03
					10/12/11	149.50	4431.44
					1/31/12	149.31	4431.63
					4/10/12	149.64	4431.30

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

ND = No Data

[1] Survey Source: Survey conducted by Gilbert Technical Service, Inc and Arizona Land Specialists, Inc.

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

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

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

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

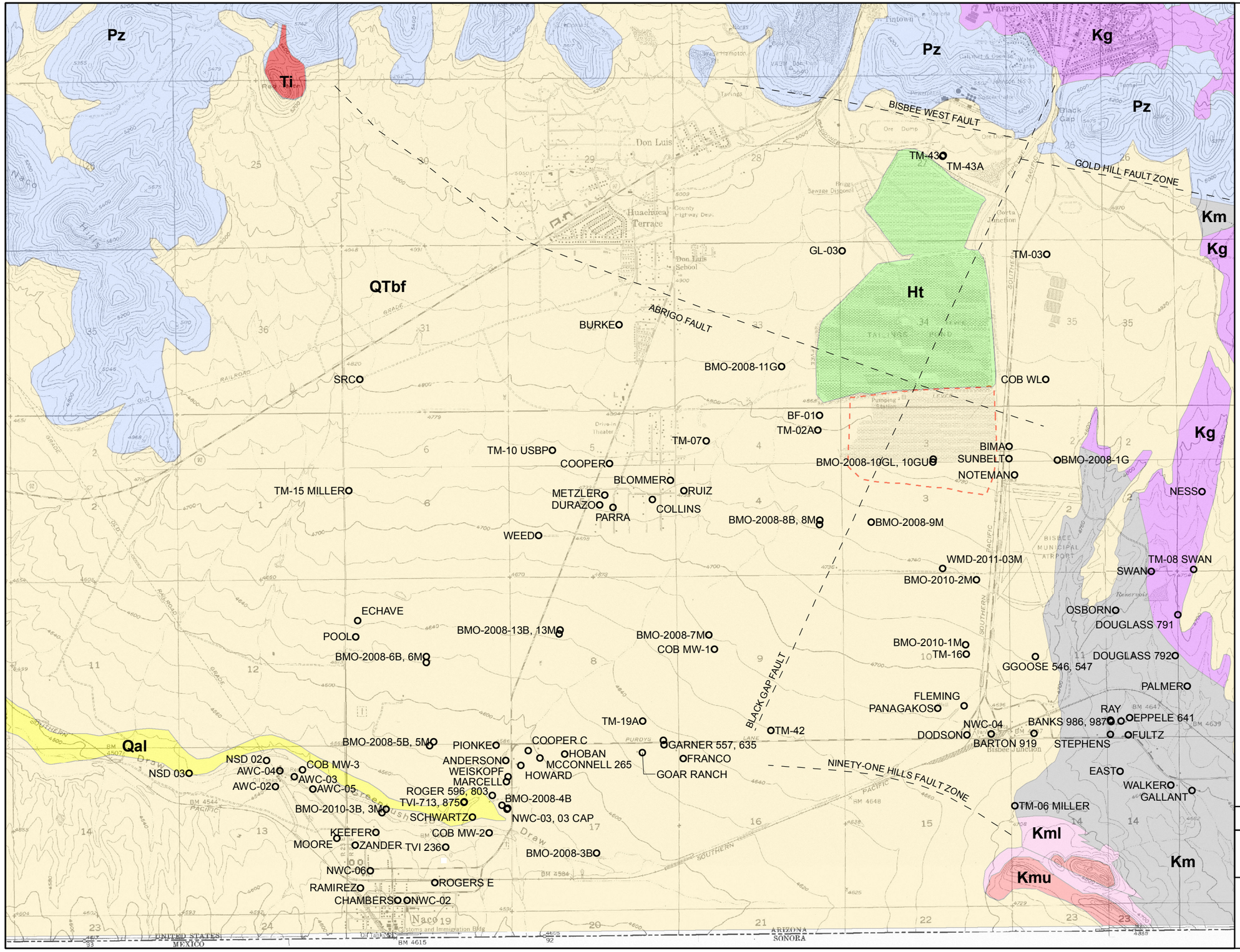
[6] Depth to Water measurement provided by Naco Water Company

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

[8] Well previously identified as ROGERS 803

[9] 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

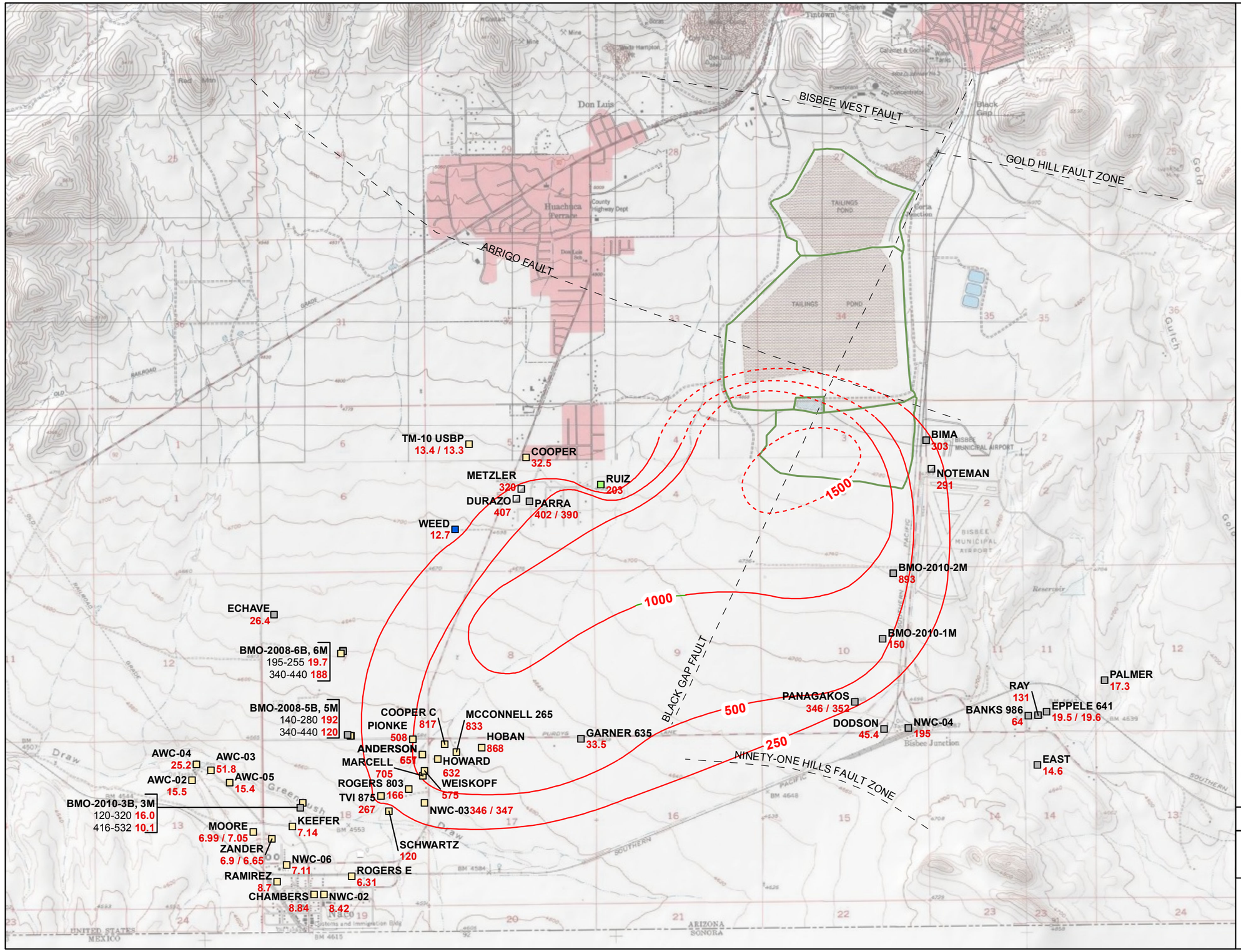
0 1,500 3,000 6,000 Feet

Notes:
Projection: UTM Zone 12N NAD83

Date	File ID
6/26/12	055038-009C

CLEAR CREEK ASSOCIATES

FIGURE 1
GENERALIZED GEOLOGY AND WELL LOCATIONS



Legend

- RAY — Well ID
- 115 — Sulfate Concentration (mg/L)
- Sulfate Concentration Contour (mg/L)
- Faults (inferred)
- CTSA Facility

Co-located Wells
- Well ID
- Screen (ft bls): Sulfate Concentration (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:

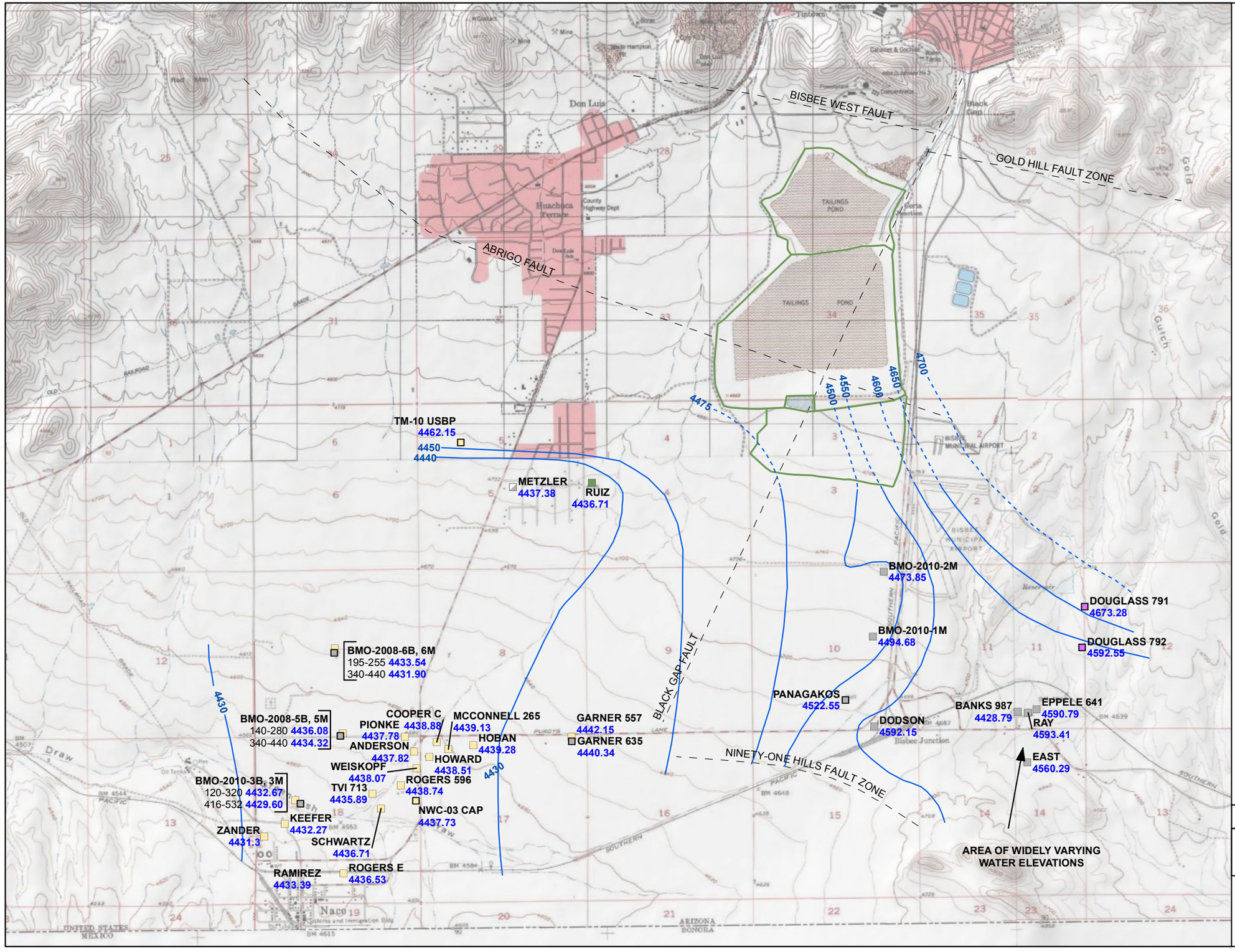
Projection: UTM Zone 12N NAD83

Sulfate concentration contours are based on third quarter 2011 data and adjusted for current data.

Date	File ID
06/26/12	055038-202

CLEAR CREEK ASSOCIATES

FIGURE 2
SULFATE CONCENTRATIONS IN GROUNDWATER FOR SECOND QUARTER 2012



Legend

- RAY — Well ID
- 4432.35 — Groundwater Elevation (ft amsl)
- Groundwater Elevation Contours (dashed where inferred)
- Faults (inferred)
- CTSA Facility

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

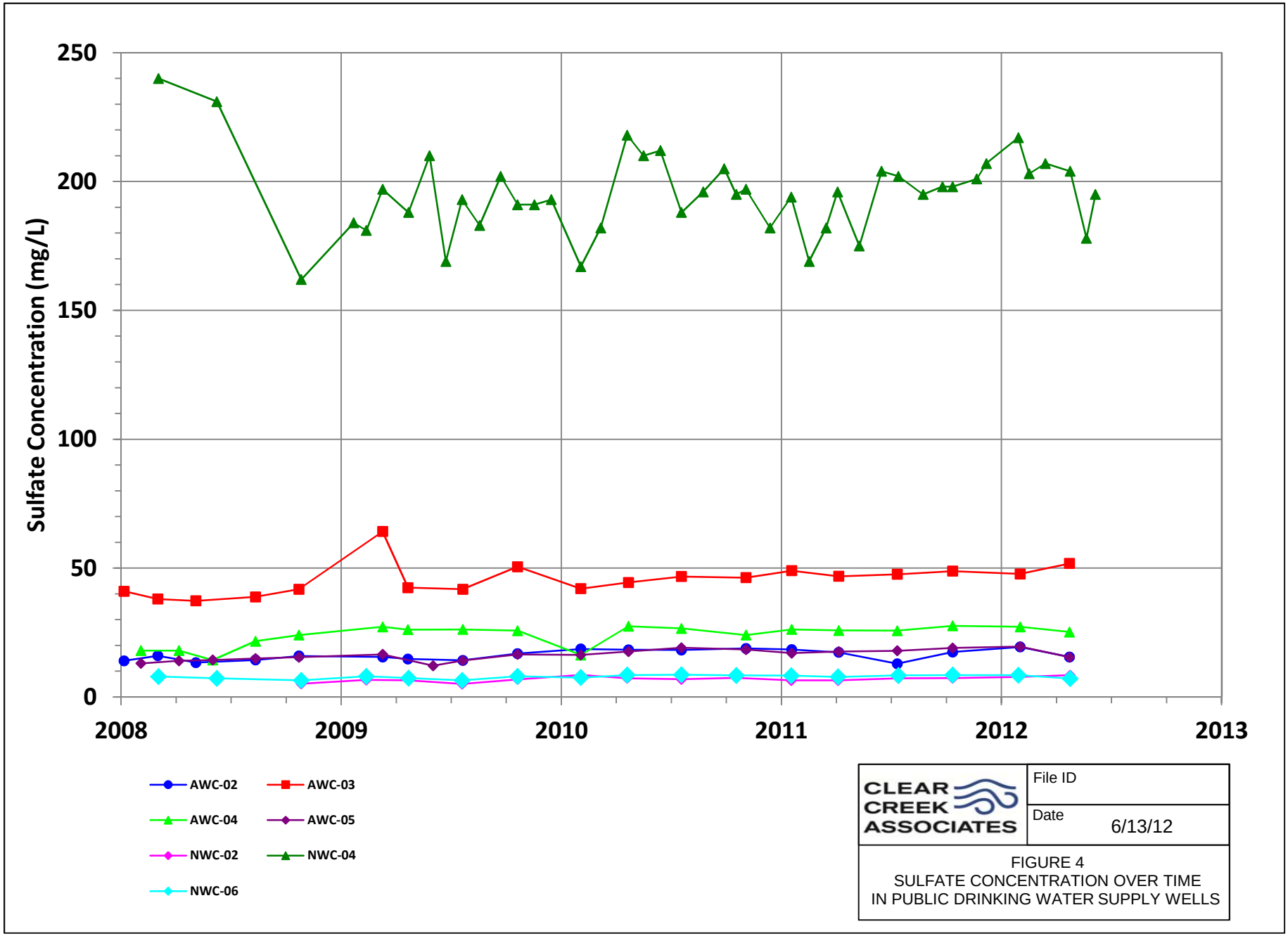
Notes:

Projection: UTM Zone
12N NAD83
Groundwater
elevation contours are based on third quarter 2011 data and adjusted based on current data.

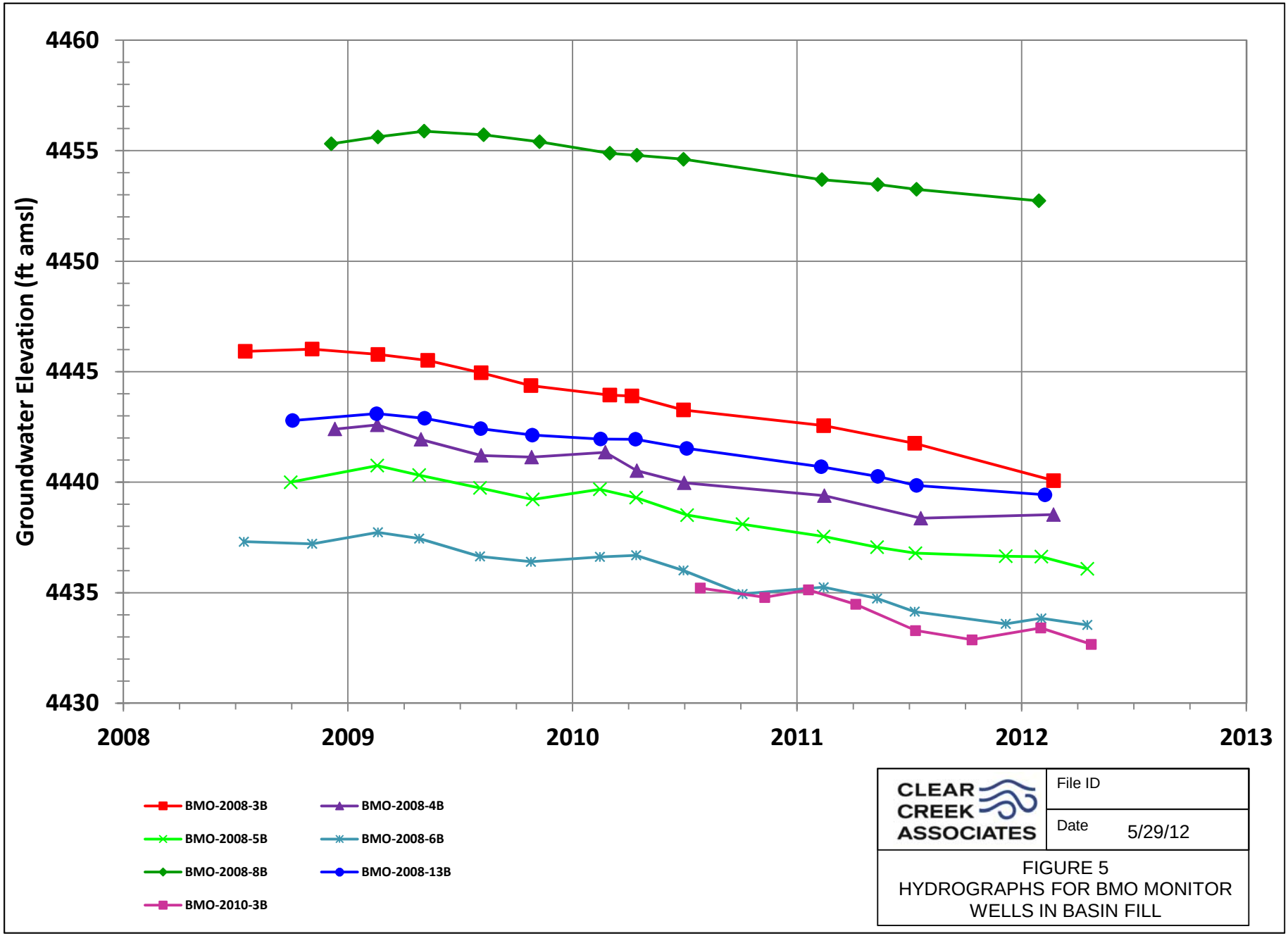
Date	File ID
06/26/12	055038-205

CLEAR CREEK ASSOCIATES

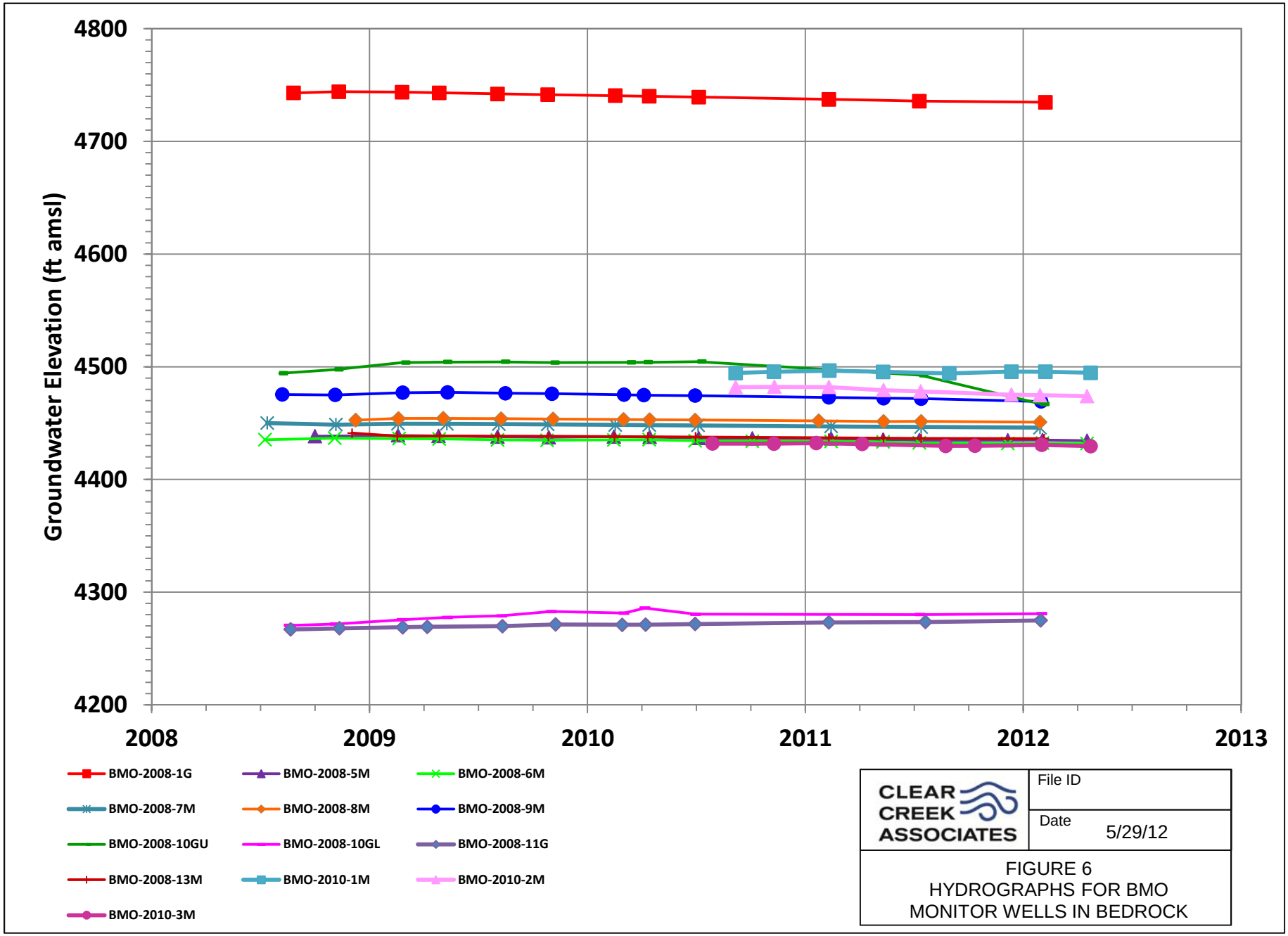
FIGURE 3
GROUNDWATER ELEVATIONS FOR SECOND QUARTER 2012



\\phx-file1\Tucson\Data\Projects\G & K\055038_Copper Queen Branch Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2012 Q2 CQB Groundwater Monitoring Report\SO4 and GW elev Time Series for Select Q2 2012



N:\Projects\G & K\055038_Copper Queen Branch Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2012 Q2 CQB Groundwater Monitoring Report\SO4 and GW elev Time Series for Select Q2 2012



N:\Projects\G & K\055038_Copper Queen Branch Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2012 Q2 CQB Groundwater Monitoring Report\SO4 and GW elev Time Series for Select Q2 2012

APPENDIX A

DATA VERIFICATION REPORT

APPENDIX A

DATA VERIFICATION REPORT

SECOND QUARTER 2012
GROUNDWATER MONITORING REPORT

Prepared for:

FREEPORT-MCMORAN
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

June 27, 2012

TABLE OF CONTENTS

1. INTRODUCTION

This report summarizes the data verification review of groundwater samples collected and analyzed during the second 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 second quarter 2012 were provided to Clear Creek by SVL Analytical, Inc. (SVL) of Kellogg, Idaho for preparation of the second 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 second quarter 2012 samples including COC forms, laboratory correspondence, QC summaries, data qualifiers, internal QA/QC tests performed by SVL, and any case narratives are presented with the laboratory reports included in Appendix B. Based on the results of laboratory control samples, matrix spike/recovery and blank spikes, SVL did not advise of any modifications that should be made regarding the usability and data validation status of the laboratory test results. The analytical results for all 72 samples collected by Clear Creek and CQB are contained in 8 reports having the SVL Project numbers identified in the following table.

SVL ID	WELLS REPORTED
Number of wells sampled: 51 Number of well samples collected (including duplicates): 60 Number of duplicate samples collected: 7 Number of field and equipment blanks collected: 12 Total number of samples collected: 72	
W2D0276	BANKS 986, COOPER, DURAZO, DUP20120410, DUP20120411, EAST, EPPELE 641, EQB20120410, EQB20120411, FB20120410, FB20120411, McCONNELL 265, METZLER, PALMER, PIONKE, RAMIREZ, RAY, ROGERS E, SCHWARTZ, ZANDER
W2D0404	DODSON, DUP20120412, DUP20120413, EQB20120412, FB20120412, GARNER 635, HOWARD, MARCELL, PANAGAKOS, PARRA, RUIZ
W2D0423	BMO-2008-5B, BMO-2008-5M, BMO-2008-6B, BMO-2008-3M, BMO-2010-2M, HOBAN
W2D0512	BMO-2010-1M
W2D0590	ANDERSON, COOPER C, DUP20120425, EQB20120425, FB20120425, NWC-02, NWC-03, NWC-04, NWC-06, TVI-875, WEED, WEISKOPF
W2D0589	AWC-02, AWC-03, AWC-04, AWC-05, BIMA, BMO-2010-3B, BMO-2010-3M, CHAMBERS, DUP20120423, DUP20120424, ECHAVE, EQB20120423, EQB20120424, FB20120423, FB20120424, KEEFER, MOORE, NOTEMAN, ROGERS 803, TM-10 USBP
W2E0673	NWC-04
W2F0217	NWC-04

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. However, it was not always possible to ascertain from the well owners how long the pump had been off. 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 probe 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 C) 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 0.3 standard units for pH, 2 degrees Celsius for temperature and 100 microSiemen/centimeter for specific conductance as described in Section 4.2.1.2 of the QAPP.

During this monitoring period 60 well samples (duplicates included) were collected for analysis from 51 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 SVL and maintained in a clean and secure work area until used in the field.

[1] Field pH meter was calibrated using a three point calibration and pH buffers 4, 7, and 10
[2] Field SC meter was calibrated using a standard stock solution of 3900 µS/cm or 12880 µS/cm

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 for analysis. COC documentation accompanied all samples submitted and included the sample name, collection date and time. Laboratory reports include the date and time the samples were received by SVL. As noted on the analytical data reports from SVL, all of the sample bottles were received intact, properly preserved, and in good condition. The samples were shipped within one to seven days of sample collection and the time between sample collection and receipt of samples by SVL was one to seven days. The samples were collected, shipped, and received by SVL within the established holding time for dissolved sulfate analysis in accordance with United States Environmental Protection Agency (EPA) Method 300.0.

4. LABORATORY QUALITY CONTROL

As specified in the QAPP, laboratory QC was maintained for all analyses through proper licensure, the use of approved analytical methods, QC measurements, appropriate turn-around-time for analysis (timeliness), method detection limits (MDLs), 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 per the SVL Quality Manual and QAPP. 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, 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 second quarter 2012.

4.5.5 Field Blank Samples

During the second quarter 2012, 12 field blank samples were collected, including six field blanks (FB20120410, FB20120411, FB20120412, FB20120423, FB20120424 and FB20120425) and six equipment blanks (EQB20120410, EQB20120411, EQB20120412, EQB20120423, EQB20120424 and EQB20120425). Field blank samples were collected in accordance with procedures described in Section 4.2.1.5 of the QAPP. Field 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.

Analytical results from field blank and equipment blank samples had a detection of sulfate in one equipment blank sample (EQB20120425). The equipment blank sample was collected at 13:04 on April 25, 2012 by rinsing equipment with Alconox® detergent and then commercial deionized water. The equipment blank was collected from the final deionized water rinsate. Sulfate was detected in the equipment blank at 1.94 mg/L. The field blank (FB20120425) collected at 12:57 did not detect sulfate. The equipment blank was collected just prior to the Cooper C sample collection. Due to the small amount detected in the equipment blank and the magnitude of sulfate in the Cooper C sample collected, there are no perceived issues with the reported sulfate results and no corrective action is needed.

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 second 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 seven field filtered duplicate samples (DUP20120410, DUP20120411, DUP20120412, DUP20120413, DUP20120423, DUP20120424, and DUP20120425) were collected by Clear Creek and CQB for analysis. The collection of seven duplicate samples meets the QA/QC method and quantity goal stated in Section 4.2.1.5 of the QAPP.

Sulfate results for the seven duplicate samples collected are provided in the table below. The range of RPD values was between 0 and 3.69 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
W2D0276	ZANDER	DUP20120410	6.9	6.65	3.69%
W2D0276	EPPELE 641	DUP20120411	19.5	19.6	0.51%
W2D0404	PANAGAKOS	DUP20120412	346	352	1.72%
W2D0404	PARRA	DUP20120413	402	390	3.03%
W2D0589	MOORE	DUP20120423	6.99	7.05	0.85%
W2D0589	TM-10 USBP	DUP20120424	13.4	13.3	0.75%
W2D0590	NWC-03	DUP20120425	346	347	0.29%

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.

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. 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 (CQB, 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 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 B

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: **W2D0276**
Reported: 27-Apr-12 12:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
RAMIREZ	W2D0276-01	Ground Water	10-Apr-12 11:50	ML	13-Apr-2012
COOPER	W2D0276-02	Ground Water	10-Apr-12 09:50	ML	13-Apr-2012
FB20120410	W2D0276-03	Ground Water	10-Apr-12 12:42	ML	13-Apr-2012
EQB20120410	W2D0276-04	Ground Water	10-Apr-12 12:58	ML	13-Apr-2012
SCHWARTZ	W2D0276-05	Ground Water	10-Apr-12 17:07	ML	13-Apr-2012
ZANDER	W2D0276-06	Ground Water	10-Apr-12 14:59	ML	13-Apr-2012
DUP20120410	W2D0276-07	Ground Water	10-Apr-12 18:00	ML	13-Apr-2012
ROGERS E	W2D0276-08	Ground Water	10-Apr-12 13:29	ML	13-Apr-2012
PALMER	W2D0276-09	Ground Water	11-Apr-12 09:10	ML	13-Apr-2012
DUP20120411	W2D0276-10	Ground Water	11-Apr-12 18:00	ML	13-Apr-2012
EPPELE 641	W2D0276-11	Ground Water	11-Apr-12 11:15	ML	13-Apr-2012
BANKS 986	W2D0276-12	Ground Water	11-Apr-12 13:51	ML	13-Apr-2012
RAY	W2D0276-13	Ground Water	11-Apr-12 16:13	ML	13-Apr-2012
EAST	W2D0276-14	Ground Water	11-Apr-12 15:04	ML	13-Apr-2012
EQB20120411	W2D0276-15	Ground Water	11-Apr-12 13:41	ML	13-Apr-2012
FB20120411	W2D0276-16	Ground Water	11-Apr-12 13:40	ML	13-Apr-2012
MCCONNELL 265	W2D0276-17	Ground Water	11-Apr-12 17:06	ML	13-Apr-2012
METZLER	W2D0276-18	Ground Water	12-Apr-12 09:37	ML	13-Apr-2012
DURAZO	W2D0276-19	Ground Water	12-Apr-12 10:13	ML	13-Apr-2012
PIONKE	W2D0276-20	Ground Water	12-Apr-12 14:35	ML	13-Apr-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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **RAMIREZ**
SVL Sample ID: **W2D0276-01 (Ground Water)**

Sampled: 10-Apr-12 11:50
Received: 13-Apr-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**	8.70	mg/L	0.30	0.04		W217160	AEW	04/24/12 13:41	

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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **COOPER**
SVL Sample ID: **W2D0276-02 (Ground Water)**

Sampled: 10-Apr-12 09:50
Received: 13-Apr-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**	32.5	mg/L	1.50	0.20	5	W217160	AEW	04/24/12 13:51	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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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **FB20120410**
SVL Sample ID: **W2D0276-03 (Ground Water)**

Sampled: 10-Apr-12 12:42
Received: 13-Apr-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	0.04		W217342	AEW	04/26/12 21:27	

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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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **EQB20120410**
SVL Sample ID: **W2D0276-04 (Ground Water)**

Sampled: 10-Apr-12 12:58
Received: 13-Apr-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	< 0.30	mg/L	0.30	0.04		W217160	AEW	04/24/12 14:02	

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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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **SCHWARTZ**
SVL Sample ID: **W2D0276-05 (Ground Water)**

Sampled: 10-Apr-12 17:07
Received: 13-Apr-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**	120	mg/L	1.50	0.20	5	W217160	AEW	04/24/12 14:12	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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **ZANDER**
SVL Sample ID: **W2D0276-06 (Ground Water)**

Sampled: 10-Apr-12 14:59
Received: 13-Apr-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**	6.90	mg/L	0.30	0.04		W217160	AEW	04/24/12 14:23	

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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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **DUP20120410**
SVL Sample ID: **W2D0276-07 (Ground Water)**

Sampled: 10-Apr-12 18:00
Received: 13-Apr-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**	6.65	mg/L	0.30	0.04		W217160	AEW	04/24/12 14:33	

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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **ROGERS E**
SVL Sample ID: **W2D0276-08 (Ground Water)**

Sampled: 10-Apr-12 13:29
Received: 13-Apr-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**	6.31	mg/L	0.30	0.04		W217160	AEW	04/24/12 14:43	

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
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **PALMER**
SVL Sample ID: **W2D0276-09 (Ground Water)**

Sampled: 11-Apr-12 09:10
Received: 13-Apr-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**	17.3	mg/L	0.30	0.04		W217160	AEW	04/24/12 14:54	

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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **DUP20120411**
SVL Sample ID: **W2D0276-10 (Ground Water)**

Sampled: 11-Apr-12 18:00
Received: 13-Apr-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**	19.6	mg/L	0.30	0.04		W217160	AEW	04/24/12 15:04	

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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **EPPELE 641**
SVL Sample ID: **W2D0276-11 (Ground Water)**

Sampled: 11-Apr-12 11:15
Received: 13-Apr-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**	19.5	mg/L	0.30	0.04		W217160	AEW	04/24/12 15:15	

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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **BANKS 986**
SVL Sample ID: **W2D0276-12 (Ground Water)**

Sampled: 11-Apr-12 13:51
Received: 13-Apr-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**	64.0	mg/L	1.50	0.20	5	W217160	AEW	04/24/12 16:10	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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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **RAY**
SVL Sample ID: **W2D0276-13 (Ground Water)**

Sampled: 11-Apr-12 16:13
Received: 13-Apr-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**	131	mg/L	1.50	0.20	5	W217160	AEW	04/24/12 16:20	D2

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
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **EAST**
SVL Sample ID: **W2D0276-14 (Ground Water)**

Sampled: 11-Apr-12 15:04
Received: 13-Apr-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**	14.6	mg/L	0.30	0.04		W217160	AEW	04/24/12 16:31	

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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **EQB20120411**
SVL Sample ID: **W2D0276-15 (Ground Water)**

Sampled: 11-Apr-12 13:41
Received: 13-Apr-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	0.04		W217342	AEW	04/26/12 22:01	

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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **FB20120411**
SVL Sample ID: **W2D0276-16 (Ground Water)**

Sampled: 11-Apr-12 13:40
Received: 13-Apr-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	0.04		W217342	AEW	04/26/12 22:12	

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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **MCCONNELL 265**
SVL Sample ID: **W2D0276-17 (Ground Water)**

Sampled: 11-Apr-12 17:06
Received: 13-Apr-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**	833	mg/L	15.0	1.95	50	W217160	AEW	04/24/12 16:41	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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **METZLER**
SVL Sample ID: **W2D0276-18 (Ground Water)**

Sampled: 12-Apr-12 09:37
Received: 13-Apr-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**	320	mg/L	7.50	0.98	25	W217160	AEW	04/24/12 16:52	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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **DURAZO**
SVL Sample ID: **W2D0276-19 (Ground Water)**

Sampled: 12-Apr-12 10:13
Received: 13-Apr-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**	407	mg/L	7.50	0.98	25	W217160	AEW	04/24/12 17:02	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: **W2D0276**
Reported: 27-Apr-12 12:36

Client Sample ID: **PIONKE**
SVL Sample ID: **W2D0276-20 (Ground Water)**

Sampled: 12-Apr-12 14:35
Received: 13-Apr-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**	508	mg/L	7.50	0.98	25	W217160	AEW	04/24/12 17:12	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: **W2D0276**
Reported: 27-Apr-12 12:36

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	0.04	0.30	W217342	26-Apr-12	
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.04	0.30	W217160	24-Apr-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	W217342	26-Apr-12	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.5	10.0	105	90 - 110	W217160	24-Apr-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	<0.30	<0.30	UDL	20	W217342	26-Apr-12	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	107	108	1.1	20	W217160	24-Apr-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	10.1	<0.30	10.0	101	90 - 110	W217342	26-Apr-12	
EPA 300.0	Sulfate as SO4	mg/L	44.1	33.2	10.0	110	90 - 110	W217342	26-Apr-12	
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	116	108	10.0	R > 4S	90 - 110	W217160	24-Apr-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	17.5	6.64	10.0	108	90 - 110	W217160	24-Apr-12	

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Freeport McMoRan - Bisbee	**Project Name: Copper Queen Branch Sulfate Mitigation Order**
36 West Hwy 92	Work Order: **W2D0276**
Bisbee, AZ 85603	Reported: 27-Apr-12 12:36

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

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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: **W2D0404**
Reported: 03-May-12 15:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
DODSON	W2D0404-01	Ground Water	12-Apr-12 16:30	ML	19-Apr-2012
PANAGAKOS	W2D0404-02	Ground Water	12-Apr-12 17:30	ML	19-Apr-2012
FB20120412	W2D0404-03	Ground Water	12-Apr-12 16:00	ML	19-Apr-2012
EQB20120412	W2D0404-04	Ground Water	12-Apr-12 16:03	ML	19-Apr-2012
DUP20120412	W2D0404-05	Ground Water	12-Apr-12 18:00	ML	19-Apr-2012
RUIZ	W2D0404-06	Ground Water	13-Apr-12 09:10	ML	19-Apr-2012
PARRA	W2D0404-07	Ground Water	13-Apr-12 10:07	ML	19-Apr-2012
MARCELL	W2D0404-08	Ground Water	13-Apr-12 11:11	ML	19-Apr-2012
HOWARD	W2D0404-09	Ground Water	13-Apr-12 12:50	ML	19-Apr-2012
GARNER 635	W2D0404-10	Ground Water	13-Apr-12 15:55	ML	19-Apr-2012
DUP20120413	W2D0404-11	Ground Water	13-Apr-12 00:00	ML	19-Apr-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: **W2D0404**
Reported: 03-May-12 15:24

Client Sample ID: **DODSON**
SVL Sample ID: **W2D0404-01 (Ground Water)**

Sampled: 12-Apr-12 16:30
Received: 19-Apr-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**	45.4	mg/L	1.50	0.13	5	W218133	AEW	05/02/12 17:43	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: **W2D0404**
Reported: 03-May-12 15:24

Client Sample ID: **PANAGAKOS**
SVL Sample ID: **W2D0404-02 (Ground Water)**

Sampled: 12-Apr-12 17:30
Received: 19-Apr-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**	346	mg/L	7.50	0.65	25	W218133	AEW	05/02/12 18:16	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: **W2D0404**
Reported: 03-May-12 15:24

Client Sample ID: **FB20120412**
SVL Sample ID: **W2D0404-03 (Ground Water)**

Sampled: 12-Apr-12 16:00
Received: 19-Apr-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	0.03		W218130	AEW	05/02/12 01:38	

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: **W2D0404**
Reported: 03-May-12 15:24

Client Sample ID: **EQB20120412**
SVL Sample ID: **W2D0404-04 (Ground Water)**

Sampled: 12-Apr-12 16:03
Received: 19-Apr-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	0.03		W218130	AEW	05/02/12 01:48	

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: **W2D0404**
Reported: 03-May-12 15:24

Client Sample ID: **DUP20120412**
SVL Sample ID: **W2D0404-05 (Ground Water)**

Sampled: 12-Apr-12 18:00
Received: 19-Apr-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**	352	mg/L	3.00	0.26	10	W218133	AEW	05/02/12 18:27	D2

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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: **W2D0404**
Reported: 03-May-12 15:24

Client Sample ID: **RUIZ**
SVL Sample ID: **W2D0404-06 (Ground Water)**

Sampled: 13-Apr-12 09:10
Received: 19-Apr-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**	203	mg/L	3.00	0.26	10	W218133	AEW	05/02/12 18:38	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: **W2D0404**
Reported: 03-May-12 15:24

Client Sample ID: **PARRA**
SVL Sample ID: **W2D0404-07 (Ground Water)**

Sampled: 13-Apr-12 10:07
Received: 19-Apr-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**	402	mg/L	7.50	0.65	25	W218133	AEW	05/02/12 18:49	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: **W2D0404**
Reported: 03-May-12 15:24

Client Sample ID: **MARCELL**
SVL Sample ID: **W2D0404-08 (Ground Water)**

Sampled: 13-Apr-12 11:11
Received: 19-Apr-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**	668	mg/L	7.50	0.65	25	W218133	AEW	05/02/12 19:00	D2

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

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

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0404**
Reported: 03-May-12 15:24

Client Sample ID: **HOWARD**
SVL Sample ID: **W2D0404-09 (Ground Water)**

Sampled: 13-Apr-12 12:50
Received: 19-Apr-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**	632	mg/L	7.50	0.65	25	W218133	AEW	05/02/12 19:11	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: **W2D0404**
Reported: 03-May-12 15:24

Client Sample ID: **GARNER 635**
SVL Sample ID: **W2D0404-10 (Ground Water)**

Sampled: 13-Apr-12 15:55
Received: 19-Apr-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**	33.5	mg/L	1.50	0.13	5	W218133	AEW	05/02/12 19:22	D1

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

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0404**
Reported: 03-May-12 15:24

Client Sample ID: **DUP20120413**
SVL Sample ID: **W2D0404-11 (Ground Water)**

Sampled: 13-Apr-12 00:00
Received: 19-Apr-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**	390	mg/L	3.00	0.26	10	W218133	AEW	05/02/12 19:32	D2

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 - Copper Queen Branch
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0404**
Reported: 03-May-12 15:24

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	0.03	0.30	W218130	01-May-12	
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.03	0.30	W218133	02-May-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	W218130	01-May-12	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.2	10.0	102	90 - 110	W218133	02-May-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	70.4	64.3	9.0	20	W218130	01-May-12	D2
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	6.16	5.97	3.1	20	W218133	02-May-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	65.2	64.3	10.0	R > 4S	90 - 110	W218130	01-May-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	567	546	10.0	R > 4S	90 - 110	W218130	02-May-12	D2,M3
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	16.3	5.97	10.0	103	90 - 110	W218133	02-May-12	
EPA 300.0	Sulfate as SO4	mg/L	47.6	38.0	10.0	96.5	90 - 110	W218133	02-May-12	

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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: **W2D0404**
Reported: 03-May-12 15:24

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

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

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0423**
Reported: 04-May-12 14:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2008-6M	W2D0423-01	Ground Water	18-Apr-12 07:00	CLS	20-Apr-2012
BMO-2008-6B	W2D0423-02	Ground Water	18-Apr-12 08:10	CLS	20-Apr-2012
BMO-2008-5M	W2D0423-03	Ground Water	18-Apr-12 09:35	CLS	20-Apr-2012
BMO-2008-5B	W2D0423-04	Ground Water	18-Apr-12 10:05	CLS	20-Apr-2012
BMO-2010-2M	W2D0423-05	Ground Water	18-Apr-12 12:50	CLS	20-Apr-2012
HOBAN	W2D0423-06	Ground Water	19-Apr-12 13:00	CLS	20-Apr-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: **W2D0423**
Reported: 04-May-12 14:37

Client Sample ID: **BMO-2008-6M**
SVL Sample ID: **W2D0423-01 (Ground Water)**

Sampled: 18-Apr-12 07:00
Received: 20-Apr-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**	188	mg/L	3.00	0.26	10	W218220	AEW	05/02/12 22:38	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: **W2D0423**
Reported: 04-May-12 14:37

Client Sample ID: **BMO-2008-6B**
SVL Sample ID: **W2D0423-02 (Ground Water)**

Sampled: 18-Apr-12 08:10
Received: 20-Apr-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**	19.7	mg/L	0.30	0.03		W218220	AEW	05/02/12 22:49	

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: **W2D0423**
Reported: 04-May-12 14:37

Client Sample ID: **BMO-2008-5M**
SVL Sample ID: **W2D0423-03 (Ground Water)**

Sampled: 18-Apr-12 09:35
Received: 20-Apr-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**	120	mg/L	1.50	0.13	5	W218220	AEW	05/02/12 23:00	D2

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

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

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0423**
Reported: 04-May-12 14:37

Client Sample ID: **BMO-2008-5B**
SVL Sample ID: **W2D0423-04 (Ground Water)**

Sampled: 18-Apr-12 10:05
Received: 20-Apr-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**	192	mg/L	3.00	0.26	10	W218220	AEW	05/02/12 23:11	D2

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

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

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0423**
Reported: 04-May-12 14:37

Client Sample ID: **BMO-2010-2M**
SVL Sample ID: **W2D0423-05 (Ground Water)**

Sampled: 18-Apr-12 12:50
Received: 20-Apr-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**	893	mg/L	15.0	1.30	50	W218220	AEW	05/02/12 23:22	D2

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
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0423**
Reported: 04-May-12 14:37

Client Sample ID: **HOBAN**
SVL Sample ID: **W2D0423-06 (Ground Water)**

Sampled: 19-Apr-12 13:00
Received: 20-Apr-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**	868	mg/L	15.0	1.30	50	W218220	AEW	05/02/12 23:33	D2

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
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0423**
Reported: 04-May-12 14:37

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	0.03	0.30	W218220	02-May-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	9.72	10.0	97.2	90 - 110	W218220	02-May-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	3.67	3.98	8.3	20	W218220	02-May-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	13.3	3.98	10.0	92.7	90 - 110	W218220	02-May-12	
EPA 300.0	Sulfate as SO4	mg/L	9.71	<0.30	10.0	96.0	90 - 110	W218220	02-May-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: **W2D0512**
Reported: 11-May-12 12:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMD2010-1M	W2D0512-01	Ground Water	24-Apr-12 10:15	CLS	25-Apr-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: **W2D0512**
Reported: 11-May-12 12:51

Client Sample ID: **BMD2010-1M**
SVL Sample ID: **W2D0512-01 (Ground Water)**

Sampled: 24-Apr-12 10:15
Received: 25-Apr-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**	150	mg/L	3.00	0.17	10	W219215	AEW	05/09/12 22:14	D2

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

John Kern
Laboratory Director

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

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0512**
Reported: 11-May-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	0.02	0.30	W219215	09-May-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	W219215	09-May-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	67.1	69.2	3.1	20	W219215	10-May-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	55.6	45.2	10.0	104	90 - 110	W219215	10-May-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	80.3	69.2	10.0	R > 4S	90 - 110	W219215	10-May-12	D2,M3

Notes and Definitions

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

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

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36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
KEEFER	W2D0589-01	Ground Water	23-Apr-12 10:20	ML	26-Apr-2012
MOORE	W2D0589-02	Ground Water	23-Apr-12 11:10	ML	26-Apr-2012
CHAMBERS	W2D0589-03	Ground Water	23-Apr-12 11:39	ML	26-Apr-2012
NOTEMAN	W2D0589-04	Ground Water	23-Apr-12 13:01	ML	26-Apr-2012
BIMA	W2D0589-05	Ground Water	23-Apr-12 13:54	ML	26-Apr-2012
ROGERS 803	W2D0589-06	Ground Water	23-Apr-12 14:55	ML	26-Apr-2012
ECHAVE	W2D0589-07	Ground Water	23-Apr-12 16:48	ML	26-Apr-2012
DUP20120423	W2D0589-08	Ground Water	23-Apr-12 18:00	ML	26-Apr-2012
FB20120423	W2D0589-09	Ground Water	23-Apr-12 13:48	ML	26-Apr-2012
EQB20120423	W2D0589-10	Ground Water	23-Apr-12 13:50	ML	26-Apr-2012
AWC-05	W2D0589-11	Ground Water	24-Apr-12 09:16	ML	26-Apr-2012
AWC-03	W2D0589-12	Ground Water	24-Apr-12 09:36	ML	26-Apr-2012
AWC-04	W2D0589-13	Ground Water	24-Apr-12 09:50	ML	26-Apr-2012
AWC-02	W2D0589-14	Ground Water	24-Apr-12 10:07	ML	26-Apr-2012
BMO-2010-3B	W2D0589-15	Ground Water	24-Apr-12 11:55	ML	26-Apr-2012
BMO-2010-3M	W2D0589-16	Ground Water	24-Apr-12 14:32	ML	26-Apr-2012
TM-10 USBP	W2D0589-17	Ground Water	24-Apr-12 16:11	ML	26-Apr-2012
DUP20120424	W2D0589-18	Ground Water	24-Apr-12 18:00	ML	26-Apr-2012
FB20120424	W2D0589-19	Ground Water	24-Apr-12 14:13	ML	26-Apr-2012
EQB20120424	W2D0589-20	Ground Water	24-Apr-12 14:15	ML	26-Apr-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: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **KEEFER**
SVL Sample ID: **W2D0589-01 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 23-Apr-12 10:20
Received: 26-Apr-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**	7.14	mg/L	0.30	0.02		W219258	AEW	05/10/12 01:57	

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: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **MOORE**
SVL Sample ID: **W2D0589-02 (Ground Water)**

Sampled: 23-Apr-12 11:10
Received: 26-Apr-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**	6.99	mg/L	0.30	0.02		W219258	AEW	05/10/12 02:33	

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **CHAMBERS**
SVL Sample ID: **W2D0589-03 (Ground Water)**

Sampled: 23-Apr-12 11:39
Received: 26-Apr-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**	8.84	mg/L	0.30	0.02		W219258	AEW	05/10/12 02:45	

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **NOTEMAN**
SVL Sample ID: **W2D0589-04 (Ground Water)**

Sampled: 23-Apr-12 13:01
Received: 26-Apr-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**	291	mg/L	3.00	0.17	10	W219258	AEW	05/10/12 02:57	D2

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **BIMA**
SVL Sample ID: **W2D0589-05 (Ground Water)**

Sampled: 23-Apr-12 13:54
Received: 26-Apr-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**	303	mg/L	3.00	0.17	10	W219258	AEW	05/10/12 03:09	D2

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **ROGERS 803**
SVL Sample ID: **W2D0589-06 (Ground Water)**

Sampled: 23-Apr-12 14:55
Received: 26-Apr-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**	166	mg/L	3.00	0.17	10	W219258	AEW	05/10/12 03:21	D2

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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **ECHAVE**
SVL Sample ID: **W2D0589-07 (Ground Water)**

Sampled: 23-Apr-12 16:48
Received: 26-Apr-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**	26.4	mg/L	0.30	0.02		W219258	AEW	05/10/12 03:57	

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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: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **DUP20120423**
SVL Sample ID: **W2D0589-08 (Ground Water)**

Sampled: 23-Apr-12 18:00
Received: 26-Apr-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**	7.05	mg/L	0.30	0.02		W219258	AEW	05/10/12 04:09	

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36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **FB20120423**
SVL Sample ID: **W2D0589-09 (Ground Water)**

Sampled: 23-Apr-12 13:48
Received: 26-Apr-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		W219429	AEW	05/11/12 17:28	

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: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **EQB20120423**
SVL Sample ID: **W2D0589-10 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 23-Apr-12 13:50
Received: 26-Apr-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		W219429	AEW	05/11/12 17:37	

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John Kern
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36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **AWC-05**
SVL Sample ID: **W2D0589-11 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 24-Apr-12 09:16
Received: 26-Apr-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**	15.4	mg/L	0.30	0.02		W219258	AEW	05/10/12 04:21	

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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36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **AWC-03**
SVL Sample ID: **W2D0589-12 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 24-Apr-12 09:36
Received: 26-Apr-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**	51.8	mg/L	1.50	0.08	5	W219258	AEW	05/10/12 04:45	D2

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **AWC-04**
SVL Sample ID: **W2D0589-13 (Ground Water)**

Sampled: 24-Apr-12 09:50
Received: 26-Apr-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**	25.2	mg/L	1.50	0.08	5	W219258	AEW	05/10/12 04:57	D1

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Freeport McMoRan - Copper Queen Branch
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **AWC-02**
SVL Sample ID: **W2D0589-14 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 24-Apr-12 10:07
Received: 26-Apr-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**	15.5	mg/L	0.30	0.02		W219258	AEW	05/10/12 05:09	

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Freeport McMoRan - Copper Queen Branch
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **BMO-2010-3B**
SVL Sample ID: **W2D0589-15 (Ground Water)**

Sampled: 24-Apr-12 11:55
Received: 26-Apr-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**	16.0	mg/L	0.30	0.02		W219258	AEW	05/10/12 05:21	

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

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **BMO-2010-3M**
SVL Sample ID: **W2D0589-16 (Ground Water)**

Sampled: 24-Apr-12 14:32
Received: 26-Apr-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**	10.1	mg/L	0.30	0.02		W219258	AEW	05/10/12 05:33	

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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: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **TM-10 USBP**
SVL Sample ID: **W2D0589-17 (Ground Water)**

Sampled: 24-Apr-12 16:11
Received: 26-Apr-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**	13.4	mg/L	0.30	0.02		W219258	AEW	05/10/12 05:46	

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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: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **DUP20120424**
SVL Sample ID: **W2D0589-18 (Ground Water)**

Sampled: 24-Apr-12 18:00
Received: 26-Apr-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**	13.3	mg/L	0.30	0.02		W219258	AEW	05/10/12 00:57	

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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: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **FB20120424**
SVL Sample ID: **W2D0589-19 (Ground Water)**

Sampled: 24-Apr-12 14:13
Received: 26-Apr-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		W219429	AEW	05/11/12 17:47	

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

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

Client Sample ID: **EQB20120424**
SVL Sample ID: **W2D0589-20 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 24-Apr-12 14:15
Received: 26-Apr-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		W219429	AEW	05/11/12 17:57	

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0589**
Reported: 15-May-12 11:32

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	W219429	11-May-12	
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.02	0.30	W219258	10-May-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	10.7	10.0	107	90 - 110	W219429	11-May-12	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.9	10.0	109	90 - 110	W219258	10-May-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	31.0	31.0	0.1	20	W219429	11-May-12	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	7.07	7.14	0.9	20	W219258	10-May-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	42.5	31.0	10.0	115	90 - 110	W219429	11-May-12	M1
EPA 300.0	Sulfate as SO4	mg/L	415	408	10.0	R > 4S	90 - 110	W219429	11-May-12	D2,M3
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	18.0	7.14	10.0	109	90 - 110	W219258	10-May-12	
EPA 300.0	Sulfate as SO4	mg/L	26.5	15.4	10.0	111	90 - 110	W219258	10-May-12	M1

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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: **W2D0589**
Reported: 15-May-12 11:32

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

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2D0590**
Reported: 11-May-12 15:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W2D0590-01	Ground Water	25-Apr-12 08:31	ML	26-Apr-2012
NWC-03	W2D0590-02	Ground Water	25-Apr-12 09:00	ML	26-Apr-2012
NWC-02	W2D0590-03	Ground Water	25-Apr-12 09:34	ML	26-Apr-2012
NWC-06	W2D0590-04	Ground Water	25-Apr-12 09:55	ML	26-Apr-2012
TVI-875	W2D0590-05	Ground Water	25-Apr-12 10:59	ML	26-Apr-2012
WEISKOPF	W2D0590-06	Ground Water	25-Apr-12 12:06	ML	26-Apr-2012
ANDERSON	W2D0590-07	Ground Water	25-Apr-12 12:27	ML	26-Apr-2012
COOPER C	W2D0590-08	Ground Water	25-Apr-12 13:09	ML	26-Apr-2012
FB20120425	W2D0590-09	Ground Water	25-Apr-12 12:57	ML	26-Apr-2012
EQB20120425	W2D0590-10	Ground Water	25-Apr-12 13:04	ML	26-Apr-2012
WEED	W2D0590-11	Ground Water	25-Apr-12 13:45	ML	26-Apr-2012
DUP20120425	W2D0590-12	Ground Water	25-Apr-12 18:00	ML	26-Apr-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: **W2D0590**
Reported: 11-May-12 15:46

Client Sample ID: **NWC-04**
SVL Sample ID: **W2D0590-01 (Ground Water)**

Sampled: 25-Apr-12 08:31
Received: 26-Apr-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**	204	mg/L	3.00	0.17	10	W219215	AEW	05/10/12 00:13	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: **W2D0590**
Reported: 11-May-12 15:46

Client Sample ID: **NWC-03**
SVL Sample ID: **W2D0590-02 (Ground Water)**

Sampled: 25-Apr-12 09:00
Received: 26-Apr-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**	346	mg/L	3.00	0.17	10	W219215	AEW	05/10/12 00:23	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: **W2D0590**
Reported: 11-May-12 15:46

Client Sample ID: **NWC-02**
SVL Sample ID: **W2D0590-03 (Ground Water)**

Sampled: 25-Apr-12 09:34
Received: 26-Apr-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**	8.42	mg/L	0.30	0.02		W219215	AEW	05/10/12 00:33	

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: **W2D0590**
Reported: 11-May-12 15:46

Client Sample ID: **NWC-06**
SVL Sample ID: **W2D0590-04 (Ground Water)**

Sampled: 25-Apr-12 09:55
Received: 26-Apr-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**	7.11	mg/L	0.30	0.02		W219215	AEW	05/10/12 00:43	

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: **W2D0590**
Reported: 11-May-12 15:46

Client Sample ID: **TVI-875**
SVL Sample ID: **W2D0590-05 (Ground Water)**

Sampled: 25-Apr-12 10:59
Received: 26-Apr-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**	267	mg/L	3.00	0.17	10	W219215	AEW	05/10/12 00:53	D2

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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: **W2D0590**
Reported: 11-May-12 15:46

Client Sample ID: **WEISKOPF**
SVL Sample ID: **W2D0590-06 (Ground Water)**

Sampled: 25-Apr-12 12:06
Received: 26-Apr-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**	575	mg/L	7.50	0.42	25	W219215	AEW	05/10/12 01:03	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: **W2D0590**
Reported: 11-May-12 15:46

Client Sample ID: **ANDERSON**
SVL Sample ID: **W2D0590-07 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 25-Apr-12 12:27
Received: 26-Apr-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	7.50	0.42	25	W219215	AEW	05/10/12 01:12	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: **W2D0590**
Reported: 11-May-12 15:46

Client Sample ID: **COOPER C**
SVL Sample ID: **W2D0590-08 (Ground Water)**

Sampled: 25-Apr-12 13:09
Received: 26-Apr-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**	817	mg/L	15.0	0.85	50	W219215	AEW	05/10/12 01:22	D2

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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: **W2D0590**
Reported: 11-May-12 15:46

Client Sample ID: **FB20120425**
SVL Sample ID: **W2D0590-09 (Ground Water)**

Sampled: 25-Apr-12 12:57
Received: 26-Apr-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		W219328	AEW	05/11/12 06:15	

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: **W2D0590**
Reported: 11-May-12 15:46

Client Sample ID: **EQB20120425**
SVL Sample ID: **W2D0590-10 (Ground Water)**

Sampled: 25-Apr-12 13:04
Received: 26-Apr-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**	1.94	mg/L	0.30	0.05		W219328	AEW	05/11/12 06:27	

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: **W2D0590**
Reported: 11-May-12 15:46

Client Sample ID: **WEED**
SVL Sample ID: **W2D0590-11 (Ground Water)**

Sampled: 25-Apr-12 13:45
Received: 26-Apr-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**	12.7	mg/L	0.30	0.02		W219215	AEW	05/09/12 21:14	

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: **W2D0590**
Reported: 11-May-12 15:46

Client Sample ID: **DUP20120425**
SVL Sample ID: **W2D0590-12 (Ground Water)**

Sampled: 25-Apr-12 18:00
Received: 26-Apr-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**	347	mg/L	3.00	0.47	10	W219215	AEW	05/10/12 15:30	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: **W2D0590**
Reported: 11-May-12 15:46

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	W219328	10-May-12	
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.02	0.30	W219215	09-May-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	W219328	10-May-12	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.6	10.0	106	90 - 110	W219215	09-May-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	792	811	2.4	20	W219328	11-May-12	D2
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	67.1	69.2	3.1	20	W219215	10-May-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	798	811	10.0	R > 4S	90 - 110	W219328	11-May-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	818	835	10.0	R > 4S	90 - 110	W219328	11-May-12	D2,M3
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	55.6	45.2	10.0	104	90 - 110	W219215	10-May-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	80.3	69.2	10.0	R > 4S	90 - 110	W219215	10-May-12	D2,M3

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

Freeport McMoRan - Copper Queen Branch	**Project Name: Copper Queen Branch Sulfate Mitigation Order**
36 West Highway 92	Work Order: **W2D0590**
Bisbee, AZ 85603	Reported: 11-May-12 15:46

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

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: **W2E0673**
Reported: 07-Jun-12 17:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W2E0673-01	Ground Water	22-May-12 12:00	BD	24-May-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: **W2E0673**
Reported: 07-Jun-12 17:03

Client Sample ID: **NWC-04**
SVL Sample ID: **W2E0673-01 (Ground Water)**

Sampled: 22-May-12 12:00
Received: 24-May-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**	178	mg/L	1.50	0.24	5	W223175	AEW	06/06/12 19:42	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 - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W2E0673**
Reported: 07-Jun-12 17:03

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	W223175	06-Jun-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	W223175	06-Jun-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	10.8	10.8	0.3	20	W223175	06-Jun-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	21.3	10.8	10.0	104	90 - 110	W223175	06-Jun-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: **W2F0217**
Reported: 12-Jun-12 10:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W2F0217-01	Ground Water	06-Jun-12 10:40	BD	08-Jun-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: **W2F0217**
Reported: 12-Jun-12 10:06

Client Sample ID: **NWC-04**
SVL Sample ID: **W2F0217-01 (Ground Water)**

Sampled: 06-Jun-12 10:40
Received: 08-Jun-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**	195	mg/L	3.00	0.47	10	W224088	AEW	06/11/12 17:49	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: **W2F0217**
Reported: 12-Jun-12 10:06

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	W224088	11-Jun-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	W224088	11-Jun-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	194	195	0.3	20	W224088	11-Jun-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	204	195	10.0	96.2	90 - 110	W224088	11-Jun-12	D2,M3

Notes and Definitions

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

APPENDIX C

GROUNDWATER SAMPLING FORMS

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/25/12

Well ID: ANDERSON Weather: Partly Cloudy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): ~~235~~ 234

Casing Diameter (in): 6

Static Water Level (ft bmp): 150.69

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						
1222				7.10	23.9	1390	
							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)
ANDERSON	1227	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 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: Sample from tank.

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/24/17

Well ID: AWC-02 Weather: Sunny 80s

ADWR No: Sampler: MML

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						
1004				7.23	23.0	430	
							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)
AWC-02	1007	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 Date: 4/24/12

Well ID: AWC-03 Weather: Sunny

ADWR No: Sampler: MML

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						
0933				7.28	22.1	450	
							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)
AWC-03	1936	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 Date: 4/24/12

Well ID: AWC-04 Weather: Sunny

ADWR No: Sampler: MML

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						
0947				7.10	22.1	570	
							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)
AWC-04	0950	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 Date: 4/24/12

Well ID: AWC-05 Weather: Sunny

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						
0913				7.18	21.4	430	
							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)
AWC-05	0916	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 Date: 4/11/12

Well ID: BANKS 986 Weather: Sunny, windy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 435

Casing Diameter (in): 6"

Static Water Level (ft bmp): N/A

Casing Volume (gal): ~317 x3 = ~951

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
1147	Pump On						
1202	15	8	120	7.82	22.2	1054	
1217	30		240	7.80	22.0	1055	
1232	45		360	7.76	21.9	1046	
1247	60		480	7.78	22.0	1042	
1302	75		600	7.79	21.8	1042	
1317	90		720	7.77	22.0	1032	
1332	105		840	7.76	22.1	1028	
1347	120		960	7.77	22.0	1025	
							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)
BANKS 986	1351	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: Use WL from Banks 987

WELL PURGING INFORMATION

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

Additional Comments: Banks 987 SWL = 219.39

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/11/12

Well ID: Banks 987 Weather: sunny windy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 219.39

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: WL-C

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/23/12

Well ID: BIMA Weather: Partly Cloudy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 465

Casing Diameter (in): 4

Static Water Level (ft bmp): N/A

Casing Volume (gal): previous 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
1317	Pump On						
1322	5	10	50	6.57	23.9	1790	
							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	1354	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: Well dry, Recharge & sample

Additional Comments: Well dry at 13:25

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	4-18-12
Well ID:	BMO-2008-5B	Weather:	Sunny
ADWR No:		Sampler:	Christopher L Skeen

WELL DATA

Well Depth (ft bls):	285
Casing Diameter (in):	5¼
Static Water Level (ft bmp):	149.02
Casing Volume (gals):	138.72
3 Casing Volumes (gals):	416.1

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0940							
0945	5	27	135	6.95	21.7	716	
0955	15	27	405	6.98	21.8	714	
1005	25	27	675	6.96	21.7	712	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMO-2008-5B	1005	plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments: 131

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	4-18-12
Well ID:	BMO-2008-5M	Weather:	Sunny
ADWR No:		Sampler:	Christopher J Sharma

WELL DATA

Well Depth (ft bls):	450
Casing Diameter (in):	5"
Static Water Level (ft bmp):	150.70
Casing Volume (gals):	305.2
3 Casing Volumes (gals):	915.6

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0840							
0845	5	18	90	6.63	22.4	590	
0905	25	18	459	6.73	22.2	589	
0925	45	18	810	6.75	22.2	590	
0935	55	18	990	6.71	22.4	587	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMO-2008-5M		plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	4-18-12
Well ID:	BMO-2008-6B	Weather:	Sunny
ADWR No:		Sampler:	Christopher L Brown

WELL DATA

Well Depth (ft bls):	265'
Casing Diameter (in):	5"
Static Water Level (ft bmp):	193.90
Casing Volume (gals):	72.5
3 Casing Volumes (gals):	218

Casing Capacity

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0725							
0730	5	5.1	25	7.30	21.3	330	
0740	15	5.1	75	7.26	21.1	332	
0755	30	5.1	150	7.28	21.3	335	
0810	45	5.1	225	7.25	21.4	336	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMO-2008-6B	0810	plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments: 761

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	4-18-12
Well ID:	Bmo-2008-LM	Weather:	Sunny
ADWR No:		Sampler:	Christopher J. Skowron

WELL DATA

Well Depth (ft bls):	450'
Casing Diameter (in):	5"
Static Water Level (ft bmp):	195'
Casing Volume (gals):	260.1
3 Casing Volumes (gals):	780.3

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
0620							
0639	10	21	210	7.01	21.4	715	
0640	929	21	420	7.00	21.3	705	
0650	30	21	630	7.00	21.4	704	
0700	40	21	840	7.01	21.4	701	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
Bmo-2008-LM		plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

255

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	4-24-12
Well ID:	BMO 2010 - 1M	Weather:	Sunny
ADWR No:		Sampler:	Christopher L. Sherman

WELL DATA

Well Depth (ft bls):	550
Casing Diameter (in):	5"
Static Water Level (ft bmp):	223.87
Casing Volume (gals):	~~320.1~~ 332.6
3 Casing Volumes (gals):	997.8

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0545							
0600	15	10	150	7.05	23.1	690	
0645	60	5	375	7.10	22.9	692	
0745	120	3	555	7.13	23.1	691	
0845	180	3	725	7.14	23.3	696	
0945	240	3	915	7.10	23.5	700	
1015	270	3	1005	7.08	23.4	701	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMO2010 - 1M		plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	4-18-12
Well ID:	BMQ-2010-2M	Weather:	Sunny
ADWR No:		Sampler:	Christopher L Shumway

WELL DATA

Well Depth (ft bls):	380
Casing Diameter (in):	5"
Static Water Level (ft bmp):	272.31
Casing Volume (gals):	110
3 Casing Volumes (gals):	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
1220							
1225	5	27	135	6.49	21.3	2.15	
1230	10	27	270	6.48	21.2	2.16	
1240	20	27	540	6.49	21.3	2.16	
1250	30	27	810	6.48	21.2	2.17	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMQ2010-2M		plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments: 1027

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/24/12

Well ID: BMO-2010-3B Weather: Sunny

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 330

Casing Diameter (in): 5

Static Water Level (ft bmp): 117.92

Casing Volume (gal): 210 x3 = 649

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
1041	Pump On						
1051	10	9	90	7.43	22.4	390	transparent w/ orange tint. Hard water smell
1101	20		180	7.38	21.8	390	
1111	30		270	7.27	21.8	400	clear
1121	40		360	7.38	22.0	400	
1131	50		450	7.35	21.9	390	
1141	60		540	7.32	21.7	390	
1151	70		630	7.30	21.8	390	
							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-2010-3B	1155	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: 4/24/12

Well ID: BMO-2010-3M Weather: Sunny 90's

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 531

Casing Diameter (in): 5

Static Water Level (ft bmp): 120.93

Casing Volume (gal): 418 x3 = 1255

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						
1230	20	9	180	7.56	22.5	330	
1250	40		360	7.606	23.2	360	
1310	60		540	7.65	23.6	360	
1330	80		720	7.56	23.6	360	
1350	100		900	7.55	23.5	370	
1410	120		1080	7.47	24.2	370	
1430	140		1260	7.49	23.9	370	
							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-2010-3M	1432	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 Date: 4/23/12

Well ID: CHAMBERS Weather: Sunny

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
1127	Pump On						
1130	3	6.5	19.5	7.43	24.6	450	
1133			39	7.40	23.2	470	
1136			58.5	7.46	22.7	460	
							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)
CHAMBERS	1139	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: Yard floods quickly. 3min readings.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/10/12

Well ID: COOPER Weather: Sunny

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 325

Casing Diameter (in): 6

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
0932	Pump On						
0937	5	8	40	7.33	22.0	426.1	
0942	10		80	7.36	22.0	426.0	
0947	15		120	7.41	22.4	426.8	
							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)
COOPER	0950	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 Date: 4/25/12

Well ID: COOPERC Weather: partly cloudy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 220

Casing Diameter (in): 6" ~~160.26~~

Static Water Level (ft bmp): 160.26

Casing Volume (gal): 88 x3 = 264

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1238	Pump On						
1242	4	~10	40	6.96	22.5	2050	
1248	10		100	6.91	21.9	2020	
1255	17		170	6.87	21.7	1990	
1302	24		240	6.86	21.7	1980	
1306	28		280	6.83	21.5	1960	
							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)
COOPERC	1309	POLY	250	1	3500	N	Y *

WATER LEVEL MEASUREMENT COLLECTION

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

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 Date: 4/12/12

Well ID: DODSON Weather: Sunny

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 200

Casing Diameter (in): 6

Static Water Level (ft bmp): 94.19

Casing Volume (gal): 156 x3 = 467

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
1546 ~~1357~~	Pump On						
1556 ~~1409~~	10	12.5	125	7.02	20.8	1571	
1606	20	↓	250	7.08	20.7	1536	
1616	30	↓	375	7.06	20.8	1499	
1626	40	↓	500	7.06	20.6	1492	
							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)
DODSON	1630	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 Date: 9/11/12

Well ID: Douglass 791 Weather: sunny

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 29.99

Casing Volume (gal): x3 =

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							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: 1 Date: 4/11/12

Well ID: Douglass 792 Weather: Sunny, windy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 89.18

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: 1 Date: 4/12/12

Well ID: DURAZO Weather: Sunny

ADWR No: Sampler: MMC

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
0947	Pump On						
0952	5	5	25	7.38	20.0	1126	
0957	10		50	7.34	21.1	1091	
1002	15		75	7.43	21.8	1087	
1009	22		110	7.41	21.8	1101	
							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)
DURAZO	1013	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 Date: 4/11/12

Well ID: EAST Weather: Sunny windy

ADWR No: Sampler: MWL

WELL DATA

Well Depth (ft bls): 125

Casing Diameter (in): 6

Static Water Level (ft bmp): 65.72

Casing Volume (gal): 87 x3 = 261

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
1440	Pump On						
1445	5	13	65	7.56	21.0	593.1	
1450	10		130	7.52	20.8	602.0	
1455			195	7.51	20.7	610.0	
1500			260	7.53	20.6	609.3	
							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)
EAST	1504	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 Date: 4/23/12

Well ID: ECHAVE Weather: Sunny, breezy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 345

Casing Diameter (in): 6

Static Water Level (ft bmp): previous 218.71

Casing Volume (gal): ~190 x3 = ~570

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
1525	Pump On						
1535	10	7	70	7.46	24.0	440	
1545	20		140	7.55	22.6	450	
1555	30		210	7.54	22.5	440	
1605	40		280	7.50	22.3	440	
1615	50		350	7.46	22.3	440	
1625	60		420	7.48	22.5	440	
1635	70		490	7.51	22.4	430	
1645	80		560	7.50	22.5	440	
							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)
ECHAVE	1648	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 | Date: 4/11/12

Well ID: EPPELE 641 | Weather: Sunny Windy

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls): 265

Casing Diameter (in): 8

Static Water Level (ft bmp): 52.07

Casing Volume (gal): 556 x3 = 1667

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
0958	Pump On						
1008	10	12	120	7.57	20.8	561.1	
1018	20		240	7.63	20.6	562.0	
1028	30		360	7.67	20.7	565.2	
1038	40		480	7.68	20.6	568.7	
1048	50		600	7.74	20.6	563.8	
1056	58	↓	696				Goes Dry
							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)
EPPELE 641	1115	POLY	250	1	300.0	N	Y
DUP20120411		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.
- [x] Other: Dry, field parameters stabatized

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/13/12

Well ID: GARNET 557 Weather: Sunny windy

ADWR No: Sampler: MMC

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 196.30

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: 1 Date: 4/13/12

Well ID: GARNER 1635 Weather: sunny, windy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 680'

Casing Diameter (in): 5

Static Water Level (ft bmp): 200.40

Casing Volume (gal): 499 x3 = 1468

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
1405	Pump On						
1420	15	15	225	7.58	24.5	457.5	
1435	30		450	7.62	23.8	461.3	
1450	45		675	7.65	24.0	461.8	
1505	60		800	7.69	24.1	461.3	
1520	75		1025	7.68	23.8	460.3	
1535	90		1250	7.70	23.4	460.2	
1550	105		1475	7.68	24.0	460.0	
							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)
GARNER 635	1555	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:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	4-19-12
Well ID:	Haban	Weather:	Sunny
ADWR No:		Sampler:	Christopher L Shuma

WELL DATA

Well Depth (ft bls):	300
Casing Diameter (in):	5"
Static Water Level (ft bmp):	168.32
Casing Volume (gals):	134.2
3 Casing Volumes (gals):	402.6

Casing Capacity

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

Casing Volume = gallons/foot * water 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	12.6	176	6.78	21.6	1798	
1250	20	12.6	352	6.80	21.4	1800	
1300	30	12.6	528	6.81	21.5	1803	

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:

131.6

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/13/12

Well ID: HOWARD Weather: Sunny

ADWR No: Sampler: MMC

WELL DATA

Well Depth (ft bls): 220

Casing Diameter (in): 6

Static Water Level (ft bmp): 155.40

Casing Volume (gal): 95 x3 = 285

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
1206	Pump On						
1216	10	10	100	7.10	21.7	1399	
1226	20		200	7.02	21.2	1463	
1236	30		300	6.89	21.2	1472	
1246	40		400	6.99	21.2	1508	
							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)
HOWARD	12:50	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 Date: 4/23/12

Well ID: KEEFER Weather: Sunny, 80's

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 245

Casing Diameter (in): 6

Static Water Level (ft bmp): 139.76

Casing Volume (gal): 155 x3 = 465

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						
0936	10	10	100	7.12	21.7	480	
0946	20		200	7.22	22.5	490	
0956	30		300	7.23	22.1	490	
1006	40		400	7.27	21.3	520	
1016	50		500	7.23	21.6	500	
							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)
KEEFER	1020	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: Hanna meter

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/11/12

Well ID: McConnell 205 Weather: Sunny windy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 216

Casing Diameter (in): 6

Static Water Level (ft bmp): 161.57

Casing Volume (gal): 80 x3 = 240

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
1643	Pump On						
1648	5	12	60	7.33	21.9	1774	brown water (not turbid)
1653	10		120	6.88	21.4	1777	mostly cleared up
1658	15		180	6.84	21.3	1779	
1703	20		240	6.82	21.4	1781	
							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)
McConnell	1706	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:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/13/12

Well ID: MARCELL Weather: Sunny

ADWR No: Sampler: MMR

WELL DATA

Well Depth (ft bls): 220

Casing Diameter (in): 6

Static Water Level (ft bmp): N/A

Casing Volume (gal): * 60 x3 = 180

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
1028	Pump On				21.8		
1038	10	5	50	7.38	~~225~~	1589	
1048	20		100	7.12	21.7	1585	
1058	30		150	7.18	21.6	1569	
1108	40		200	7.15	21.8	1560	
							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)
MARCELL	11:11	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: * previous WL = 180

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/12/12

Well ID: METZLER Weather: Sunny

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 351

Casing Diameter (in): 6

Static Water Level (ft bmp): 291.15

Casing Volume (gal): 88 x3 = 264

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
0850	Pump On						
0900	10	6	60	7.29	20.1	1000	
0910	20	↓	120	7.24	20.7	1006	
0920	30	↓	180	7.31	20.8	1008	
0930	40	↓	240	7.38	21.2	1011	
0934	44	↓	264	7.34	21.1	1009	
							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)
METZLER	0937	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	Date:	4/23/12
Well ID:	MOORE	Weather:	Sunny
ADWR No:		Sampler:	MWL

WELL DATA

Well Depth (ft bls):	220
Casing Diameter (in):	6
Static Water Level (ft bmp):	N/A
Casing Volume (gal):	x3 = ~410
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
1035	Pump On						
1045	10	10	100	7.33	23.4	460	
1055	20	10	200	7.31	23.5	450	
1105	30		306	7.34	22.8	470	
							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)
MOORE	11:10	POLY	250	1	300.0	N	Y
DUP20120423							

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 Date: 4/23/12

Well ID: NOTEMAN Weather: Sunny

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
1242	Pump On						
1247	5	12	60	6.79	25.2	1560	
1252	10		120	6.78	24.3	1570	
1257	15		180	6.68	24.0	1580	
							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)
NOTEMAN	1301	POLY	250	1	3020	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 Date: 4/25/12

Well ID: NWC-02 Weather: partly cloudy

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						
0923				7.46	22.5	360	
0927				7.44	22.3	370	
0931				7.42	22.4	370	
							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-02	0934	Poly	250	1	3000	N	Y*

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to 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: 4/25/12

Well ID: NWC-03 CAP Weather: overcast

ADWR No: Sampler: MMC

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 135.09

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)
							k

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to 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: WLD

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/25/12

Well ID: NWC-03 Weather: overcast

ADWR No: Sampler: MMC

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						
0850				7.15	21.6	1020	
0854				7.12	21.7	960	
0858				7.17	21.6	920	
							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-03	0900	POLY	250	1	300.0	N	Y*
DUP20120425		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 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 Date: 4/25/12

Well ID: NWC-04 Weather: overcast

ADWR No: Sampler: MMC

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						
0816				6.86	22.8	870	
0819				6.99	22.9	890	
0822				7.09	23.2	890	
0825				7.16	23.4	870	
							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	0831	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: 5/22/12

Well ID: NWC-04 Weather: Sunny

ADWR No: Sampler: BTD

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						
11:45		20		7.15	24.6	970	
11:50		20		7.22	23.2	990	
11:55		20		7.25	23.9	970	
							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	12:00	Poly				None	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: 6/16/12

Well ID: NWC-04 Weather:

ADWR No: Sampler: BTD

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
10:15	Pump On	20					
10:20		20	100	6.88	25.4	930	
10:25		20	200	7.17	24.8	980	
10:30		20	300	7.27	24.9	1050	
10:35		20	400	7.27	24.4	1040	
							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	10:40	Poly				None	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 Date: 4/25/12

Well ID: NWC-06 Weather: partly cloudy

ADWR No: Sampler: MML

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						
0944				7.36	22.7	400	
0948				7.37	22.6	400	
0952				7.34	22.5	410	
							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-06	0955	~~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 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 Date: 4/11/12

Well ID: PALMER Weather: sunny windy

ADWR No: Sampler: MML

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						
0909				7.52	18.7	519.8	
							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)
PALMER	0910	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: No purge, sample from tank

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/12/12

Well ID: Panagakos Weather: Sunny

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 200

Casing Diameter (in): 8

Static Water Level (ft bmp): 168.85

Casing Volume (gal): 81 x3 = 244

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
1651	Pump On						
1701	10	7.5	75	6.88	21.2	1150	
1711	20		150	6.85	20.6	1225	
1721	30		225	6.88	20.8	1256	
1725	34		255	6.90	20.9	1265	
							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)
PANAGAKOS	1730	POLY	250	1	300.0	N	Y
DUP20120412		POLY	250	1	300.0	N	X

WATER LEVEL MEASUREMENT COLLECTION

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

WELL PURGING INFORMATION

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

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/13/12

Well ID: PARRA Weather: Sunny

ADWR No: Sampler: MMC

WELL DATA

Well Depth (ft bls): 355

Casing Diameter (in): 6

Static Water Level (ft bmp): N/A

Casing Volume (gal): N/A 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
0933	Pump On						
0943	10	5.5	55	7.44	21.0	1201	
0953	20		110	7.41	20.9	1213	
1003	30		165	7.49	21.1	1204	
							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)
PARRA	1007	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 Date: 4/12/12

Well ID: PIONKE Weather: Sunny breezy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 300

Casing Diameter (in): 6

Static Water Level (ft bmp): 154.35

Casing Volume (gal): 214 x3 = 642

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
1058	Pump On						
1128	30	3	90	7.18	20.2	1237	
1158	60		180	7.16	20.8	1238	
1228	90		270	7.10	21.6	1220	
1258	120		360	7.12	21.7	1229	
1328	150		450	7.17	22.1	1239	
1358	180		540	7.16	22.2	1232	
1428	210		630	7.13	22.1	1225	
1433	215		645	7.17	22.1	1218	
							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	1435	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 Date: 4/10/12

Well ID: RAMIREZ Weather: Sunny

ADWR No: Sampler: MMC

WELL DATA

Well Depth (ft bls): 300

Casing Diameter (in): 6

Static Water Level (ft bmp): 163.22

Casing Volume (gal): 201 x3 = 603

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
1047	Pump On						
1057	10	10.5	105	7.39	23.2	405.2	
1102	25	10.5	262.5	7.44	23.2	403.1	
1117	30	10.5	315	7.36	23.0	405.1	
1127	40	10.5	420	7.38	23.2	404.6	
1137	50	10.5	525	7.41	23.4	403.3	
1147	60	10.5	630	7.40	23.2	404.5	
							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)
RAMIREZ	1150	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:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/11/12

Well ID: RAY Weather: Sunny windy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 100

Casing Diameter (in): 6

Static Water Level (ft bmp): 54.5

Casing Volume (gal): 66.9 x3 = 201

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
1539	Pump On						
1544	5	6.5	32.5	6.77	22.5	1384	
1549	10		65	6.94	22.2	1375	
1559	20		130	7.01	20.3	1360	
1609	30		195	7.03	20.6	1359	
							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)
RAY	1613	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:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/23/12

Well ID: Rogers 596 Weather: Sunny

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 138.61

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: 1 Date: 4/23/13

Well ID: Rogers 803 Weather: Sunny

ADWR No: Sampler: MML

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
1437	Pump On						
1442	5	12	60	7.35	24.0	730	
1447	10	1	65	7.35	23.8	730	
1452	15	1	70	7.32	23.9	720	
							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)
Rogers 803	1455	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 Date: 4/10/12

Well ID: ROGERS E Weather: Sunny

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 290

Casing Diameter (in): 6

Static Water Level (ft bmp): 154.13

Casing Volume (gal): 200 x3 = 600

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
1215	Pump On						
1225	10	9	90	7.33	22.5	422.9	
1235	20		180	7.34	22.7	423.7	
1245	30		270	7.37	22.3	424.2	
1255	40		360	7.39	22.4	424.3	
1305	50		450	7.42	22.3	423.7	
1315	60		540	7.42	22.0	424.7	
1325	70		630	7.37	22.1	421.8	
							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)
ROGERS E	1329	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:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/13/12

Well ID: RUIZ Weather: SUNNY

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 312

Casing Diameter (in): 6

Static Water Level (ft bmp): 298.47

Casing Volume (gal): 20 x3 = 60

Total Volume Purged (gal):

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

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

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0851	Pump On						
0857	6	5.5	33	7.12	20.5	898.4	
0903	12		66	7.01	20.7	896.2	
0907	16		88	7.04	21.1	896.5	
							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)
RUIZ	0910	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 | Date: 4/10/12

Well ID: SCHWARTZ | Weather: Sunny, breezy

ADWR No: | Sampler: MMC

WELL DATA

Well Depth (ft bls): 305

Casing Diameter (in): 6"

Static Water Level (ft bmp): 127.78

Casing Volume (gal): 260.5 x3 = 782

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
1555	Pump On						
1605	10	12	120	7.44	22.2	608.1	
1615	20		240	7.45	21.8	612.5	
1625	30		360	7.44	21.8	615.0	
1635	40		480	7.49	21.6	614.6	
1645	50		600	7.49	21.7	617.7	
1655	60		720	7.46	21.7	617.0	
1705	70		840	7.48	21.6	626.1	
							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	1707	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 | Date: 4/24/12

Well ID: TM-10 USBP | Weather: Sunny

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 279.03

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						
1531	-			7.22	23.1	280	
1541				7.46	21.0	280	
1551				7.73	20.8	290	
1601				7.89	21.4	270	
1611				7.88	21.0	280	
							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)
TM-10 USBP	1611	POLY	250	1	300.0	N	Y
DUP20120424		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.
- [x] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Purge each time ~ 1-2 gal

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 4/25/12

Well ID: TV1-713 Weather: Partly Cloudy

ADWR No: Sampler: MMC

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 131.33

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 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 Date: 4/25/12

Well ID: TV1-875 Weather: Partly Cloudy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 330

Casing Diameter (in): 8

Static Water Level (ft bmp): 131.33 in TV1-713

Casing Volume (gal): 519 x3 = 1560

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
1042	Pump On						
1047	5	4500	500	7.20	22.0	830	
1052	10		1000	7.21	21.7	840	
1057	15		1500	7.19	21.3	840	
							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)
TV1-875	10:59	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 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 Date:

Well ID: WEED Weather:

ADWR No: Sampler:

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
1328	Pump On						
1332	4	5	20	7.49	23.4	370	
1336	8		40	7.56	22.4	360	
1340	12		60	7.60	22.1	360	
							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)
WEED	1345	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 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 Date: 4/25/12

Well ID: Weiskopf Weather: partly cloudy

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls):	200
Casing Diameter (in):	6
Static Water Level (ft bmp):	148.82
Casing Volume (gal):	75 x3 = 226
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
1129	Pump On						
1139	10	8	80	7.09	22.8	1260	
1149	20		160	7.15	23.3	1280	
1159	30		240	7.07	23.5	1300	
							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)
WEISKOPF	1200	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 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 | Date: 4/10/12

Well ID: ZANDER | Weather: sunny, breezy

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls): 280

Casing Diameter (in): 6"

Static Water Level (ft bmp): 149.64

Casing Volume (gal): 192 x3 = 575

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
1405	Pump On						
1415	10	12.5	125	7.48	22.2	419.7	
1425	20		250	7.41	21.7	418.4	
1435	30		375	7.47	21.8	422.3	
1445	40		500	7.47	21.7	418.2	
1455	50		625	7.49	21.9	420.1	
							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)
ZANDER	1459	POLY	250	1	300.0	N	N
Dup20120410	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: DUPLICATE sample collected after Zander

CLEAR CREEK ASSOCIATES