#### THIRD QUARTER 2013 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

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October 18, 2013

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#### 1. INTRODUCTION

This report provides the results of groundwater monitoring conducted by Freeport-McMoRan Corporation Copper Queen Branch (CQB) in the third quarter 2013 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 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 geologic map (Hayes and Landis, 1964) of the study area and well locations where data reported herein have been collected. The well locations are identified by name on Figure 2. Table 2 lists the sampling status of wells scheduled under the groundwater monitoring program for sampling in the third quarter 2013 and any additional wells where data was collected outside of the program. This is the first report in which Table 2 includes wells that are not part of the groundwater monitoring plan. The modification of Table 2 was made to make it easier to identify all sampling and water level data collected for the quarter. 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 in Section 2.

The monitoring purpose listed on Table 2 was updated in the third quarter 2013 to reflect the current well usage. Drinking water supply wells are monitored under the Well Inventory and all other wells monitor the plume extent.

A capped well, THOMPSON 151, and drinking water well, THOMPSON 341, were identified in the Naco area in the second quarter 2013. The wells were surveyed and added to the groundwater monitoring schedule in the third quarter 2013. The survey data are included in Appendix A.

#### 2. GROUNDWATER MONITORING RESULTS

#### 2.1 Results of Monitoring

Analytical results and groundwater elevation data for the third quarter 2013 are tabulated in Tables 3 and 4, respectively, along with information previously collected under the Mitigation Order. Figure 3 shows the concentrations of dissolved sulfate in the well water samples. The highest sulfate concentration measured at co-located wells was used for concentration contouring. Figure 4 shows groundwater elevations in the third quarter 2013. Groundwater elevations were calculated using depth to water measurements made under static (non-pumping) conditions whenever possible. The most recent measuring point elevation data for each well was used to calculate groundwater elevations in Table 4. At wells with multiple samples or water levels during the third quarter 2013, the most recent data are shown on the figures.

#### 2.2 Quality Assurance/Quality Control Review

Pursuant to Section 6.4 of the QAPP, a data verification report was prepared for quality assurance and quality control purposes. The data verification report, analytical laboratory reports, and groundwater sampling forms for samples collected by Clear Creek and CQB during the third quarter 2013 are included in Appendices B, C, and D, respectively. As determined by the data verification review, the analytical results for samples collected in the third quarter 2013 are of acceptable quality for use in activities conducted pursuant to the Mitigation Order.

#### 3. FINDINGS

In the third quarter of 2013, groundwater samples were collected from 83 wells and depth to water measurements were collected in 82 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 third quarter 2013 and historical groundwater monitoring are described below.

- Sulfate concentration data indicate that the plume extends from the vicinity of the former evaporation pond (Figure 2) southwest to the vicinity of Naco and south to the vicinity of Bisbee Junction (Figure 3). The groundwater monitoring data indicate that the sulfate plume extends over an oblong area of approximately 2 miles by 3.9 miles and is contained primarily in the basin fill and undifferentiated Bisbee Group except near the former evaporation pond where wells in the Glance Conglomerate have sulfate concentrations greater than 250 mg/L. The extent of the sulfate plume and the sulfate contours as drawn on Figure 3 are based on both historical and current sulfate concentration data. Historical sulfate concentration data are available in this report and in the Aquifer Characterization Report (Clear Creek, 2010).
- Comparison of the third quarter 2013 sulfate concentrations with previous quarters indicates
  no large scale change in the plume geometry (represented by the position of the 250 mg/L
  sulfate concentration contour) since the Mitigation Order sampling began in 2008, although
  concentration contours within the plume have been modified to reflect current
  concentrations.
- Figure 5 shows sulfate concentrations through time at public drinking water supply wells. Sulfate concentrations have remained relatively stable over time at AWC-02, AWC-04, AWC-05, NWC-02, and NWC-06. The sulfate concentration at AWC-03 increased to between 60 and 70 mg/L in 2013. There is an increasing trend in the sulfate concentrations in NWC-04 since March 2008; however the concentrations are highly variable from month to month. The concentration has ranged between 200 and 225 mg/L in 2013.
- Groundwater elevations decrease from east to west across the study area, indicating westerly groundwater flow (Figure 4).
- Figures 6 and 7 show groundwater elevations over time for BMO monitor wells with screened intervals in basin fill and bedrock, respectively. Groundwater elevations in BMO monitor wells screened in basin fill have decreased over time. The maximum rate of decline measured in the basin fill through the most recent quarter sampled is 1.55 feet per year in BMO-2010-3B, which has declined 4.64 feet between July 2010 and July 2013. Groundwater elevations in most BMO monitor wells screened in bedrock have also declined over time. The maximum rate of decline measured in the bedrock through the most recent quarter sampled is 4.98 feet per year in BMO-2010-2M which has declined 14.63 feet between

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September 2010 and August 2013. Water level declines range from 0.8 to 3.0 feet per year in BMO-2008-1G, BMO-2008-5M, BMO-2008-6M, BMO-2008-7M, BMO-2008-8M, BMO-2008-9M, BMO-2008-13M, BMO-2010-1M, and BMO-2010-3M. The groundwater elevations in bedrock wells BMO-2008-10GL, BMO-2008-10GU, and BMO-2008-11G display increasing trends.

#### 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.
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- Hydro Geo Chem, Inc. (HGC). 2008. Revision 1, Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Concentrator Tailing Storage Area, Cochise County, Arizona. July 3, 2008.

# TABLES

# TABLE 1 Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	ADWR 55 Registry Number	Semiannual Sampling First Quarter	Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
ANDERSON 396	613396	✓	✓	✓	✓
ANDERSON 458	221458	✓	✓	✓	✓
AWC-02	616586	✓	✓	✓	✓
AWC-03	616585	✓	✓	✓	✓
AWC-04	616584	✓	✓	✓	✓
AWC-05	590620	✓	✓	✓	✓
BANKS 986	647986	✓	✓	✓	✓
BANKS 987	647987	WLO		WLO	
BARTON 919	644919	WLO		WLO	
BF-01	539783			✓	
BIMA	577927	✓	✓	✓	✓
BMO-2008-1G	909474	✓		✓	
BMO-2008-3B	909147	✓		✓	
BMO-2008-4B	910096	✓		✓	
BMO-2008-5B	909653	✓	✓	✓	✓
BMO-2008-5M	909552	✓	✓	✓	✓
BMO-2008-6B	909146	✓	✓	✓	✓
BMO-2008-6M	909019	✓	✓	✓	✓
BMO-2008-7M	908794	✓		✓	
BMO-2008-8B	910097			✓	
BMO-2008-8M	909711	✓		✓	
BMO-2008-9M	909255	✓		✓	
BMO-2008-10GL	909435			✓	
BMO-2008-10GU	909272			✓	
BMO-2008-11G	909434	✓		✓	
BMO-2008-13B	909551			✓	
BMO-2008-13M	909760			✓	
BMO-2010-1M	219957	✓	✓	✓	✓
BMO-2010-2M	219958	✓	✓	✓	✓
BMO-2010-3B	219970	✓	✓	✓	✓
BMO-2010-3M	219969	✓	✓	✓	✓
BMO-2012-1M	221388	✓	✓	✓	✓
воотн	914931	✓	✓	✓	✓
CHAMBERS	629807	✓	✓	✓	✓
COB MW-1	903992			✓	
COB MW-2	903984	✓		✓	
COB MW-3	906823			✓	
COB WL	593116			✓	
COOPER	623564	✓	✓	✓	✓



# TABLE 1 Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	ADWR 55 Registry Number	Semiannual Sampling First Quarter	Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
COOPER C	637069	✓	✓	✓	✓
DODSON	644927	✓	✓	✓	✓
DOUGLASS 791	592791	WLO		WLO	
DOUGLASS 792	592792	WLO		WLO	
DURAZO	NR	✓	✓	✓	✓
EAST	599796	✓	✓	✓	✓
ECHAVE	219449	✓	✓	✓	✓
EPPELE 641	805641	✓	✓	✓	✓
FLEMING	218386	WLO		WLO	
FRANCO 101	500101	✓	✓	✓	✓
FRANCO 383	221383	✓	✓	✓	✓
FULTZ	212447	✓	✓	✓	✓
GARNER 557	558557	WLO		WLO	
GARNER 635	587635	✓	✓	✓	✓
GGOOSE 547	628547	✓		✓	
GOAR RANCH	610695	WLO		WLO	
HOBAN	805290	✓	✓	✓	✓
HOWARD NR	NR	✓	✓	✓	✓
HOWARD 312	221312	✓	✓	✓	✓
KEEFER	209744	✓	✓	✓	✓
MARCELL	NR	✓	✓	✓	✓
MCCONNELL 265	539265	✓	✓	✓	✓
MCCONNELL 459	221459	✓	✓	✓	✓
METZLER	35-71891	✓	✓	✓	✓
MOORE	538847	✓	✓	✓	✓
NESS	509127	✓		✓	
NOTEMAN	212483	✓	✓	✓	✓
NWC-02	562944	✓	✓	✓	✓
NWC-03	203321	✓	✓	✓	✓
NWC-03 CAP	627684	WLO		WLO	
NWC-04	551849	✓	✓	✓	✓
NWC-06	575700	<b>√</b>	✓	✓	✓
OSBORN	643436	✓		✓	
PALMER	578819	<b>√</b>	✓	✓	✓
PANAGAKOS	35-76413			✓	
PARRA	576415	<b>√</b>	✓	✓	✓
PIONKE 395	613395	<b>√</b>	✓	✓	✓
PIONKE 517	221517	✓	✓	✓	✓
POOL	509518	✓	✓	✓	✓



## TABLE 1 Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	ADWR 55 Registry Number	Semiannual Sampling First Quarter	Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
RAMIREZ	216425	✓	✓	✓	✓
RAY	803772	✓	✓	✓	✓
ROGERS 596	573596	✓	✓	✓	✓
ROGERS 803	641803	✓	✓	✓	✓
ROGERS E	216018	✓	✓	✓	✓
RUIZ	531770	✓	✓	✓	✓
SCHWARTZ	210865	✓	✓	✓	✓
STEPHENS	808560	WLO		WLO	
SUNBELT	201531	WLO		WLO	
SWAN	NR	✓		✓	
THOMPSON 151	612151	WLO		WLO	
THOMPSON 341	218341	✓	✓	✓	✓
TM-02A	522574	✓		✓	
TM-06 MILLER	522695			✓	
TM-07	522576	✓		✓	
TM-15 MILLER	522699			✓	
TM-16	522578			✓	
TM-19A	522580	✓		✓	
TM-42	562554			✓	
TVI 236	802236			✓	
TVI 713	567713	WLO		WLO	
TVI 875	568875	✓	✓	✓	✓
WEED	544535	✓	✓	✓	✓
WEISKOPF 802	641802	✓	✓	✓	✓
WEISKOPF 897	221897	✓	✓	✓	✓
ZANDER	205126	✓	✓	✓	✓

Notes:

35-71891 = ADWR 35 Database

ADWR = Arizona Department of Water Resources

NR = No Record

WLO = Water Level Only



Well Name	ADWR 55 Registry Number	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status	
ANDERSON 396	613396	Anderson	Plume	236	Y	N	Water level measured in July 2013. Unable to collect water quality sample because well is not operational.	
ANDERSON 458	221458	Anderson	Well Inventory	734	Y	Y	Water quality sample collected in July 2013.	
ASLD 435	616435	AZ State Land	Regional	340	Y	N	Well is not part of the groundwater monitoring plan. Water level measured in September 2013.	
AWC-02	616586	Arizona Water Company	Well Inventory	330	Y	Y	Water quality sample collected in July 2013.	
AWC-03	616585	Arizona Water Company	Well Inventory	269	Y	Y	Water quality sample collected in July 2013.	
AWC-04	616584	Arizona Water Company	Well Inventory	250	Y	Υ	Water quality sample collected in July 2013.	
AWC-05	590620	Arizona Water Company	Well Inventory	1183	Y	Y	Water quality sample collected in July 2013.	
BANKS 986	647986	Banks	Well Inventory	435	N	Y	Water quality sample collected in July 2013. Unable to measure water level because wellhead is inaccessible.	
BANKS 987	647987	Banks	Plume	339	Y	N	Well identified for water level measurements only. Water level measured in July 2013.	
BARTON 919	644919	Barton	Plume	130	Y	N	Well identified for water level measurements only. Water level measured in July 2013.	
BF-01	539783	Copper Queen Branch	Plume	400	N	N	Well abandoned April 2013.	
BIMA	577927	Bisbee Municipal Airport	Well Inventory	465	N	Y	Water quality sample collected in July 2013. Unable to measure water level because of obstruction in well.	
BMO-2008-1G	909474	Copper Queen Branch	Plume	310	Y	Υ	Water quality sample collected in August 2013.	
BMO-2008-3B	909147	Copper Queen Branch	Plume	260	Y	Υ	Water quality sample collected in August 2013.	
BMO-2008-4B	910096	Copper Queen Branch	Plume	610	Y	Y	Water quality sample collected in September 2013.	
BMO-2008-5B	909653	Copper Queen Branch	Well Inventory	285	Y	Y	Water quality sample collected in August 2013.	
BMO-2008-5M	909552	Copper Queen Branch	Plume	450	Υ	Υ	Water quality sample collected in August 2013.	
BMO-2008-6B	909146	Copper Queen Branch	Plume	265	Y	Y	Water quality sample collected in August 2013.	
BMO-2008-6M	909019	Copper Queen Branch	Plume	450	Y	Y	Water quality sample collected in August 2013.	
BMO-2008-7M	908794	Copper Queen Branch	Plume	670	Y	Υ	Water quality sample collected in August 2013.	
BMO-2008-8B	910097	Copper Queen Branch	Plume	480	Y	Y	Water quality sample collected in August 2013.	
BMO-2008-8M	909711	Copper Queen Branch	Plume	1210	Y	Y	Water quality sample collected in August 2013.	
BMO-2008-9M	909255	Copper Queen Branch	Plume	775	Y	Υ	Water quality sample collected in August 2013.	



Well Name	ADWR 55 Registry Number	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status	
BMO-2008-10GL	909435	Copper Queen Branch	Plume	810	Y	Υ	Water quality sample collected in August 2013.	
BMO-2008-10GU	909272	Copper Queen Branch	Plume	449	Y	Υ	Water quality sample collected in August 2013.	
BMO-2008-11G	909434	Copper Queen Branch	Plume	760	Y	Υ	Water quality sample collected in August 2013.	
BMO-2008-13B	909551	Copper Queen Branch	Plume	474	Y	Υ	Water quality sample collected in September 2013.	
BMO-2008-13M	909760	Copper Queen Branch	Plume	1030	Y	Υ	Water quality sample collected in September 2013.	
BMO-2010-1M	219957	Copper Queen Branch	Plume	540	Y	Υ	Water quality sample collected in August 2013.	
BMO-2010-2M	219958	Copper Queen Branch	Plume	370	Y	Υ	Water quality sample collected in August 2013.	
BMO-2010-3B	219970	Copper Queen Branch	Plume	330	Y	Υ	Water quality sample collected in July 2013.	
BMO-2010-3M	219969	Copper Queen Branch	Plume	532	Y	Υ	Water quality sample collected in July 2013.	
BMO-2012-1M	221388	Copper Queen Branch	Plume	396	Y	Υ	Water quality sample collected in August 2013.	
воотн	914931	Booth	Well Inventory	240	N	Υ	Water quality sample collected in July 2013. Unable to measure water level because wellhead is inaccessible.	
CHAMBERS	629807	Chambers	Well Inventory	245	N	Y	Water quality sample collected in July 2013. Unable to measure water level because wellhead is inaccessible.	
COB MW-1	903992	City of Bisbee	Plume	420	Y	Υ	Water quality sample collected in July 2013.	
COB MW-2	903984	City of Bisbee	Plume	170	Y	Υ	Water quality sample collected in July 2013.	
COB MW-3	906823	City of Bisbee	Plume	269	Y	Υ	Water quality sample collected in July 2013.	
COB WL	593116	City of Bisbee	Plume	150	Y	Υ	Water quality sample collected in July 2013.	
COLLINS	565260	Collins	Regional	320	Y	Υ	Well is not part of the groundwater monitoring plan. Water quality sample collected in July 2013.	
COOPER	623564	Cooper	Well Inventory	325	N	Y	Water quality sample collected in July 2013. Unable to measure water level because wellhead is inaccessible.	
COOPER C	637069	Copper Queen Branch	Plume	220	Y	Υ	Water quality sample collected in August 2013.	
DODSON	644927	Dodson	Well Inventory	200	Y	Υ	Water quality sample collected in July 2013.	
DOUGLASS 791	592791	Douglass	Plume	200	Y	N	Well identified for water level measurements only. Water level measured in July 2013.	
DOUGLASS 792	592792	Douglass	Plume	200	Y	N	Well identified for water level measurements only. Water level measured in July 2013.	
DURAZO	NR	Durazo	Plume	ND	N	N	Well is not operational. Unable to measure water level because wellhead is inaccessible.	
EAST	599796	East	Well Inventory	125	Υ	Υ	Water quality sample collected in July 2013.	



Well Name	ADWR 55 Registry Number	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status	
ECHAVE	219449	Echave	Well Inventory	345	N	Υ	Water quality sample collected in July 2013. Unable to measure water level because of obstruction in well.	
EPPELE 641	805641	Eppele	Well Inventory	265	Υ	Υ	Water quality sample collected in July 2013.	
FLEMING	218386	Fleming	Plume	400	Υ	N	Well identified for water level measurements only. Water level measured in July 2013.	
FRANCO 101	500101	Franco	Plume	200	Υ	N	Water level measured in July 2013. Unable to collect water quality sample because well is not operational.	
FRANCO 383	221383	Franco	Well Inventory	711	Υ	Υ	Water quality sample collected in July 2013.	
FULTZ	212447	Fultz	Well Inventory	300	N	N	Water quality sample not collected per owner request. Unable to measure water level due to obstruction in well.	
GARNER 557	558557	Garner	Plume	300	Y	N	Well identified for water level measurements only. Water level measured in July 2013.	
GARNER 635	587635	Garner	Well Inventory	680	Υ	Υ	Water quality sample collected in July 2013.	
GGOOSE 547	628547	Copper Queen Branch	Plume	800	N	N	Well abandoned October 2012.	
GOAR RANCH	610695	Goar	Plume	250	Y	N	Well identified for water level measurements only. Water level measured in September 2013.	
HOBAN	805290	Copper Queen Branch	Plume	316	Y	Υ	Water quality sample collected in August 2013.	
HOWARD NR	NR	Howard	Plume	200	Υ	Υ	Water quality sample collected in July 2013.	
HOWARD 312	221312	Howard	Well Inventory	980	Υ	Υ	Water quality sample collected in July 2013.	
KEEFER	209744	Keefer	Well Inventory	245	Υ	Υ	Water quality sample collected in July 2013.	
LADD 251	520251	Ladd	Regional	280	Υ	N	Well is not part of the groundwater monitoring plan. Water level measured in September 2013.	
LADD 538	503538	Ladd	Regional	282	Υ	N	Well is not part of the groundwater monitoring plan. Water level measured in September 2013.	
LADD 837	519837	AZ State Land	Regional	460	Υ	N	Well is not part of the groundwater monitoring plan. Water level measured in September 2013.	
LADD 977	642977	Ladd	Regional	165	Υ	N	Well is not part of the groundwater monitoring plan. Water level measured in September 2013.	
MARCELL	NR	Marcell	Well Inventory	220	N	Υ	Water quality sample collected in July 2013. Unable to measure water level because there is no port in the wellhead.	
MCCONNELL 265	539265	McConnell	Plume	216	N	Y	Water quality sample collected in July 2013. Unable to measure water level due to obstruction in well.	
MCCONNELL 459	221459	McConnell	Well Inventory	863	Y	Y	Water quality sample collected in July 2013.	
METZLER	35-71891	Metzler	Plume	351	Y	N	Water level measured in July 2013. Unable to collect water quality sample because well is not operational.	
MOORE	538847	Moore	Well Inventory	220	N	Υ	Water quality sample collected in July 2013. Unable to measure water level because wellhead is inaccessible.	
NESS	509127	Ness	Well Inventory	812	N	Υ	Water quality sample collected in July 2013. Unable to measure water level because of obstruction in well.	



Well Name	ADWR 55 Registry Number	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status	
NOTEMAN	212483	Bailey	Well Inventory	400	N	Υ	Water quality sample collected in July 2013. Unable to measure water level because wellhead is inaccessible.	
NSD-02	527587	Naco Sanitary District	Regional	120	Υ	N	Well is not part of the groundwater monitoring plan. Water level measured in September 2013.	
NSD-03	527586	Naco Sanitary District	Regional	100	Υ	N	Well is not part of the groundwater monitoring plan. Water level measured in September 2013.	
NWC-02	562944	Naco Water Company	Well Inventory	312	N	Υ	Water quality sample collected in July 2013. Unable to measure water level because well was pumping.	
NWC-03	203321	Naco Water Company	Well Inventory	312	N	N	Well abandoned in first quarter 2013.	
NWC-03 CAP	627684	Naco Water Company	Plume	179	Υ	N	Well identified for water level measurements only. Water level measured in July 2013.	
NWC-04	551849	Naco Water Company	Well Inventory Sulfate Trend	795	N	Y	Water quality samples collected in July, August, and September 2013. Unable to measure water level because of obstruction in well.	
NWC-06	575700	Naco Water Company	Well Inventory	410	N	Y	Water quality sample collected in July 2013. Unable to measure water level because well was pumping.	
OSBORN	643436	Osborn	Well Inventory	258	N	Y	Water quality sample collected in July 2013. Unable to measure water level because wellhead is inaccessible.	
PALMER	578819	Palmer	Well Inventory	220	N	Y	Water quality sample collected in July 2013. Unable to measure water level because wellhead is inaccessible.	
PANAGAKOS	35-76413	Panagakos	Well Inventory	200	Y	Y	Water quality sample collected in July 2013.	
PARRA	576415	Parra	Plume	355	N	Y	Water quality sample collected in July 2013. Unable to measure water level because wellhead is inaccessible.	
PIONKE 395	613395	Pionke	Plume	300	Y	N	Water level measured in July 2013. Unable to collect water quality sample because well is not operational.	
PIONKE 517	221517	Pionke	Well Inventory	604	Y	Y	Water quality sample collected in July 2013.	
POOL	509518	Pool	Well Inventory	313	N	N	Unable to contact well owner for access.	
RAMIREZ	216425	Ramirez	Well Inventory	300	N	Y	Water quality sample collected in July 2013. Unable to measure water level because of obstruction in well.	
RAY	803772	Ray	Well Inventory	100	Y	Y	Water quality sample collected in July 2013.	
ROGERS 596	573596	Rogers, David	Plume	290	Y	N	Well is turned off. Rogers residence uses ROGERS 803. Water level measured in July 2013.	
ROGERS 803	641803	Rogers, David	Well Inventory	140	N	Y	Water quality sample collected in July 2013. Unable to measure water level because wellhead is inaccessible.	
ROGERS E	216018	Rogers, Ernest	Well Inventory	290	Y	Y	Water quality sample collected in July 2013.	
RUIZ	531770	Ruiz	Well Inventory	312	Y	Y	Water quality sample collected in July 2013.	
SCHWARTZ	210865	Schwartz	Well Inventory	305	Y	Y	Water quality sample collected in July 2013.	
STEPHENS	808560	Stephens	Plume	NR	Y	N	Well identified for water level measurements only. Water level measured in July 2013.	
SUNBELT	201531	Sunbelt Marketing, Inc.	Plume	380	N	N	Well identified for water level measurements only. Well level was not measured due to well being dry.	



Well Name	ADWR 55 Registry Number	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status	
SWAN	NR	Swan	Well Inventory	NR	Y	Y	Water quality sample collected in July 2013.	
THOMPSON 151	612151	Thompson	Plume	NR	Y	N	Well identified for water level measurements only. Water level measured in August 2013.	
THOMPSON 341	218341	Thompson	Well Inventory	285	N	Y	Water quality sample collected in August 2013. Unable to measure water level because there is no port in the wellhead.	
TM-02A	522574	Copper Queen Branch	Plume	925	Y	Y	Water quality sample collected in July 2013.	
TM-06 MILLER	522695	Miller	Plume	200	Y	Y	Water quality sample collected in August 2013.	
TM-07	522576	Copper Queen Branch	Plume	350	N	Y	Water quality sample collected in August 2013. Unable to measure water level because of obstruction in sounding port.	
TM-10 USBP	522696	USBP	Regional	290	Y	Y	Well is not part of the groundwater monitoring plan. Water quality sample collected in July 2013.	
TM-15 MILLER	522699	Miller	Plume	325	N	Y	Water quality sample collected in September 2013. Unable to measure water level because of obstruction in sounding port.	
TM-16	522578	Copper Queen Branch	Plume	115	Y	Y	Water quality sample collected in August 2013.	
TM-19A	522580	Copper Queen Branch	Plume	700	Y	Y	Water quality sample collected in September 2013.	
TM-42	562554	Copper Queen Branch	Plume	250	Y	Y	Water quality sample collected in August 2013.	
TVI 236	802236	Turquoise Valley, Inc.	Well Inventory	222	Y	Y	Water quality sample collected in July 2013.	
TVI 713	567713	Turquoise Valley, Inc.	Well Inventory	200	Y	N	Well identified for water level measurements only. Water level measured in July 2013.	
TVI 875	568875	Turquoise Valley, Inc.	Plume	330	N	Y	Water quality sample collected in July 2013. Unable to measure water level because wellhead is inaccessible.	
WEED	544535	Weed	Well Inventory	320	N	Y	Water quality sample collected in July 2013. Unable to measure water level because there is no port in the wellhead.	
WEISKOPF 802	641802	Weiskopf	Plume	200	Y	Y	Water quality sample collected in July 2013.	
WEISKOPF 897	221897	Weiskopf	Well Inventory	947	Y	Y	Water quality sample collected in July 2013.	
ZANDER	205126	Zander	Well Inventory	280	Y	Y	Water quality sample collected in July 2013.	

35-71891 = ADWR 35 Database

ADWR = Arizona Department of Water Resources

bls = below land surface

N = No

ND = No Data

NR = No Record

Y = Yes



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		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
ANDERSON 396	613396	7/19/10	6.93	24.1	1420	648
		10/19/10	7.03	20.6	1229	416
		1/17/11	7.02	20.6	1334	562
		4/11/11	6.92	15.1	1485	609
		7/14/11	7.23	24.4	1451	678
		10/11/11	6.65	21.2	1230	543
		2/1/12	7.28	11.8	1360	551
		4/25/12	7.10	23.9	1380	657
		7/12/12	6.89	24.9	1520	667
		10/10/12	7.40	24	1414	574
		9/9/12	8.34	25.9	406.3	31
		10/10/12	8.13	23.8	412.3	30.3
ANDERSON 458	221458	1/17/13	8.06	23.7	416.0	30.9
		4/15/13	8.19	23.5	402.7	32.3
		7/18/13	8.18	24.3	401.9	23.0
		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
AWC-02	616586	11/4/10	7.72	21.3	465.9	18.8
		1/19/11	7.84	19.0	500	18.4
		4/7/11	7.27	20.3	488.5	17.3
		7/13/11	5.93	23.9	431.5	12.9
		10/13/11	6.72	25.1	464.6	17.4
		10/13/11 DUP	6.72	25.1	464.6	17.4
		2/2/12	7.20	20.8	479.5	19.4
		4/24/12	7.23	23.0	430	15.5
		7/5/12	7.25	22.1	437.1	10.1
		10/18/12	7.48	21.6	473.6	13.0
		2/5/13	7.54	19.3	448.9	18.0
		4/11/13	7.53	22.1	471.3	17.2
		7/25/13	7.35	22.1	460.5	14.7



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		1/7/08	ND	ND	ND	41
		3/3/08	ND ND	ND ND	ND ND	38
		5/5/08	ND	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
AWC-03	616585	11/4/10	7.80	20.8	452.3	46.3
		1/19/11	7.07	19.6	560	49.0
		4/7/11	7.28	19.9	469.8	46.8
		7/13/11	6.33	23.1	458.8	47.6
		7/13/11 DUP	6.33	23.1	458.8	46.2
		10/13/11	6.69	23.8	463.6	48.8
		2/2/12	7.39	20.7	504.8	47.7
		4/24/12	7.28	22.1	450	51.8
		7/5/12	7.32	21.7	474.3	50.7
		10/18/12	7.44	21.3	477.4	51.3
		2/5/13	7.73	19.2	481.2	55
			22.2	486.4	66.1	
		7/16/13	7.61	21.5	489.6	63.6
		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
AWC-04	616584	11/4/10	7.41	20.3	593.2	24.0
		1/19/11	8.15	20.5	690	26.2
		4/7/11	7.00	20.4	637.2	25.8
		7/13/11	6.88	20.4	610.1	25.7
		10/13/11	6.38	24.0	619.7	27.6
		2/2/12	6.97	20.1	637.6	27.2
		4/24/12	7.10	22.1	570	25.2
		7/5/12	7.03	21.6	568.0	28.2
		7/5/12 DUP	7.03	21.6	568.0	28.1
		10/18/12	7.20	20.8	606.7	26.6
		2/5/13	7.29	19.7	616.8	26.9
		4/11/13	7.38	21.7	595.4	26.2
	1	7/16/13	7.30	21.0	585.7	27.0



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

### APPLIED NO	Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
## AF7/08 ND ND ND 14.3  ## B1/208 6.7/4 23.3 425 14.9  ## B1/208 7.45 21.0 422 14.9  ## B1/209 7.31 22.1 398 16.5  ## B1/209 7.31 22.1 398 16.5  ## B1/209 7.31 22.1 398 16.5  ## B1/209 7.39 24.4 423 14.1  ## B1/2109 7.37 21.1 433 14.5  ## B1/2109 7.32 18.9 44.3 17.5  ## B1/2010 7.62 24.2 44.0 19.1  ## B1/2010 7.62 24.2 44.0  ## B1/2010 7.62 20.7 427.1 19.4  ## B1/2010 7.62 20.8 438.3 17.6  ## B1/2010 7.62 20.8 438.3 17.6  ## B1/2010 7.62 20.8 438.3 17.6  ## B1/2010 7.62 20.9 44.8  ## B1/2010 7.62 20.9 44.7  ## B1/2010 7.62 20.9 45.8  ## B1/2010 7.63 20.9 45.8  ## B1/2010 7.63 20.9 45.8  ## B1/2010 7.63 20.9 45.8  ## B1/2010 7.66 21.3 454.5 10.7  ## B1/2010 7.66 21.3 454.5 10.7  ## B1/2010 7.60 22.4 948.7 734  ## B1/2010 7.70 23.2 80.3 71.8  ## B1/2010 7.70 23.2 80.3 80.9 80.9  ## B1/2010 7.70 23.2 80.3 80.9 80.9  ## B1/2010 7.70 23.2 80.3 80.9  ## B1/2010 7.70 23.2 80.3 80.9  ## B1/2010 7.70 23.2 80.0 80.9  ## B1/2010 7.			2/4/08	ND	ND	ND	13
81/20/8   6.74   23.3   425   14.9     10/23/08   7.45   23.0   422   15.4     3/11/109   7.31   22.1   398   16.5     6/309   7.33   22.0   418   12.1     7/22/09   7.49   24.4   423   14.1     10/21/09   7.49   24.4   423   14.1     10/21/09   7.37   21.1   433   16.5     2/31/10   7.35   19.3   438   16.3     4/23/10   7.55   19.3   438   16.3     4/23/10   7.62   24.2   440   19.1     4/23/10   7.62   24.2   440   19.1     4/23/10   7.62   24.2   440   19.1     4/23/11   7.64   20.3   42.3   17.6     4/7/11   7.64   20.3   42.3   17.6     4/7/11   7.64   20.3   42.3   17.6     4/7/11   7.64   20.3   42.5   19.1     1/16/3/11   6.82   22.9   49.8   17.6     4/24/12   7.16   21.4   42.7   19.5     4/24/12   7.16   21.4   43.0   15.4     4/24/12   7.16   21.4   43.0   15.4     1/16/3/11   7.54   22.6   432.1   19.1     10/18/12   7.66   22.6   438.1   20.1     2/5/13   7.57   20.2   437.7   20.1     4/11/13   7.54   21.2   444.5   20.3     7/16/13   50.9   7.56   21.3   454.5   18.0     7/16/13   50.9   7.56   21.3   454.5   18.0     7/16/13   50.9   7.56   21.3   454.5   18.0     7/16/13   50.9   7.56   21.3   454.5   18.0     7/16/13   50.9   7.56   21.1   10.3   65.2     10/13/08   7.26   21.7   980   5.3     10/13/08   7.26   21.7   980   5.3     10/13/08   7.56   22.7   933   47.5     10/13/08   7.56   22.7   933   77.5     10/13/08   7.56   22.7   933   77.5     10/13/08   7.76   22.2   88.3   77.5     10/13/08   7.76   22.2   88.3   77.5     10/13/08   7.76   22.1   50.3   50.3     7/20/10   7.70   22.2   88.3   77.5     10/13/08   7.56   22.7   940   7.64     4/8/09   7.56   22.7   940   7.64     4/8/09   7.56   22.7   940   7.64     4/8/09   7.56   22.7   940   7.64     4/8/11   7.77   22.0   10.7   64.9     4/11/12   7.77   22.0   10.7   64.9     4/11/12   7.77   22.0   854.4   76.6     1/8/10   7.66   23.7   940   7.6     4/8/11   7.76   22.1   10.7   64.9     4/8/11   7.76   22.2   23.7   940   7.6     4/8/11   7.76   22.2   23.7   940   7.6     4/8/11   7.76   22.2   23.7   940   7.6     4/8/11							
102/308			6/2/08	ND	ND	ND	14.3
3/11/109			8/12/08	6.74	23.3	425	14.9
B6309			10/23/08	7.45	21.0	422	15.4
10/21/09			3/11/09		22.1	398	
AWC-05							
AWC-05							
AWC-05							
AWC-05							
AWC-05    11/4/10							
1/19/11	AVA/C 05	500000					
### ### ### ### ### ### ### ### ### ##	AVVC-U5	590620					
T/13/11   6.52   22.9   419.8   17.9							
10/13/11   6.82   26.0   427.5   19							
22/12							
### AIR ### AI							
176/12							
10/18/12							
2/5/13							
### ### ##############################							
### Title   Ti							
7/16/13 DUP							
2/27/08							
S12/08							
10/13/08							
10/13/08							
1/21/09							
## Algorithms							
179/09							
10/7/09							
BANKS 986						838	
BANKS 986  647986  648.8  649.0  688.8  610/12/11  649.9  649.0  64					21.1		
BANKS 986  647986  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  1/31/2012 DUP  7.69  20.2  1017  64.3  1/31/2012 DUP  7.69  20.2  1017  64.9  4/11/12  7.77  22.0  1025  64.0  7/6/12 DUP  7.66  23.7  940  77.9  10/4/12  7.73  22.0  845.4  62.6  1/18/13  7.82  21.9  832.4  70.5  4/8/13  7.87  20.7  861.7  62.9  7/9/13  8.04  22.9  769.1  67.9  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  4/7/10  5.83  20.4  1853  1450  7/6/10  5.93  2/1/10  5.93  22.6  1403  1310  7/13/11  6.26  21.13  2960  1350  2/1/12  6.18  19.8  2910  1480			4/20/10	7.71	22.8	1013	53.9
BANKS 986  647986  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  1/31/20 7.69 20.2 1017 64.3  1/31/21 7.77 22.0 1025 64.0  7/6/12 7.66 23.7 940 78.6  7/6/12 0UP 7.66 23.7 940 77.9  10/4/12 7.73 22.0 845.4 62.6  1/18/13 7.82 21.9 832.4 70.5  4/8/13 7.82 21.9 832.4 70.5  4/8/13 7.87 20.7 861.7 62.9  7/9/13 8.04 22.9 769.1 67.9  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  8/17/09 6.21 29.7 2948 1250  8/17/09 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			7/20/10	7.70	23.2	828.3	71.5
A45/11			10/20/10	7.60	22.4	948.7	73.4
7/11/11	BANKS 986	647986	1/17/11	7.73	20.6	1038	53.5
10/12/11			4/5/11	7.66	21.5		64.5
1/31/12					25.4	890.0	
1/31/2012 DUP			10/12/11	7.88	21.2	1551	172
## A							
From 16       539783       7/6/12       7.66       23.7       940       78.6         7/6/12 DUP       7.66       23.7       940       77.9         10/4/12       7.73       22.0       845.4       62.6         1/18/13       7.82       21.9       832.4       70.5         4/8/13       7.87       20.7       861.7       62.9         7/9/13       8.04       22.9       769.1       67.9         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         8/17/09       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 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
7/6/12 DUP     7.66     23.7     940     77.9       10/4/12     7.73     22.0     845.4     62.6       1/18/13     7.82     21.9     832.4     70.5       4/8/13     7.87     20.7     861.7     62.9       7/9/13     8.04     22.9     769.1     67.9       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       BF-01     539783     11/4/09     6.24     23.0     2846     1280       4/7/10     5.83     20.4     1853     1450       7/6/10     5.93     22.6     1403     1310       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							
BF-01    10/4/12							
BF-01 539783 1/16/10 5.83 20.4 21.9 832.4 70.5 22.9 76.91 67.9 29.48 1250 27.10 5.83 20.4 1853 1450 27.17 29.17 29.45 1260 47.710 5.83 20.4 1853 1450 27.17 29.45 1260 27.17 29.46 1350 27.17 29.46 1350 27.17 29.46 1350 27.17 29.4							
## All ##							
BF-01 539783 11/4/09 6.24 23.0 2846 1280 3/1/10 5.83 20.4 1853 1450 47/1/10 5.83 20.4 1853 1450 1310 7/1/3/11 6.26 21.3 2960 1350 2/1/12 6.18 19.8 2910 1480							
BF-01							
BF-01							
BF-01 539783 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 3/1/10 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							
BF-01 539783 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							
BF-01 539783 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 23/11/10 6.34 21.1 2945 1260 4/7/10 5.83 20.4 1853 1450 76/6/10 5.93 22.6 1403 1310 7/13/11 6.26 21.3 2960 1350 2/11/12 6.18 19.8 2910 1480							
BF-01 539783 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		-					
BF-01 539783 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		-					
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	RE 01	530702					
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	DC-01	009100					
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		}					
7/13/11         6.26         21.3         2960         1350           2/1/12         6.18         19.8         2910         1480		-					
2/1/12 6.18 19.8 2910 1480							
		}					
		}	8/14/12	6.00	21.5	3000	1500



Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		2/6/08	6.69	22.2	1335	210
		4/25/2008 <sup>1</sup>	6.37	23.1	1521	190
		5/13/2008 <sup>1</sup>	6.58	22.7	1489	195
		6/23/2008 <sup>1</sup>	6.30	23.3	1572	225
		6/23/08 DUP	6.30	23.3	1572	196
		7/29/2008	6.44	23.0	1647	204
		8/28/2008 <sup>1</sup>	М	23.0	1776	256
		9/23/2008 <sup>1</sup>	6.29	23.0	1741	296
		10/22/08	6.41	22.3	1801	285
		1/20/09	6.40	21.7	1233	190
		1/20/09 DUP	6.40	21.7	1233	200
		4/7/09	6.45	23.4	1436	212
		7/8/09 10/5/09	6.31 6.34	23.4 22.7	1483 1525	189 233
BIMA	577927	1/20/10	6.88	17.0	M	222
BIIVIA	311321	4/19/10	6.70	21.9	1533	256
		7/12/10	6.70	24.0	1577	273
		10/18/10	6.47	24.3	1702	296
		1/19/11	6.65	21.2	1672	283
		4/4/11	6.61	24.0	1643	282
		8/25/11	6.27	25.9	1460	300
		10/10/11	6.5	24.1	1520	322
		2/3/12	6.48	18.5	1540	312
		4/23/12	6.57	23.9	1790	303
		7/10/12	6.06	23.7	1200	301
		11/29/12	6.51	20.6	1664	310
		3/13/13	7.29	19.8	1175	317
		4/10/13	6.64	13.9	1569	308
		7/8/13	6.62	28.0	1580	301
		2/5/08	7.43	20.2	714	206
		4/21/2008 <sup>1</sup>	7.06	21.9	753	201
		5/15/2008 <sup>1</sup>	7.16	22.2	845	211
BLOMMER	633472	6/23/2008 <sup>1</sup>	6.93	21.5	903	193
BEOWNIER	000472	7/29/2008 <sup>1</sup>	7.21	22.2	921	203
		8/27/2008 <sup>1</sup>	7.12	22.1	864	189
		9/23/2008 <sup>1</sup>	7.16	22.3	818	193
		10/22/08	7.17	21.3	873	200
		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
BMO-2008-1G	909474	4/15/10 7/7/10	7.04	22.2	711 640	95.2 88.1
		7/7/10 DUP	6.91 6.91	21.5	640	87.1
	ŀ	2/10/11	6.80	21.5 21.0	916	105
		7/12/11	7.2	26.6	1015	121
		2/8/12	7.02	20.2	869	116
	}	8/14/12	6.97	21.9	959	120
		2/14/13	7.09	21.2	986	112
		8/14/13	6.96	21.6	1009	120
		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
BMO-2008-3B	909147	3/3/10	7.38	21.4	695	164
		4/8/10	6.47	21.3	585	162
		7/1/10	6.92	21.4	541	157
		2/14/11	6.98	20.6	698	169
		7/12/11	7.04	21.4	672	148
		2/23/12	6.92	21.0	695	173
		7/10/12	7.02	21.5	651	150
		2/15/13	6.63	20.4	692	163
		8/27/13	7.1	21.1	725	170



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
	Number				" ,	
		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
BMO-2008-4B	910096	4/16/10	7.70	23.4	330	9.73
DIVIO-2000-4B	910090	7/2/10	7.25	23.6 22.2	323 362	10.10 8.90
	-	2/15/11 7/22/11	7.65 7.33	23.7	371	10.2
		2/23/12	7.21	22.3	354	10.5
		8/15/12	6.96	23.6	380	9.5
		1/15/13	7.63	22.7	370.2	10.3
		1/15/13 DUP	7.63	22.7	370.2	9.5
	l l	4/15/13	7.75	23.0	368.2	11.2
		9/18/13	7.69	23.4	384.6	9.84
		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
	l l	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
	l l	2/15/10	7.22	21.7	720	185
	l l	4/15/10	7.21	23.0	571	194
	l l	7/7/10	6.94	22.2	551	183
	l l	10/5/10	6.85	22.3	722	201
DMO 0000 FD	200050	2/14/11	6.90	21.8	725	203
BMO-2008-5B	909653	5/12/11	7.06	21.5	722	195
		7/13/11	6.99	22.0	712	200
		12/7/11	6.95	19.9	730	213
		2/3/12	7.16	20.2	726	215
		4/18/12	6.96	21.7	712	192
		7/10/12	6.87	21.5	726	218
		10/16/12	6.69	21.4	712	207
		2/7/13	7.40	21.4	771.4	229
		2/12/13	6.49	20.7	752	227
		5/15/13	7.01	21.8	742	220
		8/20/13	7.00	21.7	792	226
		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
DMO 2000 FM	000550	10/5/10	6.81	22.5	602	127
BMO-2008-5M	909552	2/14/11	6.95	22.2	591	124
		5/12/11	7.16	23.0	558	119
		7/12/11	7.22	22.7	590	126
		12/7/11	7.1	21.2	601	129
		2/3/12	6.99	21.5	589	130
		4/18/12	6.71	22.4	587	120
		7/10/12	6.82	22.4	592	135
		10/16/12	6.86	21.9	591	134
		2/12/13 5/15/13	6.65 6.73	21.6 22.4	610 603	139 135



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
BMO-2008-6B	909146	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
	1	7/10/12	6.86	21.2	328	21.9
		10/16/12	6.79 6.87	21.5	342 339	19.9 16.2
		2/12/13		20.7	297	
		5/15/13 8/20/13	6.87 7.36	21.2 21.5	310	12.7 10.6
		7/10/08	7.36 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	7.11	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
BMO-2008-6M	909019	2/14/11	6.80	21.3	731	202
	-	5/12/11	7.12	21.9	709	189
		7/12/11	7.06	21.8	709	194
		12/7/11	6.94	21.3	710	200
		2/3/12	7.03	21.2	720	206
		4/18/12	7.01	21.4	701	188
		7/10/12	6.67	21.4	702	208
		10/16/12	6.89	21.8	708	207
		2/12/13	6.71	20.5	740	204
		5/8/13	7.01	21.9	726	212
		8/20/13	6.99	21.7	772	213
	]	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
	1	2/17/10	7.57	23.4	452	25.4
	1	2/17/10 DUP	7.57	23.4	452	25.0
BMO-2008-7M	908794	4/15/10	7.52	23.2	415	26.0
	1	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
	1	7/15/11	7.1	22.8	466	26.5
	1	1/30/12	7.16	22.0	454	26.4
		7/11/12	7.18	22.7	455	28.1
		2/15/13	7.23	21.8	471	25.8
		8/28/13	7.15	22.9	494	27.7



Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolv (mg/L)
		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
BMO-2008-8B	910097	4/16/10	6.06	21.4	1682	1470
		7/1/10	6.10	21.4	1594	1440
		7/15/11	6.21	21.2	2940	1380
		1/30/12	6.22	21.2	2880	1480
		1/30/12 DUP	6.22	21.2	2880	1480
		7/12/12	6.41	21.1	2860	1440
		2/13/13	6.25	20.7	2830	1330
		8/12/13	6.38	21.3	2780	1420
		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				
BMO-2008-8M	909711		7.29	24.5	541	97.0
		7/1/10	6.99	25.0	502	94.7
		1/24/11	7.05	23.4	595	98.2
		7/15/11	6.89	22.1	590	79.9
		1/30/12	7.36	23.9	565	77.6
		7/12/12	7.15	24.2	554	73.1
		7/12/12 DUP	7.15	24.2	554	73.2
		2/14/13	7.1	24.3	565	64.9
		8/12/13	7.19	24.6	585	65.0
		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
BMO-2008-9M	909255	4/6/10	6.74	23.8	484	60.1
		7/1/10	7.40	24.6	425	61.0
		2/10/11	6.79	24.0	520	64.2
		7/15/11	7.56	24.3	516	67
		2/1/12	7.54	22.4	516	67.4
		7/12/12	7.68	24.2	513	68.9
		2/13/13	7.37		531	68.2
				23.8		
		8/12/13	7.47	24.2	553	71.1
		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
BMO-2008-10GL	909435	4/8/10	6.03	25.6	1575	1260
		7/2/10	6.16	26.3	1338	1020
		7/13/11	6.32	24.8	1726	644
		2/2/12	6.45	24.8	1600	624
		7/13/12	6.71	25.7	1571	545
		2/18/13	6.45	25.4	1530	498
		2/18/13 DUP	6.45	25.4	1530	494
		8/13/13	6.57	25.5	1586	520
		8/4/08	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
BMO-2008-10GU	909272	11/2/09	6.27	21.8	3157	1730
		3/10/10	6.67	19.1	3951	1700
	1	4/7/10	5.96	20.4	3210	1510
	,					
		7/6/10	5.90	21.8	1610	1670
		7/6/10 7/13/11 2/1/12	5.90 6.12	21.8 22.3	1610 3890	1670 1670 1870



Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		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
BMO-2008-11G	909434	4/9/10	6.88	24.5	301 298	13.0
	-	7/1/10 2/10/11	6.97 6.99	25.4 24.0	327	12.3 11.7
		7/22/11	7.26	24.6	331	12.1
		7/22/11 DUP	7.26	24.6	331	12.0
		1/31/12	7.41	24.1	328	11.9
		8/14/12	7.35	24.6	337	12.3
		2/13/13	7.54	24.2	343	11.9
		8/27/13	7.48	24.9	363	12.2
		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
BMO-2008-13B	909551	4/14/10	6.38	21.2	1346	974
		7/6/10	6.37	21.8	1208	972
		7/15/11	6.44	20.8	2160	1010
		2/9/12	6.68	20.3	2180	1060
	-	7/11/12	6.55	21.2	2190	1080
		2/27/13	6.54	20.3	2160	1090
		9/4/13	6.57	20.8	2070	1050 494
		12/3/08 2/17/09	7.73 8.21	24.1 22.7	1463 1340	494
		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
BMO-2008-13M	909760	4/13/10	8.06	23.2	1130	398
		7/2/10	8.30	23.9	1027	386
		7/15/11	8.4	23.4	1331	388
		2/6/12	8.47	23.2	1300	ND
		8/13/12	8.75	24.2	1311	397
		2/15/13	8.8	22.4	1280	383
		9/6/13	8.81	23.8	1300	402
		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
DMC 0040 444	040057	12/13/11	7.63	21.3	713	149
BMO-2010-1M	219957	2/8/12	7.69	22.0	605	158
		4/24/12	7.08	23.4	701	150
		7/9/12	6.37	24.3	715	161
		10/17/12	7.40	23.9	699	154
		2/13/13 5/8/13	7.09 7.12	22.2 22.5	712 725	152 160
		8/15/13	7.12	23.5	767	156
		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
BMO-2010-2M	219958	1/30/12	6.41	21.4	2180	989
		4/18/12	6.48	21.2	2170	893
		7/9/12	6.41	21.8	2190	1030
		10/17/12	6.60	21.3	2200	998
		2/13/13	6.45	21.0	2190	962
		5/8/13	6.42	21.0	2160	996
	1 H	8/15/13	6.58	21.2	2157	978



Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolv (mg/L)
		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
BMO-2010-3B	219970	2/2/12	7.52	20.4	400.2	16.9
20 20.0 02	2.55.5	2/2/2012 DUP	7.52	20.4	400.2	17.1
		4/24/12	7.30	21.8	390	16.0
		7/5/12	7.51	22.4	419.1	15.7
		10/18/12	7.58	21.6	411.9	17.0
		1/16/13	7.58	20.8	420.5	17.4
		4/16/13	7.65	21.2	415.1	17.5
		7/23/13	7.67	21.8	420.0	19.8
		7/31/10	7.73	24.3	390	14.8
		11/10/10	7.66		340	12.6
				21.8		
		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
BMO-2010-3M	219969	2/2/12	7.68	22.0	367.1	10.6
		4/24/12	7.49	23.9	370	10.1
		7/5/12	7.66	23.7	381.8	10.3
		10/18/12	7.71	23.3	379.9	10.4
		1/16/13	7.68	22.1	383.1	10.0
		4/16/13	7.83	22.3	383.7	10.2
		4/16/2013 DUP	7.83	22.3	383.7	10.2
		7/23/13	7.80	23.4	386.0	10.7
		11/13/12	7.55	21.3	933.7	231
5140 0040 414	201000	2/27/13	6.97	22.4	793	205
BMO-2012-1M	221388	5/8/13	6.77	22.9	814	197
		8/14/13	7.09	22.9	858	202
		1/5/13	7.67	18.5	574.3	91.4
BOOTH	914931	6/14/13	7.61	51.1	604.2	95
		6/14/13 DUP	7.61	51.1	604.2	92.5
		7/17/13	7.75	23.2	497.6	75.0
		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
BURKE	212268	4/28/09	7.16	26.1	369	24.2
BOTTILE	212200	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
		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
0114445555	22222	10/19/10	8.00	23.0	440	7.04
CHAMBERS	629807	1/18/11	7.47	22.4	390	7.30
		4/11/11	7.18	22.0	427.3	7.74
		7/18/11	7.18	23.8	420.2	8.18
		10/12/11	7.33	22.6	425.8	7.8
		2/6/12	7.43	21.8	434.6	9.08
		4/23/12	7.46	22.7	460	8.84
		7/17/12	7.31	22.4	410	8.41
		10/8/12	7.44	22.4	430.0	10.1
		1/10/13	7.57	21.5	440.8	9.64
			7.49	21.7	434.1	9.78
		4/18/13				
	1	7/15/13	7.40	22.7	434.6	9.81
		7/15/13 DUP	7.40	22.7	434.6	10.2



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH	Temp	SC (µS/cm)	Sulfate, dissolved
	Number		(SU)	(deg C)	(µS/cm)	(mg/L)
		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
COB MW-1	903992	7/22/09 DUP	6.94	21.6	1570	730
		10/22/09	6.81	22.3	1582	820
		2/4/10	7.04	21.1	1653	680
		4/20/10	6.92	21.8	1836	783
		7/13/10	7.02	22.3	2004	919
	-	7/14/11	6.78	21.4	1924	927
	-	7/12/12	6.74	23.4	1760	805
	-	2/5/13	6.95	21.5	1773	877
		7/11/13	7.17	21.4	1858	842
	-	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
000 1000	22224	3/3/10	7.55	19.7	450	33.5
COB MW-2	903984	4/26/10	7.28	21.3	479.6	34.8
		7/13/10	6.91	21.2	479.5	30.4
		7/13/10 DUP	6.91	21.2	479.5	30.6
		1/20/11	7.47	20.7	440	29.6
		7/14/11	7.11	21.1	472.6	29.8
		1/31/12	7.53	20.3	466.6	30.0
		7/12/12	7.36	21.2	630	29.2
		1/9/13	7.48	20.0	473.5	35.8
		7/25/13	7.34	20.9	485.4	40.6
		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
000 1444	000000	4/23/09	7.35	22.6	407	43.7
COB MW-3	906823	7/22/09	7.38	21.5	460	52.3
		10/22/09	7.40	21.3	466	74.2
		10/22/09 DUP	7.40	21.3	466	73.9
		3/3/10	7.36	21.1	480	102
		4/26/10	7.35	22.0	497.9	77.6
		7/13/10	7.41	21.7	456.7	46.5
		7/14/11	7.19	21.8	440.0	40.1
		7/12/12	7.34	21.4	450	39.5
		2/5/13	7.60	20.4	476.4	65.1
		2/5/13 DUP	7.60	20.4	476.4	64.7
		7/25/13	7.42	21.4	485.0	66.6



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
	Number		* *	, , ,	. ,	, , ,
		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 1075	107
		10/23/08	7.23	21.4	1075	104
		2/12/09	6.98	20.6	814 923	94
COB WL	593116	4/23/09 7/22/09	7.29 7.17	22.2	1037	98 97.3
		10/22/09	7.17	22.5 22.4	988	97.3
		3/3/10	7.17	22.4	1030	96.1
		4/26/10	7.36	21.9	1030	97.7
		4/26/10 DUP	7.36	21.9	1038	97.9
		7/13/10	7.18	22.3	1013	88.7
		7/13/10	6.91	21.6	1019	87.3
		7/12/12	7.07	23.2	1060	92.0
		2/5/13	7.91	21.5	1057	98.3
		7/25/13	7.23	22.7	1074	97.6
		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
COLLINS	505000	4/21/09	6.92	22.5	1150	499
COLLINS	565260	7/22/09	7.00	22.4	1413	460
		10/20/09	6.60	21.9	1432	513
		2/2/10	6.98	21.2	1439	471
		4/23/10	6.99	20.6	1472	561
		7/20/10	6.69	25.0	1420	569
		7/17/13	6.97	21.6	1409	519
		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
COODED	000504	7/19/10	7.98	29.3	420	35.0
COOPER	623564	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 34.1
		2/1/12	7.97 7.41	21.8 22.4	429.2	34.1
		4/10/12 7/18/12	7.41		426.8 430	32.5
		10/9/12	7.45	22.9 22.1	430	33.4
		1/11/13	7.76	22.1	432.8	34.3
		4/10/13	7.76	21.5	434.1 427.5	32.7



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
COOPER C	637069	4/22/10	6.76	19.5	1921	884 921
COOPERC	037009	7/21/10 10/20/10	6.84 7.16	22.9 20.9	1761 1980	829
		1/17/11	6.95	20.5	1880	756
		4/11/11	6.82	21.0	1942	834
		8/26/11	6.84	21.8	1800	847
		2/1/12	7.13	20.5	2024	867
		4/25/12	6.83	21.5	1960	817
		7/11/12	6.48	22.8	2030	834
		10/10/12	6.98	21.2	1985	863
		2/27/13	6.58	20.9	1805	821
		5/8/13	6.41	20.7	1744	798
		8/13/13	6.69	21.2	1739	756
		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
	644927	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
DODSON		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 6.79	23.7	1352 1280	52.9 50.9
		10/10/11 10/10/11 DUP	6.79	20.9	1280	49.6
		1/31/12	7.17	20.3	1454	50.4
		4/12/12	7.17	20.6	1492	45.4
		7/11/12	7.10	21.5	1790	54.0
	-	10/4/12	7.27	20.6	1626	48.7
	-	1/18/13	7.27	20.2	1743	51.8
	-	1/18/13 DUP	7.27	20.2	1743	51.6
		4/9/13	7.33	19.6	1886	74.4
		7/9/13	7.39	21.0	1825	53.6
		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
DURAZO	NR	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



Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		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 1/25/10	7.29 7.08	20.8 19.0	593 585	13.4 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
EAST	599796	10/20/10	7.64	21.2	650	12.1
		1/18/11	7.44	21.0	615.9	13.1
		4/5/11	7.19	20.8	612.5	13.8
		7/12/11	7.23	21.7	595.1	12.7
		10/12/11	7.31	21.4	599.7	15.1
		10/12/11 DUP	7.31	21.4	599.7	15.1
		1/31/12	7.24	20.0	610	12.8
		4/11/12	7.53	20.6	609.3	14.6
		7/9/12	7.20	21.1	580	14.2
		10/4/12	7.49	20.4	623.8	15.0
		1/17/13	7.46	20.0	613.0	13.1
		4/9/13 7/9/13	7.54	19.6 21.2	597.7	12.2 12.1
		2/1/12	7.46 7.39	20.7	603.6 390.0	26.7
		4/23/12	7.50	22.5	440.0	26.4
		7/17/12	7.44	22.2	430	26.1
		10/9/12	7.69	21.9	404.7	26.1
ECHAVE	219449	10/9/12 DUP	7.69	21.9	404.7	26.0
		1/18/13	7.61	21.7	408.5	25.4
		5/14/13	7.74	22.2	400.2	25.2
		7/17/13	7.81	22.1	406.4	24.3
		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 7/9/09	7.56	22.4	538	19.7
		7/20/10	7.43 7.58	24.3 23.3	550 529.2	17.5 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
EPPELE 641	805641	7/11/11	7.27	23.5	563.1	18.6
		7/11/11 DUP	7.27	23.5	563.1	18.3
		10/12/11	7.38	20.9	500.0	19.6
		1/31/12	7.68	19.9	560.8	18.2
		4/11/12	7.74	20.6	563.8	19.5
		4/11/2012 DUP	7.74	20.6	563.8	19.6
		7/6/12	7.60	21.7	560	18.8
		10/3/12	7.84	20.7	558.8	19.5
		1/17/13	7.76	19.1	559.6	18.8
		4/8/13	7.71	20.4	564.1	17.5
		4/8/2013 DUP	7.71	20.4	564.1	17.4
EL EMANA	040000	7/9/13	7.66	21.9	570.1	17.5
FLEMING	218386	7/15/10	6.98	24.2	1390	573 670
		2/6/08 5/5/08	7.47 6.93	19.6 23.1	1301 1557	670 680
		7/14/08	7.00	23.1	1586	680
		10/15/08	7.20	20.5	1560	680
		1/22/09	7.19	20.1	1178	740
FRANCO 101	500101	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
	I .	7/13/10	7.48	28.6	901.6	188



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		9/13/12	7.66	25.0	1005	318
		10/5/12	7.63	24.4	1002	324
		11/13/12	7.67	19.8	988.2	349
		12/3/12	7.54	19.4	1001	332
FRANCO 383	221383	1/15/13	7.52	13.5	1010	333
		2/6/13	7.55	18.9	1004	353
	-	3/7/13	7.4	20.5	979.9	338
		4/10/13 7/10/13	7.7 7.69	20.4 25.7	1000 1018	335 335
		2/27/08	6.76	21.1	1827	152
		4/21/2008 <sup>1</sup>	6.74	22.0	1739	137
		5/14/2008 <sup>1</sup>	6.88	22.3	1532	131
		6/23/2008 <sup>1</sup>	6.74	22.0	1788	111
		7/29/2008 <sup>1</sup>	6.74	22.2	1989	152
		8/28/2008 <sup>1</sup>	M	21.6	1889	137
		9/23/2008 <sup>1</sup>	6.82	21.9	1821	137
		10/22/08	6.80	21.4	1940	145
		1/21/09	6.74	21.2	1481	82
		4/9/09	6.78	21.5	1695	138
FULTZ	212447	7/13/09	7.04	23.4	1452	81
1 0212	212771	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 8/25/11	7.08 6.45	22.1 23.3	1082 940	51.7 50.6
	-	10/12/11	7.22	21.7	870	48.5
		2/11/08	7.46	20.2	604	17.9
GALLANT	502527	7/23/08	7.26	21.2	925	20.9
		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
GARNER 635	587635	10/19/10	8.23	25.4	510	37.9
GARNER 000	001000	1/19/11 1/19/11 DUP	7.82	24.1 24.1	463.4 463.4	35.7 35.7
		4/6/11	7.82 7.76	24.1	463.4 467.4	35.7 35.8
		7/15/11	7.76	25.0	457.40	35.8
		10/11/11	7.19	24.2	400.0	38
		2/2/12	7.38	22.7	469.5	39.2
		4/13/12	7.62	24.0	460.0	33.5
		7/11/12	7.52	24.9	520	37.7
		7/11/12 DUP	7.52	24.9	520	37.2
		10/5/12	8.09	23.1	472.9	39.1
		1/11/13	7.83	23.7	470.8	38.7
		4/15/13	7.79	23.4	471.5	40
		7/10/13	7.90	25.0	469.5	36.7
		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
GGOOSE 547	628547	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
	1	11/11/09	7.15	23.1	897	188



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		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
CL 02	520702	5/5/09	6.91	28.1	682	43.9
GL-03	539782	8/1/09	7.12	27.4	768	43.1
		11/10/09 3/2/10	6.96 7.36	27.0 24.9	692	49 43.4
		3/2/2010 DUP	7.36	24.9	693 693	45.4
		4/9/10	6.17	25.6	556	48.1
		7/7/10	6.48	26.3	546	44.4
	l l	2/1/12	6.57	24.1	559	42.0
HARDT	NR	2/5/13	7.15	17.5	670.6	17.7
		2/27/08	6.93	22.1	1359	510
	l l	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
HOBAN	805290	3/2/10	7.12	19.8	1575	580
		8/31/11	6.64	22.3	1772	893
		12/14/11	6.68	20.2	1870	944
		2/1/12	6.74	20.9	1900	993
		4/19/12	6.81	21.5	1805	868
		7/11/12	6.86	21.4	1906	1110
		10/17/12	6.74	22.0	1846	1040
		2/15/13	6.64	20.7	1934	954
		5/8/13	6.6	21.4	1903	1060
		8/13/13	6.85	21.6	1925	1030
		3/4/08	7.06	20.4	1280	571
		5/8/08 7/14/08	6.95 7.00	21.0 21.1	1494 1566	673 610
		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
	ŀ	10/12/09	6.89	21.4	1414	600
	l l	1/27/10	7.35	20.0	1714	440
	l l	1/27/10 DUP	7.35	20.0	1714	520
		4/21/10	7.16	20.8	1490	710
11014/400 110		7/19/10	6.94	24.6	1350	548
HOWARD NR	NR -	10/18/10	6.47	21.4	1420	568
		1/17/11	7.12	19.8	1370	520
		4/11/11	7.20	20.6	1489	616
		8/26/11	7.11	23.2	1160	498
		10/11/11	7.1	21.0	1220	545
		10/11/11 DUP	7.1	21.0	1220	538
		2/1/12	7.29	20.6	1367	630
		4/13/12	6.99	21.2	1508	632
		9/13/12	7.12	21.9	1576	699
		10/16/12	7.06	21.1	1417	576
		2/6/13	7.06	20.3	1499	679
		4/9/13	7.38	19.4	1319	521
		7/12/13	7.40	21.6	1430	590
		8/14/12	8.35	26.3	629.3	69.2
		10/16/12	8.18	26.6	648.3	68.1
HOWARD 312	221312	10/16/12 2/6/13 4/9/13	8.18 8.18 8.2	26.6 24.1 24.3	648.3 650.3 621	68.1 71.9 67.5



Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
KEEFER		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 4/16/09	7.42 7.29	19.5 20.0	356 452	6.1 7.7
		7/14/09	7.35	20.0	533	7.7
		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
	209744	10/19/10	6.72	20.2	470	7.89
	209744	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 2/6/12	7.39 7.36	20.7 20.3	486.9 482.0	7.98 6.84
		4/23/12	7.23	21.6	500	7.14
		7/17/12	7.40	21.0	500	7.14
		10/9/12	7.58	20.1	506.6	8.47
		1/10/13	7.55	19.3	466.3	6.37
		4/18/13	7.58	20	475.9	7.3
		7/11/13	7.67	20.8	485.1	7.23
		7/11/13 DUP	7.67	20.8	485.1	7.24
		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 7/13/12	7.15 6.86	21.8 22.3	1560 1730	668 650
MARCELL	NR	10/17/12	7.18	21.3	1546	660
		10/17/12 DUP	7.18	21.3	1546	657
		2/6/13	7.25	19.8	1553	714
		2/6/13 DUP	7.25	19.8	1553	714
		4/10/13	7.07	19.9	1578	695
		7/15/13	7.09	21.4	1617	724
		2/20/08	7.21	21.1	1435	720
		5/6/08	6.77	21.6	1668	737
		7/15/08	6.91	22.3	1775	700
		10/15/08 1/28/09	6.82 6.85	21.3 21	1686 1274	703 660
	539265	4/15/09	7.04	21.3	1472	657
		7/15/09	7.04	22.2	1607	662
		10/12/09	6.77	21.7	1594	666
MCCONNELL 265		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 4/11/12	7.14	20.6	1842	847
		7/6/12	6.82 6.88	21.4 22.4	1781 1827	833 851
		10/8/12	7.07	20.9	1862	934
		1/10/13	6.89	20.9	1854	902
		1/10/13 DUP	6.89	20.9	1854	889
		4/18/13	7.11	20.4	1889	884
		7/10/13	7.14	22.1	1897	898
		7/27/12	8.25	26.5	510.0	41
	221459	10/8/12	8.12	25.3	517.3	43.4
MCCONNELL 459		1/15/13	8.06	24.5	512.6	37.4
		4/10/13	8.14	23.5	487	35.5
		7/10/13	8.10	25.5	480.7	34.5



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
	ramon	- /- /		, , ,	" ,	, , ,
		3/5/08	7.27	21.6	1055	317
		5/15/08	7.12	22.8	1051	329
		7/31/08	7.16 7.24	22.5 22.2	1078 1080	317 305
		10/20/08 10/20/08 DUP	7.24	22.2	1080	326
		2/11/09	7.24	21.3	818	321
		4/20/09	7.12	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
METZLER	35-71891	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
	l l	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
		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
MOORE	538847	10/19/10	6.79	22.1	430	7.14
		1/18/11	7.48	21.1	390	6.42
		4/6/11	7.39	21.4	426.3	6.70
		7/13/11	6.91	23.2	423.4	7.62
		10/11/11	7.31	22.5	419.0	7.31
		1/31/12	7.35	21.7	430	7.21
		4/23/12	7.34	22.8	470	6.99
		4/23/12 DUP	7.34	22.8	470	7.05
		7/17/12	7.36	22.9	430	7.01
		7/17/12 DUP	7.36	22.9	430	6.99
		10/8/12	7.64	21.4	433.2	7.51
		1/10/13	7.50	20.8	439.9	7.16
		4/19/13	7.68	21.6	434.7	7.25
		7/11/13	7.56	22.9	442.2	7.14
	509127	7/24/08 10/16/08	7.35 7.47	26.5 21.4	563 542	50.2 48.9
		1/26/09	7.47	17.2	422	52.3
		5/11/09	7.52	28.8	472	45.9
		- / / / /				
		8/11/09 11/12/09	7.56 7.53	28.7 24.5	525 537	39.8 51.3
		2/2/10	7.67	19.7	535	48.7
		4/21/10	7.70	23.5	518.9	42.1
NESS		7/19/10	7.70	28.9	524.7	48.1
		1/18/11	7.49	21.8	536.6	50.1
		7/12/11	7.48	26.3	520.0	43.5
		2/3/12	7.58	21.1	538.2	49.0
		7/10/12	7.20	26.8	380	40.1
		7/10/12 7/10/12 DUP	7.20	26.8	380	39.2
		1/9/13	7.57	19.1	549.6	53.9
		7/8/13	7.84	27.9	539.2	46.8



Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolver
		2/5/08	6.70	19.9	1317	310
NOTEMAN		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
	212483	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 1/19/11	6.08 6.84	24.6 22.3	1430 1446	280 266
		4/4/11	6.72	22.9	1446	276
		4/4/11 DUP	6.72	22.9	1446	279
		7/11/11	6.78	23.9	1406	272
		10/11/11	6.96	23.4	1250	286
		2/3/12	6.68	21.3	1370	301
		4/23/12	6.68	24.0	1580	291
		7/9/12	6.57	24.7	1360	265
		7/9/12 DUP	6.57	24.7	1360	265
		10/4/12	6.80	23.6	1412	287
		1/17/13	6.69	23.3	1417	288
		4/8/13	6.90	22.3	1409	280
NOTEMANULOUS	040400	7/9/13	6.89	24.3	1400	278
NOTEMAN HOUSE	212483	2/3/12	7.06	13.5	1520	324
NSD-02	527587	2/5/08 7/7/08	ND 8.02	ND 21.0	ND 609	43
		2/5/08	ND	ND	ND	70.7
NSD-03	527586	7/7/08	7.64	21.0	570	58.9
		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
NWC-02	562944	1/18/11	7.47	23.2	390	6.43
		4/6/11	7.27	22.9	413.5	6.4
		7/15/11 10/13/11	7.03 7.45	22.5 21.9	416.3 370	7.24 7.31
		1/30/12	7.39	21.2	431.3	7.78
		4/25/12	7.42	22.4	370	8.42
		7/18/12	7.33	22.5	430	6.99
		10/10/12	7.58	21.7	423.9	7.46
		1/10/13	7.58	21.8	396.4	9.02
		4/17/13	7.64	21.2	426.2	7.52
		7/12/13	7.65	22.0	429.3	6.91
	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	444 444
		2/3/10 4/21/10	7.24 7.22	20.7 21.6	1214 1178	444
		7/20/10	7.04	22.8	1229	433
NWC-03		10/19/10	7.22	21.3	1172	432
		1/18/11	7.09	22.8	1120	386
		4/6/11	7.19	21.7	1114	361
		7/15/11	6.91	21.8	1094	386
		10/13/11	7.23	21.6	960	353
		1/30/12	7.15	21.5	1061	379
		4/25/12	7.17	21.6	920	346
		4/25/12 DUP	7.17	21.6	920	347
		7/18/12	7.05	22.1	1080	354
		10/10/12	7.31	21.1	1029	354
		10/10/12 DUP	7.31	21.1	1029	353
		1/10/13	7.18	20.8	1051	370



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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 9/23/09	7.12 7.16	24.5 23.8	906 953	183 202
		10/21/09	7.18	24.3	875	191
		11/18/09	7.16	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
NWC-04	551849	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 9/26/11	7.32	25.1 26.2	780 875.4	195 198
		9/26/11 DUP	6.56 6.56	26.2	875.4 875.4	198
	-	10/13/11	7.46	23.3	770	198
		11/22/11	7.36	22.9	853.5	201
		12/8/11	7.33	22.3	872.2	207
		1/30/12	7.34	23.4	914.4	217
		2/17/12	7.45	22.9	898.1	203
		3/15/12	7.39	23.9	888.2	207
		4/25/12	7.16	23.4	870	204
		5/22/12	7.25	23.9	970	178
		6/6/12	7.27	24.4	1040	195
		7/18/12	7.25	23.7	880	205
		8/28/12	7.49	24.2	893.3	208
		9/13/12	7.40	23.9	883.7	205
		10/10/12	7.48	23.2	883.6	207
		11/13/12	7.56	21.7	849.8	211
		12/3/12	7.40	23.0	898.6	208
		1/10/13	7.37	22.2	903.1	210
		2/7/13	7.54	23.0	917.5	228
		3/7/13	7.49	22.4	892.4	222
		4/17/13	7.43	22.6	903.8	223
		5/14/13	7.53	23.2	881.7	214
		6/5/13	7.29	33.9	862.7	201
		7/12/13	7.29	23.5	897.2	211
		7/40/40 0110				
		7/12/13 DUP 8/9/13	7.29 7.43	23.5 23.5	897.2 898.6	200 207



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
NIMO OO	575700	10/19/10	7.49	22.7	394.5	8.32
NWC-06	575700	1/18/11	7.45	23.4	380	8.24
		4/6/11	7.42	23.1	388.3	7.76
		4/6/11 DUP	7.42	23.1	388.3	7.73
		7/15/11	7.09	22.9	394.3	8.36
		10/13/11	7.51	22.3	340	8.48
		1/30/12	7.47	22.1	402.7	8.44
		4/25/12	7.34	22.5	410	7.11
		7/18/12	7.39	22.8	380	8.60
		10/10/12	7.62	21.9	393.6	9.33
		1/10/13	7.47	21.3	429.2	7.55
		4/17/13	7.66	21.1	404.1	8.82
		7/12/13	7.59	22.4	404.1	8.40
		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
OSBORN	643436	8/18/09	7.16	24.6	643	17.4
		10/5/09	7.14	22.9	599 591	17.9
		1/21/10	7.47	19.5		15.6
		4/19/10 7/12/10	7.60 7.69	21.5 24.2	601.9 594.0	19.3 18.4
		7/12/10	7.87	24.2	594.0 575.9	19.5
		2/3/12	8.15	15.3	390	19.5
		1/8/13	7.88	10.5	544.4	20.4
		7/8/13	7.56	39.2	510.3	19.2
		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	19.4	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
	<del> </del>	10/18/10	8.13	22.1	511.9	16.5
PALMER	578819	1/18/11	7.24	17.1	517.0	15.7
		4/5/11	8.04	19.0	499.2	15.8
		7/12/11	7.65	26.6	517.6	16.4
		10/11/11	7.85	22.0	510.4	17
		2/3/12	7.94	10.0	521.4	17.1
		4/11/12	7.52	18.7	519.8	17.3
		7/10/12	7.30	27.9	390	16.6
		10/3/12	8.09	25.7	526.7	17.6
		10/3/12 DUP	8.09	25.7	526.7	17.5
		1/9/13	7.9	17.5	532.8	16.8
		4/8/13	8.07	18.4	534.1	17
		1, 0, 10	7.74	22.3	531.0	17.2



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolv (mg/L)
	Number		3 7	, , ,	" ,	, ,
		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
DANAGAKOO	05.70440	7/20/10	6.90	24.0	1560	706
PANAGAKOS	35-76413	10/18/10	6.38	22.1	1530	568
		7/14/11	6.93	23.3	1070	223
		8/25/11 2/6/12	7.17	23.4	1170 1017	222
			6.98	20.8		166
		2/29/12	7.09	20.3	1080	362
		3/15/12 4/12/12	7.02	21.4 20.9	1138 1265	282 346
		4/12/12 4/12/2012 DUP	6.90 6.90	20.9	1265	352
		7/9/12	6.82	20.9	1140	292
		11/27/2012	7.51	20.1	1164	274
		2/6/2013	7.05	19.9	1054	212
		4/9/2013	7.03	19.7	11054	232
		7/10/2013	7.26	21.4	1218	329
		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
PARRA	576415	10/20/10	7.51	21.4	1270	411
		1/19/11	7.49	20.8	1130	391
		4/4/11	6.90	22.6	1207	382
		7/12/11	6.76	23.7	1156	404
		10/12/11	7.44	22.3	1070	406
		2/7/12	7.64	21.4	1212	428
		4/13/12	7.49	21.1	1204	402
		4/13/12 DUP	7.49	21.1	1204	390
		7/18/12	7.03	22.6	1210	418
		7/18/12 DUP	7.03	22.6	1210	419
		10/9/12	7.30	21.3	1209	428
		1/11/13	7.64	20.3	1217	413
		4/11/13	7.29	21.2	1206	427
		7/17/13	7.21	21.9	1212	411



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
PIONKE 395	613395	7/15/10 10/18/10	7.32 7.33	22.3	1158 1277	474 473
		10/18/10 DUP	7.33	21.3 21.3	1277	473
		1/19/11	7.32	19.9	1277	471
		4/8/11	7.13	19.9	1232	467
		7/12/11	7.30	23.8	1232	500
		10/11/11	6.98	20.8	1100	502
		2/1/12	7.25	17.5	1230	481
		2/1/2012 DUP	7.25	17.5	1230	495
		4/12/12	7.17	22.1	1218	508
		7/11/12	6.59	22.9	1280	439
		10/17/12	7.16	22.3	1136	419
		9/18/12	7.91	23.4	395.8	14
		10/11/12	7.75	22.8	394.7	14.9
PIONKE 517	221517	1/9/13	7.79	22.6	389.9	14.3
		4/17/13	7.74	22.1	391.9	14.6
		7/16/13	7.84	22.9	391.5	13.9
		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
POOL	509518	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 2/12/08	7.37 7.11	21.6 18.9	567.4 428	114 15.5
POWER	624535	7/22/08	7.10	21.7	795	20.2
		2/4/08	7.10	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
DAMIDET	216425	10/19/10	7.91	23.7	450	10.8
RAMIREZ	216425	1/18/11	7.52	23.1	380	8.18
		4/11/11	7.24	23.2	408.5	8.65
		7/18/11	7.27	25.4	402.6	8.44
		10/12/11	7.40	23.3	412.7	8.55
		1/30/12	7.38	22.3	412.2	8.80
		4/10/12	7.40	23.2	404.5	8.70
		7/6/12	7.32	24.2	415.7	8.97
		10/8/12	7.61	22.5	412.0	9.14
		10/8/12 DUP	7.61	22.5	412.0	9.07
		1/17/13	7.52	22.2	409.6	8.82
		4/19/13	7.6	22.1	413.9	8.63
		7/15/13	7.58	23.6	416.2	8.19



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		2/15/08	7.30	19.1	1540	159
		4/21/2008 <sup>1</sup>	6.92	21.3	1418	125
		5/13/2008 <sup>1</sup>	7.05	20.9	1418	123
		6/23/2008 <sup>1</sup>	6.87	21.1	1593	130
	-	7/29/20081	6.98	21.8	1411	120
		8/28/2008 <sup>1</sup>	M	21.1	1519	129
	-	9/23/2008 <sup>1</sup>	6.90	22.2	1519	125
	-	10/22/08	6.96	20.8	1604	145
		1/20/09	6.92	20.6	1355	88
		4/8/09 7/9/09	6.85 6.93	21.4 22.3	1759 1434	178 126
		10/7/09	6.98	22.3	1288	126
	-	1/26/10	6.82	20.6	1352	125
	-	4/20/10	7.14	21.5	1318	134
RAY	803772	7/14/10	7.14	23.8	1313	137
IVII	003172	10/20/10	7.14	19.6	1368	127
		1/17/11	7.04	20.8	1451	132
		1/17/11 DUP	7.04	20.8	1451	125
		4/5/11	7.03	20.8	1387	132
		7/11/11	7.07	22.8	1345	126
		10/12/11	7.06	21.6	1250	130
		1/31/12	7.28	20.5	1360	131
		4/11/12	7.03	20.6	1359	131
		7/6/12	7.11	22.1	1430	129
		10/3/12	7.12	21.1	1464	130
		1/17/13	7.05	19.5	1527	126
		1/17/13 DUP	7.05	19.5	1527	140
		4/8/13	7.32	20	1476	131
		7/9/13	7.18	21.4	1451	128
		10/19/09	6.89	23.3	1360	590
ROGERS 596	573596	11/5/09	6.79	21.9	1418	540
ROGERS 390	373390	2/25/10	6.99	19.6	1603	520
		4/22/10	7.21	18.2	1641	710
		2/7/08	7.45	18.6	601	138
		4/21/2008 <sup>1</sup>	7.32	21.4	552	128
		5/8/2008 <sup>1</sup>	7.14	21.2	622	141
		6/23/2008 <sup>1</sup>	7.06	22.9	660	129
		7/29/2008 <sup>1</sup>	6.78	23.1	339	134
		8/28/2008 <sup>1</sup>	7.18	21.6	635	128
		9/23/20081	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
ROGERS 803	641803	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 7/14/11	7.30	20.2	658.2	160
			7.12	23.5	653.5	166
		10/12/11	7.41 7.40	21.8 20.0	665.3	175 171
		1/30/12	7.40		580	171
		4/23/12	7.32	23.9 24.0	720	171
		7/13/12 7/13/12 DUP	7.26	24.0	820 820	171
		10/10/12	7.41	24.0	671.4	177
		10/10/12	7.41			
	H	1/15/12	7 27	16.0	601 1	17/
		1/15/13 4/15/13	7.37 7.57	16.9 23.8	681.1 698	174 190



Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
ROGERS E	216018	10/19/10	7.80	22.8	460	5.92
KUGEKS E	210010	1/18/11	7.39	21.5	390	5.50
		4/11/11	7.19	22.7	427.2	6.13
		7/18/11	7.12	24.3	418.5	6.00
		10/13/11	7.52	22.2	370	5.99
		1/30/12	7.38	20.8	427.2	6.22
		4/10/12	7.37	22.1	421.8	6.31
		7/17/12	7.32	22.7	420	5.85
		10/17/12	7.55	21.7	429.0	6.04
		1/17/13	7.46	21.5	431.5	6.01
		4/18/13	7.63	21.3	433.5	6.26
		7/17/13	7.59	22.1	427.7	6.05
		7/17/13 DUP	7.59	22.1	427.7	6.28
		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
RUIZ	531770	1/18/11	7.19	20.2	860	213
		4/8/11	7.09	19.8	923.3	236
		8/26/11	6.85	22.6	800	220
		10/13/11	7.19	21.5	810	230
		2/7/12	7.28	20.7	915.6	230
		2/7/12 DUP	7.28	20.7	915.6	228
		4/13/12	7.04	21.1	896.5	203
		7/18/12	6.87	21.6	900	214
		10/9/12	7.18	21.4	890.6	229
		1/11/13	7.21	20.7	895.8	219
		1/11/2013 DUP	7.21	20.7	895.8	211
		4/11/13	7.26	21.9	876.8	229
	Ī	7/25/13	7.13	21.4	887.3	228



Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		2/8/08	7.52	21.5	506	158
		4/21/2008 <sup>1</sup>	7.23	21.7	563	122
		5/19/2008 <sup>1</sup>	7.38	22.4	629	130
		6/23/2008 <sup>1</sup>	7.02	22.1	674	129
		7/29/2008 <sup>1</sup>	7.25	22.4	955	245
		8/28/2008 <sup>1</sup>	M	22.3	669	131
		9/23/2008 <sup>1</sup>	7.27	22.2	607	124
		10/22/2008 <sup>1</sup>	7.31	22.0	653	135
		11/19/2008 <sup>1</sup>	7.38	21.1	612	140
		12/17/2008 <sup>1</sup>	6.78	21.6	472	144
		1/29/2009 <sup>1</sup> 2/23/2009 <sup>1</sup>	7.08	22.0	475	124
			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
SCHWARTZ	210865	10/6/09	7.27	22.5	613	120
		1/22/10	7.79	19.5	664	133
		4/21/10	7.50	20.9	638	129
		7/21/10	7.43	22.0	650	134
		10/19/10	7.76	21.2	710	147
		1/17/11	7.15	21.2	620	116
		4/11/11	7.20	21.5	656.9	128
		7/18/11	7.36	23.7	612.4	116
		10/12/11	7.35	22.4	635.8	124
		2/6/12	7.32	21.3	629.7	116
		2/6/2012 DUP	7.32	21.3	629.7	114
		4/10/12	7.48	21.6	626.1	120
		7/16/12		21.9	710	117
			7.31			
		10/17/12	7.48	21.6	645	121
		3/13/13	7.57	20.7	623.6	118
		5/14/13	7.61	21.5	629.7	112
		7/15/13	7.49	22.1	770.2	198
SRC	211345	4/23/08	7.57	25.8	380	19
ONO	211040	8/5/08	7.40	27.2	452	15.4
		2/13/08	7.28	20.7	467	24.1
		5/14/08	7.24	21.2	479	23.7
		7/24/08	7.35	22.4	506	18
		10/16/08	7.32	20.7	488	19
		1/20/09	7.05	20.4	391	19.8
		4/7/09	7.21	21.5	447	19.9
		7/8/09	7.18	23.1	473	18.5
		10/5/09	7.18	21.4	496	19.7
		1/21/10	7.49	19.5	501	18.4
SWAN	NR	4/21/10	7.49	20.3	512.1	20.9
			7.13		518.6	
		7/19/10		23.8		22.2
		1/18/11	7.19	17.8	483.6	18.7
		7/12/11	7.05	22.4	478.2	19.1
		2/3/12	7.40	20.5	484.5	20.1
		2/3/12 DUP	7.40	20.5	484.5	19.5
		7/10/12	7.00	22.7	370	19.4
		1/11/13	7.38	20.0	489.0	19.3
		7/8/13	7.45	22.8	489.7	19.4
THOMPSON 341	218341	5/29/13	7.22	24.4	415.9	7.32
THOWN SON 341	210041	8/9/13	7.57	22.2	420.0	7.62
		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
TM-02A	522574	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
	1		7.65	24.6	366	23.4
		8/14/12	7.05		300	
		8/14/12 2/15/13	7.72	22.2	369	22.1



Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
TM-03	522575	5/13/09	7.47	22.2	695	109
00	0220.0	8/18/09	7.48	22.4	822	98
		11/10/09	7.55	21.8	761	106
		3/2/10	7.56	21.6	748	99
		4/14/10	7.55	20.6	635	103
		7/7/10	7.19	21.4	566	103
		2/1/12	7.48	21.1	744	112
		2/27/08	7.44	19.6	457	13.9
		5/20/08	7.50	20.7	506	32.7
		8/4/08	7.41	20.7	529	31.3
	-	10/29/08	7.55	20.2	531	34.5
	-	2/26/09	7.18	20.4	574 465	32.7
	-	5/13/09	7.35	20.9	560	30.6 30.9
TM-06 MILLER	522695	8/18/09 0/48/00 DUD	7.50	20.9		
TIVI-UO IVIILLEK	522695	8/18/09 DUP	7.50	20.9	560	29.9
		11/12/09	7.53	20.4	530	31.1
	-	4/14/10 7/2/10	7.35 7.24	19.4 20.1	461 438	29.0
	-	7/2/10 7/21/11	7.24 7.1	20.1	438 516	29.8 31.7
		7/9/12			505	
	-	2/14/13	6.82 6.92	20.8 19.6	505	33.5 31.1
		8/19/13	7.21	19.9	556	32.5
		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
TM-07	522576	3/2/10	7.67	21.6	422	124
0.	0220.0	5/25/10	7.77	21.2	398	42.6
		7/6/10	7.58	22.0	350	44.7
		2/11/11	6.87	20.1	393	24.9
		7/21/11	6.90	21.4	402	41.7
		2/9/12	7.15	23.0	670	171
		8/13/12	6.83	21.7	415	25.4
		2/27/13	6.81	19.9	380	25.6
		8/28/13	7.36	21.2	369	25.0
		2/13/08	7.63	24.1	511	24.1
TM-08 SWAN	522817	5/14/08	7.44	24.4	480	12.6
		7/23/08	7.76	28.1	522	12.6
		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-10 USBP	522696	9/13/12	8.09	21.1	407	13.3
TIME TO USBE	322030				428.2	
		10/19/12	8.17	21.0		12.8
		3/7/13	8.33	21.2	415.1	12.7
		4/17/13	8.27	20.3	423.9	12.8
		7/23/13	8.16	21.4	426.1	13.2
		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
TM-15 MILLER	522699	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
				22.7		110
		7/10/12 2/12/13	7.04 6.96	23.7 21.7	379 393	14.9 14.6



Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolver (mg/L)
		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
	ļ ļ	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
TM-16	522578	11/10/09	7.02	21.0	1310	505
		3/2/10	7.13	20.4	1313	451
		4/14/10	6.90	19.9	987	484
		7/2/10	6.81	20.8	858	474
		7/14/11	6.97	20.5	1285	511
		7/16/11	6.97	20.5	1285	513
		7/9/12	6.95	21.0	1292	544
		8/15/13	6.86	20.3	1374	539
		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
TM-19A	522581	3/10/10	7.54	22.9	511	60.6
		4/9/10	6.49	23.0	435	66.5
		7/7/10	6.93	23.8	428	63.2
		2/14/11	6.69	21.4	511	61.9
		7/15/11	7.11	24.1	499	62.1
		2/2/12	7.13	22.5	498	62.2
		7/10/12	7.12	23.5	505	63.7
		2/15/13	6.74	23.2	522	60.1
		9/4/13	7.11	23.8	538	61.3
		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
	562554	5/7/09 DUP	6.88	24.5	1155	445
		8/18/09	7.04	24.4	1336	428
TM-42		11/3/09	7.07	23.1	1266	430
		2/24/10	7.13	22.7	1236	390
		4/19/10	6.87	21.5	985	444
		7/2/10	6.81	23.9	827	407
		7/12/11	6.83	22.0	1205	441
		2/9/12	6.76	20.5	1172	444
		7/11/12	6.72	21.1	1155	449
		2/12/13	6.69	20.2	1185	400
		8/28/13	6.89	21.3	1212	416
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 400	505004	3/3/08	6.79	20.6	514	0.7
TM-43B	565004	8/5/08	6.89	21.0	507	31.8
		8/5/08 DUP	6.89	21.0	507	32.5
		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 7/21/09	7.36	19.3	418	28.3
TVI 236	802236		7.59	22.9	484	31.3
		10/19/09	7.31	22.1	513	33.2
		2/2/10	7.39	20.4	497	26
		4/23/10	7.46	20.0	504.6	30.9
		7/15/10	7.37	21.5	499.4	39.3
		7/15/11	6.80	22.4	499.6	42.9
		7/16/12	7.30	21.1	500	36.3
	1	10/9/12	7.56 7.38	20.4 20.9	513.7	40.9



TABLE 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp	SC (µS/cm)	Sulfate, dissolved
	Number		` '	(deg C)	,	(mg/L)
		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
TVI 875	568875	10/20/10	7.79	21.9	890	242
	333.3	1/20/11	7.39	21.0	780	226
		4/11/11	7.20	21.1	820.6	235
		7/15/11	6.75	22.2	791.9	239
		10/12/11	7.35	22.7	868.5	262
		2/3/12	7.20	20.5	850	299
		4/25/12	7.19	21.3	840	267
		7/16/12	7.13	22.2	860	261
		7/16/12 DUP	7.13	22.2	860	267
		10/9/12	7.39	20.9	882.8	281
		2/6/13	7.23	20.8	946.1	335
		4/10/13	7.35	20.9	907.6	296
		7/18/13	7.31	21.4	994.2	355
WALKER	200393	2/13/08	7.05	20.2	650	20
		7/23/08	7.25	20.7	740	45.4
		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 13.6
		7/21/10 7/21/10 DUP	7.36 7.36	22.1 22.1	354.9 354.9	13.5
WEED	544535	10/19/10	7.63	21.2	354.9	11.7
VVEED	J <del>-14</del> 030	1/19/10	7.62	21.2	378.8	12.2
		4/11/11	7.44	21.1	386.6	13
		7/18/11	7.44	22.0	379.3	12.7
		10/12/11	7.02	21.7	382.8	13.3
		2/6/12	7.60	21.4	385.0	13.5
		4/25/12	7.60	22.1	360	12.7
		7/5/12	7.64	21.7	385.8	12.7
		10/9/12	7.66	21.7	385.8	14.0
		2/7/13	7.7	21.4	389.7	14.0
i		2/7/13 DUP	7.7	21.4	389.7	13.2
		4/10/13	7.76	20.6	383.9	13.2
		7/19/13	7.76	20.6	383.9	14.2
		7/19/13	7.03	21.3	380.0	14.∠



Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolv (mg/L)
	114111201			, , ,	" ,	, , ,
		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 22.1	1164	503 486
		7/15/09 10/15/09	7.84	21.4	1317 1216	484
		2/2/10	6.89 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
WEISKOPF 802	641802	10/20/10 DUP	7.64	21.6	1360	529
WEISKOFF 602	041802	1/17/11	7.04	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	23.5	1299	539
		2/3/12	7.35	21.5	1363	583
		4/25/12	7.35	23.5	1300	575
		7/13/12	6.83	22.2	1530	552
		10/11/12	7.26	21.3	1369	572
		10/11/12 10/11/12 DUP	7.26	21.3	1369	577
		1/16/13	7.14	20.5	1298	523
		4/17/13	7.14	20.1	1337	558
		7/18/13	7.45	21.3	1131	420
		12/6/12	7.93	23.6	398.3	18.5
		1/16/13	7.88	23.1	398.9	18.2
WEISKOPF 897	221897	1/16/13 DUP	7.88	23.1	398.9	18.2
WEIGHOIT 037	22 1037	4/17/13	7.86	22.6	394.4	19
		7/18/13	7.84	24.3	393.2	18.0
WMD-2011-03M	913037	2/2/12	6.66	22.0	1190	391
WIND ZOTT OOM	313037	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
ZANDER	205126	1/18/11	7.59	18.9	380	6.14
		1/18/11 DUP	7.59	18.9	380	6.06
		4/6/11	7.20	19.7	425.8	6.12
		7/13/11	7.29	22.9	410.10	6.43
		10/12/11	7.35	22.2	426.2	6.38
		1/31/12	7.29	20.3	420	6.59
		4/10/12	7.49	21.9	420.1	6.90
		4/10/2012 DUP	7.49	21.9	420.1	6.65
		7/17/12	7.34	22.2	430	6.38
		10/8/12	7.58	20.8	431.4	7.03
		1/10/13	7.58	20.7	436.1	6.52
		4/18/13	7.65	20.8	436.7	6.66
	1	7/15/13	7.55	21.8	431.1	6.49

Notes:

35-71891 = ADWR 35 Database

ADWR = Arizona Department of Water Resources

deg C = degrees Celsius

DUP = Blind duplicate

M = Multi-Meter Malfunction

mg/L = milligrams per liter

ND = No Data

NR = No Record

SC = Specific Conductance

SU = Standard Units

 $\mu$ S/cm = microsiemens per centimeter



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

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
ANDERSON 396	613396	601134.729	3468816.065	4588.51	7/19/10	148.34	4440.17
ANDERSON 390	013390	001134.729	3400010.003	4300.51	10/19/10 1/17/11	147.75 148.63	4440.76 4439.88
					4/11/11	149.46	4439.05
				-	7/14/11	149.92	4438.59
					10/11/11	150.19	4438.32
					2/1/12	150.19	4438.32
					4/25/12	150.69	4437.82
					7/12/12	151.34	4437.17
					10/10/12	151.50	4437.01
					1/17/13	151.24	4437.27
					4/15/13	152.08	4436.43
					7/18/13	152.19	4436.32
					9/7/12	173.76	4411.61
			3468826.284	4585.37	10/10/12	151.82	4433.55
ANDERSON 458	221458	601118.690			1/17/13	152.17	4433.20
					4/15/13	158.42	4426.95
					7/18/13	157.56	4427.81
ASLD 435	616435	593496.865	3468879.791	4471.34	6/27/13 9/24/13	250.85 250.85	4220.49 4220.49
					8/27/08	121.12	4426.52
					4/8/08	116	4431.64
					10/23/08 <sup>1</sup>	115	4432.64
41410.00	040500	500007.044	0.4005.40.057	4547.64	4/22/09 <sup>1</sup>	118	4429.64
AWC-02	616586	598907.911	3468549.357		10/9/09 <sup>1</sup>	117	4430.64
					4/23/10 <sup>1</sup>	119	4428.64
					4/11/13	127.64	4420.00
					7/25/13	128.89	4418.75
					8/27/08	119.40	4420.12
					4/8/08	112	4427.52
					10/23/08 <sup>1</sup>	106	4433.52
AWC-03	616585	599090.322	3468681.898	4539.52	4/22/09 <sup>1</sup>	114	4425.52
					10/9/09 <sup>1</sup>	116	4423.52
					4/23/10 <sup>1</sup>	116	4423.52
					4/11/13 <sup>1</sup>	125	4414.52
					7/16/13 <sup>1</sup> 8/18/08	126 112.56	4413.52 4427.92
					4/8/08	108	4427.92
					10/23/08 <sup>1</sup>	111.31	4432.46
					4/22/09 <sup>1</sup>	110	4430.48
AWC-04	616584	598949.929	3468717.084	4540.48	10/9/09 <sup>1</sup>	110	4430.48
					4/23/10 <sup>1</sup>	109	4431.48
					4/11/13	120.93	4419.55
					7/16/13	123.76	4416.72



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
AWC-05	590620	599269.904	3468541.692	4542.51	6/3/09	125	4417.51
					10/9/09 <sup>1</sup>	289	4253.51
					4/23/10 <sup>1</sup>	278	4264.51
					4/11/13	229.56	4312.95
					7/16/13	203.17	4339.34
					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
BANKS 987	647987	606981.921	3469206.175	4648.18	10/20/10	230.24	4417.94
					1/17/11	215.28	4432.90
					4/5/11	221.68	4426.50
					7/11/11	237.39	4410.79
					10/12/11	237.34	4410.84
					1/31/12	228.95	4419.23
					4/11/12	219.39	4428.79
					7/6/12	232.59	4415.59
					10/4/12	237.16	4411.02
					1/18/13	237.81	4410.37
					4/8/13	237.92	4410.26
					7/9/13	238.32	4409.86
					5/12/08	113.71	4578.65
					7/23/08	113.56	4578.80
					10/16/08	113.20	4579.16
BARTON 919	644919	606243.850	3469076.689	4692.36	3/11/09	112.92	4579.44
					4/10/09	112.89	4579.47
					7/7/09	112.86	4579.50
					7/17/13	114.18	4578.18
					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
BF-01	539783	604169.077	3472151.593	4835.23	11/4/09	348.65	4486.58
					3/1/10	348.84	4486.39
					4/7/10	348.70	4486.53
					7/6/10	348.69	4486.54
					7/13/11	348.67	4486.56
					2/1/12	347.84	4487.39
					8/13/12	343.95	4491.28



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BIMA	577927	606001.245	3471852.804	4802.05	7/8/09	365.44	4436.61
					10/5/09	370.11	4431.94
					4/19/10	382.25	4419.80
					7/21/10	386.89	4415.16
					10/18/10	387.39	4414.66
					1/19/11	391.47	4410.58
					4/4/11	395.22	4406.83
					8/27/08 11/11/08	62.05	4743.05
					2/25/09	60.95 61.43	4744.15 4743.67
					4/28/09	62.01	4743.09
					8/4/09	62.96	4742.14
					10/27/09	63.61	4741.49
			3471723.644		2/17/10	64.51	4740.59
BMO-2008-1G	909474	474 606467.681		4805.10	4/15/10	65.05	4740.05
					7/7/10	65.83	4739.27
					2/10/11	67.74	4737.36
					7/12/11	69.37	4735.73
					2/8/12	70.33	4734.77
					8/14/12	71.73	4733.37
					2/14/13	72.95	4732.15
					8/14/13	73.82	4731.28
					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
DMO 0000 0D	000117	000040 000	0.407040.500	4500.07	3/3/10	140.03	4443.94
BMO-2008-3B	909147	602012.923	3467919.582	4583.97	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 7/10/12	143.90 143.70	4440.07 4440.27	
					2/15/13	143.70	4439.44
					8/27/13	144.53	4439.44



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BMO-2008-4B	910096	601099.405	3468383.430	4573.17	7/2/10	133.20	4439.97
					2/15/11	133.78	4439.39
					7/22/11	134.80	4438.37
					2/23/12	134.64	4438.53
					9/17/12	136.15	4437.02
					1/15/13	136.13	4437.04
					4/15/13	136.78	4436.39
					9/18/13	137.04	4436.13
					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
BMO-2008-5B	909653	600438.159	3468994.715	4585.10	5/12/11	148.04	4437.06
					7/13/11	148.31	4436.79
					12/7/11	148.45	4436.65
					2/3/12	148.47	4436.63
					4/18/12	149.02	4436.08
					7/10/12	148.65	4436.45
					10/16/12	149.91	4435.19
					2/7/13	149.94	4435.16
					2/12/13	150.06	4435.04
					5/15/13	150.55	4434.55
					8/20/13	150.82	4434.28



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BMO-2008-5M	909552	600445.071	3468994.282	4585.02	2/14/11	148.74	4436.28
DIVIO-2000-3IVI	909002	000440.071	J <del>4</del> 00334.202	4000.02	5/12/11	149.66	4435.36
					7/12/11	150.20	4434.82
					12/7/11	150.30	4434.72
					2/3/12	150.05	4434.97
					4/18/12	150.70	4434.32
					7/10/12	151.65	4433.37
					10/16/12	151.77	4433.25
					2/12/13	152.00	4433.02
					5/15/13	152.42	4432.60
					8/20/13	152.76	4432.26
					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
BMO-2008-6B	909146	600366.523	3469820.644	4627.44	2/14/11	192.19	4435.25
					5/12/11	192.70	4434.74
					7/12/11	193.30	4434.14
					12/7/11	193.85	4433.59
					2/3/12	193.60	4433.84
					4/18/12	193.90	4433.54
					7/10/12	194.75	4432.69
					10/16/12	195.71	4431.73
					2/12/13	195.42	4432.02
					5/15/13	195.91	4431.53
					8/20/13	196.23	4431.21



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BMO-2008-6M	909019	600367.943	3469813.885	4626.90	2/14/11	193.14	4433.76
					5/12/11	193.68	4433.22
					7/12/11	194.47	4432.43
					12/7/11	194.92	4431.98
					2/3/12	194.65	4432.25
					4/18/12	195.00	4431.90
					7/10/12	196.10	4430.80
					10/16/12	196.53	4430.37
					2/12/13	196.45	4430.45
					5/15/13	196.90	4430.00
					8/20/13	197.43	4429.47
					7/14/08 11/6/08	238.31 239.69	4450.02 4448.64
			3470029.283	4688.33	2/18/09	238.90	4449.43
					5/11/09	239.03	4449.30
					8/6/09	239.03	4449.16
					10/27/09	239.55	4448.78
					2/17/10	239.98	4448.35
BMO-2008-7M	908794	603099.165			4/15/10	240.13	4448.20
					7/6/10	240.28	4448.05
					2/14/11	241.26	4447.07
					7/15/11	241.81	4446.52
					1/30/12	242.44	4445.89
					7/11/12	243.0	4445.33
					2/15/13	243.8	4444.53
					8/28/13	244.32	4444.01
					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
BMO-2008-8B	910097	604171.347	3471141.719	4753.25	7/1/10	298.64	4454.61
					2/11/11	299.56	4453.69
					5/13/11	299.78	4453.47
					7/15/11	300.00	4453.25
					1/30/12	300.52	4452.73
					7/12/12	301.15	4452.10
					2/13/13	302.05	4451.20
					8/12/13	302.48	4450.77



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BMO-2008-8M	909711	604167.912	3471127.902	4752.45	7/1/10	299.70	4452.75
					1/24/11	300.46	4451.99
					5/13/11	301.00	4451.45
					7/15/11	300.96	4451.49
					1/30/12	301.60	4450.85
					7/12/12	302.45	4450.00
					2/14/13	303.07	4449.38
					8/12/13	303.60	4448.85
					8/8/08	287.17	4475.44
					11/5/08	287.65	4474.96
					2/26/09	285.65	4476.96
			3471121.675		5/12/09	285.28	4477.33
					8/17/09	286.09	4476.52
		604668.669		4762.61	11/3/09	286.55	4476.06
					3/4/10	287.45	4475.16
DMO 0000 0M	000055				4/6/10	287.81	4474.80
BMO-2008-9M	909255				7/1/10	288.26	4474.35
					2/10/11	289.77	4472.84
					5/13/11	290.47	4472.14
					7/15/11	290.95	4471.66
					2/1/12	293.44	4469.17
					7/12/12	294.65	4467.96
					2/13/13	296.67	4465.94
					8/12/13	297.63	4464.98
					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
PMO 2000 4001	000425	605264.070	2474702.042	4700.04	3/4/10	510.88	4281.33
BMO-2008-10GL	909435	605264.072	3471702.043	4792.21	4/8/10	506.31	4285.90
					7/2/10	511.80	4280.41
					7/13/11	512.16	4280.05
					2/2/12	511.34	4280.87
					7/13/12	510.90	4281.31
					2/18/13	509.91	4282.30
					8/13/13	509.32	4282.89



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BMO-2008-10GU	909272	605267.551	3471731.866	4793.45	3/10/10	289.58	4503.87
					4/7/10	289.5	4503.95
					7/6/10	288.93	4504.52
					7/13/11	301.02	4492.43
					2/1/12	326.51	4466.94
					7/13/12	328.7	4464.75
					8/19/13	283.97	4509.48
					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
		603800.995	3472626.482	4844.67	3/1/10	573.68	4270.99
BMO-2008-11G	909434				4/9/10	573.56	4271.11
					7/1/10	572.97	4271.70
					2/10/11	571.61	4273.06
					7/22/11	571.20	4273.47
					1/31/12	569.83	4274.84
					8/14/12	569.70	4274.97
					2/13/13	568.75	4275.92
					8/27/13	566.50	4278.17
					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
BMO-2008-13B	909551	601657.612	3470076.358	4649.21	7/6/10	207.68	4441.53
					2/10/11	208.51	4440.70
					5/13/11	208.95	4440.26
					7/15/11	209.36	4439.85
					2/9/12	209.78	4439.43
					7/11/12	210.60	4438.61
					2/27/13	211.40	4437.81
					9/4/13	212.15	4437.06



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BMO-2008-13M	909760	601650.495	3470040.455	4647.15	7/2/10	209.30	4437.85
					2/10/11	210.36	4436.79
				-	5/13/11	210.50	4436.65
				-	7/15/11 2/6/12	210.67 210.90	4436.48 4436.25
					8/13/12	211.42	4435.73
					2/15/13	212.13	4435.02
					9/6/13	212.52	4434.63
					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
		219957 605581.263			8/31/11	224.38	4494.17
BMO-2010-1M 219957					12/13/11	222.86	4495.69
	219957		3469935.750	4718.55	2/8/12	222.97	4495.58
					4/24/12	223.87	4494.68
					7/9/12	225.05	4493.50
					10/17/12	225.63	4492.92
					2/13/13	226.85	4491.70
					5/8/13	227.45	4491.10
					8/15/13	228.10	4490.45
					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
DMO 0040 0M	040050	005005 540	0.470504.040	4740.40	12/13/11	270.98	4475.18
BMO-2010-2M	219958	605685.549	3470564.646	4746.16	1/30/12	271.50	4474.66
					4/18/12	272.31	4473.85
					7/9/12	273.20	4472.96
					10/17/12	274.27	4471.89
				-	2/13/13 5/8/13	275.52 276.05	4470.64 4470.11
				-	8/15/13	278.76	4467.40
					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
BMO-2010-3B	219970	599977.962	3468347.363	4550.59	2/2/12	117.18	4433.41
					4/24/12	117.92	4432.67
					7/5/12	118.84	4431.75
					10/18/12	119.13	4431.46
					1/16/13	118.89	4431.70
					4/16/13	119.36	4431.23
					7/23/13	120.02	4430.57



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BMO-2010-3M	219969	599970.801	3468353.543	4550.53	2/2/12	119.91	4430.62
					4/24/12	120.93	4429.60
					7/5/12	122.05	4428.48
					10/18/12	122.06	4428.47
					1/16/13	121.86	4428.67
					4/16/13	122.26	4428.27
					7/23/13	122.97	4427.56
					11/13/12	231.90	4487.86
D110 0010 111	004000	000007.004	0.4007.40.747	4740.70	2/27/13	233.20	4486.56
BMO-2012-1M	221388	606097.384	3469746.747	4719.76	5/8/13	233.97	4485.79
					8/14/13	233.96	4485.80
DOOTH	044004	004400 400	0.4000.40.045	4500.04	1/15/13	131.47	4436.74
BOOTH	914931	601132.466	3468049.945	4568.21	4/19/13	132.04	4436.17
					4/22/08	606.55	4249.75
					8/5/08	605.86	4250.44
					10/28/08	604.88	4251.42
BURKE	212268	602230.087	3473029.816	4856.30	2/19/09	603.91	4252.39
					4/28/09	603.70	4252.60
					8/19/09	602.66	4253.64
					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
COB MW-1	903992	603153.259	3469889.889	4683.26	10/22/09	234.69	4448.57
					2/4/10	235.15	4448.11
					4/20/10	235.47	4447.79
					7/13/10	235.68	4447.58
					7/14/11	236.98	4446.28
					7/12/12	238.24	4445.02
					2/5/13	239.11	4444.15
					7/11/13	239.67	4443.59



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
COB MW-2	903984	600973.257	3468114.836	4566.21	3/3/10	124.93	4441.28
					4/26/10	125.47	4440.74
					7/13/10	126.54	4439.67
					1/20/11	126.46	4439.75
					7/14/11	128.17	4438.04
					1/31/12	128.04	4438.17
					7/12/12	129.58	4436.63
					1/9/13	129.28	4436.93
					7/25/13	130.21	4436.00
					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
COB MW-3	906823	599169.225	3468726.000	4538.63	10/22/09	118.03	4420.60
					3/3/10	120.14	4418.49
					4/26/10	123.12	4415.51
					7/13/10	128.60	4410.03
					7/14/11	132.41	4406.22
					7/12/12	133.89	4404.74
					2/5/13	123.68	4414.95
					7/25/13	129.05	4409.58
					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
COB WL	593116	606357.506	3472502.012	4832.06	10/22/09	62.82	4769.24
					3/3/10	65.24	4766.82
					4/26/10	66.13	4765.93
					7/13/10	67.52	4764.54
				_	7/14/11	73.86	4758.20
					7/12/12	78.85	4753.21
					2/5/13	82.41	4749.65
					7/25/13	81.36	4750.70



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
COLLINS	565260	602551.286	3471341.335	4733.72	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 7/20/10	291.96 292.21	4441.76 4441.51
					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
COOPER C	637069	601349.987	3468913.011	4599.14	10/20/10	158.41	4440.73
					1/17/11	158.37	4440.77
					4/11/11	158.74	4440.40
					8/26/11	159.51	4439.63
					10/13/11	159.81	4439.33
					2/1/12	159.80	4439.34
					4/25/12	160.26	4438.88
					7/12/12	160.88	4438.26
					10/10/12	161.10	4438.04
					2/27/13	161.40	4437.74
					5/8/13	161.70	4437.44
					8/13/13 5/12/08	162.07 81.38	4437.07 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
DODSON	644927	605594.560	3469063.772	4686.34	10/18/10	90.33	4596.01
					1/19/11	90.34	4596.00
					4/5/11	91.05	4595.29
					7/12/11	92.07	4594.27
					10/10/11	93.11	4593.23
					1/31/12	93.68	4592.66
					4/12/12	94.19	4592.15
				-	10/4/12	97.80	4588.54
					1/18/13	99.73	4586.61
					4/9/13	98.09	4588.25
					7/9/13	98.38	4587.96



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
DOUGLASS 791	592791	607632.993	3470222.677	4703.27	1/21/10	34.55	4668.72
					4/19/10	36.40	4666.87
					7/12/10	36.74	4666.53
					1/18/11	25.96	4677.31
					1/30/12	27.72	4675.55
					4/11/12	29.99	4673.28
					7/5/12	32.67	4670.60
					1/9/13	27.24	4676.03
					7/8/13	32.70	4670.57
					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
DOLLOL 400 700	500700	007007.544	0.400000 445	4004 70	1/21/10	86.45	4595.28
DOUGLASS 792	592792	607607.541	3469829.115	4681.73	4/19/10	87.19	4594.54
					7/12/10	87.55	4594.18
					1/18/11	87.8	4593.93
					7/12/11	88.38	4593.35
					1/30/12	88.92	4592.81
					4/11/12	89.18	4592.55
					7/5/12	95.64	4586.09
					1/9/13	82.60	4599.13
					7/8/13	83.66	4598.07



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
EAST	599796	607076.365	3468712.215	4626.01	10/20/10	61.20	4564.81
					1/18/11	59.79	4566.22
					4/5/11	59.73	4566.28
					7/12/11	63.79	4562.22
					10/12/11	63.64	4562.37
					1/31/12	63.82	4562.19
					4/11/12	65.72	4560.29
					7/9/12	70.50	4555.51
					10/4/12	73.34	4552.67
					1/17/13	75.04	4550.97
					4/9/13	78.05	4547.96
					7/9/13	78.37	4547.64
					2/1/12	216.71	4431.29
ECHAVE	219449	599701	3470168	4648	1/18/13	218.41	4429.59
					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
EPPELE 641	805641	607165.354	3469229.942	4642.86	1/17/11	51.13	4591.73
-					4/5/11	53.81	4589.05
					7/11/11	56.82	4586.04
					10/12/11	37.62	4605.24
					1/31/12	46.80	4596.06
					4/11/12	52.07	4590.79
					7/6/12	62.39	4580.47
					10/3/12	71.66	4571.20
					1/17/13	59.73	4583.13
					4/8/13	83.98	4558.88
			1	1	1,0,10	55.56	1000.00



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
FLEMING	218386	605565.701	3469342.523	4693.68	7/15/10	318.32	4375.36
I LLIVIINO	210300	003303.701	3409342.323	4093.00	11/4/10	349.62	4344.06
					1/19/11	356.89	4336.79
					7/12/11	364.72	4328.96
					2/3/12	370.84	4322.84
					7/9/12	373.86	4319.82
					1/18/13	373.96	4319.72
					7/17/13	374.88	4318.80
FRANCO 101	500101	602848.756	3468830.905	4636.75	4/10/13	196.05	4440.70
	-				7/10/13	196.19	4440.56
					9/13/12	195.19	4441.69
					10/5/12	195.00	4441.88
					12/3/12	196.70	4440.18
FRANCO 383	221383	602817.854	3468831.563	4636.88	1/15/13	196.30	4440.58
					2/6/13	195.62	4441.26
					3/7/13	196.20	4440.68
					4/10/13	196.25	4440.63
					7/10/13	196.13	4440.75
		607153.306 3469063	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
FULTZ	212447				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
					2/21/08	191.05	4447.40
					5/5/08	191.28	4447.17
				-	7/15/08	191.44	4447.01 4446.62
				-	10/16/08	191.83	
					1/28/09 4/15/09	191.92 192.09	4446.53 4446.36
					7/16/09	192.52	4445.93
					10/14/09	192.82	4445.63
				h	2/2/10	193.33	4445.12
					4/22/10	193.49	4444.96
					7/20/10	193.93	4444.52
GARNER 557	558557	602659.240	3468962.415	4638.45	10/19/10	194.29	4444.16
50.					1/19/11	194.61	4443.84
					4/6/11	194.86	4443.59
					7/15/11	195.25	4443.20
					10/11/11	195.72	4442.73
					2/2/12	196.09	4442.36
					4/13/12	196.30	4442.15
					7/11/12	196.72	4441.73
					10/5/12	197.08	4441.37
					1/11/13	197.51	4440.94
				-	4/15/13	197.76	4440.69



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
GARNER 635	587635	602665.352	3468967.902	4640.74	10/19/10	225.83	4414.91
					1/19/11	196.89	4443.85
					4/6/11	197.40	4443.34
					7/15/11	198.07	4442.67
					10/11/11	197.75	4442.99
					2/2/12	199.50	4441.24
					4/13/12	200.40	4440.34
					7/11/12	199.15	4441.59
					10/5/12	202.71	4438.03
					1/11/13	199.38	4441.36
					4/15/13	200.53	4440.21
					7/10/13	200.13	4440.61
					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
000005.547	000547	22222	0.400000.000		5/14/09	236.17	4480.94
GGOOSE 547	628547	606256.657	3469820.260	4717.11	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
					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
01		00.405	0.4707.17.11	400 : 5 :	8/12/09	656.56	4267.75
GL-03	539782	604386.940	3473747.943	4924.31	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



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
GOAR RANCH	610695	602454.751	3468892.471	4631.13	2/2/10	186.25	4444.88
					4/22/10	186.44	4444.69
					7/13/10	186.76	4444.37
					1/19/11	187.52	4443.61
					7/12/11	188.24	4442.89
					2/6/12	189.02	4442.11
					9/13/12	190.08	4441.05
					1/11/13	190.48	4440.65
					9/18/13	191.21	4439.92
					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
HOBAN	805290	601705.848	3468880.329	4607.60	7/20/10	166.17	4441.43
					10/19/10	166.45	4441.15
					8/31/11	167.76	4439.84
					12/14/11	168.13	4439.47
					2/1/12	168.09	4439.51
					4/19/12	168.32	4439.28
					7/11/12	169.10	4438.50
					10/17/12	169.40	4438.20
					2/15/13	169.70	4437.90
					5/8/13	169.95	4437.65
					8/13/13	170.31	4437.29

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
HOWARD NR	NR	601281.159	3468770.377	4593.91	10/18/10	153.53	4440.38
					1/17/11	153.51	4440.40
					4/11/11	154.24	4439.67
					8/26/11	154.79	4439.12
					10/11/11	155.02	4438.89
					2/1/12	155.08	4438.83
					4/13/12	155.40	4438.51
					9/13/12	156.29	4437.62
					10/16/12	156.43	4437.48
					2/6/13	156.27	4437.64
					4/9/13	156.71	4437.20
					7/12/13	157.18	4436.73
					8/14/12	188.36	4406.58
					10/16/12	193.33	4401.61
HOWARD 312	221312	601308.920	3468772.630	4594.9356	2/6/13	193.74	4401.20
					4/9/13	195.30	4399.64
					7/12/13	198.27	4396.67
					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
KEEFER	209744	599879.175	3468119.015	4572.03	10/19/10	137.68	4434.35
					1/18/11	137.42	4434.61
					4/6/11	137.91	4434.12
					7/18/11	140.39	4431.64
					10/11/11	141.68	4430.35
					2/6/12	139.27	4432.76
					4/23/12	139.76	4432.27
					7/17/12	140.69	4431.34
					10/9/12	141.00	4431.03
					1/10/13	140.80	4431.23
					4/8/13	141.32	4430.71
					7/11/13	141.81	4430.22
					3/22/13	221.32	4222.51
LADD 251	520251	594788.933	3470348.534	4443.83	6/14/13	221.78	4222.05
					9/24/13	219.60	4224.23



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					2/9/10	253.10	4273.95
					4/28/10	253.83	4273.22
					7/28/10	254.05	4273.00
					12/8/10	252.87	4274.18
					3/17/11	252.76	4274.29
					6/24/11	288.00	4239.05
					9/29/11	276.58	4250.47
LADD 538	505538	596790.675	3469638.573	4527.05	12/16/11	250.68	4276.37
					2/15/12	253.80	4273.25
					6/11/12	258.90	4268.15
					9/26/12	255.76	4271.29
					12/19/12	249.43	4277.62
					3/22/13	250.51	4276.54
					6/27/13	270.00	4257.05
					9/24/13	250.80	4276.25
					2/9/10	262.80	4207.31
					4/28/10	262.65	4207.46
			3470817.194	4470.11	7/28/10	265.75	4204.36
					12/8/10	262.38	4207.73
					3/17/11	262.65	4207.46
					6/24/11	262.51	4207.60
					9/29/11	262.28	4207.83
LADD 837	519837	594757.700			12/16/11	264.32	4205.79
					2/15/12	262.24	4207.87
					6/11/12	264.04	4206.07
					9/26/12	261.75	4208.36
					12/19/12	261.94	4208.17
					3/27/13	266.68	4203.43
					6/14/13	261.51	4208.60
					9/24/13	261.38	4208.73
					3/17/11	82.32	4431.08
					6/24/11	84.00	4429.40
					9/29/11	83.62	4429.78
					12/16/11	84.8	4428.60
					2/15/12	84.67	4428.73
LADD 977	642977	597619.168	3468714.011	4513.40	6/11/12	85.7	4427.70
					9/26/12	84.96	4428.44
					12/19/12	86.27	4427.13
					3/22/13	85.18	4428.22
					6/14/13	86.54	4426.86
					9/24/13	82.66	4430.74



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
MCCONNELL 205	E2020E	004.402.004	2400040420	4000 70	7/21/10	159.37	4441.33
MCCONNELL 265	539265	601463.094	3468840.139	4600.70	10/18/10	159.63	4441.07
					1/19/11	159.69	4441.01
					4/8/11	159.10	4441.60
					7/12/11	160.77	4439.93
					10/11/11	161.17	4439.53
					2/7/12	161.31	4439.39
					4/11/12	161.57	4439.13
					7/6/12	162.36	4438.34
					10/8/12	162.43	4438.27
					1/10/13	162.57	4438.13
					4/18/13	163.08	4437.62
					7/27/12	170.50	4431.05
					10/8/12	166.81	4434.74
MCCONNELL 459	221459	601471.708	3468840.682	4601.55	1/15/13	166.32	4435.23
					4/10/13	166.79	4434.76
					7/19/13	167.53	4434.02
					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
METZLER	35-71891	602091.308	3471381.176	4728.53	10/19/10	289.09	4439.44
					1/19/11	289.54	4438.99
					4/4/11	289.87	4438.66
					7/12/11	289.98	4438.55
					10/12/11	290.47	4438.06
					2/7/12	290.92	4437.61
					4/12/12	291.15	4437.38
					7/18/12	291.37	4437.16
					10/4/12	291.63	4436.90
					1/11/13	292.15	4436.38
					4/11/13	292.29	4436.24
					7/17/13	292.43	4436.10



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
NESS	509127	607866.391	3471419.494	4761.23	2/2/10	531.85	4229.38
					4/21/10	568.11	4193.12
					7/19/10	573.02	4188.21
					1/18/11	541.80	4219.43
					7/12/11	597.71	4163.52
					2/3/12	591.24	4169.99
					1/9/13	551.35	4209.88
					5/13/08	339.77	4460.91
NOTEMAN	212483	606053.800	3471576.400	4800.68	8/27/08	344.34	4456.34
11012	2.2.00	000000.000	011 101 0.100	1000.00	11/22/08	322.26	4478.42
					2/25/09	327.54	4473.14
					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
NSD-02	527587	598820.051	3468821.474	4531.38	6/17/11	109.29	4422.09
					12/7/11	104.41	4426.97
					3/6/12	104.30	4427.08
					12/14/12	107.24	4424.14
					3/22/13	107.20	4424.18
					6/24/13	113.50	4417.88
					9/23/13	105.00	4426.38
					10/7/09	85.62	4432.66
					3/16/10 5/25/10	83.51 84.49	4434.77 4433.79
							4433.79
					8/25/10 3/17/11	85.70 86.76	4432.56
					6/17/11	88.76	4429.52
NSD-03	527586	598070.538	3468694.259	4518.28	12/7/11	89.30	4429.52
					3/6/12	89.24	4429.04
					12/14/12	90.83	4429.04
					3/22/13	88.65	4429.63
					6/24/13	91.70	4426.58
					9/23/13	86.88	4431.40
					10/27/08	160.51	4439.93
					4/29/09 <sup>2</sup>	160.5	4439.94
NWC-02	562944	600177.435	3467474.673	4600.44	9/10/09 <sup>2</sup>	155	4445.44
					4/2010 <sup>2</sup>	131	4469.44
					3/1/2013 <sup>2</sup>	131	4469.44
					11/3/08	131.48	4443.51
NIMO OO	202224	004450 057	2400050 000	4574.00	4/29/09 <sup>2</sup>	130	4444.99
NWC-03	203321	601153.857	3468350.838	4574.99	9/10/09 <sup>2</sup>	126	4448.99
					10/9/09 <sup>5</sup>	125	4449.99



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
NWC-03 CAP	627684	601151.704	3468343.653	4572.82	7/15/11	134.42	4438.40
					10/13/11	134.73	4438.09
					1/31/12	134.50	4438.32
					4/25/12	135.09	4437.73
					7/18/12	135.73	4437.09
					10/10/12	135.97	4436.85
					1/10/13	135.60	4437.22
					4/17/13	136.32	4436.50
					7/12/13	136.78	4436.04
					12/2/08	352.11	4338.66
					4/29/09 <sup>2</sup>	328	4362.77
NWC-04	551849	605829.808	3469071.959	4690.77	9/10/09 <sup>2</sup>	324	4366.77
					4/2010 <sup>2</sup>	216	4474.77
					3/1/2013 <sup>2</sup>	216	4474.77
					4/29/09 <sup>2</sup>	156	4436.50
					9/10/09 <sup>2</sup>	155	4437.50
NWC-06	575700	599822.821	3467749.954	4592.50	10/9/09 <sup>2</sup>	148	4444.50
					4/2010 <sup>2</sup>	140	4452.50
					3/1/13 <sup>2</sup>	140	4452.50
					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
OSBORN	643436	607031.823	3470270.548	4711.95	10/5/09	75.09	4636.86
					1/21/10	75.37	4636.58
					4/19/10	81.59	4630.36
					7/12/10	83.00	4628.95
					7/12/11	74.60	4637.35
					2/3/12	74.57	4637.38
					7/9/12	74.63	4637.32



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
PANAGAKOS	35-76413	605304.234	3469323.140	4691.40	8/25/11	172.89	4518.51
1 AIVAGAIROO	33 70413	000004.204	0400020.140	4051.40	2/6/12	169.09	4522.31
					2/29/12	169.32	4522.08
					3/15/12	169.64	4521.76
					4/12/12	168.85	4522.55
					7/9/12	170.38	4521.02
					11/27/12	169.82	4521.58
					1/18/13	169.12	4522.28
					2/6/13	168.76	4522.64
					4/9/13	167.79	4523.61
					7/10/13	168.51	4522.89
					5/15/08	279.78	4447.43
					8/18/08	280.06	4447.15
PARRA	576415	602170.716	3471263.549	4727.21	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
					7/17/08	149.88	4442.25
				-	11/3/08 2/25/09	150.99 149.68	4441.14 4442.45
				-	4/14/09		4442.45
				-		150.01	
				-	7/13/09 10/7/09	150.47 150.96	4441.66 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
PIONKE 395	613395	601045.471	3468960.981	4592.13	1/19/11	152.38	4439.75
	0.3000	55.576.117	3.33300.001	.552.15	4/8/11	153.04	4439.09
					7/12/11	153.57	4438.56
					10/11/11	153.87	4438.26
					2/1/12	153.92	4438.21
					4/12/12	154.35	4437.78
					7/11/12	154.97	4437.16
					10/17/12	155.31	4436.82
					1/9/13	155.25	4436.88
					4/17/13	155.76	4436.37
					7/18/13	156.09	4436.04
					9/18/12	152.00	4435.21
					10/11/12	152.15	4435.06
PIONKE 517	221517	600909.967	3468866.654	4587.20792	1/9/13	152.23	4434.98
		600909.967			4/17/13	152.58	4434.63
					7/16/13	153.11	4434.10



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
POOL	509518	599683.603	3470013.823	4639.09	4/21/09	204.87	4434.22
1 002	000010	000000.000	0170010.020	1000.00	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
					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
DAMIDEZ	216425	E00720 C40	2407504 202	4596.61	7/21/10	161.05	4435.56
RAMIREZ	216425	599730.649	3467584.363	4596.61	10/19/10	161.23	4435.38
					1/18/11 4/11/11	161.22 161.48	4435.39
					7/18/11	162.39	4435.13 4434.22
					10/12/11	163.04	4433.57
					4/10/12	163.22	4433.39
					7/6/12	163.85	4432.76
					10/8/12	164.38	4432.23
					4/19/13	164.96	4431.65
					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
RAY	803772	607083.422	3469195.147	4647.91	10/20/10	49.85	4598.06
					1/17/11	50.51	4597.40
					4/5/11	51.84	4596.07
					7/11/11	55.74	4592.17
					10/12/11	53.63	4594.28
					1/31/12	53.21	4594.70
					4/11/12	54.50	4593.41
					7/6/12	58.75	4589.16
					10/3/12	60.98	4586.93
					1/17/13	56.57	4591.34
					4/18/13	56.32	4591.59
					7/9/13	60.30	4587.61



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
ROGERS 596	573596	601001.503	3468491.639	4577.35	7/14/11	138.09	4439.26
					10/12/11	138.09	4439.26
					1/30/12	137.91	4439.44
				-	4/23/12	138.61	4438.74
				-	7/13/12	139.65	4437.70
					10/10/12	139.55	4437.80
				-	1/15/13 4/15/13	139.23 139.97	4438.12 4437.38
				-	7/15/13	139.94	4437.41
					2/7/08	129.85	4449.17
				-	7/29/08	131.86	4447.16
					10/22/08	132.08	4446.94
ROGERS 750 <sup>3</sup>	641750	600977.690	3468417.386	4579.02	2/10/09	130.62	4448.40
				-	4/29/09	131.33	4447.69
					8/3/09	135.07	4443.95
					7/17/08	149.65	4441.01
					11/3/08	150.15	4440.51
					2/10/09	149.02	4441.64
			3467636.029	4590.66	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
ROGERS E	216018	600449.648			8/25/10	151.15	4439.51
					10/19/10	151.57	4439.09
					10/13/11	153.79	4436.87
					1/30/12	153.56	4437.10
					4/10/12	154.13	4436.53
					7/17/12	155.10	4435.56
					1/17/13	154.56	4436.10
					4/18/13	155.66	4435.00
					7/17/13	155.71	4434.95
					2/5/08	293.29	4441.89
					5/15/08	293.57	4441.61
					7/30/08	293.86	4441.32
					10/20/08 2/12/09	294.18 294.62	4441.00 4440.56
					4/21/09	294.66	4440.52
					8/3/09	294.98	4440.20
RUIZ	531770	602857.357	3471424.219	4735.18	10/28/09	295.33	4439.85
		332331.001		55.15	2/1/10	295.70	4439.48
					4/26/10	295.96	4439.22
					4/8/11	297.20	4437.98
					4/13/12	298.47	4436.71
					1/11/13	299.39	4435.79
					4/11/13	299.72	4435.46
	1				7/25/13	300.06	4435.12

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)								
					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								
SCHWARTZ	210865	600811.014	3468269.622	4564.49	10/19/10	126.30	4438.19								
					1/17/11	125.35	4439.14								
					4/11/11	127.50	4436.99								
					7/18/11	127.67	4436.82								
					10/12/11	127.51	4436.98								
					2/6/12	127.34	4437.15								
					4/10/12	127.78	4436.71								
					7/16/12	128.84	4435.65								
					10/17/12	128.98	4435.51								
														3/13/13	128.81
					5/14/13	129.60	4434.89								
					7/15/13	129.05	4435.44								
					5/13/08	44.94	4606.28								
			1			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								
OTED/ ITAIC	000700	000001 700	0.400070.700	4054.00	1/26/10	51.13	4600.09								
STEPHENS	808560	606981.766	3469072.799	4651.22	4/20/10	51.24	4599.98								
					7/14/10	51.91	4599.31								
					1/18/11	52.98	4598.24								
					7/11/11	54.44	4596.78								
					1/31/12	55.65	4595.57								
					7/9/12	10.69	4640.53								
					1/18/13	10.50	4640.72								
					7/10/13	58.16	4593.06								



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					2/6/08	352.10	4454.42
				ļ ļ	5/15/08	358.97	4447.55
					8/5/08	Dry	<4426
				ļ ļ	10/16/08	347.00	4459.52
				ļ ļ	1/21/09	344.78	4461.74
				ļ ļ	4/10/09	349.64	4456.88
				ļ ļ	7/8/09	356.99	4449.53
					10/5/09	Dry	<4426
OLINIDEL T	004504	005000 050	0.474705.440	4000 50	1/21/10	Dry	<4426
SUNBELT	201531	605998.250	3471735.149	4806.52	4/19/10	Dry	<4426
					7/12/10	Dry	<4426
					1/19/11	Dry	<4426
					8/25/11	Dry	<4426
					2/3/12	Dry	<4426
					7/9/12	Dry	<4426
					9/13/12	Dry	<4426
					1/17/13	Dry	<4426
					7/9/13	Dry	<4426
					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
SWAN	NR	607378.547	3470648.298	4716.59	1/21/10	36.64	4679.95
OW/III	1410	007070.017	0170010.200	17 10.00	4/21/10	38.06	4678.53
				-	7/19/10	39.67	4676.92
					1/18/11	35.06	4681.53
					7/12/11	39.32	4677.27
					2/3/12	37.86	4678.73
				-	7/10/12	40.39	4676.20
				-	1/9/13	38.51	4678.08
				-			
THOMPSON 151	612151	599543.561	3467387.294	4597.62	7/8/13 8/9/13	42.26 167.86	4674.33 4429.76
THOWFSON 131	012131	J99J43.50 I	3407307.294	4037.02			
					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
TM 004	522574	604450.050	2472000 704	4900 40	11/4/09	348.97	4459.46
TM-02A	5225/4	604152.059	3472008.794	4808.43	3/10/10	348.19	4460.24
					4/6/10	353.86	4454.57
					7/6/10	349.20	4459.23
					2/10/11	347.60	4460.83
					7/13/11	348.14	4460.29
					2/2/12	346.94	4461.49
					8/13/12	344.53	4463.90
					2/14/13	343.50	4464.93
					8/27/13	343.84	4464.59



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)				
					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				
TM 00	500575	000000 400	0.470744.040	4007.05	5/13/09	113.86	4783.99				
TM-03	522575	606366.130	3473711.046	4897.85	8/18/09	128.80	4769.05				
					11/10/09	125.38	4772.47				
					3/2/10	128.02	4769.83				
					4/14/10	130.56	4767.29				
					7/7/10	131.25	4766.60				
					2/1/12	135.04	4762.81				
					2/26/08	158.78	4549.10				
					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				
TM-06 MILLER	522695	606055.975	3468376.658	4707.88	11/12/09	158.96	4548.92				
					3/8/10	158.99	4548.89				
					4/14/10	159.02	4548.86				
					7/2/10	159.13	4548.75				
					7/21/11	159.88	4548.00				
									7/9/12	161.40	4546.48
							2/14/13	161.05	4546.83		
					8/19/13	161.30	4546.58				
					3/15/12	279.30	4461.88				
		601586.268 3471816.397					4/24/12	279.03	4462.15		
							9/13/12	278.30	4462.88		
TM-10 USBP	522696		3471816.397	4741.18	10/19/12	277.45	4463.73				
					3/7/13	276.55	4464.63				
					4/17/13	276.42	4464.76				
					7/23/13	275.99	4465.19				
					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				
TM-16	522578	605588.075	3469842.199	4717.71	8/19/09	82.37	4635.34				
I IVI- I U	322316	000000.070	3403042.133	7/1/./1	11/10/09	82.83	4634.88				
					3/2/10	83.09	4634.62				
					4/14/10	83.22	4634.49				
					7/2/10	83.51	4634.20				
					7/14/11	80.41	4637.30				
					7/9/12	72.55	4645.16				
					8/15/13	61.42	4656.29				



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)											
					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											
				ļ ļ	11/4/09	201.16	4444.71											
T14.404	500504	000450 740	0.400.407.400	4045.07	3/10/10	201.34	4444.53											
TM-19A	522581	602458.710	3469197.426	4645.87	4/9/10	201.55	4444.32											
					7/7/10	202.35	4443.52											
					2/14/11	203.00	4442.87											
					7/15/11	203.30	4442.57											
					2/2/12	203.84	4442.03											
					7/11/12	204.75	4441.12											
					10/16/12	205.02	4440.85											
						2/15/13	205.30	4440.57										
					9/4/13	205.73	4440.14											
				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											
TM-42	562554	603698.271	3469104.903	4666.67	11/3/09	213.05	4453.62											
···· · <u>-</u>				4000.07	2/24/10	213.36	4453.31											
				İ							İ	1				4/19/10	213.51	4453.16
					7/2/10	213.52	4453.15											
					7/12/11	214.62	4452.05											
								İ					7/11/12	216.10	4450.57			
					2/12/13	216.55	4450.12											
					8/28/13	217.38	4449.29											
					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											
TVI 236	802236	600552.215	3467978.431	4561.98	2/2/10	122.26	4439.72											
					4/23/10	122.70	4439.72											
					7/15/10 7/15/11	125.08	4436.90											
						127.23	4434.75											
					7/16/12 10/9/12	127.81 128.45	4434.17 4433.53											
					10/9/12	178.45	44.1.1 5.1											



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)					
					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					
TVI 713	567713	600729.095	3468412.946	4567.22	10/20/10	130.84	4436.38					
	001110	0001201000	0.001.2.0.0	1007.122	1/20/11	134.36	4432.86					
					4/11/11	135.72	4431.50					
					7/15/11	131.61	4435.61					
					10/12/11	130.33	4436.89					
					2/3/12	130.01	4437.21					
					4/25/12	131.33	4435.89					
							7/16/12	131.97	4435.25			
					10/9/12	132.16	4435.06					
					2/6/13	131.14	4436.08					
					4/10/13	132.08	4435.14					
					7/18/13 2/15/08	131.72 143.31	4435.50 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/	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					
WEISKOPF 802	641802	601154.951	3468658.855	4586.89	10/20/10	147.11	4439.78					
					1/17/11	146.72	4440.17					
					4/11/11	146.31	4440.58					
					8/26/11	148.06	4438.83					
					10/13/11	148.30	4438.59					
					2/1/12	148.23	4438.66					
					4/25/12	148.82	4438.07					
					7/13/12	149.79	4437.10					
					10/11/12	149.73	4437.16					
					1/16/13	149.49	4437.40					
					4/17/13	150.16	4436.73					
					7/18/13	150.24	4436.65					
					12/6/12	149.27	4436.43					
WEISKOPF 897	221897	601096.780	3468647.358	4585.70	1/16/13	148.70	4437.00					
				12300	4/17/13	149.80	4435.90					
					7/18/13	150.15	4435.55					
WMD-2011-03M	913037	605360.830	3470671.273	4746.28	2/2/12	226.66	4519.62					



Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
ZANDER	205126	599678.880	3467998.486	4580.94	10/19/10	147.80	4433.14
					1/18/11	147.52	4433.42
					4/6/11	147.84	4433.10
					7/13/11	148.91	4432.03
					10/12/11	149.50	4431.44
					1/31/12	149.31	4431.63
					4/10/12	149.64	4431.30
					7/17/12	150.63	4430.31
					10/8/12	150.92	4430.02
					1/10/13	150.89	4430.05
					4/18/13	151.36	4429.58
					7/15/13	152.14	4428.80

Notes:

35-71891 = ADWR 35 Database

ADWR = Arizona Department of Water Resources

ft amsl = feet above mean sea level

NR = No Record

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

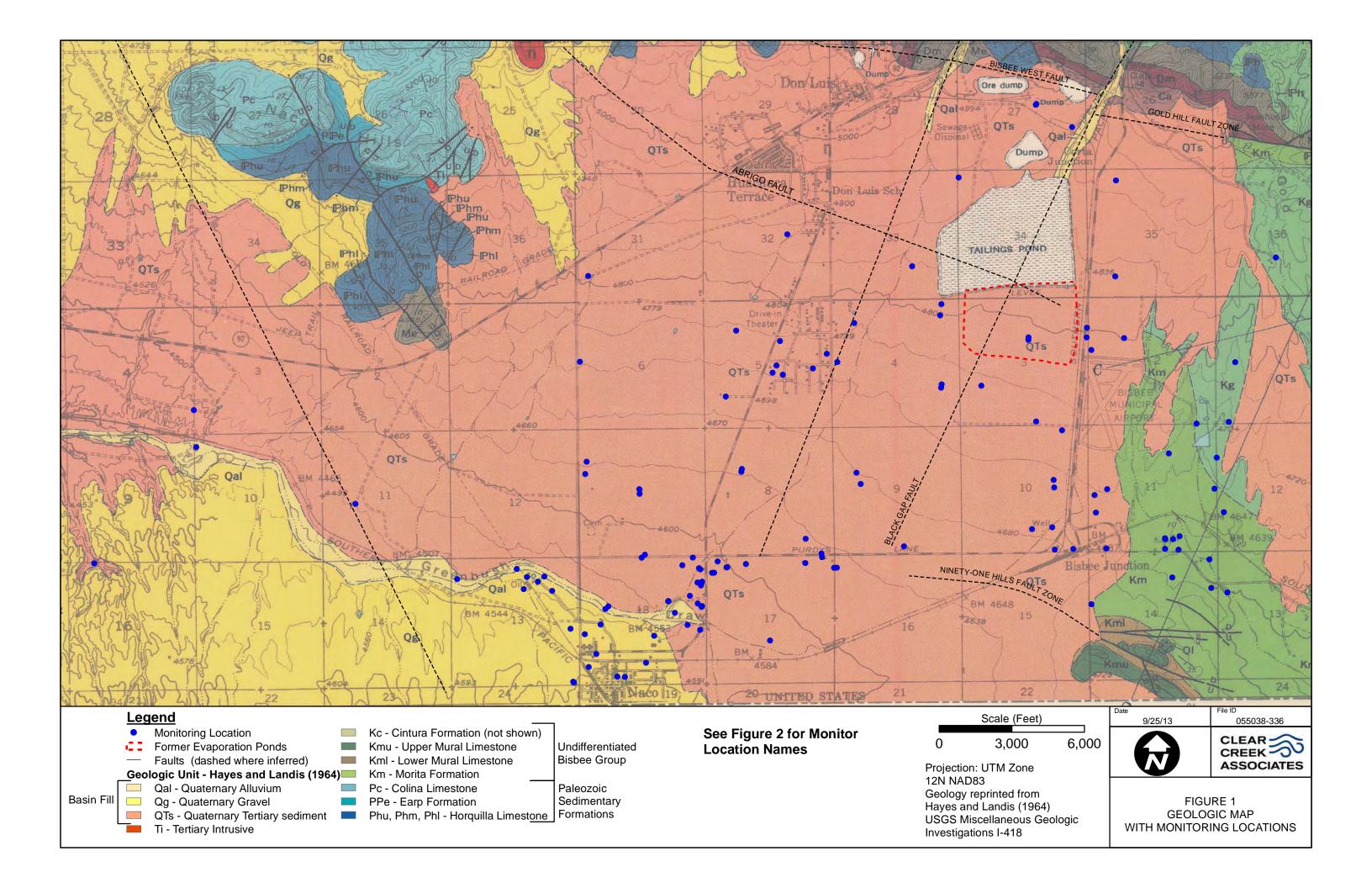


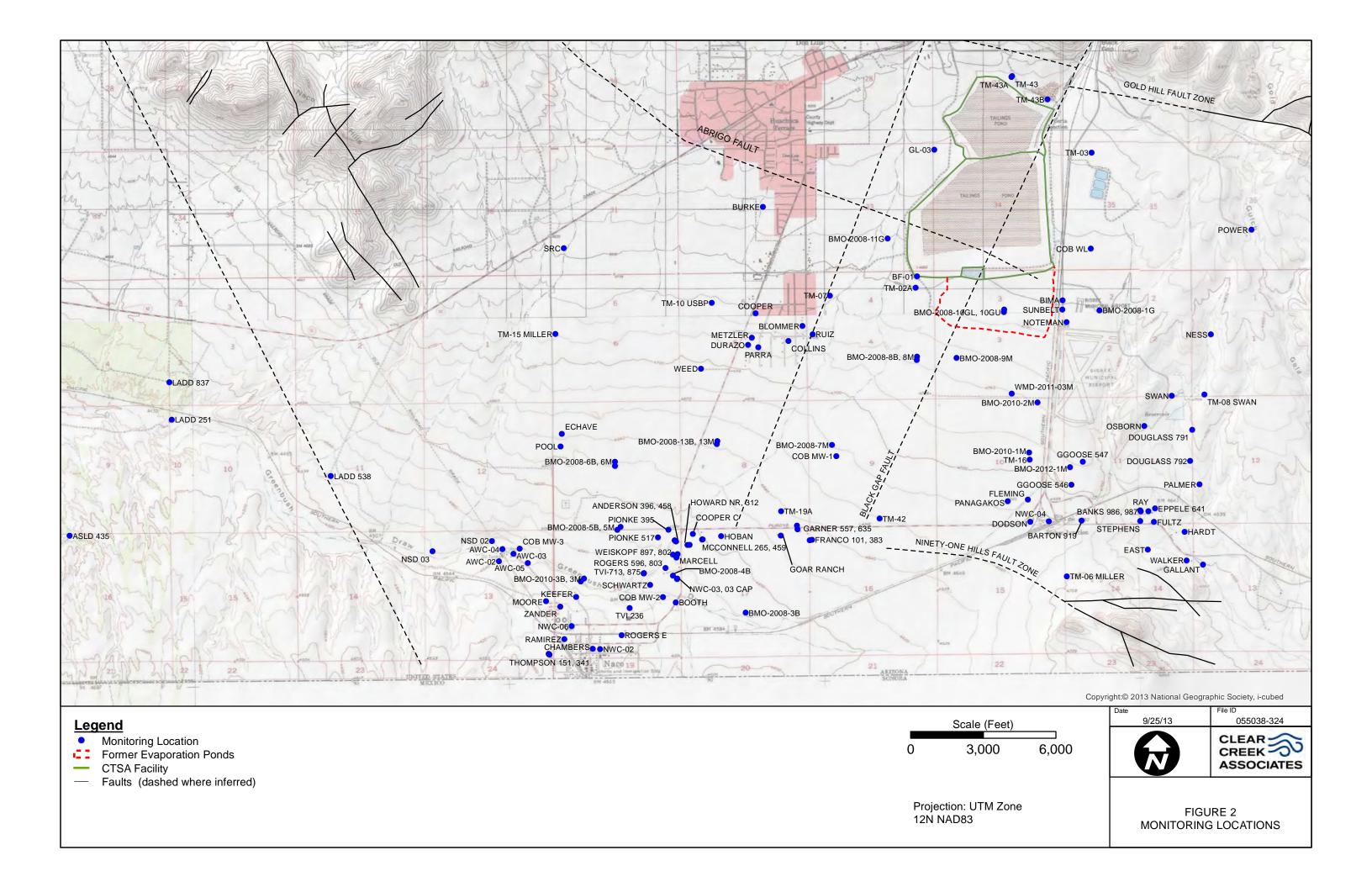
<sup>&</sup>lt;sup>1</sup> Depth to Water measurement provided by Arizona Water Company

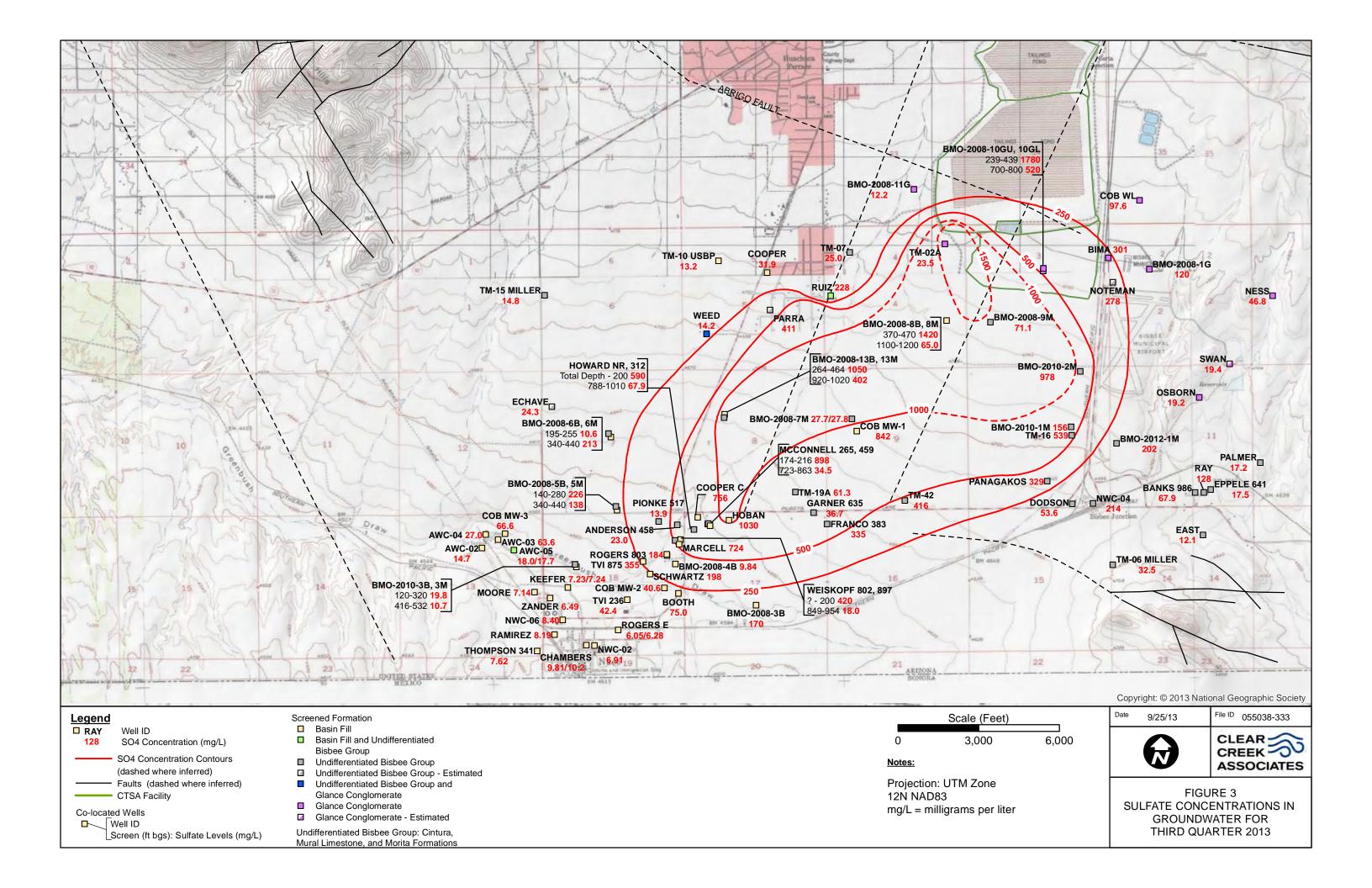
<sup>&</sup>lt;sup>2</sup> Depth to Water measurement provided by Naco Water Company

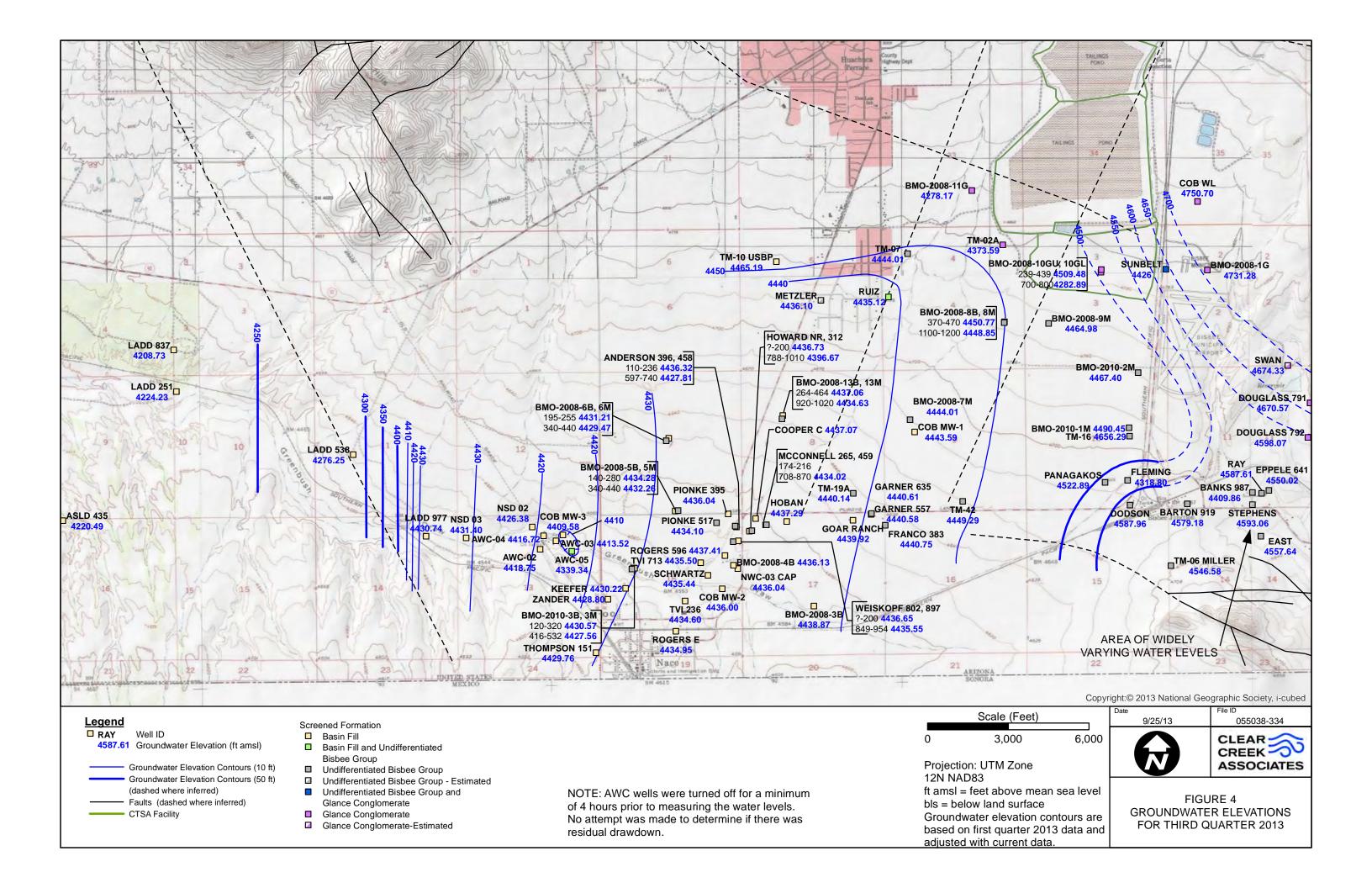
 $<sup>^{\</sup>rm 3}$  Well previously identified as ROGERS 803

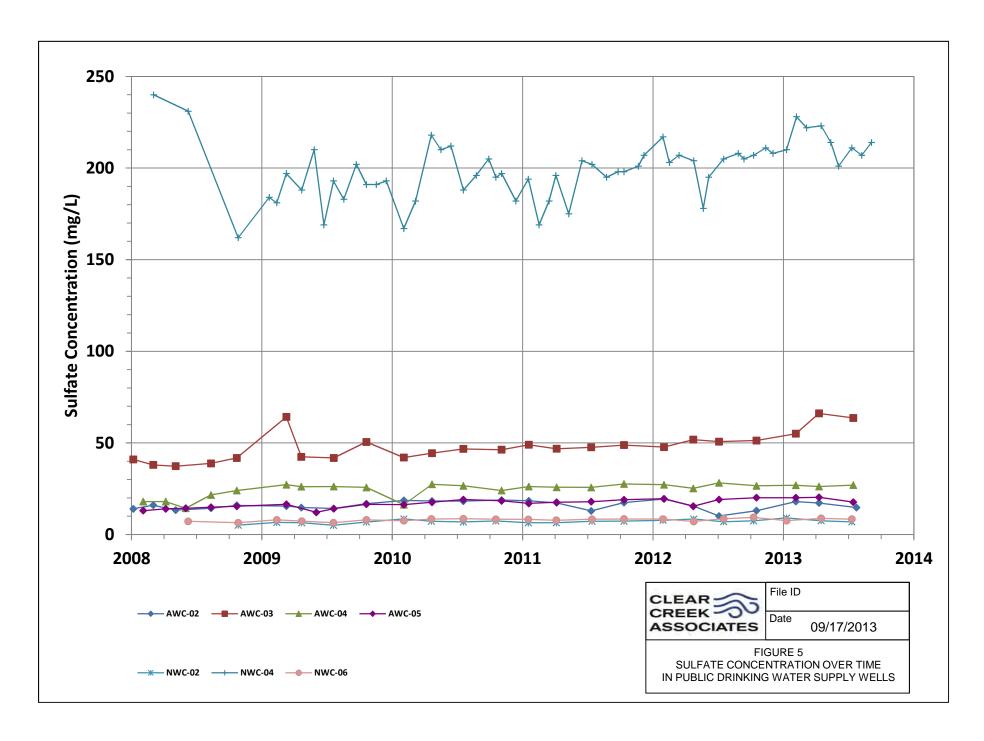
# **FIGURES**

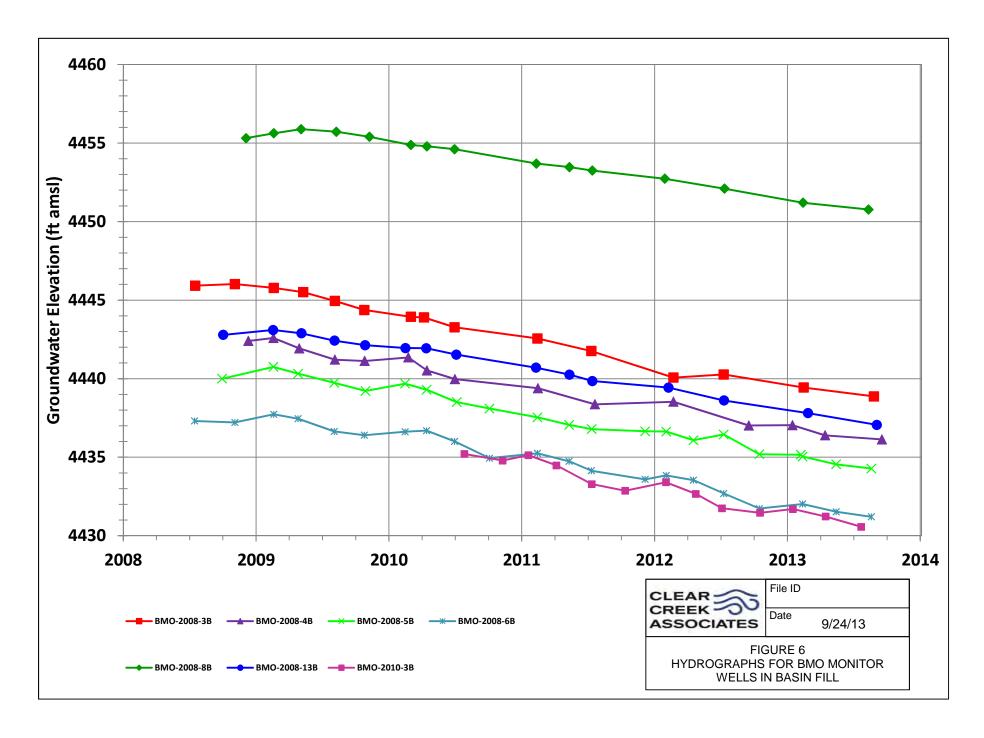


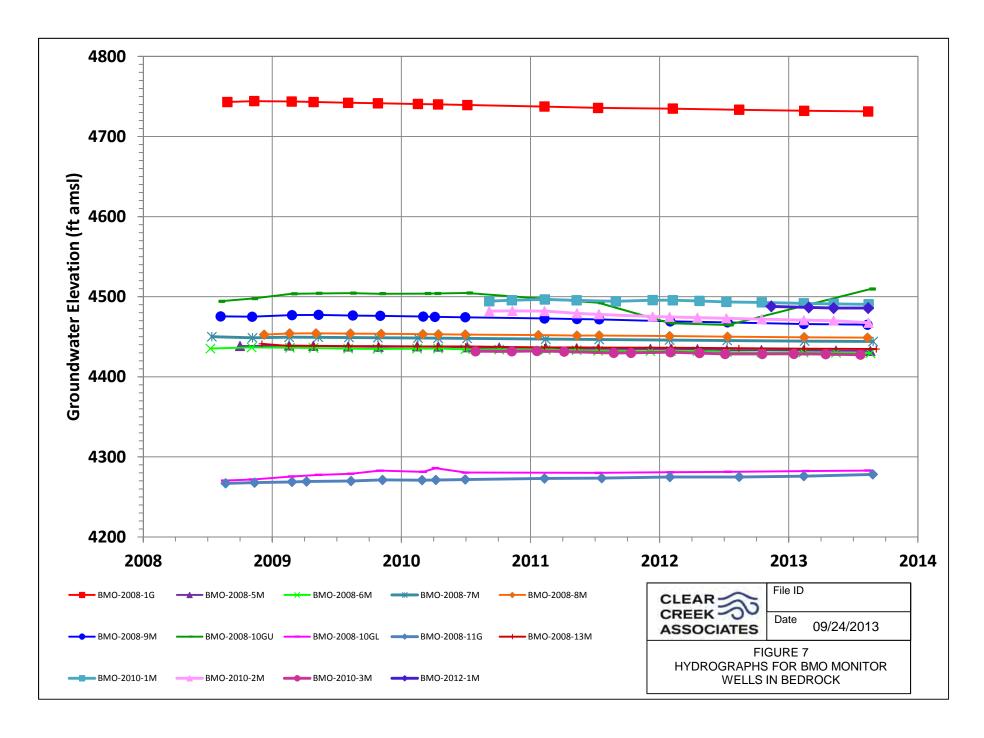












# APPENDIX A SURVEY DATA

# APPENDIX A Survey Data

Point ID	ADWR 55 Number	Survey Location	Northing (UTM meters)	Easting (UTM meters)	Measuring Point Elevation (meters)	Measuring Point Elevation (feet)
THOMPSON 151	612151	Top of Casing	3467387.294	599543.561	1401.358	4597.623
THOMPSON 341	218341	Top of Casing	3467396.849	599532.241	1401.087	4596.732

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



# APPENDIX B DATA VERIFICATION REPORT

### **APPENDIX B**

# **DATA VERIFICATION REPORT**

# THIRD QUARTER 2013 GROUNDWATER MONITORING REPORT

# Prepared for:

# FREEPORT-MCMORAN CORPORATION COPPER QUEEN BRANCH

36 West Highway 92 Bisbee, Arizona 85603

# Prepared by:

# CLEAR CREEK ASSOCIATES, P.L.C.

221 North Court Avenue, Suite 101 Tucson, Arizona 85701

October 18, 2013

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#### 1. INTRODUCTION

This report summarizes the data verification review of groundwater samples collected and analyzed during the third quarter 2013 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 third quarter 2013 were provided to Clear Creek by SVL Analytical, Inc. (SVL) of Kellogg, Idaho for preparation of the third quarter 2013 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.

A laboratory comparison was conducted on select samples from the second quarter 2013 as an elective, additional measure of data quality insurance. Turner Laboratories (Turner) of Tucson, Arizona were contracted to analyze duplicate samples from the second quarter 2013 sampling campaign. The comparison of sulfate results between SVL and Turner are discussed in Section 6.0 of this data verification review, and provided on Table B.1 and Figure B.1.

The laboratory reports for the third quarter 2013 samples including COC forms, laboratory correspondence, QC summaries, data qualifiers, and internal QA/QC tests performed by the laboratory are in Appendix C. Based on the results of laboratory control samples, matrix spike/recovery and blank spikes, SVL did not advise any modifications regarding the usability and data validation status of the laboratory test results. The analytical results for 102 samples collected by Clear Creek and CQB in third quarter 2013 are contained in 12 reports with the SVL laboratory identification numbers listed in the following table.

1

SVL ID	WELLS REPORTED
Number of w Number of d Number of fi	vells sampled: 83 vell samples collected (including duplicates and multiple samples from one well): 91 uplicate samples collected: 6 eld and equipment blanks collected: 11 vr of samples collected: 102
W3G0485	NWC-04
W3G0290	FRANCO 383, PANAGAKOS, BANKS 986, DODSON, EAST, NOTEMAN, RAY, EPPELE 641, NESS, SWAN, OSBORN, BIMA, MCCONNELL 265, GARNER 635, MCCONNELL 459, COB MW-1, COOPER
W3G0486	MOORE, KEEFER, DUP20130711, EQB20130712, NWC-06, FB20130712, DUP20130712, PARRA, ECHAVE, ZANDER, EQB20130715, FB20130716, PIONKE 517, EQB20130716, ROGERS E, CHAMBERS, RAMIREZ, HOWARD NR, NWC-02
W3G0482	COLLINS, PALMER, BOOTH, DUP20130717, AWC-05, AWC-03, DUP20130715, DUP20130716, FB20130715, HOWARD 312, WEISKOPF 802, ANDERSON 458, MARCELL, AWC-04, SCHWARTZ, ROGERS 803, WEISKOPF 897
W3G0770	BMO-2010-3M, EQB20130723, FB20130723, BMO-2010-3B, TM-10 USBP, WEED, TVI 875, TVI 236, COB MW-2, AWC-02, RUIZ, EQB20130725, FB20130725, COB-WL, COB MW-3
W3H0297	NWC-04, THOMPSON
W3H0426	BMO-2008-8M, BMO-2008-8B, BMO-2008-9M, BMO-2008-10GL, COOPER C, HOBAN, BMO-2008-1G, BMO-2012-1M, TM-16, BMO-2010-1M, BMO-2010-2M
W3H0616	BMO-2008-10GU, TM-6, BMO-2008-6M, BMO-2008-6B, BMO-2008-5M, BMO-2008-5B
W3H0789	BMO-2008-11G, BMO-2008-3B, TM-42, EQB-082813, BMO-2008-7M, DUP-082813, TM-7, TM-2A
W3H0426b	NWC-04
W3I0181	BMO-2008-13B, TM-19A, TM-15, BMO-2008-13M
W3I0472	BMO-2008-4B

#### 2. FIELD OPERATIONS

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

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

Documentation of the field activities was evaluated for quality assurance and has been deemed to have met the documentation requirements stated in the QAPP.

#### 2.1 Water Level Monitoring

Static water level measurements were attempted at each well that was sampled (where there are no known obstructions or lack of wellhead access to prevent static water level measurement) and at all wells where water level monitoring was conducted by Clear Creek and CQB. Water levels were measured while the well pump was off. Because it is not always possible to ascertain how long the pump had been off prior to water level measurements (for wells equipped with pumps), some water levels may be affected by residual drawdown. Before measuring the water level at each well, the battery on the water level indicator was checked and the sensitivity level was adjusted, if necessary. Each measurement was collected and verified by measuring the depth to water multiple times in order to obtain a consistent reading and accurate measurement.

### 2.2 Groundwater Sampling

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.



#### **Pre-Sampling Field Activities** 2.2.1

On each day of sampling, the pH<sup>1</sup> and SC<sup>2</sup> multipurpose meter was calibrated. In addition, the water level indicator was checked for a signal which indicates a working meter and sufficient battery strength. On each day where sampling extended for more than half a day, a mid-day calibration check was performed on the pH and SC probe to ensure accurate measurement. In addition to calibrating the instruments each day, measures were taken to 1) properly decontaminate field equipment, 2) ensure the appropriate storage and transport temperature of the samples, and 3) document activities related to the collection of groundwater samples as part of this project. These objectives were met by 1) replenishing or obtaining supplies of deionized water and ice daily, 2) use of the proper preservative and sample collection containers, 3) properly packing the samples on ice during field activities, 4) using deionized water to properly decontaminate field equipment prior to the start of sampling each day and after sampling at each well, and 5) obtaining the appropriate field notebook in order to document field activities related to the groundwater monitoring program.

#### Well Purging, Field Measurements, and Sample Collection

Three wetted casing volumes were purged from each well prior to sampling, when possible. However, when three casing volumes could not be purged, this information was noted on the groundwater sampling form (Appendix D) at each well for which this was the case. Purge water was discharged to the ground surface.

Field measurements were collected at varying intervals during well purging at each well where a water quality sample was collected. If possible, field parameters were monitored until the measurements stabilized within 0.3 standard units for pH, 2 degrees Celsius for temperature and 100 microSiemens/centimeter for specific conductance as described in Section 4.2.1.2 of the QAPP.

During this monitoring period 91 groundwater samples (duplicate and multiple samples included) were collected for analysis from 83 wells. Groundwater samples were collected by filtering the sample into a 250 milliliter bottle using a clean filtration apparatus and one disposable 0.45-micron filter. All bottles were provided by the laboratory and maintained in a clean and secure work area until used in the field.

<sup>&</sup>lt;sup>2</sup> Field SC meters were calibrated using standard stock solutions



<sup>&</sup>lt;sup>1</sup> Field pH meters were calibrated using a three point calibration

## 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<sup>®</sup> 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 third quarter 2013 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 eleven days of sample collection and the time between sample collection and receipt of samples by SVL was two to twelve 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 is equal to or less than the target MDL identified in the QAPP.

Lab	Method	MDL (mg/L)	RL (mg/L)	Target MDL <sup>1</sup> (mg/L)
SVL	EPA 300.0	0.07	0.30	10

mg/L = milligrams per liter

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 and spike duplicate samples were analyzed for 10 percent of the samples analyzed. The spike samples were prepared by adding a sulfate spike to one randomly chosen sample out of every ten samples analyzed. Spike recoveries for most analyses were between 90 and 110 percent. Instances in which analytical spike recoveries were high or unusable are qualified with an "M1", or "M3" flag, respectively. The "M1" flag was used on reports W3H0789, W3H0616, W3H0426, W3G0482-1, and W3G0770. The "M3" qualifier was used on reports W3H0789, W3H0616, W3H0426, W3G0482-1, W3G0770, W3G0482, W3G0486, W3G0290, and W3G0485. In all cases where a qualifier was used, the method control sample recovery was checked to ensure that it was acceptable. The method control samples were prepared by adding a sulfate spike to de-ionized water.

#### 4.5.3 <u>Laboratory Duplicate Samples</u>

Analyses of laboratory duplicate samples were reviewed as part of this quality data verification report. Field duplicate samples are discussed in Section 5.1. In all cases where the relative percent difference (RPD) could be calculated for laboratory duplicate samples, the RPD was within 20 percent, which is the tolerance range set by the laboratory. The results met QA criteria and demonstrate an appropriate level of precision in laboratory analysis of these samples.

#### 4.5.4 Sample Re-Analysis

During the third quarter 2013, one field sample (SCHWARTZ) was re-analyzed by SVL at the request of Clear Creek Associates based on comparison to historical results. The July 15, 2013 sample concentration was reported as 198 mg/L which was the highest reported concentration at that well since the third quarter 2008. The sample was reanalyzed twice on August 15, 2013 with concentrations reported as 198 mg/L and 190 mg/L, however the reanalysis was completed outside of the hold time of 28 days. The original sample result was confirmed and is reported in tables and figures.

# 4.5.5 Blank Samples

During the third quarter 2013, 11 blank samples were collected, including five field blanks (FB20130712, FB20130715, FB20130716, FB20130723, and FB20130725) and six field (EQB20130712, EQB20130715, EQB20130716, equipment blanks EQB20130723 EQB20130725, and EQB-082313). None of the blank samples collected in the third guarter 2013 had sulfate concentrations above the reporting limit of 0.30 mg/L. The results demonstrate that the sulfate concentrations reported in the third quarter 2013 were not affected by sample collection and sample handling procedures. Field and equipment blank samples were collected in accordance with procedures described in Section 4.2.1.5 of the QAPP. Field and equipment blank samples were collected and submitted along with other samples to evaluate the potential for contaminant introduction under field conditions. As required by Section 4.2.1.5 of the QAPP, a minimum of one field blank and one equipment blank sample was collected for every twenty samples.

# 5. DATA QUALITY INDICATORS

The QAPP provides several DQIs for assessing the overall quality of the data. These DQIs include the following:

- Precision
- Bias
- Accuracy
- Representativeness
- Comparability
- Completeness
- Sensitivity

Each of these DQIs is discussed below in relation to the third quarter 2013 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 and by measuring the water level multiple times before recording the result.

For the QA/QC of analytical data, precision was quantified by calculating the RPDs between duplicates among the following groups of duplicate samples:

- Laboratory duplicate samples
- Field duplicate samples

As discussed in Section 4.5.3 there were no exceedances of RPD QA criteria for any laboratory duplicates. During this monitoring period 6 field filtered duplicate samples (DUP20130711, DUP20130712, DUP20130715, DUP20130716, DUP201307117, and DUP-082813) were collected by Clear Creek and CQB for analysis. The collection of 6 duplicate samples meets the QA/QC method and quantity goal stated in Section 4.2.1.5 of the QAPP.

Sulfate results for the 6 duplicate samples collected are provided in the table below. The range of RPD values was between 0.14 and 5.35 percent, all within the 20 percent acceptance criteria for



field duplicates, as stated in Section 3.3.1 of the QAPP. Overall, the DQI for precision is met for the analytical data.

SVL Project No.	Well ID	Duplicate ID	Sample (mg/l)	Duplicate (mg/l)	RPD
W3G0485 & W3G0486	NWC-04	DUP20130712	211	200	5.35%
<u>W3G0486</u>	KEEFER	DUP20130711	7.23	7.24	0.14%
W3G0486 & W3G0482	ROGERS E	DUP201307117	6.1	6.28	3.73%
<u>W3G0482</u>	AWC-05	DUP20130716	18	17.7	1.68%
W3G0482	CHAMBERS	DUP20130715	9.81	10.2	3.90%
<u>W3H0789</u>	BMO-2008-7M	DUP-082813	27.7	27.8	0.36%

mg/L = milligrams per liter

RPD = Relative Percent Difference

For the QA/QC of water level monitoring, precision was met by measuring the water level repeatedly until readings were within 0.03 feet of one another. Readings within that range were obtained from all wells where groundwater measurements were collected, so the DQI for precision is met.

#### **5.2** Bias

Bias is a systematic distortion of measurements causing consistent errors in one direction. Bias is managed in this data set by the consistent application of standardized sample collection and analysis procedures. As discussed in Section 4.5.5, none of the blank samples had measurable concentrations of sulfate indicating that the sampling collection and analysis procedures did not contribute sulfate to the results.

#### 5.3 Accuracy

Accuracy is a measure of the agreement of a measurement to a known value and is measured using the recoveries from laboratory control samples. As discussed in Sections 4.5.1, 4.5.2, and 4.5.3 there were no significant exceedances of the recovery QA criteria for any of the calibration standards, analytical spikes, or laboratory duplicates, respectively. As discussed in Section 4.5.5, none of the blank samples had measurable concentrations of sulfate indicating that the sampling collection and analysis procedures did not contribute sulfate to the results. Water level measurements for the third quarter 2013 were compared to previous quarters to ensure that the

measurements were within the expected ranges. Based on this information, the overall accuracy of the data is judged sufficient for the purpose of aquifer characterization.

## 5.4 Representativeness

All samples and water level measurements were taken from locations specified in the revised groundwater monitoring program (ADEQ, 2010) following sampling procedures specified in the QAPP. Therefore, they provide a good representation of groundwater quality at the sampled locations. The sampling procedures are representative of groundwater quality at the sampled locations because no sulfate was detected in the field or equipment blanks. The analytical data are 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 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 meets the MDL requirements specified in Table F.2 of the QAPP. The water level sounder was accurate to 0.01 feet as specified in Section 4 of the QAPP. Therefore, the analytical sensitivity is considered acceptable for use in aquifer characterization.

#### 6. INTER-LABORATORY COMPARISON

The inter-laboratory comparison described below was conducted as an additional QA step, to independently verify the results from SVL, which is the laboratory that is routinely used for groundwater monitoring. Second quarter 2013 samples analyzed by SVL were reported in July 2013 (Clear Creek, 2013). Additional analysis for select second quarter 2013 samples was conducted by Turner Laboratories of Tucson, Arizona (Turner). The Turner data were not analyzed in time to include in the second quarter monitoring report. Turner is licensed with the Arizona Department of Health Services (license number AZ0066). The laboratory reports from Turner for the second quarter 2013 duplicate samples including COC forms, laboratory correspondence, QC summaries, data qualifiers, and internal QA/QC tests performed by the laboratory are in Appendix C.

Second quarter 2013 samples reported here were collected by Clear Creek and delivered directly to Turner for analysis. The samples are serial duplicates of the samples sent to SVL and reported in the second quarter 2013. The serial duplicate samples submitted to Turner were collected by filling a second 250 milliliter sample container from the filtered discharge immediately after the collection of the first container for submittal to SVL. Laboratory reports include the date and time the samples were received by Turner. As noted on the analytical data reports from Turner, all of the sample bottles were received intact, properly preserved, and in good condition. The samples were received and analyzed by Turner within the established holding time for dissolved sulfate analysis in accordance with United States Environmental Protection Agency (EPA) Method 300.0.

The analytical results for 52 samples collected by Clear Creek in the second quarter 2013 are contained in 3 reports with laboratory identification numbers listed in the following table

TURNER ID	WELLS REPORTED
Total number of	of samples analyzed: 52
13D0620	GARNER 635, ANDERSON 458, ROGERS 803, BMO-2008-4B
13D0612	WEED, MCCONNELL459, HOWARD NR, HOWARD 312, EPPELE 641, NOTEMAN, PALMER, COOPER, PARRA, TVI815, BIMA, BANKS 986, RAY, MARCELL, AWC-02, AWC-03, RUIZ, FRANCO 383, EAST, DODSON, PANAGAKOS, CHAMBERS, ROGERS E, KEEFER, PIONKE517, WEISKOPF 897, WEISKOPF 802, TM-10, AWC-04, MCCONNELL 265, MOORE, ZANDER, NWC002, NWC-04, NWC-06, BMO-2013-3B, BMO-2010-3M, RAMIREZ, AWC-05, FB20130410, DUP20130408, EQB20130410, EQB20130417, FB20130417, DUP20130416
13E0496	SCHWARTZ, ECHAVE, NWC-04

The MDL and RL of the analytical method used by Turner 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.

Lab	Method	MDL (mg/L)	RL (mg/L)	Target MDL <sup>1</sup> (mg/L)	
Turner	EPA 300.0	0.13	5.0	10	

mg/L = milligrams per liter

<sup>1</sup> Target MDL from Table F.2 of QAPP

During the second quarter 2013 sampling 52 duplicate samples were collected for analysis by Turner in order to evaluate and confirm the results from SVL. The RPD was calculated for each set of samples (Table B.1) except for samples with at least one result below the reporting limit of the respective laboratories. The RPDs range from 0.00% to 31.11%. The RPD for WEISKOPF 897 was 31.11%, which exceeds the 20% limit stated in section 3.3.1 of the QAPP. SVL results were slightly higher than Turner results in 43 samples, lower than Turner results in three samples, and equal to Turner results in five samples. Figure B.1 shows a comparison between the results from each laboratory.

The results of inter-laboratory comparison show that there are no significant discrepancies between sulfate concentrations reported by SVL and Turner. Figure B.1 indicates a good correspondence between the SVL and Turner analyses, with a linear trendline of the data having a correlation coefficient of 0.9979. The slight bias for SVL's concentrations to be greater than Turner's is indicated by the trendline slope of 0.9609.

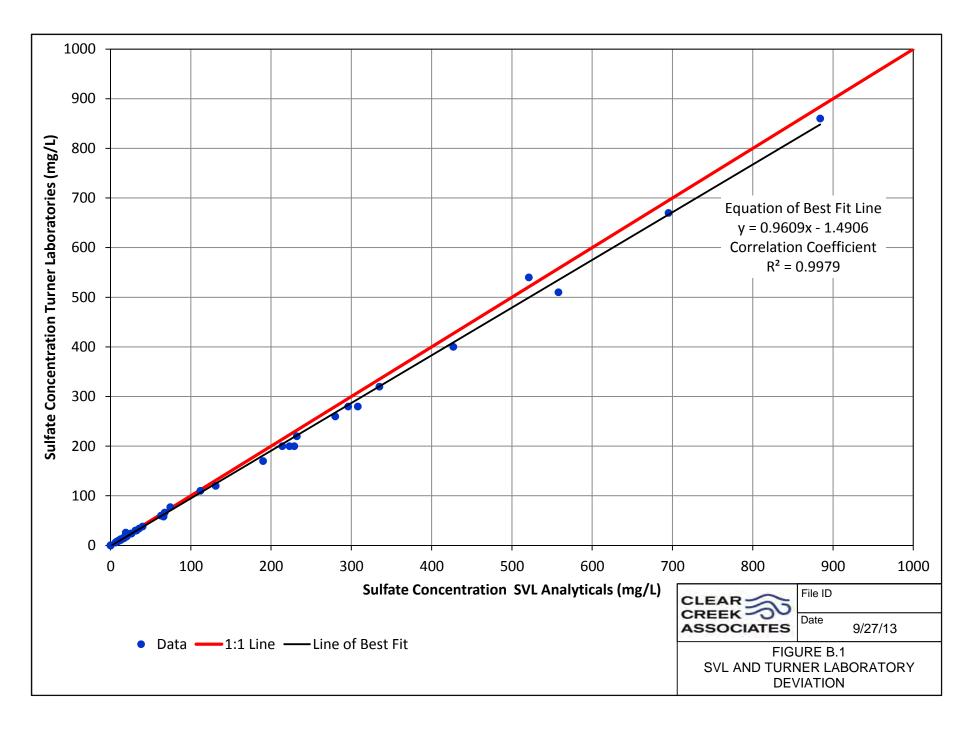
#### 7. REFERENCES

- 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. 2013. Second Quarter 2013 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. July 10, 2013.
- 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.

Table B.1 **SVL** and Turner Laboratory Comparison

Well Name	ADWR 55 Registry	Sample Date	рН	Temp	SC	SVL Sulfate,	Turner Sulfate	RPD%	Abosolute	Difference
	Number	Sample Date	(SU)	(deg C)	(μS/cm)	(mg/L)	Dissolved (mg/L	KFD/0	Difference	(SVL-Turner)
ANDERSON 458	221458	4/15/13	8.19	23.5	402.7	32.3	30	7.38%	2.30	2.3
AWC-02	616586	4/11/13	7.53	22.1	471.3	17.2	15	13.66%	2.20	2.2
AWC-03	616585	4/11/13	7.51	22.2	486.4	66.1	58	13.05%	8.10	8.1
AWC-04	616584	4/11/13	7.38	21.7	595.4	26.2	24	8.76%	2.20	2.2
AWC-05	590620	4/11/13	7.54	21.2	444.5	20.3	18	12.01%	2.30	2.3
BANKS 986	647986	4/8/13	7.87	20.7	861.7	62.9	60	4.72%	2.90	2.9
BIMA	577927	4/10/13	6.64	13.9	1569	308	280	9.52%	28.00	28.0
BMO-2008-4B	910096	4/15/13	7.75	23.0	368.2	11.2	11	1.80%	0.20	0.2
BMO-2010-3B	219970	4/16/13	7.65	21.2	415.1	17.5	16	8.96%	1.50	1.5
		4/16/13	7.83	22.3	383.7	10.2	9.5	7.11%	0.70	0.7
	219969	4/16/2013 DUP	7.83	22.3	383.7	10.2	9.4	8.16%	0.80	0.8
CHAMBERS	629807	4/18/13	7.49	21.7	434.1	9.78	9.1	7.20%	0.68	0.8
COOPER	623564	4/10/13	7.49	21.7	427.5	31.0	30	3.28%	1.00	1.0
DODSON	644927	4/9/13	7.72	19.6	1886	74.4	77	3.43%	2.60	-2.6
	+									
EAST	599796	4/9/13	7.54	19.6	597.7	12.2	< 5	NA 4 000/	NA 1 20	NA 1.2
ECHAVE	219449	5/14/13	7.74	22.2	400.2	25.2	24	4.88%	1.20	1.2
EPPELE 641	805641	4/8/13	7.71	20.4	564.1	17.5	17	2.90%	0.50	0.5
==	221222	4/8/2013 DUP	7.71	20.4	564.1	17.4	17	2.33%	0.40	0.4
FRANCO 383	221383	4/10/13	7.70	20.4	1000	335	320	4.58%	15.00	15.0
GARNER 635	587635	4/15/13	7.79	23.4	471.5	40.0	38	5.13%	2.00	2.0
HOWARD NR	NR	4/9/13	7.38	19.4	1319	521	540	3.58%	19.00	-19.0
HOWARD 312	221312	4/9/13	8.20	24.3	621.0	67.5	66	2.25%	1.50	1.5
KEEFER	209744	4/18/13	7.58	20.0	475.9	7.30	6.8	7.09%	0.50	0.5
MARCELL	NR	4/10/13	7.07	19.9	1578	695	670	3.66%	25.00	25.0
MCCONNELL 265	539265	4/18/13	7.11	20.4	1889	884	860	2.75%	24.00	24.0
MCCONNELL 459	221459	4/10/13	8.14	23.5	487.0	35.5	34	4.32%	1.50	1.5
MOORE	538847	4/19/13	7.68	21.6	434.7	7.25	7	3.51%	0.25	0.3
NOTEMAN	212483	4/8/13	6.9	22.3	1409	280	260	7.41%	20.00	20.0
NWC-02	562944	4/17/13	7.64	21.2	426.2	7.52	6.9	8.60%	0.62	0.6
NWC-04	551849	4/17/13	7.43	22.6	903.8	223	200	10.87%	23.00	23.0
	331043	5/14/13	7.53	23.2	881.7	214	200	6.76%	14.00	14.0
NWC-06	575700	4/17/13	7.66	21.1	404.1	8.82	8.2	7.29%	0.62	0.6
PALMER	578819	4/8/13	8.07	18.4	534.1	17.0	16	6.06%	1.00	1.0
PANAGAKOS	35-76413	4/9/2013	7.24	19.7	1105	232	220	5.31%	12.00	12.0
PARRA	576415	4/11/13	7.29	21.2	1206	427	400	6.53%	27.00	27.0
PIONKE 517	221517	4/17/13	7.74	22.1	391.9	14.6	13	11.59%	1.60	1.6
RAMIREZ	216425	4/19/13	7.6	22.1	413.9	8.63	8.3	3.90%	0.33	0.3
RAY	803772	4/8/13	7.32	20.0	1476	131	120	8.76%	11.00	11.0
ROGERS 803	641803	4/15/13	7.57	23.8	698.0	190	170	11.11%	20.00	20.0
ROGERS E	216018	4/18/13	7.63	21.3	433.5	6.26	6	4.24%	0.26	0.3
RUIZ	531770	4/11/13	7.26	21.9	876.8	229	200	13.52%	29.00	29.0
SCHWARTZ	210865	5/14/13	7.61	21.5	629.7	112	110	1.80%	2.00	2.0
TM-10 USBP	522696	4/17/13	8.27	20.3	423.9	12.8	11	15.13%	1.80	1.8
TVI 875	568875	4/10/13	7.35	20.9	907.6	296	280	5.56%	16.00	16.0
WEED	544535	4/10/13	7.76	20.6	383.9	13	13	0.00%	0.00	0.0
WEISKOPF 802	641802	4/17/13	7.22	20.1	1337	558	510	8.99%	48.00	48.0
WEISKOPF 897	221897	4/17/13	7.86	22.6	394.4	19.0	26	31.11%	7.00	-7.0
ZANDER	205126	4/18/13	7.65	20.8	436.7	6.66	6.3	5.56%	0.36	0.4
EQB20130410	-	4/10/13	-	-	-	< 0.30	< 5	NA	0.00	0.00
EQB20130417	-	4/17/13	-	-	-	< 0.30	< 5	NA	0.00	0.00
FB20130410	-	4/10/13	-	-	-	< 0.30	< 5	NA	0.00	0.00
FB20130417	-	4/17/13	-	-	-	< 0.30	< 5	NA	0.00	0.00
	1	., = , , ±0		l	I	3.55	MINIMUM	0.00%	0.00	-19.00
							MAXIMUM	31.11%	48.00	48.00
								52.11/0	SVL = Turner	
								SVI high	ner than Turner	43
SVL lower than Turn										3
									of Best Fit Line	0.961311847

Notes: ADWR = Arizona Department of Water Resources DUP = Blind duplicate mg/L = milligrams per liter NR = No Record SC = Specific Conductance SU = Standard Units  $\mu S/cm = microsiemens$  per centimeter NA = Not Available. Unable to calculate as the Turner sulfate result is below the minimum detection limit.



## APPENDIX C ANALYTICAL REPORTS



36 West Hwy 92

Bisbee, AZ 85603

One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **W3G0290**Reported: 26-Jul-13 09:38

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
FRANCO 383	W3G0290-01	Ground Water	10-Jul-13 11:54	VH	12-Jul-2013
PANAGAKOS	W3G0290-02	Ground Water	10-Jul-13 09:59	VH	12-Jul-2013
BANKS 986	W3G0290-03	Ground Water	09-Jul-13 17:02	VH	12-Jul-2013
DODSON	W3G0290-04	Ground Water	09-Jul-13 15:21	VH	12-Jul-2013
EAST	W3G0290-05	Ground Water	09-Jul-13 14:09	VH	12-Jul-2013
NOTEMAN	W3G0290-06	Ground Water	09-Jul-13 13:14	VH	12-Jul-2013
RAY	W3G0290-07	Ground Water	09-Jul-13 11:11	VH	12-Jul-2013
EPPLE 641	W3G0290-08	Ground Water	09-Jul-13 09:46	VH	12-Jul-2013
NESS	W3G0290-09	Ground Water	08-Jul-13 13:43	VH	12-Jul-2013
SWAN	W3G0290-10	Ground Water	08-Jul-13 14:21	VH	12-Jul-2013
OSBORN	W3G0290-11	Ground Water	08-Jul-13 15:00	VH	12-Jul-2013
BIMA	W3G0290-12	Ground Water	08-Jul-13 15:46	VH	12-Jul-2013
MCCONNELL 265	W3G0290-13	Ground Water	10-Jul-13 16:24	VH	12-Jul-2013
GARNER 635	W3G0290-14	Ground Water	10-Jul-13 14:57	VH	12-Jul-2013
MCCONNELL 459	W3G0290-15	Ground Water	10-Jul-13 17:30	VH	12-Jul-2013
COB MW-1	W3G0290-16	Ground Water	11-Jul-13 12:56	VH	12-Jul-2013
COOPER	W3G0290-17	Ground Water	11-Jul-13 13:34	VH	12-Jul-2013

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.



Birty Gray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: FRANCO 383

SVL Sample ID: W3G0290-01 (Ground Water)

Sample Report Page 1 of 1

Sampled: 10-Jul-13 11:54
Received: 12-Jul-13
Sampled By: VH

W330111

AEW

10

07/23/13 18:35

D2

	*	•	,			0		Sample	a Dy. 111	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatogra	aphy								

EPA 300.0 Sulfate as SO4 335 mg/L 3.00 0.66

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

Kirby Gray



Birby Dray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0290 Bisbee, AZ 85603 Reported: 26-Jul-13 09:38

Sampled: 10-Jul-13 09:59 Client Sample ID: PANAGAKOS Received: 12-Jul-13 SVL Sample ID: W3G0290-02 (Ground Water) Sample Report Page 1 of 1 Sampled By: VH

	, and p			~	ampie report	1 mgc 1 01 1	Sampled by. VII			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved An	ions by Ion Chromatogra	nhv								

EPA 300.0 Sulfate as SO4 329 mg/L 3.00 0.66 10 W330111 AEW 07/23/13 18:46 D2

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

**Kirby Gray** 



Birty Dray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: BANKS 986

SVL Sample ID: W3G0290-03 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample Report Page 1 of 1

		5 - 5 - 5 - 5 - 7 - 7 - 7 - 7 - 7 - 7 -		14.10.7		ampie recport	1 450 1 01 1		Sample	aby: vn	
N	1ethod	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes

 Dissolved Anions by Ion Chromatography

 EPA 300.0
 Sulfate as SO4
 67.9
 mg/L
 1.50
 0.33
 5
 W330111
 AEW
 07/23/13 18:57
 D2

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

Kirby Gray



Birby Dray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: DODSON

SVI\_Sample ID: W3G0290-04 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

	5 v L Sample 1D. W330230-04 (Ground Water)				ашріе керогі	ragerori		Sampl	ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	53.6	mg/L	1.50	0.33	5	W330111	AEW	07/23/13 19:08	D2

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

Kirby Gray



Birty Dray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: EAST

SVL Sample ID: W3G0290-05 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample By: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

EPA 300.0 Sulfate as SO4 12.1 mg/L 0.30 0.07 W330111 AEW 07/23/13 19:19

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

**Kirby Gray** 



Birby Dray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: NOTEMAN

SVL Sample ID: W3G0290-06 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample Report Page 1 of 1

					ampie riepore	r uge r or r		Sample	ей Бу. УП	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Ani	ons by Ion Chromatograp	phy								
EPA 300.0	Sulfate as SO4	278	mg/L	3.00	0.66	10	W330111	AEW	07/23/13 19:30	D2

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

Kirby Gray



Birty Dray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: RAY
SVL Sample ID: W3G0290-07 (Ground Water)
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sampled BV: 09-Jul-13 11:11
Received: 12-Jul-13
Sampled BV: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

 Dissolved Anions by Ion Chromatography

 EPA 300.0
 Sulfate as SO4
 128
 mg/L
 3.00
 0.66
 10
 W330111
 AEW
 07/23/13 19:41

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

Kirby Gray

**Technical Director** 

D2



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: EPPLE 641 Supple ID: W3G0290-08 (Ground Water) Sample Report Page 1 of 1 Sampled: 09-Jul-13 09:46

Received: 12-Jul-13 O9:46
Sampled By: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

Birty Dray

EPA 300.0 **Sulfate as SO4** 17.5 mg/L 0.30 0.07 W330111 AEW 07/23/13 20:14

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

Kirby Gray



Birty Dray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: NESS

Sample ID: W3G0290-09 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

	SVE Sample 1D. VISO	0230-03 (Ground I	vater)	3	ашріе Керогі	1 age 1 of 1	Sampled By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anie	one by Ion Chromotogra	nhv.								

 Dissolved Anions by Ion Chromatography

 EPA 300.0
 Sulfate as SO4
 46.8
 mg/L
 1.50
 0.33
 5
 W330111
 AEW
 07/23/13 20:25
 D1

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

Kirby Gray



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: SWAN

SVL Sample ID: W3G0290-10 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sampled 808-Jul-13 14:21

Received: 12-Jul-13

Sampled BV: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

Birty Dray

EPA 300.0 **Sulfate as SO4** 19.4 mg/L 0.30 0.07 W330111 AEW 07/23/13 20:36

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 Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: OSBORN
SVL Sample ID: W3G0290-11 (Ground Water)
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sample By: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

**Dissolved Anions by Ion Chromatography** 

Birty Dray

EPA 300.0 **Sulfate as SO4** 19.2 mg/L 0.30 0.07 W330111 AEW 07/23/13 20:47

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

Kirby Gray



Birty Dray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: BIMA

SVL Sample ID: W3G0290-12 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample BV: 08-Jul-13 15:46
Received: 12-Jul-13
Sampled BV: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Discolved Anions by Ion Chromatography

 Dissolved Anions by Ion Chromatography

 EPA 300.0
 Sulfate as SO4
 301
 mg/L
 3.00
 0.66
 10
 W330111
 AEW
 07/23/13 20:58

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

Kirby Gray

**Technical Director** 

D2



Birty Gray

EPA 300.0

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: MCCONNELL 265

SVL Sample ID: W3G0290-13 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample Report Page 1 of 1

15.0

3.30

W330111

AEW

07/23/13 21:09

D2

	SVL Sample ID: W3G0290-13 (Ground Water)					Page 1 of 1		Sampled By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anio	ns by Ion Chromatogra	phy									

mg/L

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

898

Kirby Gray

Sulfate as SO4



Birby Dray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: GARNER 635

SVL Sample ID: W3G0290-14 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample Report Page 1 of 1

					ampie recport	i i uge i oi i		Sampi	ea By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	36.7	mg/L	1.50	0.33	5	W330111	AEW	07/23/13 21:20	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 - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: MCCONNELL 459

SVL Sample ID: W3G0290-15 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sampled Bv: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

Birty Dray

EPA 300.0 **Sulfate as SO4** 34.5 mg/L 0.30 0.07 W330111 AEW 07/23/13 21:31

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

Kirby Gray



Birby Dray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: COB MW-1

SVL Sample ID: W3G0290-16 (Ground Water)

Sample Report Page 1 of 1

Sampled: 11-Jul-13 12:56
Received: 12-Jul-13
Sampled By: VH

	*	•	,		1			Sampi	cu by. VII	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	842	mg/L	15.0	3.30	50	W330111	AEW	07/23/13 21:42	D2

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

Kirby Gray



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0290
Reported: 26-Jul-13 09:38

Client Sample ID: COOPER

SVL Sample ID: W3G0290-17 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sampled Bv: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

**Dissolved Anions by Ion Chromatography** 

Birty Dray

EPA 300.0 Sulfate as SO4 31.9 mg/L 0.30 0.07 W330111 AEW 07/23/13 21:53

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

Kirby Gray



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

Freeport McMoRan - Bisbee

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W3G0290

36 West Hwy 92 Bisbee, AZ 85603

Reported: 26-Jul-13 09:38

Quality C	Control - BLANK Data									
Method	Analyte	Units	Result	i	MDL	N	1RL	Batch ID	Analyzed	Notes
Dissolved A EPA 300.0	Anions by Ion Chromatography Sulfate as SO4 mg/L <0.30		0.07	0.	30	W330111	23-Jul-13			
Quality C	Control - LABORATORY (	CONTROL SA	AMPLE Data							
Method	Analyte	Units	LCS Result		CS rue	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved A EPA 300.0	Anions by Ion Chromatogra Sulfate as SO4	aphy mg/L	9.77	10	0.0	97.7	90 - 110	W330111	23-Jul-13	
Quality C	Control - MATRIX SPIKE I	Data								
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved A	Anions by Ion Chromatogra		339	330	10.0	R > 4S	00 110	W330111	23-Jul-13	D2,M3
EPA 300.0	Sulfate as SO4 Sulfate as SO4	mg/L mg/L	126	116	10.0	96.7	90 - 110 90 - 110	W330111	23-Jul-13	D2,M3
EPA 300.0 EPA 300.0		mg/L	126							D2,M3  Notes
EPA 300.0 EPA 300.0  Quality C  Method  Dissolved	Sulfate as SO4  Control - MATRIX SPIKE I	mg/L  DUPLICATE  Units	126  Data  MSD	116 Spike	10.0 Spike	96.7	90 - 110 RPD	W330111	23-Jul-13	
EPA 300.0 EPA 300.0  Quality C  Method  Dissolved	Sulfate as SO4  Control - MATRIX SPIKE I  Analyte  I Anions by Ion Chromatogi	mg/L  DUPLICATE  Units  raphy	Data MSD Result	Spike Result	Spike Level	96.7 RPD	90 - 110  RPD Limit	W330111  Batch ID	23-Jul-13 Analyzed	Notes
Quality C Method  Dissolved EPA 300.0	Sulfate as SO4  Control - MATRIX SPIKE I  Analyte  I Anions by Ion Chromatogi	mg/L  DUPLICATE  Units  raphy  mg/L	Data MSD Result	Spike Result	Spike Level	96.7 RPD	90 - 110  RPD Limit	W330111  Batch ID	23-Jul-13 Analyzed	Notes
Quality C Method  Dissolved EPA 300.0	Sulfate as SO4  Control - MATRIX SPIKE I  Analyte  I Anions by Ion Chromatogram Sulfate as SO4	mg/L  DUPLICATE  Units  raphy  mg/L  to matrix.	Data MSD Result	Spike Result 339	Spike Level	96.7 RPD	90 - 110  RPD Limit	W330111  Batch ID	23-Jul-13 Analyzed	Notes
EPA 300.0 EPA 300.0  Quality C	Sulfate as SO4  Control - MATRIX SPIKE I  Analyte  I Anions by Ion Chromatogr Sulfate as SO4  Sample required dilution due	mg/L  DUPLICATE  Units  raphy mg/L  to matrix. to high concent	Data MSD Result  339  Notes	Spike Result  339  s and Definite  analyte.	Spike Level	96.7 RPD	90 - 110  RPD Limit  20	W330111  Batch ID  W330111	23-Jul-13 Analyzed	Notes
Quality C Method  Dissolved EPA 300.0  D1 D2 M3	Sulfate as SO4  Control - MATRIX SPIKE I  Analyte  I Anions by Ion Chromatogra Sulfate as SO4  Sample required dilution due Sample required dilution due The spike recovery value is u	mg/L  DUPLICATE  Units  raphy mg/L  to matrix. to high concent	Data MSD Result  339  Notes	Spike Result  339  s and Definite  analyte.	Spike Level	96.7 RPD	90 - 110  RPD Limit  20	W330111  Batch ID  W330111	23-Jul-13 Analyzed	Notes
Quality C Method  Dissolved EPA 300.0  D1 D2 M3 LCS	Sulfate as SO4  Control - MATRIX SPIKE I  Analyte  I Anions by Ion Chromatogram Sulfate as SO4  Sample required dilution due Sample required dilution due The spike recovery value is u acceptable.	mg/L  DUPLICATE  Units  raphy mg/L  to matrix. to high concent	Data MSD Result  339  Notes	Spike Result  339  s and Definite  analyte.	Spike Level	96.7 RPD	90 - 110  RPD Limit  20	W330111  Batch ID  W330111	23-Jul-13 Analyzed	Notes
Quality C Method  Dissolved EPA 300.0  D1 D2 M3 LCS RPD	Sulfate as SO4  Control - MATRIX SPIKE I  Analyte  I Anions by Ion Chromatogranic Sulfate as SO4  Sample required dilution due Sample required dilution due The spike recovery value is u acceptable. Laboratory Control Sample (1)	mg/L  DUPLICATE  Units  raphy mg/L  to matrix. to high concent inusable since the	Data MSD Result  339  Notes	Spike Result  339  s and Definite  analyte.	Spike Level	96.7 RPD	90 - 110  RPD Limit  20	W330111  Batch ID  W330111	23-Jul-13 Analyzed	Notes
Quality C Method  Dissolved EPA 300.0  D1 D2 M3 LCS RPD UDL	Sulfate as SO4  Control - MATRIX SPIKE I  Analyte  I Anions by Ion Chromatogra Sulfate as SO4  Sample required dilution due Sample required dilution due The spike recovery value is u acceptable.  Laboratory Control Sample (In Relative Percent Difference)	mg/L  DUPLICATE  Units  raphy mg/L  to matrix. to high concent inusable since the sinc	Data MSD Result  339  Notes  ration of target and the analyte concern	Spike Result  339  s and Definite malyte. attration in the sa	Spike Level  10.0  tions  ample is dispro	RPD  0.0	90 - 110  RPD Limit  20	W330111  Batch ID  W330111	23-Jul-13 Analyzed	Notes
Quality C Method  Dissolved EPA 300.0  D1 D2 M3 LCS RPD UDL	Sulfate as SO4  Control - MATRIX SPIKE I  Analyte  I Anions by Ion Chromatogra Sulfate as SO4  Sample required dilution due Sample required dilution due The spike recovery value is u acceptable.  Laboratory Control Sample (Relative Percent Difference A result is less than the detection of the spike recovery value is u acceptable.	mg/L  DUPLICATE  Units  raphy mg/L  to matrix. to high concent inusable since the Blank Spike)  tion limit umple concentra	Data MSD Result  339  Notes  ration of target and the analyte concern	Spike Result  339  s and Definite malyte. attration in the sa	Spike Level  10.0  tions  ample is dispro	RPD  0.0	90 - 110  RPD Limit  20	W330111  Batch ID  W330111	23-Jul-13 Analyzed	Notes
PA 300.0 EPA 300.0 EPA 300.0  Quality C Method  Dissolved EPA 300.0  D1 D2 M3 LCS RPD UDL R > 4S	Sulfate as SO4  Control - MATRIX SPIKE I  Analyte  I Anions by Ion Chromatogra Sulfate as SO4  Sample required dilution due Sample required dilution due The spike recovery value is u acceptable. Laboratory Control Sample (i) Relative Percent Difference A result is less than the detect % recovery not applicable, sa	mg/L  DUPLICATE  Units  raphy mg/L  to matrix. to high concent inusable since the Blank Spike)  tion limit umple concentra	Data MSD Result  339  Notes  ration of target and the analyte concern	Spike Result  339  s and Definite malyte. attration in the sa	Spike Level  10.0  tions  ample is dispro	RPD  0.0	90 - 110  RPD Limit  20	W330111  Batch ID  W330111	23-Jul-13 Analyzed	Notes
PA 300.0  PA 300.0  PA 300.0  Quality C  Method  Dissolved  EPA 300.0  D1  D2  M3  LCS  RPD  UDL  R > 4S <rl< td=""><td>Sulfate as SO4  Control - MATRIX SPIKE I  Analyte  I Anions by Ion Chromatogra Sulfate as SO4  Sample required dilution due Sample required dilution due The spike recovery value is u acceptable. Laboratory Control Sample (I) Relative Percent Difference A result is less than the detectory recovery not applicable, satisfactory is less than the reportation.</td><td>mg/L  DUPLICATE  Units  raphy mg/L  to matrix. to high concent inusable since the Blank Spike)  tion limit umple concentra</td><td>Data MSD Result  339  Notes  ration of target and the analyte concern</td><td>Spike Result  339  s and Definite malyte. attration in the sa</td><td>Spike Level  10.0  tions  ample is dispro</td><td>RPD  0.0</td><td>90 - 110  RPD Limit  20</td><td>W330111  Batch ID  W330111</td><td>23-Jul-13 Analyzed</td><td>Notes</td></rl<>	Sulfate as SO4  Control - MATRIX SPIKE I  Analyte  I Anions by Ion Chromatogra Sulfate as SO4  Sample required dilution due Sample required dilution due The spike recovery value is u acceptable. Laboratory Control Sample (I) Relative Percent Difference A result is less than the detectory recovery not applicable, satisfactory is less than the reportation.	mg/L  DUPLICATE  Units  raphy mg/L  to matrix. to high concent inusable since the Blank Spike)  tion limit umple concentra	Data MSD Result  339  Notes  ration of target and the analyte concern	Spike Result  339  s and Definite malyte. attration in the sa	Spike Level  10.0  tions  ample is dispro	RPD  0.0	90 - 110  RPD Limit  20	W330111  Batch ID  W330111	23-Jul-13 Analyzed	Notes



One Government Gulch - PO Box 929

36 West Hwy 92

Bisbee, AZ 85603

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **W3G0482** Reported: 26-Aug-13 16:46

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
COLLINS	W3G0482-01	Ground Water	17-Jul-13 13:24	VH	19-Jul-2013
PALMER	W3G0482-02	Ground Water	17-Jul-13 11:26	VH	19-Jul-2013
ВООТН	W3G0482-03	Ground Water	17-Jul-13 10:29	VH	19-Jul-2013
DUP20130717	W3G0482-04	Ground Water	17-Jul-13 18:00	VH	19-Jul-2013
AWC-05	W3G0482-05	Ground Water	16-Jul-13 09:54	VH	19-Jul-2013
AWC-03	W3G0482-06	Ground Water	16-Jul-13 10:43	VH	19-Jul-2013
DUP20130715	W3G0482-07	Ground Water	15-Jul-13 18:00	VH	19-Jul-2013
DUP20130716	W3G0482-08	Ground Water	16-Jul-13 18:00	VH	19-Jul-2013
FB20130715	W3G0482-09	Ground Water	15-Jul-13 10:56	VH	19-Jul-2013
HOWARD 312	W3G0482-10	Ground Water	12-Jul-13 14:09	VH	19-Jul-2013
WEISKOPF 802	W3G0482-11	Ground Water	18-Jul-13 13:00	VH	19-Jul-2013
ANDERSON 458	W3G0482-12	Ground Water	18-Jul-13 10:00	VH	19-Jul-2013
MARCELL	W3G0482-13	Ground Water	15-Jul-13 16:59	VH	19-Jul-2013
AWC-04	W3G0482-14	Ground Water	16-Jul-13 11:26	VH	19-Jul-2013
SCHWARTZ	W3G0482-15	Ground Water	15-Jul-13 14:15	VH	19-Jul-2013
ROGERS 803	W3G0482-16	Ground Water	15-Jul-13 15:48	VH	19-Jul-2013
WEISKOPF 897	W3G0482-17	Ground Water	18-Jul-13 13:09	VH	19-Jul-2013

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.

## Case Narrative

08/26/2013mab: Report reissued. Client requested SO4 reanalyis for sample -15.

Original result was confirmed. Original and reanalysis reported



Birby Dray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

Client Sample ID: COLLINS

SVI\_Sample ID: W3G0482-01 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

	5 v E Sample 1D. 11300402-01 (Ground Water)				Sample Report 1 age 1 of 1			Sampled By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anion	s by Ion Chromatogra	phy									
EPA 300.0	Sulfate as SO4	519	mg/L	15.0	3.30	50	W331306	AEW	08/01/13 14:28	D2	

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

Kirby Gray



Birty Gray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

Client Sample ID: PALMER
SVL Sample ID: W3G0482-02 (Ground Water)
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sample By: VH
Sample By: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

EPA 300.0 **Sulfate as SO4** 17.2 mg/L 0.30 0.07 W331306 AEW 08/01/13 14:38

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

Kirby Gray



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

Client Sample ID: BOOTH

SVI, Sample ID: W3G0482-03 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

		5 v B sample 1B. WOOD-02-00 (Oloulla Water)				ашріс Керогі	1 age 1 of 1	Sampled By: VH			
	Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Ι	Dissolved Anio	ons by Ion Chromatograp	ohy								
Ē	EDA 200 0	Sulfata as SO4	75.0	ma/I	1.50	0.22	5	W/221206	A EW	09/01/12 15:10	

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 Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

 Client Sample ID:
 DUP20130717
 Sample Report Page 1 of 1
 Sampled:
 17-Jul-13 18:00

 SVL Sample ID:
 W3G0482-04 (Ground Water)
 Sample Report Page 1 of 1
 Sampled By:
 VH

	SVE sumple 15. VVOCOTOE OF (Cround Vator)				Sample Report 1 age 1 of 1			Sampled By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Ani	Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	6.28	mg/L	1.50	0.33	5	W331306	AEW	08/01/13 15:20	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 - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

Client Sample ID: AWC-05
SVL Sample ID: W3G0482-05 (Ground Water)
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sample BV: VH

SVL Sample ID: W3G0482-05 (Ground Water)

Sample Report Page 1 of 1

Sampled By: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

 Dissolved Anions by Ion Chromatography

 EPA 300.0
 Sulfate as SO4
 18.0
 mg/L
 0.30
 0.07
 W331306
 AEW
 08/01/13 15:31

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 Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

Client Sample ID: AWC-03

SVI, Sample ID: W3G0482-06 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

		5 v E Sample 1B. 11000402-00 (Oloulla Water)				ашріс Керогі	1 age 1 of 1	Sampled By: VH			
	Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Di	ssolved Ani	ions by Ion Chromatograp	hy								
ED	A 300.0	Sulfata as SOA	63.6	ma/I	1.50	0.22	5	W331306	AEW	08/01/13 15:41	

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Kirby Gray



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Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

 Client Sample ID:
 DUP20130715
 Sample ID:
 Sample ID:
 Sample ID:
 Sample ID:
 Sample ID:
 Sample ID:
 VH
 Sample ID:
 VH

	S + 2 Sample 13: 11000 102 01 (Ground Trator)				Sample Report 1 age 1 of 1			Sampled By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved An	ions by Ion Chromatograp	hy									
EPA 300.0	Sulfate as SO4	10.2	mg/L	1.50	0.33	5	W331306	AEW	08/01/13 15:51	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 - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

 Client Sample ID:
 DUP20130716
 Sample ID:
 Sample ID:
 Sample ID:
 Sample ID:
 Sample ID:
 Sample ID:
 VH
 Sample ID:
 VH

	,				Sumple Report Luge 1 of 1			Sampled by. VII			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Ani	Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	17.7	mg/L	1.50	0.33	5	W331306	AEW	08/01/13 16:23		

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Kirby Gray



Birty Dray

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Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

 Client Sample ID:
 FB20130715
 Sample ID:
 Sample ID:
 Sample ID:
 Sample ID:
 Sample ID:
 Sample ID:
 Sample ID:
 Sample ID:
 VH
 Sample ID:
 VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

 Anions by Ion Chromatography

 EPA 300.0
 Sulfate as SO4
 < 0.30</td>
 mg/L
 0.30
 0.07
 W331207

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Kirby Gray

**Technical Director** 

07/31/13 21:42

AEW



Birby Dray

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Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

Client Sample ID: HOWARD 312

SVL Sample ID: W3G0482-10 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample Report Page 1 of 1

						Sumple Report Luge 1 of 1			Sampled By: VH			
1	Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	

 Dissolved Anions by Ion Chromatography

 EPA 300.0
 Sulfate as SO4
 67.9
 mg/L
 15.0
 3.30
 50
 W331306
 AEW
 08/01/13 16:33
 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 Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0482 Bisbee, AZ 85603 Reported: 26-Aug-13 16:46

Sampled: 18-Jul-13 13:00 Client Sample ID: WEISKOPF 802 Received: 19-Jul-13 SVL Sample ID: W3G0482-11 (Ground Water) Sample Report Page 1 of 1

Sampled By: VH Method Result RLDilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

Birty Gray

EPA 300.0 Sulfate as SO4 420 W331306  $mg\!/\!L$ 15.0 3.30 50 AEW 08/01/13 16:43 D2

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

**Kirby Gray** 



Birty Gray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

Client Sample ID: ANDERSON 458

SVL Sample ID: W3G0482-12 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

EPA 300.0 **Sulfate as SO4** 23.0 mg/L 0.30 0.07 W331306 AEW 08/01/13 16:54

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 Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0482 Bisbee, AZ 85603 Reported: 26-Aug-13 16:46

Sampled: 15-Jul-13 16:59 Client Sample ID: MARCELL Received: 19-Jul-13 SVL Sample ID: W3G0482-13 (Ground Water) Sample Report Page 1 of 1

Sampled By: VH Method Result Units RLDilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

Birty Gray

EPA 300.0 Sulfate as SO4 724 W331306  $mg\!/\!L$ 15.0 3.30 50 AEW 08/01/13 17:04 D2

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

**Kirby Gray** 



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

Client Sample ID: AWC-04
SVL Sample ID: W3G0482-14 (Ground Water)
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sample By: VH
Sample By: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

**Dissolved Anions by Ion Chromatography** 

Birty Dray

EPA 300.0 **Sulfate as SO4** 27.0 mg/L 0.30 0.07 W331306 AEW 08/01/13 17:15

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

Kirby Gray



Birby Gray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0482 Bisbee, AZ 85603 Reported: 26-Aug-13 16:46

Sampled: 15-Jul-13 14:15 Client Sample ID: SCHWARTZ Received: 19-Jul-13 SVL Sample ID: W3G0482-15 (Ground Water) Sample Report Page 1 of 1 Sampled By: VH

									·	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	198	mg/L	3.00	0.66	10	W331306	AEW	08/01/13 17:25	D2
EPA 300.0	Sulfate as SO4	198	mg/L	3.00	0.66	10	W331306	AEW	08/26/13 14:24	D2,H7,N10
EPA 300.0	Sulfate as SO4	190	mg/L	3.00	0.66	10	W331306	AEW	08/26/13 14:34	D2,H7,N10

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

**Kirby Gray** 



Birby Gray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

Client Sample ID: ROGERS 803

SVL Sample ID: W3G0482-16 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample Report Page 1 of 1

	5 + 2 Sumpro 13. Troob 102 To (Ground Trator)				Sample Report 1 age 1 of 1			Sampi	ea By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved An	ions by Ion Chromatograp	hy								
EPA 300.0	Sulfate as SO4	184	mg/L	3.00	0.66	10	W331306	AEW	08/01/13 17:36	D2

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

Kirby Gray

Technical Director



Birly Gray

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3G0482
Reported: 26-Aug-13 16:46

Client Sample ID: WEISKOPF 897

SVL Sample ID: W3G0482-17 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample Bv: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

EPA 300.0 **Sulfate as SO4** 18.0 mg/L 0.30 0.07 W331306 AEW 08/01/13 17:46

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

Kirby Gray

**Technical Director** 



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

Fax (208) 783-0891

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

 36 West Hwy 92
 Work Order: W3G0482

 Bisbee, AZ 85603
 Reported: 26-Aug-13 16:46

Bisocc, AZ 63								Керог	cu. 20-Aug-	13 10.40
Quality Cont	trol - BLANK Data									
Method	Analyte	Units	Result		MDL	N	MRL	Batch ID	Analyzed	Notes
	Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	< 0.30		0.07	0	0.30	W331207	31-Jul-13	
Dissolved Ani	ons by Ion Chromatogr	aphy								
EPA 300.0	Sulfate as SO4	mg/L	< 0.30		0.07	0	0.30	W331306	01-Aug-13	
Quality Cont	trol - LABORATORY	CONTROL SA	MPLE Data							
Method	Analyte	Units	LCS Result		LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Wichiod	Anaryte	Onits	Result		True	Rec.	Lillits	Datell 1D	Anaryzeu	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.1		10.0	101	90 - 110	W331207	31-Jul-13	
Dissolved Ani	ons by Ion Chromatogr	·anhv								
EPA 300.0	Sulfate as SO4	mg/L	10.0		10.0	100	90 - 110	W331306	01-Aug-13	
Quality Cont	trol - MATRIX SPIKE	Data								
Quanty Cont	ITOI - MIATRIA SPIKE	Data	Spike	Commla	Spike	%	Accomtomos			
Method	Analyte	Units	Result	Sample Result (R)	Level (S)	Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
	CI I									
Anions by Ion EPA 300.0	Chromatography Sulfate as SO4	mg/L	2160	2180	10.0	R > 4S	90 - 110	W331207	31-Jul-13	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	731	733	10.0	R > 4S	90 - 110	W331207	31-Jul-13	D2,M3
		J								
	ons by Ion Chromatogr	• •	20.2	17.0	10.0	110	00 110	W221206	01 4 12	
EPA 300.0 EPA 300.0	Sulfate as SO4 Sulfate as SO4	mg/L mg/L	28.2 29.0	17.2 18.0	10.0 10.0	110 110	90 - 110 90 - 110	W331306 W331306	01-Aug-13 01-Aug-13	
EFA 300.0	Surface as 504	mg/L	29.0	16.0	10.0	110	90 - 110	W 331300	01-Aug-13	
Quality Cont	trol - MATRIX SPIKE	DUPLICATE	Data							
			MSD	Spike	Spike		RPD			
Method	Analyte	Units	Result	Result	Level	RPD	Limit	Batch ID	Analyzed	Notes
Anions by Io	n Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	2150	2160	10.0	0.6	20	W331207	31-Jul-13	D2,M3
D: 1 1 4										
Dissolved An EPA 300.0	ions by Ion Chromatog Sulfate as SO4	graphy mg/L	28.2	28.2	10.0	0.1	20	W331306	01-Aug-13	
L1 /1 300.0	Surface as SO4	mg/L	20.2	20.2	10.0	0.1	20	** 221200	01-11ug-13	



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

Project Name: Copper Queen Branch Sulfate Mitigation Order
W3G0482
Reported: 26-Aug-13 16:46

### **Notes and Definitions**

D1	Sample required dilution due to matrix.
Da	C1i d dilution door to bink one

D2 Sample required dilution due to high concentration of target analyte.

H7 Initial analysis was within holding time. Reanalysis was run past holding time.

M3 The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was

acceptable.

N10 After reanalysis original results are confirmed.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



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3G0485**Bisbee, AZ 85603 Reported: 26-Jul-13 09:28

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W3G0485-01	Water	12-Jul-13 08:55	VH	19-Jul-2013

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.



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0485 Bisbee, AZ 85603 Reported: 26-Jul-13 09:28

Sampled: 12-Jul-13 08:55 Client Sample ID: NWC-04 Received: 19-Jul-13 SVL Sample ID: W3G0485-01 (Water) Sample Report Page 1 of 1

Sampled By: VH Method Result Units RLDilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 211 W330111 07/24/13 00:06 mg/L 3.00 0.66 10 AEW D2

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

John Ken John Kern



Freeport McMoRan - Bisbee

36 West Hwy 92 Bisbee, AZ 85603 Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **W3G0485** Reported: 26-Jul-13 09:28

<b>Quality Cont</b>	rol - BLANK Data							
Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anio EPA 300.0	ons by Ion Chromatogn Sulfate as SO4	raphy mg/L	<0.30	0.07	0.30	W330111	23-Jul-13	

Quality Control - LABORATORY CONTROL SAMPLE Data											
Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes		
Dissolved Anio	ons by Ion Chromatog Sulfate as SO4	raphy mg/L	9.77	10.0	97.7	90 - 110	W330111	23-Jul-13			

Quality Control - MATRIX SPIKE Data											
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved Ani	ons by Ion Chromatog	raphy									
Dissolved Anie EPA 300.0	ons by Ion Chromatog Sulfate as SO4	raphy mg/L	339	330	10.0	R > 4S	90 - 110	W330111	23-Jul-13	D2,M3	

Quality Control - MATRIX SPIKE DUPLICATE Data											
Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes	
	ions by Ion Chromato	graphy									
EPA 300.0	Sulfate as SO4	mg/L	339	339	10.0	0.0	20	W330111	23-Jul-13	D2,M3	

## **Notes and Definitions**

D2	Sample required dilution due to high concentration of target analyte.
174	bample required dilution due to mgn concentration of target analyte.

M3	The spike recovery v	alue is unusable sin	ice the analyte con	centration in the sa	imple is disproportion	onate 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



Bisbee, AZ 85603

One Government Gulch - PO Box 929 Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Bisbee

36 West Hwy 92

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: W3G0486

Work Order: **W3G0486**Reported: 01-Aug-13 15:06

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
MOORE	W3G0486-01	Ground Water	11-Jul-13 15:34	VH	19-Jul-2013
KEEFER	W3G0486-02	Ground Water	11-Jul-13 16:51	VH	19-Jul-2013
DUP20130711	W3G0486-03	Ground Water	11-Jul-13 18:00	VH	19-Jul-2013
EQB20130712	W3G0486-04	Ground Water	12-Jul-13 09:45	VH	19-Jul-2013
NWC-06	W3G0486-05	Ground Water	12-Jul-13 09:55	VH	19-Jul-2013
FB20130712	W3G0486-06	Ground Water	12-Jul-13 10:05	VH	19-Jul-2013
DUP20130712	W3G0486-07	Ground Water	12-Jul-13 18:00	VH	19-Jul-2013
PARRA	W3G0486-08	Ground Water	17-Jul-13 14:20	VH	19-Jul-2013
ECHAVE	W3G0486-09	Ground Water	17-Jul-13 16:44	VH	19-Jul-2013
ZANDER	W3G0486-10	Ground Water	15-Jul-13 10:09	VH	19-Jul-2013
EQB20130715	W3G0486-11	Ground Water	15-Jul-13 10:51	VH	19-Jul-2013
FB20130716	W3G0486-12	Ground Water	16-Jul-13 14:59	VH	19-Jul-2013
PIONKE 517	W3G0486-13	Ground Water	16-Jul-13 15:25	VH	19-Jul-2013
EQB20130716	W3G0486-14	Ground Water	16-Jul-13 14:58	VH	19-Jul-2013
ROGERS, E	W3G0486-15	Ground Water	17-Jul-13 09:49	VH	19-Jul-2013
CHAMBERS	W3G0486-16	Ground Water	15-Jul-13 12:24	VH	19-Jul-2013
RAMIREZ	W3G0486-17	Ground Water	15-Jul-13 11:44	VH	19-Jul-2013
HOWARD NR	W3G0486-18	Ground Water	12-Jul-13 12:20	VH	19-Jul-2013
NWC-02	W3G0486-19	Ground Water	12-Jul-13 10:30	VH	19-Jul-2013

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.



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92

Bisbee, AZ 85603

Work Order: W3G0486

Reported: 01-Aug-13 15:06

Client Sample ID: MOORE

SVL Sample ID: W3G0486-01 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample Bv: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

**Dissolved Anions by Ion Chromatography** 

John Ken

EPA 300.0 Sulfate as SO4 7.14 mg/L 0.30 0.07 W331209 AEW 07/31/13 12:34

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0486 Bisbee, AZ 85603 Reported: 01-Aug-13 15:06

Sampled: 11-Jul-13 16:51 Client Sample ID: KEEFER Received: 19-Jul-13 SVL Sample ID: W3G0486-02 (Ground Water) Sample Report Page 1 of 1

Sampled By: VH Method Result Units RLMDL Dilution Batch Analyst Analyzed Notes Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 7.23 W331209 07/31/13 12:45  $mg\!/\!L$ 0.30 0.07 AEW

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0486 Bisbee, AZ 85603 Reported: 01-Aug-13 15:06

Sampled: 11-Jul-13 18:00 Client Sample ID: DUP20130711 Received: 19-Jul-13 SVL Sample ID: W3G0486-03 (Ground Water)

Sample Report Page 1 of 1 Sampled By: VH Method Result Units RLMDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 7.24 W331209 07/31/13 12:56  $mg\!/\!L$ 0.30 0.07 AEW

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

John Ken John Kern



EPA 300.0

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0486 Bisbee, AZ 85603 Reported: 01-Aug-13 15:06

Sampled: 12-Jul-13 09:45 Client Sample ID: EQB20130712 Received: 19-Jul-13 SVL Sample ID: W3G0486-04 (Ground Water) Sample Report Page 1 of 1

0.30

0.07

W331149

AEW

07/30/13 19:34

Sampled By: VH Method RLMDL Dilution Batch Analyst Analyzed Notes

Anions by Ion Chromatography

mg/L

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

< 0.30

John Ken John Kern Laboratory Director

Sulfate as SO4



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0486 Bisbee, AZ 85603 Reported: 01-Aug-13 15:06

Sampled: 12-Jul-13 09:55 Client Sample ID: NWC-06 Received: 19-Jul-13 SVL Sample ID: W3G0486-05 (Ground Water) Sample Report Page 1 of 1

Sampled By: VH Method Result Units RLMDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 8.40 W331209 07/31/13 13:07  $mg\!/\!L$ 0.30 0.07 AEW

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3G0486**Bisbee, AZ 85603 Reported: 01-Aug-13 15:06

 Client Sample ID:
 FB20130712
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 VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 < 0.30 mg/L 0.30 0.07 W331149 AEW 07/30/13 19:45

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

John Kern



John Ken

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Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92

Bisbee, AZ 85603

Work Order: W3G0486

Reported: 01-Aug-13 15:06

 Client Sample ID:
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Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	200	mg/L	7.50	1.65	25	W331209	AEW	07/31/13 13:18	D2

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

John Kern



John Ken

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Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0486 Bisbee, AZ 85603 Reported: 01-Aug-13 15:06

Sampled: 17-Jul-13 14:20 Client Sample ID: PARRA Received: 19-Jul-13 SVL Sample ID: W3G0486-08 (Ground Water) Sample Report Page 1 of 1

Sampled By: VH Method Units RLDilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

EPA 300.0 Sulfate as SO4 411 25 W331209 07/31/13 13:29 D2  $mg\!/\!L$ 7.50 1.65 AEW

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3G0486**Bisbee, AZ 85603 Reported: 01-Aug-13 15:06

Client Sample ID: ECHAVE
SVL Sample ID: W3G0486-09 (Ground Water)
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sample By: VH
Sample By: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 **Sulfate as SO4** 24.3 mg/L 0.30 0.07 W331209 AEW 07/31/13 13:40

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0486 Bisbee, AZ 85603 Reported: 01-Aug-13 15:06

Sampled: 15-Jul-13 10:09 Client Sample ID: ZANDER Received: 19-Jul-13 SVL Sample ID: W3G0486-10 (Ground Water)

Sample Report Page 1 of 1

Sampled By: VH Method Units RLMDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 6.49 W331209 07/31/13 14:13  $mg\!/\!L$ 0.30 0.07 AEW

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3G0486**Bisbee, AZ 85603 Reported: 01-Aug-13 15:06

 Client Sample ID:
 EQB20130715
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Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

**Anions by Ion Chromatography** 

John Ken

EPA 300.0 Sulfate as SO4 < 0.30 mg/L 0.30 0.07 W331149 AEW 07/30/13 19:56

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0486 Bisbee, AZ 85603 Reported: 01-Aug-13 15:06

Sampled: 16-Jul-13 14:59 Client Sample ID: FB20130716 Received: 19-Jul-13 SVL Sample ID: W3G0486-12 (Ground Water) Sample Report Page 1 of 1

0.07

W331209

AEW

07/31/13 14:24

Sampled By: VH Method Result Units RLMDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

EPA 300.0 Sulfate as SO4 < 0.30  $mg\!/\!L$ 0.30

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

John Ken

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92

Bisbee, AZ 85603

Work Order: W3G0486

Reported: 01-Aug-13 15:06

Client Sample ID: PIONKE 517

SVL Sample ID: W3G0486-13 (Ground Water)

Sample Report Page 1 of 1

Sampled: 16-Jul-13 15:25
Received: 19-Jul-13
Sampled Bv: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 13.9 mg/L 0.30 0.07 W331209 AEW 07/31/13 18:06

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92

Bisbee, AZ 85603

Work Order: W3G0486

Reported: 01-Aug-13 15:06

 Client Sample ID:
 EQB20130716
 Sample ID:
 Sample ID:
 16-Jul-13 14:58

 SVL Sample ID:
 W3G0486-14 (Ground Water)
 Sample Report Page 1 of 1
 Sample By:
 VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 < 0.30 mg/L 0.30 0.07 W331149 AEW 07/30/13 20:08

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

John Kern



EPA 300.0

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Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3G0486 Bisbee, AZ 85603 Reported: 01-Aug-13 15:06

Client Sample ID: ROGERS, E Sampled: 17-Jul-13 09:49 Received: 19-Jul-13 SVL Sample ID: W3G0486-15 (Ground Water) Sample Report Page 1 of 1

0.30

0.07

W331209

AEW

07/31/13 14:46

Sampled By: VH Method Result Units RLMDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

mg/L

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

6.05

John Ken

Sulfate as SO4

John Kern Laboratory Director



John Ken

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92

Bisbee, AZ 85603

Work Order: W3G0486

Reported: 01-Aug-13 15:06

Client Sample ID: CHAMBERS
SVL Sample ID: W3G0486-16 (Ground Water)
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sampled BV: 15-Jul-13 12:24
Received: 19-Jul-13
Sampled BV: VH

SVL Sample ID: W3G0486-16 (Ground Water)

Sample Report Page 1 of 1

Sampled By: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

EPA 300.0 **Sulfate as SO4** 9.81 mg/L 0.30 0.07 W331209 AEW 07/31/13 14:57

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3G0486**Bisbee, AZ 85603 Reported: 01-Aug-13 15:06

Client Sample ID: RAMIREZ
SVL Sample ID: W3G0486-17 (Ground Water)
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sampled BV: 15-Jul-13 11:44
Received: 19-Jul-13
Sampled BV: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

EPA 300.0 Sulfate as SO4 8.19 mg/L 0.30 0.07 W331209 AEW 07/31/13 15:08

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

John Kern Laboratory Director

John Ken



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92

Bisbee, AZ 85603

Work Order: W3G0486

Reported: 01-Aug-13 15:06

Client Sample ID: HOWARD NR
SVL Sample ID: W3G0486-18 (Ground Water)
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sample Report Page 1 of 1

	*	•	,	,				Sampled By. VII				
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anions by Ion Chromatography												
EPA 300 0	Sulfate as SO4	590	ma/I	7.50	1.65	25	W331209	ΔFW	07/31/13 15:19			

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

Laboratory Director

John Kern Laboratory

SVL holds the following certifications:



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92

Bisbee, AZ 85603

Work Order: W3G0486

Reported: 01-Aug-13 15:06

 Client Sample ID:
 NWC-02
 Sample ID:
 Sample ID:
 VI Sample ID:
 Sample ID:
 W3G0486-19 (Ground Water)
 Sample Report Page 1 of 1
 Sample ID:
 VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

EPA 300.0 Sulfate as SO4 6.91 mg/L 0.30 0.07 W331209

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

John Kern Laboratory Director

John Ken

07/31/13 15:30

AEW



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Freeport McMoRan - Bisbee

36 West Hwy 92 Bisbee, AZ 85603 **Project Name: Copper Queen Branch Sulfate Mitigation Order** 

Work Order: **W3G0486**Reported: 01-Aug-13 15:06

<b>Quality Con</b>	trol - BLANK Data										
Method	Analyte	Units	Result		MDL	N	MRL .	Batch ID	Analyzed	Notes	
Anions by Ior EPA 300.0	n Chromatography Sulfate as SO4	mg/L	<0.30		0.07	0	0.30		30-Jul-13		
Dissolved And EPA 300.0	ions by Ion Chromatogr Sulfate as SO4	<b>aphy</b> mg/L	<0.30		0.07	0	.30	W331209	31-Jul-13		
Quality Control - LABORATORY CONTROL SAMPLE Data											
Method	Analyte	Units	LCS Result		LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Anions by Ior EPA 300.0	n Chromatography Sulfate as SO4	mg/L	9.88		10.0	98.8	90 - 110	W331149	30-Jul-13		
Dissolved Ani EPA 300.0	ions by Ion Chromatogr Sulfate as SO4	<b>aphy</b> mg/L	9.90		10.0	99.0	90 - 110	W331209	31-Jul-13		
Quality Con	trol - MATRIX SPIKE	Doto									
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Anions by Ior EPA 300.0 EPA 300.0	Sulfate as SO4 Sulfate as SO4	mg/L mg/L	61.2 254	50.7 246	10.0 10.0	105 R > 4S	90 - 110 90 - 110	W331149 W331149	30-Jul-13 30-Jul-13	D2,M3 D2,M3	
Dissolved And EPA 300.0 EPA 300.0	ions by Ion Chromatogr Sulfate as SO4 Sulfate as SO4	aphy mg/L mg/L	11.6 139	1.04 126	10.0 10.0	106 R > 4S	90 - 110 90 - 110	W331209 W331209	31-Jul-13 31-Jul-13	D2,M3	
	trol - MATRIX SPIKE		MSD	Spike	Spike	nee	RPD	D. C. T.		N	
Anions by Io	Analyte on Chromatography Sulfate as SO4	Units mg/L	Result	Result 61.2	Level	0.3	Limit 20	W331149	Analyzed 30-Jul-13	D2,M3	

10.0

1.3

20

W331209

31-Jul-13

**Dissolved Anions by Ion Chromatography** 

Sulfate as SO4

EPA 300.0

mg/L

11.8

11.6



Freeport McMoRan - BisbeeProject Name: Copper Queen Branch Sulfate Mitigation Order36 West Hwy 92Work Order:W3G0486Bisbee, AZ 85603Reported:01-Aug-13 15:06

# **Notes and Definitions**

D2 Sample required dilution due to high concentration of target analyte.

M3 The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was

acceptable.

LCS Laboratory Control Sample (Blank Spike)

RPD Relative Percent Difference

UDL A result is less than the detection limit

R > 4S % recovery not applicable, sample concentration more than four times greater than spike level

<RL A result is less than the reporting limit

MRL Method Reporting Limit
MDL Method Detection Limit

N/A Not Applicable



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Bisbee, AZ 85603

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Freeport McMoRan - Copper Queen Branch Sulfate Mitigation Order

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **W3G0770**Reported: 13-Aug-13 11:28

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2010-3M	W3G0770-01	Ground Water	23-Jul-13 14:02	VH	31-Jul-2013
EQB20130723	W3G0770-02	Distilled water	23-Jul-13 11:17	VH	31-Jul-2013
FB20130723	W3G0770-03	Distilled water	23-Jul-13 11:18	VH	31-Jul-2013
BMO-2010-3B	W3G0770-04	Ground Water	23-Jul-13 10:36	VH	31-Jul-2013
TM-10 USBP	W3G0770-05	Ground Water	23-Jul-13 16:06	VH	31-Jul-2013
WEED	W3G0770-06	Ground Water	19-Jul-13 08:29	VH	31-Jul-2013
TVI 875	W3G0770-07	Ground Water	18-Jul-13 16:40	VH	31-Jul-2013
TVI 236	W3G0770-08	Ground Water	18-Jul-13 15:50	VH	31-Jul-2013
COB-2	W3G0770-09	Ground Water	25-Jul-13 11:45	VH	31-Jul-2013
AWC-02	W3G0770-10	Ground Water	25-Jul-13 10:07	VH	31-Jul-2013
RUIZ	W3G0770-11	Ground Water	25-Jul-13 12:43	VH	31-Jul-2013
EQB20130725	W3G0770-12	Distilled water	25-Jul-13 12:56	VH	31-Jul-2013
FB20130725	W3G0770-13	Distilled water	25-Jul-13 12:50	VH	31-Jul-2013
COB-WL	W3G0770-14	Ground Water	25-Jul-13 15:32	VH	31-Jul-2013
COB-3	W3G0770-15	Ground Water	25-Jul-13 10:58	VH	31-Jul-2013

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: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: BMO-2010-3M

SVL Sample ID: W3G0770-01 (Ground Water)

Sample Report Page 1 of 1

Sampled: 23-Jul-13 14:02 Received: 31-Jul-13

Sampled By: VH

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyze	
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Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 **Sulfate as SO4** 10.7 mg/L 0.30 0.07 W332313 AEW 08/08/13 17:04

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

John Kern



John Ken

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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: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: **EQB20130723** 

SVL Sample ID: W3G0770-02 (Distilled water)

Sample Report Page 1 of 1

Sampled: 23-Jul-13 11:17 Received: 31-Jul-13

Sampled By: VH

	*	•	,	r		Sampled by. VII				
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	0.07		W332222	AEW	08/07/13 15:40	<u> </u>

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: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: FB20130723

SVL Sample ID: W3G0770-03 (Distilled water)

Sample Report Page 1 of 1

Sampled: 23-Jul-13 11:18 Received: 31-Jul-13

5 v E Sample 115. W300110-03 (Distilled Water)					ашріе Керогі	1 age 1 of 1	Sampled By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion	Chromatography									

Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 < 0.30 mg/L 0.30 0.07 W332222 AEW 08/07/13 15:50

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: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: BMO-2010-3B

SVL Sample ID: W3G0770-04 (Ground Water)

Sample Report Page 1 of 1

Sampled: 23-Jul-13 10:36 Received: 31-Jul-13

	S TE Sumple IB. 1100	5	ampic report	rage rorr	Sampled By: VH					
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatogra	nhv								

John Ken

EPA 300.0 W332313 Sulfate as SO4 19.8  $mg\!/\!L$ 0.30 0.07 AEW 08/08/13 17:14

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

Method

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: TM-10 USBP

SVL Sample ID: W3G0770-05 (Ground Water)

Sample Report Page 1 of 1

Sampled: 23-Jul-13 16:06 Received: 31-Jul-13

, , , , , , , , , , , , , , , , , , , ,				sumple repor	ge 1 01 1	Sampled Бу. V П				
Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 13.2 mg/L 0.30 0.07 W332313 AEW 08/08/13 17:25

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: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: WEED

SVL Sample ID: W3G0770-06 (Ground Water)

Sample Report Page 1 of 1

Sampled: 19-Jul-13 08:29 Received: 31-Jul-13

|--|

	, , , , , , , , , , , , , , , , , , , ,				Sumple Report Luge 1 of 1			Sampled by. VII			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved An	ions by Ion Chromatograp	ohy									
EPA 300.0	Sulfate as SO4	14.2	mg/L	0.30	0.07		W332313	AEW	08/08/13 17:35		

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

John Ken

**Project Name: Copper Queen Branch Sulfate Mitigation Order** 

Work Order: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: TVI 875

SVI. Sample ID: W3G0770-07 (Ground Water)

Sample Report Page 1 of 1

Sampled: 18-Jul-13 16:40 Received: 31-Jul-13

Received:	31-Jui-
Sampled By:	VH

SVL Sample ID. WSGOTTO-OT (Ground Water)					Sample Report Page 1 01 1			Sampled By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anion	Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	355	mg/L	3.00	0.66	10	W332313	AEW	08/08/13 17:46	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

John Ken

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: TVI 236

SVL Sample ID: W3G0770-08 (Ground Water)

Sample Report Page 1 of 1

Sampled: 18-Jul-13 15:50 Received: 31-Jul-13

Sampled By: VH
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		•	-						Sumpled By. 111		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anions by Ion Chromatography											
EPA 300.0	Sulfate as SO4	42.4	mg/L	0.30	0.07		W332313	AEW	08/08/13 17:56		

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: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: COB-2

Sampled: 25-Jul-13 11:45 Received: 31-Jul-13

	SVL Sample ID: W3G0770-09 (Ground Water)				Sample Report Page 1 of 1			Received: 31-Jul-13 Sampled By: VH			
	Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
D	Dissolved Anions by Ion Chromatography										
El	PA 300.0	Sulfate as SO4	40.6	mg/L	1.50	0.33	5	W332313	AEW	08/08/13 18:07	D1

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

John Ken

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: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: AWC-02

SVL Sample ID: W3G0770-10 (Ground Water)

Sample Report Page 1 of 1

Sampled: 25-Jul-13 10:07 Received: 31-Jul-13

|--|

		<u> </u>	<u> </u>			0		Sampies	a B y	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatogra	nphy								

 $mg\!/\!L$ 

EPA 300.0 Sulfate as SO4

John Ken

0.30 0.07 W332313

AEW

08/08/13 18:17

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

14.7

John Kern



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Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

John Ken

**Project Name: Copper Queen Branch Sulfate Mitigation Order** 

Work Order: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: RUIZ

SVL Sample ID: W3G0770-11 (Ground Water)

Sample Report Page 1 of 1

Sampled: 25-Jul-13 12:43 Received: 31-Jul-13

Received.	31-Jul
Compled Day	VH

SVL Sample ID. W3G0770-11 (Ground Water)					Sample Report Page 1 of 1			Sampled By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anions by Ion Chromatography											
EPA 300.0	Sulfate as SO4	228	mg/L	3.00	0.66	10	W332313	AEW	08/08/13 18:48	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: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: **EQB20130725** 

SVL Sample ID: W3G0770-12 (Distilled water)

Sample Report Page 1 of 1

Sampled: 25-Jul-13 12:56 Received: 31-Jul-13

Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes

Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 < 0.30 mg/L 0.30 0.07 W332222 AEW 08/07/13 16:01

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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: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: FB20130725

SVL Sample ID: W3G0770-13 (Distilled water)

Sample Report Page 1 of 1

Sampled: 25-Jul-13 12:50 Received: 31-Jul-13

Sampled By: VH

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion C	Chromatography						•			

John Ken

EPA 300.0 Sulfate as SO4 < 0.30 W332222 08/07/13 16:11  $mg\!/\!L$ 0.30 0.07 AEW

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

John Kern



John Ken

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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: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: COB-WL

SVL Sample ID: W3G0770-14 (Ground Water)

Sample Report Page 1 of 1

Sampled: 25-Jul-13 15:32 Received: 31-Jul-13

Sample	d Rv	VH	

	5 v E sample 1D. 11300110-14 (Glound Water)					1 age 1 of 1	Sampled By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	97.6	mg/L	1.50	0.33	5	W332313	AEW	08/08/13 18:59	D2

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

John Kern



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Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W3G0770

Reported: 13-Aug-13 11:28

Client Sample ID: COB-3

SVI. Sample ID: W3G0770-15 (Ground Water)

Sampled: 25-Jul-13 10:58 Received: 31-Jul-13

received.	J1-Ju1-15
Sampled By:	VH

	SVL Sample 1D. WSGOTTO-15 (Ground Water)				ampie Kepor	t Page 1 of 1	Sampled By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	66.6	mg/L	1.50	0.33	5	W332313	AEW	08/08/13 19:09	D2

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

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Project Name: Copper Queen Branch Sulfate Mitigation Order

Freeport McMoRan - Copper Queen Branch 36 West Highway 92 Work Order: W3G0770 Bisbee, AZ 85603 Reported: 13-Aug-13 11:28

Quality Cont	rol - BLANK Data									
Method	Analyte	Units	Result		MDL	N	1RL	Batch ID	Analyzed	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	< 0.30		0.07	0.	.30	W332222	07-Aug-13	
	ons by Ion Chromatogr							********		
EPA 300.0	Sulfate as SO4	mg/L	< 0.30		0.07	0.	.30	W332313	08-Aug-13	
Quality Conti	rol - LABORATORY	CONTROL SA								
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	10.8		10.0	108	90 - 110	W332222	07-Aug-13	
	ons by Ion Chromatogr		10.0		10.0	100	00 110	W/222212	00 4 12	
EPA 300.0	Sulfate as SO4	mg/L	10.8		10.0	108	90 - 110	W332313	08-Aug-13	
Olite- Ct	rol - MATRIX SPIKE	D-4-								
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	4560	4610	10.0	R > 4S	90 - 110	W332222	07-Aug-13	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	31.2	19.8	10.0	114	90 - 110	W332222	07-Aug-13	M1
	ons by Ion Chromatogr									
EPA 300.0 EPA 300.0	Sulfate as SO4 Sulfate as SO4	mg/L mg/L	176 102	169 94.0	10.0 10.0	R > 4S R > 4S	90 - 110 90 - 110	W332313 W332313	08-Aug-13 09-Aug-13	D2,M3 D2,M3
EFA 300.0	Surface as 504	IIIg/L	102	94.0	10.0	K > 45	90 - 110	W 332313	09-Aug-13	D2,W13
Quality Cant	rol - MATRIX SPIKE	DIDI ICATE	Doto							
			MSD	Spike	Spike		RPD			
Method	Analyte	Units	Result	Result	Level	RPD	Limit	Batch ID	Analyzed	Notes
	Chromatography	·~	4646	45.60	10.2		20	11/22222	07.4.13	DC 3.55
EPA 300.0	Sulfate as SO4	mg/L	4640	4560	10.0	1.7	20	W332222	07-Aug-13	D2,M3
Dissolved Ani EPA 300.0	ions by Ion Chromatog Sulfate as SO4	graphy mg/L	176	176	10.0	0.1	20	W332313	08-Aug-13	D2,M3
			1,0	- / 0		V				22,13



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Freeport McMoRan - Copper Queen Branch Sulfate Mitigation Order

Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Highway 92 Work Order: **W3G0770**Bisbee, AZ 85603 Reported: 13-Aug-13 11:28

# **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



Freeport McMoRan - Bisbee

36 West Hwy 92

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: W3H0297

Bisbee, AZ 85603 Reported: 21-Aug-13 11:47

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W3H0297-01	Ground Water	09-Aug-13 08:45	VH	13-Aug-2013
THOMPSON	W3H0297-02	Ground Water	09-Aug-13 10:58	VH	13-Aug-2013

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.



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0297 Bisbee, AZ 85603 Reported: 21-Aug-13 11:47

Sampled: 09-Aug-13 08:45 Client Sample ID: NWC-04 Received: 13-Aug-13 SVL Sample ID: W3H0297-01 (Ground Water) Sample Report Page 1 of 1

Sampled By: VH Method Units RLDilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 207 W334035  $mg\!/\!L$ 3.00 0.66 10 AEW 08/19/13 14:10

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

John Ken John Kern

Laboratory Director

D2



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0297 Bisbee, AZ 85603 Reported: 21-Aug-13 11:47

Sampled: 09-Aug-13 10:58 Client Sample ID: THOMPSON Received: 13-Aug-13

SVL Sample ID: W3H0297-02 (Ground Water) Sample Report Page 1 of 1 Sampled By: VH

Method Units RLMDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 7.62 W334035 08/19/13 14:21  $mg\!/\!L$ 0.30 0.07 AEW

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

John Kern

John Ken Laboratory Director



Freeport McMoRan - Bisbee Project Name: Cop

36 West Hwy 92 Bisbee, AZ 85603 Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: W3H0297

Reported: 21-Aug-13 11:47

<b>Quality Contro</b>	l - BLANK Data							
Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anion EPA 300.0	s by Ion Chromatog Sulfate as SO4	raphy mg/L	<0.30	0.07	0.30	W334035	19-Aug-13	

Quality Control - LABORATORY CONTROL SAMPLE Data										
Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved Anio EPA 300.0	ns by Ion Chromatog Sulfate as SO4	raphy mg/L	10.1	10.0	101	90 - 110	W334035	19-Aug-13		

Quality Control - MATRIX SPIKE Data											
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved Anion	ıs by Ion Chromatogı	aphy		57.4		99.4	90 - 110	W334035	20-Aug-13		

Quality Control - MATRIX SPIKE DUPLICATE Data											
Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes	
Dissolved Anio	Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	66.7	67.4	10.0	0.9	20	W334035	20-Aug-13	D2,M3	

## **Notes and Definitions**

D2	Sample required dilution due to high concentration of target analyte.
174	bample required dilution due to mgn concentration of unget 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



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3H0426**Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2008-8M	W3H0426-01	Ground Water	12-Aug-13 09:10	CLS	16-Aug-2013
BMO-2008-8B	W3H0426-02	Ground Water	12-Aug-13 10:25	CLS	16-Aug-2013
BMO-2008-9M	W3H0426-03	Ground Water	12-Aug-13 12:30	CLS	16-Aug-2013
BMO-2008-10GL	W3H0426-04	Ground Water	13-Aug-13 10:30	CLS	16-Aug-2013
COOPER C	W3H0426-05	Ground Water	13-Aug-13 12:50	CLS	16-Aug-2013
HOBAN	W3H0426-06	Ground Water	13-Aug-13 13:45	CLS	16-Aug-2013
BMO-2008-1G	W3H0426-07	Ground Water	14-Aug-13 08:00	CLS	16-Aug-2013
BMO-2012-1M	W3H0426-08	Ground Water	14-Aug-13 13:00	CLS	16-Aug-2013
TM-16	W3H0426-09	Ground Water	15-Aug-13 06:45	CLS	16-Aug-2013
BMO-2010-1M	W3H0426-10	Ground Water	15-Aug-13 11:35	CLS	16-Aug-2013
BMO-2010-2M	W3H0426-11	Ground Water	15-Aug-13 12:15	CLS	16-Aug-2013

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.



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0426 Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

Sampled: 12-Aug-13 09:10 Client Sample ID: BMO-2008-8M Received: 16-Aug-13 SVL Sample ID: W3H0426-01 (Ground Water) Sample Report Page 1 of 1

Sampled By: CLS Method Result RLDilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 W335162 65.0 3.00 0.66 10 AEW 08/28/13 14:53 D2

 $mg\!/\!L$ 

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

John Ken John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0426 Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

Sampled: 12-Aug-13 10:25 Client Sample ID: BMO-2008-8B Received: 16-Aug-13 SVL Sample ID: W3H0426-02 (Ground Water) Sample Report Page 1 of 1

Sampled By: CLS Method Result RLDilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 1420 W335162 mg/L30.0 6.60 100 AEW 08/28/13 15:03 D2

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

John Ken John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3H0426**Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

Client Sample ID: BMO-2008-9M Sample Report Page 1 of 1

SVL Sample ID: W3H0426-03 (Ground Water) Sample Report Page 1 of 1

Sample BV: CLS

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

No. 1. 1. 1. Character and the second

Dissolved Anions by Ion Chromatography

EPA 300.0 Sulfate as SO4 71.1 mg/L 3.00 0.66 10 W335162 AEW 08/28/13 15:13 D2

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

John Kern Laboratory Director

John Ken



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0426 Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

Sampled: 13-Aug-13 10:30 Client Sample ID: BMO-2008-10GL Received: 16-Aug-13 SVL Sample ID: W3H0426-04 (Ground Water) Sample Report Page 1 of 1

W335162

AEW

08/28/13 15:23

D2

25

Sampled By: CLS Method Result RLDilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 520 mg/L7.50 1.65

Laboratory Director

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

John Ken John Kern



EPA 300.0

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Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0426 Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

Sampled: 13-Aug-13 12:50 Client Sample ID: COOPER C Received: 16-Aug-13 SVL Sample ID: W3H0426-05 (Ground Water) Sample Report Page 1 of 1

15.0

3.30

W335162

AEW

08/28/13 15:33

D2

	S v E Sumple 1B: VIOI	0420 00 (Sibalia i	rutoi,		ampic Keport	1 age 1 01 1		Sample	d By: CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved An	ions by Ion Chromatogra	nhv	_							

mg/L

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

756

John Ken

Sulfate as SO4

John Kern



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Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3H0426**Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

Client Sample ID: HOBAN
SVL Sample ID: W3H0426-06 (Ground Water)
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sample By: CLS

	, ,			Sampled By. CES						
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	1030	mg/L	15.0	3.30	50	W335162	AEW	08/28/13 15:43	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 Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0426 Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

Sampled: 14-Aug-13 08:00 Client Sample ID: BMO-2008-1G Received: 16-Aug-13 SVL Sample ID: W3H0426-07 (Ground Water)

Sample Report Page 1 of 1 Sampled By: CLS Method Result RLDilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

EPA 300.0 Sulfate as SO4 120 W335162  $mg\!/\!L$ 3.00 0.66 10 AEW 08/28/13 15:52 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 Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3H0426**Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

 Client Sample ID:
 BMO-2012-1M
 Sample Report Page 1 of 1
 Sample Received:
 14-Aug-13 13:00

 SVL Sample ID:
 W3H0426-08 (Ground Water)
 Sample Report Page 1 of 1
 Sample Report Page 1 of 1
 Sample Report Page 1 of 1

	1		~ .	р.тр		Sampled By. CLS				
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	202	mg/L	3.00	0.66	10	W335162	AEW	08/28/13 16:02	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 Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3H0426**Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

Client Sample ID: TM-16
SVL Sample ID: W3H0426-09 (Ground Water)
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sample Report Page 1 of 1

	S + E Sumpre 12: 11011	3 120 00 (S. Sana		54	impic report	1 450 1 01 1	Sampled By: CLS			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatograj	ohy								
EPA 300.0	Sulfate as SO4	539	mg/L	7.50	1.65	25	W335162	AEW	08/28/13 16:30	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 Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0426 Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

Sampled: 15-Aug-13 11:35 Client Sample ID: BMO-2010-1M Received: 16-Aug-13 SVL Sample ID: W3H0426-10 (Ground Water) Sample Report Page 1 of 1

	SVL Sample ID: W3H0426-10 (Ground Water)  Analyte Result Units			S	ample Report	Page 1 of 1		Sample	d By: CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes

Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 156 W335162 mg/L 3.00 0.66 10 AEW 08/28/13 16:39 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 Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3H0426**Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

Client Sample ID: BMO-2010-2M

SVL Sample ID: W3H0426-11 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample Report Page 1 of 1

	*	•	•					Sample	d by. CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatograp	ohy								
EPA 300 0	Sulfate as SO4	978	ma/I	15.0	3 30	50	W335162	ΔEW	08/28/13 16:49	D2

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3H0426**Bisbee, AZ 85603 Reported: 29-Aug-13 15:19

<b>Quality Con</b>	trol - BLANK Data							
Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Ani	ions by Ion Chromatog	raphy mg/L	<0.30	0.07	0.30	W335162	28-Aug-13	

Quality Control - LABORATORY CONTROL SAMPLE Data												
Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes			
Dissolved Anio	ons by Ion Chromatog Sulfate as SO4	raphy mg/L	9.93	10.0	99.3	90 - 110	W335162	28-Aug-13				

Quality Control - MATRIX SPIKE Data												
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes		
		_										
Dissolved Ani	ons by Ion Chromatog	raphy										
Dissolved Ani EPA 300.0	ons by Ion Chromatog	raphy mg/L	18.2	6.91	10.0	113	90 - 110	W335162	28-Aug-13	M1		

Quality Control - MATRIX SPIKE DUPLICATE Data											
Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes	
Dissolved Anio	Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	169	167	10.0	0.8	20	W335162	28-Aug-13	D2,M3	

## **Notes and Definitions**

	~			
D2 S	Sample required	dilution due to	high concent	tration 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



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W310118
Reported: 16-Sep-13 11:20

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W3I0118-01	Ground Water	05-Sep-13 11:42	VH	06-Sep-2013

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.



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W310118**Bisbee, AZ 85603 Reported: 16-Sep-13 11:20

Client Sample ID: NWC-04

SVL Sample ID: W3l0118-01 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sampled By: VH

	P	( ) ( )	,	~	ampie rieport	r uge r or r	Sampled by. VII			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Ani	ons by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	214	mg/L	3.00	0.66	10	W337294	AEW	09/12/13 22:01	D2

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

John Kern John Kern



Freeport McMoRan - Bisbee

36 West Hwy 92 Bisbee, AZ 85603 Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **W3I0118**Reported: 16-Sep-13 11:20

<b>Quality Cont</b>	trol - BLANK Data							
Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anic	ons by Ion Chromatogr Sulfate as SO4	raphy mg/L	<0.30	0.07	0.30	W337294	12-Sep-13	

Quality Control - LABORATORY CONTROL SAMPLE Data									
Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatog Sulfate as SO4	raphy mg/L	9.99	10.0	99.9	90 - 110	W337294	12-Sep-13	

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 EPA 300.0 Su	Ion Chromatography	mg/L	11.8	0.91	10.0	109	90 - 110	W337294	12-Sep-13	

Quality Control - MATRIX SPIKE DUPLICATE Data										
Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	11.8	11.8	10.0	0.5	20	W337294	12-Sep-13	

## **Notes and Definitions**

D2	Sample required	dilution due to high concentration	on of target analyte.

LCS Laboratory Control Sample (Blank Spike)

RPD Relative Percent Difference

UDL A result is less than the detection limit

 $R > 4S \hspace{1cm} \% \ recovery \ not \ applicable, \ sample \ concentration \ more \ than \ four \ times \ greater \ than \ spike \ level$ 

<RL A result is less than the reporting limit

MRL Method Reporting Limit
MDL Method Detection Limit

N/A Not Applicable



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92

Bisbee, AZ 85603

Work Order: W3H0616

Reported: 05-Sep-13 11:46

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2008-106U	W3H0616-01	Ground Water	19-Aug-13 08:15	CL	23-Aug-2013
TM-6	W3H0616-02	Ground Water	19-Aug-13 09:15	CL	23-Aug-2013
BMO-2008-6M	W3H0616-03	Ground Water	20-Aug-13 07:10	CL	23-Aug-2013
BMO-2008-6B	W3H0616-04	Ground Water	20-Aug-13 08:15	CL	23-Aug-2013
BMO-2008-5M	W3H0616-05	Ground Water	20-Aug-13 09:55	CL	23-Aug-2013
BMO-2008-5B	W3H0616-06	Ground Water	20-Aug-13 10:30	CL	23-Aug-2013

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 Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3H0616**Bisbee, AZ 85603 Reported: 05-Sep-13 11:46

Client Sample ID: **BMO-2008-106U**Sampled: 19-Aug-13 08:15

Received: 23-Aug-13

SVL Sample ID: W3H0616-01 (Ground Water)

Sample Report Page 1 of 1

Sampled By: CL

Method Result Units RLDilution Batch Analyst Analyzed Notes Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 1780 W336074 D2  $mg\!/\!L$ 15.0 3.30 50 AEW 09/03/13 15:53

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3H0616
Reported: 05-Sep-13 11:46

Client Sample ID: TM-6
Sampled: 19-Aug-13 09:15
Received: 23-Aug-13

SVL Sample ID: W3H0616-02 (Ground Water)

Sample Report Page 1 of 1

Sampled By: CL

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
 0.30
 0.07
 W336074
 AEW
 09/03/13 16:05

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

John Kern Laboratory Director

John Ken



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0616 Bisbee, AZ 85603 Reported: 05-Sep-13 11:46

Sampled: 20-Aug-13 07:10 Client Sample ID: BMO-2008-6M Received: 23-Aug-13 SVL Sample ID: W3H0616-03 (Ground Water) Sample Report Page 1 of 1

Sampled By: CL Method Units RLDilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 213 W336074  $mg\!/\!L$ 3.00 0.66 10 AEW 09/03/13 16:17

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

John Ken John Kern

Laboratory Director

D2



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3H0616**Bisbee, AZ 85603 Reported: 05-Sep-13 11:46

 Client Sample ID:
 BMO-2008-6B
 Sample Report Page 1 of 1
 Sample Received:
 20-Aug-13 08:15

 SVL Sample ID:
 W3H0616-04 (Ground Water)
 Sample Report Page 1 of 1
 Sample Report Page 1 of 1
 Sample Report Page 1 of 1

SVL Sample ID: W3H0616-04 (Ground Water)

Sample Report Page 1 of 1

Sampled By: CL

Method

Analyte

Result

Units

RL

MDL

Dilution

Batch

Analyst

Analyzed

Notes

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

 Dissolved Anions by Ion Chromatography

 EPA 300.0
 Sulfate as SO4
 10.6
 mg/L
 0.30
 0.07
 W336074
 AEW
 09/03/13 16:29

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

John Kern Laboratory Director

John Ken



John Ken

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Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3H0616**Bisbee, AZ 85603 Reported: 05-Sep-13 11:46

Client Sample ID: BMO-2008-5M

SVL Sample ID: W3H0616-05 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sampled By: CL

	SVL Sample ID: <b>W3H0</b>	616-05 (Ground \	Nater)	Sa	ample Report	Page 1 of 1		Sampled By: CL			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anion	ns by Ion Chromatograp	hy									
EPA 300.0	Sulfate as SO4	138	mg/L	3.00	0.66	10	W336074	AEW	09/03/13 16:41	D2	

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

John Kern



John Ken

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W3H0616**Bisbee, AZ 85603 Reported: 05-Sep-13 11:46

Client Sample ID: **BMO-2008-5B**Sampled: 20-Aug-13 10:30

Received: 23-Aug-13

SVL Sample ID: W3H0616-06 (Ground Water)

Sample Report Page 1 of 1

Sample By: CL

	*	•	<u> </u>					Sampi	ca by. CL	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	226	mg/L	3.00	0.66	10	W336074	AEW	09/03/13 16:53	D2

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

John Kern



Freeport McMoRan - Bisbee

36 West Hwy 92 Bisbee, AZ 85603 Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **W3H0616**Reported: 05-Sep-13 11:46

<b>Quality Cont</b>	rol - BLANK Data							
Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anio EPA 300.0	ons by Ion Chromatogr Sulfate as SO4	raphy mg/L	<0.30	0.07	0.30	W336074	03-Sep-13	

Quality Cont	rol - LABORATORY	CONTROL SAN	MPLE Data						
Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatog Sulfate as SO4	raphy mg/L	10.0	10.0	100	90 - 110	W336074	03-Sep-13	

Quality Con	Quality Control - MATRIX SPIKE Data										
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved Ani	ons by Ion Chromatog	raphy									
Dissolved Ani EPA 300.0	ons by Ion Chromatog Sulfate as SO4	raphy mg/L	14.0	3.03	10.0	109	90 - 110	W336074	03-Sep-13		

Quality Contr	rol - MATRIX SPIKE	DUPLICATE	Data							
Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Ani	ons by Ion Chromatog	graphy								
EPA 300.0	Sulfate as SO4	mg/L	14.2	14.0	10.0	1.8	20	W336074	03-Sep-13	M1

#### **Notes and Definitions**

D2	Sample required dilution due to high concentration of target analyte.
174	bample required dilation due to mgn 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



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603

Work Order: W3H0789
Reported: 12-Sep-13 08:56

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2008-11G	W3H0789-01	Ground Water	27-Aug-13 08:05	CLS	30-Aug-2013
BMO-2008-3B	W3H0789-02	Ground Water	27-Aug-13 13:25	CLS	30-Aug-2013
TM-42	W3H0789-03	Ground Water	28-Aug-13 09:35	CLS	30-Aug-2013
EQB-082813	W3H0789-04	Ground Water	28-Aug-13 11:00	CLS	30-Aug-2013
BMO-2008-7M	W3H0789-05	Ground Water	28-Aug-13 11:05	CLS	30-Aug-2013
DUP-082813	W3H0789-06	Ground Water	28-Aug-13 11:05	CLS	30-Aug-2013
TM-7	W3H0789-07	Ground Water	28-Aug-13 12:08	CLS	30-Aug-2013
TM-2A	W3H0789-08	Ground Water	28-Aug-13 13:30	CLS	30-Aug-2013

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.



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3H0789
Reported: 12-Sep-13 08:56

Client Sample ID: BMO-2008-11G

SVL Sample ID: W3H0789-01 (Ground Water)

Sample Report Page 1 of 1

Sampled 87 CLS

Sampled BV: CLS

SVL Sample ID: W3H0789-01 (Ground Water)

Sample Report Page 1 of 1

Sampled By: CLS

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed N

 Dissolved Anions by Ion Chromatography

 EPA 300.0
 Sulfate as SO4
 12.2
 mg/L
 0.30
 0.07
 W337058
 AEW
 09/09/13 20:42

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

John Kern Laboratory Director

John Ken



John Ken

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Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W3H0789
Reported: 12-Sep-13 08:56

Client Sample ID: BMO-2008-3B

SVL Sample ID: W3H0789-02 (Ground Water)

Sample Report Page 1 of 1

Sampled By: CLS

Sampled By: CLS

	SVL Sample ID: <b>W3H0</b>	1789-02 (Ground \	Nater)	Sa	ample Report	Page 1 of 1		Sampl	ed By: CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatograp	hy								
EPA 300.0	Sulfate as SO4	170	mg/L	3.00	0.66	10	W337058	AEW	09/09/13 20:52	D2

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

John Kern



EPA 300.0

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Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0789 Bisbee, AZ 85603 Reported: 12-Sep-13 08:56

Sampled: 28-Aug-13 09:35 Client Sample ID: TM-42 Received: 30-Aug-13

W337058

AEW

09/09/13 21:23

25

D2

SVL Sample ID: W3H0789-03 (Ground Water) Sample Report Page 1 of 1 Sampled By: CLS Units RLDilution Batch Analyst Analyzed Notes

7.50

1.65

Method Dissolved Anions by Ion Chromatography

 $mg\!/\!L$ 

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

416

John Ken

Sulfate as SO4

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0789 Bisbee, AZ 85603 Reported: 12-Sep-13 08:56

Sampled: 28-Aug-13 11:00 Client Sample ID: EQB-082813 Received: 30-Aug-13

SVL Sample ID: W3H0789-04 (Ground Water) Sample Report Page 1 of 1 Sampled By: CLS

Method RLMDL Dilution Batch Analyst Analyzed Notes

Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 < 0.30 W336224 mg/L0.30 0.07 AEW 09/05/13 18:32

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

John Ken John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0789 Bisbee, AZ 85603 Reported: 12-Sep-13 08:56

Sampled: 28-Aug-13 11:05 Client Sample ID: BMO-2008-7M Received: 30-Aug-13 SVL Sample ID: W3H0789-05 (Ground Water) Sample Report Page 1 of 1

Sampled By: CLS Method Result Units RLMDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 27.7 W337058  $mg\!/\!L$ 0.30 0.07 AEW 09/09/13 21:33

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0789 Bisbee, AZ 85603 Reported: 12-Sep-13 08:56

Sampled: 28-Aug-13 11:05 Client Sample ID: DUP-082813 Received: 30-Aug-13 SVL Sample ID: W3H0789-06 (Ground Water) Sample Report Page 1 of 1

Sampled By: CLS Method Units RLMDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 27.8 W337058  $mg\!/\!L$ 0.30 0.07 AEW 09/09/13 21:43

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0789 Bisbee, AZ 85603 Reported: 12-Sep-13 08:56

Sampled: 28-Aug-13 12:08 Client Sample ID: TM-7 Received: 30-Aug-13 SVL Sample ID: W3H0789-07 (Ground Water)

Sample Report Page 1 of 1 Sampled By: CLS Method Result Units RLMDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 25.0 W337058 mg/L0.30 0.07 AEW 09/09/13 21:53

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

John Ken John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3H0789 Bisbee, AZ 85603 Reported: 12-Sep-13 08:56

Sampled: 28-Aug-13 13:30 Client Sample ID: TM-2A Received: 30-Aug-13

SVL Sample ID: W3H0789-08 (Ground Water) Sample Report Page 1 of 1 Sampled By: CLS Units RLMDL Dilution Batch Analyst Analyzed Notes

Method

Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 23.5 W337058 mg/L0.30 0.07 AEW 09/09/13 22:03

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

John Ken

John Kern Laboratory Director



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Fax (208) 783-0891

Freeport McMoRan - Bisbee

36 West Hwy 92 Bisbee, AZ 85603 Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **W3H0789**Reported: 12-Sep-13 08:56

<b>Quality Cont</b>	trol - BLANK Data									
Method	Analyte	Units	Resu	lt	MDL	N	1RL	Batch ID	Analyzed	Notes
Anions by Ion EPA 300.0	Chromatography Sulfate as SO4	mg/L	<0.30	)	0.07	0	.30	W336224	05-Sep-13	
Dissolved Anio EPA 300.0	ons by Ion Chromatogr Sulfate as SO4	raphy mg/L	<0.30	)	0.07	0	.30	W337058	09-Sep-13	
Quality Cont	trol - LABORATORY (	CONTROL SA								
Method	Analyte	Units	LCS Result		CS rue	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion EPA 300.0	Chromatography Sulfate as SO4	mg/L	10.2	10	0.0	102	90 - 110	W336224	05-Sep-13	
Dissolved Anio EPA 300.0	ons by Ion Chromatogr Sulfate as SO4	raphy mg/L	9.98	10	0.0	99.8	90 - 110	W337058	09-Sep-13	
Quality Cont	trol - MATRIX SPIKE									
Method	Analyte	Units	Spike	Sample	Spike	%	<b>A</b>			
		Units	Result	Result (R)	Level (S)	Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion	Chromatography	Omts	Result	Result (R)				Batch ID	Analyzed	Notes
EPA 300.0	Chromatography Sulfate as SO4 Sulfate as SO4	mg/L mg/L	315 52.6	313 43.0				W336224 W336224	Analyzed  05-Sep-13  05-Sep-13	D2,M
EPA 300.0 EPA 300.0	Sulfate as SO4	mg/L mg/L	315	313	Level (S)	Rec.	90 - 110	W336224	05-Sep-13	D2,M
EPA 300.0 EPA 300.0 Dissolved Anic EPA 300.0	Sulfate as SO4 Sulfate as SO4	mg/L mg/L	315	313	Level (S)	Rec.	90 - 110	W336224	05-Sep-13	D2,N D2,N M1
EPA 300.0 EPA 300.0 Dissolved Anie EPA 300.0 EPA 300.0	Sulfate as SO4 Sulfate as SO4 ons by Ion Chromatogr Sulfate as SO4	mg/L mg/L <b>raphy</b> mg/L mg/L	315 52.6 40.5 35.1	313 43.0 29.0 23.7	10.0 10.0 10.0 10.0	Rec.  R > 4S 96.0	90 - 110 90 - 110 90 - 110 90 - 110 90 - 110	W336224 W336224 W337058	05-Sep-13 05-Sep-13	D2,M
EPA 300.0 EPA 300.0 Dissolved Anie EPA 300.0 EPA 300.0	Sulfate as SO4 Sulfate as SO4 ons by Ion Chromatogr Sulfate as SO4 Sulfate as SO4	mg/L mg/L <b>raphy</b> mg/L mg/L	315 52.6 40.5 35.1	313 43.0 29.0	10.0 10.0 10.0	Rec.  R > 4S 96.0	90 - 110 90 - 110 90 - 110	W336224 W336224 W337058	05-Sep-13 05-Sep-13	D2,M D2,M M1

**Dissolved Anions by Ion Chromatography** 

Sulfate as SO4

EPA 300.0

40.6

mg/L

40.5

10.0

0.1

20

W337058

09-Sep-13

M1



Freeport McMoRan - BisbeeProject Name: Copper Queen Branch Sulfate Mitigation Order36 West Hwy 92Work Order:W3H0789Bisbee, AZ 85603Reported:12-Sep-13 08:56

#### **Notes and Definitions**

D2 Sample required dilution d	lue 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



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W310181**Bisbee, AZ 85603 Reported: 16-Sep-13 11:05

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2008-13B	W3I0181-01	Ground Water	04-Sep-13 07:15	CLS	10-Sep-2013
TM-19A	W3I0181-02	Ground Water	04-Sep-13 08:40	CLS	10-Sep-2013
TM-15	W3I0181-03	Ground Water	04-Sep-13 10:20	CLS	10-Sep-2013
BMO-2008-13M	W3I0181-04	Ground Water	06-Sep-13 15:30	CLS	10-Sep-2013

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.



John Ken

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W310181**Bisbee, AZ 85603 Reported: 16-Sep-13 11:05

Client Sample ID: BMO-2008-13B

SVL Sample ID: W3l0181-01 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sampled Bv: CLS

	r	(	,	٥.	mpie rieport	r uge r or r		Sample	шБу. CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Ani	ions by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	1050	mg/L	15.0	3.30	50	W337294	AEW	09/12/13 22:11	D2

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

John Kern



John Ken

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W310181**Bisbee, AZ 85603 Reported: 16-Sep-13 11:05

Client Sample ID: TM-19A Sample Report Page 1 of 1 Sampled Bampled By: CLS Sampled By: CLS Sam

	S VE Sumple 1B. 11010	7101 02 (Sibulia 11	atory	54	i age i oi i	Sampled By: CLS				
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	61.3	mg/L	3.00	0.66	10	W337294	AEW	09/12/13 22:21	D2

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

John Kern



Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: W3I0181 Bisbee, AZ 85603 Reported: 16-Sep-13 11:05

Sampled: 04-Sep-13 10:20 Client Sample ID: TM-15 Received: 10-Sep-13 SVL Sample ID: W3I0181-03 (Ground Water) Sample Report Page 1 of 1

Sampled By: CLS Method Result Units RLMDL Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 14.8 W337294 09/12/13 22:31  $mg\!/\!L$ 0.30 0.07 AEW

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

John Ken John Kern



John Ken

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

Freeport McMoRan - Bisbee Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Hwy 92 Work Order: **W310181**Bisbee, AZ 85603 Reported: 16-Sep-13 11:05

Client Sample ID: BMO-2008-13M

SVL Sample ID: W3I0181-04 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample Report Page 1 of 1

	S + E Sumpre 1B: 1161	(G. Gama 11	uto.,	54	11 450 1 01 1	Sampled By: CLS				
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	402	mg/L	7.50	1.65	25	W337294	AEW	09/12/13 22:41	D2

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

John Kern



Freeport McMoRan - Bisbee

36 West Hwy 92 Bisbee, AZ 85603 Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **W3I0181**Reported: 16-Sep-13 11:05

Quality (	Control - BLANK Data										
Method	Analyte	Units	Result		MDL	1	MRL	Batch ID	Analyzed	Notes	
Dissolved EPA 300.0	Anions by Ion Chromatograp Sulfate as SO4	<b>ohy</b> mg/L	<0.30	<0.30 0.07		0.30		W337294	12-Sep-13		
Quality (	Control - LABORATORY CO	ONTROL S.	AMPLE Data								
Method	Analyte	Units	LCS Result	I T	.CS rue	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved Anions by Ion Chromatography EPA 300.0 Sulfate as SO4 mg/L 9.99					10.0 99.9 90 - 11			W337294	12-Sep-13		
Quality (	Control - MATRIX SPIKE D	ata									
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved EPA 300.0	Anions by Ion Chromatograp Sulfate as SO4	ohy mg/L	11.8	0.91	10.0	109	90 - 110	W337294	12-Sep-13		
Quality (	Control - MATRIX SPIKE D	UPLICATE	E Data								
Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes	
Dissolved EPA 300.0	d Anions by Ion Chromatogra Sulfate as SO4	n <b>phy</b> mg/L	11.8	11.8	10.0	0.5	20	W337294	12-Sep-13		
			Notes	and Defini	tions						
D2	Sample required dilution due to	high concen	tration of target a	nalyte.							
LCS	Laboratory Control Sample (B	_	-								
RPD	Relative Percent Difference										
UDL	A result is less than the detection	on limit									
R > 4S	4S % recovery not applicable, sample concentration more than four times greater than spike level										
<rl< td=""><td colspan="11">A result is less than the reporting limit</td></rl<>	A result is less than the reporting limit										
MRL	Method Reporting Limit										
MDL	Method Detection Limit										
MIDL											



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: **W3I0472**Reported: 26-Sep-13 09:08

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2008-4B	W3I0472-01	Ground Water	18-Sep-13 10:53	VH	19-Sep-2013

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

Method

Project Name: Copper Queen Branch Sulfate Mitigation Order

AEW

Work Order: W3I0472

Reported: 26-Sep-13 09:08

Client Sample ID: BMO-2008-4B

SVL Sample ID: W3I0472-01 (Ground Water)

Sample Report Page 1 of 1

MDL

0.07

Sampled: 18-Sep-13 10:53 Received: 19-Sep-13

Sampled By: VH

09/23/13 19:36

Dissolved Anions by Ion Chromatography

EPA 300.0 Sulfate as SO4

mg/L 0.30

RL

Units

Dilution

Batch A

W339106

Analyst Analyze

Analyzed Notes

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

Result

9.84

John Ken

John Kern



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

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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: W310472
Reported: 26-Sep-13 09:08

Quality Control - BLANK Data												
Method	Analyte	Units	Result	MDL	1	MRL	Batch ID	Analyzed	Notes			
Dissolved Anior EPA 300.0	ns by Ion Chromatogr Sulfate as SO4	raphy mg/L	<0.30	0.07	(	0.30	W339106	23-Sep-13				
Quality Control - LABORATORY CONTROL SAMPLE Data												
Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes			

-	Method	Analyte	Ullits	Result	True	Rec.	Limits	Datell ID	Anaryzeu	notes
	Dissolved Anions EPA 300.0	by Ion Chromatogr Sulfate as SO4	raphy mg/L	9.93	10.0	99.3	90 - 110	W339106	23-Sep-13	

<b>Quality Contro</b>	Quality Control - MATRIX SPIKE Data										
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved Anion	Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	20.0	9.16	10.0	108	90 - 110	W339106	23-Sep-13		

Quality Control - MATRIX SPIKE DUPLICATE Data											
Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes	
Dissolved Anions by Ion Chromatography											
Dissolved An	nons by ion Unromatog	grapny									

#### **Notes and Definitions**

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< td=""><td>A result is less than the reporting limit</td></rl<>	A result is less than the reporting limit

Matrix spike recovery was high, but the LCS recovery was acceptable.

MRL Method Reporting Limit
MDL Method Detection Limit
N/A Not Applicable

M1

# APPENDIX D GROUNDWATER SAMPLING FORMS

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	<u>h</u>
Task No:					Date:	7/18/13		
Well ID:	Anderson	, 396			Weather:	Sonny +	windy	
ADWR No:	- <del>- y \                                </del>	, 396 613396	2	MT	Sampler:	VNY "		
				WELL DA	ΓA			
Well D	epth (ft bls):	9	185'		Nominal	Casing (Inches)	Capacity  Gallons per Li	near Foot
	•		8"			2	0.16	
Casing I	Diameter (in):					5	0.65 1.02	
Static Water	er Level (ft bmp):	15	52.191			6 8	1.47 2.61	
Casing '	Volume (gal):		x3 =			10 .	4.08	
Total Volum	ne Purged (gal):				Casin	ng Volume = gallons	/foot * water colum	ın (feet)
TOTAL VOIG	ne Fulgeu (gal).		FIEL	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On							
	Send enter that can need the F	ndrika in 'n Mana i nuber e	THE PERSON OF THE PARTY OF THE STATE OF THE					
						in ne		
				1	proper	24		
			<del></del>	Jue to	V!			
			sample	0				
		10	5000					
	ble							
	100000							
							Pump Off	
	FIELD PARAMET	ER STABILIZA	ATION: Three c	onsecutive rea	adings within (	0.3 su pH, 2 degree	s C, and 100 μS/cr	n)
			SAN	VIPLE INFOF	RMATION			
Sample Co	ollection Point:							
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
eresülőszervessze			(ATED ENVEL	NATACUIDE	MENT COLL	 		
		radira dia selit yang jija Salat Sud	/ATER LEVEL	MEASURE	MEN I COLI	ECHON		
□ No wat	level measurement er level measurem er level measurem er level measurem	t collected. ent collected. ent collected.	Obstruction in v	ellhead/No po vell.		. H.a. 5,7 or 5 of Children and the Children Children		70年3年3月 18日 18日 18日 18日 18日 18日 18日 18日 18日 18日
			WELL	PURGING IN	FORMATION			
☐ Purged	i 3 well volumes ar i 3 well volumes ba i well until field par	ased on previou	us water level a	nd field paren	neters stabilize	ed.		
☐ Other:				<del></del>	<del></del>			•
Additiona	l Comments:	Pipe	still bro	len,	no Jan	rple		· · · · · · · · · · · · · · · · · · ·
		<del></del>				•		
•	· · · · · · · · · · · · · · · · · · ·							
						_ <del></del> .		



Project No:	055038				Client:	Freeport Coppe	r Queen Branc	<u>h</u>
Task No:					Date:	<u> 7/18/13</u>		
Well ID:	Anderso	n 458			Weather:	Bunnyt .	Windy	
ADWR No:		1458			Sampler:	TVH ,	•	
				WELL DA	ΓΑ ÖHELL			
Mell D	anth (ft bla):	7	34 '		Nomina	Casing (	Capacity Gallons per Li	near Foot
well D	epth (ft bls):			···	710111110	2	0.16	
Casing I	Diameter (in):		5 <b>'</b>			4 5	0.65 1.02	
Static Wate	er Level (ft bmp):	15	7.561			6	1.47	
Casing \	Volume (gal):	588	x3 = 1	764		8 10	2.61 4.08	
_					Casir	ng Volume = gallons	/foot * water colum	in (feet)
Total Volur	ne Purged (gal):		FIE	D SAMPLIN	I IG DATA			
Time	Elapsed Time (min)	Discharge Rate	Total Discharge	pH (SU)	Temp (°C)	Specific Conductance	Comme	ents
	<u> </u>	(gpm)	(gallons)			μS/cm)		
0841	Pump On				100 -		rgarile Sibalii	
0856	15	9	135	8.14	23,7	405.1		
0911	36	9	270	8.08	24.3	407.4		
0926	45	9	405	8.21	24.1	404.9		
0941	60	9	540	8.17	24.3	402.0		
0956	75	9	675	8.18	24.3	401.9		
			<u> </u>	<u> </u>			Pump Off	
ranin manadina servici	FIELD PARAMET	ER STABILIZA	Francisco de Militario de La Militario	Language en la Maria de la collega	Continue La Continue de	0.3 su pH, 2 degree	s C, and 100 μS/C	n)
			SAN	MPLE INFOR	RMATION			
Sample Co	ollection Point:		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	<del>.,</del>	<del></del>		
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Ander	son 458	1000	Poly	250mz	1	300.0	NA	Υ
								and a Sinney
		V	VATER LEVEL	_ MEASURE	MENT COL	LECTION		
□ No wat □ No wat □ No wat □ Other:	level measurementer level measuremer lev	t collected. nent collected. nent collected. nent collected.	No access to w Obstruction in v Well is pumping	ellhead/No po vell.	rt in wellhead			
	d 3 well volumes a d 3 well volumes b			ınd field naren	neters stabilia	red.		
_	d well until field par			ind lield paren	icicio Glabiliz			
Other:	<b>~</b> D		vol, parav	neters =	,tabilized	<i>J</i>		
Additiona	l Comments:		7					
			·					

Project No:	287030				Client:	Freeport Coppe	er Queen Branc	ch
Task No:					Date:	7/25/13		
Well ID:	AWC-C	72			Weather:	Overcost	mugay	
ADWR No:	(	616586			Sampler:	VNH		
				WELLDA	TA	Casina	Conocity	
Well De	pth (ft bls):	33	3'		Nomina	l Size (inches)	Capacity Gallons per Li	
Casing D	iameter (in):	2(	)"		i .	2	0.16 0.65	;
Static Water	Level (ft bmp):	128	.89			5 6	1.02 1.47	l l
Casing V	olume (gal):	3331	x3 = 9	993		8 10	2.61 4.08	
_	e Purged (gal):				Casin	ng Volume = gallons	/foot * water colum	nn (feet)
			FIEL	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
0840	Pump On							
0900	20	120	2400	7.40	22.0	471.8		
0920	40	120	4800	7,27	21.7	463.6		·
0940	100	120	7200	7.31	21,9	456.8		
1000	<b>30</b>	120	9600	7,32	22.0	456.3		
1005	85	120	10200	7.35	22,1	460,5		
							D Off	
	TELD DADAMET	ED CTABILIZA	ATION: Three o	one coutive rec	dings within (	D.3 su pH, 2 degree	Pump Off	m)
	TELD FARAIVIET	ER STABILIZA		IPLE INFOR		J.O Su pri, z deglee	s e, and του μετα	
Sample Coll	ection Point:							
•	nple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
ANC	-02	1007	Poly	250mL	<u> </u>	300.0	44	Υ
			ATERILEVEL	MEASURE	MENT COLL	TEGILON		
<b>~ (</b>	vel measurement		No oceano to um	allbood/No no	t in wallboad			
	r level measurem r level measurem				I III Weillicau			
	r level measurem							
□ Other:								illanoto ililoria pie ilililia ilila
سر م				PURGING INI	ORMATION			
r 🔻 -	3 well volumes an 3 well volumes ba	-		nd field param	etere etabiliza	ad		
_	well until field par			no nelo palem	eleis sladiize	<del>.</del> .		
□ Other:								
Additional	Comments:					-		

Date:   7   16   18   18   18   18   18   18   18
ADWR No:   (6   6585   Sampler: V)
ADWR No:   (6   6585   Sampler: V)
Well Depth (ft bls):   270   Nominal Size (inches)   Gallons per Linear Foot
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
Casing Diameter (in): $1/6$ 4 0.65 1.02 Static Water Level (ft bmp): $12/6$ 6 1.47 8 2.61 Casing Volume (gal): $1501/2$ $x3 = 45/2$ 10 4.08 Casing Volume = gallons/foot * water column (feet) Total Volume Purged (gal): $I = 10/2$
Static Water Level (ft bmp):
Casing Volume (gal):
Total Volume Purged (gal):  FIELD SAMPLING DATA  Time  Elapsed Time (min)  Discharge Rate (gpm)  Discharge (gallons) $(SU)$ $(SU)$ Temp (°C)  Conductance (µS/cm) $(\mu S/cm)$ Comments $(\mu S/cm)$ $(\mu S/cm)$ $(\mu S/cm)$
Total Volume Purged (gal):    FIELD SAMPLING DATA
Time Elapsed Time (min) Discharge Rate (gpm) Discharge (gallons) PH (SU) Temp (°C) Conductance (μS/cm) Comments  1017 Pump On  1027 5 400 3000 7.38 21.7 502 46
Time Elapsed Time (min) Rate (gpm) Discharge (gallons) SU Conductance ( $\mu$ SU) Conductance ( $\mu$ S/cm) Comments    10   7   Pump On   7.38   21.7   502 $\mu$ (o)
1022 5 600 3000 7.38 21.7 502.6
102
1027 10 600 6000 7.53 21.5 494.2
1032 15 600 9000 7.62 21.4 490.3
1037 20 600 12,000 7.61 21.5 489.6
Pump Off
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)
SAMPLE INFORMATION
Sample Collection Point:
Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative (y/n)
AWC-03 1043 Poly 250ml i 380.0 NA Y
· · · · · · · · · · · · · · · · · · ·
WATER LEVEL MEASUREMENT COLLECTION
Water level measurement collected.
No water level measurement collected. No access to wellhead/No port in wellhead
□ No water level measurement collected. Obstruction in well. □ No water level measurement collected. Well is pumping.
□ Other:
WELL PURGING INFORMATION
□ Purged 3 well volumes and field parameters stabilized.
□ Purged 3 well volumes based on previous water level and field paremeters stabilized. □ Purged well until field parameters stabilized.
□ Purged well until field parameters stabilized. □ Other:
Additional Comments:

#

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	h
Task No:					Date:	7116/13		
Well ID:	AWC- @	94			Weather:	Overcast		
ADWR No:		(016584	/		Sampler:	NUI		
				WELL DA	ΓA			
Well D	epth (ft bls):	ب. ،	337'		Nominal	Size (inches)	Capacity Gallons per Li	inear Foot
	Diameter (in):		16"			2 4	0.16 0.65	
						5	1.02	2
Static Wate	er Level (ft bmp):		23.76'	102)		6 8	1.47 2.61	
Casing '	Volume (gal):	2227	x3 = 6	1801		10	4.08	
Total Volur	ne Purged (gal):				ļ	g Volume = gallons	/foot * water colum	ın (feet)
			a contrata messa esta securida	_D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1100	Pump On							
1105	5	700	3500	7.79	20.9	841.3		
1110	10	700	7000	7.40	20,8	600.4		
1115	15	700	10,500	7,33	20.9	588.5		
1120	20	700	14,000	7.30	21.0	585.7		
··-							D Off	
		ED OTABILITA	A TION! There are		diana within (	D.3 su pH, 2 degree	Pump Off	m\
	FIELD PARAMET	ERSTABILIZ	era i giji matawa na ajawa S	IPLE INFOR		J.S su pri, 2 degree	s O, and Too μοιο	
Sample Co	llection Point:	T	T. O. daine	1	No of	<u> </u>		Filtered
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)
AWC	-04	10/26	Poly	250mL	. (	300°.0	NA	V
			l VATER LEVEL	MEAGIIDE	MENT COLL	L		
			VAHER LEVEL	. IVIEASURE	VIENT COLL	-EOIIION		
i '	evel measuremen er level measurem		No access to we	allhead/No no	rt in wellhead			
l	er level measurem er level measurem			•	it iii weiiiieaa			
	er level measurem							
□ Other:								
			WELL	PURGING IN	FORMATION			
	3 well volumes ar							
_	3 well volumes ba			nd field parem	eters stabilize	ed.		
☐ Purged☐ Other:	well until field par	ameters stabi	iizea.					
L	Comments:				<del> </del>			
Auditional	COMMENTS.							
		110=						

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	<u>h</u>
Task No:					Date:	7/16/13		·
Well ID:	Awc	-05			Weather:	Overcast		
ADWR No:		590620	)		Sampler:	VNH		
	şile sikti			- WELL DA	ΓA			
Well De	epth (ft bls):	119	83'		Nominal	Size (inches)	Capacity Gallons per Li	near Foot
	Diameter (in):		6"			2 4	0.16 0.65	
-			3.17'	<del></del>		5 6	1.02 1.47	
Static Wate	r Level (ft bmp):			2-2 6		8	2.61	
Casing \	/olume (gal):	10234.5	x3 = 30	7,403,5	0	10	4.08	n (feet)
Total Volum	ne Purged (gal):					g Volume = gallons	root water colum	n (leet)
			Date of the second of the second	LD SAMPLIN	IG DATA	0		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
0904	Pump On							
0914	10	300	3000	7,29	21.4	451.2		
0924	20	300	6000	7,55	21,1	447.8		
0934	30	300	9,000	7,60	21,3	449.0		
0944	40	300	12,000	7,50	21.3	454,5		
							D Off	
					<u> </u>		Pump Off	\
	FIELD PARAME	FER STABILIZ	SE COMMITTE DE LA VERSE VERSE	e <b>tieru</b> uninerunikeen hikkeis	or all the second of the secon	0.3 su pH, 2 degree	es C, and Too µS/C	ity Elektrik i kalendari
			. SA	MPLE INFO	RMATION			
Sample Co	llection Point:			<del></del>	<del></del>		г	
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-	Ø5	0954	Poly	250mL	1	300.0	NA	4
DUP 20	130716	1800	Poly	250mL		300,0	l NA	<u>y</u>
		V	VATER LEVE	L MEASURE	MENT COLL	LECTION		
Water i	evel measuremer	nt collected.						
☐ No wat	er level measuren	nent collected.	No access to w	velihead/No po	ort in wellhead			
l .	er level measuren					-		
□ No wat	er level measurer	nent collected.	Well is pumpin	g.				
☐ Other:	otoinemis en (1551 - comprimei faults	usat olitatistaasakaan kalensiit		- Supoluo II	FORMATION			
				PURGING IN	IFURWATION			
	l 3 well volumes a l 3 well volumes b				neters stabiliz	ed.		
	i 3 well volumes b I well until field pa				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
☐ Other:								
Additiona	Comments:							
					<del></del>		<del></del>	
	<u> </u>				<u> </u>		<u> </u>	
					<del></del> -			



Project No:	055038				Client:	Freeport Coppe	r Queen Branc	<u>h</u>
Task No:					Date:	7/9/1	3	
Well ID:	Banks	986			Weather:	Overcost,	80's	
ADWR No:		17986			Sampler:	YNH		
				WELL DAT	ΓΑ	Coolea	Capacity	
Well De	pth (ft bls):	4	135'		Nominal	Size (inches)	Gallons per Li	
Casing D	iameter (in):		6"			2 4	0.16 0.65	
		11 8 1		8.32'		5 6	1.02 1.47	1
Static water	Level (ft bmp):	Use Banks				8	2.61	
Casing V	olume (gal):	289	x3 = 3	367	Cosin	10 g Volume = galions	#foot * water colum	
Total Volum	e Purged (gal):				1	y volume – galions	7100t Water Colum	II (ICCI)
	l de la companya de l			_D_SAMPLIN T	IG DATA	Coosific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1557	Pump On							
1617	20	11	220_	7.89	22.5	828,5		
1637	40	11	440	7.96	22.8	793,6		
1657	60	3	500	8.04	22,9	769.1		
17/70	86 H							
				ļ				
								<u> </u>
							Pump Off	
F	IELD PARAMET	ER STABILIZA	ATION: Three c	onsecutive rea	.Iadings within (	i	s C, and 100 μS/cr	n)
			SAN	MPLE INFOF	RMATION			
Sample Coll	ection Point:						Steen Indiana Lantangerah sa 11° 120	
	nple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Banks	986	1762	Poly	250mL	l	300.O	NA	<u> </u>
						ere an en discourse, aproxi più incor		anner i de les resones de la consta
		V)	ATER LEVEL	MEASURE	MENT COLL	ECTION		
	vel measuremen							
	r level measuren r level measuren				π in weilnead			
	r level measuren							Į.
☐ Other:	, 1070, 11100001.01.							ê'
			WELL	PURGING IN	FORMATION			
1	3 weli volumes a							ø
	3 well volumes b				neters stabilize	ed.		
*	well until field pa	rameters stabili	ized. + 119h1	ning				
Other:	Commonts:	/	. /	15- 10	mi			
Additional	Comments:	L191	itning a	/in 10				
* When	Q drops	, relet	control	box in	well	shed w/	orange les	Ver X

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	<u>h</u>
Task No:					Date:	7/9/13		
Well ID:	Banks	987			Weather:	Overcast,	80's	
ADWR No:	$(a^{I}$	47987			Sampler:	VVH		
				- WELL DAT	ΓΑ			
Well D	epth (ft bls):	3	391		Nominal	Size (inches)	Capacity  Gallons per Li	
Casing I	Diameter (in):		6"			2	0.16 0.65	
Static Water	er Level (ft bmp):	23°	8.32'			5 6	1.02 1.47 2.61	
Casing '	Volume (gal):		x3 =			8 10	4.08	
_					Casin	ig Volume = gallons	/foot * water colum	ın (feet)
Total Volum	ne Purged (gal):		EIEI	D SAMPLIN	l IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On	(92117	(Gallette)					
					<u>.                                    </u>			
						-		
				wed				
				1000				
							<u> </u>	
							Pump Off	
	FIELD PARAMET	ER STABILIZ	ATION: Three c	onsecutive rea	dings within	0.3 su pH, 2 degree	s C, and 100 μS/cr	n)
			SAN	IPLE INFOF	RMATION			
Comple Co	ollection Point:							<u>ii indicani ing marang na mahalan</u> ia
<u> </u>			Container	1	No. of			Filtered
S	ample ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)
		V	VATER LEVEL	MEASURE	MENT COLL	ECTION		
4₩ Water	level measuremen	iling but her in the state of the	nalitengaga atman, artigapa	<u> </u>		<u>entennumenten en u>		of Englishing to area to the
	er level measurem		No access to w	ellhead/No po	rt in wellhead			
1	er level measurem							
☐ No wat	er level measurem	ent collected.	Well is pumping	J.				
□ Other:								- marrie 1 marrie 1 marrie 1 marrie 1 marrie 1 marrie 1 marrie 1 marrie 1 marrie 1 marrie 1 marrie 1 marrie 1 m
			WELL	PURGING IN	FORMATION			
☐ Purgeo	i 3 well volumes ar	nd field parame	eters stabilized.					
☐ Purged	d 3 well volumes ba	ased on previo	us water level a	nd field parem	eters stabiliz	ed.		
☐ Purged	i well until field par	ameters stabil	ized.					
☐ Other:			<del></del>					
Additiona	Comments:	<u> </u>	WLO					
					w <u></u>			
	*****			<u></u>				
		······	<del></del>					

Freeport Copper Queen Branch 055038 Client: Project No: Date: Task No: Weather: Well ID: Sampler: ADWR No: WELL DATA Casing Capacity Gallons per Linear Foot Nominal Size (inches) Well Depth (ft bis): 0.16 4 0.65 Casing Diameter (in): 1.02 5 1.47 6 Static Water Level (ft bmp): 8 2.61 x3 = 10 4.08 Casing Volume (gal): Casing Volume = gallons/foot \* water column (feet) Total Volume Purged (gal): FIELD SAMPLING DATA Discharge Total Specific Elapsed Time pН Temp Comments Discharge Conductance Time Rate (SU) (°C) (min) (µS/cm) (gpm) (gallons) Pump On Pump Off FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 μS/cm) SAMPLE INFORMATION Sample Collection Point: Filtered Container No. of Preservative Volume Analysis Method Sample ID Time (y/n) Containers Type 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.  $\hfill\square$  Purged well until field parameters stabilized. ☐ Other: Additional Comments: brick tower (former windmill?)



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Project No:	055038				Client:	Freeport Coppe	r Queen Branc	h
Task No:					Date:	7/8/13	· -	
Well ID:	Bina				Weather:	Overcast, k	reezy 80	's
ADWR No:	<u>Bina</u> 577	927			Sampler:	NNH	,	
				WELL DA	TA			
Mall D	onth (ft blo):	41	e0'		Nominal	Casing Size (inches)	Capacity Gallons per Li	near Foot
well D	epth (ft bis):				Homina	2	0.16	
Casing I	Diameter (in):	4	<i>\\</i> "			4 5	0.65 1.02	
Static Wate	er Level (ft bmp):					6	1.47	
Casing '	Volume (gal):		x3 =		ļ	8 10	2.61 4.08	
	ne Purged (gal):				Casin	g Volume = gallons	/foot * water colum	nn (feet)
Total Volul	ne Fulged (gai).		FIE	LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On							
1540	manana in tan ranggarena arra			6.62	28,0	1580		
7 7								
	1-1							
			:					
				<del> </del>				-
							,	
							Pump Off	
	FIELD PARAMET	ER STABILIZA	ATION: Three c	onsecutive re	adings within (	0.3 su pH, 2 degree	s C, and 100 μS/c	m)
			a committee of the committee of the	VIPLE INFOF				
Sample Co	ollection Point:						intelnitingualin musi musi misi in misi	
	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Bic	na	1546	Poly	250mL	- 1	300.0	NA	Ч
		M.	ATER LEVE	_ MEASURE	MENT COLL	ECTION		
□ Water	level measuremen	t collected.			-			
L.	er level measurem				rt in wellhead			
1 * *	er level measurem							
·	er level measurem	ent collected.	Well is pumping	g.				
□ Other:			WELL	PURGING IN	FORMATION			
□ Purgeo	l 3 well volumes ar	nd field parame						
1	d 3 well volumes ba				neters stabiliz	ed.		
□ Purged	d well until field par	ameters stabili	ized.	,			}	
Other:	Samp	le grom	P-Toint	erno po	rge pe	r duries,	regues (	
Additiona	l Comments:			·	- /			
		<del></del>						
							<u> </u>	
	****				· · · · · · · · · · · · · · · · · · ·			

roject No:	287030			(	Client: <u>F</u>	-reeport Coppe	r Queen Branc	<u>n</u>
ask No:					Date: _	8-14-13		
fell ID:	BM	0-2008-	-16	,	Weather:	Sugar		
OWR No:					Sampler:	Christon 1	1 Shown	
7VVI (140.				WELL DAT				
Mail De	nah (# blo):	3/	$\overline{\cap}$	}	Nominal	Casing C Size (inches)	Capacity Gallons per Li	near Foot
well be	pth (ft bis):		511			2	0.16	
Casing D	iameter (in): _		2 00			5	0.65 1.02	
Static Water	r Level (ft bmp):		3.82			6	1.47 2.61	
Casing V	/olume (gal):	241	x3 = 7	23		8 10	4.08	
_	-				Casing	Volume = gallons/	foot * water colum	ın (feet)
Total Volum	ne Purged (gal):	<del>/</del>	<del>// FIEL</del>	 .D SAMPLIN	G DATA			
_	T	Discharge	Total	рН	Temp	Specific	<u> </u>	,
Time	Elapsed Time ( (min)	Rate (gpm)	Discharge (gallons)	(SU)	(°C)	Conductance (µS/cm)	Comme	ents 
0630	Pump On							
0700	30	8.3	249	6.97	21.0	1005		
0720	50	8.3	415	1.99	21.5	1005		
0740	70	8.3	581	1.99	21.5	1007		
0800	90	8,3	347	1.96	11.6	1009		
<u> </u>	1 /9		_ <i>- , </i>		/([-/	100 (		
<u>-</u>	<u> </u>							
		_						
				Ţ			Pump Off	
	FIELD PARAMET	ER STABILIZA	ATION: Three c	onsecutive rea	dings within 0	).3 su pH, 2 degree	s C, and 100 μS/c	m)
			SAM	MPLE INFOR	MATION			
Sample Co	llection Point:							
			Container		No. of			Filtered
	imple ID	Time	Type	Volume	Containers	Analysis Method	Preservative	(y/n)
	2008-16	7 Time	1	250		Analysis Method	Freservative	
		0800	Type PL	250	Containers	300		
		0800	1	250	Containers	300		
Sa BMO -	2008-IC	0800	Type	250 MEASURE	Containers  / MENT COLL	300		
Sa  Water I	2008-16 level measurementer level measurementer	Vant collected.	Type  VATER LEVEL  No access to w	250 MEASURE	Containers  / MENT COLL	300		
Water I	level measurement er level measurent er level er level er level er level er level er level er level er level er level er level	Wat collected.	VATER LEVEL No access to w Obstruction in v	250 MEASURE	Containers  / MENT COLL	300		
Water III No water III No water III No water III	2008-16 level measurementer level measurementer	Wat collected.	VATER LEVEL No access to w Obstruction in v	250 MEASURE	Containers  / MENT COLL	300		
Water I	level measurement er level measurent er level er level er level er level er level er level er level er level er level er level	Wat collected.	VATER LEVEL  No access to w  Obstruction in v  Well is pumping	250  MEASUREI  vellhead/No poi well. g.	MENT COLL rt in wellhead	300 ECTION		
Water II No wate No wate No wate	level measurement er level measurent er level er level measurent er level er	vot collected. nent collected. nent collected. nent collected.	No access to w Obstruction in v Well is pumping	250  MEASUREI  vellhead/No po well. g.	MENT COLL rt in wellhead	300 ECTION		
Water II No water II No water II No water II No water II No water II Purged	level measurement er level measurement er level measuremer  level measurement level m	Went collected.  ment collected.  ment collected.  ment collected.	No access to w Obstruction in v Well is pumping	250 MEASUREI Wellhead/No powell. g.	MENT COLL rt in wellhead	300 ECTION		
Water III No wate No wate Other: Purged	level measurement er level measurent er level er level measurent er level er	vont collected. nent collected. nent collected. nent collected. nent collected. nent collected.	No access to w Obstruction in w Well is pumping WELL eters stabilized.	250 MEASUREI Wellhead/No powell. g.	MENT COLL rt in wellhead	300 ECTION		
Water III No wate No wate Other: Purged	level measurementer level	vont collected. nent collected. nent collected. nent collected. nent collected. nent collected.	No access to w Obstruction in w Well is pumping WELL eters stabilized.	250 MEASUREI Wellhead/No powell. g.	MENT COLL rt in wellhead	300 ECTION		
Water III No wate No wate Other: Purged Purged Purged Other:	level measurementer level	vont collected. nent collected. nent collected. nent collected. nent collected. nent collected.	No access to w Obstruction in w Well is pumping WELL eters stabilized.	250 MEASUREI Wellhead/No powell. g.	MENT COLL rt in wellhead	300 ECTION		
Water III No wate No wate Other: Purged Purged Purged Other:	level measurementer level	vont collected. nent collected. nent collected. nent collected. nent collected. nent collected.	No access to w Obstruction in w Well is pumping WELL eters stabilized.	250 MEASUREI Wellhead/No powell. g.	MENT COLL rt in wellhead	300 ECTION		

Project No:	287030	<u> </u>	<u>.</u>		Client: <u></u>	Freeport Coppe	r Queen <u>Branc</u>	<u>h</u>
Task No:					Date:	8-27-1	3	
Well ID:	BMD -	2008-3	B		Weather: _	Suans/	4	
ADWR No:		<del></del>			Sampler:	Mristopher	1 Sherman	
				WELL DAT	Α		2	
Well De	epth (ft bls):	20	60		Nominal	Casing ( Size (inches)	Capacity  Gallons per Li	near Foot
			I.I			2	0.16 0.65	
Casing D	oiameter (in):		<del></del>			5	1.02	:
Static Water	r Level (ft bmp):		15.10			6	1.47 2.61	
Casing V	/olume (gal):	117.3	$3 \times 3 = 3$	54		10	4.08	
Total Volum	ne Purged (gal):	54	0	/	Casing	g Volume = gallons	/foot * water colum	nn (feet)
TOTAL VOIGH	ie i aigea (gai).		FIEL	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1305	Pump On							
1315		25	135	7.07	21.2	720		
1320	15	27	405	5 09	1/2	724		
1325	20	27	540	510	2/1	725	<u> </u>	
_; //				,			<u></u>	
						· <u>-</u>	· <u> </u>	<del></del>
			<u></u>	<u> </u>			Pump Off	
	FIELD PARAMET	ER STABILIZA				).3 su pH, 2 degree	s C, and 100 μS/c	m)
	<u></u>		SAN	APLE INFOR	RMATION			
Sample Co	llection Point:							
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Bma-	2008-3B	1325	PZ	250	1	309-0	Ico	У
10000	*****		/ - /					
	<del></del>	V	ATER LEVEL	MEASURE	MENT COLL	ECTION		
Water l	evel measuremen	t collected.				:		
	er level measurem				rt in wellhead			
	er level measuren							
☐ No wat	er level measuren	ient collected.	weir is pumping	<b>J</b> .				
Ctrici.			WELL	PURGING IN	FORMATION		```	
Purgeo	3 well volumes a	nd field param	eters stabilized.			-		
-	l 3 well volumes b			nd field paren	neters stabiliz	ed.		
1	d well until field pa	rameters stabi	lized.					
Other:		سرر :	<del></del>	<u> </u>	<del></del> .	<del>-</del>	<del></del>	<del></del>
<u>Additiona</u>	Comments:	<u> 45</u>				<u></u>	<u> </u>	
	<u> </u>							

Project No:	287030				Client:	Freeport Copp	er Queen Brand	ch
Task No:					Date:	9/18/13		
Well ID:	BMO	- 2008	-4B		- Weather:	SUNNY,	DN/ 80's	
ADWR No:	_	910096	-		- Sampler:	V114	· ·	
		-110010		WELL DA				
Well De	pth (ft bls):	6	10'		Nomina	Casing I Size (inches)	Capacity Gallons per L	inear Foot
vven De	pui (ii bis).		<u> </u>		Nonna	2	0.16	
Casing D	iameter (in):		5		_	4 5	0.69 1.02	
Static Water	Level (ft bmp):		7.04'	··-		6	1.4	7
Casing V	olume (gal):	482	x3 = 12	146	_	8 10	2.6° 4.08	
Total Volum	e Purged (gal):	• -			Casir	ng Volume = gallons	s/foot * water colum	nn (feet)
			FIE	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate ≱ (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents
0920	Pump On							
0940	20	3	60				Figorina Out	Q
0950	30	20	260	7,64	24.2	384.1	3	
1010	50	20	660	7,78	23.6	382.9		
1030	70	20	i.060	7.71	23,5	382.7	-	
1050	90	20	1460	7.69	23.4	384,6		
	,							
							Pump Off	
F	IELD PARAMET	ER STABILIZA	ATION: Three co	onsecutive rea	dings within (	D.3 su pH, 2 degree	s C, and 100 μS/c	m)
			SAN	IPLE INFOR	MATION			
Sample Coll	ection Point:							
San	nple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMD-2	-008-4B	1053	Polu	250mL	1	300.0	NA	V
		,,,,	/					7
		W	ATER LEVEL	MEASURE	MENT COLL	ECTION		
X Water le	vel measurement	collected.						
	level measurem				t in wellhead			
1	level measurem							
□ No water □ Other:	level measurem	ent collected. V	Well is pumping					
			WELL	PURGING INF	ORMATION			
Purged 3	s well volumes an	d field parame	ters stabilized.			eren er ennemenen fefned menden e.	<ul> <li>A vite of the filter on an entitle of the filter of the fil</li></ul>	eller eller galeriarett in vol. 1800 av
☐ Purged 3	s well volumes ba	sed on previou	ıs water level ar	nd field parem	eters stabilize	ed.		
I	vell until field par	ameters stabili	zed.					
☐ Other:			·					
Additional (	Comments:	* Prior	to pura	e - op	en all	valves		
		If li	ow dische	- 001		00 /	ver	
		<u>+7 1(</u>	אט 1.115 אנגייל אנגייל	uge -	, ,	<del></del>	οχ	
	2	3 Make	sure 1	o turn	off all	switches	for power	when don

Project No:	287030				Client:	Freeport Coppe	er Queen Brand	ch
Task No:					Date:	8-20-13		. <u>-</u>
Well ID:	13MD	-2008-5	B		Weather:	Sugar		
ADWR No:	17:	0 -			Sampler: /	Wastoober 65	hemme	
				WELL DA	TA	· · · · · · · · · · · · · · · · · · ·		
Well De	pth (ft bls):	28	3		Nominal	Casing Size (inches)	Capacity Gallons per L	inear Foot
	•	J-4				2	0.16 0.65	3
Casing D	iameter (iπ):	<u>ک</u>	<i></i>		1	5	1.02	
Static Water	Level (ft bmp):	130.8	72			6 8	1.47 2.61	
Casing V	olume (gal):	137	x3 = 4	1/		10	4.08	
Total Volum	e Purged (gal):	6	75		Casin	g Volume = gallons	/foot * water colun	nn (feet)
			FIEL	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Commo	ents
1005	Pump On		· •···		,			
1010	5	27	135	4.95	21.8	792		
1020	15	27	405	1.98	21.8	791		
1030	25	27	675	7.20	21.7	592		
10,00		•	,	0,	74 [	111		
							• .	
						,	Pump Off	
F	FIELD PARAMET	ER STABILIZA	ATION: Three co	onsecutive rea	adings within (	0.3 su pH, 2 degree	s C, and 100 μS/c	m)
			SAN	IPLE INFOR	RMATION			
Sample Col	lection Point:				_			
Sai	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
		1	<u> </u> /ATER LEVEL	MEASURF!	MENT COLL	ECTION		
□ Water le	vel measurement	* · · ·		WILL NOON L				
	r level measurem		No access to we	ellhead/No po	rt in wellhead			
□ No wate	r level measurem	ent collected.	Obstruction in w	rell.				
	r level measurem	ent collected.	Well is pumping	ļ.				
□ Other:			WELL	PURGING IN	FORMATION	<u> </u>		
□ Purged	3 well volumes ar	nd field parame						
_	3 well volumes at			nd field parem	eters stabilize	ed.		
□ Purged	well until field par	ameters stabili	ized.					
□ Other:								
Additional	Comments:	134.1						
			<b></b>		<u></u>			
						<u>-</u>		

roject No:	287030				Client: <u>F</u>	reeport Copper	Queen Branch	<u> </u>		
ask No:		-			Date: _	8-20-13				
/ell ID:	amo-	2008 5	-m		Weather:	Sunn		<u> </u>		
DWR No:	<del></del>	<del></del>	-	·** <u>**</u>	Sampler: /	La ristadur L	Shown			
DVVIX IVO.		<u> </u>		WELL DAT			· · ·			
10(-II D.		WE	<del></del>		Nominal	Casing C Size (inches)		near Foot		
Well De	epth (ft bls):		~ <sub>11</sub>		1101111101	2	0.16			
Casing D	Diameter (in):		) "			5	0.65 1.02			
Static Wate	r Level (ft bmp):	152	476 9	<i>®</i>		6	1.47	Gallons per Linear Foot  0.16 0.65 1.02 1.47 2.61 4.08  * water column (feet)  Comments  mp Off and 100 μS/cm)		
Casing \	/olume (gal):	300	31x3= 9	093	:	8				
_	·	146	190	<u> </u>	Casing	Volume = gallons/	foot * water colum	n (feet)		
Total Volum	ne Purged (gal):		FIEL	D SAMPLIN	L G DATA			-		
	<del>T</del>	Discharge	Total			Specific	-			
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents		
0900	Pump On					<del></del>	<u></u>			
0005	5	18	90	7.14	22.5	639				
1921	25	18	450	Sil	22.4	138				
0945	45	78	810	17.16	22.4	240				
0955	55	18	990	7.18	725	640		<u> </u>		
1/2/2/2		70			<i>a.</i> ,					
							<u></u>			
<del></del> ,							<del></del> .			
							Pump Off			
	FIELD PARAMET	ER STABILIZ	ATION: Three c	onsecutive rea	adings within (	0.3 su pH, 2 degree	s C, and 100 μS/c	m)		
			SAM	MPLE INFOF	RMATION					
Sample Co	llection Point:			_						
Se	ample ID	Time	Container	Volume	No. of	Analysis Method	Preservative			
			Туре	<del> </del>	Containers			(3/11/		
		<del> </del>	<del>  _</del>		<u> </u>	-				
			<u> </u> VATER LEVEI	MEASURE	MENT COLL	 _ECTION		<u> </u>		
- NA(-4	level measuremer		VAILIV CE VE							
	ter level measuren		No access to w	ellhead/No po	ort in wellhead					
	ter level measurer									
□ No wat	ter level measurer	nent collected.	Well is pumping	g.						
Other:				DUDCING IN	IFORMATION		<u> </u>			
	10	and field access			- CHARLION	<u> </u>		<del></del>		
□ Purged □ Purged	d 3 well volumes a d 3 well volumes b	ind field parami vased on previo	eters stabilized. Sus water level a	and field parer	neters stabiliz	ed.				
	d well until field pa									
☐ Other:						·				
Additiona	l Comments:	297.2			<u> </u>		<u></u> ,			
						<u> </u>	<del>.                                      </del>	<u></u> ,		
			<u>.</u>	-		<u>.</u> . <u>.</u>	<u>-</u>	<u>_</u>		
<del></del>	<u> </u>		<del>-</del>							

Project No:	287030		<u></u>		Client:	Freeport Coppe	er Queen Branc	<u>:h</u>
Task No:					Date:	8-20-13		
Well ID:	BMO-	2008-6	6		Weather:	Luna		
ADWR No:					Sampler: /	Christopher V	- Shevan	
				WELL DA		<i>*</i>		
Well De	epth (ft bls):	6	165		Nominal	Casing Size (inches)	Capacity Gallons per Li	near Foot
			Tel			2	0.16	
Casing D	Diameter (in):	: 44	5			4 5	0.65 1.02	
Static Wate	r Level (ft bmp):	190	.23			6	1. <b>4</b> 7 2.61	
Casing \	/olume (gal):	מכ	x3 = 3	210		10	4.08	
Total Volum	ne Purged (gal):	774			Casin	g Volume = gallons	/foot * water colum	ın (feet)
Total Volum	ic i diged (gai).	J. H.	FIEL	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
0730	Pump On							
0735	5	61	25	7.05	21.4	7ABA 322		
0745	15	5.1	75	7.32	[ 2].4 _	7/8		
0800	30	5.1	150	7.33	21.4	315		
0815	45	61	225	5.36	11.5	310		
7017		- 1			V-1 V			
						. <u></u>		
							Pump Off	
	FIELD PARAMET	ER STABILIZA	-			0.3 su pH, 2 degree	s C, and 100 μS/cr	m)
			SAN	IPLE INFOR	RMATION			
Sample Col	lection Point:				_			10 1
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
					<del>                                     </del>			
			ATER LEVEL	MEAGUES	MENT COLL	ECTION	<u> </u>	
			ATER LEVEL	- WEASURE	WENT COLL	ECTION		
	evel measurement er level measurem		No access to wi	ellhead/No po	rt in wellhead			
1	er level measurem							
□ No wate	er level measurem	ent collected. V	Well is pumping	<b>j</b> .				
☐ Other:			14/511	DUDONIO INI	CORMATION		·	
D 0	3 wall values = ==	ed field na		PURGING IN	FURIVIA HUN	<u>Majoria.</u>		
1	3 well volumes ar 3 well volumes ba			nd field parem	neters stabiliza	ed.		
1 -	well until field par				Glasmer			
□ Other:		<u> </u>						
Additional	Comments:	18.7		<u>_</u>				4
		<u>'( '</u>			<del></del>			<del></del>
						<u> </u>	· · · · · · · · · · · · · · · · · · ·	
		<del></del>		<u>-</u>				

Project No:	287030				Client:	Freeport Copper Queen Branch			
Task No:					Date:	8-20-13			
Well ID:	BMO	-2008	-LM		Weather:	Partly (1)	ad v		
ADWR No:	<del> 10-1-5-</del>		- <del> </del>		Sampler: /	Porist police	I Showing		
				WELL DA	ГА	/			
Well D	epth (ft bis):	45	0		Nominal	Size (inches)	Capacity  Gallons per Li	near Foot	
	•	l o	- V			2	0.16 0.65		
Casing i	Diameter (in):	101.	7 110			4 5	1.02		
Static Wate	er Level (ft bmp):	/ <i>1/</i>	<u>'.43</u>			6 8	1.47 2.61		
Casing '	Volume (gal):	257.	$\sqrt{x^3} = 7^{-1}$	73		10	4.08		
Total Volum	ne Purged (gal):	240	,		Casing	g Volume = gallons	/foot * water colum	n (feet)	
TOTAL VOIG	no r argea (gar).	010	FIEL	LD SAMPLIN	IG DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
0630	Pump On				-				
01,40	19	21	210	1.91	21.6	777			
0650	20	21	420	1.98	3,7	773			
0700	30	21	1,30	7.98	317	771			
0710	40	21	840	1.99	71.5	372			
	1	- 1	<del></del>	4	1407				
•									
		Zs.					Pump Off		
	FIELD PARAMET	ER STABILIZ	ATION: Three c	onsecutive rea	adings within (	).3 su pH, 2 degree	s C, and 100 μS/cr	n)	
			SAN	MPLE INFOR	RMATION				
Sample Co	llection Point:								
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
				<u> </u>				<u> </u>	
		1.0	 /ATER LEVEL	MEAGURE	MENT COLL	ECTION			
□ \M-4			MIERLEVEL	- IVICASURE	WENT COLL	LOTION			
	evel measurement er level measurem		No access to w	ellhead/No po	rt in wellhead				
	er level measurem								
	er level measurem	ent collected.	Well is pumping	g.					
□ Other:	_	<del> </del>	WEII	PURGING IN	FORMATION				
□ Purged	3 well volumes ar	nd field parame						<u></u> .	
	3 well volumes ba				neters stabilize	ed.			
□ Purged	well until field par	ameters stabil	ized.						
☐ Other:			<del>.</del>	<u>.</u>			<del></del>		
Additional	Comments:	257.5		<u> </u>		· · · · ·	<del></del>		
			<del></del>	<del>_,</del>	<del></del>				
			· <u>··</u> ·						

roject No:	287030				Client:	Freeport Coppe	r Queen Brand	:h
ask No:					Date: _	8-28-13		
ell 1D:	BMO-	2008-	M		Weather:	Partly C	laud-1	
OWR No:	<del> </del>	<del>,</del>	7		Sampler: /	Mustoplar- L	Shirmon	
				WELL DAT	Α	<u> </u>		
Well De	epth (ft bls):	1.70			Nominal	Casing (Size (inches)	Capacity Gallons per Li	near Foot
	•		<u> </u>			2	0.16	i
Casing D	Diameter (in):	<u> </u>	<u>"</u>			5	0.65 1.02	
Static Wate	r Level (ft bmp):	294.3	<u> 32                                    </u>		6		1.47	
Casing V	/olume (gal):	434.1	$434.1 \times 3 = 1302$ 8 10 2.6 4.0					
Total Value	ne Purged (gal):	1365			Casing	g Volume = gallons	/foot * water colum	nn (feet)
TOTAL VOIGI	ie Pulged (gai).	1.767	FIEL	D SAMPLIN	G DATA	<del></del>	· -	
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
•	Pump On	(gpiii)	(gallolis)			(40/011)		
1000	, unip on	0.1	100	7 11.1	229	1194		
1005	13	21	105	4.7	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	495		
1025	15	21	315	300	200	493		
1045	+ 75	91	1775	317	22 9	777		
<u>/105</u>	<del>                                   </del>		1.31/2)	111	<del> </del>	777		
	<del> </del>		_		<b></b>	r	<u>.</u>	
<del></del> ,				1	 			
<u>.</u>							Pump Off	· · · · · · · · · · · · · · · · · · ·
	I FIELD PARAMET	I ER STABILIZ/	ATION: Three co	onsecutive rea	Ldings within C	0.3 su pH, 2 degree	s C, and 100 μS/ci	m)
				IPLE INFOR				
Sample Co	llection Point:							
	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BM0-20	108-7M	1105	16	250	1	EPA 300	T16	
Dun-	082813	1105	PL	250		BD4-300	Tro	<u> </u>
· <i>r</i>		, v	VATER LEVEL	. MEASUREI	MENT COLL	ECTION		
/	evel measuremen er level measurem	ent collected.	Obstruction in w	vell.	t in wellhead			
□ No wate	er level measurem er level measurem	nent collected.	Well is pumping	<b>J.</b>				
□ No wate		nent collected.		PURGING INI	ORMATION	<del></del>		
☐ No wate ☐ No wate ☐ Other:			WELL	. <u></u>	ORMATION			
□ No wate □ No wate □ Other: □ Purged □ Purged	er level measurem	nd field parame	WELL eters stabilized. ous water level a	PURGING IN		ed.		
No wate No wate Other: Purged Purged	er level measurem	nd field parame	WELL eters stabilized. ous water level a	PURGING IN		ed.		
□ No wate □ No wate □ Other: □ Purged □ Purged □ Purged □ Other:	er level measurem	nd field parame	WELL eters stabilized. ous water level a	PURGING IN		ed.		

287030 BMO-	2008-8	3 B		Date: _ Weather:	8-12-13 64nn-1		
BMO-	2008-8	3 B		Weather:	Lunn		
	MIND U			_	-) vi vi · )		
				Sampler:	Urist-olar L	Shormer	
	<u> </u>	<del>}}</del>	WELL DAT				
	400	1		Nominal			near Foot
pth (ft bis):	109	<u>'</u>		Nomina	2	0.16	
iameter (in):	5"	<u> </u>			4 5	0.65 1.02	
r Level (ft bmp):	302	.48			6	1.47	
_	(0)	x3 = 5	43		-	4.08	
rolume (gai).			-17	Casin		foot * water colum	ın (feet)
ne Purged (gal):	<u></u>	39 FIEI	D SAMPLIN				
<del>,                                    </del>	Discharge				Specific		
Elapsed Time (min)	Rate	Discharge	pH (SU)	(°C)	Conductance (uS/cm)	Comme	ents
Pump On	(gpiii)	(gallotis)	<u> </u>				
775	14.2	213	626	22.0	2760		
125	147	355	1.31	21.6	2220		
1 36	14.3		1 34	21.4	2770		
47			128	51.3	7780		
<del>  15                                   </del>	-11		100	<del> </del>	7	·	
<del> </del>				-			
	<u> </u>						
<del> </del>							
<del> </del>						Pump Off	· 
FIELD PARAMET	ER STABILIZ	ATION: Three c	onsecutive rea	adings within	0.3 su pH, 2 degree	s C, and 100 μS/c	m)
ollection Point:	···						
	Time	Container	Volume	No. of	Analysis Method	Preservative	Filtered (y/n)
		Type D/	750	Containers		TN	1/
1008-813	1025	<u> </u>	250	<del>                                     </del>	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	<u> </u>	VATER LEVE		MENT COL	LECTION		·
		VAILIVEL VE					
		No access to w	ellhead/No po	rt in wellhead	I		
ter level measuren	nent collected.	Well is pumping	g.				
	_		DUDOING II	I CODMATION		<u> </u>	
				IFURIVIA ISON			
d 3 well volumes a	ind field param	ieters stabilized. Dus water level a	and field parer	meters stabiliz	zed.		
			and note pero.				
g 44011 diten Nota pa				_ <u>_</u>			
				=			
al Comments:							
al Comments:							
al Comments:				- <del>-</del> -			
	FIELD PARAMET  Collection Point:  Completed measurementer level me	Islameter (in):  Tolume (gal):  Tolume (gal):  The Purged (gal):  The	r Level (ft bmp):    Colume (gal):   Column   r Level (ft bmp):    Colume (gal):   S   X3 = 543     Colume (gal):   S   X3 = 543     Colume (gal):   FIELD SAMPLIN     Elapsed Time (min)   Discharge (gallons)   Total Discharge (gallons)   PUMP ON     Pump On   15   14.2   21.3   6.26	repurped (gal):    Solution   Sol	pth (ft bis):    pth (ft bis):	Idameter (in):    John	

Project No:	287030				Client: <u>F</u>	reeport Coppe	r Queen Branch	<u> </u>	
Task No:					ate:	8-12-13	<u> </u>	<u></u> -	
		3MO - 200	08-8M	·	Veather:	Sunn			
ADWR No:		76	<del></del>		Sampler: 🖊	bestoder LS	herman		
				WELL DAT	Δ				
Well De	pth (ft bls):	12	10	}	Nominal	Casing ( Size (inches)	Gallons per Lir	near Foot	
	•	<del></del>	-11			2	0.16 0.65		
Casing Di	iameter (in):	<del></del>				5	1.02		
Static Water	Level (ft bmp):	30	3.60			6 8	1.47 2.61		
Casing V	olume (gal):	924.5	$x3 = \lambda$	,774		10	4.08		
_	e Purged (gal):	200	29 281	6	Casing Volume = gallons/foot * water column (feet)				
Total Volum	o r argea (gar).			D SAMPLING	DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts	
0/30	Pump On								
1720	60	17.6	1056	7.01	24.6	584			
0830	120	17.6	2117	7.15	24.4	573			
0900	150	17.6	21.40	7.17	24.4	782			
0910	160	17.4	2811	7.19	24:6	585			
<u>()                                    </u>			000			<i></i>			
		_	_						
<u> </u>								<del></del> ,	
							Pump Off		
	FIELD PARAMET	ER STABILIZ				).3 su pH, 2 degree	s C, and 100 μS/cr	n)	
			SAN	IPLE INFOR	MATION				
Sample Col	lection Point:				<del>-</del>		<del>r</del>	<u></u>	
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
RMO-2	108-8M	0910	Pl	250 ml	1	SPA-300.0	Fe6	yes	
101.78 of	<del>h. n. 0 1 -</del>	-611-0							
		V	VATER LEVEL	MEASURE	MENT COLL	ECTION			
	evel measuremer								
	er level measuren				t in wellhead				
	er level measuren er level measuren								
Other:	er level measuren	Helli Collected.	AACII IS ballibuid						
			WELL	PURGING IN	ORMATION		·		
	3 well volumes a								
_	3 well volumes b			and field parem	eters stabilize	ea.			
□ Purged □ Other:	well until field pa	rameters stabi	lizea.						
	Comments:	<u></u>	<u>-</u>						
Calibrated	Moter - Geof	ech PH7	7AF725	Ep 5-1	SPA	1 3 shool Fxy	3-15		
THE STATE OF THE S						. /	<i>y-</i> 1		
A LI J	<u>.                                      </u>	<u> </u>	<del></del>						
<u> 400.4</u>								CLEAR -	

Project No:	287030				Client:	t: Freeport Copper Queen Branch		
Task No:					Date:	8-12	-/3	
Well ID:	BMO	-2008-0	7 m		Weather:	Suna		
ADWR No:			-		Sampler:	Christopher	Shuman	
				WELL DAT	Α			
Well De	epth (ft bls):	ファギ	_		Nomin	Casing al Size (inches)	Capacity Gallons per L	inear Foot
	•		,,			2	0.16 0.65	3
Casing D	Diameter (in):		<u> </u>		<b>4</b> 5		1.02	2
Static Wate	r Level (ft bmp):	29	7.63			6 8	1.47 2.61	
Casing V	/olume (gal):	487	x3 =	1960		10	4.08	
Total Volum	ne Purged (gal):	- 10		· •	. Cas	ing Volume = gailons	/foot * water colun	nn (feet)
10.01 40.01	io r uigou (gai).		FIE	LD SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents
1110	Pump On							
1130	20	13.8	376	743	24.3	550		
1150	40	18.8	752	7.47	24.2	552		
1210	10	18.8	1/28	7,49	24.2	553		<u></u>
1230	80	187	1504	747	24.2	553	<u>.                                    </u>	
, , ,		1 0-0	/ /					
_								
-								<u>_</u> .
					<u> </u>		Pump Off	
	FIELD PARAMET	ER STABILIZA				n 0.3 su pH, 2 degree	es C, and 100 μS/c	em)
·		<u>.</u>	SAI	MPLE INFOR	RMATION			
Sample Co	llection Point:							I
Sa	mple ID	Time	Container Type	Volume	No. of Container	Analysis Method	Preservative	Filtered (y/n)
Bmo-2	008-9m	1230	PL	250	1	300	Ico	Y
					<u> </u>			_
		W	ATER LEVE	L MEASURE	MENT CO	LLECTION		
, <del>,</del>	evel measuremen		-					
	er level measurem				rt in wellhea	ad	•	
	er level measurem er level measurem							
Other:	51 10101 1110 LOLO 1110 I							
			WELL	PURGING IN	FORMATIO	N		. <u> </u>
☐ Purged	3 well volumes at 3 well volumes ba well until field par	ased on previo	us water level a		neters stabil	lized.		
<del> </del>	Comments:	·						_
Auditional	COMMENTS.		_					
							<u> </u>	

Project No:	287030			<u></u>	Client: <u>[</u>	Freeport Coppe	r Queen Branc	h
Task No:					Date: _	7-13-1	<u> 3</u>	
Well ID:	BMC -	2008-10	164		Weather:	SUPPLI_		
ADWR No:			-		Sampler:	Costophy L	Shamen	
LE TITLE				WELL DAT	Α			
Wall D	epth (ft bls):	12/	$\cap$		Nominal	Size (inches)	Capacity Gallons per Li	near Foot
	·	<del></del>	r 11			2	0.16	
Casing [	Diameter (in):					5	0.65 1.02	
Static Wate	er Level (ft bmp):	50	<u>9.32                                    </u>			6 8	1.47 2.61	
Casing \	Volume (gal):	306.	7 x3 = 6	720		10	4.08	
_	-	94	)		Casing	g Volume = gailons	/foot * water colum	ın (feet)
Total Volur	ne Purged (gal):		FIEL	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
9639	Pump On	. <u>-</u>						
1675		4.5	22.<	6.51	25.8	1572		
403	60	4.1	220	6.55	26.0	1567		
0931	120	7,7	ril	6.58	25.8	1585		
0930	190	7.4	728	6.59	25%	1590		
1020	590	3.4	942	1.57	25.5	1586		<u> </u>
1011	10	71	7	(Qt) (	0-10			. <u></u>
			,		-			
·							Pump Off	<u> </u>
	FIELD PARAMET	ER STABILIZ	ATION: Three c	onsecutive rea	adings within (	).3 su pH, 2 degree	s C, and 100 μS/c	m)
	_		SAN	IPLE INFOR	RMATION			
Sample Co	llection Point:			· · · · · · · · · · · · · · · · · · ·				
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Om.	2002-1061_	1930	PL	250	1	300	La	<u> </u>
1)[76]	10000	17 <b>3</b> (/			'-		7	
		V	VATER LEVEL	MEASURE	MENT COLL	ECTION		
√ <b>√</b> Water	level measuremen	collected.						
☐ No wat	ter level measurem				rt in wellhead			
•	ter level measurem							
□ No wat	ter level measurem	ent collected.	yvell is pumping	<b>.</b>				
- Omer.			WELL	PURGING IN	FORMATION	<u> </u>		
<b>≱</b> Purge	d 3 well volumes ar	nd field param	eters stabilized.					
D Purger	d 3 well volumes ba	ased on previo	ous water level a	ınd field paren	neters stabilize	ed.		
	d well until field par	ameters stabi	lized.					
□ Other:			<del> </del>	<del></del>	<u></u>			<u> </u>
	I Comments:							
3:00.7					<u> </u>			
			_					

Project No:	287030	<u> </u>			Client: F	reeport Coppe	r Queen Branc	<u>h</u>
Гask No:				_	Date:	8-19-13		<del></del>
Well ID:	BM0-20	108-10	CU	<del></del>	Weather:	Sunay	<u>,                                     </u>	
ADWR No:			· · · · · · · · · · · · · · · · · · ·			Wistopher LS	hrm)	
				WELL DAT	ΓA	Casing (	Canacity	
Well D	epth (ft bis):		449		Nominal	Size (inches)	Gallons per Li	
•	'		F4			2	0.16 0.65	
Casing i	Diameter (in):		702 07	·	5 1.02			
Static Water	er Level (ft bmp):		105.7/			6 l	1.47 2.61	
Casing '	Volume (gal):		. ) x3 = 5	505		10	4.08	
Total Volur	me Purged (gal):	•	·		Casing	y Volume = gallons	foot * water colum	n (feet)
10001 0000	no Langua (ganya	-	FIEL	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
0/45	Pump On							
7700	15	5.7	85.5	1.07	20-6	7410	<u> </u>	
0745	20	5.7	171	109	2014	3400		
1945	10	2.7	247	1.08	90.9	21.10		
0815	90	4.7	713	1 10	21.0	3/130		
<del>_2                                    </del>	13	1	3,-	( ) × 10				
_								
							Pump Off	
	FIELD PARAMET	ER STABILIZA	ATION: Three c	onsecutive rea	adings within C	.3 su pH, 2 degree	s C, and 100 μS/c	m)
			SAM	APLE INFOR	RMATION			
Sample Co	ollection Point:							<u></u>
S	ample ID	Time	Container	Volume	No. of	Analysis Method	Preservative	Filtered (y/n)
-		<del> </del>	Туре	<u> </u>	Containers			Grin
	<del>-</del>			<u> </u>				
	<u> </u>		I /ATER LEVEL	_L _MEASURE	MENT COLL	ECTION		
□ Water	level measuremen							
	ter level measuren		No access to w	ellhead/No po	rt in wellhead			
	ter level measuren							
ì	ter level measuren	nent collected.	Well is pumping	g.				
☐ Other:		<u> </u>	WFIL	PURGING IN	FORMATION	<u>.                                    </u>		
☐ Purge	d 3 well volumes a	nd field parami				<u> </u>		
	d 3 well volumes b				neters stabilize	ed.		
1	d well until field pa			\$ <b>.</b>				
☐ Other:			·	<u></u>	<del></del>		<u>-</u>	_
Additiona	I Comments:	165						
	<del></del>			2*				
	<u> </u>							
	Lalibra	el moter						

roject No:	287030			(	Client: <u>F</u>	reeport Copper	r Queen Branc	<u> </u>
ask No:					Date:	8-27-1	<u> </u>	<u></u>
/ell ID:	BMO-	1008-116		,	Weather: _	Sunn-1	<u> </u>	
DWR No:	<u> </u>	<del>(()//6/ -11 -</del>			Sampler:	Christoplar	L Shermore	
DVIN NO.				WELL DAT				
Mall Da	anth (ff bla):		10		Nominal	Casing ( Size (inches)	Capacity  Gallons per Li	near Foot
well De	epth (ft bis):	<del>/</del>	-11			2	0.16 0.65	
Casing D	Piameter (in):	3				5	1.02	
Static Water	r Level (ft bmp):	574	150			6 8	1.47 2.61	
Casing V	/olume (gal):	197	$3 \times 3 = .5$	919		10	4.08	
_	_	600		7	Casing	g Volume = gallons	foot * water colum	ın (feet)
Total Volum	ne Purged (gal):		FIEL	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
00:0	Pump On	(95)	(3/		. <u> </u>			
0700	10	8	30	741	9410	3/,3		
0700	30	8	240	1.76	240	363	<u> </u>	
0720	1/0	<del>2</del>	480	7 11	34.9	7/2		
<u>()                                    </u>	120	7-	600	4747	2/19	2/3		
0805	<del>  /5                                   </del>		1000	1470-	19.1	- 16)	<del></del>	<u>.</u>
<u> </u>	<del> </del>	<u></u>			<del></del>		<u> </u>	<del>_</del>
<del>_</del>					<del> </del>			<u> </u>
		<u> </u>		<u></u>	<u> </u>		<u> </u>	
	<del> </del>					·-	Pump Off	<u>-</u>
<del></del>	FIELD PARAMET	L ER STABILIZ/	 ATION: Three c	onsecutive rea	dings within (	).3 su pH, 2 degree	s C, and 100 μS/c	m)
				MPLE INFOR				.:
Comple Co	ellection Point:					· · · · · · · · · · · · · · · · · · ·	····	
	<del></del>		Container	Volume	No. of	Analysis Method	Preservative	Filtered
Sa	ample ID	Time	Туре	Volume	Containers			(y/n)
Dunn C	2000	0805	PL_	250	<del>                                     </del>	300	Jes	7.
13/11/2-2	<del>-                                    </del>							
Brie - 2		<u>]</u>	<u> </u>	<u> </u>		ECTION.		
יישיוטי-2			 VATER LEVE	MEASURE	MENT COLL	ECTION		
	level measuremen	t collected.				ECTION		
/□ No wat	ter level measuren	it collected.	No access to w	ellhead/No po		ECTION		
│ No wat	ter level measuren ter level measuren	nt collected. nent collected. nent collected.	No access to w	/ellhead/No po		ECTION		
│ No wat  No wat  No wat	ter level measuren ter level measuren ter level measuren	nt collected. nent collected. nent collected.	No access to w	/ellhead/No po		ECTION		
│ No wat	ter level measuren ter level measuren ter level measuren	nt collected. nent collected. nent collected.	No access to w Obstruction in v Well is pumpin	/ellhead/No po	ort in wellhead			
□ No wat □ No wat □ No wat □ Other:	ter level measuren ter level measuren ter level measuren	nt collected. ment collected. ment collected. ment collected.	No access to w Obstruction in v Well is pumpin	/ellhead/No po well. g. . PURGING IN	ort in wellhead			
No wat No wat No wat Other:	ter level measuren ter level measuren ter level measuren	nt collected. nent collected. nent collected. nent collected. nent collected.	No access to wood of the composition of the composi	vellhead/No po well. g. PURGING IN	nt in wellhead			
No wat No wat Other: Purged	ter level measuren ter level measuren ter level measuren d 3 well volumes a	nt collected. nent collected. nent collected. nent collected. nent dield param	No access to wood obstruction in word well is pumping WELL eters stabilized our water level a	vellhead/No po well. g. PURGING IN	nt in wellhead			
No wat No wat Other: Purged	ter level measuren ter level measuren ter level measuren d 3 well volumes a d 3 well volumes b d well until field pa	nt collected. nent collected. nent collected. nent collected. nent dield param	No access to wood obstruction in word well is pumping WELL eters stabilized our water level a	vellhead/No po well. g. PURGING IN	nt in wellhead			
No wat No wat Other: Purged Purged Purged Other:	ter level measuren ter level measuren ter level measuren d 3 well volumes a d 3 well volumes b d well until field pa	nt collected. nent collected. nent collected. nent collected. nent dield param	No access to wood obstruction in word well is pumping WELL eters stabilized our water level a	vellhead/No po well. g. PURGING IN	nt in wellhead			
No wat No wat Other: Purged Purged Purged Other:	ter level measuren ter level measuren ter level measuren d 3 well volumes a d 3 well volumes b d well until field pa	nt collected. nent collected. nent collected. nent collected. nent dield param	No access to wood obstruction in word well is pumping WELL eters stabilized our water level a	vellhead/No po well. g. PURGING IN	nt in wellhead			

Groundwater Sampling Form Freeport Copper Queen Branch Client: 287030 Project No: Date: Task No: BMO-2008-13B Weather: Well ID: Sampler: ADWR No: **WELL DATA** Casing Capacity Gallons per Linear Foot Nominal Size (inches) Well Depth (ft bis): 0.65 4 Casing Diameter (in): 1.02 5 1.47 6 Static Water Level (ft bmp): 2.61 8 4.08 10 Casing Volume (gal): Casing Volume = gallons/foot \* water column (feet) Total Volume Purged (gal): FIELD SAMPLING DATA Specific Discharge Total pН Temp Comments Elapsed Time Conductance Discharge Rate Time (SU) (°C) (µS/cm) (min) (gallons) (gpm) Pump On 20 20 20 Pump Off FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 μS/cm) SAMPLE INFORMATION Sample Collection Point: Filtered No. of Container Analysis Method Preservative Volume (y/n)Time Sample ID Containers Type 250 WATER LEVEL MEASUREMENT COLLECTION Water level measurement collected.  $\ \square$  No water level measurement collected. No access to wellhead/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.

Additional Comments: 2008

motor Calibrate - Gestuck -4-1 of 30 Bool Rep 25=7 Lot 3A6 725 Rep 5-15

CREEK STANSOCIATES

☐ Purged well until field parameters stabilized.

□ Other:

Project No:	287030		_		Client: <u>F</u>	reeport Coppei	Queen Branch	<u> </u>
Froject No:					Date:	9-6-13	<u> </u>	
Well ID:	BM	- 2008-	-13 M		Veather:	Sunay		
ADWR No:		AVUU			Sampler:	Shernas		
ADVIK NO.		<del></del>		WELL DAT				
Mall D	and (A bla):	10	30	- "	Nominal	Casing C Size (inches)	Capacity  Gallons per Linear Foot	
Well De	epth (ft bls):	- 18				2	0.16 0.65	
Casing [	Diameter (in):		541			5	1.02	
Static Wate	er Level (ft bmp):	4	2.52			6	1.47 2.61	
Casing '	Volume (gal):	833.	$7 \times 3 = 2$	501		10	4.08	
_	•	7	LAV		Casing	y Volume = gallons	foot * water columi	n (feet)
Total Volum	ne Purged (gal):		( FIEL	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
0515	Pump On							
177/	140	57	793	8-94	231	1276		
0835		4/2	1140	209	230	1280		
0025	200	2.8	14/6	799	23.3	1272		
1135	280	3.8	1872	228	13/5	1288		
7235	440	2.8	2100	2.84	73.8	11294		
1520	1,20	2.3	2604	2.81	23,8	1300		
11000			0	0101				
· <del></del>								
<del></del>							Pump Off	
	FIELD PARAMET	ER STABILIZA				).3 su pH, 2 degree	s C, and 100 μS/cr	n)
			SAM	MPLE INFOR	RMATION			
Sample Co	ollection Point:				<del>,</del>		·	Filtered
s	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)
amo.	7008-17 W	1530	PI	250 ml	·	EPH 300.0	Ice	Yes
171.10	~1° V 13 V	13 2"/	<u> </u>	1 0-7:7 mg	1		7	
		V	VATER LEVE	MEASURE	MENT COLL	ECTION		
⊠ Water	level measuremer	30 A C -						
lo No wa	iter level measuren	nent collected.			rt in wellhead			
	iter level measuren							
	ater level measuren	nent collected.	Well is pumping	g.				
☐ Other:	<u>:</u>		WELL	PURGING IN	FORMATION			
D Purge	ed 3 well volumes a	nd field param	eters stabilized					
Purge	ed 3 well volumes b	ased on previo	ous water level a	and field paren	neters stabiliz	ed.		
☐ Purge	ed well until field pa	rameters stabi	lized.					
☐ Other		·	. 1	·			<del></del>	
Additiona	al Comments:	817	<del>y</del>		<del></del>	<u>,                                      </u>		
		See .						CLEAR-

Groundwater Sampling Form Freeport Copper Queen Branch Client: 287030 Project No: Date: Task No: Weather: Well ID: Shermon Sampler: ADWR No: WELL DATA Casing Capacity Gallons per Linear Foot Nominal Size (inches) Well Depth (ft bis): 0.16 0.65 Casing Diameter (in): 1.02 5 1.47 6 Static Water Level (ft bmp): 2.61 8 4.08 Casing Volume (gal): Casing Volume = gallons/foot \* water column (feet) Total Volume Purged (gal): FIELD SAMPLING DATA Specific Discharge Total Temp pΗ Elapsed Time Comments Conductance Discharge Rate Time (SU) (°C) (min) (µS/cm) (gpm) (gallons) Pump On Pump Off FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100  $\mu$ S/cm) SAMPLE INFORMATION Sample Collection Point: Filtered Container No. of Analysis Method Preservative Volume Time Sample ID (y/n) Containers Type 300 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
) A	Purged 3 well volumes and field parameters stabilized.
<u>'</u>	Purged 3 well volumes based on previous water level and field paremeters stabilized.
	Purged well until field parameters stabilized.
	Other:
Ad	ditional Comments: 2 D

CREEK STATES

Date:   S-15-13
Nell ID:   Sampler:
Nominal Size (inches)   Static Water Level (ft bmp):   Static Water Level (ft bmp):   Static Volume (gal):   Static Volume Purged (gal):   Static Volume P
WELL DATA   Casing Capacity
Nominal Size (inches)   Gallons per Linear Foot
Casing Diameter (in):    Casing Diameter (in):   5
Static Water Level (ft bmp):
Casing Volume (gal):  Total Volume Purged (gal):  Total Volume Purged (gal):  FIELD SAMPLING DATA  Flagged Time Discharge Total pH Temp Specific
Casing Volume (gal):  Total Volume Purged (gal):  Total Volume Purged (gal):  FIELD SAMPLING DATA  Flagged Time Discharge Total pH Temp Specific
Total Volume Purged (gal):  Casing Volume = gallons/foot * water column (feet)  FIELD SAMPLING DATA  Flagged Time Discharge Total pH Temp Specific
FIELD SAMPLING DATA  Flanced Time Discharge Total pH Temp Specific
Flored Time   DH   Lemp
Time Elapsed Time (min) Rate Discharge (SU) (SU) Conductance Comments (µS/cm)
1145 Pump On
1155 10 27 720 6.56 214 2140
1705 20 27 540 1.59 31/3 2150
1215 30 27 810 6.38 21.2 2159
1210 - 24 - 24 - 24 - 24 - 24 - 24 - 24 - 2
Pump Off
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 μS/cm)
SAMPLE INFORMATION
Sample Collection Point:
Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative Filterer (y/n)
BMO-2010-2M 1215 PL 250 1 300 Fax
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: 101

Project No:	287030				_Client:	Freeport Copp	er Queen Brand	ch
Task No:					Date:	4/23/13		
Well ID:	BMO - 2	010-3	B	-	Weather:	Sunny, W	indy	
ADWR No:		19970			Sampler:	HELV	•	-
				WELLDA	TA			
Well De	epth (ft bls):	33	O'		Nomina	Casing Capacity  Nominal Size (inches) Gallons per		
Casing D	Diameter (in):	<u>33</u> 5	į)			2	0.16 0.68	6
Static Wate	r Level (ft bmp):	120.	.02'			5 6	1.02 1.47	
Casing \	/olume (gal):		x3 = (	242		8 10	2.61 4.08	
	ne Purged (gal):			<i></i>	Casir	ng Volume = gallon	s/foot * water colun	nn (feet)
			FIE	LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Commo	ents
0912	Pump On							The Color of the C
0932	20	8	160	7.61	21.6	421.6	Faint brow	<i>ب</i>
0952	40	8	320	7.606	21.6	420.3	Clear	
1012	60	8	480	7.67	21,7	420.0		
1032	80	8	640	7.67	21,8	420.0		
	<u></u>	-					D Off	
r	TELD DARAMET	ED STABILIZA	ATION: Thmo o	ancooutivo ros	dinac within (	 0.3 su pH, 2 degree	Pump Off	~\
	ILED I AIVINET	EKOTABILIZ		MPLE INFOR		o:o su pri, z degree		
Sample Coll	lection Point:		<u> </u>					
<del></del>	nple ID	Time	Container	Volume	No. of	Analysis Method	Preservative	Filtered
BNO	2010-3B	1.00	Туре		Containers	200.50	.15 A	(y/n) √
9140-2	2010-73	1036	Poly	250ml		3000.0	<i>χ</i> )Δ	<u> </u>
		W	L /ATER LEVEL	I .MEASUREI	L MENT COLL	L ECTION		
Æ Water le	vel measurement			dadagentibile Kipiborijek				
, ,	r level measurem		No access to we	elihead/No por	t in wellhead			
L	r level measurem							
□ No water □ Other:	r level measurem	ent collected. \	Well is pumping	<b>J.</b>				
— Gulei:			WELL	PURGING INF	ORMATION			
Purged 3	3 well volumes an	d field parame	ters stabilized.					altotta, sällimretlestanis
	3 well volumes ba			nd field parem	eters stabilize	ed.		
	well until field para	ımeters stabili	zed.					
Other.	Commonto	·					<del></del>	<del></del>
Additional (	Johnnents.			<del></del>		<del></del>	<del></del>	



Project No:	287030				Client:	Freeport Copp	er Queen Brand	ch
Task No:				-	Date:	4/23/13		
Well ID:	BNO	-2010	-3M		Weather:	Sunny , a	indy	
ADWR No:		21991	_		Sampler:	UNH	,,	
		Ĭ		WELLDA	TA.			
Well De	epth (ft bls):	5	32 i		Nomina	Casing I Size (inches)	Capacity Gallons per L	inear Foot
			<u> </u>	-		2	0.16 0.6	6
	liameter (in):		_			<b>4</b> 5	1.02	_
Static Wate	Level (ft bmp):	[2]	2.97'		!	6 8	1.4 <sup>-</sup> 2.6 <sup>-</sup>	
Casing Volume (gal):		417	x3 = 12	251		10	4.0	
Total Volum	e Purged (gal):				Casir	ig Volume = gallon	s/foot * water colum	nn (feet)
	<b>J</b>		FIE	LD SAMPLIN	IG DATA			
Time Elapsed Time (min) Discharge Total Rate Discharge (gpm) (gallons)			pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents	
1100	Pump On							
1120	20	7	140	7,81	224	350.7	Faintly yellow,	sulphur odor
1140	40	7	280	7.79	23.0	388.7	tt / '	' <u>,,</u>
1200	60	7	-120	7.82	23.3	386.1	Clear, faint	sulphur odor
1220	<b>3</b> 0	7	560	7.83	23,4	385,2	te.	te
1240	100	7	700	7.80	23,3	385.1	le	гl
1300	120	7	840	7.82	23,5	384,8	Clear, odo	r less
1320	140	7	980	7,81	23.7	384,6	10	<i>#</i>
1340	160	7	1/20	7,79	23,5	385.5	r	11
1400	180	7	1260	7,80	23.4	38610	Pump Off	
	FIELD PARAMET	ER STABILIZA				0.3 su pH, 2 degree	es C, and 100 μS/c	m)
			SAN	IPLE INFOR	MATION			
Sample Col	ection Point:					<del></del>		
Sai	nple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO	2010-3M	1402	Poly	250mL	1	350.0	NA	1
***************************************								
			ATER LEVEL	.MEASURE	MENT COLL	ECHON		
$\Gamma \subset$	vel measurement r level measurem		No necess to um	allboad/No por	t in wallbaad			
1	r level measurem			-	t iii weiiiieau			
☐ No wate	r level measurem	ent collected. \	Well is pumping	J.				
☐ Other:								
				PURGING INF	ORMATION			
_	3 well volumes an 3 well volumes ba			nd field nem	otore stabili	νd		
1	well until field para			na nela palem	eleis slauiize	ru.		
☐ Other:	<b></b>						·	
Additional	Comments:							
<del></del> :								

roject No:	287030				Client: <u>F</u>	reeport Copper	Queen Branc	<u>h</u>	
ask No:	<u> </u>		_		Date: _	8-14-13			
/ell ID:	RMD- 2	1012-11	M		Weather:	Sunny			
DWR No:	<del></del>	<del>V (                                   </del>	<del>-</del>		Sampler:	bustoon	1 Sharmon	<u> </u>	
				WELL DAT	Α		)if	-	
Well D	epth (ft bls):	- U	05		Nominal	Casing C Size (inches)	Galions per Li	near Foot	
	•		ا سے ایا سے			2	0.16 0.65		
Casing [	Diameter (in):	~~~	<u>)</u>			5	1.02	}	
Static Wate	er Level (ft bmp):	233	. <i>96</i>			6	1.47 2.61		
Casing \	Volume (gal):	174.4	x3 = .	522.4		10	4.08		
Total Volum	ne Purged (gal):		540		Casing	y Volume = gallons/	foot * water colum	nn (feet)	
TOTAL VOIGI	ne r diged (gai).			D SAMPLIN	G DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
1120	Pump On				<u> </u>				
1170-	1,0	6	40	7-08	22.9	853			
1 200	30	1/	190	7.06	229	\$ 02			
1730	10	//	360	2.01	728	856			
1200	190	11	540	919	12.9	858			
( )00	1 4 6	- <del>''</del>	J 187	- C		0.5		<u></u>	
··									
_					<u></u>		Pump Off	<del>_</del>	
	FIELD PARAMET	ER STABILIZA				3 su pH, 2 degrees	s C, and 100 μS/c	:m)	
			SAM	MPLE INFOR	RMATION				
Sample Co	ollection Point:		<u></u>	<u>.                                      </u>			<u>-</u>		
s	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
BMa-	2012 - jm	1300_	PI	250	+ '-	300	Tic	-X	
			 /ATER LEVEI	MEAGURE	MENT COLL	ECTION			
			ALER LEVEL	_ IVIEASURE	IVIENT COLL	LOTION			
	level measuremen ter level measurem		No access to w	relihead/No po	rt in wellhead				
	ter level measuren								
□ No wa	ter level measuren	nent collected.	Well is pumpin	g.					
Other:	<u> </u>	<u> </u>	WELL	PURGING IN	IFORMATION				
<b>∕</b> Purge	d 3 well volumes a	nd field narams			0,		<u> </u>		
	d 3 well volumes a d 3 well volumes b				neters stabilize	ed.			
_	d well until field pa								
□ Other		1 11		-		<u> </u>			
Addition	al Comments:_	171,04				<del></del>			
			_	-	<del></del>		<u> </u>		
-				<u>-</u>			-		

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	<u>h</u>	
Task No:					Date:	<u> 7/17/13</u>			
Well ID:	Booth	,			Weather:	Sunny, windy			
ADWR No:		914931			Sampler:	VUL		and the same of the same	
				WELL DAT	Α	Casing 0	Conceity		
Well De	epth (ft bis):	2	40'		Nomina	Size (inches)	Gallons per Li	near Foot	
	Diameter (in):	7	7"			2 4	0.16 0.65		
_						5	1.02 1.47	l l	
	er Level (ft bmp):					8	2.61 4.08		
Casing \	Volume (gal):		x3 =		Casir	10 g Volume = gallons/			
Total Volur	ne Purged (gal):			LD SAMPLIN					
		Discharge	Total			Specific		e y de proper para a la company de la compan	
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents	
	Pump On								
1025				7.75	23,2	497.6			
				ļ					
				· ·					
				<u> </u>			Pump Off		
	FIELD PARAMET	L TER STABILIZ	ATION: Three o	onsecutive rea	idings within	0.3 su pH, 2 degree	s C, and 100 μS/ci	m)	
			SAI	MPLE INFOR	MATION				
Sample Co	llection Point:								
Si	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Boo	th.	1029	Poly	250ml	(	300,0	AU		
								constitues a sassinguis const	
		νν	VATER LEVE	L MEASURE	MENT COL	LECTION			
No wat  No wat  No wat  Purget  Purget  Purget  Cother:		nent collected. nent collected. nent collected. nd field paramased on previous	Obstruction in y Well is pumpin WELL eters stabilized ous water level a	well. g. PURGING IN and field parem	FORMATION	well owner.	ocked, cannot Left note.	context	
Additiona	Comments:								

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	<u>h</u>
Task No:					Date:	07/15/13		
Well ID:	Chaml	0015			Weather:	Sunny, 1	ot, humid	<u> </u>
ADWR No:		'e2980'	7		Sampler:	VUH /		
				WELL DA	A			
Mall D	epth (ft bis):		145'		Nominal	Size (inches)	Capacity Gallons per Li	near Foot
	•		, 1°			2	0.16	
Casing I	Diameter (in):		( 0			5	0.65 1.02	
Static Water	er Level (ft bmp):					6	1.47 2.61	
Casing '	Volume (gal):		x3 =		8 10		4.08	
Total Volur	ne Purged (gal):				Casin	g Volume = gallons	/foot * water colum	ın (feet)
			FIE	LD SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1207	Pump On							
1212	5	13	65	7.17	22.6	433.9		
1217	10	13	130	7.36	22.7	435.7		
1222		13	195	7.40	22.7	434,6		
1000	12-	, , , , , , , , , , , , , , , , , , ,		1		7.0		<u></u>
							. 44	
	<del>                                     </del>							***
	+				<del> </del>		Pump Off	· · · · · · · · · · · · · · · · · · ·
	FIELD PARAMET	ER STABILIZ	ATION: Three o	onsecutive rea	dings within (	0.3 su pH, 2 degree	s C, and 100 μS/c	m)
			The second of the second of the second of	VIPLE INFOR	grant and distribution of Settle			
Sample Co	ollection Point:		Pagilist stiffers (17 and 1866)		Militar gebe ve kalendebbi			
	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Cham	bers	1224	Poly	250ml		300,0	NA	<u> </u>
	130715	1225	Poly	250mC	(	300.0	NA	
			VATER LEVEI	MEASURE	MENT COLL	ECTION		<b>.</b>
□ Water	level measuremen	t collected.						
-	ter level measurem				rt in wellhead			
l .	ter level measurem							
☐ No wat	ter level measurem	ient collected.	vveii is pumpini	g.				
D Other.			WELL	PURGING IN	FORMATION			
	d 3 well volumes ar	nd field parame	eters stabilized.			nige management by Cont. Readings (194		
_	d 3 well volumes ba				neters stabiliz	ed.		
Purgeo	d well until field par	rameters stabi	lized.					
☐ Other:		• • •			<del></del>			
Additiona	Comments:							<del>-</del>
		· · · · · · · · · · · · · · · · · · ·						
				<del> </del>				
		****						

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h	
Task No:		·····			Date:	7/1/13			
Well ID:	COB	MW-1			Weather:	Partly elou	dy, hot, h	umi'el	
ADWR No:		103992			Sampler:	VVI			
				WELL DA	TA				
Well De	epth (ft bls):	42	0'		Nominal	Size (inches)		Gallons per Linear Foot	
Caeina I	Diameter (in):	8"				2	0.16 0.65		
_			9.67'			5	1.02 1.47		
Static Wate	r Level (ft bmp):			413		8	2.61		
Casing \	/olume (gal):	471	x3 = /	417	0 :	10	4.08		
Total Volun	ne Purged (gal):					g Volume = gallons	Moot water colum	ın (seet)	
			i	_D SAMPLIN	IG DATA	Specific			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents	
1033	Pump On								
1053	20	11	220	7.18	22.0	1705			
1113	46	11	440	7.24	21,7	1745			
1133	60	[]	660	7.26	21.10	1775			
1153	80	11	880	7.27	21.5	1792		<u>.</u>	
1213	100	11	1100	7,25	21.3	1813			
1233	120	11	1320	7.13	21,4	1833			
1253	140	11	1540	7.17	21.4	1858	· 		
				<u> </u>			Pump Off		
-	EIEI D DADAMET	FR STARII (7	ATION: Three c	onsecutive rea	dinas within (	).3 su pH, 2 degree	·	m)	
	TILLD LAIVAINE		Control and Application of the Control of the Contr	MPLE INFOR	unacar aut a anna a taite				
Comple Co	llection Point:								
<del></del>	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
COB	MW-1	1256	Poly	250mL	(	300.0	AU	У	
								en a	
		V	VATER LEVEL	MEASURE	MENT COLL	ECTION			
□ No wat	evel measuremen er level measuren er level measuren er level measuren	nent collected. nent collected.	Obstruction in w	vell. 3.			na. s usumalahkan bunya pepekunya	, seedikinen eeskeidh	
				PURGING IN	FORMATION				
☐ Purged	3 well volumes a 3 well volumes b well until field pa	ased on previo	ous water level a	and field paren	neters stabilize	ed.			
	Comments:	<del></del>						. ,	
Auditional	COMMENTS.								
								· · · · · · · · · · · · · · · · · · ·	
	<del> </del>						<u></u>		

Project No:	287030				Client:	Freeport Coppe	r Queen Branc	ch
Task No:					Date:	7/25/13		
Well ID:	(0)	3-2			Weather:	Sunny	70's	
ADWR No:		<u>8-2</u> 90398	, 4		Sampler:	YAY		
				- WELL DA				
Well De	epth (ft bls):	Ì	62'		Nominal	Size (inches)	Capacity Gallons per L	inear Foot
		<u> </u>	71"			2 4	0.16 0.65	
	Diameter (in):		0 - 0 1 /			5	1.02	2
Static Wate	r Level (ft bmp):	<u>l</u>	30.21			6 8	1.47 2.61	
Casing \	/olume (gal):	21	x3 = (	<u>,3</u>		10	4.08	
Total Volun	ne Purged (gal):					g Volume = gallons	/foot * water colum	nn (feet)
			周围	LD SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Commo	ents
1127	Pump On							
1130	3	7	2	7.26	21,0	482.5		
1133	6	7	42	7.33	21.	485.1		
1136	9	¥	63	7.34	20.9	485,4	<u></u>	
,								
				ļ				
							D 0"	
			TION: TI			).3 su pH, 2 degree	Pump Off	m)
	FIELD PARAMET	ER STABILIZA		VIPLE INFOR		7.3 su pr1, 2 degree	s C, and 100 μS/C	
Sample Co	llection Point:							
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method		Filtered (y/n)
CO1	5~ 2	1145	Poly	250ml		300.0	NA	<del></del>
			 /ATTER LEVEL	MENGUBE	 VENT COLU	   ECTION		
- FT 184-11			/ATTERT HEVILL	WIEASURE	VIENII GOLL			
	evel measurement er level measurem		No access to we	ellhead/No po	rt in wellhead			
1	er level measurem							
	er level measurem	ent collected.	Well is pumping	<b>g</b> .				
□ Other:			WEU	PURGING IN	ORMATION			
Ø Purged	3 well volumes ar	nd field narame						
	3 well volumes ba			nd field parem	eters stabilize	ed.		
	well until field par							
□ Other:			-·					
Additional	Comments:							



Project No:	287030				Client:	Freeport Coppe	er Queen Brand	ch
Task No:					Date:	7/25/13		
Well ID:	COB- 3	3			Weather:	Sunny, ho	f	
ADWR No:		823			Sampler:	VIA		
				WELLDA	ΓA			
Well De	pth (ft bls):	30	ල'		Nomina	Size (inches)	Capacity Gallons per L	inear Foot
Casing D	iameter (in):		į li			2 4	0.16 0.65	
Static Water	Level (ft bmp):	12	9.05'	· <del></del>		5 6	1.02 1.47	
Casing V	olume (gal):	111	x3 = 3	333		8 10	2.6° 4.08	Ï
Total Volum	e Purged (gal):				Casin	g Volume = gallons	s/foot * water colum	nn (feet)
I I Viai Viai	o i algoo (gal).		- FIE	LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents
1024	Pump On							
1030	9	19	114	7.37	21.6	457.2		
1036	12	19	228	7.47	21.5	4731		
1042	18	19	342	7,42	21,4	480,8		
1048	24	19	450	7.43	21,3	482.9		
1054	30	19	570	7.42	21,4	485.0		
							D Off	
	IELD DADAMET	ED STADII 17	ATION: Three or		dings within (	).3 su pH, 2 degree	Pump Off	·m)
	IEEDTAIVAMET	ENGTABLE		IPLE INFOR		7.5 Su pri, 2 degree	s e, una ree pere	,
Sample Coll	ection Point:							приничника приничника приничника приничника приничника приничника приничника приничника приничника приничника п
· · · · · · · · · · · · · · · · · · ·	nple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
(OB-	3	1058	ROLY	250mL	t	30 . ර	NA	<u> </u>
			ATER LEVEL	. MEASURE	MENT COLL	ECTION		
	vel measurement · level measurem		No access to wa	allboad/No nor	t in wallhaad			
	· level measurem				t in Weineau			
	level measurem							
□ Other:								
/ <del></del>		d fiold		PURGING INF				
1/	3 well volumes an 3 well volumes ba			nd field parem	eters stabilize	ed.		
	vell until field para			•				
□ Other:	,				-			
Additional 6	Comments:	SWL =	129.05	from	top of	Sounding	tube.	
		بىد	126,95	from g	wound a	urface.		
			100,45	GOTTI G	DOUNA L	or bocco.		

Project No:	287030				Client:	Freeport Coppe	er Queen Branc	:h		
Task No:					Date:	7/25/1	3			
Well ID:	CC	7B-WL			Weather:	Partly de	oudy, Ho	<i>/</i>		
ADWR No:		593116	)		Sampler: M					
				WELL DAT	<u> A</u>	Cooling	Conceity			
   Well De	pth (ft bls):	10	50'		Nominal	Size (inches)	Capacity Gallons per L			
Casing D	iameter (in):	1			2 4		0.16 0.65			
	•	8	1.36			5	1.02 1.47			
Static vvater	Level (ft bmp):			121	- - 8		2.61			
Casing V	olume (gal):	45 x3= 135			10	4.08				
Total Volum	e Purged (gal):	FIELD SAMPLING			Casing Volume = gallons/foot * water column (feet)					
		Discharge	Total	ID SAMPLIN	G DAIA	Specific				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents		
1430	Pump On									
1435	5	7	35	7.08	263	1061				
1446	10	무	70	7.11	21.3	10068				
1455	25	1.5	92.5	7.37	22.6	1068				
1510	40	1.5	115	7.31	22,9	1072				
1525	55	1,5	137.5	7,23	22.7	1074		<del></del>		
							<u></u>			
							Pump Off			
F	 FIELD PARAMET	<u> </u> ER STABILIZ/	I ATION: Three c	I onsecutive rea	l Idings within (	).3 su pH, 2 degree		m)		
			SAN	IPLE INFOR	MATION					
Sample Col	lection Point:									
	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
COB	~ WL	1532	Poly	250m2	(	300,0	NA	γ		
			VATIER LEVE	. MEASUREI	MENT COLL	LECTION				
<i>*</i> \	evel measurement er level measurem		No copose to w	olihead/No no	t in wellhead					
1	r level measurem				t iii weiiileaa					
□ No wate	r level measurem	ent collected.	Well is pumping	<b>]</b> .						
□ Other:			yya-14	BUDGING IN	- CONTRACTION					
E Dumod	3 well volumes ar	d field namme		PURGING INI						
	3 well volumes at 3 well volumes ba			nd field parem	eters stabilize	ed.				
	well until field par									
□ Other:					·					
Additional	Comments:			<u></u>	<del></del>					
						-				

Project No:	055038				Client: _	Freeport Coppe	Queen Brancl	<u> </u>
Task No:					Date:	oluli3		
Well ID:	Cooper			,	Weather:	Partly Clo	od, hum	.,;
ADWR No:		62356	,사		Sampler:	,		
				WELLDAT	A	Casing (	anacity	
Well D	epth (ft bls):	3	25)		Nominal	Size (inches)	Gallons per Lir	near Foot
Casing	Diameter (in):		(o')			2	0.16 0.65	
_	•					5	1.02 1.47	
	er Level (ft bmp):					8	2.61 4.08	
Casing '	Volume (gal):		x3 =		Casin	g Volume = gallons/		n (feet)
Total Volur	ne Purged (gal):	santa eliminalis (SAPERE).		D SAMPLIN				
		Discharge	Total		35,5 303 31 4 10 10 10 10 10 10 10 10 10 10 10 10 10	Specific		
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	nts
1316	Pump On							
1321	5	8	40	7.54	22.5	433.9		
1326	10	8	80	7.57	23,0	433.0		
1331	15	8	120	7.65	23,2	432,5		
							<u> </u>	
				<u>                                     </u>				
ļ				<del>                                     </del>			<del></del>	_ <del></del>
	<u> </u>							
<u> </u>						.,	Pump Off	
	FIELD PARAMET	ER STABILIZ	ATION: Three o	onsecutive rea	dings within (	0.3 su pH, 2 degree	s C, and 100 μS/cr	n)
			SAI	MPLE INFOR	MATION			
Sample Co	ollection Point:							
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Coo	Des	1334	Poly	250mL	1	300,0	UA	ΥΥ
			an or Think has a wealther and this		na mananananan tanan			
			VATER LEVE	L MEASURE	MENT COLL	ECTION		
	level measuremen		No company to us	clibood/No po	t in wellhead			
	ter level measuren ter level measuren				t III Wearlead			
	ter level measuren							
□ Other:	militions page of a general additionary are	ulik keta sasildan kelej ppi			ODIVITION			
	10	- 4 5-14 posses		PURGING IN				
	d 3 well volumes a d 3 well volumes b				eters stabiliz	ed.		
	d well until field pa							
□ Other:		<del></del>			·			
Additiona	l Comments:		<del> </del>					<u> </u>

Project No:	287030				Client: Freeport Copper Queen Branch				
Гask No:					Date:	8-13.	<u> 73                                    </u>		
Well ID:	/20	per C			Weather:	Sanns			
ADWR No:		<i>j</i>	<u>-</u> .	<u>.</u> ,	· - Sampler: ,	Chairt der	Shirm		
ADVIN NO.				WELL DA		VIII 19 19 19 IN			
		20	0				Capacity	near Foot	
Well De	epth (ft bls):		<u>'</u>	·	Nominal	Size (inches)	Gallons per L 0.16		
Casing D	Diameter (in):	6	" <i>(1</i> 7			4	0.65		
Static Water	r Level (ft bmp):	1/ 2	107		Ì	5	1.02 1.47		
	•		7 -			8	2.61		
Casing V	/olume (gal):	<u> </u>	2 x3 =			10	4.08		
Total Volum	ne Purged (gal):		56_	<u></u>		g Volume = gallons	/foot * water colun	nn (feet)	
		· V	FIE	LD SAMPLIN	IG DATA		,	·· <del>-</del>	
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Commo	ents	
1220	Pump On								
1020	10	8,5	25	1.13	21.3	1733			
17.50	T !	2.5	170	1.13	91.2	1237			
010	20	21	2017	119	212	1739			
1270	<del>-36/</del>	00	<del>- 27 (-</del>	<del>  (                                   </del>	<del>                                     </del>				
				<u> </u>	<u> </u>		u <u>u</u>	<u> </u>	
	<u> </u>	<u></u>		<u> </u>	<u> </u>	<u> </u>			
				<u> </u>	<u> </u>			<del> </del>	
				. <u></u>	<u> </u>				
			,				Pump Off		
	FIELD PARAMET	ER STABILIZA	ATION: Three o	onsecutive rea	adings within (	).3 su pH, 2 degree	s C, and 100 μS/c	:m)	
			SAI	MPLE INFOR	RMATION				
Sample Co	llection Point:			•					
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Can	per C	1250	PL	250		<b>De</b> 300	100	X	
6-849					<u> </u>				
		V	ATER LEVE	L MEASURE	MENT COLL	ECTION			
Water I	evel measuremen	t collected.							
No wate	er level measurem	ent collected.	No access to w	/ellhead/No po	ort in wellhead				
	er level measuren								
	er level measuren	nent collected.	Well is pumpin	g.					
□ Other:			18/F1 1	DUDCING IN	IEODMATION		<u>-</u>		
=#)		1.5.11		PURGING IN	IFORIVIATION				
•	3 well volumes a				noters stabiliz	ed			
_	l 3 well volumes b I well until field par			and noid paren	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<del>-</del> -			
☐ Pulged☐ Other:	well ulifii lielu þa	CHICGIS SISUII							
	Comments:		_	_		<u> </u>	-		
Additional	COMMENTS.			···	<del>.</del>	5 <u>8</u>			
						-	·		

Project No:	055038				Client:	Freeport Copp	er Queen Brancl	<u>h</u>
Task No:			<u> </u>		Date: _	7/9/13		
Well ID:	Dodson			<del></del>	- / Weather:	Overcust.	80's, dri	zely
		1927	<u></u>		Sampler:	HUV		/
ADWR No:		1 12 9		WELL DAT				
Wall D	epth (ft bis):	2	(CO)		Nominal	Casing Size (inches)	Capacity  Gallons per Li	near Foot
	•		<i>J</i> 11			2	0.16 0.65	
Casing I	Diameter (in):		6 26		4	4 5	1.02	i i
Static Wate	er Level (ft bmp):		8.38			6 8	1.47 2.61	L
Casing '	Volume (gal):	149	x3 = \(\frac{1}{2}\)	147		10	4.08	
Total Volum	ne Purged (gal):		<u>-</u>		Casin	g Volume = gallon	s/foot * water colum	n (feet)
TOTAL VOIG	ne r arged (gar).		FIE	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1436	Pump On							
1448	10	14	140	7.24	22,5	1985		
1458	20	14	280	7,30	21.2	1897		
1508	30	14	420	7.36	21.1	1832		
1518	40	14	560	7.39	21.0	1825		
				<u> </u>	:			
-								
							5.55	<del>-</del> -
			<u> </u>				Pump Off	\
esit krydrec stantin desis ikay	FIELD PARAMET	ER STABILIZ	era in marco establica e marco establicada e	randonia interiore dell'indice		u.3 su pH, 2 degre	es C, and 100 μS/cr	n)
			SAI	MPLE INFOR	MATION			
Sample Co	ollection Point:			T	1 50 6	T	· · ·	Filtered
s	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)
Dode	300	1521	Poly	250mL	(	300,0	N.A.	У
			/					ei acesso - 1915, 1736 (1866)
		٧	VATER LEVE	_ MEASURE	MENT COLL	LECTION		
	level measuremen							
	ter level measurem				rt in wellnead			
l .	ter level measuren ter level measuren							
☐ Other:								
			WELL	PURGING IN	FORMATION			
	d 3 well volumes a							
	d 3 well volumes b			and field paren	neters stabiliz	ea.		
☐ Purge ☐ Other:	d well until field par	ameters stabi	mzeu.					
	al Comments:	<del></del>	<u> </u>					
Additione								
								<del></del>



Project No:	055038	_	<u> </u>		Client:	Freeport Coppe	r Queen Brancl	1	
Task No:					Date:	7/8/13			
Well ID:	Doublass	791			Weather:	Partly Cloudy	180's		
ADWR No:	Douglass 592	791			Sampler:	VNH			
				WELL DA	TA				
Well D	epth (ft bls):	200	N)		Nominal	Size (inches)	Capacity Gallons per Lir	near Foot	
		<u> </u>	<i>'</i> '			2	0.16 0.65		
Casing [	Diameter (in):	<u>ි</u>		· · · · · · · · · · · · · · · · · · ·	-	4 5	1.02		
Static Water	r Level (ft bmp):	32.	70'	***		6 8	1.47 2.61		
Casing \	/olume (gal):		x3 =			10	4.08		
	•				Casin	g Volume = gallons	/foot * water colum	n (feet)	
i otai Volur	ne Purged (gal):		FIEL	D SAMPLIN	IG DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
	Pump On	(G) /							
<del></del>					Table State				
<u> </u>			-						
			. ~ (						
			Will						
							Pump Off		
	FIELD PARAMET	ER STABILIZA	ATION: Three co	nsecutive re	adings within	0.3 su pH, 2 degree	s C, and 100 μS/cr	n)	
			SAN	IPLE INFO	RMATION				
Sample Co	ollection Point:	1100							
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
					<u> </u>				
			ATER LEVEL	MEASURE	MENILCOL	TEG HON			
	level measuremen								
1	er level measuren				ort in weilnead				
1	er level measuren er level measuren								
□ Other:	er level measuren	ieni conecica.	wen is pumping	) <del>.</del>					
			WELL	PURGING IN	IFORMATION				
	3 well volumes a								
1	d 3 well volumes b			nd field parer	meters stabiliz	ed.			
1	d well until field par	rameters stabil	ized.						
□ Other:		. 4.7							
Additiona	Comments:	W/CO	Sured gron	n 1600 a	of motal	Guter cosin	· · · · · · · · · · · · · · · · · · ·		
	Orter	metal	casing =		ove conc	1 .	pad		
				:04' ak	pove inn	er PVC cas	ing_		

¥

Project No:	055038				_	Freeport Copper	Queen Branch	1
Task No:		970.0	<del> </del>	-	Date:	10110	90'	
Well ID:	Douglass 592792	5 492				Partly cloudy,	005	
ADWR No:	592792	2	Jacobs, nakona pro Judistranov		Sampler:	VH		
				-WELL DAT	Α	Casing C	Capacity	
Well De	epth (ft bls):	200 5	<u> </u>		Nominal	Size (inches)	Gallons per Lin 0.16	ear Foot
Cooing [	Diameter (in):	5	<i>'</i>			2	0.65	
_						5	1.02 1.47	
Static Water	er Level (ft bmp):	83.6	26			6 8	2.61	
Casing \	Volume (gal):		x3 =			10	4.08	
Total Volum	me Purged (gal):				Casin	g Volume = gallons/	foot * water columi	n (feet)
TOTAL VOIGI	ne r algea (gay:		FIEL	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
	Pump On							
	<del> </del>		<del></del>					
			<del></del>					
				0				
			W					
					<u> </u>	-		
			-		<u> </u>			
							Pump Off	
			<u>L </u>	<u> </u>	<u> </u>		<u> </u>	m)
	FIELD PARAMET	ER STABILIZ	The second secon	ONSECUTIVE RE		0.3 su pH, 2 degree	s O, and 100 pero	
Sample Co	ollection Point:		T	<del></del>	No of			Filtered
s	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)
WLO								
W	·							
		V	L VATER LEVEL	MEASURE	MENT COLI	ECTION		
💆 Water	level measuremen							
	ter level measurem		No access to w	elihead/No po	ort in wellhead			
	ter level measurem							
□ No wa	ter level measuren	nent collected.	Well is pumping	<b>3</b> .				
☐ Other:		alitaka amoodilika sa 10		gelminta disensirina kasi, lekt.				
				PURGING IN	IFORMATION			
☐ Purge	d 3 well volumes a	nd field param	eters stabilized.	15.11				
	d 3 well volumes b			ind field parer	neters stabiliz	eu.		
	d well until field pa	rameters stabl	lizea.					
Other:		1011 8						
Additiona	al Comments:	Mrg	Mon Lare	1 6	top of	ronductor (	asina, me	etal.
	1.	08' abov	<u>Measusea</u> e land su	rface	- 1010 OF	(3/1///00 00)		
		28' abov	-		using.			
					0			

#### \*

Project No:	055038				Client:	Freeport Coppe	Queen Branc	<u> </u>	
Task No:					Date:	7/17/13			
Well ID:	Durazo				Weather:	Sunny, wi	'ndy	<u>.                                 </u>	
ADWR No:		NR			Sampler:	VNY	/		
				WELL DA	ΓA ,				
<b>M</b> -11 D					Nominal	Casing C Size (inches)	Capacity  Gallons per Lii	near Foot	
vveii D	epth (ft bls):				740711114	2	0.16		
Casing I	Diameter (in):		<del></del>			4 5	0.65 1.02		
Static Wate	er Level (ft bmp): (	hable to acce	ns, rusted we	Ided shut		6	1.47		
Casina			x3 =			8	2.61 4.08		
Casing	Volume (gal):	· · · · · · · · · · · · · · · · · · ·			Casin	ig Volume = gallons/	foot * water colum	n (feet)	
Total Volui	me Purged (gal):	g Millian salata kan kan di sirac		D SAMPLIN	L				
		Disabaras	Total	SAMELIN	IG DATA	Specific		egggangelikeraturaturas, 18	
Time	Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	nts	
	Pump On								
			T. MAZINES CONT. CARRESTON	(a) is also attractive to the first terms.					
			. <u></u>						
					<u> </u>				
	<del></del>								
					<u> </u>				
							Pump Off		
	FIELD PARAMET	ER STABILIZA	ATION: Three co	onsecutive re	adings within	0.3 su pH, 2 degree	s C, and 100 μS/ci	n)	
			SAN	IPLE INFOR	RMATION				
Sample Co	ollection Point:	SECTION OF THE PERSON	<u> </u>	1384					
<del> </del>	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
		V/	VATER LEVEL	MEASURE	MENT COL	LECTION			
□ Water	level measuremer	t collected.							
□ No wa	ter level measuren	nent collected.	No access to we	ellhead/ <b>N</b> o po	rt in wellhead				
	ter level measuren								
□ No wa	ter level measuren	nent collected.	Well is pumping	1.					
☐ Other:		receivare positive i se se			EODKATION				
			Side (Physiological State	PURGING IN	FORMATION				
	d 3 well volumes a			-d field percr	natara atabiliz	rod			
i ·	d 3 well volumes b			nu nelu parei	Heleis Stabiliz	.cu.			
☐ Purge☐ Other:	d well until field pa	I allietels stabil	izeu.		ľ			_	
		1	1 // 5	aldad	Luched of	lwt. Cann	of get si	16.	
Additiona	I Comments:	Access "	to well 15	welded	1105100 5	wi. Carrin	or get or	<u></u>	
<del> </del>									

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Task No:	Project No:	055038				Client:	Freeport Coppe	r Queen Brancl	<u>h</u>
ADWR No:   599 79 (6   Sampler: WH)   Well Data   Casing Capacity   Nominal Size (inches)   Gallons per Linear Foot   Casing Diameter (in):   6	-					Date:	7/9/13	<u></u>	
ADWR No:   599 79 (6   Sampler: WH)   Well Data   Casing Capacity   Nominal Size (inches)   Gallons per Linear Foot   Casing Diameter (in):   6		East				Weather:	gunny, hum	id 905	
Well Depth (ft bis):   125'   Nominal Size (inches)   Gallons per Linear Foot		599	1960			Sampler:			
Veil Depth (ft bis):   125   Nominal Size (inches)   Gallons per Linear Foot	ADVIX NO.				WELL DA				
Casing Diameter (in):    Casing Diameter (in):   Casing Volume (gal):   Casing Volume (gal):   Casing Volume (gal):   Casing Volume Purged (gal):   Casing Volume Purged (gal):   Casing Volume = gallons/foot * water column (feet)	Mall D	enth (ff ble):	12	<del>ر</del> ا		Nomina			near Foot
Static Water Level (ft bmp):							2	0.16	
Casing Volume (gal):   C   X3 = 20   7   10   4.08	Casing I	Diameter (in):			<u></u>		5		
Casing Volume (gal):	Static Wate	er Level (ft bmp):	<u> </u>	3 <u>.37                                   </u>			Į.		
Total Volume Purged (gal):   FIELD SAMPLING DATA	Casing '	Volume (gal):	69	x3 = 2	07				
FIELD SAMPLING DATA  FIELD SAMPLING DATA  Specific Conductance (min)  Pump On  135 1 7 /0 70 7.34 21.6 599.6  1358 14 /0 140 7.40 21.2 602.4  1405 21 10 210 7.46 21.2 603.6  FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 μS/cm)  Sample Collection Point:  Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative (y/n)	_					Casir	ng Volume = gallons	foot * water colum	in (feet)
Time   Elapsed Time (min)   Rate (gpm)   Discharge (gallons)   PH (SU)   Pump On     35	lotai volur	ne Purgeu (gai).		FIEL	D SAMPLIN	IG DATA			
135	Time	1 .	Rate	Discharge			Conductance	Comme	ents
135	12414	Pump On							
1358 14 10 140 7.40 71.2 (602.4)  1405 21 10 210 7.46 21.2 (603.6)  FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 μS/cm)  SAMPLE INFORMATION  Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative (y/n)  1358 14 10 140 140 140 140 140 140 140 140 1			10	70	7,34	21.6	599.6		
1405 21 10 210 7.46 21.2 603.6  Pump Off  FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 μS/cm)  SAMPLE INFORMATION  Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative (y/n)				<u> </u>					
Sample Collection Point:  Sample ID  Time  Container Type  Volume  No. of Containers Containers No. of Containers		<del></del>	· · · · · · · · · · · · · · · · · · ·		T' -				
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time  Container Type  Volume  No. of Containers  Analysis Method  Preservative (y/n)	1-1,02		70						
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time  Container Type  Volume  No. of Containers  Analysis Method  Preservative (y/n)									
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time  Container Type  Volume  No. of Containers  Analysis Method  Preservative (y/n)									
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time  Container Type  Volume  No. of Containers  Analysis Method  Preservative (y/n)									
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time  Container Type  Volume  No. of Containers  Analysis Method  Preservative (y/n)				<del></del>					
Sample Collection Point:  Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative (y/n)								Pump Off	
Sample Collection Point:  Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative (y/n)		FIELD PARAMET	ER STABILIZ	ATION: Three c	onsecutive re	adings within	0.3 su pH, 2 degree	s C, and 100 μS/cr	m)
Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative Filtered (y/n)				SAN	VIPLE INFOR	RMATION			
Sample ID Time Type Volume Containers Analysis Method Preservative (y/n)	Sample Co	ollection Point:							
1409 Feb. 15000 1 30000 NA Y	Si	ample ID	Time	l .	Volume		Analysis Method		(y/n)
East 1701 Ford Dome 1	Eas:	L .	1409	Foly	250MC	1	300.0	NA	<u> </u>
WATER LEVEL MEASUREMENT COLLECTION			٧	VATER LEVEL	MEASURE	MENT COL	LECTION		
	☐ Other:								
□ No water level measurement collected. Well is pumping.				WELL	PURGING IN	IFORMATION	٧		
□ No water level measurement collected. Well is pumping.		d 3 well volumes a							
□ No water level measurement collected. Well is pumping. □ Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.			acad an provid	us water level a	and field parer	neters stabiliz	zed.		
□ 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.	☐ Purge	d 3 well volumes b							
□ No water level measurement collected. Well is pumping. □ Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized. □ Purged 3 well volumes based on previous water level and field parameters stabilized. □ Purged well until field parameters stabilized.	☐ Purge	d 3 well volumes b d well until field pa		lized.					
□ No water level measurement collected. Well is pumping. □ Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized. □ Purged 3 well volumes based on previous water level and field parameters stabilized. □ Purged well until field parameters stabilized. □ Other:	☐ Purged☐ Purged☐ Other:	d 3 well volumes b d well until field pa		lized.					
□ No water level measurement collected. Well is pumping. □ Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized. □ Purged 3 well volumes based on previous water level and field parameters stabilized. □ Purged well until field parameters stabilized.	☐ Purged☐ Purged☐ Other:	d 3 well volumes b d well until field pa		ized.					
□ No water level measurement collected. Well is pumping. □ Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized. □ Purged 3 well volumes based on previous water level and field parameters stabilized. □ Purged well until field parameters stabilized. □ Other:	☐ Purged☐ Purged☐ Other:	d 3 well volumes b d well until field pa		ized.					

Project No:	055038				Client: <u>I</u>	Freeport Copper	Queen Branch	1
rask No:				· · · · · · · · · · · · · · · · · · ·	Date:	7/17/13		
Nell ID:	Echave				Weather: _	Smny, w	indy	<u> </u>
ADWR No:		219449			Sampler:	HUV /	,	
				WELL DAT	A			
Well De	epth (ft bls):	3	45		Nominal	Casing C Size (inches)	Gallons per Lir	ear Foot
	•		(°)			2	0.16 0.65	
_	Diameter (in):			10		5	1.02 1.47	
Static Wate	r Level (ft bmp):	19e 218,41	from 1/18	_	1	6	2.61	1
Casing \	Volume (gal):	1860	x3 = 5	58		10	4.08	(F H)
Total Volum	ne Purged (gal):					g Volume = gallons/	foot * water colum	n (feet)
			Property against the company	_D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts .
1515	Pump On							
1535	20	7	140	7.86	22,6	403.0		
1555	40	7	280	7.76	22.0	404.8		
1615	60	77	420	7.79	22.0	406.9		
1635	80	7	560	7.81	22.1	406.4		
							<u></u>	
							Pump Off	
			A TION! There a		odings within (	D.3 su pH, 2 degrees		n)
	FIELD PARAME	ER STABILIZ	Control of the Contro	MPLE INFOR	grada e or incomitation i			
	ollection Point: ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Ech	rave	1644	Poly	250mL		30000	AU	Y
		1	1					
		ν	VATER LEVE	L MEASURE	MENT COLI	LECTION		
□ No wa  □ No wa □ No wa □ Other:		nent collected. nent collected. nent collected	Obstruction in Well is pumpin	well. へ ぴぢ g. PURGING IN				
☐ Purge☐ Purge	d 3 well volumes a d 3 well volumes b d well until field pa	ased on previo	ous water level	and field parer	neters stabiliz	ed.		
Other:								
Additiona	al Comments:	<del></del>						
								<del></del>



Project No:	055038				Client:	Freeport Coppe	r Queen Branc	h
Task No:					Date:	7/9/13		
Well ID:	Eppele	641			Weather:	Sunny, hun	id, 80's	
ADWR No:	<u>Eppele</u> 80	5641			Sampler:	voi_		
				WELL DAT	ГА	Casing (	Canacity	
Well De	epth (ft bls):	2	65'		Nominal	Size (inches)	Gallons per Li	
Casing [	Diameter (in):	•	B"			2 4	0.16 0.65	
	r Level (ft bmp):	92	.84'			5	1.02 1.47	
		449		347		8	2.61 4.08	
_	/olume (gal):	441	X3 - 1	J17_	Casin	ig Volume = gallons	<del> </del>	
Total Volur	ne Purged (gal):		EIE	LD SAMPLIN				
		Discharge	Total			Specific		
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents
0848	Pump On							
0858	10	9	90	7.53	21.7	565,1		
0908	20_	٩	180	7.55	21,2	565.3		
0918	30	9	270	7.66	21.5	566.4		<del></del>
0928 40 9 360 7.66 21.9 570.1 D							<del></del>	
0930								
			<u> </u>		_		· · · · · · · · · · · · · · · · · · ·	
						,		
							Pump Off	
	FIELD PARAMET	I ER STABILIZ	ATION: Three o	consecutive rea	dings within	0.3 su pH, 2 degree	s C, and 100 μS/cr	m)
			SAI	MPLE INFOF	RMATION			
Sample Co	llection Point:	Allienijaliai etteres ruses						
<del></del>	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Espel	2641	0946	Poly	250ml	1	300,0	NA	<u> </u>
		ν.	VATER LEVE	_MEASURE	MENT COL	ECTION		
1 3	evel measuremen							
ŀ	er level measuren				rt in wellhead			
i	er level measuren					•		
1_	er level measuren	nent collected.	Well is pumpin	g.				
☐ Other:			WELL	PURGING IN	FORMATION			
□ Purgeo	l 3 well volumes a	nd field param	eters stabilized.	and the second of the second of the second		No. 10 10 10 10 10 10 10 10 10 10 10 10 10	<u> </u>	
□ Purgeo	l 3 well volumes b	ased on previo	ous water level a		neters stabiliz	ed.		
l	l well until field pa	rameters stabil	lized.					
Other:	<del>&gt;</del>	: 7 .1 1		1 ( 1	1 0	Dum) @	0020	
Additiona	Comments:	Well di	1 1	below le	weldt	pun) C	0930.	
		UJCI+	· 15 Min	70 50	in pie			
* Add/	lonal denar	it on p	roperty.					

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	<u>h</u>		
Task No:					Date:	7/17/13				
Well ID:	Flos	mina			Weather:	Sunny, w	indy			
ADWR No:		2183	810		Sampler:	HUV	,			
ABVIICIO.				WELL DA	ΓA					
)8/-U D	enth (ft blo):	1	145'		Nominal	Casing Size (inches)	Capacity  Gallons per Lit	near Foot		
Well L	epth (ft bls):		71/		Homman	2	0.16			
Casing	Diameter (in):					4 5	0.65 1.02			
Static Water	er Level (ft bmp):	3`	74,88'			6	1.47			
Casing	Volume (gal):		x3 =			8 10	2.61 4.08			
_					Casin	g Volume = gallons	/foot * water colum	n (feet)		
Total Volu	me Purged (gal):	inggestlangs.C		D SAMPLIN	I IG DATA					
Time	Elapsed Time (min)	Discharge Rate	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents		
	D. Control	(gpm)	(galions)			(μο,στη)				
	Pump On			<u>josepadilens</u> L	T					
			10							
			N	Ĺ						
							Pump Off			
-	FIELD PARAMET	ER STABILIZA	ATION: Three c	onsecutive re	adings within (	0.3 su pH, 2 degree	s C, and 100 μS/cr	n)		
			SAN	IPLE INFOF	RMATION					
Sample Co	ollection Point:									
<del></del>	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
	NICO	<del>-</del>								
				Territoria de la Composito		s enveronment van Seel-Jii Sadaige (S				
		V.	VATER LEVEL	. MEASURE	MENT COLL	LECTION				
	level measuremen									
	ter level measuren				rt in wellhead					
ŀ	ter level measuren ter level measuren									
☐ No wa		nem conected.	well is pumping	j.						
			WELL	PURGING IN	FORMATION					
□ Purge	d 3 well volumes a	nd field parame	eters stabilized.							
	d 3 well volumes b			nd field paren	neters stabiliz	ed.				
□ Purge	d well until field pa	rameters stabil	ized.							
□ Other										
Additiona	al Comments:		M	L()						
							· · · · · · · · · · · · · · · · · · ·			
				<del></del> -						

		C	3roundw	ater Sa	ampling	g Form		
Project No:	055038				Client:	Freeport Coppe	er Queen Branc	:h
Task No:					Date:	7/10/13		
Well ID:	Franci	2 101				Overcoust, hi	ot, Jumid	
ADWR No:		500101	**		Sampler:	YNH		
ABWIT 140:				WELL DA				
Well De	epth (ft bls):	20	90'		Nominal	Size (inches)	Capacity Gallons per L 0.16	
Casing D	iameter (in):	(0	n ''			2 4	0.65	i
	r Level (ft bmp):	190	0.19'			5	1.02 1.47	·
Casing \	/olume (gal):	7	x3 =			8 10	2.61 4.08	3
Total Volun	ne Purged (gal):				Casin	g Volume = gallons	/foot * water colun	nn (feet)
			FIEL	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Commo	ents
	Pump On							
			,					
			:					
			u ()					
			200	.,				
	<del></del>							***
								•
			,11-11-1					
					· ·		Pump Off	
	LFIELD PARAMET	ER STABILIZA	ATION: Three co	onsecutive rea	adings within (	).3 su pH, 2 degree	s C, and 100 μS/c	m)
			SAN	IPLE INFOR	RMATION			
Sample Co	llection Point:						Antonio de la compansión de la compansión de la compansión de la compansión de la compansión de la compansión	enteredigina quanticipale de g
<del>                                     </del>	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
, NC	0							
1								
		· · · · · · · · · · · · · · · · · · ·	ATER LEVEL	MEASURE	MENT COLL	ECTION		
Water I	evel measuremen	t collected.						
	er level measurem				rt in wellhead			
1	er level measurem							
□ No wate	er level measurem	nent collected.	vveii is pumping	) <b>.</b>				
_ Officer.			WELL	PURGING IN	FORMATION			
☐ Purged	3 well volumes a	nd field parame	eters stabilized.		ar y year alahida dikibi EFES	на кастору турковна и стородного добородного The second secon		
i i	3 well volumes ba			nd field paren	neters stabilize	ed.		
□ Purged	well until field par	rameters stabili	ized.					
□ Other:			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
Additional	Comments:		WLE	9				

CLEAR SO CREEK SO ASSOCIATES

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Project No:	055038				Client:	Freeport Coppe	er Queen Branc	<u>h</u>
Task No:					Date:	7/10/13		
Well ID:	Franc	. 383	)		Weather:	Overcast, to	ot, humid	
ADWR No:	22	21383			Sampler:	VNI		
				WELL DAT	A			
Well De	epth (ft bls):	7	-11	•	Nominal	Size (inches)	Capacity Gallons per Li	
	Diameter (in):	Į	- " 5			2	0.16 0.65	
			.13'			5	1.02 1.47	
Static Wate	r Level (ft bmp):			مس اسا سیا		8	2.61	
Casing \	/olume (gal):	<u>525</u>	x3 = /	5.45		10	4.08	
Total Volun	ne Purged (gal):					g Volume = gallons	/foot * water colum	n (feet)
				_D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1100	Pump On							
1115	15	1/	165	7.59	25.8	1015		
1130	30	11	330	7.74	26.0	1017		
1145	45	11	495	7.79	25,9	1615		
1150	50	11	550	7.69	25.7	1018		
				ļ				
							Pump Off	
	FIELD DADAMET	ED CTADILIZ	ATION: Three o	ensocutive res	dings within (	).3 su pH, 2 degree		n)
			arai a come camberrancio	MPLE INFOR				
<del></del>	Ilection Point: Imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
97	0 383	1154	Poly	250mL	/	300.0	NA	<del>y</del>
Franc	0 000	1 6 1 1/	1019	2) OM C				
		N.	VATER LEVEL	MEASURE	MENT COLL	ECTION		
□ No wate	evel measuremen er level measurem er level measurem er level measurem	nent collected. nent collected.	Obstruction in v	vell.	t in wellhead			
			WELL	PURGING IN	ORMATION			
1	3 well volumes a			د ادا ما الاداد	otom stabili	a d		
1	3 well volumes bawell until field par			ind field parem	eters stabilize	a.		
	Purged 1 u			- Zield po	vameter	5,		
	Comments:							
							- · <del>- · · · · · · · · · · · · · · · · ·</del>	
	<del></del>							<del></del>

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	<u>h</u>
Task No:					Date:	7l10l13		
Weli ID:	Garner	557 3557			Weather:	Partly clo	edy, not	<u></u>
ADWR No:	558	3557			Sampler:	VNI		
				WELLDA	TA			
Well D	epth (ft bls):	20	00 1		Nomina	Casing I Size (inches)	Capacity Gallons per Li	пеаг Foot
			, 11	<del> </del>		2	0.16	1
Casing I	Diameter (in):		9			4 5	0.65 1.02	
Static Wate	er Level (ft bmp):	19'	7.87'		1	6 8	1.47 2.61	
Casing \	Volume (gal):		x3 =			10	4.08	
Total Volum	ne Purged (gal):				Casin	ig Volume = gallons	s/foot * water colum	ın (feet)
Total Volu			FIE	LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On							
	<del>                                     </del>							
•				WIO				
				TVU				
	<del> </del>			<u>                                     </u>	<u> </u>			
		1			<u> </u>		D., Off	
			TION T	<u> </u>	11 111-1-1	0.0	Pump Off	
	FIELD PARAMET	ER STABILIZA	ent i Matabalance was increase	TO THE RESIDENCE OF THE SECOND	.e.e.p	0.3 su pH, 2 degree	s C, and 100 μS/Ci	11)
			SAI	MPLE INFOR	KMATION			
Sample Co	llection Point:	·				·		
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WLC	,							
		W	ATER LEVEL	MEASURE	MENT COLL	ECTION		
Water I	evel measuremen	t collected.	<u>ja Meddinida astrologi</u>	Television (Consider the Consider tion the Consideration	pro-			**************************************
	er level measurem	ent collected. N	No access to w	ellhead/ <b>N</b> o po	rt in wellhead			
□ No wate	er level measurem	ent collected. (	Obstruction in v	vell.				
_	er level measurem	ent collected. V	Well is pumping	<b>g</b> .				
□ Other:			WEN	PURGING IN	FORMATION			
□ Purged	3 well volumes ar	nd field parame						
1	3 well volumes as			nd field parem	neters stabilize	ed.		
	well until field par							
□ Other:								
Additional	Comments:		u	120				
				<del></del>	· <del></del>			

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	h
Task No:		· · · · · · · · · · · · · · · · · · ·			Date:	7/10/13		<u>.                                    </u>
Well ID:	Garnes	635			Weather:	Partly cloc	udv, hot	/ 
ADWR No:	Garnes 58	7635			Sampler:	424	,	
				WELL DA	ГА			
Well D	, epth (ft bls):		le80°		Nomina	Casing     Size (inches)	Capacity  Gallons per Li	near Foot
			5"			2	0.16 0.65	
Casing I	Diameter (in):		2			4 5	1.02	
Static Wate	er Level (ft bmp):		20,13		6 8		1.47 2.61	
Casing	Volume (gal):	489	x3 = /	467		10	4.08	
Total Volu	me Purged (gal):				Casir	ig Volume = gallons	/foot * water colum	ın (feet)
			FIEI	LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1232	Pump On							
1252	20	il	220	7,62	24.6	480.5		
1312	40	11	440	7.84	24,9	470,7		
1332	60	1(	(060	7.91	25,4	469.5		
1352	80	11	08 <i>p</i>	7.86	25,2	469.1		
1412	100	1/	1100	7.91	24,8	469.4		
1432	120	fl	1320	7.82	25,2	469.7		
1452	140	11	1540	7.90	25.0	469.5	<del></del>	
					<u></u>			
				<u> </u>			Pump Off	
	FIELD PARAMET	ER STABILIZA	Learning Co. Co. Co. Co. Co. Co. Co. Co. Co. Co.	January March 19 Tribution	sam carrent range to the	0.3 su pH, 2 degree	s C, and 100 μS/c	n)
			SAI	MPLE INFOR	RMATION			
Sample Co	ollection Point:		· · · · · · · · · · · · · · · · · · ·		T		T -	Filtered
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)
Garn	er 635	1457	Poly	250mL	1	300,0	NA	Y
		each in the second or the Company	and the thirt is a second to the		a company on the contract of t			
		W	ATER LEVEL	_ MEASURE	MENT COL	LECTION		
1 1	level measuremen							
1	ter level measurem				rt in wellhead			
	ter level measuren							
□ No wat	ter level measurem	ient collected.	wen is bruibini	y.				
Other.			WELL	PURGING IN	FORMATION			
≱ Purgeo	d 3 well volumes a	nd field parame	eters stabilized.					
1	d 3 well volumes ba	•		ind field parem	neters stabiliz	ed.		
	d well until field par	ameters stabil	ized.					
□ Other:	<del></del>			*	<del></del>			
Additiona	il Comments:							
	······································							

Project No:	287030		_		_Client:	Freeport Coppe	er Queen Brand	ch
Task No:					Date:	9/18/17	3	
Well ID:	Goar &	anch			Weather:	Sunny	( B() 5	
ADWR No:	Goar T	6106	295		Sampler:	VNH	•	
				WELL DA	TA	Coolor	Capacity	
Weli D	epth (ft bls):	2	.50′		Nomina	l Size (inches)	Gallons per L	
Casing	Diameter (in):		7"			2 4	0.16 0.65	
_	er Level (ft bmp):	i	91,21			5 6	1.02 1.47	
	•	<u> </u>			_	8	2.61	1
Casing	Volume (gal):		x3 =		0	10 .	4.08	
Total Volu	me Purged (gal):	ANI A LINUXISINA DISKAN PSALIN		D CAMPIN	1	ng Volume = gallons	moot " water colun	ın (teet)
		Discharge	Total	LD SAMPLII I	NG DATA	Specific		
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Commo	ents
	Pump On							
		- "						
			NI					
					<u> </u>			
<u> </u>	1						Pump Off	
	FIFI D PARAMETI	FR STABILIZA	ATION: Three c	onsecutive re	dings within (	0.3 su pH, 2 degree		
				IPLE INFOR	and the second second second			
Sample Co	llection Point:							
	imple ID	Time	Container	Volume	No. of	Analysis Method	Preservative	Filtered
	ample 15	Time	Туре	Volunte	Containers	Analysis Welliou	1 ICSCIVALIVE	(y/n)
196					<u> </u>		·	
			 'ATER LEVEL	MEASLIRE	L MENT COLL	L ECTION		
Water I	evel measurement		/AVI-11:26-V-6	MEAGOIXE	WENT GOL			
1.1	er level measureme		No access to we	ellhead/No po	rt in wellhead			
□ No wate	er level measureme	ent collected. (	Obstruction in w	ell.				
l	er level measureme	ent collected. \	Well is pumping	<b>).</b>				
□ Other:			WEIL	PURGING IN	FORMATION			
☐ Purged	3 well volumes an	d field parame	terretti. Atto eta jare					
1	3 well volumes bas			nd field parem	eters stabilize	ed.		
_	well until field para	ımeters stabili	zed.					
☐ Other:								
Additional	Comments:		MLO					

oject No:	287030				Client: <u>F</u>	reeport Copper	Queen Branch	
sk No:					Date:	8-13-13		<u></u>
ell ID:	Hobern	<u> </u>		\	Veather: _	Suna		puliting
	_ ( ]( • )() /				Sampler: C	115 tooker 1	Shuma	
WR No:				WELL DAT				
		2.	~		Nominal :	Casing C Size⊮(inches)	apacity Gallons per Lin	ear Foot
Well De	epth (ft bls):	30	<u>((,)</u>		Nominary	2	0.16	
Casing D	Diameter (in):	5	7/			4 5	0.65 1.02	
Static Wate	r Level (ft bmp):	7031 A	TANA			6	1.47	
	•	122	x3 = 3 <sup>4</sup>	9 4		8	2.61 4.08	
Casing V	Volume (gal):	-177		-	Casino	Volume = gallons/	foot * water column	n (feet)
Total Volum	ne Purged (gal):	5_28	5 5151	D SAMPLIN				-
	<del>,</del>	Discharge	Total			Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	nts 
1215	Pump On							
1075	10	17.L	174	683	21.7	1927		<del> </del>
1000	20	17./.	762	1.80	25.7	1930		
333	30	17.1	228	1.85	21.0	1925		
375	<del>-   3 1/2</del> -	<del>- 1/-'/-</del>	700		<del>-                                    </del>	17~		
-	<u> </u>					_	<del></del>	
	<del>-  </del>			<u> </u>				
	<del> </del>		<u> </u>					
<del>-</del>	<del></del>		<u> </u>				Pump Off	_
	FIELD PARAMET	ER STABILIZA	ATION: Three C	onsecutive rea	idings within (	).3 su pH, 2 degree	s C, and 100 μS/cr	n)
<u> </u>	TILLET ATTUME	EI O I A I I I I I		MPLE INFOR				
Sample Co	ollection Point:		Container		No. of		Description	Filtered
S	ample ID	Time	Type	Volume	Containers	Analysis Method	Preservative	(y/n)
Hoba	<del>~</del> ()	1345	PL	250		300	Ico	<i></i>
				<u> </u>	<u> </u>	<u> </u>		
		V	VATER LEVEL	_ MEASURE	MENT COL	_ECTION		
Water	level measuremer	nt collected.	<u> </u>					
	iter level measurer				rt in wellhead			
	iter level measurer							
	iter level measurer	nent collected.	well is pumpin	g.				
	<u> </u>		WELL	PURGING IN	FORMATION			
□ Other:		and field param						
<del></del>	d 3 well volumes a	ina nela barani			neters stabiliz	ed.		
17€ Purge	ed 3 well volumes a	ased on previ	ous water level a	and tield parer				
Purge	ed 3 well volumes a ed 3 well volumes b ed well until field pa	ased on previo	ous water level a	and tieko parer	4			
Purge	ed 3 well volumes bed well until field pa	ased on previo	ous water level a	and field parer	٠			
Purge Purge Purge Other:	ed 3 well volumes bed well until field pa	ased on previo	ous water level a	and field parer				
Purge Purge Purge Other:	ed 3 well volumes bed well until field pa	ased on previo	ous water level a	and field parer				

Project <b>N</b> o:	055038				Client:	reeport Coppe	Queen Branch	) —
Task No:					Date:	7/12/13		
Well ID:	Han	ard:	312		Weather:	Sunny, hu	mid, hot	<u> </u>
ADWR No:		22131	7		Sampler:	VAH		· · · · · · · · · · · · · · · · · · ·
ADVIK NO.				WELL DA	TA .	Casing (	) anadiv	
Well D	epth (ft bls):	9.	80°	_	Nominal	Size (inches)	Galions per Lin	ear Foot
	_		5 <sup>1</sup>			2	0.16 0.65	
_	Diameter (in):		8,27			5	1.02 1.47	
Static Wate	er Level (ft bmp):			0/1		6 8	2.61	
Casing '	Volume (gal):	79,1	x3 = 2	361		10	4.08	(5-24)
Total Volu	me Purged (gal):				l	g Volume = gallons	foot * water column	ı (feet)
			FIEL	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
1225	Pump On							
1245	20	9	180	8,22	23.4	621.5		
1305	40	9	360	8,22	24.1	620,9		
1325	(00	9	540	8.24	25,7	625.4		
1345	80	વ	720	9,23	26.3	(026.0		
1405	100	9	900	8,25	26.8	624,9		
				<b></b>				
							Pump Off	
	FIELD PARAMET	ER STABILIZ	THE RESERVE TO SELECT THE PARTY OF THE PARTY OF	continuous and highest the war for him		0.3 su pH, 2 degree	s C, and 100 μS/cr	n)
			SA	MPLE INFO	RMATION			
Sample C	ollection Point:				<del></del>	<del></del>	г	Filtered
S	sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)
100	verd 312	1409	Poly	250m	1 1	30B.O	NA	<del></del>
					er i mana soom maa ga asameen ma			
□ No wa	level measuremen	t collected.	VATER LEVE	en men tenaske kreatike	Similario managari			
□ No wa	ater level measuren	nent collected.	Obstruction in	well.				
	ater level measuren	nent collected.	Well is pumpir	ıg.				
☐ Other			WELL	PURGING II	NFORMATION	ı .		
☐ Purge	ed 3 well volumes a	nd field param	eters stabilized	•				<u></u>
☐ Purge	ed 3 well volumes b	ased on previo	ous water level	and field pare	meters stabiliz	zed.		
_	ed well until field pa	rameters stabi	ilized.	_	2			
Ø Other	•	well Yo	ol, stabl	<u>e peram</u>	<u> </u>			
Addition	al Comments:							

Project No:	055038				Client:	Freeport Coppe	r Queen Branch	
Task No:					Date:	7/12/13		
Well ID:	Howa	rd NR		,	Weather:	Sunny, he	mid, hot	
ADWR No:		NR			Sampler:	VWI_		
ADVIK NO.				WELL DAT	Α			
Well Do	epth (ft bls):	2	201		Nominal	Casing (Size (inches)	Gallons per Lin	ear Foot
	·		1-11			2	0.16 0.65	
Casing I	Diameter (in):	15	7.181			5	1.02 1.47	
Static Water	r Level (ft bmp):		1110	7,		6 8	2.61	
Casing '	/olume (gal):	92	x3 = 2	76		10	4.08	(foot)
Total Volur	ne Purged (gal):					g Volume = gallons	/foot * water column	ı (leet)
			r.mata Panti id a	D SAMPLIN	IG DATA	Casaifia		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (galions)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
1135	Pump On						<u> </u>	
1145	10		1/0	7.65	21.9	1276	Orange / bro	un color
1155	20	11	220	7.53	21.7	1335	Clear	
1205	30	11	330	7.63	21.6	1387		
1215	40	11	440	7.40	51,6	17130		
					<u> </u>			
								<u></u>
							Pump Off	
	EIELD DADAME	TED STABILIZA	ATION: Three c	onsecutive rea	adings within	0.3 su pH, 2 degree	es C, and 100 μS/cr	n)
	FIELD PARAWIE			MPLE INFOR				
<u> </u>	ollection Point: ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
16. 15.	-1 MR	1220	Poly	250mL	7	300,0	MA	<u> </u>
Howa	A TOIC	104)	10.7					
No wa No wa No wa Other Purge Purge Purge Other	d 3 well volumes and 3 well volumes bed well until field pa	nt collected. ment collected. ment collected. ment collected. ment collected. and field param passed on previo	Obstruction in Well is pumpin WELL eters stabilized ous water level	vellhead/No po well. g. PURGING IN	ort in wellhead	i		
						<del></del>		

Project No:	055038				Client:	Freeport Coppe	r Queen Brancl	1
Task No:					Date:	7/11/13		
Well ID:	Keef	01			Weather:	Overcast, h	at, humin	/
ADWR No:			9744		Sampler:	VNH		
ADVIK 140.				WELL DA	ΓA			
Wall D	epth (ft bls):	91	151		Nominal	Casing (	Capacity  Gallons per Lir	near Foot
			<u> </u>			2	0.16 0.65	
Casing I	Diameter (in):		<u>e</u>			5	1.02	
Static Wate	er Level (ft bmp):	141	81'		}	6 8	1.47 2.61	
Casing '	Volume (gal):	152	x3 = 2	156_		10	4.08	
_	•				Casin	g Volume = gallons	/foot * water colum	n (feet)
lotal Volur	ne Purged (gal):		FIEI	_D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
1558	Pump On							
1608	/0	10	100	7.68	20.8	471.5		
1618	20	10	280	7.69	20.9	47502		
1628	30	10	300	7,606	21.2	473,8		
1638	40	10	400	7.67	20.7	487,2		
1648	50_	10	500	7.67	20.8	485.1		
100								
							Pump Off	
	FIELD PARAMET	ER STABILIZ	Contract the Contract of the Contract of	u in a fraid a saffartina della fillia fillia. Filo	paramentaria (China a a contra contra contra contra contra contra contra contra contra contra contra contra co	0.3 su pH, 2 degree	s C, and 100 μS/cr	n)
			SAI	MPLE INFOR	RMATION			
Sample Co	ollection Point:							
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Keet	er	1651	Poly	250mL		300,0	NA	
DUP 20	0130711	1800	Poly	250ml		320,0	NA	<u> </u>
		V	VATER LEVE	_ MEASURE	MENT COL	LECTION		
(⊠ Water	level measuremen	t collected.						
│ No wa	ter level measurem	nent collected.	No access to w	/ellhead/ <b>N</b> o po	ort in wellhead			
1	ter level measuren							
☐ No wa	ter level measuren	nent collected.	Well is pumpin	g.				
☐ Other:			waren e	PURGING IN	IEODMATION			
		- 15-14			IFUKIVIANIUN			
	d 3 well volumes a d 3 well volumes b				neters stabiliz	ed.		
1	d well until field par			2.10 1.012				
☐ Other:					· · · · · · · · · · · · · · · · · · ·			
Additiona	al Comments:							· · · · · · · · · · · · · · · · · · ·
			<del></del>	<del></del>			**	
				<del></del>				

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	h
Task No:					Date:	7/15/13		<del></del>
Well ID:	Marc	e(			Weather:	Overcoust, w	indy	
ADWR No:		NR			Sampler:	VN4		
				WELL DA	TA	Casing (	`anacity	
Well De	epth (ft bls):	~ 2	-20'		Nominal	Size (inches)	Gallons per Li	
Casing D	iameter (in):		(0)			2 4	0.16 0.65	
•			<u> </u>			5	1.02 1.47	
Static vvate	r Level (ft bmp):					8	2.61	
Casing V	/olume (gal):		x3 =		Cooin	10   g Volume = gallons/	4.08	
Total Volum	ne Purged (gal):			D OALUDI IN		y volume – gallonsi	TOOL WATER COIDIN	iii (ieely
			Total	LD SAMPLIN	NG DATA	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents
1635	Pump On							
1640	5	12,5	62.5	7.01	21,6	1728		
1645	10	12.5	125	7.02	23.1	1704		
1650	15	12,5	187,5	7.09	21.60	1627	<del></del>	
1655	20	12.5	250	7.09	21,4	1617		
				<del> </del>				
					<del> </del>		,	
				-				
				<del> </del>	-		Pump Off	
	 FIELD PARAMET	ER STABILIZ	ATION: Three o	consecutive re	adings within (	0.3 su pH, 2 degrees		m)
			100 C 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MPLE INFO	contact of year consultants de trapet			
Sample Co	llection Point:	gey r maeri fee feelgest 1996.	a turi yang ta merua memban s	terror and versions of				
<del></del>	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
, Marc	ell	1659	Poly	256ml	(	300.0	NA	y
•						sam maadaana sayat aana sanat ah		een aanstel daan en en
		V	VATER LEVE	L MEASURE	MENT COLI	LECTION		
	evel measuremen							
120	er level measuren				ort in wellhead			
	er level measuren							
_	er level measuren	nent collected.	vveii is pumpin	g.				
☐ Other:			WELL	. PURGING IN	FORMATION			
☐ Purged	3 well volumes a	nd field param	eters stabilized		i entre de la companya de la company			
☐ Purged	3 well volumes b	ased on previo	ous water level a	and field parer	neters stabiliz	ed.		
1	well until field pa	rameters stabil	lized.					
☐ Other:						,,,,,,,,,,,,,,,		
Additional	Comments:				<u> </u>			

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	<u>h</u>
Task No:					Date:	7/10/13		
Well ID:	Mc Conn.	ell 2	265		Weather:	Partly do	vdy, 90	
ADWR No:		39265			Sampler:	VIH		
ADVIX No.				WELL DA				
Moll D	eath (ft bla):	21	61		Nominal	Casing Size (inches)	Capacity Gallons per Li	near Foot
. vveii D	epth (ft bls):				110111111	2	0.16	
Casing I	Diameter (in):					<b>4</b> 5	0.65 1.02	
Static Water	er Level (ft bmp):	Use 163	.08 from	<u>1 4/18/13</u>		6	1.47 2.61	
Casing '	Volume (gal):	78	x3 =	234		8 10	4.08	
-	•	<u></u>			Casin	ig Volume = gallons	s/foot * water colum	n (feet)
Total Volur	me Purged (gal):		FIEL	D SAMPLIN	I IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1550	Pump On							
1600	10	9	90	7:04	23.2	1936	Slight sul	shur oder
1610	20	9	180	4.10	22.2	1910	Slight sulphur	odor
1620	30	9	270	7.14	22.1	1897	Slight sulphur Slight sulphur Slightsulphur	0701
1000							3	
			***					
	<del></del>							
	<u> </u>							
	<del>-</del>							
							Pump Off	
	FIELD PARAMET	ER STABILIZ	ATION: Three c	onsecutive re	adings within	0.3 su pH, 2 degree	es C, and 100 μS/ci	m)
			SAN	IPLE INFOR	RMATION			
Sample Co	ollection Point:							
	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
McCoc	nell 265	1624	Poly	250mL		300.0	NA	<u> </u>
	,,,,		(		<u> </u>	<u> </u>		
		V	VATER LEVEL	MEASURE	MENT COL	LECTION		
□ Water	level measuremen	t collected.						
□ No wa	ter level measuren	nent collected.	No access to w	ellhead/No po	rt in wellhead			
	ter level measuren				1			
□ No wa	ter level measuren	nent collected.	Well is pumping	g.				
☐ Other:			va/=11	PURGING IN	EODMATION			
		-d fold param						
	d 3 well volumes a d 3 well volumes b			ind field paren	neters stabiliz	ed.		
	d well until field pa			·				
□ Other:								
Additiona	al Comments:	Oh-	struction	@ ~1	001			
			<del></del>	-				
					<del></del>	<u> </u>		

Task No: Well ID: ADWR No:					Client:	Freeport Coppe	Queen Diane	<u> </u>
<del></del>					Date:	7/10/13		
ADWR No:	McC	onnell	459		Weather:	Partly cla	oudy ,90	
		221459	7		Sampler:	: VH'		
				WELL DAT	A			
Well Depth	(ff ble):	82	63 <sup>1</sup>		Nominal	Casing ( Size (inches)	Gallons per Lin	ear Foot
	_		<u> </u>			2 4	0.16 0.65	
Casing Diam	neter (in):	1. "	<u> </u>			5	1.02	
Static Water Le	vel (ft bmp): _	lla-	7.53'			6 8	1.47 2.61	
Casing Volu	me (gai):	709	x3 = 2	127		10	4.08	
Total Volume P	Purged (gal):				Casin	g Volume = gallons	/foot * water columi	n (feet)
			FIEL	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
1622 P	ump On							
1637	15	11	165	8.09	23.9	468.3		
1652	30	11	330	8.14	24.8	2/69,4	Faint sulphur	odor
1707	45	11	495	8.12	25.3	476.8		
1722	60	(1	(e60	8,13	25,4	481.6	•	11
1727	65	11	715	8.10	25.5	480.7	u	
				<u> </u>			Pump Off	<u> </u>
					adings within	0.3 cu nH 2 degree	' <u> </u>	n)
FIE	LD PARAMET	ER STABILIZA		VIPLE INFO		0.3 su pH, 2 degree		
			SAI	VIDEEIIVIEO	XWA TOR			
Sample Collec	ction Point:	<del></del>	Container	1	No. of	1		Filtered
Samp	le ID	Time	Container Type	Volume	Containers	Analysis Method	Preservative	(y/n)
MeConn	ell 459	1730	Poly	250mL	1	300.0	NA	<u> </u>
			7					anen best, estes tellin
		V	ATER LEVE	_ MEASURE	MENT COL	LECTION		

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	h	
Task No:					Date:	7/17/13			
Well ID:	Me	tzler			Weather:	Dunny, w	indy		
ADWR No:		35-71	891		Sampler:	VNH'	(		
				WELL DA	TA I		Congoity		
Well D	epth (ft bls):	4	351	•	Nomina	Size (inches)	Capacity Gallons per Li		
			6"			2	0.16 0.65		
	Diameter (in):	<u> </u>				5	1.02	2	
Static Wate	er Level (ft bmp):		92.43			8	1.47 2.61		
Casing	Volume (gal):		x3 =			10	4.08		
Total Volum	me Purged (gal):					ng Volume = gallons	/foot * water colum	nn (feet)	
				_D SAMPLIN	IG DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
	Pump On								
	St. Care Care Control of the St. St. St. St. St. St. St. St. St. St.								
				100					
				, ,	<u> </u>				
							Pump Off		
	FIELD PARAMET	TER STABILIZ	er et et et et a maritimate i Left	Continue a rational information	Wassinethicker, 6	0.3 su pH, 2 degree	s C, and 100 μS/c	m)	
			SAI	MPLE INFOR	RMATION				
Sample Co	ollection Point:								
s	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
- W	.0								
		<u> </u>	I VATER LEVEI	   MEASURE	MENT COL	I IECTION			
		Comment and the contract of th	VAILELLEVE	INICASUNE	WENTOOL				
1	ievel measuremer ter level measuren		No access to w	ellhead/No po	ort in wellhead	I			
	ter level measuren								
1	iter level measuren								
□ Other:	assertans and constant the selection of the		a Lagrana da Morae a estada						
				PURGING IN	FURIVIATION				
	d 3 well volumes a d 3 well volumes b				neters stabiliz	zed.			
1 -	d well until field pa			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
□ Other:								·	
Additiona	al Comments:	WLO	)						
			Bewich	re spide	15 in	hox			
				•					

Project No:	055038				Client:	Freeport Coppe	er Queen Brand	ch			
Task No:		····			Date:	7/11/13	<u> </u>				
Well ID:	Moc	216			Weather:	overast,	humid				
ADWR No:		5389	<del></del>		Sampler:	KUV					
		, , , , , , , , , , , , , , , , , , ,		WELL DA	TA						
Well D	epth (ft bls):	and the	220'		Nomina	Casing al Size (inches)	Capacity Gallons per L	inear Foot			
	•		6"		110	2	0.16	3			
Casing I	Diameter (in):		<u> </u>			<b>4</b> 5	0.65 1.02				
Static Water	er Level (ft bmp):					6	1.47	1.02 1.47 2.61 4.08 Dot * water column (feet)			
Casing '	Volume (gal):		x3 =			8 10					
	•		<b>Y</b>		Casi	ng Volume = gallons	s/foot * water colun	nn (feet)			
i otai Voiui	me Purged (gal):		FIE	LD SAMPLIN	IG DATA						
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents			
1500	Pump On	(92)	<b>(9</b> -11-11-)								
1510	10	9	90	7,60	22.7	2141.6	escono en en en el Este-Estado aj sindi-Est.	<u> </u>			
1520	20	9	180	7.64	22.4	441.9					
1530	30	9	270	7.56	22.9	442.2		· · · · ·			
1,00	30		270	71.70	1661	4,42.2					
		**		ļ							
					ļ		Pump Off				
	FIELD PARAMET	ER STABILIZA	er talle de l'est de chiefe l'est de l'est	nga ng may ang ang ang pang pang balang k		0.3 su pH, 2 degree	es C, and 100 μS/c	m)			
			SAI	VIPLE INFOR	MATION						
Sample Co	llection Point:										
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)			
Moo	re	1534	Poly	250mL	1	300.0	AU	ሃ			
			· ·								
		<b>V</b> \	ATER LEVEL	_MEASURE	MENT COL	LECTION					
□ Water I	evel measurement	collected.				W. C. C. C. C. C. C. C. C. C. C. C. C. C.					
X No wate	er level measurem	ent collected.	No access to w	ellhead/No poi	t in wellhead						
□ No wate	er level measurem	ent collected.	Obstruction in v	vell.							
□ No wate	er level measurem	ent collected.	Well is pumping	<b>g</b> .							
□ Other:	e Dichilar ide lindrin ilmidiling e se caind	ecedicaletericalnes e est 5	ng higila nahigak gizal isal								
				PURGING IN	ORMATION						
_	3 well volumes an	•				1					
	3 well volumes bawell until field para			na tiela parem	eters stadiliz	ea.					
☐ Other:	well until held para	ameters stabili	zeu.								
	Comments	····	·.								
Auditional	Comments:										
		<del></del>									
	···										



Project No:	055038				Client:	Freeport Coppe	er Queen Branc	:h		
Task No:					Date:	7/8/13				
Well ID:	Ness				Weather:	Partly clou	dy, 80's			
ADWR No:	50912	7			Sampler:	VM	•			
				WELL DA	ΓA					
Well De	epth (ft bls):	812	1		Nomina	Casing I Size (inches)	Capacity Gallons per Li	inear Foot		
		6"		1 / T 478		2 4				
Casing L	Diameter (in):		1 0	/ 1		5	1.02	Comments  Comments  Comments  Comments  Comments  Comments  Comments  Comments  Comments  Comments  Comments  Comments		
Static Wate	r Level (ft bmp):	Use 561.	.35' from x3 = 1	1/9/13		6 8				
Casing \	/olume (gal):	343	x3 = l	149		10				
Total Volun	ne Purged (gal):				Casir	ng Volume = gallons	/foot * water colum	nn (feet)		
			FIE	LD SAMPLIN	IG DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents		
1158	Pump On									
1218	20		220	7,62	27,8	536.8				
1238	40	il	440	7.82	27,5	539.6				
1258	60	11	660	7,77	27.9	539.5				
1318.	80		280	7.87	27.7	539,3				
1338	100	11	1100	7,84	27.9	539,2				
								··· ·		
					ļ	-				
							Pump Off			
	FIELD PARAMET	ER STABILIZA	ger ingeneralitet innhere kalles et i kere			0.3 su pH, 2 degree	s C, and 100 μS/c	m)		
			SAI	MPLE INFOR	RMATION					
Sample Co	llection Point:			<del></del>	T N		<del></del>	Filtored		
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative			
Nei	55	1343	Poly	250ml	1	300.0	NA	<del></del>		
			VATER LEVEL	MEASURE	MENICULI	LECTION				
	evel measuremen er level measurem		No access to w	eilhead/No no	rt in wellhead					
1 /	er level measurem				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
□ No wate	er level measurem	nent collected.	Well is pumping	g.						
☐ Other:	Mikasa Samin rendin erabelada kel		La la la la la la la la la la la la la la	DUDGING IN	-ODMATION	etnist isse se estat sulle destination (kilosen				
Purged	2 well velumes o	ad Sald navom		PURGING IN	HONWALION					
1/ 1	3 well volumes ar 3 well volumes ba			and field parem	eters stabiliz	ed.				
_	well until field par	· ·		•						
□ Other:				and the second				<del> </del>		
A 1 1.4.										
Additional	Comments:						<del></del>			
Additional	Comments:									

Project No:	055038	5038			Client:	Freeport Coppe	er Queen Branc	:h
Task No:					Date:	7/9/13		
Well ID:	Notema	<b>Λ</b>			Weather:	Sunny, hum	icl, 90's	
ADWR No:		2483			Sampler:	VNF		
				WELL DAT	ΓΑ			
Well De	epth (ft bis):	4	70"		Nominal	Size (inches)	Capacity Gallons per Li	near Foot
			5"			2	0.16 0.65	
Casing D	Diameter (in):		^	/ 1		4 5	1.02	
Static Wate	r Level (ft bmp):	Use 327	,54 from	2/25/09		6 8	1.47 2.61	
Casing \	/olume (gal):	145	x3 = -	435		10	4.08	
Total Volun	ne Purged (gal):					g Volume = gallons	/foot * water colum	nn (feet)
				LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1231	Pump On							
1241	10		110	6.49	24.6	1420		
1251	20	1/	220	6.81	24,4	1413		
1301	30	11	330	6.85	24,9	1401		
1311	40	1	440	6,89	24,3	1400		
							200	
			TION T			2 au all 2 dagrae	Pump Off	m)
	FIELD PARAME I	ER STABILIZA	SACCOSA DE LA COSTA DE DEL CONTROL DE LA CON	ONSECUTIVE FEE		0.3 su pH, 2 degree	s C, and 100 µ5/ci	<b>)</b> Halian Baraha
			SAI	VIPLE INFOR	IVIA I I ON			
Sample Co	llection Point:	T		· · ·	No. of	1		Filtered
Sa	imple ID	Time	Container Type	Volume	Containers	Analysis Method	Preservative	(y/n)
Note	man	1314	Poly	250mL	ţ	300.0	AU	<u> </u>
								e-congress and and behalfs a
		V	VATER LEVE	MEASURE	MENT COLL	ECTION		
1 a .	evel measuremen							
- 4	er level measurem er level measurem				n in wellnead			
i	er level measuren er level measuren							
□ Other:				-			- Andrews	La companya da la com
				PURGING IN	FORMATION			
1-0	3 well volumes as					t		
1	3 well volumes bawell until field par			ind field parem	ieters stadilize	εα.		
☐ Other:	well until lield pai	ametera atabii	1260.					
	Comments:							

Project No:	287030				_Client:	Freeport Copp	er Queen Bran	ch
Task No:	<del></del>				Date:	9/23/13		
Well ID:	_ NSD	-2_			Weather:	Sunay	, 60's	
ADWR No:			=- <del>-</del>		Sampler:	124	,	
				WELL DA				
Mall Da	anth (St. bla):				Nomina	Casing I Size (inches)	Capacity Gallons per L	incor East
well De	epth (ft bls):		· · · -		Nonina	2	0.10	
Casing D	Diameter (in):					4	0.69 1.00	
Static Wate	r Level (ft bmp):	GC	a , 66'			6	1.4	
Cooing \	/elumo (aal):		x3 =		]	8 10	2.6° 4.0°	
Casing	/olume (gal):				Casin	ig Volume = gallons		
Total Volun	ne Purged (gal):			БОЛИБИ		ig volume – ganom	shoot water colui	IIII (IEEL)
		-: I		LD SAMPLIN	NG DATA	0		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents
	Pump On							
							-	
			/\					
		· ·	WLO					
							Pump Off	
	I FIFI D PARAMETI	FR STABILIZA	ATION: Three co	nsecutive rea	dinas within (	l ).3 su pH, 2 degree	•	m)
				IPLE INFOR			. σ σ, ασ του μο.σ	,
Sample Col	lection Point:		01-1	•	No. of	1		Filtered
Sai	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)
W	10							
		W	ATER LEVEL	MEASURE	MENT COLL	ECTION		
Water le	vel measurement	collected.						
□ No wate	r level measureme	ent collected. I	No access to we	elihead/No po	rt in wellhead			
☐ No wate	r level measureme	ent collected. (	Obstruction in w	ell.				
	r level measureme	ent collected. \	Well is pumping					
□ Other:			weni	PURGING INI	-arwatian			
	0 1			PURGING IN				
_	3 well volumes and 3 well volumes ba	·-		nd field narem	eters stabilize	ed		
_	well until field para	•		now paren	J.C.O GLADINZC	· <del></del>		
☐ Other:								
Additional	Comments:		WLD					
								_

Project No:	287030				Client:	Freeport Coppe	r Queen Brand	h
Task No:					Date:	9/23/1	3	
Well ID:	NSD-3	, )			Weather:	Sunny,	80 <u>°</u> s	
ADWR No:					Sampler:	VIH		
				WELLDA	TA			
Well D	epth (ft bis):				Nominal	Casing (	Capacity Gallons per L	inear Foot
	•					2 4	0.16 0.65	
	Diameter (in):	1.0	5			5	1.02	2
Static Wate	er Level (ft bmp):	lC	<u>,                                     </u>			6 8	1.47 2.61	
Casing \	Volume (gal):		x3 =			10	4.08	3
Total Volur	ne Purged (gal):				Casin	ig Volume = gallons	/foot * water colun	nn (feet)
			FIEL	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On							
				10				
						,		
					<u> </u>		Pump Off	
	FIELD PARAMET	ER STABILIZA				0.3 su pH, 2 degrees	s C, and 100 μS/c	m)
			SAN	IPLE INFOR	MATION			
Sample Co	llection Point:				T N5	<u> </u>		Ciltored
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
	NLO							
					VENEZOOU			
<i>A</i>			ATER LEVEL	MEASURE	MENII COLL	Lenien		
<b>√</b> `	evel measurement er level measurem		No access to we	ellhead/No po	rt in wellhead			
l .	er level measurem							
	er level measurem	ent collected. \	Well is pumping	<b>ļ.</b>				,
☐ Other:				PURGING IN	- ADMATION			
☐ Purged	3 well volumes an	d fold parame		- BOKGINGIN				
	3 well volumes ba			nd field parem	eters stabilize	ed.		
_	well until field para							
□ Other:			,,,			<del></del> -		
Additional	Comments:		WLO				·	
	. "				<u>.</u>			

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	h
Task No:					Date:	7/12/13		<del></del>
Well ID:	NWC-	Ø2			Weather:	Sunny, 8	U's	
ADWR No:	NWC-	62944			Sampler:	1VH		
				WELL DA	Α			
Well D	epth (ft bis):	317	$Z^1$		Nominal	Casing ( Size (inches)	Gallons per Li	near Foot
	Diameter (in):	(0				2	0.16 0.65	
_	•					5	1.02 1.47	
Static Wate	er Level (ft bmp):					8	2.61	
Casing \	Volume (gal):	· · · · · · · · · · · · · · · · · · ·	x3 =		<u> </u>	10	4.08	
Total Volum	ne Purged (gal):					g Volume = gallons	root * water colum	ın (teet)
				LD SAMPLIN T	G DATA	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents
	Pump On							
1016				7.54	21.6	433.9		
1021				7.68	22.1	428.5		
1026				7.65	22.0	429.3		
		<del></del>						
				<del> </del>				
							Pump Off	
	FIELD PARAMET	ER STABIL <i>IZA</i>	ATION: Three o	consecutive rea	<u> </u>  dinas within (	).3 su pH, 2 degrees	•	m)
			anni madi marana a marana a marana	MPLE INFOR	Carlot Actions of the Minings of			
Sample Co	llection Point:					na peterana dalah mempulai sejanjanana		
<del></del>	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/π)
Nwo	-02	1030	poly	250mL	L	300.0	AN	<u>V</u>
			•				. Tarana aran makanin kalimbar yang da	
		W	ATER LEVE	_ MEASUREI	MENT COLL	ECTION		
	evel measurement							
1	er level measurem er level measurem				t in wellhead			
1 .	er level measurem							
□ Other:							og manhalloman mattet de dies ete	o i destando estadolo maio e
			The state of the s	PURGING INF	ORMATION			
1	3 well volumes ar				otom etabilize	ad		
1	3 well volumes bawell until field par-	·		mu nelu parem	eleis stabilize	su.		
☐ Other:								
Additional	Comments:		***	<u> </u>				<del></del>
	· · · · · · · · · · · · · · · · · · ·							

Project No:	055038			1,1	_Client:	Freeport Coppe	er Queen Branc	:h
Task No:					Date:	7/12/13		
Well ID:	NWC-	03CAI	>		_Weather:	Partly clove	(y, W/s	····
ADWR No:		102768			Sampler:	FWV		
				WELL DA	TA			
Well D	epth (ft bis):	ı	79'		Nomina	Size (inches)	Capacity Gallons per L	inear Foot
		·	8"			2	0.16 0.65	
1	Diameter (in):	12 /				5	1.02	2
Static Wate	er Level (ft bmp):	156	,78		_	6 8	1.47 2.61	
Casing '	Volume (gal):		x3 =			10	4.08	
Total Volur	me Purged (gal):				Casir	ng Volume = gallons	/foot * water colum	ın (feet)
			FIE	LD SAMPLIN	NG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On				l			
					100 - 5 To 170 days on a 100 -			
				Co				
			17	NLO				
								•
							Pump Off	
	FIELD PARAMET	ER STABILIZA	ATION: Three c	onsecutive re	adings within (	0.3 su pH, 2 degree	s C, and 100 μS/cr	n)
			SAN	IPLE INFOR	RMATION			
Sample Co	llection Point:							
Sa	ımpie ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
	مر							
	a conjur and memoranana substitute apar	a flaggigian , Luhwer, a, fur in Albara	samennaiana, aminos, carang	aggraagas saasa mpromaagma onnoon o			arasiosinadoren sonskranni arais 192	es autoriares terbeignes a citale
			ATER LEVEL	MEASURE	MENT COLL	LECTION		
- '	evel measurement er level measurem		No gooda to us	ollhoad/No po	et in wollhoad			
	er level measurem				it iii weiiiiead			
□ No wate	er level measurem	ent collected. \	Well is pumping	<b>]</b> .				
□ Other.	nalitasii sii karketa toi isa maratiisiin li		erice	orrania in the Phillippi de Immediali	ales distributiones entre de sais	Beredina animiyaya diriyayilga Yangayin dala		atockas esivada a xistas, an
				Purging in	FORMATION			
_	<ul><li>3 well volumes an</li><li>3 well volumes ba</li></ul>			nd field narem	etere etabiliza	ari		
_	well until field para			na nela paren	icters stabilize	<b>5u</b> .		
☐ Other:								
Additional	Comments:	WLI	2					
			<del></del>					
				<del></del>			· · · · · · · · · · · · · · · · · · ·	

Project No:	055038				Client:	Freeport Coppe	er Queen Brand	ch
Task No:					Date:	7/12/13		
Well ID:	NWC-	<b>03</b> 4			Weather:	Overcast,	70'5	
ADWR No:	55	1749			- Sampler:	VV		
				WELL DA				
Well D	epth (ft bls):		162'		Nomina	Casing I Size (inches)	Capacity Gallons per L	inear Foot
			16"		110.71.7.0	2	0.16	3
Casing I	Diameter (in):		<i>70</i>		-	4 5	0.65 1.02	
Static Wate	er Level (ft bmp):					6	1.47	
Casing '	Volume (gal):		x3 =			8 10	2.61 4.08	
Total Value	ne Purged (gal):				Casir	ng Volume = gallons	/foot * water colun	nn (feet)
TOTAL VOID	ne ruigeo (gai).		FIE	LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Commo	ents
	Pump On							
0826				6.79	23,3	941.1		
0831				6.89	23,4	928,7	•	
0836				7.16	23, 5	924.4		÷
0841				7.30	23,6	907.7		
0846				7.29	23.5	497,2		
							Pump Off	
	FIELD PARAMET	ER STABILIZA	ATION: Three of	consecutive rea	adings within (	0.3 su pH, 2 degree	s C, and 100 μS/ci	n)
			SA	MPLE INFOR	RMATION			
Sample Co	llection Point:							
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-	84	0855	Poly	250mc	l.	3.0°0 €	AU	<u> </u>
DUP200	130712	1800	Poly	250ml		300,00	NA	Y
		W	ATER LEVE	L MEASURE	MENT COLL	ECTION		
☐ No wate	evel measurement er level measurem er level measurem er level measurem	ent collected. I ent collected. (	Obstruction in v	well.				
☐ Purged	3 well volumes an	d field parame		e in the segge of entropy experience		tenguyun 400 Etnekesibili (iliyot	g up it uit große "Paleite Beginbig	
□ Purged ☑ Purged	3 well volumes ba well until field para	sed on previou	ıs water level a		eters stabilize	ed.		
Other:				<del></del>	· · · · · · · · · · · · · · · · · · ·			
Additional	Comments: *	Kush, sau	rple					
		<del></del>	•					

Project No:	287030				Client:	Freeport Coppe	r Queen Brand	ch
Task No:					Date:	8/9/13		
Well ID:	NWC-0	) <u></u>			Weather:	Sunny	70's	
ADWR No:	55184				Sampler:	VVH		
				- WELL DA	TA	Casing (	Panaoihy	
Well De	pth (ft bls):	L	1621		Nominal	Size (inches)	Gallons per L	
Casing D	iameter (in):	-	10"			2	0.16 0.65	
_	•					5 6	1.02 1.47	
	Level (ft bmp):					8	2.61	1
Casing V	olume (gal):		x3 =		Oi-	10	4.08	
Total Volum	e Purged (gal):		· ·	B CAMPUN		g Volume = gallons	Toot - water colun	nn (reet)
		Diocharga	Total	LD SAMPLIN	IGDAIA I	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comm	ents
	Pump On							
0830				7.35	23,5	881.7		
0835				7.42	23,6	885,8	<del></del>	·
0840				7.43	23,5	898.6		
					-			
				<u> </u>	!		<u> </u>	
			-			-		<u> </u>
-							<u></u>	
	<u> </u>						Pump Off	
1	I FIELD PARAMET	ER STABILIZA	ATION: Three c	onsecutive rea	dings within (	D.3 su pH, 2 degrees	<u> </u>	m)
			SAI	MPLE INFOR	RMATION			
Sample Col	lection Point:							
Sai	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC	- OH	0845	Poly	250mL	1	3 <i>000.0</i>	NA	У
			t companionamentalistississississississississississississi					
			ATTER LEVEL	_MEASURE	MENII GOLI	IEGIKOVI.		
	evel measurement r level measurem		No access to w	ellhead/No po	rt in wellhead			
	r level measurem							
1-	r level measurem	ent collected.	Well is pumping	g.				
□ Other:			Well	PURGING IN	FORMATION			
□ Purged	3 well volumes ar	nd field parame						
1	3 well volumes ba			nd field parem	eters stabilize	ed.		
	well until field par	ameters stabili	zed.					
Other:		<del></del>	· · · · · · · · · · · · · · · · · · ·					
Additional	Comments:							

Project No:	287030				Client:	Freeport Coppe	er Queen Brand	ch
Task No:					Date:	9/5/13		
Well ID:	NWC	-02/			Weather:	Sunny,	80'5	
ADWR No:		5518	3-19		Sampler:	Huu		
				WELL DAT	TA	Social Control	Oih-	
Well De	epth (ft bls):	21	62	-	Nominal	Size (inches)	Capacity Gallons per L	
Casing D	Diameter (in):		10			2	0.16 0.65	
_	•					5 6	1.02 1.47	
	r Level (ft bmp):					8	2.6	1
Casing V	/olume (gal):		x3 =			10	4.08	
Total Volum	ne Purged (gal):					ig Volume = gallons	s/foot - water colun	nn (teet)
		Disabaras	Total	LD SAMPLIN I	G DATA	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (ºC)	Conductance (µS/cm)	Comm	ents
	Pump On							
1126				7.57	24.1	934.5		
1131				7,53	24,0	902.7		
1136				7.56	23/6	893,6		
							Pump Off	
	I FIELD PARAMET	L	ATION: Three co	I onsecutive rea	dings within (	l ).3 su pH, 2 degree		m)
			SAN	IPLE INFOR	MATION			
Sample Col	lection Point:				enchianioshmaanninoon			
Sar	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-	Ø4	1142	Poly	250mL	l	300.0	NA	<u> </u>
			ATER LEVEL	MEASURE	VENII GOLI	ECHON		
	vel measurement r level measurem		No access to we	ellhead/No por	t in wellhead			
	r level measurem							
	r level measurem	ent collected. \	Nell is pumping					
☐ Other:			WELL	PURGING INF	ORMATION			
.□ Purged:	3 well volumes an	d field parame						
D Purged :	3 well volumes ba	sed on previou	ıs water level ar	nd field paremo	eters stabilize	ed.		
<i>U</i> '	well until field para	ameters stabili	zed.					
Other:	Comments:							
Auditional	COMMENTS.							

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	h
Task No:					Date:	7/12/13		
Well ID:	NWC-00				Weather:	Partly clou	dy, 80%	5
ADWR No:		75700			Sampler:	Luv Luv	/	
				- WELL DAT	ΓΑ			
Well De	epth (ft bls):	34	to'		Nominal	Casing (	Gallons per Li	
	Diameter (in):	(	<del></del>			2	0.16 0.65	
	•		<u> </u>			5	1.02 1.47	
Static Wate	r Level (ft bmp):			120.77		6 8	2.61	
Casing \	/olume (gal):		x3 =			10	4.08	
Total Volun	ne Purged (gal):				<u> </u>	g Volume = gallons	/foot * water colum	in (teet)
			and the second second second second	LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On							
0932				7.18	22.8	396.6		
0937				7.61	22,3	401.9		
0942				7.60	22,3	403.4	,	
0947				7.59	22.4	404.1		<u></u>
				-				
	ļ			<u> </u>		_		,
	ļ						Pump Off	
	FIELD DADAMET	ED STADILIZ	ATION: Three o	concocutive res	dings within (	] D.3 su pH, 2 degree		m)
	FIELD FARAIVIET	ENSTABLE		MPLE INFOR	Palaista Uniterrusia addition			
Comple Co	llection Point:						<u> Parindental Parindente i</u>	
	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC=	· Ø6	0955	Poly	250ml	(	300,0	NA	<u>Y</u>
								aramanan ar janga an masas
		V	ATER LEVE	L MEASUREI	MENT COLL	ECTION		
☐ No wate	evel measuremen er level measurem er level measurem er level measurem	ent collected. ent collected.	Obstruction in www.	well. g.	manifel specific and put there	nimoniye dhedan yaka belana y		a saga saga saga saga saga saga saga sa
				PURGING IN	-ORMATION		ikasąkialiai s	
☐ Purged Purged	3 well volumes ar 3 well volumes ba well until field par	sed on previo	us water level a		eters stabilize	ed.		
Other:	0		*****		<u> </u>			<del></del>
Additional	Comments:							

Project No:	055038				Client:	Freeport Coppe	er Queen Brand	ch
Task No:	**				Date:	2/8/13		
Well ID:	Osborn				Weather:	Partly	cloudy, 90	O's
ADWR No:	643				· Sampler:	VM	(	
				WELLDA				
Well De	epth (ft bis):	25	S8 1		Nominal	Casing Size (inches)	Capacity Gallons per L	inear Foot
	Diameter (in):	8				2 4	0.16 0.65	3
_					1	5	1.02 1.47	2
Static vvate	er Level (ft bmp):			<del></del>		8	2.61	
Casing \	Volume (gal):		x3 =			10	4.08	
Total Volun	ne Purged (gal):					g Volume = gallons	/foot * water colum	nn (feet)
				LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On							
1447				7.56	39,2	510.3		
			us					
							Pump Off	
maga danga sa Sali Sanang asang sa	FIELD PARAMET	ER STABILIZA	TION: Three o	onsecutive rea	adings within (	0.3 su pH, 2 degree	s C, and 100 μS/ci	m)
			SAI	MPLE INFOR	RMATION			
Sample Col	llection Point:							
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Osbor	'n	1500	Poly	250ml	L L	300.0	41	<u> </u>
								Parita analongan ang ang a
		W	ATER LEVEL	_ MEASURE	MENT COLL	ECTION		
	evel measurement			- III 1 (A.)				
	er level measuremer er level measureme				τ in weilnead			
	er level measurem							
□ Other:								
			WELL	PURGING IN	ORMATION			
-	3 well volumes an	· ·					** <u>.</u>	
_	3 well volumes ba well until field para			ind field parem	eters stabilize	<b>?</b> d.		
Other:		Λ.	1 /	L.,				
~ ~	Comments:	LL	ind . 9:14.	e.y			·	1
. iddisoridi		7[0	7:10				uř	
						- <del></del> -		

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	:h	
Task No:					Date:	7/17/13			
Well ID:	Palr	ner			Weather:	Dunny, a	vinely		
ADWR No:		578819	7		Sampler:	VNF			
				WELL DA	TA				
Well D	epth (ft bis):	2	220°		Nominal Size (inches)		Capacity Gallons per Li	near Foot	
	Diameter (in):		(o`'			2	0.16 0.65	- I	
_	,		<u> </u>		1	5	1.02		
Static Wate	er Level (ft bmp):					6 8	1.47 2.61	i	
Casing \	Volume (gal):	x3 =				10	4.08		
Total Volur	ne Purged (gal):				1	ig Volume = gallons	/foot * water colum	ın (feet)	
			*.,/m/mar.m.a.s.s.a.yn.s.yng	LD SAMPLIN	IG DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
1108	Pump On								
1113	5	(0	30	7.58	22.3	529.5			
1118	10	(0	60	7.66	22.2	531,3			
1123	15	6	90	7,74	22,3	531,0			
		:						<del></del>	
							·		
				ļ					
						1			
							D Off		
	FIELD DARAMET	ED STADILIZA	ATION: Throad	onsocutive rea	dings within (	 D.3 su pH, 2 degree:	Pump Off	m)	
	FIELD FARAIVIET	ER 3 IABILIZA	aproving the control of the Carlo	WPLE INFOR	and and a commence	3.9 Su pri, 2 degree	э o, and тоо долсі		
CI- C-	llastica Deisti								
	llection Point: mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Palm		1126	Poly	250ML	1	300.0	AU	<del>'''''''''''''''''''''''''''''''''''''</del>	
Lacroc	-C·	1126	1019	OWNE		20010		· · · · · · · · · · · · · · · · · · ·	
		W	L /ATER LEVEI	MEASURE	MENT COLL	ECTION			
□ Water k	evel measurement	collected.	in gagagaya be saabaya baar s	erijalija iza errebi in menengi		en des dendingen de medice de sou rent mou		::-::-::::::::::::::::::::::::::::	
No wate	er level measurem	ent collected. I	No access to w	ellhead/No por	rt in wellhead				
t	er level measurem								
□ No wate	er level measurem	ent collected. \	Well is pumping	₫.					
D Otter.			WELL	PURGING IN	ORMATION				
□ Purged	3 well volumes an	d field parame	eters stabilized.		Sensite Wildeliefer an Ameri		· Archivini air <u>s, sorti mates, sorti mate</u>	erana serena anti-arrespenta de esta	
□ Purged	3 well volumes ba	sed on previou	us water level a	nd field parem	eters stabilize	ed.			
- 72 ·	well until field para	ameters stabili	zed.						
Other:			<del>.</del> .						
Additional	Comments:								

		(	Groundw	vater Sa	ampling	g Form		
Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h
, Task No:					Date:	7/10/13		
Well ID:	Pagaga	'os				Overast, hi	mid, hot	
ADWR No:	Panagak 3	5-764	13		Sampler:	VNH	.,	
				WELL DA	ΤΑ		Öit-	
Well De	epth (ft bls):	20	<sup>უ</sup> ට '		Nominal	Size (inches)	Capacity Gallons per Li	
Caeing [	Diameter (in):	<del></del>			2 4		0.16 0.65	
		1,001)				5 6	1.02 1.47	
Static Wate	r Level (ft bmp):			7111		8	2.61	
Casing \	/olume (gal):	82	x3 = 2	.46	0 :	10	4.08	*****
Total Volun	ne Purged (gal):	anano niliastinia dila como			<u> </u>	g Volume = gallons	smoot water coluin	iii (ieei)
		Г <sub>э</sub> .		_D:SAMPLIN	IG DATA	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comments	
0925	Pump On							
0935	10	9	90	7.19	21.8	1124		
0945	20	9	180	7.25	21.4	1181		
0955	30	9	270	7.26	21.4	1218		
	ļ							
					<u> </u>		D Off	
	TIELD DADANET	ED OTABILIZ	ATION! There a		ndings within (	).3 su pH, 2 degree	Pump Off	m)
	FIELD PARAVIET	ER STABILIZ		APLE INFOF		7.5 Su pri, 2 degree	es o, and του μονεί	
Sample Co	llection Point:	rdirta iskuaju surusas	onter-comment de la ficilità de la	e de la composition della comp		and the manufacture of the second constitution o	and the second s	
<u> </u>	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Panac	iakos	0959	Poly	250mL	1	300.0	NA	<u> </u>
			de la companie santo de la companie santo de la companie santo de la companie santo de la companie santo de la			Foren		
		The control of the second	VATER LEVEL	MEASURE	MENTICULL	EOHION		
1/1/	evel measuremen er level measuren		No access to w	ellhead/No po	rt in wellhead			
1	er level measuren							
□ No wate	er level measuren	nent collected.	Well is pumping	j.				
□ Other:	ng sépanggapang atawahilings	nacharth Albahir . a si		BIIDONO E	FORMATION			
	• " '	16 11		PURGING IN	FURIVIATION			
1	3 well volumes as 3 well volumes ba			nd field paren	neters stabilize	∍d.		
_	well until field par							
☐ Other:								
Additional	Comments:	Don't	3 Forget	lo close	ball valve	<u>e,                                    </u>		



Project No:	055038				_Client:	Freeport Coppe	er Queen Brand	h
Task No:					Date:	7/17/13		
Well ID:	Parra				Weather:	Sunny, a	indy	
ADWR No:		5764	15		Sampler:	INT	,	
				WELL DA	TΑ			
Well De	epth (ft bls):	3	55"		Nomina	Size (inches)	Capacity Gallons per L	inear Foot
	Diameter (in):		6			2 4	0.16 0.65	
				7 / - / - 0	1	5	1.02	2
Static Wate	r Level (ft bmp):	use 280.		7/20/09	1	6 8	1.47 2.61	
Casing \	/olume (gal):	109	x3 = _2	327		10	4.08	3
Total Volun	ne Purged (gal):			·		ig Volume = gallons	/foot * water colum	nn (feet)
				LD SAMPLIN	NG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1346	Pump On							
1356	10	12	120	10.97	22.1	1206		
1406	20	12	240	7.14	21,9	1213		
1416	30_	12	360	7,21	21.9	1212		
					ļ			
=								
				<u> </u>	<u> </u>			
							Duma Off	
	EIELD DADAMET	ED STADILIZA	ATION: Three o	consecutive re-	adings within (	D.3 su pH, 2 degree	Pump Off	m)
	FIELD FARAINE	EN 3 IABILIZA	PROBLEM STATE OF STREET AND A	MPLE INFOR	urramona a copii seesse s	s.o su pri, z uegiee		
01- 0-	laatiaa Dalati							
<del></del>	lection Point: mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Pari	ā	1420	Polv	250mL	1	300.0	NA	Υ
			(					
		Ж	ATER LEVE	MEASURE	MENT COLL	ECTION		
□ Water le	evel measuremen	t collected.						
1	er level measurem			•	rt in wellhead			
	er level measurem er level measurem							
☐ No wate	er lever measurem	ieni collected.	wen is pumping	y.				
			WELL	PURGING IN	FORMATION			
	3 well volumes a							
1	3 well volumes ba			and field paren	neters stabilize	ed.		
☐ Purged☐ Other:	well until field par	ameters stabili	izea.					
	Comments:			***************************************				
			·					

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	<u>n</u>	
Task No:					Date:	7/18/13			
Well ID:	- Vionke	2 595			Weather:	Partly Cloudy			
ADWR No:		613395			Sampler:	VVI .			
				WELL DA	TA	Casing (	Consoity		
Well D	epth (ft bls):	3	30°		Nominal	Size (inches)	Gallons per Li	near Foot	
	Diameter (in):		Z"			2 4	0.16 0.65		
	•	الميل	6 001		1	5	1.02		
Static Wate	er Level (ft bmp):	150	6.091		_	6	1.47 2.61		
Casing '	Volume (gal):		x3 =			10	4.08		
Total Volur	ne Purged (gal):				Casin	g Volume = gallons	/foot * water colum	n (feet)	
			FIEL	D SAMPLIN	IG DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (ºC)	Specific Conductance (µS/cm)	Comme	nts	
····	Pump On								
		us te un sing PO (Epielo GEO) bir e 	overgous seer proceedings on M			micromate esta e processora (Catalo Marío el I	record and the management of the angle of the controlled the contr		
			·			1010			
					20 59	imple	<u>-,.</u>		
				rkingt	7,0				
			Not Wo	) /b //					
		rump	1/10						
		ru-							
	1						Pump Off		
	FIELD DARAMET	ED STARII 174	TION: Three co	nsecutive re	dings within (	).3 su pH, 2 degree		n)	
	FIELD FARAMET	I I I I I	and the contract of the contra	IPLE INFOR	Mear Carolinanii al				
					TWATECIX				
Sample Co	llection Point:	r <del></del>		1	1 No. 16	<del></del>		Filtered	
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)	
								<del></del>	
			· · · · · · · · · · · · · · · · · · ·						
				21.37 Table 1 27 CT 11 CD 15 Copens	compressing the basis of the same		Grand a Charletta e di Adilla di Francia.		
		W	ATER LEVEL	MEASURE	MENT COLL	ECTION			
☐ No wate ☐ No wate ☐ No wate	level measuremen er level measurem er level measurem er level measurem	t collected.  ent collected. (	No access to we	ellhead/No po	te standeliken illigeniste	ECTION			
☐ No wate ☐ No wate ☐ No wate	er level measurem er level measurem	t collected.  ent collected. (	No access to we Obstruction in w Well is pumping	ellhead/No po vell.	te standeliken illigeniste	ECTION			
No wate No wate No wate Other:	er level measurem er level measurem	t collected. ent collected. ( ent collected. ( ent collected. (	No access to we Obstruction in w Well is pumping	ellhead/No po vell.	rt in wellhead	ECTION			
No wate No wate No wate Other:	er level measurem er level measurem er level measurem	t collected. ent collected. ( ent collected. ( ent collected. )	No access to we Obstruction in we Well is pumping WELL eters stabilized.	ellhead/No po rell. PURGING IN	rt in wellhead				
No wate No wate No wate Other: Purged Purged Purged	er level measurem er level measurem er level measurem	t collected.  ent collected.  ent collected.  ent collected.  ent collected.  defined parame	No access to we Obstruction in w Well is pumping WELL sters stabilized. us water level at	ellhead/No po rell. PURGING IN	rt in wellhead				
No wate No wate No wate Other: Purged Purged Purged Other:	er level measurem er level measurem er level measurem 1 3 well volumes ar 1 3 well volumes ba 1 well until field par	t collected.  ent collected.  ent collected.  ent collected.  defined parame ased on previous	No access to we Obstruction in was Well is pumping WELL eters stabilized. us water level at zed.	ellhead/No po rell. PURGING IN	rt in wellhead FORMATION neters stabilize	ed.			
No wate No wate No wate Other: Purged Purged Purged Other:	er level measurem er level measurem er level measurem 1 3 well volumes ar 1 3 well volumes ba	t collected.  ent collected.  ent collected.  ent collected.  ent collected.  defined parame	No access to we Obstruction in was Well is pumping WELL eters stabilized. us water level at zed.	ellhead/No po rell. PURGING IN	rt in wellhead FORMATION neters stabilize				
No wate No wate No wate Other: Purged Purged Purged Other:	er level measurem er level measurem er level measurem 1 3 well volumes ar 1 3 well volumes ba 1 well until field par	t collected.  ent collected.  ent collected.  ent collected.  defined parame ased on previous	No access to we Obstruction in was Well is pumping WELL eters stabilized. us water level at zed.	ellhead/No po rell. PURGING IN	rt in wellhead FORMATION neters stabilize	ed.			

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	ch
Task No:					Date:	7/16/13		
Well ID:	Pi	onke :	517		Weather:	Overcast,	hot	
ADWR No:		2211	517		Sampler:	VUI		
				WELL DAT	TA	Casing	Capacity	
Well De	pth (ft bls):		e04'		Nominal	Size (inches)	Gallons per L	
Casing D	iameter (in):		ち"			2 4	0.16 0.65	L
	Level (ft bmp):		53,11'			5 6 8	1.02 1.47 2.61	7
Casing V	olume (gal):	460	x3 =	380_		10	4.08	1
Total Volum	e Purged (gal):				Casin	ig Volume = gallons	/foot * water colum	nn (feet)
, ou			FIEL	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1300	Pump On							
1328	20	10	200	7,02	23.4	394.8		
1340	40	10	400	7,70	23,2	391.3		
1400	60	10	600	7.86	23,2	391,1		
1420	80	ιO	800	7.78	23.2	391.5	,	
1440	100	10	1000	7.83	22.8	391,8		
1500	120	10	1200	7.92	22.9	391,9		
1520	140	10	1400	7.84	22,9	391.5		
						l	Pump Off	
	-IELD PARAMET	ER STABILIZA	The property of the company of the company	Name and American State of the		0.3 su pH, 2 degree	s C, and 100 µS/C	11)
			SAN	IPLE INFOR	IVIATION			
Sample Col	lection Point:	Г	0		No of	1	1	Filtered
Sar	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)
Pionk	e 517	1525	Poly	250ML	1	300.0	NA	Y
					JENE GOLL	 		
4.0		Programme Charles (Colored)	ATER LEVEL	MEASURE	MENT COLL	ECHON		
	vel measurement		No oceano to um	-Ubood/No por	t in wallbaad			
	r level measurem r level measurem			•	t iii weiineau			
	r level measurem							
□ Other:								
			WELL	PURGING INF	FORMATION			
[ " =	3 well volumes an							
	3 well volumes ba well until field par	•		nd field parem	eters stabilize	ea.		
☐ Purgeu	well until nelu par	ameters stabili	26u.					
L	Comments:	<del></del>		1,, 1,000	,			
				<del></del>		<u></u>	<del></del>	



Project No:	055038				Client:	Freeport Coppe	er Queen Branc	:h
Task No:					Date:	7/15/13		
Well ID:	Ramire	· 2			Weather:	Sunny, hot	, homi'd	
ADWR No:					Sampler:	VLH		
				WELLDA	TA			
Well D	epth (ft bis):	30	<u> </u>		Nominal Size (inches)		Capacity Gallons per L	
Casing	Diameter (in):	( <u></u>	 > "			2	0.16 0.65	į.
_	er Level (ft bmp):		,96 from	4/19/13		5 6	1.02 1.47	
	Volume (gal):	199	x3 = 5			8 10	2.61 4.08	
	me Purged (gal):				Casir	ng Volume = gallons	/foot * water colum	nn (feet)
			FJE	LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm) Comments		ents
1038	Pump On			E ig				
1053	15	10	150	7,36	23,2	426,2		
1108	30	io	300	7,55	23.4	423,3		
1123	45	10	450	7.54	23.3	418.7		
1138	(,0)	10	600	7.58	23.6	416.2		
							Pump Off	
	FIELD PARAMET	TER STABILIZA	ATION: Three o	consecutive rea	adings within	0.3 su pH, 2 degree	s C, and 100 μS/c	m)
			SAI	MPLE INFOF	RMATION			
Sample Co	ollection Point:							
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Raw	1154,E	1144	Poly	250ml	1	300,0	40	4
		ara kada amin'ny avon'ny avon'ny avon'ny	A September 200 - Note 10 This is				на заверно во подпостана на пример под	L
		W	ATER LEVE	_ MEASURE	MENT COLI	LECTION		
□ No wat		nent collected. I	Obstruction in v	well. Couldn'		inder past	60°	
	er level measuren	nent collected. \	Well is pumping	g.				
□ Other:			WEII	PURGING IN	FORMATION			
Purgeo	i 3 well volumes a	nd field parame						
1 \ -	3 well volumes b				neters stabilize	ed.		
□ Purgeo	l well until field pa	rameters stabili	zed.					
□ Other:								
Additiona	Comments:	<del></del>						
		· · · · · · · · · · · · · · · · · · ·						
								****

		(	Groundv	vater Sa	ampling	g Form		
Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h
Task No:					Date:	7/9/13		
Well ID:	Ray		·····		Weather:	Sunny, hum	ld, 90's	
ADWR No:	-1 WY	03772	<u> </u>	·	Sampler:	WV H	07 200	
ADVICTO.				WELL DA	<del></del>	700		
144 11 75		3 /	'O M )		NI		Capacity	noor Foot
Well De	pth (ft bls):		<u>"""</u>		Nomina	Size (inches) 2	Gallons per Li 0.16	
Casing D	riameter (in):		8			4 5	0.65 1.02	
Static Water	Level (ft bmp):	60.30'				6	1.47	
Casing V	olume (gal):	104	x3 = رڑ	312		8 10	2.61 4.08	
			Casing Volume = gallons/foot * wat		/foot * water colum	ın (feet)		
Total Volum	e Purged (gal):		FIE	LD SAMPLIN				
		Discharge	Total			Specific		
Time	Elapsed Time (min)	Rate	Discharge	pH (SU)	Temp (°C)	Conductance	Comme	ents
1600	Pump On	(gpm)	(gallons)			(µS/cm)		
1023			— »	7 60	ار رما	12/2/2		
1033	10	7	70_	7.08	21,4	1443		
(043	20	7	140	7.16	22.1	1426		
1053	30	7	210	7.17	21.7	1444		
1003	40	7	280	7.18	21,3	1440		
1108	45	1	3/5	7.18	21.4	1451		
				<u> </u>				
							Dump Off	
	TEL D DADAMET	ED STABILIZA	TION: Three o	encocutive res	dings within (	).3 su pH, 2 degree	Pump Off	m)
	-IELD PARAWET	ER STABILIZA		MPLE INFOR		7.3 su pri, z degree	s C, and 100 porci	11)
			SAI		IWATION			
Sample Col	lection Point:	1		1	T N5	T		Filtered
Sai	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Ray		1111	Poly	250ml	1	300,0	NA	·Y
		W	ATER LEVEL	MEASURE	MENT COLL	ECTION		
Water le	vel measuremen	t collected.						
i	r level measurem			•	t in wellhead			
	r level measurem							
□ No wate □ Other:	r level measurem	ient collected.	vveii is pumping	<b>3</b> .				
			WELL	PURGING IN	ORMATION			
	3 well volumes ar	nd field parame	ters stabilized.	ecumulari, erece <u>gojojene ur</u>				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1	3 well volumes ba	•		nd field parem	eters stabilize	ed.		
-	well until field par	ameters stabili	zed.					
☐ Other:			<del>-</del>					
Additional	Comments:							



Project No:	055038				Client:	Freeport Coppe	er Queen Brand	:h
Task No:					Date:	7/15/13		
Well ID:	Rogers	596			Weather:	Fartly cl	oudy, he	H
ADWR No:	3	5735	910		- Sampler:	1/1/4	(	·
				WELL DA				
Well D	epth (ft bls):	2	290'		Nominal	Casing Size (inches)	Capacity Gallons per L	inear Foot
	Diameter (in):		(e)\			2	0.16 0.65	
	-	120	7,94'		1	5	1.02	<u>)</u>
Static Wate	r Level (ft bmp):	1.0-			-	6 1.47 8 2.61		
Casing \	/olume (gal):		x3 =			10	4.08	
Total Volun	ne Purged (gal):				Casin	ng Volume = gallons	s/foot * water colun	ın (feet)
			FIEL	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On							أأجنو
				$\sim$				
			, 11	0				- 177
			3					
								·
				<u></u>			Pump Off	
	FIELD PARAMETI	ER STABILIZA	and the second of the second second	TO THE AND INCIDENCE OF STREET	n 20 Mai Prima de 2004 i 10 Januari	0.3 su pH, 2 degree	es C, and 100 μS/c	m)
			SAN	IPLE INFOR	RMATION			
Sample Co	llection Point:							
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
					1			
			 /ATER LEVEL	MEAGIIDE	MENT COLL	ECTION		
⊠ Wateri	evel measurement		/AII EN LEVIEL	WILAGUINE	WENTOOL			
	er level measureme		No access to we	ellhead/No po	rt in wellhead			
1	er level measureme							
	er level measureme	ent collected. \	Well is pumping	).				
□ Other:			AVELL	DI IRGING IN	FORMATION			
☐ Purged	3 well volumes an	d field narame						
	3 well volumes ba			nd field parem	neters stabilize	∍d.		
_	well until field para							
☐ Other:								
Additional	Comments:	W						
	··········							

Project No.   055038			(	Groundv	vater S	amplin	g Form		
Task No:    Well ID:   Rogers   SO3	Project No:	055038				Client:	Freeport Copp	er Queen Bran	ch
Well ID: Rogers 802   Weather: Sundy Jumid, 75°   ADWR No: (_4/1/803   Sampler:	Task No:					Date:	7(15/13		
ADWR No:	Well ID:	Rogers	803			· Weather:		mid. 95°	2
Well Depth (ft bis):	ADWR No:			 3				TVCCCT	
Well Depth (it bis):  Casing Diameter (in):  (a)  Casing Diameter (in):  (b)  Casing Volume (gal):  Total Volume Purged (gal):  Total Volume Purged (gal):  Time  Elapsed Time (min):  (gm)  Discharge Rate (gm)  Discharge					WELL DA				
Casing Diameter (in):	Well De	enth (ft his):		401		Nomina			inear Foot
Static Water Level (ft bmp):    Static Water Level (ft bmp):				/ "		Nonnia	2	0.1	6
Casing Volume (gal):  Total Volume Purged (gal):  Time Elapsed Time (min)  Discharge Rate (gpm)  (gm)  Pump (Oh	Casing D	iameter (in):						1	
Casing Volume (gal):  Total Volume Purged (gal):  Time Elapsed Time (min)  Discharge Rate (gpm)  (gm)  Pump (Oh	Static Water	Level (ft bmp):	: Use 139.94' from Rogers 1596					1	
Time Elapsed Time (min) Discharge Rate (min) Discharge (gpm) Discharge (gpm) Elapsed Time (min) Discharge (gpm) Discharge (gpm) Elapsed Time (gpm) Discharge (gpm) Elapsed Time (ppm) El	Casing V	olume (gal):							
Time Elapsed Time (min) Discharge Rate (ps) Discharge Rate (ps) Discharge (gallons) Pump On:  1/53 3 Pump On:  1/53 5 Pump On:  1/53 5 Pump On:  1/53 5 Pump On:  1/53 7 Pump On:  1/53 7 Pump On:  1/53 8 5 Pump On:  1/53 9 Q 27 7.10 24.3 (691.3 1539 1539 164) Pump Off  1/54 9 S 1 S 2 S 2 S 2 S 2 S 3 S 3 S 3 S 3 S 3 S 3	Total Volum	ie Puraed (aal):				Casir	ig Volume = galloni	s/foot * water colu	mn (feet)
Time   Elapsed Lime   Rate   Container   C				FIE	LD SAMPLIN	IG DATA			
1536   3   9   27   7.10   24.3   691.3     1538   5	Time	1 '	Rate	Discharge	1 '		Conductance	Comm	nents
1538   5	1533	Pump On							
1539   G   C   C   C   C   C   C   C   C   C	1536	3	9	27	7.10	24.3	691.3		
1539   G   C   C   C   C   C   C   C   C   C	1538	5 WW W	<1	N32					
1542   9   13   23.4   (990.2   1545   12   12   12   24   239   7.39   23.6   697.8	1539	6	<1	∿33	7,21	23.6	690.4		
1545   12		9	<1	~36	7,33	23,4			
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time  Container  Type  Volume  Containers  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 well until field parameters stabilized. Other:	1545	12	< <i>l</i>	~39	7.39	23.6	l .		
Sample Collection Point:    Sample ID   Time   Container   Type   Volume   No. of   Analysis Method   Preservative   Filtered (y/n)								L	
Sample Collection Point:    Sample ID   Time   Container   Type   Volume   No. of   Analysis Method   Preservative   Filtered (y/n)	l linear contract to	-IELD PARAME I	ER STABILIZA	DOGGA GIDANIA (#577-1460	n est jamásontempek		J.3 su pH, 2 degree	es C, and 100 µS/o	m)
Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative (y/n)    Cours 803   1548   Coly   250nc   1   300.00   MA   Y      WATER LEVEL MEASUREMENT COLLECTION     Water level measurement collected. No access to wellhead/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 well until field parameters stabilized.     Other:   Other:   Other:     Other:   Other:   Other:   Other:     Other:				SAN	APLE INFOR	MATION			
Water level measurement collected.    No water level measurement collected. No access to wellhead/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 well until field parameters stabilized.   Other:			Time	1	Volume		Analysis Method	Preservative	i
WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No water level measurement collected. No access to wellhead/No port in wellhead No water level measurement collected. Obstruction in well. No water level measurement collected. Well is pumping. Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized. Purged 3 well volumes based on previous water level and field parameters stabilized. Purged well until field parameters stabilized. Other:	Roger	5 803	1548	Λ.	250ml	1	300.0	NA	
<ul> <li>□ Water level measurement collected.</li> <li>□ No water level measurement collected. No access to wellhead/No port in wellhead</li> <li>☑ No water level measurement collected. Obstruction in well.</li> <li>□ No water level measurement collected. Well is pumping.</li> <li>□ Other:</li> <li>☑ WELL:PURGING:INFORMATION</li> <li>☑ Purged 3 well volumes and field parameters stabilized.</li> <li>□ Purged 3 well volumes based on previous water level and field paremeters stabilized.</li> <li>□ Purged well until field parameters stabilized.</li> <li>□ Other:</li> </ul>	0								
□ No water level measurement collected. No access to wellhead/No port in wellhead No water level measurement collected. Obstruction in well. □ No water level measurement collected. Well is pumping. □ Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized. □ Purged 3 well volumes based on previous water level and field parameters stabilized. □ Purged well until field parameters stabilized. □ Other:			M	ATER LEVEL	MEASURE	VENT COLL	ECTION		
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:	1		· · · · · · · · · · · · · · · · · ·						
□ 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:	1 /				•	t in wellhead			
United States of the Control of the	F ~								
Purged 3 well 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:	1 _								
<ul> <li>□ Purged 3 well volumes based on previous water level and field paremeters stabilized.</li> <li>□ Purged well until field parameters stabilized.</li> <li>□ Other:</li> </ul>				WELL	PURGING INF	ORMATION			
□ Purged well until field parameters stabilized. □ Other:	1'								
□ Other:			•		nd field parem	eters stabilize	ed.		
	_	veli untii field para	arneters stabili	zea.					
		Comments:		<del></del>				<del></del>	

CLEAR OF CREEK ASSOCIATES

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	:h
Task No:					Date:	7/17/13		
Well ID:	Roger	3 ,			Weather:	Overcast		
ADWR No:		2160	18		Sampler:	VIH		
				- WELL DA	TA		Cib	
Well De	epth (ft bls):	2	85'		Nomina	Size (inches)	Capacity Gallons per Li	
Casing I	Diameter (in):		6"			2 4	0.16 0.65	
Static Wate	er Level (ft bmp):	į	55.71			5 6	1.02 1.47	,
Casing \	Volume (gal):	190 x3 = 5 <sup>th</sup>		570		8 10	2.61 4.08	
Total Volun	ne Purged (gal):				Casin	ig Volume = gallons	/foot * water colum	ın (feet)
			FIE	LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (ºC)	Specific Conductance (µS/cm)	Comme	ents
0845	Pump On							
6900	15	9.5	142.5	7.54	21.3	424.5		
0915	30	9.5	285	7.58	21.8	427.6		
0930	45	9.5	427.5	7.60	22.1	427.8		
0945	60	9.5	570	7.59	22.1	427,7		·
				****				
				<u> </u>				
				1			Pump Off	
	FIELD PARAMET	FR STABILIZ	ATION: Three o	consecutive rea	dinas within (	] 0.3 su pH, 2 degree	•	n)
			minatary to select contract.	MPLE INFOR				
Sample Co	llection Point:		i bian katawa a majara	HORSE CONTRACT THE STOPPHEN		odderstaden symplicadij erdeder i strugor		
	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Roce	B.E	0949	Polv	250ml	1	300,0	NA	γ
DUPZO	0130717	1800	Poly	250m2	l	300.0	AU	y
		V	VATER LEVEL	MEASURE	MENT COLL	ECTION		
17	evel measuremen							
ŀ	er level measurem				rt in wellhead			
	er level measurem er level measurem							
☐ Other:				3.				
			WELL	PURGING INI	FORMATION			
_	3 well volumes ar							
i -	3 well volumes ba			and field parem	eters stabilize	ed.		
☐ Purged☐ Other:	well until field par	ameters stabil	izea.					
L	Comments:							··· ··· · · · · · · · · · · · · · · ·
		·		<del>-</del>			·	

Project No:	287030		•		Client:	Freeport Coppe	r Queen Branc	:h	
Task No: .					Date:	7/25/13			
Well ID:	PWE	·			Weather:	Djecast			
ADWR No:		581770			Sampler:	YNH			
				WELL DAT	A	Casina	Capacity		
Well De	epth (ft bls):	3	12'		Nominal	Casing (Size (inches)	Gallons per Li		
Casing [	Diameter (in):	7.	, u			2	0.16 0.65		
_			00,06			5	1.02 1.47		
	r Level (ft bmp):			ار ح		8	2.61		
Casing \	/olume (gal):	18	x3 = 2	54	Casing Volume = gallons/foot * water column (feet)				
Total Volun	ne Purged (gal):			D SAMPLIN		y volume – galions.		III (leet)	
	<u> </u>	Discharge	Total	IDIOAWITEIN I		Specific			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents	
1220	Pump On								
1226	6	3	18	7.23	22.3	883,3			
1232	12	3	36	7.15	21,5	888.4			
1238	18	3	54	7.13	21.4	867.3			
								<u> </u>	
	<u> </u>							·	
								<u> </u>	
		-							
				· · · · · · · · · · · · · · · · · · ·			Pump Off		
	FIELD PARAMET	ER STABILIZA	ATION: Three c	onsecutive rea	dings within C	).3 su pH, 2 degree		m)	
				APLE INFOR					
Sample Co	llection Point:							aldininininininini — — — — — — — — — — — —	
	imple ID	Time	Container Type	Volume	No. of Containers	-Analysis Method	Preservative	Filtered (y/n)	
B0	12	1243	Poly	250ml	1	3000	NA	9	
v									
			/AITER LEVEL	MEASURE	MENT COLL	IECTION			
	evel measuremen er level measuren		No popose to w	olihoad/No por	t in wellhead				
	er level measuren er level measurem				·				
	er level measurem								
□ Other:									
	O cool cool	nd fiold access		PURGING IN					
	3 well volumes as 3 well volumes ba			nd field parem	eters stabilize	ed.			
_	well until field par			•					
□ Other:					· · ·				
Additional	Comments:								
					<u>,</u>				
<del></del>									

Project No:	No: 055038				Client:	Freeport Copper Queen Branch			
Task No:	9chwartz 210865				Date:	Il15/13			
Well ID:				Weather:	Suny, hot, humid				
ADWR No:		21086	5		Sampler:	VN-1			
				WELL DA	TA				
Well De	epth (ft bls):	305'			Nominal	Casing     Size (inches)	Gallons per Linear Foot		
Casing Diameter (in):		(o"				2	0.16 0.65		
Static Water Level (ft bmp):		129.05'			5 6		1.02 1.47		
Casing Volume (gal):			x3 = 7	177		8 10	2.61 4.08		
Total Volume Purged (gal):					Casin	ising Volume = gallons/foot * water column (feet)			
Total Volum	ie i digea (gai).		FLEE	LD SAMPLIN	IG DATA				
Time Elapsed Time (min)		Discharge Total Rate Discharge (gpm) (gallons)		pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments		
1257	Pump On								
1312	15	11	165	7.43	22,2	823.5			
1327	30	l1	330	7.51	22.3	779.0			
1342	45	ll	495	7,48	22,7	771.9			
1357	(0)	11	660	7.51	22.2	769.3			
1412	75	11	825	7.49	22.1	770,2			
					<b>_</b>				
							D Off		
EIELD DADAMET		ER STABILIZATION: Three consecutive		ennocutive rec	udings within 0.3 su pH 2 dogs		Pump Off		
	FIELD PARAMET	ER STABILIZA	S 1754 Streetscopp Sales Lite	MPLE INFOR		7.3 Su pri, 2 deglee	s C, and 100 μ3/ci	· · ·	
Sample Col	lection Point:	ALEKSAS PROGRESION					Tipote pri Provincia princiali Piez di C		
Sample ID		Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Schwartz		1415	Poly	250ml	I.	300.0	NA	7	
0.710					manusca Par Table Sales		enementari ilimoa al indimentari della con		
		Minary (Author) (Spring)	ATER LEVEL	MEASURE	MENT COLL	ECTION			
1.0	evel measuremen		Na (n )	olihood/No noo	et in wallbaad				
1	er level measurem er level measurem			-	it iii weiiileau				
	er level measurem								
□ Other:		has Control of August 18	engs siting-district state (1.1.15)	Fig. 1 stat i seediskel terhaled	valiane (e picaninahinina a) j	Garandoo lalos kaantaa kalkintena kalkis		ni erinedisklistatilikaj arbib	
				PURGING IN	ORMATION				
- 4	3 well volumes ar 3 well volumes ba			nd field narem	eters stabilize	ed.			
	well until field par			ina nela paren	otoro otobiliza				
□ Other:		<del></del>							
Additional	Comments:								

Project No:	055038				_Client:	Freeport Coppe	er Queen Branc	:h
Task No:					Date:	7/10/13		
Well ID:	Stephen	5			Weather:	Ovozast, ho	1, humid	
ADWR No:		808560			- Sampler:	VIH		
				WELL DA	TA			
Well D	epth (ft bis):				Nomina	Casing Size (inches)	Capacity Gallons per Li	near Foot
						2	0.16	
Casing I	Diameter (in):				1	4 5	0.65 1.02	
Static Wate	er Level (ft bmp):	<u></u>	5,16		_	6 8	1.47 2.61	
Casing '	Volume (gal):		x3 =			10	4.08	
1					Casir	ng Volume = gallons	s/foot * water colum	ın (feet)
Tutai Vului	me Purged (gal):		FIE	D SAMPLIN	I IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On							
	saipinestoor. Siogillejää jappati lejä	and the Control of th						noda: ramin la mi mi ne rozaveno.
					-			
			. 1	6				
			Mt	0				
			<del></del>					
	1						Pump Off	
	 FIELD PARAMET	ER STABILIZA	ATION: Three c	onsecutive rea	adings within (	0.3 su pH, 2 degree	•	n)
			The state of the s	IPLE INFOF				
Sample Co	llection Point:							
<u> </u>		<u> </u>	Container	T	No. of	T		Filtered
	imple ID	Time	Type	Volume	Containers	Analysis Method	Preservative	(y/n)
101	9	,						
								The state of the s
		W	ATER LEVEL	MEASURE	MENT COLL	ECTION		
Water I	evel measuremen	t collected.						
i .	er level measurem				rt in wellhead			
	er level measurem er level measurem							
☐ Other:	er ievermeasurem	ent conected.	vveii is pamping	<b>,</b> .				
			WELL	PURGING IN	FORMATION			
☐ Purged	3 well volumes ar	nd field parame	ters stabilized.					
☐ Purged	3 well volumes ba	ased on previou	ıs water level a	nd field parem	neters stabilize	ed.		
1 _	well until field par	ameters stabili	zed.					
☐ Other:								<b>6</b> 71
Additional	Comments:		WLO		<u> </u>			
- 21	26.26/ Min	asure f.	rom ofe	ening r	ext to	drop DIDA	2 .	
	TO IT TO IT	10301E 1	10172 OFFE		<u> </u>	11701- 11120		
<u> </u>	·		Not in	drop ou	00.			

Freeport Copper Queen Branch 055038 Client: Project No: Task No: Date: Sunhelt 90'5 Well ID: Weather: ADWR No: Sampler: WELL DATA Casing Capacity Well Depth (ft bis): Nominal Size (inches) Gallons per Linear Foot 0.16 0.65 Casing Diameter (in): 4 5 1.02 6 1.47 Static Water Level (ft bmp): 8 2.61 x3 =10 4.08 Casing Volume (gal): Casing Volume = gallons/foot \* water column (feet) Total Volume Purged (gal): FIELD SAMPLING DATA Discharge Total Specific Elapsed Time pΗ Temp Comments Time Rate Discharge Conductance (min) (SU) (°C) (gpm) (gallons) (µS/cm) Pump On Pump Off FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 μS/cm) SAMPLE INFORMATION Sample Collection Point: Container No. of Filtered Analysis Method Sample ID Time Volume Preservative Containers (y/n) Type 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. Sther: We

I 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: 110611

Project No:	055038				Client:	Freeport Coppe	er Queen Brand	ch
Task No:					Date:	7/8/13		
Well ID:	Swan				Weather;	Partly clouds	1, 90'5	
ADWR No:	N	R			Sampler:	Partly cloudy VNH		
				WELL DA				
Well Do	epth (ft bls):	9	18		Nomina	Casing I Size (inches)	Capacity Gallons per L	inear Foot
			111		11000000	2	0.16	6
Casing [	Diameter (in):		1			4 5	0.65 1.02	
Static Wate	er Level (ft bmp):	42,	26'		ļ	6	1.47	
Casing \	Volume (gal):	36	x3 = /(	<b>7</b> 8		8 10	2.6° 4.08	
	-	ill			Casir	ng Volume = gallons	/foot * water colun	nn (feet)
Total Volun	ne Purged (gal):			LD SAMPLIN	l IG DATA			
	Florand Time	Discharge	Total	pН	Temp	Specific		
Time	Elapsed Time (min)	Rate	Discharge (gallons)	(SU)	(°C)	Conductance (µS/cm)	Comm	ents
111097	Pump On	(gpm)	(galions)			<sub>[</sub> (μο/cm/ <sub>[</sub>		
1407	THE REPORT OF STREET	<u> </u>	l 00	7,49	1220	12110		
1410	3 7	10	30		23,8	484.2		
1414	+	10	70	7,43	22.8	487,9		
1418	11	10	110	7.45	22.8	489.7		
<u> </u>								
								<del> </del>
	-							
							Dump Off	
	EIEI D DADAMET	ED STABILIZ	ATION: Three o	onsecutive res	dings within (	D.3 su pH, 2 degree	Pump Off	m)
	I IEED I AIVAMET	LICOTABILIE		IPLE INFOR		o:o gu pri, z degree	s e, and ree pere	
			S/AII					
Sample Col	llection Point:		l 0t-:		l Na af		.*	Tiltara d
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Suc	3.0	1421	Poly	250mL	1	300.0	NA	V
			1917	300,12			, , ,	
		V	ATER LEVEL	MEASUREI	MENT COLL	ECTION		
∕⊠ Water le	evel measurement	collected.		ne ngga angagaran a mgag				
□ No wate	er level measurem	ent collected.	No access to we	ellhead/No poi	t in weilhead			
	er level measurem							
1	er level measurem	ent collected.	Well is pumping	J.				
□ Other:			WEIT	PURGING IN	OPMATION			
Purged	3 well volumes an	d field parame	away 1,71, io istoriyaya, samaaya da da		UNIVALIEN			
1 (	3 well volumes ba			nd field parem	eters stabilize	ed.		
1	well until field para			•				
□ Other:								
Additional	Comments:					=		

Project No:	287030		o di idi.	ato. Oc		Freeport Coppe	er Queen Branc	:h
Task No:					Date:	8/9/13		
Well ID:	Thomp	500 3	341		- Weather:	Sunny . S	<del></del>	
ADWR No:		18341		<u>-</u>	Sampler:	YNH		
//BWKNO.				WELL DAT				
Weli De	pth (ft bls):	2	85'		Nominal	Casing Size (inches)	Capacity Gallons per L	inear Foot
						2 4	0.16 0.65	
_	iameter (in):	4	7			5	1.02	2
Static Water	Level (ft bmp):		86' from	· .		6 8	1.47 2.61	
Casing V	olume (gal):	234	x3 = `	702		10	4.08	
Total Volum	e Purged (gal):					g Volume = gallons	/foot * water colun	ın (feet)
				.D SAMPLIN	G DATA	1		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1039	Pump On							
1044	5	4/+	20	7.57	22,3	421.5		
1049	10	4	40	7,59	22,4	418.Ce		
1054	15	L/*	60	7,57	22.2	420.0		
							<del></del>	
	<u> </u>		<del></del>				Pump Off	
	IELD PARAMET	ER STABILIZA	ATION: Three co	onsecutive rea	dinas within (	).3 su pH, 2 degree		m)
				IPLE:INFOR				
Sample Col	lection Point:	1		T	N			Filtered
Sai	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Thom	p500	1058	Poly	250mL	1	300.0	NA	<u> </u>
					ENT COL	ECTION		
			ATER LEVEL	MEASURE	WENIL COLL	ieenien		<u> </u>
	vel measuremen r level measurem		No access to we	ellhead/No por	t in wellhead			
	r level measurem							
	r level measurem	ent collected.	Well is pumping	l <b>.</b>				
□ Other:			WEIT	PURGING INF	ORMATION			
☐ Purged	3 well volumes ar	nd field parame						
☐ Purged	3 well volumes ba	ased on previou	us water level a	nd field parem	eters stabilize	ed.		
Purged  Other:	well until field par	ameters stabili	ized>> Sho	rt purge i	owne	er segvest.		
Additional	Comments:	Pump acti	vated by	water-4	ank Flo	oa ti	<u> </u>	
	PM estim	ated ©	spinot	near u	sell. A	ctual GP	M probabi	ly higher
			1 5					<u> </u>
	Hand-	giltes.		<del> </del>				

Project No:	287030				Client:	Freeport Coppe	er Queen Bran	ch
Task No:		-			Date:	8/9/13		
Well ID:	Thomp	2500	UR		- Weather:	Sunny,	80's	
ADWR No:	10000				- Sampler:	VW		
ABOUT NO.				WELL DA				
	11 (5.11)	· · · · · · · · · · · · · · · · · · ·	-		Nomino	Casing I Size (inches)	Capacity Gallons per L	inear Foot
Well D	epth (ft bis):			<u> </u>	Nonsna	2	0.1	
Casing I	Diameter (in):				<u> </u>	4 5	0.6 1.0	
Static Water	er Level (ft bmp):	ile -	7.861			6	1.4	
Į.		, , , , , , , , , , , , , , , , , , ,	x3 =			8 10	2.6 4.0	
Casing	Volume (gal):				Capir	ng Volume = gallons		
Total Volur	ne Purged (gal):					ng volume – ganons	WIGOL WALE COLU	IIII (166t)
		I		LD SAMPLIN	NG DATA	1 0:		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ients
	Pump On							
				-				<del></del>
			<del></del> -		<del>                                     </del>			
			17					
			NV					
				<u> </u>	<u> </u>			
			<u> </u>					
		<u> </u>			<u> </u>			
					<u> </u>	<u> </u>	Pump Off	
_	FIELD PARAMET	TER STABILIZA				0.3 su pH, 2 degree	s C, and 100 μS/o	am)
			SAN	VPLE INFOR	RMATION			
Sample Co	llection Point:							
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u> </u>	سال	<u> </u>		<u> </u>	<del> </del>			
			ATER LEVEL	_MEASURE	MENT COL	LECIION		
1 ' -	level measuremen							
	er level measuren				rt in wellhead			
	er level measuren er level measuren							
Other:	ei level illeasuleii	tent conected.	vven is puriping	<b>J</b> ·				
			WELL	PURGING IN	FORMATION			
□ Purged	l 3 well volumes a	nd field parame	ters stabilized.		-			
1	I 3 well volumes b			nd field paren	neters stabiliz	æd.		
☐ Purged	i well until field par	rameters stabili	zed.					
□ Other:								
Additiona	Comments:	W	LO	in we	ell insi	de shed.		
							<u> </u>	
-			<u> </u>					

Project No:	287030				Client: Freeport Copper Queen Branch				
Task No:					Date:	8-27-13			
Well ID:		TM 2A			Weather:	Sunn	1		
ADWR No:		_ <del></del>			Sampler:	Maristonlar	L Shelman		
				WELL DA	ГА	001 117,			
Weil De	epth (ft bls):	925			Nominal	Casing I Size (inches)	Capacity Gallons per L	inear Foot	
		<u> </u>	<u>,                                      </u>			2	0.16	3	
Casing D	Piameter (in):					4 5	0.65 1.02		
Static Water	r Level (ft bmp):	<u>343</u>	84		]	6	1.47		
Casing V	/olume (gal):	37	8 x3 = 1	134		10	2. <b>6</b> 1 4.08		
Total Volum	ne Purged (gal):			,	Casin	 ig Volume = gallons	s/foot * water colun	nn (feet)	
Total Volum	ie i diged (gai).		FIEL	Ď SAMPLIN	IG DATA				
	Elapsed Time	Discharge	Total	pН	Temp	Specific			
Time	(min)	Rate (gpm)	Discharge (gallons)	(SU)	(°C)	Conductance (µS/cm)	Comme	ents	
0020	Pump On	(gpitt)	(gallolia)	<u></u>		(рогонт)	<u>                                     </u>		
083()	, unip on		10	774	111	77/			
Q \$35	<del>  5</del>	15-	37	4://	47.3	3/4			
0434	100	5.4	450	77/	171/	375 -			
1010	1 100	3/2	1.10	1.74	14.8	377			
141	166	1.86	9/0	7.78	75.0	3/7			
1150	200	1.25	712	1.80	25.2	3/9		<del>-</del>	
1200				-	1	(1)	Bloke Suction	of 818-13	
1300				7.74	25.0	4/3	Pump ON		
1315	15	<u> </u>	105	7.20	24.8	414			
1330	<u> 130 </u>		210	17.72	<u>  24.7                                   </u>	414		mplos [	
1	FIELD PARAMET	ER STÅBILIZA				0.3 su/pH, 2 degree	es C, and 100 μS/c	m)	
			SAN	IPLE INFOR	RMATION				
Sample Col	lection Point:				_				
Sa	mple ID	Time	Container	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Tm	<b>7</b> a -	1720	Type	250	Containers	Too	I.a.	(j/ii)	
1111		1)31/		1 1 C/	/	311	-F-CL	7	
		W	L /ATER LEVEL	. MEASURE	MENT COLL	ECTION			
□ Water le	evel measuremen								
□ No wate	er level measurem	ent collected.	No access to w	ellhead/No po	rt in wellhead				
No wate	r level measurem	ent collected. (	Obstruction in v	vell.					
	er level measurem	ent collected. \	Well is pumping	].					
□ Other:			)A(ELI	PURGING IN	CODMATION				
☐ Purged	3 well volumes a	nd field persons		FURGING IN	ONWATION	<u></u>			
-	3 well volumes at			nd field parem	eters stabilize	ed.			
	well until field par			no note paren					
A Other:	, 							·	
Additional	Comments:	581.1		2					
Scronol	day - A	clie abs	quelo avoi	end 400'					
		-		•		<del> </del>			
	4 ( 1 ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (								
						*			

Task No.   Date:   Supplex   Justing J	Project No:	287030				Client: <u>f</u>	reeport Coppe	r Queen Brancl	n
Well Dark  Well Depth (ft bis):  Casing Diameter (in):  Viii 2 4 0.65 5 1.02 5 1.02 6 1.47 8 2.61 9 1.02 Casing Volume (gag):  Total Volume Purged (ga):  Time Etapsed Time (min)  Purged Salions Part Linear Foot 1.02 6 1.47 8 2.61 9 4.08 Casing Volume gallons/foot *water column (feat)  FIELD SAMPLING DATA  Time Etapsed Time Discharge (gallons)  Field Dark Purged (gallons)  Field Dark Purged (gallons)  Field Sample (in):  Purged Salions Part Linear Foot 1.02 8 2.61 9 4.08 Casing Volume = gallons/foot *water column (feat)  Field Dark Purged (gallons)  Field Dark P	Task No:					Date:	8-19-13	3	<u></u>
Well Darth (it bis):  Well Depth (it bis):  Casing Capacity  Well Depth (it bis):  Casing Depth (it bis):  Y''		7101-6	<del>-</del>			Weather:	Marthy a	and	
Well Depth (it bis):  Casing Diameter (in):  Vi (1 2 0.65 5 1.02 5 1.02 Casing Volume (gal):  Casing Volume (gal):  Total Volume Purged (gal):  Time Elapsed Time (min) Discharge (gal) Discha		<del></del>	-		· <u></u>	Sampler:	avistorier 1	Sleem	_
Nominal Size (Inches)   Gallons per Linear Foot   Casing Diameter (In):   1	/LB VII ( IVO.								
Casing Volume (gal):  Casing Volume (gal):  Casing Volume (gal):  Casing Volume (gal):  Casing Volume (gal):  Total Volume Purged (gal):  Time Elapsed Time (min)  Purp On Purp On Qabs (gal)   1/3	Mali De	onth (ft ble):	$\gamma_{\ell}$	200	-	Nominal			near Foot
Static Water Level (ft bmp):  Casing Volume (gal):  Total Volume Purged (gal):  Total Volume Purged (gal):  Time Elapsed Time (min)  Purged (gal):  Time Elapsed Time (min)  Discharge Rate (gmm)  Rat				<u> </u>	<del></del>	1	2	0.16	
Casing Volume (gal):  Total Volume Purged (gal):  Time Elapsed Time (min)  Discharge Rate (gal) Discharge (gal	Casing [	Diameter (in):		7					
Casing Volume (gal):  Total Volume Purged (gal):  Time Elapsed Time (nin) Discharge Rate (gam) Total ph Conductance (gam) Pump On Pump	Static Wate	er Level (ft bmp):	[6]	<u>.3                                    </u>			_		
Casing Volume = gallons/foot * water column (feet)	Casing \	Volume (gal):	25	.( x3 = ~	75.3				
Time Elapsed Time (min) Discharge Rate (gpm) Discharge (gallons) Total Discharge (gallons) Pump On  1995	_		17	9		Casing	y Volume = gallons	/foot * water colum	n (feet)
Time Elapsed Time (min) Discharge Rate (gpm) Total Discharge (gallons) PH (SU) Co. Specific Conductance (LS/cm) Comments  ### Co	Total Volum	ne Purged (gai).	• /	FIEL	D SAMPLIN	G DATA			
Analysis Method Preservative Pr	Time		Rate	Discharge		1	Conductance	Comme	ents
Analysis Method Preservative Pr	0900	Pump On							
Analysis Method Preservative Filtered (y/n)  Water level measurement collected. No access to wellhead/No port in wellhead No water level measurement collected. Well is pumping.  Cither:  WELL PURGING INFORMATION  WELL PURGING INFORMATION  WELL PURGING INFORMATION  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized. Purged well until field parameters stabilized.  Purged well until field parameters stabilized.  Cither:	1915	1	1/5	57	7.19	201	555		
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume Type Volume Containers Analysis Method Preservative (y/n)  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No access to wellhead/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 well until field parameters stabilized. Other:	0910	10	1/2	115	3,20		533	·	
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume Type Volume Containers Analysis Method Preservative (y/n)  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No access to wellhead/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 well until field parameters stabilized. Other:	0015	16	11.5	172	321	19.9	556		
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume Type Volume Containers Analysis Method Preservative (y/n)  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No access to wellhead/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 well until field parameters stabilized. Other:	110110	13	,	<del>                                     </del>	101	,,,			
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume Containers Containers No. of Containers Containers Analysis Method Preservative (y/n)  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No access to wellhead/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 well until field parameters stabilized. Other:			-						
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume Containers Containers No. of Containers Containers Analysis Method Preservative (y/n)  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No access to wellhead/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 well until field parameters stabilized. Other:	_						*. 		
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume Containers Containers No. of Containers Containers Analysis Method Preservative (y/n)  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No access to wellhead/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 well until field parameters stabilized. Other:									
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume Type Volume Containers Analysis Method Preservative (y/n)  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No access to wellhead/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 well until field parameters stabilized. Other:		-	-			_		,	
Sample Collection Point:  Sample ID  Time  Container Type  Volume Containers Type  Volume Containers Type  Analysis Method Preservative Filtered (y/n)  MATER 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. Well is pumping.  Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized. Purged 4 well until field parameters stabilized. Other:	== -							Pump Off	
Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative Filtered (y/n)  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No access to wellhead/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.  Other:		FIELD PARAMET	ER STABILIZA	ATION: Three c	onsecutive rea	adings within (	).3 su pH, 2 degree	s C, and 100 μS/cr	n)
Sample ID  Time  Type  Volume  No. of Containers  No. of Containers  Analysis Method  Preservative  (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 well until field parameters stabilized.  Other:				SAM	MPLE INFOR	RMATION			
Sample ID Time Type Volume Containers Analysis Method Preservative (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 well until field parameters stabilized. Other:	Sample Co	Ilection Point:			· <del></del>				<u></u>
<ul> <li>□ Water level measurement collected.</li> <li>□ No water level measurement collected. No access to wellhead/No port in wellhead</li> <li>□ No water level measurement collected. Obstruction in well.</li> <li>□ No water level measurement collected. Well is pumping.</li> <li>□ Other:</li> <li>□ WELL PURGING INFORMATION</li> <li>□ Purged 3 well volumes and field parameters stabilized.</li> <li>□ Purged 3 well volumes based on previous water level and field parameters stabilized.</li> <li>□ Purged well until field parameters stabilized.</li> <li>□ Other:</li> </ul>	Sa	1. ample ID	Time		Volume		Analysis Method	Preservative	
<ul> <li>□ Water level measurement collected.</li> <li>□ No water level measurement collected. No access to wellhead/No port in wellhead</li> <li>□ No water level measurement collected. Obstruction in well.</li> <li>□ No water level measurement collected. Well is pumping.</li> <li>□ Other:</li> <li>□ WELL PURGING INFORMATION</li> <li>□ Purged 3 well volumes and field parameters stabilized.</li> <li>□ Purged 3 well volumes based on previous water level and field parameters stabilized.</li> <li>□ Purged well until field parameters stabilized.</li> <li>□ Other:</li> </ul>				<u></u>	<u> </u>				
<ul> <li>□ Water level measurement collected.</li> <li>□ No water level measurement collected. No access to wellhead/No port in wellhead</li> <li>□ No water level measurement collected. Obstruction in well.</li> <li>□ No water level measurement collected. Well is pumping.</li> <li>□ Other:</li> <li>□ WELL PURGING INFORMATION</li> <li>□ Purged 3 well volumes and field parameters stabilized.</li> <li>□ Purged 3 well volumes based on previous water level and field parameters stabilized.</li> <li>□ Purged well until field parameters stabilized.</li> <li>□ Other:</li> </ul>					<u> </u>				
<ul> <li>No water level measurement collected. No access to wellhead/No port in wellhead</li> <li>No water level measurement collected. Obstruction in well.</li> <li>No water level measurement collected. Well is pumping.</li> <li>Other:</li> <li>WELL PURGING INFORMATION</li> <li>Purged 3 well volumes and field parameters stabilized.</li> <li>Purged 3 well volumes based on previous water level and field parameters stabilized.</li> <li>Purged well until field parameters stabilized.</li> <li>Other:</li> </ul>			M	VATER LEVEL	_ MEASURE	MENT COLL	ECTION		
<ul> <li>□ No water level measurement collected. Obstruction in well.</li> <li>□ No water level measurement collected. Well is pumping.</li> <li>□ Other:</li> <li>■ WELL PURGING INFORMATION</li> <li>□ Purged 3 well volumes and field parameters stabilized.</li> <li>□ Purged 3 well volumes based on previous water level and field parameters stabilized.</li> <li>□ Purged well until field parameters stabilized.</li> <li>□ Other:</li> </ul>				N(=	ellhood/No po	et in wollboad			
□ No water level measurement collected. Well is pumping. □ Other:  WELL PURGING INFORMATION  □ Purged 3 well volumes and field parameters stabilized. □ Purged 3 well volumes based on previous water level and field parameters stabilized. □ Purged well until field parameters stabilized. □ Other:						irt in weimeau			
United Description  WELL PURGING INFORMATION  □ Purged 3 well volumes and field parameters stabilized. □ Purged 3 well volumes based on previous water level and field parameters stabilized. □ Purged well until field parameters stabilized. □ Other:									
<ul> <li>□ Purged 3 well volumes and field parameters stabilized.</li> <li>□ Purged 3 well volumes based on previous water level and field parameters stabilized.</li> <li>□ Purged well until field parameters stabilized.</li> <li>□ Other:</li> </ul>		·							
<ul> <li>□ Purged 3 well volumes based on previous water level and field paremeters stabilized.</li> <li>□ Purged well until field parameters stabilized.</li> <li>□ Other:</li> </ul>						FORMATION			
□ Purged well until field parameters stabilized. □ Other:									
Other:					and field paren	neters stabilizi	eu.		
	1	ı well until fleld pal	iailieters stabil	negu.					
Additional Commonic. 3B (		Comments:	38.2						
	Additional	Comments.	<del></del>						
									· ·
	<del></del>	<del></del>					<del></del>		

roject No:	287030				Client: _	Freeport Coppe	_	<u>h</u>
isk No:		<del></del>			Date:	8-28	<u>-13</u>	
ell ID:	TM-	-7			Weather: _	Cloudy	/	
WR No:					Sampler:	Christopher L	Sharmon	
				WELL DA	ГА	Casing (	Panacity.	
- Wall Do	nth (ft ble):	<del>.</del>			Nominal	Size (inches)	Gallons per Li	
vveii De	pth (ft bls):		<u> </u>	-		2	0.16 0.65	
Casing D	iameter (in):	<del> </del>				5	1.02	
Static Water	Level (ft bmp):					6 8	1.47 2.61	
Casing V	/olume (gal):		x3 =		<u> </u>	10	4.08	
-					Casin	g Volume = gallons	foot * water colum	ın (feet)
Total Volum	ne Purged (gal):		FIEL	D SAMPLIN	IG DATA			
	\	Discharge	Total	pH	Temp	Specific		4_
Time	Elapsed Time (min)	Rate	Discharge	(SU)	(°C)	Conductance (µS/cm)	Commo	ents ,
		(gpm)	(gallons)			(postery)	<del></del>	
<u> </u>	Pump On	<u> </u>	22	7.1	20.01	159		
1132_	12	10_	20	7.05	20.9	(2)		
1/42_	<del>                                     </del>		<i>u</i> / )	7.80	20.9	## 221		
1144_	4	-/0	40	7.30	211.7	3/66 5/1	<u></u>	<del>_</del>
1154_	<del>  `                                   </del>	<del> </del> _	1.0	7 20	21.	7 70	<del></del>	
1156	6	/0	10	7.32	21.0	370		
1206	<u> </u>		- 00	725	12/2	3/9		
1208	8	10	80_	7.36	1/1-2	16/	<u> </u>	
		ļ	<u> </u>				Pump Off	
	<u> </u>	0	ATION: There a	enapoutivo ro	adings within	0.3 su pH, 2 degree		
<u> </u>	FIELD PARAMET	TER STABILIZA		MPLE INFO		0.0 3d pr 1, 2 dog. 00		
			SAR					
Sample Co	ollection Point:				1 11	<del></del>	<del></del>	Filtered
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)
	147	1708	PI	250	1	300	Ta	X
<del></del>	1- /	<del>  '0\\\</del>	<del>                                     </del>	1			74	(
			VATER LEVEL	MEASURE	MENT COL	LECTION		
☐ Water	level measuremen	nt collected.						
□ No wa	ter level measurer	ment collected.			ort in wellhead	i		
	ter level measurer							
	ter level measure	ment collected.	Well is pumpin	g.				
☐ Other:			WELL	PURGING II	NFORMATION	1		
☐ Purge	d 3 well volumes a	and field param	eters stabilized					
D Purge	d 3 well volumes I	based on previo	ous water level a	and field pare	meters stabiliz	zed.		
	d well until field pa							
Other	<u> </u>							<u> </u>
Additiona	al Comments:	SWL N.	<u> 4</u>				<u> </u>	
	<del></del>	a)	11 1	61 -	TM	-7	<del>_</del>	<u> </u>
	MOH BY	JEON CVEO	K moto	, jou	<u> </u>			

Project No:	287030				Client:	Freeport Coppe	er Queen Brand	ch
Task No:					Date:	7/23/13		
Well ID:	TM-10	) USB 2696	P		Weather:	Overcost,	breezy	
ADWR No:	52	2696			Sampler:	V131	, 	
				- WELL DA	TA			
Well De	epth (ft bls):	29			Nomina	l Size (inches)	Capacity Gallons per L	inear Foot
Casina F	Diameter (in):	4	1 11			2	0.16 0.65	
		•	5.99'	<del> </del>		5	1.02	2
Static Wate	r Level (ft bmp):					8	1.47 2.61	
Casing V	/olume (gal):	9.1	x3 = 1/2	27.3		10	4.08	
Total Volum	ne Purged (gal):				Casir	ng Volume = gallons	s/foot * water colum	nn (feet)
				LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1518	Pump On							
1520				7.79	20,9	429.9		
1530	<u> </u>			8.07	21.2	421,4		
1540				8.15	21.3	425,8	Sediment in	water
1550				8,19	21.4	425.9	ı	**
1600				8.16	21.4	426.1		
							Pump Off	
	FIELD PARAMET	ER STABILIZA				0.3 su pH, 2 degree	s C, and 100 μS/cr	n)
			SAM	MPLE INFOR	MATION			
Sample Col	lection Point:				·			
Sar	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method		Filtered (y/n)
TM-10	USBP	1(000	Poly	250ml	1	300.0	<i>N</i> -A-	<u> </u>
			Augustus de la companya de la companya de la companya de la companya de la companya de la companya de la compa					
			ATER LEVEL	MEASURE	MENII COLL	ECHON		
☐ No wate ☐ No wate	evel measurement r level measurem r level measurem r level measurem	ent collected. I ent collected. (	Obstruction in v	vell.				
☐ Purced:	3 well volumes an	d field parame						
_	3 well volumes ba			nd field parem	eters stabilize	ed.		
	well until field para	ameters stabili	zed.					
□ Other:					<u></u>			
Additional	Comments:	Wait 1	Omir h	etween	reading	s for sec	harge.	
		& Hand.	-Filter				<del></del>	
		1 thull	rocter_					
							<del> </del>	<del> </del>

Groundwater Sampling Form Freeport Copper Queen Branch 287030 Project No: Client: Task No: Date: Well ID: Weather: ADWR No: Sampler: WELL DATA Casing Capacity Nominal Size (inches) Well Depth (ft bis): Gallons per Linear Foot 0.16 Casing Diameter (in): 0.65 5 1.02 6 1.47 Static Water Level (ft bmp): 8 2.61 x3 =Casing Volume (gal): 4.08 Casing Volume = gallons/foot \* water column (feet) Total Volume Purged (gal): FIELD SAMPLING DATA Discharge Specific Total Elapsed Time рΗ Temp Comments Time Discharge Conductance Rate (SU) (°C) (min) (µS/cm) (gallons) (gpm) Pump On Pump Off FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 μS/cm) SAMPLE INFORMATION Sample Collection Point: Container No. of Filtered Analysis Method Preservative Sample ID Volume Time Containers (y/n) Type EAT 300.0 020 750 ml 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.

 CLEAR	 ≨§§

ASSOCIATES

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

Purged well until field parameters stabilized.

Other:

Additional Comments:

287030			·c	lient: <u>F</u>	reeport Copper	Queen Branch	<u> </u>
				ate: _	8-15-13		
IM-1	/		v	Veather:	S124 n-1		
				$_{\text{Sampler:}} / \overline{\ell}$	1015 tadas /	Sherman	
	116			Nominal	Casing C	apacityGallons per Lin	ear Foot
epth (ft bls):	<del>- 115</del>			Nominal	2	0.16	
Diameter (in):	<u> </u>				4		
or Level (ff hmp):	/1.4	(2)			6	1.47	
			06		8		
Volume (gal):	3)	<u> </u>	<del>'''                                  </del>	Casino			n (feet)
ne Purged (gal):	<u> </u>		D CAMPI IN				
- <del></del>	<del></del>		DSAMPLING	JUAIA	Specific		
Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	nts
Pump On							
	21	lar	6.82	20.3	1375		
<del> </del>	5;	910	184	20.3	1375		
100	21	715	1.86		1374		
<del></del>	<del>- 4-  </del>	- <i>)!</i>	<u> </u>				
<del>- </del>	-				ŗ		
<del>                                     </del>					-		
_				<del></del>			
						Pump Off	
FIELD PARAME	ER STABILIZA	TION: Three co	onsecutive rea	dings within	0.3 su pH, 2 degree	s C, and 100 μS/c	m)
1122517115111							
U. dies Deinte							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
n 11	MUK	OI.	200	/	3000	Ter	<u> </u>
7-16	- 42075			1 - (-			<u>/</u>
		VATER LEVEL	MEASURE	MENT COL	LECTION		
r level measureme							
ater level measure	nent collected.	No access to w	ellhead/No po	rt in wellhead	l		
ater level measure	ment collected.	Obstruction in v	well.				
ater level measure	ment collected.	Well is pumping	g.				
		NA/ELL	PURGING IN	IFORMATION	 J		
r:			T ORGING III				
			<u> </u>				
ed 3 well volumes	and field param	eters stabilized.	and field parer	neters stabiliz	zed.		
ed 3 well volumes ed 3 well volumes	based on previo	eters stabilized. ous water level a	and field parer	neters stabiliz	zed.		
ed 3 well volumes	based on previo	eters stabilized. ous water level a	and field parer	neters stabiliz	zed.		
ed 3 well volumes ed 3 well volumes ed well until field p	based on previo	eters stabilized. ous water level a	and field parer	neters stabiliz	zed.		
ed 3 well volumes ed 3 well volumes ed well until field p	based on previo	eters stabilized. ous water level a	and field parer	neters stabiliz	zed.		
	epth (ft bls): Diameter (in): In Level (ft bmp): Volume (gal): Ine Purged (gal): Pump On Include (min) Pump On Include (min) Pump On Include (min) Include (	Pump On  FIELD PARAMETER STABILIZATION  FIELD PARAMETER STABIL	ppth (ft bls): Diameter (in): In Level (ft bmp): In Level (ft bmp): In Purged (gal): In Pump On In In In In In In In In In In In In In I	WELL DATA  Septh (ft bis):  Diameter (in):  Olume (gal):  Me Purged (gal):  Elapsed Time (gpm)  Pump On  Septh (ft bis):  FIELD SAMPLING  FIELD SAMPLING  FIELD SAMPLING  FIELD SAMPLING  FIELD SAMPLING  FIELD SAMPLING  FIELD SAMPLING  FIELD SAMPLING  FIELD SAMPLING  FIELD PARAMETER STABILIZATION: Three consecutive real  SAMPLE INFORT  Ollection Point:  FIELD PARAMETER STABILIZATION: Three consecutive real  SAMPLE INFORT  WATER LEVEL MEASURE  Fievel measurement collected.  Rater level measurement collected. No access to wellhead/No potater level measurement collected. Obstruction in well.	Date:  Weather: Sampler:  WELL DATA  WELL DATA  Nominal: Diameter (in):  Volume (gal):  Meather: Sampler:  Volume (gal):  Meather: Sampler:  Volume (gal):  Meather: Sampler:  Volume (gal):  Meather: Sampler:  Volume (gal):  Meather: Meat	Date: \$\frac{15-13}{\text{Veather:}}\$\text{Veather:} \text{Veather:} Vea	Date:  Weather:  Sampler:  Weather:  Sample (in):  Water Level measurement collected. No access to wellhead/No port in wellhead atter level measurement collected. Obstruction in well.

Vell ID: Weather: Sunny	Project No:	287030				Client:	Freeport Coppe	r Queen Branc	<u>h</u>
DIDNY No:  WELL DATA  Casing Capacity  Well Depth (ft bis):  Casing Diameter (in):  Yell  Casing Diameter (in):  Yell  Casing Diameter (in):  Yell  Casing Capacity  Nominal Size (inches)  Casing Capacity  Nominal Size (inches)  Casing Capacity  Nominal Size (inches)  Casing Capacity  O.16  O.65  5 1.02  5 1.02  6 1.47  8 2.61  1.47  8 2.61  Casing Volume (gal):  Total Volume Purged (gal):  Total Volume Purged (gal):  Total Purged (gal):  Total Purged (gal):  FIELD SAMPLING DATA  FIELD SA	Task No:					Date:	9-4-13	) <u> </u>	
Well Depth (it bis):  Casing Diameter (in):  Vell Depth (it bis):  Casing Diameter (in):  Vell Depth (it bis):  Casing Diameter (in):  Vell 2  0.16  0.55  1.02  5 1.02  6 1.47  8 2.61  1.02  1.02  1.02  1.03  1.04  1.08  Casing Volume (gal):  7.01  1.02  1.03  1.04  1.08  Casing Volume (gal):  7.02  1.03  1.04  1.05  1.06  1.07  Casing Volume = gallons/foot * water column (feet)  FIELD SAMPLING DATA  Time Elapsed Time (min)  Pump On (gal):  7.08	Well ID:	T	M-19A			Weather:	Sunny		
Well Depth (it bis):  Casing Diameter (in):  Casing Diameter (in):  Upt	ADWR No:					Sampler: /	Costaphy 1	3 huma	
Well Depth (It bis):  Casing Diameter (in):  Casing Diameter (in):  Static Water Level (ft bmp):  Casing Volume (gal):  Total Volume Purged (gal):  Total Volume Purged (gal):  Time Elapsed Time (gmm)  Elapsed Time (gmm)  Elapsed Time (gmm)  Second Pump On  Second Pump O					WELL DAT	A	Casing	Canacity	
Casing Diameter (in):  Static Water Level (it bmp):  Casing Volume (gal):  Total Volume Purged (gal):  Total Volume Purged (gal):  Time Elapsed Time (min)  Purp On  Sample ID  Time Container Type  Sample ID  Time Container Type  Container Type  Container Type  Water level measurement collected. No access to well-head/No port in well-head  No water level measurement collected. No access to well-head/No port in well-head  No water level measurement collected. No access to well-head/No port in well-head  No water level measurement collected. Obstruction in well.  No water level measurement collected. Obstruction in well.  Purged 3 well volumes and field parameters stabilized.  Other:  Value Casing Volume (a 1.47 and 1.47 and 1.47 and 1.47 and 1.47 and 1.47 and 1.47 and 1.47 and 1.47 and 1.40 and 1.4	Weli De	oth (ft bis):	700	0		Nominal		Gallons per Li	
Static Water Level (ft bmp):  Casing Volume (gal):  Total Volume Purged (gal):  Total Volume Purged (gal):  Time  Elapsed Time (min)  Purp On  Casing Volume (gal):  Time  Elapsed Time (min)  Purp On  Casing Volume (gal):  Time  Elapsed Time (min)  Purp On  Casing Volume (gal):  FIELD SAMPLING DATA  Specific Conductance (Lips/cm)  Comments  Comm		•	i.	1 11					
Casing Volume (gal):  Total Volume Purged (gal):  Time Elapsed Time (min)  Pump On  Rete (gar)  Sample Collection Point:  Sample ID  Time Container Type  Container Type  Container Type  Water level measurement collected.  No water level measurement collected. No water level measurement collected. Well is pumping.  Well Purged 3 well volumes and field parameters stabilized. Purged 3 well volumes based on previous water level and field parameters stabilized. Purged 3 well volumes based on previous water level and field parameters stabilized. Purged 3 well volumes based on previous water level and field parameters stabilized.  Casing Volume = gallons/floot * water column (feet)  Casing Volume = gallons/floot * water column (feet)  FIELD SAMPLING DATA  Specific  Conductance (pus/cm)  Conductance Conductance Comments  Specific  Conductance (pus/cm)  Specific  Conductance (pus/cm)  Specific  Conductance Conductance Conductance (pus/cm)  Specific  Pump Off  Field DaAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  Sample Collection Point:  Sample ID  Time Container Volume No. of Containers Analysis Method Preservative Filtered (yfn)  Water level measurement collected.  Water level measurement collected. No access to wellhead/No port in wellhead  No water level measurement collected. Well is pumping.  Other:  WELL PURGING INFORMATION	Casing D	iameter (in):		- 7 7				1.02	
Total Volume Purged (gal):  Total Volume Purged (gal):  Time Elapsed Time (min) Discharge Rate (gallons) Total Discharge (gallons)  Pump On Conductance (µS/m)  SAMPLING DATA  Time Elapsed Time (min) Discharge Rate (gallons)  Pump On Conductance (µS/m)  SAMPLE NORMATION  FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID Time Container Type Volume Containers (yin)  Water level measurement collected. No access to wellhead/No port in wellhead  No water level measurement collected. Well is pumping.  Other:  Well Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field parameters stabilized.  Other:	Static Water	Level (ft bmp):		) + / 5	.1 . 1		6 8		
Time Elapsed Time Obscharge Rate Opscharge (gallons)  FIELD SAMPLING DATA  Time Elapsed Time (min) Discharge Rate Opscharge (gallons)  Pump On  State Opscharge (gallons)  Pump Off  FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID Time Container Type Volume Opscharge (yin)  TM-IPA 0840 PL 250 M FM State Opscharge (yin)  Water level measurement collected. No access to wellhead/No port in wellhead  No water level measurement collected. Well is pumping.  Water level measurement collected. Well is pumping.  Other:  Well Purged 3 well volumes based on previous water level and field parameters stabilized.  Purged 3 well volumes based on previous water level and field parameters stabilized.  Other:	Casing V	olume (gal):	321	.7 x3 = 0	44				
Time Elapsed Time (min) Discharge Rate (gpm) Discharge (gpm) Discharge (gpm) Discharge (gpm) Discharge (gpm) Discharge (gpm) Discharge (gpm) Discharge (gpm) Discharge (gpm) Discharge (gpm) Pump On	Total Volum	e Purged (gal):	111	າຄ			g Volume = gallons	foot * water colum	ın (feet)
Time Elapsed Time (min) Rate (gpm) Discharge (gallons) (SU) Pump Conductance (LuS/cm) Conductance (LuS/cm)  Pump On  375 7.08 33.3 53.5  387 7.08 33.3 53.5  387 7.08 33.3 53.5  387 7.08 33.3 53.5  388 7.08 7.08 7.08 7.08 7.08 7.08 7.08 7.				FIEL	D SAMPLIN	G DATA			
Sample Collection Point:  Sample ID  Time  Container Type  Volume Container Type Telf# 3000  Telf#  WATER LEVEL MEASUREMENT COLLECTION  WATER LEVEL MEASUREMENT COLLECTION  WATER LEVEL MEASUREMENT COLLECTION  WATER LEVEL MEASUREMENT COLLECTION  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field parameters stabilized.  Purged well until field parameters stabilized.  Purged well until field parameters stabilized.  Purged well until field parameters stabilized.  Other:	Time		Rate	Discharge			Conductance	Comme	ents
375 7.08 3.3 5.3 5.3 5.3 5.3 5.3 5.3 5.3 5.3 5.3	PROP	Pump On							
Pump Off	0815	15	25	375	7.08	23.3	535	<u> </u>	
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample ID Time Container Type Volume No. of Containers Type Volume Type IPM 19 PM 0875	25	25	1.25	7.10_	73.7	ČŽŽ			
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume Container Container Type Volume Container Contain	07840	40	25	1000	211	23-8	53/8		
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume Container Container Type Volume Container Contain									
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume No. of Containers Containers Type Volume No. of Containers Filtered (y/n)  Filt 3000 Filt 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. Well is pumping. Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized. Purged well until field parameters stabilized. Other:									
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume Container Container Type Volume Container Contain									
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume No. of Containers Containers Type Volume No. of Containers Filtered (y/n)  FIN 3000 FOL  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 well until field parameters stabilized.  Other:									
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)  SAMPLE INFORMATION  Sample Collection Point:  Sample ID  Time Container Type Volume No. of Containers Containers Type Volume No. of Containers Filtered (y/n)  FIN 3000 FOL  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 well until field parameters stabilized.  Other:									
Sample Collection Point:  Sample ID  Time  Container Type  Volume Containers Type  Volume Containers Containers Containers Containers Containers Analysis Method Preservative Filtered (y/n)  FIN 3000  TOL  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 4 well volumes based on previous water level and field paremeters stabilized. Other:					<u> </u>		<u></u>		1
Sample ID Time Container Type Volume Containers Analysis Method Preservative Filtered (y/n)  TM-194 0840 PL 250 ml FPH 3000 TCL  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. Well is pumping. Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized. Purged well until field parameters stabilized. Other:		FIELD PARAMET	ER STABILIZA				0.3 su pH, 2 degree	s C, and 100 μS/C	m)
Sample ID  Time Type  Volume Type  Volume Containers Containers Type  Volume Containers Containers Analysis Method Preservative  Filtered (y/n)  FM-194  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 based on previous water level and field paremeters stabilized. Purged well until field parameters stabilized. Other:				SAN	MPLE INFOR	MATION			
Sample ID  Time Type Volume Type Containers Analysis Method Preservative (y/n)  TM-I9A  OR40 PL 250ml FM 3000 TCt  Water level measurement collected. No water level measurement collected. No access to wellhead/No port in wellhead No water level measurement collected. Obstruction in well. No water level measurement collected. Well is pumping. Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized. Purged 3 well volumes based on previous water level and field parameters stabilized. Other:	Sample Col	llection Point:				T 41 6	<del></del>	<del></del>	Filtered
WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected.  No water level measurement collected. No access to wellhead/No port in wellhead  No water level measurement collected. Obstruction in well.  No water level measurement collected. Well is pumping.  Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field parameters stabilized.  Purged well until field parameters stabilized.  Other:	Sa	mple ID	Time		Volume		Analysis Method	Preservative	
Water level measurement collected.  No water level measurement collected. No access to wellhead/No port in wellhead  No water level measurement collected. Obstruction in well.  No water level measurement collected. Well is pumping.  Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field parameters stabilized.  Purged well until field parameters stabilized.  Other:	×m.	194	0840	Ph	250 M	1	EPH 3000	Ice	У
Water level measurement collected. No access to wellhead/No port in wellhead  No water level measurement collected. Obstruction in well.  No water level measurement collected. Well is pumping.  Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field parameters stabilized.  Purged well until field parameters stabilized.  Other:	1 1		0.7-2						
No water level measurement collected. No access to wellhead/No port in wellhead  No water level measurement collected. Obstruction in well.  No water level measurement collected. Well is pumping.  Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field parameters stabilized.  Purged well until field parameters stabilized.  Other:			V	VATER LEVEL	MEASURE	MENT COLI	ECTION		
No water level measurement collected. Obstruction in well.  No water level measurement collected. Well is pumping.  Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field parameters stabilized.  Purged well until field parameters stabilized.  Other:						<del></del>			
No water level measurement collected. Well is pumping.  Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field parameters stabilized.  Purged well until field parameters stabilized.  Other:						rt in welihead			
Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field parameters stabilized.  Purged well until field parameters stabilized.  Other:									
WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field parameters stabilized.  Purged well until field parameters stabilized.  Other:		21 IEAEI IIIESSNISII	TOTAL CORRECTED.	Tage to bambing	<del></del>	<u></u>			
Purged 3 well volumes based on previous water level and field paremeters stabilized.  Purged well until field parameters stabilized.  Other:				WELL	PURGING IN	FORMATION		<u> </u>	
□ Purged well until field parameters stabilized. □ Other:	Purged	3 well volumes a	nd field param	eters stabilized.					
Other:					and field paren	neters stabiliz	ed.		
210112		well until field pa	rameters stabil	lizea.					
Additional Constitents.		Comments	<u>.                                    </u>	<i>u</i> 91	1,)				
	Auditional	COMMENTS.							
							<u> </u>		<del></del>
					<del></del>				

Project No:	287030				Client: Freeport Copper Queen Branch					
Task No:					Date:	<u>8-28-13</u>				
Well ID:	Th	1-42			Weather:	& Partly	Cloudy	<u></u>		
ADWR No:					Sampler:	hristoplar 1	Shermh			
				WELL DAT		,	~			
Well De	pth (ft bls):	75/	)		Nominal	Size (inches)	Capacity Gallons per Li	inear Foot		
	•	T11			<del></del>	2	0.16			
Casing D	iameter (in):					5	0.65 1.02			
Static Water	Levei (ft bmp):	217	.38			6	1.47			
Casing V	olume (gal):	33,2	x3 = 1	00		8	2.61 4.08			
_	,			- <b>V</b> .	Casin	g Volume = gallons	/foot * water colum	nn (feet)		
Total Volum	e Purged (gal):	/	FIFI	D SAMPLIN	I G DATA		<del></del>			
	<u> </u>	Discharge	Total		i	Specific				
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents		
0905	Pump On									
0915	10	6	50	6.83	21.5	1217				
0925	20	2	100	6.87	21.3	1213				
0935	30	3	150	189	21.3	1212				
()   ) )	10/		<del>-13V</del> -	<del>-601</del>				•		
			_	<u>.                                    </u>			<del></del>	·		
					<u>-</u>		···-			
	<u> </u>			<del> </del>			-	i		
					_					
				<u> </u>	1		Pump Off			
	L D BARAMET	ED STABILIZA	ATION: Three c	onsecutive rea	dings within (	).3 su pH, 2 degree		m)		
	FIELD FARAIVIL	LIVOIADILIZ		MPLE INFOR		5.5 64 p, 2 44 <u>5</u> . 66				
	<u> </u>		JAII	AII EE IIVI OI	- INCOM	<del></del> .	<u></u>			
Sample Col	lection Point:	·		<del></del>	No of	<del>-</del>		Filtered		
Sa	mple iD	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)		
Tm-	47	0935	PL	250	1	300.0	Ic,	$\chi_{-}$		
								-		
		M	VATER LEVEL	MEASURE	MENT COLL	ECTION		<u></u>		
	evel measuremen									
	er level measuren				rt in wellhead					
	er level measuren									
	er level measuren	nent collected.	Well is pumping	9.						
□ Other:			MELL	PURGING IN	EODMATION			<u>_</u>		
<b>A</b>	0				- OTAMATION		<u> </u>	<del></del> -		
	3 well volumes a 3 well volumes b				natars stahiliz	ed				
_	well until field pa			ma neia paieli	IULUIU GLADIIIZI	<del></del>				
☐ Purged ☐ Other:	wen unun neru pa	iumotoro stabil								
	Comments:	27%	<del></del>							
Additional	Johnnetto.	7~~	<u> </u>	<del></del>						
		·								
							<del>"</del>			
							<u>.</u>			

Freeport Copper Queen Branch 055038 Client: Project No: Task No: Date: -1ly Cloudy Well ID: Weather: ADWR No: Sampler: WELL DATA Casing Capacity Nominal Size (inches) Gallons per Linear Foot Well Depth (ft bis): 0.16 4 0.65 Casing Diameter (in): 5 1.02 127,38 Static Water Level (ft bmp): 6 1.47 8 2.61 556 1(068 x3 = 10 Casing Volume (gal): 4.08 Casing Volume = gallons/foot \* water column (feet) Total Volume Purged (gal): FIELD SAMPLING DATA Specific Discharge Total Elapsed Time рΗ Temp Time Comments Rate Discharge Conductance (SU) (min) (°C) (gallons) (µS/cm) (gpm) Pump On 10 20,9 20 Pump Off FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 μS/cm) SAMPLE INFORMATION Sample Collection Point: No. of Filtered Container Sample ID Analysis Method Preservative Time Volume Туре Containers (y/n) 286 300<u>, O</u> 1550 250mL 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. WELL PURGING INFORMATION Purged 3 well volumes and field parameters stabilized. Purged 3 well volumes based on previous water level and field paremeters stabilized.  $\ \square$  Purged well until field parameters stabilized. ☐ Other: Additional Comments:

Project No:	055038				_Client:	Freeport Coppe	er Queen Brand	:h
Task No:					_Date:	7/18/13		
Well ID:	TVI	713			Weather:	Partly clo	udy	
ADWR No:	2	5677	/3		- Sampler:	1) JH	· · · · · /	
				WELL DA	TA			
Well D	epth (ft bls):	2	<u>2</u> 00¹		Nomina	Casing I Size (inches)	Capacity Gallons per L	inear Foot
	•	<u>:</u>	8"			2	0.16 0.65	5
Casing	Diameter (in):					4 5	1.02	
Static Wate	er Level (ft bmp):	13	1.72'	<del></del>	_	6 8	1.47 2.61	
Casing	Volume (gal):		x3 =			10	4.08	
Total Volui	me Purged (gal):				Casir	ng Volume = gallons	/foot * water colum	ın (feet)
			FIE	D SAMPLIN	NG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On							
		and a separate of the second						
,			- · · · -					
			WLC					
						44		
						_		
							Pump Off	
	FIELD PARAMETI	ER STABILIZ	ATION: Three c	onsecutive re	adings within (	0.3 su pH, 2 degree	s C, and 100 μS/ci	n)
			SAN	IPLE INFOR	RMATION			
Sample Co	llection Point:							
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
	NEO							
	Vite state the contract of the U.S.	Side otings a viide		Militaring the management of				
		California (1997)	ATER LEVEL	MEASURE	MENTCOLL	ECHON		
~	evel measurement							
	er level measureme er level measureme			•	rt in wellhead			
	er level measureme er level measureme							
☐ Other:				•				
			WELL	Purging in	FORMATION			
I -	3 well volumes an							
1	3 well volumes ba			nd field paren	neters stabilize	ed.		
☐ Purged☐ ☐ Other:	well until field para	imeters stabil	izea.					
	Comments:		l J	160				
, additional	John Horito.							
	<del></del>							<del></del>

Project No:	055038				Client:	Freeport Coppe		:h	
Task No:					Date: 7/18/13				
Well ID:	TVI	875			Weather:	Partly cloudy			
ADWR No:		5688	75		Sampler:	VIJ			
				WELL DA	TA				
Well D	epth (ft bls):	3	301		Nomina	Casing   Casing	Capacity Gallons per L	inear Foot	
i	•		8"			2	0.16		
Casing I	Diameter (in):					4 5	0.65 1.02		
Static Wate	er Level (ft bmp):					6	1.47 2.61		
Casing \	Volume (gal):		x3 =			8	4.08	1	
	ne Purged (gal):				Casin	ng Volume = gallons	/foot * water colum	nn (feet)	
Total Volui	ne r diged (gai).		FIE	LD SAMPLIN	IG DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
1621	Pump On								
1026				7.21	21.6	969.7			
1631			*	7.29	21.5	1005			
1636				7.31	21.4	9942			
			-						
							Pump Off		
	FIELD PARAMET	ER STABILIZA	TION: Three o	consecutive rea	adings within (	0.3 su pH, 2 degree	s C, and 100 μS/ci	m)	
			SAI	MPLE INFOR	RMATION				
Sample Co	llection Point:								
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
TVI	875	1640	Poly	250ml	l	300,0	MA	χ	
			(						
		W	ATER LEVE	L MEASUREI	MENT COLL	ECTION			
□ Water I	evel measurement	collected.							
. "	er level measurem				t in wellhead				
	er level measurem								
i	er level measurem	ent collected. V	Vell is pumping	g.					
□ Other:			WELL	PURGING INI	ORMATION				
□ Purged	3 well volumes an	d field paramet	Officialists July 1906	The straining of the strain for	di ka tida madalah kalamitat	elille telletationen ( epening killerankorti	estadina edita settem in factorie cara.		
_	3 well volumes ba				eters stabilize	ed.			
र्व्य Purged	well until field para	ameters stabiliz	ed.						
☐ Other:							<u> </u>		
Additional	Comments:						<del></del>		
	·								

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	:h
Task No:					Date:	7/19/13		
Well ID:	Weed				Weather:	Overcoust,	drizzling	
ADWR No:		144535			Sampler:	JUN	8	
				WELL DA	TA			
Well Do	epth (ft bis):	3	70'		Nominal	Casing Size (inches)	Capacity Gallons per Li	near Foot
	Diameter (in):		( <sub>6</sub> '			2	0.16 0.65	
_			<u> </u>		5		1.02	
Static Wate	r Level (ft bmp):	<del></del>	· ·			6 8	1.47 2.61	
Casing \	/olume (gal):		x3 =			10	4.08	
Total Volun	ne Purged (gal):	-		<del></del>		g Volume = gallons	/foot * water colum	in (feet)
				LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
0616	Pump On							
0819	3	2.5	7.5	7.54	21.1	387.4	· · · · · · · · · · · · · · · · · · ·	
0822	Ce	215	15	7.60	21,2	386.1		
0825	9	2.5	22.5	7.63	21.3	386.6		
	<u> </u>							
							Pump Off	
	FIELD PARAMET	FR STABILIZ	ATION: Three o	consecutive rea	dinas within (	] 0.3 su pH, 2 degree		m)
			. Same and the Contraction of th	MPLE INFOR	e de la deserva del Colonia.			
Sample Co	llection Point:				s ekikirku eleti			Badigia binggista A
	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Weed		0829	Poly	250ml	1	300. O	AU	Y
								i mar mu gupa A. agair dail
		V	ATER LEVEL	L MEASURE	MENT COLL	ECTION		
1	evel measuremen							
1	er level measurem				rt in wellhead	•		
1	er level measurem er level measurem							
☐ Other:		on concolor.		<b>5</b> .				
			WELL	PURGING IN	FORMATION			
1	3 well volumes ar							
27	3 well volumes bawell until field par	' <u>=</u> '		and field parem	ieters stabilize	ed.		
Other:	wen until lielu pai	ameters stabil	12 <b>c</b> u.					
	Comments:	<del></del>						
					-			
						<u> </u>		
	<u></u> .				··	·····	<del></del>	



Project No:	055038	·			Client:	Freeport Coppe	er Queen Branc	:h	
Task No:					Date:	7/18/13			
Well ID:	Weis 120	ph BC	)2		Weather:	Bunny, win	dy		
ADWR No:		41802	2		Sampler:	VIJ	·		
				WELL DAT	ΓΑ	0	Canadin		
Well De	epth (ft bls):		200'		Nominal	Size (inches)	Capacity Gallons per L	inear Foot	
	iameter (in):		1."			2	0.16 0.65	l l	
	•	150	7.24'			5	1.02	·	
Static Wate	r Level (ft bmp):	17/0		- 101		.6 8	1.47 2.61		
Casing \	/olume (gal):	73	x3 = 2	219		10	4.08	3	
Total Volun	ne Purged (gal):					g Volume = gallons	s/foot * water colun	nn (feet)	
			FIEL	D SAMPLIN	G DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (ºC)	Specific Conductance (µS/cm)	Comme	ents	
1022	Pump On								
1037	15	5	75	7.69	21,3	245 <i>.5</i>	Cloudy, fain	fly brown	
1052	30	5	150	7,73	21.2	343.4	Less cloudy for	infly brown	
1107	45	5	225	7.63	21,3	475.6	f.,	1/	
1122	(eO	5	300	7.69	21,4	Ce61.2	le.	9	
1137	75	5	375	7.58	21,4	793,5	11	"	
1152	90	5	450	7.49	21.3	879.2	u	1/	
1207	165	5	525	7,18	21,4	979,9	Clear		
1222	120	5	600	7.37	21,4	1045	Clea		
1237	135	5	675	7.37	21.3	1096	Clear		
1252	e militare e a danse VIV. de Miser.	Countries to 1 th and 1 th states and	er ertale til steder lige i ertst ett i 🕶 👍 👯	Programme de Letter	The School of the State	0.3 su pH, 2 degree	es C, and 100 μS/c	m)	
1207VA	750 gd		SAN	IPLE INFOR	RMATION	7,45/2	1.3 / 1131		
Sample Co	llection Point:								
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Weisk	opf 802	1300	Poly	250mL	1	300,0	NA	γ	
	U -		(			n distribution de la companya de la companya de la companya de la companya de la companya de la companya de la			
		A CHARLEST TO THE PARTY	VATER LEVEL	MEASURE	MENT COLL	ECTION			
1 ' \	evel measurement		NI 4	- 11h d /h l					
1	er level measurem er level measurem				it iii weiiilead				
1	er level measurem								
□ Other:							endanos i lais ar a santreportes se	normaniana Palancoloni	
			SCREENSTERN A. DECEMENT OF	PURGING IN	FORMATION				
	3 well volumes ar					.i			
	3 well volumes ba			na tiela parem	eters stadilize	ea.			
☐ Other:	well ultil lield par	ameters stabil	126u.						
<del>1</del>	Comments:		<del></del>						
								·····	

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	:h	
Task No:		0			Date:	7/18/13			
Well ID:	Weiskop	f 89°	7		Weather:	Sunny, wi	ndy		
ADWR No:		2218	97	The Residence of the second	Sampler:	UN4			
				WELL DA	IA	Casing	Capacity		
Well De	epth (ft bls):	10	<i>030</i>	·	Nomina	Size (inches)	Gallons per L		
Casing D	Diameter (in):	<u> </u>			2 4 5		0.16 0.65 1.02	;	
Static Wate	r Level (ft bmp):	15	0.15			6	1.47	,	
Casing \	/olume (gal):	897 x3 = 2691				8 10	2.61 4.08	<u> </u>	
Total Volum	ne Purged (gal):				Casin	ig Volume = gallons	/foot * water colum	in (feet)	
			FJE	LD SAMPLIN	IG DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
1136	Pump On								
1156	20	12.5	250	7.81	23.0	391,5			
1216	40	12,5	500	7.84	24.1	393,8			
1236	60	12.5	750	7.86	24.0	393.7			
1256	80	12,5	1000	7,84	24.3	393.2			
1									
						·	Pump Off		
	FIELD PARAMET	ER STABILIZA	ATION: Three o	consecutive rea	dings within (	0.3 su pH, 2 degree	s C, and 100 μS/ci	n)	
			SAI	MPLE INFOR	MATION				
Sample Col	lection Point:								
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Weisko	of 897	1309	Poly	250mL	1	300.0	NA	<u>Y</u>	
		remarks 15.0 ft Franciscon	C. Posterio Tili Appril a sono	nga ganeraj jajo (apakhiji ka) aka			S Papuramanaa aasaa Cusarii Aasa	arian riika namma aaanga saag	
		M	ATER LEVE	MEASURE	MENT COLL	ECTION			
□ No wate	evel measurement er level measurem er level measurem er level measurem	ent collected. ent collected.	Obstruction in v	well.	rt in wellhead				
			WELL	Purging ini	ORMATION				
I -	3 well volumes an								
1 -	3 well volumes ba	•		and field parem	eters stabilize	ed.			
□ Purged	well until field para Purge	ameters stabili 1 well		arameter.	s stabili	Zod.			
L-7	Comments:	- WEN	101 (2)	NA WING TO	, 0,122 - 11				
Additional	Comments.		· · · · · ·						

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	<u>h</u>
Task No:					Date:	7/15/13		
Well ID:	Fand	er			Weather:	Sunny, 80	's	
ADWR No:		05126			Sampler:	VAH		
				- WELL DA			0	
Well D	epth (ft bls):	2	80'		Nominal	Size (inches)	Capacity Gallons per Li	
Caeina I	Diameter (in):	/	11		2 4		0.16 0.65	
	•	152,14'				5	1.02	
Static Wate	er Level (ft bmp):			- 1/		6 8	1.47 2.61	
Casing '	Volume (gal):	188 x3 = 564			10		4.08	
Total Volur	ne Purged (gal):					g Volume = gallons	/foot * water colum	n (feet)
				LD SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
0914	Pump On							
0924	10	11	110	7.28	21,7	433,6		
0934	20	11	220	7,42	21,7	433,2		
0944	30	11	330	7,45	21,9	430.5		
0954	40	11	440	7.55	21.9	431.0		
1004	50		550	7.55	21.8	431.1		
				-				
							Pump Off	
	FIELD PARAMET	FR STABILIZA	ATION: Three o	consecutive rea	dinas within (	).3 su pH, 2 degree		n)
			were the same of the same of the same	MPLE INFOR	Communication of the same of the			
Sample Co	Ilection Point:							
	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Zunder	,	1009	Poly	250ml	1	300. එ	NA	<u> </u>
								ere en en en en en en en en en en en en en
		W	VATER LEVE	L MEASURE	MENT COLL	ECTION		
r ,	level measuremen							
i i	er level measurem er level measurem				rt in weiinead			
1	er level measurem er level measurem							
☐ Other:								
			WELL	PURGING IN	FORMATION			
1	3 well volumes ar							
	3 well volumes ba			and field parem	eters stabilize	ed.		
☐ Purged ☐ Other:	l well until field par	ameters stabil	izeu.					
	Comments:							