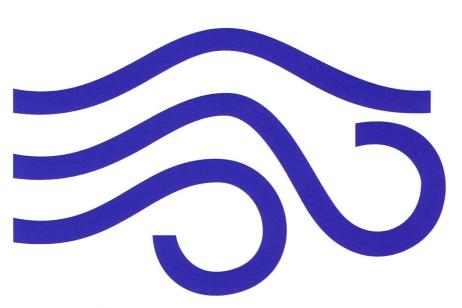
#### FOURTH QUARTER 2011 GROUNDWATER MONITORING REPORT

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



Prepared for:

### FREEPORT-MCMORAN CORPORATION COPPER QUEEN BRANCH

36 West Highway 92 Bisbee, Arizona 85603

Prepared by:

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January 19, 2012

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Expires 12/31

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#### 1. INTRODUCTION

This report provides the results of groundwater monitoring conducted by Freeport-McMoRan Corporation Copper Queen Branch (CQB) in the fourth quarter 2011 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. The Work Plan was submitted to Arizona Department of Environmental Quality (ADEQ) on December 17, 2007 pursuant to the Mitigation Order on Consent Docket No. P-121-07 (ADEQ, 2007). CQB initiated water sampling prior to work plan approval while ADEQ was commenting on the Work Plan and CQB was responding to their comments. Revision 1 of the Work Plan was submitted to ADEQ on July 3, 2008 and ADEQ approved the Work Plan on August 3, 2008. On January 25, 2010 CQB proposed a revised groundwater monitoring program (CQB, 2010). The revised monitoring program was approved by ADEQ in April 2010 (ADEQ, 2010). Clear Creek Associates (Clear Creek) prepared this groundwater monitoring report on behalf of CQB.

#### 1.1 Scope of Groundwater Monitoring

The objectives of groundwater monitoring are:

- Determination of the sulfate concentration in drinking water supply (DWS) wells outside of and within one mile of the sulfate plume for the purpose 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 plume is considered to consist of groundwater with sulfate in excess of 250 milligrams per liter (mg/L) attributable to the CTSA. The sample collection and analysis specifications of the Work Plan have been retained throughout the groundwater monitoring program. Table 1 provides the schedule for the groundwater monitoring program. Dissolved sulfate is the only constituent monitored.

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

#### 2. GROUNDWATER MONITORING RESULTS

#### 2.1 Results of Monitoring

Analytical results and groundwater elevation data for the fourth quarter 2011 are tabulated in Tables 3 and 4, respectively, along with information previously collected under the Mitigation Order. Figure 2 shows the concentrations of dissolved sulfate in the wells sampled in the fourth quarter 2011. The most recent sample results are shown at wells where multiple samples were collected during the quarter. The highest sulfate concentration measured at co-located wells was used for concentration contouring. Figure 3 shows groundwater elevations in the fourth quarter 2011. Groundwater elevations were calculated using depth to water measurements made under static (nonpumping) conditions for all wells shown on Figure 3.

#### 2.2 Quality Assurance/Quality Control Review

Pursuant to Section 6.4 of the QAPP, a data verification report was prepared for quality assurance and quality control purposes. The data verification report, analytical laboratory reports, and groundwater sampling forms for samples collected by Clear Creek and CQB during the fourth quarter 2011 are included in Appendices A, B, and C respectively. As determined by the analytical data verification review, all data for samples collected in the fourth quarter 2011 by Clear Creek and CQB are of acceptable quality for use in the groundwater monitoring being conducted pursuant to the Mitigation Order.

#### 3. FINDINGS

This report provides the results of groundwater monitoring conducted within the vicinity of the CTSA for the fourth quarter 2011. Groundwater samples were collected from 49 wells and depth to water measurements were collected at 33 wells. The December 2010 Aquifer Characterization Report (Clear Creek, 2010) provides detailed descriptions of the hydrogeology, water quality, and sulfate plume. Findings based on the fourth quarter 2011 groundwater monitoring are described below.

- Water quality samples have been collected from wells completed in three principal water bearing units in the area: basin fill, undifferentiated Bisbee Group, and Glance Conglomerate. The undifferentiated Bisbee Group consists, from youngest to oldest, of the Cintura Formation, Upper Mural Limestone, Lower Mural Limestone and Morita Formation. Figures 2 and 3 provide the screened lithology of the wells sampled.
- Sulfate concentration data indicate that the plume extends to the southwest from the vicinity of the former evaporation pond to the vicinity of Naco and to the south to the vicinity of Bisbee Junction (Figure 2). The groundwater monitoring data indicate that the sulfate plume extends over an oblong area of approximately 2 miles by 3.9 miles and is contained primarily in the basin fill and undifferentiated Bisbee Group except near the former evaporation pond where wells in the Glance Conglomerate have sulfate concentrations greater than 250 mg/L.
- The sulfate concentration in bedrock monitoring well BMO-2008-10GL was 1,020 mg/L in July 2010 and 644 mg/L in July 2011. The July 2011 sample concentration was the lowest to date. CQB attempted to collect a sample during the fourth quarter 2011, to confirm the result of the July sample, but was not able to collect the sample due to mechanical problems with the submersible pump. The well will be sampled when the mechanical problems are repaired.
- Comparison of the fourth quarter 2011 sulfate concentrations with previous quarters indicates no large scale change in the plume geometry since the Mitigation Order sampling began in the fourth quarter 2008, although concentration contours within the plume have been modified to reflect current concentrations.
- Figure 4 shows sulfate concentrations through time at public drinking water supply wells that are not receiving mitigation actions. Sulfate concentrations have remained relatively stable over time, although NWC-04 displays the greatest variability in concentration.
- Groundwater elevations decrease from northeast to southwest in the area east of the Black Gap Fault and between the Bisbee Municipal Airport and Bisbee Junction, and from east to west across the central portion of the study area west of the Black Gap Fault (Figure 3).

 Figures 5 and 6 show groundwater elevations over time for BMO monitor wells with screened intervals in basin fill and bedrock, respectively. Groundwater elevations in BMO monitor wells screened in basin fill have decreased over time. The maximum decrease has been 4.16 feet since July 2008. Groundwater elevations in BMO monitor wells screened in bedrock are relatively steady over time, although BMO-2008-10GL and BMO-2008-11G display increasing trends whereas BMO-2008-1G displays a decreasing trend.

#### 4. REFERENCES

- Arizona Department of Environmental Quality (ADEQ). 2007. Mitigation Order on Consent, Docket No. P-121-07, In the Matter of: Phelps Dodge Corporation, Copper Queen Branch, located at 36 West Highway 92, Bisbee, Arizona, ADEQ Identification Number 100531. November 14, 2007.
- ADEQ. 2010. Correspondence from Cynthia Campbell, ADEQ, to Rebecca Sawyer, CQB, Re: Request to Modify Groundwater Monitoring Program, Mitigation Order on Consent No. P-127-07, Your Letter dated January 25, 2010. April 22, 2010.
- Clear Creek Associates (Clear Creek). 2010. Revision I Aquifer Characterization Report, Task 4.0 of Aquifer Characterization Plan, Mitigation Order on Consent Docket No. P-121-07, Cochise County, Arizona, Volumes I and II. December 15, 2010.
- Freeport McMoRan Copper Queen Branch (CQB). 2010. Correspondence from Rebecca Sawyer, CQB, to Cynthia Campbell, ADEQ, Re: Request to Modify Groundwater Monitoring Program Mitigation Order on Consent No. P-121-07. January 25, 2010.
- Hydro Geo Chem, Inc. (HGC). 2008. Revision 1, Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Concentrator Tailing Storage Area, Cochise County, Arizona. July 3, 2008.

# TABLES

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

Well Name	ADWR 55 Registry No.	Semiannual Sampling First Quarter	Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
ANDERSON	613396	✓	✓	✓	✓
AWC-02	616586	✓	✓	✓	✓
AWC-03	616585	✓	✓	✓	✓
AWC-04	616584	✓	✓	✓	✓
AWC-05	590620	✓	✓	✓	✓
BANKS 986	647986	✓	✓	✓	✓
BANKS 987	647987	WLO		WLO	
BARTON 919	644919	WLO		WLO	
BF-01	539783			✓	
BIMA	577927	✓	✓	✓	✓
BMO-2008-1G	909474	✓		✓	
BMO-2008-3B	909147	✓		✓	
BMO-2008-4B	910096	✓		✓	
BMO-2008-5B	909653	✓	✓	✓	✓
BMO-2008-5M	909552	✓	✓	✓	✓
BMO-2008-6B	909146	✓	✓	✓	✓
BMO-2008-6M	909019	✓	✓	✓	✓
BMO-2008-7M	908794	✓		✓	
BMO-2008-8B	910097			✓	
BMO-2008-8M	909711	✓		✓	
BMO-2008-9M	909255	✓		✓	
BMO-2008-10GL	909435			✓	
BMO-2008-10GU	909272			✓	
BMO-2008-11G	909434	✓		✓	
BMO-2008-13B	909551			✓	
BMO-2008-13M	909760			✓	
BMO-2010-1M	219957	✓	✓	✓	✓
BMO-2010-2M	219958	✓	✓	✓	✓
BMO-2010-3B	219970	✓	✓	✓	✓
BMO-2010-3M	219969	✓	✓	✓	✓
CHAMBERS	629807	✓	✓	✓	✓
COB MW-1	903992			✓	
COB MW-2	903984	✓		✓	
COB MW-3	906823			✓	
COB WL	593116			✓	
COOPER	623564	✓	✓	✓	✓
COOPER C	637069	✓	✓	✓	✓
DODSON	644927	✓	✓	✓	✓
DOUGLASS 791	592791	WLO		WLO	



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

Well Name	ADWR 55 Registry No.		Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
DOUGLASS 792	592792	WLO		WLO	
DURAZO	NR	✓	✓	✓	✓
EAST	599796	✓	✓	✓	✓
EPPELE 641	805641	✓	✓	✓	✓
FLEMING	218386	WLO		WLO	
FRANCO	500101	✓	✓	✓	✓
FULTZ	212447	✓	✓	✓	✓
GARNER 557	558557	WLO		WLO	
GARNER 635	587635	✓	✓	✓	✓
GGOOSE 547	628547	✓		✓	
GOAR RANCH	610695	WLO		WLO	
HOBAN	805290	✓	✓	✓	✓
HOWARD	NR	✓	✓	✓	✓
KEEFER	209744	✓	✓	✓	✓
MCCONNELL 265	539265	✓	✓	✓	✓
METZLER	35-71891	✓	✓	✓	✓
MOORE	538847	✓	✓	✓	✓
NESS	509127	✓		✓	
NOTEMAN	212483	✓	✓	✓	✓
NWC-02	562944	✓	✓	✓	✓
NWC-03	203321	✓	✓	✓	✓
NWC-03 CAP	627684	WLO		WLO	
NWC-04	551849	✓	✓	✓	✓
NWC-06	575700	✓	✓	✓	✓
OSBORN	643436	✓		✓	
PALMER	578819	✓	✓	✓	✓
PANAGAKOS	35-76413			✓	
PARRA	576415	✓	✓	✓	✓
PIONKE	613395	✓	✓	✓	✓
POOL	509518	✓	✓	✓	✓
RAMIREZ	216425	✓	✓	✓	✓
RAY	803772	✓	✓	✓	✓
ROGERS 596/803	573596	✓	✓	✓	✓
ROGERS E	216018	✓	✓	✓	✓
RUIZ	531770	✓	✓	✓	✓
SCHWARTZ	210865	✓	✓	✓	✓
STEPHENS	808560	WLO		WLO	
SUNBELT	201531	WLO		WLO	
SWAN	NR	✓		✓	



Table 1
Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	ADWR 55 Registry No.	Semiannual Sampling First Quarter	Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
TM-02A	522574	✓		<b>✓</b>	
TM-06 MILLER	522695			✓	
TM-07	522576	✓		✓	
TM-15 MILLER	522699			✓	
TM-16	522578			✓	
TM-19A	522580	✓		✓	
TM-42	562554			✓	
TVI 236	802236			✓	
TVI 713	567713	WLO		WLO	
TVI 875	568875	✓	✓	✓	✓
WEED	544535	✓	✓	✓	✓
WEISKOPF	641802	✓	✓	✓	✓
ZANDER	205126	✓	✓	✓	✓

Notes:

ADWR = Arizona Department of Water Resources

WLO = Water Level Only

NR = No Record



Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status	
ANDERSON	613396	Anderson	Well Inventory	236	Y	Y	Water quality sample collected in October 2011.	
AWC-02	616586	Arizona Water Company	Plume	330	N	Υ	Water quality sample collected in October 2011. Unable to collect water level because well was pumping.	
AWC-03	616585	Arizona Water Company	Plume	269	N	Υ	Water quality sample collected in October 2011. Unable to collect water level because well was pumping.	
AWC-04	616584	Arizona Water Company	Plume	250	N	Υ	Water quality sample collected in October 2011. Unable to collect water level because well was pumping.	
AWC-05	590620	Arizona Water Company	Plume	1183	N	Υ	Water quality sample collected in October 2011. Unable to collect water level because well was pumping.	
BANKS 986	647986	Banks	Well Inventory	435	N	Υ	Water quality sample collected in October 2011. Unable to collect water level because wellhead is not accessible.	
BANKS 987	647987	Banks	Well Inventory	339	Υ	N	Water level collected in October 2011.	
BARTON 919	644919	Barton	Plume	130	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BF-01	539783	Copper Queen Branch	Plume	400	N	N	Well not scheduled for fourth quarter 2011 sampling.	
ВІМА	577927	Bisbee Municipal Airport	Plume	465	N	Y	Water quality sample collected in October 2011. Water level not collected, could not get sounder down well.	
BMO-2008-1G	909474	Copper Queen Branch	Plume	310	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BMO-2008-3B	909147	Copper Queen Branch	Plume	260	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BMO-2008-4B	910096	Copper Queen Branch	Plume	610	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BMO-2008-5B	909653	Copper Queen Branch	Plume	285	Y	Y	Water quality sample collected in December 2011.	
BMO-2008-5M	909552	Copper Queen Branch	Plume	450	Y	Y	Water quality sample collected in December 2011.	
BMO-2008-6B	909146	Copper Queen Branch	Plume	265	Y	Y	Water quality sample collected in December 2011.	
BMO-2008-6M	909019	Copper Queen Branch	Plume	450	Y	Y	Water quality sample collected in December 2011.	
BMO-2008-7M	908794	Copper Queen Branch	Plume	670	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BMO-2008-8B	910097	Copper Queen Branch	Plume	480	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BMO-2008-8M	909711	Copper Queen Branch	Plume	1210	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BMO-2008-9M	909255	Copper Queen Branch	Plume	775	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BMO-2008-10GL	909435	Copper Queen Branch	Plume	810	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BMO-2008-10GU	909272	Copper Queen Branch	Plume	449	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BMO-2008-11G	909434	Copper Queen Branch	Plume	760	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BMO-2008-13B	909551	Copper Queen Branch	Plume	474	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BMO-2008-13M	909760	Copper Queen Branch	Plume	1030	N	N	Well not scheduled for fourth quarter 2011 sampling.	
BMO-2010-1M	219957	Copper Queen Branch	Plume	540	Y	Y	Water quality sample collected in December 2011.	
BMO-2010-2M	219958	Copper Queen Branch	Plume	370	Y	Y	Water quality sample collected in December 2011.	
BMO-2010-3B	219970	Copper Queen Branch	Plume	330	Y	Y	Water quality sample collected in October 2011.	



Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status	
BMO-2010-3M	219969	Copper Queen Branch	Plume	532	Υ	Υ	Water quality sample collected in October 2011.	
CHAMBERS	629807	Chambers	Well Inventory	245	N	Y	Water quality sample collected in October 2011. Unable to collect water level because wellhead is not accessible.	
COB MW-1	903992	City of Bisbee	Plume	420	Ν	N	Well not scheduled for fourth quarter 2011 sampling.	
COB MW-2	903984	City of Bisbee	Plume	170	Ν	N	Well not scheduled for fourth quarter 2011 sampling.	
COB MW-3	906823	City of Bisbee	Plume	269	Ν	N	Well not scheduled for fourth quarter 2011 sampling.	
COB WL	593116	City of Bisbee	Plume	150	N	N	Well not scheduled for fourth quarter 2011 sampling.	
COOPER	623564	Cooper	Plume	325	N	Y	Water quality sample collected in November 2011. Unable to collect water level because wellhead is not accessible.	
COOPER C	637069	Hutson	Plume	220	Υ	N	Water level collected in October 2011. Unable to collect water sample because electricity at property is turned off.	
DODSON	644927	Dodson	Plume	200	Υ	Y	Water quality sample collected in October 2011.	
DOUGLASS 791	592791	Douglass	Well Inventory	200	N	Ν	Well identified for water level measurements only. Well not scheduled for water level measurements in the fourth quarter 2011.	
DOUGLASS 792	592792	Douglass	Well Inventory	200	N	N	Well identified for water level measurements only. Well not scheduled for water level measurements in the fourth quarter 2011.	
DURAZO	NR	Durazo	Well Inventory	ND	N	Y	Water quality sample collected in October 2011. Unable to collect water level because wellhead is not accessible.	
EAST	599796	East	Well Inventory	125	Υ	Υ	Water quality sample collected in October 2011.	
EPPELE 641	805641	Eppele	Well Inventory	265	Y	Y	Water quality sample collected in October 2011.	
FLEMING	218386	Fleming	Well Inventory	400	Ν	N	Well identified for water level measurements only. Well not scheduled for water level measurements in the fourth quarter 2011.	
FRANCO	500101	Franco	Well Inventory	200	N	N	Well is not currently operational.	
FULTZ	212447	Fultz	Well Inventory	300	N	Y	Water quality sample collected in October 2011. Unable to collect water level due to obstruction in well.	
GARNER 557	558557	Garner	Plume	300	Y	N	Well identified for water level measurements only. Water level measurement taken in October 2011.	
GARNER 635	587635	Garner	Plume	680	Y	Y	Water quality sample collected in October 2011.	
GGOOSE 547	628547	Copper Queen Branch	Plume	800	N	N	Well not operational. Unable to collect water level due to obstruction.	
GOAR RANCH	610695	Goar	Well Inventory	250	N	N	Well identified for water level measurements only. Well not scheduled for water level measurements in the fourth quarter 2011.	
HOBAN	805290	Copper Queen Branch	Well Inventory	316	Υ	Y	Water quality sample collected in December 2011.	
HOWARD	NR	Howard	Well Inventory	200	Υ	Y	Water quality sample collected in October 2011.	
KEEFER	209744	Keefer	Well Inventory	245	Y	Y	Water quality sample collected in October 2011.	
MARCELL	NR	Marcell	Plume	220	N	Y	Water quality sample collected in November 2011. Unable to collect water level because there is no available port in wellhead.	
MCCONNELL 265	539265	McConnell	Well Inventory	216	Y	Y	Water quality sample collected in October 2011.	



Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status	
METZLER	35-71891	Metzler	Well Inventory	351	Y	Y	Water quality sample collected in October 2011.	
MOORE	538847	Moore	Well Inventory	220	N	Υ	Water quality sample collected in October 2011. Unable to collect water level because wellhead is not accessible.	
NESS	509127	Ness	Well Inventory	812	N	N	Well not scheduled for fourth quarter 2011 sampling.	
NOTEMAN	212483	Noteman	Well Inventory	400	N	Y	Water quality sample collected in October 2011. Unable to collect water level due to obstruction in well.	
NSD-02	527587	Naco Sanitary District	Water Level	120	Y	N	Water level measurement taken in December 2011.	
NSD-03	527586	Naco Sanitary District	Water Level	100	Y	N	Water level measurement taken in December 2011.	
NWC-02	562944	Naco Water Company	Plume	312	N	Υ	Water quality sample collected in October 2011. Unable to collect water level because the well was pumping.	
NWC-03	203321	Naco Water Company	Plume	312	N	Y	Water quality sample collected in October 2011. Unable collect water level because the well was pumping.	
NWC-03 CAP	627684	Naco Water Company	Plume	179	Y	N	Well identified for water level measurements only. Water level measurement taken in October 2011.	
NWC-04	551849	Naco Water Company	Well Inventory Sulfate Trend	795	N	Y	Water quality sample collected in October, November and December 2011. Unable to collect water levels because th well was pumping.	
NWC-06	575700	Naco Water Company	Well Inventory	410	N	Υ	Water quality sample collected in October 2011. Unable to collect water level because the well was pumping.	
OSBORN	643436	Osborn	Plume	258	N	N	Well not scheduled for fourth quarter 2011 sampling.	
PALMER	578819	Palmer	Well Inventory	220	N	Y	Water quality sample collected in October. Unable to collect water level because wellhead is inaccessible.	
PANAGAKOS	35-76413	Panagakos	Well Inventory	200	N	N	Well not scheduled for fourth quarter 2011 sampling.	
PARRA	576415	Parra	Plume	355	N	Y	Water quality sample collected in October 2011. Unable to collect water level because of obstruction in well.	
PIONKE	613395	Pionke	Well Inventory	300	Y	Y	Water quality sample collected in October 2011.	
POOL	509518	Pool	Well Inventory	313	N	N	Unable to access well. Unable to contact well owner .	
RAMIREZ	216425	Ramirez	Well Inventory	300	Y	Y	Water quality sample collected in October 2011.	
RAY	803772	Ray	Well Inventory	100	Y	Y	Water quality sample collected in October 2011.	
ROGERS 596	573596	Rogers, Ernest D	Plume	290	Y	N	Well is turned off. Rogers residence uses ROGERS 803. Water level measurement collected in October 2011.	
ROGERS 803	641803	Rogers, Ernest D	Plume	140	N	Y	Water quality sample collected in October 2011. Unable to collect water level measurement because wellhead is not accessible.	
ROGERS E	216018	Rogers, Ernest M	Well Inventory	290	Y	Y	Water quality sample collected in October 2011.	
RUIZ	531770	Ruiz	Well Inventory	312	N	Y	Water quality sample collected in October 2011. Unable to collect water level measurement because wellhead is not accessible.	
SCHWARTZ	210865	Schwartz	Well Inventory	305	Υ	Υ	Water quality sample collected in October 2011	



Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status	
STEPHENS	808560	Stephens	Well Inventory	NR	N	N	Well identified for water level measurements only. Well not scheduled for water level measurements in the fourth quarter 2011.	
SUNBELT	201531	Sunbelt Marketing, Inc.	Well Inventory	380	N	N	Well identified for water level measurements only. Well not scheduled for water level measurements in the fourth quarter 2011.	
SWAN	NR	Swan	Well Inventory	NR	N	N	Well not scheduled for fourth quarter 2011 sampling.	
TM-02A	522574	Copper Queen Branch	Plume	925	N	N	Well not scheduled for fourth quarter 2011 sampling.	
TM-06 MILLER	522695	Miller	Plume	200	N	N	Well not scheduled for fourth quarter 2011 sampling.	
TM-07	522576	Copper Queen Branch	Plume	350	N	N	Well not scheduled for fourth quarter 2011 sampling.	
TM-10 USBP	522696	U.S. Border Patrol	Well Inventory	290	N	Υ	Water quality sample collected in December 2011. Unabl collect water level because water is below top of pumping equipment.	
TM-15 MILLER	522699	Miller	Well Inventory	325	N	N	Well not scheduled for fourth quarter 2011 sampling.	
TM-16	522578	Copper Queen Branch	Plume	115	N	N	Well not scheduled for fourth quarter 2011 sampling.	
TM-19A	522580	Copper Queen Branch	Plume	700	N	N	Well not scheduled for fourth quarter 2011 sampling.	
TM-42	562554	Copper Queen Branch	Plume	250	N	N	Well not scheduled for fourth quarter 2011 sampling.	
TVI 236	802236	Turquoise Valley, Inc.	Well Inventory	222	N	N	Well not scheduled for fourth quarter 2011 sampling.	
TVI 713	567713	Turquoise Valley, Inc.	Well Inventory	200	Υ	N	Well identified for water level measurements only. Water level measurement taken in October 2011.	
TVI 875	568875	Turquoise Valley, Inc.	Plume	330	N	Υ	Water quality sample collected in October 2011. Unable to collect water level because well head is not accessible.	
WEED	544535	Weed	Plume	320	N	Υ	Water quality sample collected in October 2011. Unable to collect water level because well head is not accessible.	
WEISKOPF	641802	Weiskopf	Plume	200	Y	Y	Water quality sample collected in October 2011.	
ZANDER	205126	Zander	Well Inventory	280	Υ	Υ	Water quality sample collected in October 2011.	

ADWR = Arizona Department of Water Resources

ft bls = below land surface

NR = No Record

35-71891 = ADWR 35 Database

Y = Yes

N = No



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name AD  ANDERSON	613396	Sample Date  3/20/08 5/5/08 7/14/08 10/15/08 11/27/09 4/14/09 7/14/09 10/12/09 11/27/10 4/21/10 7/19/10 10/19/10 11/17/11 4/11/11 17/14/11 10/11/11 1/7/08 3/3/08 5/5/08	pH (SU) 7.25 7.03 7.11 7.10 7.27 7.12 7.03 6.98 7.93 7.40 6.93 7.03 7.02 6.92 7.23 6.65 ND	Temp (deg C)  21.1  21.8  21.6  21.3  21.0  21.8  22.2  21.5  20.1  20.7  24.1  20.6  20.6  15.1  24.4  21.2  ND  ND	(μS/cm)  1176 1231 1260 1252 965 1229 1372 1375 1449 1439 1420 1229 1334 1485 1451 1230 ND	Sulfate, dissolved (mg/L)  431  452  472  475  488  534  550  510  523  627  648  416  562  609  678  543  14
ANDERSON	613396	5/5/08 7/14/08 10/15/08 1/27/09 4/14/09 7/14/09 10/12/09 1/27/10 4/21/10 7/19/10 10/19/10 1/17/11 4/11/11 10/11/11 10/11/11 1/7/08 3/3/08 5/5/08	7.03 7.11 7.10 7.27 7.12 7.03 6.98 7.93 7.40 6.93 7.03 7.02 6.92 7.23 6.65 ND	21.8 21.6 21.3 21.0 21.8 22.2 21.5 20.1 20.7 24.1 20.6 20.6 15.1 24.4 21.2 ND	1231 1260 1252 965 1229 1372 1375 1449 1439 1420 1229 1334 1485 1451 1230 ND	452 472 475 488 534 550 510 523 627 648 416 562 609 678 543
ANDERSON	613396	7/14/08 10/15/08 1/27/09 4/14/09 7/14/09 10/12/09 1/27/10 4/21/10 7/19/10 10/19/10 1/17/11 4/11/11 7/14/11 10/11/11 17/7/08 3/3/08 5/5/08	7.11 7.10 7.27 7.12 7.03 6.98 7.93 7.40 6.93 7.03 7.02 6.92 7.23 6.65 ND ND	21.6 21.3 21.0 21.8 22.2 21.5 20.1 20.7 24.1 20.6 20.6 15.1 24.4 21.2 ND	1260 1252 965 1229 1372 1375 1449 1439 1420 1229 1334 1485 1451 1230 ND	472 475 488 534 550 510 523 627 648 416 562 609 678
ANDERSON	613396	10/15/08 1/27/09 4/14/09 7/14/09 10/12/09 1/27/10 4/21/10 7/19/10 10/19/10 1/17/11 4/11/11 7/14/11 10/11/11 1/7/08 3/3/08 5/5/08	7.10 7.27 7.12 7.03 6.98 7.93 7.40 6.93 7.03 7.02 6.92 7.23 6.65 ND ND	21.3 21.0 21.8 22.2 21.5 20.1 20.7 24.1 20.6 20.6 15.1 24.4 21.2 ND	1252 965 1229 1372 1375 1449 1439 1420 1229 1334 1485 1451 1230 ND	475 488 534 550 510 523 627 648 416 562 609 678
ANDERSON	613396	1/27/09 4/14/09 7/14/09 10/12/09 1/27/10 4/21/10 7/19/10 10/19/10 1/17/11 4/11/11 7/14/11 10/11/11 1/7/08 3/3/08 5/5/08	7.27 7.12 7.03 6.98 7.93 7.40 6.93 7.03 7.02 6.92 7.23 6.65 ND	21.0 21.8 22.2 21.5 20.1 20.7 24.1 20.6 20.6 15.1 24.4 21.2 ND	965 1229 1372 1375 1449 1439 1420 1229 1334 1485 1451 1230 ND	488 534 550 510 523 627 648 416 562 609 678 543
ANDERSON	613396	4/14/09 7/14/09 10/12/09 1/27/10 4/21/10 7/19/10 10/19/10 1/17/11 4/11/11 7/14/11 10/11/11 1/7/08 3/3/08 5/5/08	7.12 7.03 6.98 7.93 7.40 6.93 7.03 7.02 6.92 7.23 6.65 ND	21.8 22.2 21.5 20.1 20.7 24.1 20.6 20.6 15.1 24.4 21.2 ND	1229 1372 1375 1449 1439 1420 1229 1334 1485 1451 1230 ND	534 550 510 523 627 648 416 562 609 678
ANDERSON	613396	10/12/09 1/27/10 4/21/10 7/19/10 10/19/10 1/17/11 4/11/11 7/14/11 10/11/11 1/7/08 3/3/08 5/5/08	6.98 7.93 7.40 6.93 7.03 7.02 6.92 7.23 6.65 ND	21.5 20.1 20.7 24.1 20.6 20.6 15.1 24.4 21.2 ND	1375 1449 1439 1420 1229 1334 1485 1451 1230 ND	510 523 627 648 416 562 609 678 543
ANDERSON	613396	1/27/10 4/21/10 7/19/10 10/19/10 1/17/11 4/11/11 7/14/11 10/11/11 1/7/08 3/3/08 5/5/08	7.93 7.40 6.93 7.03 7.02 6.92 7.23 6.65 ND	20.1 20.7 24.1 20.6 20.6 15.1 24.4 21.2 ND	1449 1439 1420 1229 1334 1485 1451 1230 ND	523 627 648 416 562 609 678 543
ANDERGON	-	4/21/10 7/19/10 10/19/10 1/17/11 4/11/11 7/14/11 10/11/11 1/7/08 3/3/08 5/5/08	7.40 6.93 7.03 7.02 6.92 7.23 6.65 ND	20.7 24.1 20.6 20.6 15.1 24.4 21.2 ND	1439 1420 1229 1334 1485 1451 1230 ND	627 648 416 562 609 678 543
		7/19/10 10/19/10 1/17/11 4/11/11 7/14/11 10/11/11 1/7/08 3/3/08 5/5/08	6.93 7.03 7.02 6.92 7.23 6.65 ND	24.1 20.6 20.6 15.1 24.4 21.2 ND	1420 1229 1334 1485 1451 1230 ND	648 416 562 609 678 543
		10/19/10 1/17/11 4/11/11 7/14/11 10/11/11 1/7/08 3/3/08 5/5/08	7.03 7.02 6.92 7.23 6.65 ND	20.6 20.6 15.1 24.4 21.2 ND	1229 1334 1485 1451 1230 ND	416 562 609 678 543
		1/17/11 4/11/11 7/14/11 10/11/11 1/7/08 3/3/08 5/5/08	7.02 6.92 7.23 6.65 ND ND	20.6 15.1 24.4 21.2 ND	1334 1485 1451 1230 ND	562 609 678 543
		4/11/11 7/14/11 10/11/11 1/7/08 3/3/08 5/5/08	6.92 7.23 6.65 ND ND	15.1 24.4 21.2 ND	1485 1451 1230 ND	609 678 543
		7/14/11 10/11/11 1/7/08 3/3/08 5/5/08	7.23 6.65 ND ND	24.4 21.2 ND	1451 1230 ND	678 543
		10/11/11 1/7/08 3/3/08 5/5/08	6.65 ND ND	21.2 ND	1230 ND	543
		1/7/08 3/3/08 5/5/08	ND ND	ND	ND	
		5/5/08		ND		17
			ND	ND	ND	16
		0/40/00		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 7/22/09	7.17 7.24	22.6 22.7	430 444	14.7 14.2
	_	10/21/09	7.24	21.3	444	16.8
AWC-02	616586	2/3/10	7.19	19.7	449	18.6
		4/23/10	7.56	19.7	526	18.3
		7/20/10	7.27	23.9	450	18.2
		11/4/10	7.72	21.3	465.9	18.8
		1/19/11	7.84	19.0	500	18.4
		4/7/11	7.27	20.3	488.5	17.3
		7/13/11	5.93	23.9	431.5	12.9
		10/13/11	6.72	25.1	464.6	17.4
		10/13/11 DUP	6.72	25.1	464.6	17.4
	-	1/7/08 3/3/08	ND ND	ND ND	ND ND	41 38
		5/5/08	ND 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
AWC-03	616585	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 11/4/10	7.29 7.80	23.8 20.8	460 452.3	46.7 46.3
	-	1/19/11	7.07	19.6	452.3 560	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
		2/4/08	ND	ND	ND	18
		4/7/08	ND	ND	ND	18
		6/2/08	ND	ND	ND 150	14.3
	_	8/12/08	7.08	22.5	458	21.6
	_	10/23/08	6.91	22.2	616	24
	-	3/11/09 4/22/09	7.02 6.93	21.3 22.1	539 560	27.2 26.1
	-	7/22/09	7.13	22.1	587	26.2
AWC-04	616584	10/21/09	7.13	21.2	607	25.7
		2/3/10	7.35	19.3	438	16.3
		4/23/10	7.14	19.2	625	27.4
		7/20/10	7.02	24.1	600	26.6
		11/4/10	7.41	20.3	593.2	24.0
		1/19/11	8.15	20.5	690	26.2
1		4/7/11	7.00	20.4	637.2	25.8
	<u> </u>	7/13/11 10/13/11	6.88 6.38	20.4 24.0	610.1 619.7	25.7 27.6



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

		For Sulfate and	T IOIG T GIGINO		•	
Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		2/4/08	ND	ND	ND	13
		4/7/08	ND	ND	ND	14
		6/2/08	ND	ND	ND	14.3
		8/12/08	6.74	23.3	425	14.9
		10/23/08	7.45	21.0	422	15.4
		3/11/09	7.31	22.1	398	16.5
	l F	6/3/09	7.33	22.0	418	12.1
	l F	7/22/09	7.49	24.4	423	14.1
AWC-05	590620	10/21/09	7.37	21.1	433	16.5
		2/3/10	7.35	19.3	438	16.3
		4/23/10	7.62	18.9	443	17.6
	<del> </del>	7/20/10	7.62	24.2	440	19.1
	<del> </del>	11/4/10	7.92	20.7	427.1	18.4
	-	1/19/11	7.64	20.3	420	17.0
		4/7/11	7.22		438.3	17.6
				20.8		
		7/13/11	6.52	22.9	419.8	17.9
		10/13/11	6.82	26.0	427.5	19
		2/27/08	7.53	21.8	980	44
	-	5/12/08	7.40	22.1	1021	65.2
	-   -   -   -	7/21/08	7.43	22.9	1034	82.2
	<u> </u>	10/13/08	7.28	21.7	980	53
	L	1/21/09	7.66	21.6	872	164
		4/8/09	7.56	22.7	933	47
		7/9/09	7.59	23.1	871	70.9
BANKS 986	647986	10/7/09	7.50	22.2	838	67.7
DAING 900	647966	2/25/10	7.56	21.1	1020	50.5
		4/20/10	7.71	22.8	1013	53.9
		7/20/10	7.70	23.2	828.3	71.5
		10/20/10	7.60	22.4	948.7	73.4
	l F	1/17/11	7.73	20.6	1038	53.5
		4/5/11	7.66	21.5	965.0	64.5
	<del> </del>	7/11/11	7.72	25.4	890.0	68.8
	<del> </del>	10/12/11	7.88	21.2	1551	172
		3/4/08	6.46	21.9	2745	1320
		5/23/08				1450
			6.41	18.3	2698	
	539783	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
BF-01		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
	L	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
	<u> </u>	7/13/11	6.26	21.3	2960	1350
		2/6/08	6.69	22.2	1335	210
	ı	4/25/2008 <sup>1</sup>	6.37	23.1	1521	190
		5/13/2008 <sup>1</sup>	6.58	22.7	1489	195
	l l	6/23/2008 <sup>1</sup>	6.30	23.3	1572	225
	l F	6/23/08 DUP	6.30	23.3	1572	196
	F	7/29/2008 <sup>1</sup>	6.44	23.0	1647	204
	F	8/28/2008 <sup>1</sup>	M	23.0	1776	256
		9/23/2008 <sup>1</sup>	6.29	23.0	1741	296
	F	10/22/08	6.41	22.3	1801	285
	⊢	1/20/09	6.40	21.7	1233	190
	-	1/20/09 1/20/09 DUP				
BIMA	577927		6.40	21.7	1233	200
		4/7/09	6.45	23.4	1436	212
	-	7/8/09	6.31	23.4	1483	189
	-   -   -   -	10/5/09	6.34	22.7	1525	233
	L	1/20/10	6.88	17.0	M	222
	l L	4/19/10	6.70	21.9	1533	256
		7/12/10	6.70	24.0	1577	273
			0.47	24.3	1702	296
		10/18/10	6.47	24.0	1702	
		10/18/10 1/19/11	6.65	21.2	1672	283
		1/19/11	6.65	21.2	1672	283



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
DI OMMED	000.470	6/23/2008 <sup>1</sup>	6.93	21.5	903	193
BLOMMER	633472	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
	L	11/11/08	7.00	20.8	721	143
	L	2/25/09	7.01	22.0	860	109
	L	4/28/09	7.04	22.2	762	198
	L	8/4/09	7.23	22.8	950	104
BMO-2008-1G	909474	10/27/09	7.11	21.9	922	103
20 2000 . 0		2/17/10	7.36	20.5	899.3	98.4
		4/15/10	7.04	22.2	711	95.2
	L	7/7/10	6.91	21.5	640	88.1
		7/7/10 DUP	6.91	21.5	640	87.1
		2/10/11	6.80	21.0	916	105
		7/12/11	7.2	26.6	1015	121
	<u> </u>	7/18/08	7.35	23.9	615	106
	<u> </u>	11/4/08	7.36	21.4	599	179
	1	11/4/08 DUP	7.36	21.4	599	177
	<u> </u>	2/19/09	7.24	21.4	664	155
	-	5/11/09	7.23	22.1	631	149
D110 0000 0D	-	8/6/09	7.33	21.4	718	151
BMO-2008-3B	909147	8/6/09 DUP	7.33	21.4	718	156
		10/26/09	7.32	21.8	684	153
		3/3/10	7.38	21.4	695	164
		4/8/10	6.47	21.3	585	162
		7/1/10	6.92	21.4	541	157
		2/14/11	6.98	20.6	698	169
		7/12/11	7.04	21.4	672	148
		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 8/6/09	7.33 7.53	24.5 24.6	376 397	11.8 11.5
BMO-2008-4B	910096	10/27/09	7.53	23.7	379	11.2
DIVIO-2000-4D	910090	2/24/10	7.48	21.8	362	9.7
	⊢	4/16/10	7.70	23.4	330	9.73
		7/2/10	7.75	23.6	323	10.10
		2/15/11	7.65	22.2	362	8.90
		7/22/11	7.33	23.7	371	10.2
	+	9/30/08	7.08	22.0	688	193
		2/18/09	7.03	21.5	691	192
		4/27/09	7.32	22.1	605	177
		8/4/09	7.35	22.3	724	174
		10/29/09	7.29	21.8	731	181
		10/29/09 DUP	7.29	21.8	731	185
D110		2/15/10	7.22	21.7	720	185
BMO-2008-5B	909653	4/15/10	7.21	23.0	571	194
		7/7/10	6.94	22.2	551	183
		10/5/10	6.85	22.3	722	201
		2/14/11	6.90	21.8	725	203
		5/12/11	7.06	21.5	722	195
		7/13/11	6.99	22.0	712	200
	1	12/7/11	6.95	19.9	730	213



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

For Suitate and Field Parameters										
Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)				
		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				
	I	10/29/09	7.35	22.4	610	123				
	I	2/15/10	7.31	22.5	581	123				
BMO-2008-5M	909552	4/16/10	7.28	22.6	509	125				
DIVIO-2000-3IVI	909332	4/16/10 DUP	7.28	22.6	509	124				
		7/7/10	7.02	23.5	482	123				
		10/5/10	6.81	22.5	602	127				
		2/14/11	6.95	22.2	591	124				
	L	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				
	L	7/16/08	7.36	24.1	475	53.3				
	L	11/4/08	7.41	21.5	398	60.3				
	L	2/19/09	7.23	21.1	444	54.3				
	L	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				
BMO-2008-6B	909146	2/15/10	7.53	21.2	391	33.5				
DIVIO-2000-0B	903140	4/15/10	7.47	21.0	362	37.0				
		7/1/10	7.24	22.2	361	40.1				
		10/5/10	7.05	21.0	407	37.2				
		2/14/11	7.27	21.8	397	40.2				
		5/12/11	7.32	21.5	380	35.0				
		7/12/11	7.27	21.1	390	37.8				
	I	12/7/11	7.28	20.8	330	21.8				
		7/10/08	М	22.1	702	182				
	I	11/4/08	7.33	21.8	621	199				
		2/20/09	7.11	22.0	702	193				
	I	4/28/09	7.34	22.4	595	119				
		8/4/09	7.40	23.3	750	189				
	I	10/26/09	7.18	22.4	727	187				
BMO-2008-6M	909019	2/15/10	7.29	20.8	733	193				
BIVIO-2008-6IVI		4/15/10	7.36	20.2	619	208				
		7/1/10	7.15	22.0	571	198				
		10/5/10	6.87	21.3	720	202				
		2/14/11	6.80	21.3	731	202				
		5/12/11	7.12	21.9	709	189				
		7/12/11	7.06	21.8	709	194				
		12/7/11	6.94	21.3	710	200				
		7/14/08	7.63	25.2	500	31.4				
	ſ	11/6/08	7.53	22.6	380	34.5				
	ſ	2/18/09	7.31	23.3	452	27.6				
	Ī	5/11/09	7.43	24.4	426	26.0				
	ſ	8/6/09	7.81	24.1	486	25.1				
	ſ	10/27/09	7.53	23.0	470	26.1				
BMO-2008-7M	908794	2/17/10	7.57	23.4	452	25.4				
	ſ	2/17/10 DUP	7.57	23.4	452	25.0				
	ſ	4/15/10	7.52	23.2	415	26.0				
	Г	7/6/10	7.28	23.5	391	22.8				
	ſ	2/14/11	7.18	22.0	465	27.5				
	ſ	2/14/11 DUP	7.18	22.0	465	26.4				
	<u> </u>	7/15/11	7.1	22.8	466	26.5				
		12/5/08	6.47	20.1	2480	1890				
	ſ	2/19/09	6.19	21.0	2958	1570				
	ſ	5/5/09	6.18	21.3	2888	1370				
	F	8/10/09	6.42	21.5	2897	1250				
DMO 2002 CD	040007	11/9/09	6.33	21.8	2889	1510				
BMO-2008-8B	910097	11/9/09 DUP	6.33	21.8	2889	1520				
		3/3/10	6.51	20.4	3016	1320				
		4/16/10	6.06	21.4	1682	1470				
	i F	7/1/10	6.10	21.4	1594	1440				
			6.21	21.2	2940	1380				



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
D140 0000 014	000744	8/10/09	7.49	24.8	673	107
BMO-2008-8M	909711	11/5/09	7.30	25.4	675	104
		3/3/10	7.70	24.1	641	99.5
		4/16/10	7.29	24.5	541	97.0
		7/1/10	6.99	25.0	502	94.7
		1/24/11 7/15/11	7.05 6.89	23.4 22.1	595 590	98.2 79.9
		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
	F	8/17/09	7.76	25.6	534	53.4
BMO-2008-9M	909255	11/3/09	7.82	24.9	552	56.9
		3/4/10	8.07	22.4	520	58.6
		4/6/10	6.74	23.8	484	60.1
		7/1/10	7.40	24.6	425	61.0
		2/10/11	6.79	24.0	520	64.2
		7/15/11	7.56	24.3	516	67
		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
BMO-2008-10GL	909435	8/11/09	6.52	27.3	2661	1030
DIVIO-2000-100L	909433	11/2/09	6.52	26.7	2565	1100
		3/4/10	6.76	24.1	2937	1080
		4/8/10	6.03	25.6	1575	1260
		7/2/10	6.16	26.3	1338	1020
		7/13/11	6.32	24.8	1726	644
		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
BMO-2008-10GU	909272	8/11/09 11/2/09	6.28 6.27	22.5 21.8	3348 3157	1690 1730
		3/10/10	6.67	19.1	3951	1700
		4/7/10	5.96	20.4	3210	1510
		7/6/10	5.90	21.8	1610	1670
		7/13/11	6.12	22.3	3890	1670
		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
BMO-2008-11G	909434	11/9/09	8.03	25.5	339	13.9
DIVIO-2008-11G	909434	3/1/10	8.37	23.2	338	13.0
	Г	4/9/10	6.88	24.5	301	13.0
		7/1/10	6.97	25.4	298	12.3
		2/10/11	6.99	24.0	327	11.7
		7/22/11	7.26	24.6	331	12.1
		7/22/11 DUP	7.26	24.6	331	12.0
		10/3/08	6.49	21.6	2180	980
	<u> </u>	2/17/09	6.51	20.9	1941	1000
	<u> </u>	5/6/09	6.55	22.0	1891	930
D110 0		8/5/09	6.63	21.5	2137	950
BMO-2008-13B	909551	10/28/09	6.81	19.7	2259	1010
	<u> </u>	2/16/10	6.87	20.8	2093	997
	<u> </u>	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



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		12/3/08	7.73	24.1	1463	494
		2/17/09	8.21	22.7	1340	441
		4/29/09	8.04	24.8	1126	217
		8/5/09	8.04	25.4	1392	387
BMO-2008-13M	909760	10/28/09	8.12	21.4	1347	403
		2/16/10	8.07	24.9	1297	375
		4/13/10	8.06	23.2	1130	398
		7/2/10	8.30	23.9	1027	386
		7/15/11	8.4	23.4	1331	388
		9/9/10	7.82	24.6	727.0	150
		11/11/10	8.68	19.9	570	98
BMO-2010-1M	219957	2/11/11	8.15	20.8	589	138
		5/12/11	7.74	23.0	710	129
		8/31/11	7.74	23.2	562	154
		12/13/11	7.63	21.3	713	149
		9/15/10	6.66	22.6	2054	915
		11/11/10	6.97	20.6	1800	935
BMO-2010-2M	219958	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
		7/29/10	7.48	23.1	420	16.0
		11/10/10	7.43	21.2	370	14.9
BMO-2010-3B	219970	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
		7/31/10	7.73	24.3	390	14.8
		11/10/10	7.66	21.8	340	12.6
DMO 0040 0M	040000	11/10/10 DUP	7.66	21.8	340	12.7
BMO-2010-3M	219969	1/20/11	7.72	22.6	380.4	11.5
		4/7/11	7.38	23.5	376.5	12.3
		8/25/11	7.17	24.3	340	10.4
	+	10/13/11	7.73	23.6	375.8	10.5
		2/7/08	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
BURKE	242260	2/11/09	7.23	25.0	363	23.9
DUKKE	212268	4/28/09	7.16	26.1	369	24.2
		8/19/09	7.36	26.7	486	22.5
		12/16/09 3/2/10	7.28 7.56	25.7 12.3	488 432	26 23.8
		4/22/10	7.49	+	452	24.8
				16.4	423.7	
		7/21/10 3/6/08	7.56 7.73	25.6 17.8	423.7	33.1 7.7
		5/5/08	7.15	22.1	421	6
		7/14/08	7.15	23.2	434	5.8
		10/15/08	7.43	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	7.63	22.6	410	6.5
CHAMBERS	629807	1/26/10	7.41	21.3	416	5.7
		4/23/10	7.47	20.9	427.5	8.34
		7/21/10	7.49	23.1	427.5	7.75
		10/19/10	8.00	23.0	440	7.75
		1/18/11				7.04
		4/11/11	7.47 7.18	22.4	390 427.3	7.30
				22.0		
		7/18/11	7.18	23.8	420.2	8.18
		10/12/11	7.33	22.6	425.8	7.8



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

		For Suitate and	- Ioia i aiaiiio	1		
Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (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
COB MW-1	903992	7/22/09	6.94	21.6	1570	680
	l L	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
		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	498 379	34.9
		2/12/09 4/23/09	7.35 7.33	20.2 21.8	431	35.6 34
		7/22/09	7.36	21.3	483	33.5
COB MW-2	903984	10/22/09	7.24	21.0	454	32.2
COB WW-2	300304	3/3/10	7.55	19.7	450	33.5
	I	4/26/10	7.28	21.3	479.6	34.8
		7/13/10	6.91	21.2	479.5	30.4
	l F	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
		2/28/08	7.39	21.0	416	57.8
		3/27/08	ND	ND	ND	57.7
	l F	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
COB MW-3	906823	2/12/09	7.35	21.1	432	112
		4/23/09	7.35	22.6	407	43.7
		7/22/09	7.38	21.5	460	52.3
		10/22/09	7.40	21.3	466	74.2
		10/22/09 DUP	7.40	21.3	466	73.9
	L	3/3/10	7.36	21.1	480	102
		4/26/10	7.35	22.0	497.9	77.6
	l L	7/13/10	7.41	21.7	456.7	46.5
		7/14/11	7.19	21.8	440.0	40.1
		2/22/08	6.99	20.6	919	90
		3/24/08	ND ND	ND	ND	98.2
		4/28/08	ND 7.00	ND	ND 1050	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 ND	ND ND	100
		10/15/08 10/23/08	7.23	ND 21.4	1075	107 104
COB WL	593116	2/12/09	6.98	20.6	814	94
OOD WL	333110	4/23/09	7.29	20.6	923	98
		7/22/09	7.17	22.5	1037	97.3
		10/22/09	7.17	22.5	988	96.1
		3/3/10	7.48	21.1	1030	97.1
		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	1013	87.3
		1/17/11	0.31	۷.۱۰	1010	07.5



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name AD	565260	Sample Date  2/12/08 5/29/08 7/31/08 10/20/08 2/11/09 4/21/09 7/22/09 10/20/09 2/2/10 4/23/10 7/20/10	pH (SU) 6.88 7.01 6.86 8.44 6.68 6.92 7.00 6.60 6.98	Temp (deg C)  21.6  22.0  21.6  24.7  21.4  22.5  22.4  21.9	SC (μS/cm) 1470 1459 1502 1510 1147 1150 1413	Sulfate, dissolved (mg/L)  520 520 536 518 567 499
COLLINS	565260	5/29/08 7/31/08 10/20/08 2/11/09 4/21/09 7/22/09 10/20/09 2/2/10 4/23/10 7/20/10	7.01 6.86 8.44 6.68 6.92 7.00 6.60 6.98	22.0 21.6 24.7 21.4 22.5 22.4	1459 1502 1510 1147 1150 1413	520 536 518 567
COLLINS	565260	7/31/08 10/20/08 2/11/09 4/21/09 7/22/09 10/20/09 2/2/10 4/23/10 7/20/10	6.86 8.44 6.68 6.92 7.00 6.60 6.98	21.6 24.7 21.4 22.5 22.4	1502 1510 1147 1150 1413	536 518 567
COLLINS	565260	10/20/08 2/11/09 4/21/09 7/22/09 10/20/09 2/2/10 4/23/10 7/20/10	8.44 6.68 6.92 7.00 6.60 6.98	24.7 21.4 22.5 22.4	1510 1147 1150 1413	518 567
COLLINS	565260	2/11/09 4/21/09 7/22/09 10/20/09 2/2/10 4/23/10 7/20/10	6.68 6.92 7.00 6.60 6.98	21.4 22.5 22.4	1147 1150 1413	567
COLLINS	565260	4/21/09 7/22/09 10/20/09 2/2/10 4/23/10 7/20/10	6.92 7.00 6.60 6.98	22.5 22.4	1150 1413	
COLLINS	565260	7/22/09 10/20/09 2/2/10 4/23/10 7/20/10	7.00 6.60 6.98	22.4	1413	499
	-	10/20/09 2/2/10 4/23/10 7/20/10	6.60 6.98			100
		2/2/10 4/23/10 7/20/10	6.98	21.9	4 400	460
		4/23/10 7/20/10		04.0	1432	513
		7/20/10		21.2 20.6	1439 1472	471 561
			6.99 6.69	25.0	1472	569
		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
	<u> </u>	10/20/08	8.44	24.7	448	31.2
1		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
COOPER	623564	10/14/09	7.85	24.6	423	33.6
OGGI EIK	020004	2/1/10	7.83	13.6	433	32.4
	_	4/22/10	7.82	17.9	433	34.5
	F	7/19/10	7.98	29.3	420	35.0
		10/18/10	7.12	73.1	450	33.1
	-	1/19/11	8.83	18.4	410	32.1
		4/11/11 7/11/11	7.65	21.0	442.6	34.3
	F	11/22/11	7.45 7.86	24.2 20.6	426.5 426.1	32.1 33.7
<del></del>		3/20/08	6.93	21.3	2081	880
	<b>-</b>	5/5/08	6.78	22.4	2139	990
	<b>-</b>	7/15/08	6.86	22.3	2162	1040
	<u> </u>	7/15/08 DUP	6.86	22.3	2162	960
	F	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
COOPER C	637069	7/14/09	6.75	22.1	1972	910
COOL FILE	007000	10/12/09	6.70	21.8	1858	830
	L	1/27/10	7.27	19.6	1930	620
	<u> </u>	4/22/10	6.76	19.5	1921	884
	<b> </b>	7/21/10	6.84	22.9	1761	921
		10/20/10	7.16	20.9	1980	829
<b>I</b>	-	1/17/11 4/11/11	6.95 6.82	20.5 21.0	1880 1942	756 834
<b>I</b>	-	8/26/11	6.84	21.8	1800	847
<del>+</del>		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
<b>I</b>	F	10/13/08	7.15	20.5	1095	56.9
<b>I</b>	F	1/22/09	7.20	20.4	892	51.8
<b>I</b>		4/9/09	7.09	21.4	1103	50.1
<b>I</b>		7/8/09	7.18	21.1	1153	55.9
<b>I</b>		10/6/09	7.07	21.1	1140	49.3
DODSON	644927	1/21/10	7.15	18.9	1227	44.6
		4/19/10	7.46	19.9	1261	48.8
<b>I</b>	ļ_	4/19/10 DUP	7.46	19.9	1261	48.6
<b>I</b>	ļ_	7/20/10	7.16	22.7	1260	47.5
<b>I</b>	-	10/18/10	6.43	21.2	1260	49.3
<b>I</b>	F	1/19/11	7.88	19.5	1120	57.9
<b>I</b>	-	4/5/11	7.03	20.9	1300	49.0
,	-	7/12/11 10/10/11	6.86 6.79	23.7 20.9	1352 1280	52.9 50.9
	-	10/10/11 10/10/11 DUP	6.79	20.9	1280	49.6



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

		For Sulfate and	. ioia i aiaiii	1		
Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
			, ,	` ` ,	,	` "
	L	2/10/09	7.22	18.8	848	386
	<u> </u>	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 1099	344
DURAZO	NR	4/26/10 7/20/10	7.22	23.1 23.0		388
		10/19/10	7.28 7.28	+	1070	405 398
		1/19/11	7.28	21.9 21.6	1112 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
	+	2/8/08	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
	F	10/14/08	7.33	20.3	531	8.9
	T	1/20/09	7.33	20.0	482	12.5
	T	4/8/09	7.32	20.6	555	15.9
		7/13/09	7.33	21.2	613	13.8
		10/8/09	7.29	20.8	593	13.4
EAST	599796	1/25/10	7.08	19.0	585	10.7
EAST	599796	4/21/10	7.42	20.5	616	14.4
		4/21/10 DUP	7.42	20.5	616	13.9
		7/14/10	7.45	22.2	577.1	12.1
		10/20/10	7.64	21.2	650	12.1
		1/18/11	7.44	21.0	615.9	13.1
		4/5/11	7.19	20.8	612.5	13.8
		7/12/11	7.23	21.7	595.1	12.7
		10/12/11	7.31	21.4	599.7	15.1
		10/12/11 DUP	7.31	21.4	599.7	15.1
		3/11/08	7.98	21.4	646	21.7
		5/12/08	7.21	21.7	667	24.7
		7/21/08	7.49	23.9	605	19
		10/14/08	7.56	20.4	642	21.8
		1/21/09	7.60	21.1	500	22.7
	_	4/8/09	7.56	22.4	538	19.7
EPPELE 641	805641	7/9/09	7.43	24.3	550	17.5
		7/20/10	7.58	23.3	529.2	21.1
		10/20/10	7.66	21.0	572.1	17.2
		1/17/11 4/5/11	7.43 7.43	21.0 21.5	576.4 569.2	17.3 16.7
		7/11/11	7.43	23.5	563.1	18.6
		7/11/11 7/11/11 DUP	7.27	23.5	563.1	18.3
	<del> </del>	10/12/11	7.38	20.9	500.0	19.6
FLEMING	218386	7/15/10	6.98	24.2	1390	573
I LLIVIII NO	210000	2/6/08	7.47	19.6	1301	670
		5/5/08	6.93	23.1	1557	680
		7/14/08	7.00	22.7	1586	680
		10/15/08	7.20	20.5	1560	680
		1/22/09	7.19	20.1	1178	740
FRANCO	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
	ſ	7/13/10	7.48	28.6	901.6	188



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

			-11	Т	00	Sulfate, dissolved
Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	(mg/L)
		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
	-	7/29/20081	6.74	22.2	1989	152
	-	8/28/2008	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 4/9/09	6.74 6.78	21.2 21.5	1481 1695	82 138
		7/13/09	7.04	23.4	1452	81
FULTZ	212447	10/8/09	7.00	21.6	1262	72
		10/8/09 DUP	7.00	21.6	1262	71.8
		1/25/10	7.11	21.8	1282	66.7
		4/20/10	7.32	21.2	1202	68.3
		7/14/10	7.75	22.2	1132	57.0
		10/20/10	7.27	20.5	1091	54.7
		1/18/11	7.23	20.4	1136	56.9
		4/5/11	7.08	22.1	1082	49.5
		4/5/11 DUP	7.08	22.1	1082	51.7
		8/25/11	6.45	23.3	940	50.6
		10/12/11	7.22	21.7	870	48.5
GALLANT	502527	2/11/08	7.46	20.2	604	17.9
O/ (LL/ (IV)	302321	7/23/08	7.26	21.2	925	20.9
	L	2/4/08	7.61	22.7	479	37.8
	L	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
GARNER 635	587635	10/14/09 2/2/10	7.58 7.79	25.2	446 465	36.1 35.1
GARNER 033	367633	4/22/10	7.79	22.8 23.7	464.1	36.9
		7/20/10	7.57	25.3	458.2	38.8
		10/19/10	8.23	25.4	510	37.9
		1/19/11	7.82	24.1	463.4	35.7
		1/19/11 DUP	7.82	24.1	463.4	35.7
		4/6/11	7.76	23.4	467.4	35.8
		7/15/11	7.19	25.0	457.40	37.7
		10/11/11	7.57	24.2	400.0	38
		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
	L	5/14/09	7.15	23.9	743	174
		8/19/09	7.20	23.8	887	175
		11/11/09	7.15	23.1	897	188
		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	478 603	34.9
		2/26/09	7.05	26.5	603	54.8
GL-03	539782	5/5/09 8/1/09	6.91 7.12	28.1 27.4	682 768	43.9 43.1
	⊢	11/10/09	6.96	27.0	692	43.1
	<del> </del>	3/2/10	7.36	24.9	693	43.4
	<del> </del>	3/2/2010 DUP	7.36	24.9	693	45.1
		4/9/10	6.17	25.6	556	48.1
		TI UI I U	0.17	20.0		<del>1</del> 0.1



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

		For Sulfate and				1
Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		2/27/08	6.93	22.1	1359	510
		5/7/08	6.88	22.3	1532	670
		7/14/08	6.88	23.1	1719	690
		10/16/08	6.98	22.4	1624	692
		1/28/09	6.82	21.3	1220	580
HOBAN	805290	4/15/09	7.07	21.7	1423	700
		7/14/09 10/15/09	6.78 6.75	22.6 22.7	1551 1487	670 670
	I	10/15/09 DUP	6.75	22.7	1487	780
		3/2/10	7.12	19.8	1575	580
		8/31/11	6.64	22.3	1772	893
		12/14/11	6.68	20.2	1870	944
		3/4/08	7.06	20.4	1280	571
	L	5/8/08	6.95	21.0	1494	673
		7/14/08	7.00	21.1	1566	610
		10/15/08	7.00	20.6	1598	683
		1/28/09 1/28/09 DUP	6.82	21.0 21.0	1203	640 640
		4/15/09 4/15/09	6.82 7.02	21.5	1203 1397	620
		7/15/09	7.16	21.5	1539	640
		10/12/09	6.89	21.4	1414	600
HOWARD	NR	1/27/10	7.35	20.0	1714	440
	ſ	1/27/10 DUP	7.35	20.0	1714	520
		4/21/10	7.16	20.8	1490	710
		7/19/10	6.94	24.6	1350	548
		10/18/10	6.47	21.4	1420	568
		1/17/11	7.12	19.8	1370	520
		4/11/11 8/26/11	7.20 7.11	20.6 23.2	1489 1160	616 498
	-	10/11/11	7.1	21.0	1220	545
	l F	10/11/11 DUP	7.1	21.0	1220	538
	1	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
	L	10/28/08	7.32	20.1	534	21.2
		1/28/09	7.42	19.5	356	6.1
		4/16/09	7.29	20.0	452	7.7
	-	7/14/09	7.35	22.1	533	7
KEEFER	209744	10/13/09 1/26/10	7.24 7.15	20.7 18.8	516 483	8.7 7.3
		4/20/10	7.13	20.5	540.9	8.77
		7/15/10	7.50	22.2	535.8	8.84
		10/19/10	6.72	20.2	470	7.89
	j	1/18/11	7.45	20.6	450	7.24
		4/6/11	7.48	19.1	546.2	8.04
	[	7/18/11	7.19	23.2	492.3	7.79
	+	10/11/11	7.39	20.7	486.9	7.98
MADOELL	ND L	8/26/11	7.12	25.1	1390	669
MARCELL	NR	9/26/11 11/22/11	6.63 7.29	22.1 21.0	1502 1536	638 687
		2/20/08	7.29	21.1	1435	720
		5/6/08	6.77	21.6	1668	737
	i F	7/15/08	6.91	22.3	1775	700
		10/15/08	6.82	21.3	1686	703
	j	1/28/09	6.85	21	1274	660
		4/15/09	7.04	21.3	1472	657
	]	7/15/09	7.01	22.2	1607	662
MCCONNELL 265	539265	10/12/09	6.77	21.7	1594	666
		1/26/10	6.71	21.5	1641	685
		4/22/10 7/21/10	6.95 6.86	20.1 23.5	1691 1560	811 805
		10/18/10	6.97	23.5	1704	775
		1/19/11	7.38	20.6	1610	711
		4/8/11	7.04	19.8	1775	810
	i t	7/12/11	6.60	23.7	1702	790
	1	10/11/11	7.18	21.8	1590	845



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

		For Sulfate and	pH	Temp	SC	Sulfate, dissolved
Well Name	ADWR 55 Registry No.	Sample Date	(SU)	(deg C)	(μS/cm)	(mg/L)
		3/5/08	7.27	21.6	1055	317
		5/15/08	7.12	22.8	1051	329
	_	7/31/08	7.16	22.5	1078	317
		10/20/08 10/20/08 DUP	7.24 7.24	22.2 22.2	1080 1080	305 326
		2/11/09	7.12	21.3	818	321
	-	4/20/09	7.22	23.2	845	313
		7/15/09	7.41	22.9	1031	293
METZLER	35-71891	7/15/09 DUP	7.41	22.9	1031	309
IVILIZLLIX	33-71091	10/14/09	7.1	22.7	989	315
		2/1/10	7.22	21.7	1021	286
	_	5/18/10	7.56	21.0	1053	330
		7/16/10	7.20	24.1	1007	330
		10/19/10 1/19/11	7.15 7.55	22.6 21.1	1006 930	319 298
		4/4/11	7.03	23.3	1018	323
	-	7/12/11	7.07	22.3	993.0	312
		10/12/11	7.27	22.1	910	301
		2/20/08	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 10/13/09	7.44 7.36	23.3 22.6	439 429	5.8 7.1
MOORE	538847	1/26/10	7.54	19.6	423	6.3
WOOKE	330047	4/22/10	7.47	20.6	433	7.40
	-	7/15/10	7.44	24.1	431.3	7.54
		7/15/10 DUP	7.44	24.1	431.3	7.11
		10/19/10	6.79	22.1	430	7.14
		1/18/11	7.48	21.1	390	6.42
		4/6/11	7.39	21.4	426.3	6.70
		7/13/11	6.91	23.2	423.4	7.62
		10/11/11	7.31	22.5	419.0	7.31
		7/24/08	7.35 7.47	26.5	563 542	50.2
	-	10/16/08 1/26/09	7.47	21.4 17.2	422	48.9 52.3
		5/11/09	7.52	28.8	472	45.9
		8/11/09	7.56	28.7	525	39.8
NESS	509127	11/12/09	7.53	24.5	537	51.3
		2/2/10	7.67	19.7	535	48.7
		4/21/10	7.70	23.5	518.9	42.1
		7/19/10	7.58	28.9	524.7	48.1
		1/18/11	7.49	21.8	536.6	50.1
		7/12/11	7.48	26.3	520.0	43.5
		2/5/08 5/13/08	6.70 6.67	19.9 23.0	1317 1445	310 272
	j	7/24/08	6.68	24.2	1539	274
		10/23/08	6.57	23.2	1643	356
		1/19/09	6.38	22.9	1098	322
		4/7/09	6.56	23.8	1375	303
		7/8/09	6.55	24.6	1405	260
		10/5/09	6.48	24.1	1442	281
NOTEMAN	212483	1/20/10	6.79	20.3	1450	289
	<u> </u>	4/19/10	6.81	22.4	1446	307
		7/19/10	6.77	24.6	1438	309
		10/18/10	6.08	24.6	1430	280
		1/19/11 4/4/11	6.84 6.72	22.3 22.9	1446 1446	266 276
		4/4/11 4/4/11 DUP	6.72	22.9	1446	276
		7/11/11	6.78	23.9	1446	279
		10/11/11	6.96	23.4	1250	286
NOD oc	507507	2/5/08	ND	ND	ND	43
NSD-02	527587	7/7/08	8.02	21.0	609	44
NSD-03	527586	2/5/08	ND	ND	ND	70.7
เพอบ-บอ	327300	7/7/08	7.64	21.0	570	58.9



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	рН	Temp	SC	Sulfate, dissolved
Well Name	ADWK 33 Registry No.	•	(SU)	(deg C)	(µS/cm)	(mg/L)
		10/27/08 2/12/09	7.47 7.58	22.2	438 330	5.1
		4/23/09	7.39	21.6 23.8	373	6.6 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
NWC-02	562944	4/21/10	7.57	22.1	413	7.26
		7/20/10 10/19/10	7.36 7.42	23.7 22.5	412.5 416.2	6.87 7.39
		1/18/11	7.47	23.2	390	6.43
		4/6/11	7.27	22.9	413.5	6.4
		7/15/11	7.03	22.5	416.3	7.24
		10/13/11	7.45	21.9	370	7.31
		3/4/08 6/9/08	ND ND	ND ND	ND ND	560 524
		10/27/08	7.07	21.9	1374	489
	l F	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
NWC-03	203321	10/21/09 2/3/10	6.94 7.24	21.8 20.7	1224 1214	444 444
		4/21/10	7.22	21.6	1178	433
		7/20/10	7.04	22.8	1229	477
		10/19/10	7.22	21.3	1172	432
		1/18/11	7.09	22.8	1120	386
	-	4/6/11 7/15/11	7.19 6.91	21.7 21.8	1114 1094	361 386
	-	10/13/11	7.23	21.6	960	353
		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 2/12/09 DUP	7.20 7.20	19.8 19.8	699 699	181 198
		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 7.12	24.3	859 906	193
		8/19/09 9/23/09	7.12	24.5 23.8	953	183 202
		10/21/09	7.18	24.3	875	191
		11/18/09	7.24	22.9	909	191
		12/16/09	7.28	22.3	926	193
	-	2/3/10	7.49	22.3	844	167
		3/8/10 4/21/10	7.33 7.34	22.5 22.8	880 913	182 218
NIMO 04	FF4040	5/18/10	7.68	25.8	901.3	210
NWC-04	551849	6/15/10	7.31	24.5	917.5	212
		7/20/10	7.28	28.3	873.2	188
	<u> </u>	8/25/10	7.55	24.8	820.9	196
		9/29/10 10/19/10	7.38 7.34	24.5 23.6	920.2 870.2	205 195
		11/4/10	7.53	23.9	853.2	195
	<del> </del>	12/14/10	7.41	23.6	856.8	182
		1/18/11	7.31	24.1	860	194
		2/17/11	7.46	22.3	848.6	169
		3/17/11	7.44	24.1	888.1	182
		4/5/11 5/11/11	7.32 7.32	23.4 23.1	878.7 868.1	196 175
	<del> </del>	6/17/11	7.28	23.7	856.3	204
		7/15/11	7.06	23.5	875.1	202
		8/25/11	7.32	25.1	780	195
	[ [	9/26/11	6.56	26.2	875.4	198
		9/26/11 DUP	6.56	26.2	875.4	199
		10/13/11 11/22/11	7.46 7.36	23.3 22.9	770 853.5	198 201
	<del> </del>	12/8/11	7.33	22.3	872.2	207



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		3/4/08	ND	ND	ND	7.9
		6/9/08	ND	ND	ND	7.2
		10/27/08	7.35	23.3	414	6.4
		2/12/09	7.54	21.8	306	8
		4/23/09	7.30	24.5	354	7.3
		7/21/09	7.63	23.5	388	6.4
		10/21/09	7.26	23.2	413	8
		2/3/10	7.61	20.5	404	7.5
NWC-06	575700	2/3/10 DUP	7.61	20.5	404	7.4
	<u> </u>	4/21/10	7.54	22.4	387	8.49
		7/20/10	7.33	26.0	388.6	8.59
		10/19/10	7.49	22.7	394.5	8.32
		1/18/11	7.45	23.4	380	8.24
	_	4/6/11	7.42	23.1	388.3	7.76
		4/6/11 DUP	7.42	23.1	388.3	7.73
		7/15/11	7.09	22.9	394.3	8.36
		10/13/11	7.51	22.3	340	8.48
		2/25/08 5/13/08	7.35 7.22	22.4 22.2	508 576	16.4 17.2
		7/22/08	7.24	22.2	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
OSBORN	643436	4/7/09	7.25	24.0	542	17
CODOTAT		8/18/09	7.16	24.6	643	17.4
		10/5/09	7.14	22.9	599	17.9
		1/21/10	7.47	19.5	591	15.6
		4/19/10	7.60	21.5	601.9	19.3
		7/12/10	7.69	24.2	594.0	18.4
		7/12/11	7.87	29.8	575.9	19.5
		2/14/08	7.91	17.5	435	15.9
		5/13/08	7.92	22.9	508	16.6
		7/22/08	7.64	25.8	548	16.2
		10/16/08	7.61	17.0	527	15.9
		1/20/09	7.33	19.4	441	14.3
		4/8/09	7.65	19.1	475	15.4
		7/8/09	7.47	27.2	521	14.3
PALMER	578819	10/5/09	7.81	22.2	538	16.2
TALMER		1/20/10	7.72	11.9	510	13.8
		4/22/10	7.97	13.6	520	16.7
		7/12/10	7.62	30.2	518.8	15.7
		10/18/10	8.13	22.1	511.9	16.5
		1/18/11	7.24	17.1	517.0	15.7
		4/5/11	8.04	19.0	499.2	15.8
		7/12/11	7.65	26.6	517.6	16.4
	+	10/11/11 4/21/08	7.85 6.80	22.0 20.5	510.4 1228	17 410
		7/21/08	6.85	20.5	1390	410
		10/13/08	6.86	21.9	1386	480
		10/13/08 DUP	6.86	21.2	1386	500
		1/22/09	6.92	19.7	997	397
	<del> </del>	4/9/09	6.81	21.7	1228	431
		4/9/09 DUP	6.81	21.7	1228	426
PANAGAKOS	35-76413	7/9/09	6.89	22.3	1469	490
		10/6/09	6.83	21.1	1328	472
		1/21/10	7.06	18.8	1291	318
		4/20/10	7.25	21.0	1528	608
		7/20/10	6.90	24.0	1560	706
		10/18/10	6.38	22.1	1530	568
		7/14/11	6.93	23.3	1070	223
		8/25/11	7.17	23.4	1170	222



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

		For Sulfate and				
Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
	<u> </u>	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
PARRA	576415	10/20/09	6.80	22.5	1188	388
	1 ⊢	2/1/10	7.07	21.5	1197	353 417
		4/22/10 7/14/10	6.91 7.13	20.3 22.2	1219 1201	403
	1 <b>-</b>	7/14/10 DUP	7.13	22.2	1201	391
		10/20/10	7.13	21.4	1270	411
	1 F	1/19/11	7.49	20.8	1130	391
	1 F	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
		2/6/08	7.53	19.9	910	394
	ı	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
	<u> </u>	7/13/09	7.35	21.5	1165	472
		10/7/09	7.43	21.1	1100	403
PIONKE	613395	3/8/10	7.72	18.6	1201	406
		4/26/10	7.22	21.9	1224	438
		7/15/10	7.32	22.3	1158	474
		10/18/10	7.33	21.3	1277	473
	1 ⊢	10/18/10 DUP	7.33	21.3	1277	487
		1/19/11	7.32	19.9	1222	471
	1 ⊢	4/8/11	7.13	19.2	1232	467
	1 ⊢	7/12/11 10/11/11	7.30 6.98	23.8 20.8	1226 1100	500 502
	+ +	2/20/08	7.95	20.9	497	134
	-	5/19/08	7.40	22.2	585	122
	1 <b>-</b>	7/31/08	7.47	22.3	599	117
	1 F	10/21/08	7.51	21.4	598	120
	1 F	2/13/09	7.62	20.8	473	141
	F	4/21/09	7.73	22.6	470	124
	F	7/20/09	7.76	22.9	579	122
POOL	509518	10/20/09	7.22	21.2	577	122
	ı	2/24/10	7.56	22.4	577	110
	1 [	4/22/10	7.75	20.2	606.5	130
		7/14/10	7.38	21.7	580.9	117
		10/20/10	7.79	21.3	620	115
		1/20/11	7.71	20.5	530	112
		1/20/11 DUP	7.71	20.5	530	114
		4/6/11	7.37	21.6	567.4	114
POWER	624535	2/12/08	7.11	18.9	428	15.5
	+	7/22/08	7.10	21.7	795	20.2
		2/4/08 5/6/08	7.47	21.7	408	7.6
			7.19	22.7	405 439	8.3
		7/17/08 10/27/08	7.32 7.41	24.5 22.2	439	8.8 7.3
	<b> </b>	1/29/09	7.41	22.2	301	8.3
	F	4/16/09	7.49	22.4	344	7.6
		7/10/09	7.52	23.9	411	6.4
	<u>                                   </u>	10/6/09	7.30	23.8	388	8.4
RAMIREZ	216425	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
	F	10/19/10	7.91	23.7	450	10.8
	F	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
	I -	10/12/11	7.40	23.3	412.7	8.55



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

			рН	Temp	SC	Sulfate, dissolved
Well Name	ADWR 55 Registry No.	Sample Date	(SU)	(deg C)	(μS/cm)	(mg/L)
		2/15/08	7.30	19.1	1540	159
I		4/21/2008 <sup>1</sup>	6.92	21.3	1418	125
I		5/13/2008 <sup>1</sup>	7.05	20.9	1418	123
I		6/23/2008 <sup>1</sup>	6.87	21.1	1593	130
1	_	7/29/2008 <sup>1</sup>	6.98	21.8	1411	120
I	<u> </u>	8/28/2008 <sup>1</sup>	M	21.1	1519	129
I		9/23/2008 <sup>1</sup> 10/22/08	6.90 6.96	22.2 20.8	1519 1604	125 145
I		1/20/09	6.92	20.6	1355	88
I		4/8/09	6.85	21.4	1759	178
RAY	803772	7/9/09	6.93	22.3	1434	126
1		10/7/09	6.98	21.3	1288	127
I		1/26/10	6.82	20.6	1352	125
I		4/20/10	7.14	21.5	1318	134
1		7/14/10	7.11	23.8	1313	137
1		10/20/10	7.14	19.6	1368	127
İ		1/17/11	7.04	20.8	1451	132
1		1/17/11 DUP	7.04	20.8	1451	125
I		4/5/11	7.03	20.8	1387	132
I	_	7/11/11	7.07	22.8	1345	126
		10/12/11	7.06	21.6	1250	130
I	-	10/19/09	6.89	23.3	1360 1418	590 540
ROGERS 596	573596	11/5/09 2/25/10	6.79 6.99	21.9 19.6	1603	520
I		4/22/10	7.21	18.2	1641	710
		2/7/08	7.45	18.6	601	138
I		4/21/2008 <sup>1</sup>	7.32	21.4	552	128
1		5/8/2008 <sup>1</sup>	7.14	21.2	622	141
I		6/23/2008 <sup>1</sup>	7.06	22.9	660	129
1		7/29/2008 <sup>1</sup>	6.78	23.1	339	134
1		8/28/2008 <sup>1</sup>	7.18	21.6	635	128
I		9/23/2008 <sup>1</sup>	7.24	21.9	599	133
I		10/22/08	7.36	21.3	650	144
ROGERS 803	641803	2/10/09	7.42	17.9	475	141
1.002.10000		4/29/09	7.52	21.9	506	211
1		8/3/09	7.39	24.2	674	150
1	_	7/16/10	7.46	23.9	643.4	169
1		10/19/10	7.32	21.1	643.8	154
1		10/19/10 DUP 1/20/11	7.32 7.44	21.1 18.1	643.8 610	154 143
1		4/8/11	7.30	20.2	658.2	160
Ì		7/14/11	7.12	23.5	653.5	166
Ì		10/12/11	7.41	21.8	665.3	175
		2/4/08	7.40	21.0	435	4.6
Ì		5/7/08	7.18	22.2	415	5.9
1		7/17/08	7.28	23.0	446	7.1
Ì		10/27/08	7.38	21.4	434	15.7
Ì		2/10/09	7.51	20.7	322	5.4
1		4/16/09	7.48	22.0	361	4.9
Ì		7/13/09	7.34	22.6	420	3.8
ROGERS E	216018	10/6/09	7.31	22.3	407	5.8
		1/25/10	7.52	20.6	414	5.1
1		4/21/10	7.44	21.1	421	6.04
		7/21/10	7.37	23.8	430	6.47
	⊢	10/19/10	7.80	22.8	460	5.92
	⊢	1/18/11	7.39	21.5	390	5.50
l	⊢	4/11/11 7/18/11	7.19	22.7	427.2	6.13
	1	1/10/11	7.12	24.3 22.2	418.5 370	6.00 5.99



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

	10000 0 11 11		pН	Temp	SC	Sulfate, dissolved
Well Name	ADWR 55 Registry No.	Sample Date	(SU)	(deg C)	(µS/cm)	(mg/L)
		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
	<u>_</u>	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
RUIZ	531770	10/28/09 2/1/10	7.09 7.08	20.6 20.9	920 934	227 236
		4/26/10	7.01	22.5	920.1	240
		7/20/10	7.08	22.5	880	240
		10/20/10	7.52	20.7	970	231
		1/18/11	7.19	20.2	860	213
		4/8/11	7.09	19.8	923.3	236
		8/26/11	6.85	22.6	800	220
		10/13/11	7.19	21.5	810	230
		2/8/08	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	7.25	22.4	955	245
		8/28/2008 <sup>1</sup>	M	22.3	669	131
		9/23/20081	7.27	22.2	607	124
		10/22/2008	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	475 610	124
SCHWARTZ	210865	4/17/09	7.33 7.46	22.1 22.2	520	123 120
		7/10/09	7.52	22.8	651	116
	<b> </b>	7/10/09 DUP	7.52	22.8	651	117
		10/6/09	7.27	22.5	613	120
		1/22/10	7.79	19.5	664	133
		4/21/10	7.50	20.9	638	129
		7/21/10	7.43	22.0	650	134
		10/19/10	7.76	21.2	710	147
		1/17/11	7.15	21.2	620	116
		4/11/11	7.20	21.5	656.9	128
		7/18/11	7.36	23.7	612.4	116
		10/12/11	7.35	22.4	635.8	124
SRC	211345	4/23/08	7.57	25.8	380	19
		8/5/08	7.40	27.2	452	15.4
		2/13/08	7.28	20.7	467	24.1
SWAN		5/14/08	7.24	21.2	479	23.7
		7/24/08 10/16/08	7.35 7.32	22.4 20.7	506 488	18 19
		1/20/09	7.05	20.7	391	19.8
	-	4/7/09	7.05	21.5	447	19.8
	NR	7/8/09	7.18	23.1	473	18.5
		10/5/09	7.18	21.4	496	19.7
		1/21/10	7.49	19.5	501	18.4
		4/21/10	7.42	20.3	512.1	20.9
		7/19/10	7.13	23.8	518.6	22.2
		1/18/11	7.19	17.8	483.6	18.7
		7/12/11	7.05	22.4	478.2	19.1
	522574	3/4/08	8.67	22.6	302	12.3
		5/23/08	7.75	22.9	321	14.7
TM-02A		8/15/08	7.84	26.4	369	14.4
		10/30/08	8.07	23.9	375	21.9
		2/24/09	8.10	24.8	340	20.3
		5/6/09	8.06	26.7	320	18.7
		8/12/09	8.34	26.9	398	20
		11/4/09	8.16	26.3	381	21.8
		3/10/10 3/10/10 DUP	8.13	25.2	351 351	21.4 21.3
		3/10/10 DOP 4/6/10	8.13 6.96	25.2 24.6	351 363	25.6
		7/6/10	7.38	24.6	343	25.0
	1 L					
		2/10/11	6.93	20.2	359	22.9



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

W. II N.		For Sulfate and	pH	Temp	SC	Sulfate, dissolved
Well Name	ADWR 55 Registry No.	Sample Date	(SU)	(deg C)	(μS/cm)	(mg/L)
		5/20/08	7.51	22.2	778	110
		8/6/08 11/12/08	7.08 7.47	21.6 20.5	828 590	97 128
		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
		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 2/27/08	7.19 7.44	21.4 19.6	566 457	103 13.9
		5/20/08	7.50	20.7	506	32.7
	<del> </del>	8/4/08	7.41	20.7	529	31.3
		10/29/08	7.55	20.2	531	34.5
		2/26/09	7.18	20.4	574	32.7
TM-06 MILLER	522695	5/13/09	7.35	20.9	465	30.6
TW OO WILLERY	022000	8/18/09	7.50	20.9	560	30.9
		8/18/09 DUP	7.50	20.9	560	29.9
		11/12/09 4/14/10	7.53	20.4	530	31.1
		7/2/10	7.35 7.24	19.4 20.1	461 438	29.0 29.8
		7/21/11	7.24	20.1	516	31.7
		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
T1		5/13/09	7.30	22.9	559	130
TM-07	522576	8/17/09	7.60	22.6	442	134
	1	11/3/09	7.85 7.67	21.8	441 422	134 124
		3/2/10 5/25/10	7.07	21.6 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
		2/13/08	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
TM-10 USBP	522696	12/8/11	6.95	19.6	381	16.8
	522699	2/27/08 5/23/08	7.66 7.54	21.9 22.1	344 371	14 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
TM-15 MILLER		5/13/09	7.61	23.1	344	13.7
		8/17/09	7.73	23.2	398	14.2
		11/3/09	7.73	23.4	414	14.8
		2/24/10 4/27/10	7.66 7.71	22.8 23.0	381 383.6	14.4 14.9
		7/20/10	7.77	23.0	324	14.9
		7/12/11	7.36	23.2	380	14.2
	522578	3/5/08	7.17	20.6	1351	497
		5/22/08	7.05	20.5	1304	522
		8/6/08	6.67	20.9	1410	466
		11/5/08	7.14	19.8	1162	547
		2/20/09	6.90	21.1	1292	492
TM 40		5/13/09	6.93	21.1	1179	484
TM-16		8/19/09	7.08	21.2	1354	468
		11/10/09 3/2/10	7.02 7.13	21.0	1310	505 451
		4/14/10	6.90	20.4 19.9	1313 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



Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

		FOI Sullate allu		10.0		
Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
	F	11/18/08	7.79	24.3	365	66.3
		3/3/09	7.41	24.5	489	66.2
	F	4/22/09	7.44	24.3	494	62.5
TM-19A	522581	8/12/09	7.61	24.4	554	61.3
		11/4/09	7.47	24.2	522	63
		3/10/10	7.54	22.9	511	60.6
		4/9/10	6.49	23.0	435	66.5
		7/7/10	6.93	23.8	428	63.2
		2/14/11	6.69	21.4	511	61.9
		7/15/11	7.11	24.1	499	62.1
		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
	L	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
TM-42	562554	5/7/09 DUP	6.88	24.5	1155	445
		8/18/09	7.04	24.4	1336	428
		11/3/09	7.07	23.1	1266	430
	L	2/24/10	7.13	22.7	1236	390
	L	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
TM-43	564729	3/3/08	8.57	21.0	341	2.1
1W 43	304723	8/4/08	8.14	25.7	436	<5
TM-43A	564726	3/3/08	6.17	19.9	2788	1420
TW 45/1	304720	8/4/08	6.03	21.6	3149	1320
	L	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
	L	3/20/08	7.48	20.0	488	31.3
	L	5/7/08	7.13	20.4	494	32.6
	L	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
TVI 236	802236	4/17/09 DUP	7.36	19.3	418	28.3
		7/21/09	7.59	22.9	484	31.3
		10/19/09	7.31	22.1	513	33.2
		2/2/10	7.39	20.4	497	26
		4/23/10	7.46	20.0	504.6	30.9
	<u> </u>	7/15/10	7.37	21.5	499.4	39.3
		7/15/11	6.80	22.4	499.6	42.9
	L	2/21/08	7.28	21.1	739	244
	<u> </u>	5/7/08	7.09	21.2	833	250
	568875	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
TVI 875		10/19/09	7.23	21.9	822	247
0 / 0		2/2/10	7.32	20.8	939	250
		4/23/10	7.34	20.2	930.4	294
		7/15/10	7.46	21.8	842.5	262
		10/20/10	7.79	21.9	890	242
		1/20/11	7.39	21.0	780	226
		4/11/11	7.20	21.1	820.6	235
		7/15/11	6.75	22.2	791.9	239
		10/12/11	7.35	22.7	868.5	262
WALKER	200393	2/13/08	7.05	20.2	650	20
	20000	7/23/08	7.25	20.7	740	45.4



#### Table 3 **Compilation of Analytical Results** For Sulfate and Field Parameters

			rieiu raiaille			
Well Name	ADWR 55 Registry No.	Sample Date	рН	Temp	SC	Sulfate, dissolved
Well Hallie	ABWIN 55 Registry No.	oumpic bate	(SU)	(deg C)	(µS/cm)	(mg/L)
		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
WEED	544535	2/1/10	7.60	20.8	382	12.2
		4/26/10	7.69	22.1	366	13.4
		7/21/10	7.36	22.1	354.9	13.6
		7/21/10 DUP	7.36	22.1	354.9	13.5
		10/19/10	7.63	21.2	378.8	11.7
		1/19/11	7.62	21.1	383.6	12.2
		4/11/11	7.44	21.5	386.6	13
		7/18/11	7.56	22.0	379.3	12.7
		10/12/11	7.02	21.7	382.8	13.3
	L	2/15/08	7.48	20.0	1072	500
	L	5/7/08	7.10	21.8	1251	483
	L	7/16/08	7.07	22.2	1399	560
	_ I	10/28/08	6.98	20.8	1401	602
	_ I	1/29/09	6.79	20.7	1014	503
	L	4/15/09	7.53	21.1	1164	503
		7/15/09	7.84	22.1	1317	486
	<u> </u>	10/15/09	6.89	21.4	1216	484
WEISKOPF	641802	2/2/10	7.22	20.4	1319	451
		4/22/10	7.30	19.3	1329	572
	-	7/19/10	7.06	23.1	1330	573
	-	10/20/10	7.64	21.6	1360	515
	-	10/20/10 DUP	7.64	21.6	1360	529
	-	1/17/11	7.16	22.0	1270	481
	<u> </u>	4/11/11	6.88	22.4	1365	557
		8/26/11	6.83	23.5	1200	549
		10/13/11	7.07	22.8	1299	539
		2/4/08	7.24	19.7	392	5.7
		5/6/08	7.26	21.2	404	6.3
	⊢	7/16/08 10/28/08	6.92 7.40	22.9 21.2	441 415	6.9 15
		2/10/09	7.40	20.4	317	6
	⊢	4/16/09	7.50	21.7	352	5.5
	⊢	7/14/09	7.47	22.9	352 418	4.5
		10/13/09	7.41	21.7	407	6.3
ZANDER	205126	1/26/10	7.49	20.3	411	5.7
LINDLIN	200120	4/2/10	7.55	20.0	416	6.70
		7/21/10	7.38	22.7	388.2	6.78
		10/19/10	6.78	21.3	430	6.56
		1/18/11	7.59	18.9	380	6.14
		1/18/11 DUP	7.59	18.9	380	6.06
		4/6/11	7.20	19.7	425.8	6.12
		7/13/11	7.29	22.9	410.10	6.43
		10/12/11	7.35	22.2	426.2	6.38

ADWR = Arizona Department of Water Resources

deg C = degrees Celsius M = Multi-Meter Malfunction

NR = No Record

ND = No Data

SC = Specific Conductance

SU = Standard Units

μS/cm = microsiemens per centimeter

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

mg/L = milligrams per liter DUP = Blind duplicate



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (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
ANDERSON	613396	601134.729	3468816.065	4588.51	10/12/09	147.31	4441.20
ANDERSON	013390	001134.729	3400010.003	4566.51	1/27/10	147.31	4441.20
					4/21/10	147.57	4440.94
					7/19/10	148.34	4440.17
					10/19/10	147.75	4440.76
					1/17/11	148.63	4439.88
					4/11/11	149.46	4439.05
					7/14/11	149.92	4438.59
					10/11/11	150.19	4438.32
					8/27/08	121.12	4426.52
					4/8/08 <sup>2</sup>	116	4431.64
AWC-02	616586	598907.911	3468549.357	4547.64	10/23/08 <sup>3</sup>	115	4432.64
AVVC-02	010360	596907.911	3400349.337	4547.04	4/22/09 <sup>3</sup>	118	4429.64
					10/9/09 <sup>3</sup>	117	4430.64
					4/23/10 <sup>3</sup>	119	4428.64
					8/27/08	119.40	4420.12
					4/8/2008 <sup>2</sup>	112	4427.52
AWC-03	616585	599090.322	3468681.898	4539.52	10/23/08 <sup>3</sup>	106	4433.52
AVVC-U3	010000	599090.322	3400001.090	4539.52	4/22/09 <sup>3</sup>	114	4425.52
					10/9/09 <sup>3</sup>	116	4423.52
					4/23/10 <sup>3</sup>	116	4423.52
					8/18/08	112.56	4427.92
					4/8/2008 <sup>2</sup>	108	4432.48
AWC-04	616584	598949.929	3468717.084	4540.48	10/23/08 <sup>3</sup>	111.31	4429.17
741004	010004	000010.020	0100717.001	4040.40	4/22/09 <sup>3</sup>	110	4430.48
					10/9/09 <sup>3</sup>	110	4430.48
					4/23/10 <sup>3</sup>	109	4431.48
					8/27/08	299.65	4242.86
					4/8/08	284	4258.51
					10/23/08	284	4258.51
AWC-05	590620	599269.904	3468541.692	4542.51	4/22/09	286	4256.51
					6/3/09	125	4417.51
					10/9/09 <sup>3</sup>	289	4253.51
					4/23/10 <sup>3</sup>	278	4264.51
					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
BANKS 987	647987	606981.921	3469206.175	4648.18	10/7/09	236.71	4411.47
					2/25/10	216.98	4431.20
					4/20/10	219.35	4428.83
					7/20/10	235.60	4412.58
					10/20/10	230.24	4417.94
					1/17/11	215.28	4432.90
					4/5/11	221.68	4426.50
					7/11/11	237.39	4410.79
					10/12/11	237.34	4410.84



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
,					5/12/08	113.71	4578.65
					7/23/08	113.56	4578.80
BARTON 919	644919	606243.850	3469076.689	4692.36	10/16/08	113.20	4579.16
DAICTON 919	044313	000243.030	3409070.009	4092.30	3/11/09	112.92	4579.44
					4/10/09	112.89	4579.47
					7/7/09	112.86	4579.50
					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
BF-01	539783	604169.077	3472151.593	4835.23	5/6/09	348.73	4486.50
•-					8/17/09	348.73	4486.50
					11/4/09	348.65	4486.58
					3/1/10	348.84	4486.39
					4/7/10	348.70	4486.53
					7/6/10	348.69	4486.54
					7/13/11	348.67	4486.56
					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	62.05	4743.05
					11/11/08	60.95	4744.15
					2/25/09	61.43	4743.67
					4/28/09	62.01	4743.09
PMO 2000 40	000474	606467.004	2474702 044	4005.40	8/4/09	62.96	4742.14
BMO-2008-1G	909474	606467.681	3471723.644	4805.10	10/27/09	63.61	4741.49
					2/17/10	64.51	4740.59
					4/15/10	65.05	4740.05
					7/7/10	65.83	4739.27
	i l				2/10/11	67.74 69.37	4737.36 4735.73
							4735.73
					7/12/11		
					7/18/08	138.05	4445.92
					7/18/08 11/4/08	138.05 137.95	4445.92 4446.02
					7/18/08 11/4/08 2/19/09	138.05 137.95 138.19	4445.92 4446.02 4445.78
					7/18/08 11/4/08 2/19/09 5/11/09	138.05 137.95 138.19 138.46	4445.92 4446.02 4445.78 4445.51
BMO 2009 3D	000147	602012 022	2/67010 592	4582.07	7/18/08 11/4/08 2/19/09 5/11/09 8/6/09	138.05 137.95 138.19 138.46 139.02	4445.92 4446.02 4445.78 4445.51 4444.95
BMO-2008-3B	909147	602012.923	3467919.582	4583.97	7/18/08 11/4/08 2/19/09 5/11/09 8/6/09 10/26/09	138.05 137.95 138.19 138.46 139.02 139.60	4445.92 4446.02 4445.78 4445.51 4444.95 4444.37
BMO-2008-3B	909147	602012.923	3467919.582	4583.97	7/18/08 11/4/08 2/19/09 5/11/09 8/6/09 10/26/09 3/3/10	138.05 137.95 138.19 138.46 139.02 139.60 140.03	4445.92 4446.02 4445.78 4445.51 4444.95 4444.37 4443.94
BMO-2008-3B	909147	602012.923	3467919.582	4583.97	7/18/08 11/4/08 2/19/09 5/11/09 8/6/09 10/26/09 3/3/10 4/8/10	138.05 137.95 138.19 138.46 139.02 139.60 140.03	4445.92 4446.02 4445.78 4445.51 4444.95 4444.37 4443.94 4443.90
BMO-2008-3B	909147	602012.923	3467919.582	4583.97	7/18/08 11/4/08 2/19/09 5/11/09 8/6/09 10/26/09 3/3/10	138.05 137.95 138.19 138.46 139.02 139.60 140.03	4445.92 4446.02 4445.78 4445.51 4444.95 4444.37 4443.94



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (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
DMO 0000 4D	040000	004000 405	0.400000 400	4570.47	10/27/09	132.04	4441.13
BMO-2008-4B	910096	601099.405	3468383.430	4573.17	2/24/10	131.82	4441.35
					4/16/10	132.65	4440.52
					7/2/10	133.20	4439.97
					2/15/11	133.78	4439.39
					7/22/11	134.80	4438.37
					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
BMO-2008-5B	909653	600438.159	3468994.715	4585.10	4/15/10	145.80	4439.30
					7/7/10	146.59	4438.51
					10/5/10	147.00	4438.10
					2/14/11	147.56	4437.54
					5/12/11	148.04	4437.06
					7/13/11	148.31	4436.79
					12/7/11	148.45	4436.65
					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
BMO-2008-5M	909552	600445.071	3468994.282	4585.02	4/16/10	147.34	4437.68
					7/7/10	148.28	4436.74
					10/5/10	148.68	4436.34
					2/14/11	148.74	4436.28
					5/12/11	149.66	4435.36
					7/12/11	150.20	4434.82
					12/7/11	150.30	4434.72
					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
BMO-2008-6B	909146	600366.523	3469820.644	4627.44	2/15/10	190.82	4436.62
DIVIO-2000-0D	909140	000300.323	34090ZU.044	4021.44	4/15/10	190.75	4436.69
					7/1/10	191.43	4436.01
					10/5/10	192.50	4434.94
					2/14/11	192.19	4435.25
					5/12/11	192.70	4434.74
					7/12/11	193.30	4434.14
					12/7/11	193.85	4433.59



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					7/10/08 11/4/08 2/20/09	191.63 190.25 190.70	4435.27 4436.65 4436.20
					4/28/09	190.70	4435.20
					8/4/09	191.77	4435.92
					10/26/09	192.14	4434.76
					2/15/10	191.78	4435.12
BMO-2008-6M	909019	600367.943	3469813.885	4626.90	4/15/10	191.64	4435.26
					7/1/10	192.53	4434.37
					10/5/10	192.96	4433.94
					2/14/11	193.14	4433.76
					5/12/11	193.68	4433.22
					7/12/11	194.47	4432.43
					12/7/11	194.92	4431.98
					7/14/08	238.31	4450.02
					11/6/08	239.69	4448.64
					2/18/09	238.90	4449.43
					5/11/09	239.03	4449.30
					8/6/09	239.17	4449.16
BMO-2008-7M	908794	603099.165	3470029.283	4688.33	10/27/09	239.55	4448.78
					2/17/10	239.98	4448.35
					4/15/10	240.13	4448.20
					7/6/10	240.28	4448.05
					2/14/11	241.26	4447.07
					7/15/11	241.81	4446.52
					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
BMO-2008-8B	910097	604171.347	3471141.719	4753.25	3/3/10	298.37	4454.88
					4/16/10	298.46	4454.79
					7/1/10	298.64	4454.61
					2/11/11	299.56	4453.69
					5/13/11	299.78	4453.47
					7/15/11	300.00	4453.25
					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
BMO-2008-8M	909711	604167.912	3471127.902	4752.45	3/3/10	299.18	4453.27
					4/16/10	299.42	4453.03
					7/1/10	299.70	4452.75
					1/24/11	300.46	4451.99
					5/13/11	301.00	4451.45
					7/15/11	300.96	4451.49
					8/8/08	287.17	4475.44
					11/5/08	287.65	4474.96
					2/26/09	285.65	4476.96
					5/12/09	285.28	4477.33
					8/17/09	286.09	4476.52
BMO-2008-9M	909255	604668.669	3471121.675	4762.61	11/3/09	286.55	4476.06
					3/4/10	287.45	4475.16
					4/6/10	287.81	4474.80
					7/1/10	288.26	4474.35
					2/10/11 5/13/11	289.77	4472.84 4472.14
						290.47	



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					8/20/08 11/5/08	521.75 520.50	4270.46 4271.71
					2/25/09 5/12/09	516.72 514.68	4275.49 4277.53
					8/11/09	513.23	4277.53
BMO-2008-10GL	909435	605264.072	3471702.043	4792.21	11/2/09	509.43	4282.78
					3/4/10	510.88	4281.33
					4/8/10	506.31	4285.90
					7/2/10	511.80	4280.41
					7/13/11	512.16	4280.05
					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
BMO-2008-10GU	909272	605267.551	3471731.866	4793.45	11/2/09	289.77	4503.68
					3/10/10	289.58	4503.87
					4/7/10	289.5	4503.95
					7/6/10	288.93	4504.52
					7/13/11	301.02	4492.43
					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
BMO-2008-11G	909434	603800.995	3472626.482	4844.67	11/9/09	573.41	4271.26
BMO 2000 110	000101	000000.000	0472020.402	4044.07	3/1/10	573.68	4270.99
					4/9/10	573.56	4271.11
					7/1/10	572.97	4271.70
					2/10/11	571.61	4273.06
					7/22/11	571.20	4273.47
					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
BMO-2008-13B	909551	601657.612	3470076.358	4649.21	2/16/10	207.26	4441.95
					4/14/10	207.27	4441.94
					7/6/10	207.68	4441.53
					2/10/11	208.51	4440.70
					5/13/11	208.95	4440.26
					7/15/11	209.36	4439.85
					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
BMO-2008-13M	909760	601650.495	3470040.455	4647.15	2/16/10	209.16	4437.99
					4/13/10	209.20	4437.95
					7/2/10	209.30	4437.85
					2/10/11	210.36	4436.79
					5/13/11	210.50	4436.65
					7/15/11	210.67	4436.48
					9/7/10	224.13	4494.42
					11/10/10	222.97	4495.58
DMO 2040 4M	240057	605584 000	2460025 750	4740.55	2/11/11	222.01	4496.54
BMO-2010-1M	219957	605581.263	3469935.750	4718.55	5/12/11	223.08	4495.47
			I		0/04/44		4404.47
					8/31/11	224.38	4494.17



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					9/7/10	264.13	4482.03
					11/11/10	263.94	4482.22
					2/10/11	264.13	4482.03
BMO-2010-2M	219958	605685.549	3470564.646	4746.16	5/13/11	266.97	4479.19
					7/14/11	268.05	4478.11
					12/13/11	270.98	4475.18
					7/28/10	115.38	4435.21
					11/10/10	115.80	4434.79
					1/20/11	115.46	4435.13
BMO-2010-3B	219970	599977.962	3468347.363	4550.59	4/7/11	116.11	4434.48
					7/13/11	117.30	4433.29
					10/13/11	117.72	4432.87
					7/30/10	118.63	4431.90
					11/10/10	118.75	4431.78
					1/20/11	118.32	4432.21
BMO-2010-3M	219969	599970.801	3468353.543	4550.53	4/7/11	119.09	4431.44
					8/25/11	120.74	4429.79
					10/13/11	120.67	4429.86
	1				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
COB MW-1	903992	603153.259	3469889.889	4683.26	7/22/09	234.34	4448.92
					10/22/09	234.69	4448.57
					2/4/10	235.15	4448.11
					4/20/10	235.47	4447.79
					7/13/10	235.68	4447.58
					7/14/11	236.98	4446.28
					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
COB MW-2	903984	600973.257	3468114.836	4566.21	7/22/09	124.91	4441.30
					10/22/09	125.33	4440.88
					3/3/10	124.93	4441.28
					4/26/10	125.47	4440.74
					7/13/10	126.54	4439.67
				-	1/20/11	126.46	4439.75



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
COB MW-3	006833	E00460 22E	2469726 000	4538.63	4/23/09	125.13	4413.50
COB MM-3	906823	599169.225	3468726.000	4536.63	7/22/09	124.09	4414.54
					10/22/09	118.03	4420.60
					3/3/10	120.14	4418.49
					4/26/10	123.12	4415.51
					7/13/10	128.60	4410.03
					7/14/11	132.41	4406.22
					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
COB WL	593116	606357.506	3472502.012	4832.06	4/23/09	59.73	4772.33
COBWL	393110	000337.300	3472302.012	4032.00	7/22/09	61.27	4770.79
					10/22/09	62.82	4769.24
					3/3/10	65.24	4766.82
					4/26/10	66.13	4765.93
					7/13/10	67.52	4764.54
					7/14/11	73.86	4758.20
			3471341.335	4733.72	2/12/08	289.47	4444.25
					5/29/08	288.53	4445.19
					7/31/08	290.08	4443.64
					10/20/08	290.15	4443.57
COLLINS	565260	602551.286			4/21/09	290.66	4443.06
					7/20/09	290.78	4442.94
					10/20/09	290.52	4443.20
					2/2/10	291.64	4442.08
					4/23/10	291.96	4441.76
					7/20/10	292.21	4441.51
					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
COOPER C	637069	601349.987	3468913.011	4599.14	10/12/09	156.89	4442.25
					1/27/10	157.03	4442.11
					4/22/10	157.31	4441.83
					7/21/10	158.00	4441.14
					10/20/10	158.41	4440.73
					1/17/11	158.37	4440.77
					4/11/11	158.74	4440.40
					8/26/11	159.51	4439.63
					10/13/11	159.81	4439.33



DODGON   644927   605594.560   3468063.772   4686.34   1013008   61.82   4604.52   4603.50   17209   82.33   4690.40   4808   82.84   4603.50   7809   86.86   4599.46   4503.50   7809   86.86   4599.46   4503.50   7809   86.86   4599.46   4503.50   7809   86.86   4599.46   4503.50   7809   86.86   4599.46   4503.50   7809   86.86   4599.46   4503.50   7809   86.86   4599.46   4503.50   7809   86.86   4599.46   4503.50   7809   4595.50   4596.81   4509.80   450	Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
DODSON 644927 605594.560 3469063.772 4686.34 1073.08 81.92 44604.52 12209 82.34 44604.52 12209 82.34 44603.50 1760.09 82.24 4599.07 122110 88.54 4599.40 122010 88.54 4599.40 122010 88.54 4599.40 122010 88.54 4599.60 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.55 122010 90.79 4595.29 122						5/12/08	81.38	4604.96
DODSON 644927 605594.560 3469063.772 4686.88 4599.46 4599.46 47909 86.284 4690.55 4599.46 47909 86.88 4599.46 4799.46 47909 86.88 4599.46 4799.46 47909 86.88 4599.46 4799.46 4799.46 85.53 4599.81 77,72010 90.79 4595.55 107,12111 90.34 4596.00 445,11 91.05 4595.29 17,12111 93.11 4593.23 271308 22.11 4681.16 479.16 190.17 4678.76 77,2208 27.00 4678.27 77,2210 23.60 4678.67 77,2208 27.00 4678.67 77,2208 28.30 4678.67						7/24/08	82.20	4604.14
DODSON 644927 605594.560 3469063.772 4686.88 4599.46 4599.46 47909 86.284 4690.55 4599.46 47909 86.88 4599.46 4799.46 47909 86.88 4599.46 4799.46 47909 86.88 4599.46 4799.46 4799.46 85.53 4599.81 77,72010 90.79 4595.55 107,12111 90.34 4596.00 445,11 91.05 4595.29 17,12111 93.11 4593.23 271308 22.11 4681.16 479.16 190.17 4678.76 77,2208 27.00 4678.27 77,2210 23.60 4678.67 77,2208 27.00 4678.67 77,2208 28.30 4678.67							81.82	
DODSON 644827 605594.560 3469063.772 4686.34 4690.8 4599.46 10609 86.88 4599.46 10609 87.27 4599.07 1071/10 88.54 4599.69 1071/10 88.54 4599.69 1071/10 89.54 4599.69 1071/10 90.39 4595.55 1071/10 90.39 4595.55 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 4595.69 1071/10 90.39 10 4595.69 10 4595.69 10 4595.69 10 4595.69 10 4595.69 10 4595.69 10 4595.69 10 4595.69 10 4595								
DODSON 644827 605594.560 3469063.772 4686.34 4686.37 4599.07 4599.07 1076109 87.27 4599.07 107610 89.53 4599.61 1076109 90.33 4599.61 1076101 90.33 4599.61 1076101 90.33 4599.61 1076101 90.33 4599.61 1076101 90.34 4595.20 771211 92.07 4594.27 1076101 90.34 4595.20 771211 92.07 4594.27 1076101 90.34 4593.23 1076101 90.34 4593.23 1076101 90.34 4593.23 1076101 90.34 4593.23 1076101 90.34 4593.23 1076101 90.34 4593.23 1076101 90.34 4593.23 1076101 90.34 4593.23 1076101 90.34 4593.23 1076101 90.34 4593.23 1076101 90.34 4593.23 1076100 90.34 4593.23 1076100 90.34 4593.23 1076100 90.34 4593.23 1076100 90.34 4593.23 1076100 90.34 4593.23 1076100 90.34 4593.23 1076100 90.34 4593.23 1076100 90.34 4593.23 1076100 90.34 4593.33 107612 90.34 4593.33 107612 90.34 4593.34 4593.35 107610 90.								
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DODSON 644927 605594.560 3469063.772 4686.34 412110 88.5.54 4597.80 4596.61 41710 89.53 4596.61 4596.60 417101 90.33 4596.61 4596.00 44911 90.33 4596.61 4596.00 44911 90.34 4596.20 4								
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DOUGLASS 791 592791 607632-993 3470222-677 4703.27 4709.2 592791 607607-541 3469829.115   EAST 599796 60707-541 3468712-215 4626.01 107609 56.29 4575.36 107609 56.29 4575.38 1 107609 56.29 4575.38 1 107609 56.29 4575.38 1 107609 56.29 4575.38 1 107609 56.29 1076009 56.29 14676.37 107609 56.29 14676.39 10760								
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DOUGLASS 791  DOUGLASS 791  DOUGLASS 791  Fig. 1  DOUGLASS 791  Fig. 2  Fig. 2  Fig. 2  Fig. 2  Fig. 2  Fig. 2  Fig. 3  Fig. 4  Fig. 3  Fig. 3  Fig. 4  Fig. 3  Fig. 3  Fig. 4  Fig. 3  Fig. 4  Fig. 3  Fig. 4  Fig. 4  Fig. 4  Fig. 3  Fig. 4  Fi								
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DOUGLASS 791 592791 607632.993 3470222.677 4703.27 470								
DOUGLASS 791  592791  607632.993  3470222.677  4703.27  4709.3  40.40  40.60.87  40.10  40.60.87  40.10  40.60.87  40.10  40.60.87  40.10  40.60.87  40.10  40.60.87  40.10  40.60.87  40.10  40.60.87  40.10  40.60.87  40.10  40.60.87  40.60.80								
DOUGLASS 791  592791  607632.993  3470222.677  4703.28  4703.27  4703.27  4703.28  4703.27  4703.28  4								
DOUGLASS 791  592791  607632.993  3470222.677  4703.27  4703.27  4703.27  4703.27  4703.27  47093  28.53  4674.74  4677.23  10/5/09  31.49  4672.23  10/5/09  31.49  4671.78  1/21/10  34.55  4668.72  4/19/10  34.64  4668.637  7/12/10  36.74  4668.637  7/12/10  36.74  4668.637  1/18/11  25.96  4677.31  2/13/08  87.76  4593.97  5/13/08  87.76  4593.97  5/13/08  87.21  4594.83  10/16/08  86.45  4595.28  1/20/09  86.26  478/09  86.10  4595.69  10/5/09  86.11  4681.73  4681.73  4681.73  478/09  86.12  479/10  87.55  4594.18  1/18/11  87.80  4593.33  7/12/11  87.80  4593.33  7/12/11  88.38  4593.35  2/8/08  50.20  4675.49  479.09  50.52  4575.49  479.09  50.52  4575.49  479.09  50.95  4767.30  4769.95  47712/10  4								
DOUGLASS 791  592791  607632.993  3470222.677  4703.27  4703.27  4709.9  31.04  4672.23  10/5/09  31.49  4671.78  1/21/10  34.55  4688.72  4/9)10  36.40  4666.87  7/1/21/0  36.40  4666.87  7/1/21/0  36.40  4666.87  7/1/21/0  36.74  4666.53  1/18/11  25.96  4677.31  213/08  87.76  4593.97  571/2208  86.90  4594.83  10/16/08  86.45  4595.28  1/20/09  86.16  4595.57  10/5/09  86.16  4595.54  1/21/10  87.19  4681.73  4681.73  4681.73  4681.73  4681.73  Fig. 10								
DOUGLASS 791 892/91 607632.993 34/022.57/ 4/03.27 7/7/09 31.04 4672.23 10/5/09 31.49 4671.78 11/21/10 36.40 4666.87 7/12/10 36.74 4666.53 11/18/11 25.96 4677.31 22/13/08 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 11/20/09 86.26 4595.47 48/09 86.04 4595.69 11/21/10 86.45 4595.28 41/21/10 86.45 4595.28 41/21/10 86.45 4595.28 41/21/10 87.55 4594.81 11/81/11 87.80 4593.35 7/12/11 88.38 4593.35 28/09.28 11/21/10 87.55 4594.18 11/81/11 87.80 4593.35 7/12/11 88.38 4593.35 28/09.29 4575.81 5/14/08 52.45 4573.56 7/23/08 52.16 4573.85 11/21/10 97.12 4594.54 47/12/10 97.12 4594.54 47/12/10 97.12 4594.54 47/12/10 87.55 4594.18 11/81/11 87.80 4593.35 11/21/10 87.55 4594.18 11/81/11 87.80 4593.35 11/21/10 87.55 4594.18 11/81/11 87.80 4593.35 11/21/10 87.55 4594.18 11/81/11 87.80 4593.35 11/21/10 87.55 4594.18 11/81/11 87.80 4593.35 11/21/10 87.55 4594.18 11/81/11 87.80 4593.35 11/21/10 87.55 4594.81 11/81/11 87.80 4593.35 11/21/10 87.55 4594.81 11/81/11 87.80 4593.35 11/21/10 87.55 4594.81 11/81/11 87.80 4593.35 11/21/10 87.55 4594.81 11/21/21/21/21/21/21/21/21/21/21/21/21/2								
DOUGLASS 792 592792 607607.541 3469829.115 4681.73	DOUGLASS 791	592791	607632.993	3470222.677	4703.27			
DOUGLASS 792 592792 607607.541 3469829.115 4681.73 1/18/11 25.96 4677.31 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 4/595.59 10/5/09 86.16 4595.57 10/5/09 86.19 4595.54 1/21/10 87.55 4594.18 1/18/11 87.80 4593.93 4/5/6.2 4/5/3.85 1/21/09 86.26 4595.54 1/21/10 87.55 4594.18 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11 87.80 4593.93 1/18/11/18/11/								
## A								
PAGE 17/12/10 36.74 4666.53 7/12/10 36.74 4666.53 1/18/11 25.96 4677.31 2/13/08 87.76 4593.97 5/13/08 87.21 4594.52 7/22/08 86.90 4594.83 10/16/08 86.26 4595.28 1/22/09 86.26 4595.28 1/22/09 86.26 4595.69 1/22/09 86.26 4595.69 1/22/09 86.26 4595.57 1/22/09 86.26 4595.57 1/22/09 86.26 4595.59 1/22/10 86.45 4595.59 1/22/10 87.55 4594.18 1/18/11 87.80 4593.93 7/12/11 88.38 4593.35 2/8/08 50.20 4575.81 5/14/08 52.45 4573.85 1/22/09 50.52 4573.82 1/22/09 50.52 4573.82 1/22/09 50.52 4575.49 4/8/09 51.91 4574.10 7/13/09 56.93 4566.66 1/22/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 11/8/11 59.79 4566.22 4/5/11 59.73 4566.22 4/5/11 59.73 4566.22								
DOUGLASS 792 592792 607607.541 3469829.115 4681.73    EAST 599796 607076.365    EAST 599796 60707.366    EAST 599796 607077.370    EAST 599796 60707.370    EAST 599796 60707.								
EAST 599796 607076.365 BAST 2.215 BAST 599796 60707.541 BAST 599796 60707.365 BAST 599796 607076.365 BAST 599796 607076 6						7/12/10	36.74	4666.53
EAST 599796 607076.365 3468712.215 FAST 599796 607607.541 September 2.15    EAST 599796 607076.365 September 2.15    EAST 599796    EAST 599796 607076.365 September 2.15    EAST 599796    EAST						1/18/11	25.96	4677.31
DOUGLASS 792 592792 607607.541 3469829.115 4681.73						2/13/08		4593.97
DOUGLASS 792  592792  607607.541  3469829.115  4681.73  4681.73  4681.73  4681.73  4681.73  4681.73  607607.541  4681.73						5/13/08	87.21	4594.52
DOUGLASS 792  592792  607607.541  3469829.115  4681.73  4681.73  4681.73  777/09  86.16  4595.57  10/5/09  86.19  4595.54  1/21/10  86.45  4595.52  4594.54  7/12/10  87.15  4594.18  1/18/11  87.80  4593.35  7/12/11  88.38  4593.35  2/8/08  50.20  4575.81  59796  607076.365  3468712.215  4626.01  1/25/10  59.35  4566.66  4/21/10  58.88  4567.13  7/14/10  58.88  4567.13  7/14/10  58.88  4567.13  7/14/10  58.88  4567.13  7/14/10  58.88  4567.13  7/14/10  58.88  4567.13  7/14/10  58.88  4567.13  7/14/10  61.86  4564.15  10/20/10  61.20  4566.28  4/5/11  59.73  4566.28  4/5/11  59.73  4566.28						7/22/08	86.90	4594.83
DOUGLASS 792  592792  607607.541  3469829.115  4681.73  4681.9  4699.54  4719/10  87.15  4594.54  4719/10  87.15  4594.54  4719/10  87.15  4594.54  4719/11  88.38  4593.35  4593.35  4712/11  88.38  4593.35  4573.366  7723/08  52.16  4573.82  10/24/08  52.19  4573.82  10/26/09  50.52  4575.49  48/8/09  51.91  4574.10  7713/09  56.93  4569.08  4721/10  58.88  4567.13  7714/10  61.86  4564.15  10/20/10  61.20  4564.81  11/18/11  59.73  4566.22  4/5/11  59.73  4566.22  4/5/11  59.73  4566.22						10/16/08	86.45	4595.28
DOUGLASS 792 592792 607607.541 3469829.115 4681.73 77709 86.16 4595.57 10/5/09 86.19 4595.54 11/21/10 86.45 4595.28 41/19/10 87.19 4594.54 77/12/10 87.55 4594.18 11/18/11 87.80 4593.93 77/12/11 88.38 4593.35 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 11/20/09 50.52 4575.49 4/8/09 51.91 4574.10 7/13/09 56.93 4569.08 10/8/09 51.91 4574.10 7/13/09 56.93 4569.08 10/8/09 51.91 4574.10 7/13/09 56.93 4566.66 4/21/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 11/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22						1/20/09	86.26	4595.47
EAST 599796 607076.365 3468712.215 4626.01 10/5/09 86.19 4595.54 4595.28 10/5/09 87.19 4594.54 4595.28 44/19/10 87.19 4594.54 47/12/10 87.55 4594.18 17/81/11 87.80 4593.93 77/12/11 88.38 4593.35 2/8/08 50.20 4575.81 5/14/08 52.45 4573.56 7/23/08 52.16 4573.82 10/14/08 52.19 4573.82 11/20/09 50.52 4575.49 4/8/09 51.91 4574.10 7/13/09 56.93 4566.08 10/8/09 60.95 4566.06 11/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 11/8/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22						4/8/09	86.04	4595.69
EAST 599796 607076.365 3468712.215 4626.01 1/21/10 86.45 4595.28 4594.54 479/10 87.19 4594.54 4594.54 7/12/10 87.55 4594.18 1/18/11 87.80 4593.93 7/12/11 88.38 4593.35 2/8/08 50.20 4575.81 5/14/08 52.45 4573.56 7/23/08 52.16 4573.85 10/14/08 52.19 4573.82 1/20/09 50.52 4575.49 4/8/09 51.91 4574.10 7/13/09 56.93 4569.08 10/8/09 60.95 4565.06 1/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4566.22	DOUGLASS 792	592792	607607.541	3469829.115	4681.73	7/7/09	86.16	4595.57
EAST 599796 607076.365 3468712.215 4626.01 4/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22						10/5/09	86.19	4595.54
EAST 599796 607076.365 3468712.215 4626.01 FAST 599796 607076.365 3468712.215 FAST 607076.365						1/21/10	86.45	4595.28
EAST 599796 607076.365 3468712.215 4626.01 1/18/11 87.80 4593.93 7/12/11 88.38 4593.35 2/8/08 50.20 4575.81 5/14/08 52.45 4573.56 7/23/08 52.16 4573.85 10/14/08 52.19 4573.82 1/20/09 50.52 4575.49 4/8/09 51.91 4574.10 7/13/09 56.93 4569.08 10/8/09 60.95 4565.06 1/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22						4/19/10	87.19	4594.54
EAST 599796 607076.365 3468712.215 4626.01 7/12/11 88.38 4593.35 2/8/08 50.20 4575.81 5/14/08 52.45 4573.56 7/23/08 52.16 4573.85 10/14/08 52.19 4573.82 1/20/09 50.52 4575.49 4/8/09 51.91 4574.10 7/13/09 56.93 4569.08 10/8/09 60.95 4565.06 1/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22						7/12/10	87.55	4594.18
EAST 599796 607076.365 3468712.215 4626.01 2/8/08 50.20 4575.81 5/14/08 52.45 4573.56 7/23/08 52.16 4573.85 10/14/08 52.19 4573.82 1/20/09 50.52 4575.49 4/8/09 51.91 4574.10 7/13/09 56.93 4569.08 10/8/09 60.95 4565.06 1/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22						1/18/11	87.80	4593.93
EAST 599796 607076.365 3468712.215 4626.01 57/14/08 52.45 4573.56 7/23/08 52.16 4573.85 10/14/08 52.19 4573.82 1/20/09 50.52 4575.49 4/8/09 51.91 4574.10 7/13/09 56.93 4569.08 10/8/09 60.95 4565.06 1/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22	<u> </u>					7/12/11	88.38	4593.35
EAST 599796 607076.365 3468712.215 4626.01 7/23/08 52.16 4573.85 10/14/08 52.19 4573.82 1/20/09 50.52 4575.49 4/8/09 51.91 4574.10 7/13/09 56.93 4569.08 10/8/09 60.95 4565.06 1/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22	<u> </u>					2/8/08	50.20	4575.81
EAST 599796 607076.365 3468712.215 4626.01 10/14/08 52.19 4573.82 1/20/09 50.52 4575.49 4/8/09 51.91 4574.10 7/13/09 56.93 4569.08 10/8/09 60.95 4565.06 1/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22						5/14/08	52.45	4573.56
EAST 599796 607076.365 3468712.215 4626.01 1/20/09 50.52 4575.49 4/8/09 51.91 4574.10 7/13/09 56.93 4569.08 10/8/09 60.95 4565.06 1/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22						7/23/08	52.16	4573.85
EAST 599796 607076.365 3468712.215 4626.01 1/20/09 50.52 4575.49 4/8/09 51.91 4574.10 7/13/09 56.93 4569.08 10/8/09 60.95 4565.06 1/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22						10/14/08	52.19	4573.82
EAST 599796 607076.365 3468712.215 4626.01 4/8/09 51.91 4574.10 7/13/09 56.93 4569.08 10/8/09 60.95 4565.06 1/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22								
EAST 599796 607076.365 3468712.215 4626.01 7/13/09 56.93 4569.08 10/8/09 60.95 4565.06 1/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22								
EAST 599796 607076.365 3468712.215 4626.01 10/8/09 60.95 4565.06 1/25/10 59.35 4566.66 4/21/10 58.88 4567.13 7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22								
EAS1  599/96  6070/6.365  3468/12.215  4626.01  1/25/10  59.35  4566.66  4/21/10  58.88  4567.13  7/14/10  61.86  4564.15  10/20/10  61.20  4564.81  1/18/11  59.79  4566.22  4/5/11  59.73  4566.28  7/12/11  63.79  4562.22	E40=	F00700	007070	0.4007.5.5.5	1000 01			
4/21/10     58.88     4567.13       7/14/10     61.86     4564.15       10/20/10     61.20     4564.81       1/18/11     59.79     4566.22       4/5/11     59.73     4566.28       7/12/11     63.79     4562.22	EAST	599796	607076.365	3468/12.215	4626.01			
7/14/10 61.86 4564.15 10/20/10 61.20 4564.81 1/18/11 59.79 4566.22 4/5/11 59.73 4566.28 7/12/11 63.79 4562.22								
10/20/10 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								
1/18/11     59.79     4566.22       4/5/11     59.73     4566.28       7/12/11     63.79     4562.22								
4/5/11     59.73     4566.28       7/12/11     63.79     4562.22								
7/12/11 63.79 4562.22								
						10/12/11	63.64	4562.37



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
EPPELE 641	805641	607165.354	3469229.942	4642.86	10/7/09	29.92	4612.94
					7/20/10	50.38	4592.48
					10/20/10	48.88	4593.98
					1/17/11	51.13	4591.73
					4/5/11	53.81	4589.05
					7/11/11	56.82	4586.04
					10/12/11	37.62	4605.24
					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
FLEMING	218386	605565.701	3469342.523	4693.68	4/20/10	315.26	4378.42
					7/15/10	318.32	4375.36
					11/4/10	349.62	4344.06
					1/19/11	356.89	4336.79
					7/12/11	364.72	4328.96
					10/22/08	40.59	4602.33
					1/21/09	40.66	4602.26
					4/9/09	42.88	4600.04
					7/13/09	54.94	4587.98
FULTZ	212447	607153.306	3469063.892	4642.92	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
					10/16/08	191.83	4446.62
					1/28/09	191.92	4446.53
					4/15/09	192.09	4446.36
					7/16/09	192.52	4445.93
					10/14/09	192.82	4445.63
GARNER 557	558557	602659.240	3468962.415	4638.45	2/2/10	193.33	4445.12
					4/22/10	193.49	4444.96
					7/20/10	193.93	4444.52
					10/19/10	194.29	4444.16
					1/19/11	194.61	4443.84
					4/6/11	194.86	4443.59
					7/15/11	195.25	4443.20



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (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
CARNER COF	507005	000005 050	0.400007.000	4040.74	10/14/09	196.36	4444.38
GARNER 635	587635	602665.352	3468967.902	4640.74	2/2/10	195.32	4445.42
					4/22/10	196.01	4444.73
					8/25/10	195.57	4445.17
					10/19/10	225.83	4414.91
					1/19/11	196.89	4443.85
					4/6/11	197.40	4443.34
					7/15/11	198.07	4442.67
					10/11/11	197.75	4442.99
					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	000050 057	0.400000 000	4747.44	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
GL-03	539782	604386.940	3473747.943	4924.31	8/12/09	656.56	4267.75
					8/12/09	656.56	4267.75
					11/10/09	655.31	4269.00
					3/2/10	655.52	4268.79
					4/9/10	655.35	4268.96
	<u> </u>				7/7/10	655.05	4269.26
			_		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
GOAR RANCH	610695	602454.751	3468892.471	4631.13	7/7/09	185.36	4445.77
					10/12/09	185.72	4445.41
					2/2/10	186.25	4444.88
					4/22/10	186.44	4444.69
					7/13/10	186.76	4444.37
İ				-	1/19/11	187.52	4443.61
					7/12/11	188.24	4442.89



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					2/27/08	163.05	4434.16
					5/7/08	163.28	4433.93
					7/14/08	163.87	4433.34
					10/16/08	163.95	4433.26
					1/28/09	163.82	4433.39
					4/15/09	164.16	4433.05
				.==== 0.	7/14/09	164.59	4432.62
HOBAN	805290	601705.848	3468880.329	4597.21	10/15/09	165.00	4432.21
					3/2/10	165.32	4431.89
					5/18/10	165.71	4431.50
					7/20/10	166.17	4431.04
					10/19/10	166.45	4430.76
					8/31/11	167.76	4429.45
					12/14/11	168.13	4429.08
					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
			3468770.377	4593.91	7/15/09	151.76	4442.15
					10/12/09	152.08	4441.83
HOWARD <sup>4</sup>	NR	601281.159			1/27/10	152.20	4441.71
					4/21/10	152.30	4441.61
					7/19/10	153.16	4440.75
					10/18/10	153.53	4440.38
					1/17/11	153.51	4440.40
					4/11/11	154.24	4439.67
					8/26/11	154.79	4439.12
					10/11/11	155.02	4438.89
	1				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
KEEFER	209744	599879.175	3468119.015	4572.03	1/26/10	136.26	4435.77
					4/20/10	136.26	4435.77
					7/15/10	137.29	4434.74
					10/19/10	137.68	4434.35
					1/18/11	137.42	4434.61
					4/6/11	137.91	4434.12
					7/18/11	140.39	4431.64
					10/11/11	141.68	4430.35



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (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
MCCONNELL 265	539265	601463.094	3468840.139	4600.70	10/12/09	158.13	4442.57
WICCONNELL 200	559205	001403.094	3400040.139	4000.70	1/26/10	158.35	4442.35
					4/22/10	158.68	4442.02
					7/21/10	159.37	4441.33
					4/22/10 158.68 7/21/10 159.37 10/18/10 159.63 1/19/11 159.69 4/8/11 159.10 7/12/11 160.77 10/11/11 161.17 3/5/08 288.30 5/15/08 286.53 7/31/08 286.82 10/20/08 287.09 2/11/09 287.74 4/20/09 287.58	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
					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
			3471381.176	4728.53	2/11/09	287.74	4440.79
		602091.308			4/20/09	287.47	4441.06
					7/15/09	287.58	4440.95
METZLER	35-71891				10/14/09	287.99	4440.54
WILTZELIX	00 7 100 1			4720.00	2/1/10	288.38	4440.15
					5/18/10	288.65	4439.88
					7/16/10	288.88	4439.65
					10/19/10	289.09	4439.44
					1/19/11	289.54	4438.99
					4/4/11	289.87	4438.66
					7/12/11	289.98	4438.55
					10/12/11	290.47	4438.06
					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
NECC	500107	007000	0.474.440.40	4761.23	8/11/09	566.87	4194.36
NESS	509127	607866.391	3471419.494		11/12/09	537.34	4223.89
					2/2/10	531.85	4229.38
							4400 10
					4/21/10	568.11	4193.12
					4/21/10 7/19/10	568.11 573.02	4188.21
					4/21/10 7/19/10 1/18/11	568.11 573.02 541.80	4188.21 4219.43
					4/21/10 7/19/10 1/18/11 7/12/11	568.11 573.02 541.80 597.71	4188.21 4219.43 4163.52
					4/21/10 7/19/10 1/18/11 7/12/11 5/13/08	568.11 573.02 541.80 597.71 339.77	4188.21 4219.43 4163.52 4460.91
NOTEMAN	212483	606053.800	3471576.400	4800.68	4/21/10 7/19/10 1/18/11 7/12/11 5/13/08 8/27/08	568.11 573.02 541.80 597.71 339.77 344.34	4188.21 4219.43 4163.52 4460.91 4456.34
NOTEMAN	212483	606053.800	3471576.400	4800.68	4/21/10 7/19/10 1/18/11 7/12/11 5/13/08 8/27/08 11/22/08	568.11 573.02 541.80 597.71 339.77 344.34 322.26	4188.21 4219.43 4163.52 4460.91 4456.34 4478.42
NOTEMAN	212483	606053.800	3471576.400	4800.68	4/21/10 7/19/10 1/18/11 7/12/11 5/13/08 8/27/08 11/22/08 2/25/09	568.11 573.02 541.80 597.71 339.77 344.34 322.26 327.54	4188.21 4219.43 4163.52 4460.91 4456.34 4478.42 4473.14
NOTEMAN	212483	606053.800	3471576.400	4800.68	4/21/10 7/19/10 1/18/11 7/12/11 5/13/08 8/27/08 11/22/08 2/25/09 10/7/09	568.11 573.02 541.80 597.71 339.77 344.34 322.26 327.54 101.17	4188.21 4219.43 4163.52 4460.91 4456.34 4478.42 4473.14 4430.21
NOTEMAN	212483	606053.800	3471576.400	4800.68	4/21/10 7/19/10 1/18/11 7/12/11 5/13/08 8/27/08 11/22/08 2/25/09 10/7/09 3/16/10	568.11 573.02 541.80 597.71 339.77 344.34 322.26 327.54 101.17 99.43	4188.21 4219.43 4163.52 4460.91 4456.34 4478.42 4473.14 4430.21 4431.95
					4/21/10 7/19/10 1/18/11 7/12/11 5/13/08 8/27/08 11/22/08 2/25/09 10/7/09 3/16/10 5/25/10	568.11 573.02 541.80 597.71 339.77 344.34 322.26 327.54 101.17 99.43 101.63	4188.21 4219.43 4163.52 4460.91 4456.34 4478.42 4473.14 4430.21 4431.95 4429.75
NOTEMAN NSD-02	212483	606053.800 598820.051	3471576.400 3468821.474	4800.68 4531.38	4/21/10 7/19/10 1/18/11 7/12/11 5/13/08 8/27/08 11/22/08 2/25/09 10/7/09 3/16/10 5/25/10	568.11 573.02 541.80 597.71 339.77 344.34 322.26 327.54 101.17 99.43 101.63 102.38	4188.21 4219.43 4163.52 4460.91 4456.34 4478.42 4473.14 4430.21 4431.95 4429.75 4429.00
					4/21/10 7/19/10 1/18/11 7/12/11 5/13/08 8/27/08 11/22/08 2/25/09 10/7/09 3/16/10 5/25/10	568.11 573.02 541.80 597.71 339.77 344.34 322.26 327.54 101.17 99.43 101.63	4188.21 4219.43 4163.52 4460.91 4456.34 4478.42 4473.14 4430.21 4431.95 4429.75



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					10/7/09	85.62	4432.66
					3/16/10	83.51	4434.77
					5/25/10	84.49	4433.79
NSD-03	527586	598070.538	3468694.259	4518.28	8/25/10	85.70	4432.58
					3/17/11	86.76	4431.52
					6/17/11	88.76	4429.52
					12/7/11	89.30	4428.98
					10/27/08	160.51	4439.93
NWC-02	562944	600177.435	3467474.673	4600.44	4/29/09 <sup>5</sup>	160.5	4439.94
14440-02	302344	000177.400	3401414.013	4000.44	9/10/09 <sup>5</sup>	155	4445.44
					4/2010 <sup>5</sup>	131	4469.44
					11/3/08	131.48	4443.51
NWC-03	203321	601153.857	3468350.838	4574.99	4/29/09 <sup>5</sup>	130	4444.99
14440-05	203321	001100.007	3400300.030	4374.55	9/10/09 <sup>5</sup>	126	4448.99
					10/9/09 <sup>5</sup>	125	4449.99
					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
NWC-03 CAP <sup>6</sup>	627684	601151.704	3468343.653	4572.82	2/3/10	131.34	4441.48
14WO-03 OAI	027001	001131.704		1072102	4/21/10	131.86	4440.96
					7/20/10	131.50	4441.32
					1/18/11	132.91	4439.91
					7/15/11	134.42	4438.40
					10/13/11	134.73	4438.09
					12/2/08	352.11	4338.66
NWC-04	551849	605829.808	3469071.959	4690.77	4/29/09 <sup>5</sup>	328	4362.77
					9/10/09 <sup>5</sup>	324	4366.77
					4/2010 <sup>5</sup>	216	4474.77
					4/29/09 <sup>5</sup>	156	4436.50
NWC-06	575700	599822.821	3467749.954	4592.50	9/10/09 <sup>5</sup>	155	4437.50
					10/9/09 <sup>5</sup>	148	4444.50
					4/2010 <sup>5</sup>	140	4452.50
					5/13/08	68.65	4643.30
					8/5/08	69.53	4642.42
					10/16/08 1/20/09	69.83 69.23	4642.12 4642.72
					4/7/09	69.23	4642.72
OSBORN	643436	607031.823	3470270.548	4711.95	7/8/09	96.61	4615.34
CODOM	0-10-100	007001.020	0-110210.0-10	47.11.55	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
					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
	l				1/21/10	166.92	4524.48
PANAGAKOS	35-76413	605304.234	3469323.140	4691.40	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



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					5/15/08	279.78	4447.43
					8/18/08	280.06	4447.15
PARRA	570445	000470 740	0.474.000.540	4727.21	11/3/08	280.39	4446.82
PARKA	576415	602170.716	3471263.549	4/2/.21	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	150.99	4441.14
					2/25/09	149.68	4442.45
					4/14/09	150.01	4442.12
					7/13/09	150.47	4441.66
					10/7/09	150.96	4441.17
DIONIKE	040005	004045 474	0.400000 004	4500.40	3/8/10	151.11	4441.02
PIONKE	613395	601045.471	3468960.981	4592.13	4/26/10	151.32	4440.81
					7/15/10	151.90	4440.23
					10/18/10	152.38	4439.75
					1/19/11	152.38	4439.75
					4/8/11	153.04	4439.09
					7/12/11	153.57	4438.56
					10/11/11	153.87	4438.26
					2/20/08	204.22	4434.87
					5/19/08	204.72	4434.37
					7/31/08	205.56	4433.53
				4639.09	10/21/08	205.06	4434.03
					2/13/09	204.74	4434.35
DOOL	500540	500000 000	0.470040.000		4/21/09	204.87	4434.22
POOL	509518	599683.603	3470013.823		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
RAMIREZ	216425	599730.649	3467584.363	4596.61	4/21/10	159.96	4436.65
					7/21/10	161.05	4435.56
					10/19/10	161.23	4435.38
					1/18/11	161.22	4435.39
					4/11/11	161.48	4435.13
					7/18/11	162.39	4434.22
					10/12/11	163.04	4433.57



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
DAY	000770	007000 400	0400405447	4047.04	10/7/09	49.87	4598.04
RAY	803772	607083.422	3469195.147	4647.91	1/26/10	47.61	4600.30
					4/20/10	49.78	4598.13
					7/14/10	51.36	4596.55
					10/20/10	49.85	4598.06
					1/17/11	50.51	4597.40
					4/5/11	51.84	4596.07
					7/11/11	55.74	4592.17
					10/12/11	53.63	4594.28
					11/11/09	135.46	4441.89
					2/25/10	135.89	4441.46
			3468491.639		4/22/10	135.62	4441.73
				4577.35	7/16/10	136.63	4440.72
ROGERS 596	573596	601001.503			10/19/10	136.61	4440.74
					1/20/11	134.21	4443.14
					4/8/11	137.68	4439.67
					7/14/11	138.09	4439.26
					10/12/11	138.09	4439.26
	641750			4579.02	2/7/08	129.85	4449.17
					7/29/08	131.86	4447.16
D00ED0.750 <sup>7</sup>		000077 000	0.400.447.000		10/22/08	132.08	4446.94
ROGERS 750 <sup>7</sup>		600977.690	3468417.386		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
					4/16/09	149.53	4441.13
					7/13/09	150.31	4440.35
ROGERS E	216018	600449.648	3467636.029	4590.66	10/6/09	150.76	4439.90
					1/25/10	150.64	4440.02
					4/21/10	150.97	4439.69
					8/25/10	151.15	4439.51
					10/19/10	151.57	4439.09
					10/13/11	153.79	4436.87
					2/5/08	293.29	4441.89
					5/15/08	293.57	4441.61
					7/30/08	293.86	4441.32
					10/20/08	294.18	4441.00
					2/12/09	294.62	4440.56
RUIZ	531770	602857.357	3471424.219	4735.18	4/21/09	294.66	4440.52
					8/3/09	294.98	4440.20
					10/28/09	295.33	4439.85
					2/1/10	295.70	4439.48
					4/26/10	295.96	4439.22
					4/8/11	297.20	4437.98



SCHWARTZ <sup>8</sup> 210865 600811.014 3468269.622 4564.49 210865 600811.014 3468269.622 4564.49 210865 600811.014 3468269.622 4564.49 210865 600811.014 3468269.622 4564.49 210865 600811.014 3468269.622 4564.49 210865 4438 210865 4438 210865 4438 210865 4438 210865 4438 210865 4438 210865 4438 210865 4438 210865 4438 210865	1.00 1.85 1.10 1.62
SCHWARTZ <sup>8</sup> 210865 600811.014 3468269.622 4564.49  210865 600811.014 3468269.622 4564.49  4666  4666  4666  4666  4666  4666  47699  47.19  4666  47699  48.45  4666  477709  49.41  49.41  4666	1.85 1.10 1.62
SCHWARTZ <sup>8</sup> 210865 600811.014 3468269.622 4564.49  10/22/08 123.39 4441 1/29/09 122.87 4444 4/17/09 123.53 4440 7/10/09 124.15 4430 10/6/09 124.55 4430 1/22/10 124.32 4440 4/21/10 125.80 4436 10/19/10 126.30 4436 11/17/11 127.50 4436 4/11/11 127.50 4436 7/18/11 127.67 4436 10/12/11 127.51 4436 10/16/08 46.60 4604 10/16/08 46.60 4604 1/21/09 47.19 4604 4/8/09 48.45 4606 7/7/09 49.41 4606	1.10 1.62
SCHWARTZ <sup>8</sup> 210865 600811.014 3468269.622 4564.49  4564.49  11/29/09 122.87 4441 4/17/09 123.53 4440 7/10/09 124.15 4430 10/6/09 124.55 4430 1/22/10 124.32 4440 4/21/10 125.80 4436 10/19/10 126.30 4436 11/17/11 127.50 4436 7/18/11 127.67 4436 10/12/11 127.51 4436 10/12/11 127.51 4436 10/16/08 46.60 4604 10/16/08 46.60 4604 1/21/09 47.19 4604 4/8/09 48.45 4606 7/7/09 49.41 4606	1.62
SCHWARTZ <sup>8</sup> 210865 600811.014 3468269.622 4564.49 45664 4666 4666 4666 4666 4666 4666 4	
SCHWARTZ <sup>8</sup> 210865 600811.014 3468269.622 4564.49  7/10/09 124.15 4444 10/6/09 124.55 4438 1/22/10 124.32 4444 4/21/10 125.80 4438 10/19/10 126.30 4438 1/17/11 127.50 4438 10/12/11 127.67 4438 10/12/11 127.51 4438 10/12/11 127.51 4438 10/12/11 127.51 4438 10/16/08 46.61 4604 10/16/08 47.19 48.09 48.45 4606 7/7/09 49.41 4606	2.00
SCHWARTZ <sup>8</sup> 210865 600811.014 3468269.622 4564.49  10/6/09 124.55 4438 1/22/10 124.32 4444 4/21/10 125.80 4438 10/19/10 126.30 4438 1/17/11 125.35 4438 4/11/11 127.50 4438 7/18/11 127.67 4438 10/12/11 127.51 4438 5/13/08 44.94 4606 8/5/08 46.61 4606 10/16/08 46.60 4606 1/21/09 47.19 4606 1/21/09 48.45 4606 7/7/09 49.41 4606	J.96
SCHWARTZ*  210865  600811.014  3468269.622  4564.49  1/22/10  124.32  4444  4/21/10  125.80  4438  10/19/10  126.30  4438  1/17/11  125.35  4438  4/11/11  127.50  4438  7/18/11  127.51  4438  5/13/08  44.94  4606  8/5/08  46.61  4604  10/16/08  46.60  4/8/09  47.19  4604  4/8/09  48.45  4606  7/7/09  49.41  4606	0.34
1/22/10 124.32 4440 4/21/10 124.65 4436 7/21/10 125.80 4438 10/19/10 126.30 4438 11/17/11 125.35 4439 4/11/11 127.50 4436 7/18/11 127.67 4436 10/12/11 127.51 4436 5/13/08 44.94 4606 8/5/08 46.61 4604 10/16/08 46.60 4604 1/21/09 47.19 4604 4/8/09 48.45 4600 7/7/09 49.41 4600	9.94
7/21/10 125.80 4438 10/19/10 126.30 4438 1/17/11 125.35 4438 4/11/11 127.50 4436 7/18/11 127.67 4436 10/12/11 127.51 4436 5/13/08 44.94 4606 8/5/08 46.61 4604 10/16/08 46.60 4604 1/21/09 47.19 4604 4/8/09 48.45 4606 7/7/09 49.41 4601	0.17
10/19/10 126.30 4438 1/17/11 125.35 4433 4/11/11 127.50 4436 7/18/11 127.67 4436 10/12/11 127.51 4436 5/13/08 44.94 4606 8/5/08 46.61 4604 10/16/08 46.60 4604 11/21/09 47.19 4604 4/8/09 48.45 4602 7/7/09 49.41 4601	9.84
1/17/11 125.35 4433 4/11/11 127.50 4436 7/18/11 127.67 4436 10/12/11 127.51 4436 5/13/08 44.94 4606 8/5/08 46.61 4604 10/16/08 46.60 4604 1/21/09 47.19 4604 4/8/09 48.45 4602 7/7/09 49.41 4604	8.69
4/11/11 127.50 4436 7/18/11 127.67 4436 10/12/11 127.51 4436 5/13/08 44.94 4606 8/5/08 46.61 4604 10/16/08 46.60 4604 1/21/09 47.19 4604 4/8/09 48.45 4602 7/7/09 49.41 4601	8.19
7/18/11 127.67 4436 10/12/11 127.51 4436 5/13/08 44.94 4606 8/5/08 46.61 4604 10/16/08 46.60 4604 1/21/09 47.19 4604 4/8/09 48.45 4602 7/7/09 49.41 4601	9.14
10/12/11 127.51 4436 5/13/08 44.94 4606 8/5/08 46.61 4604 10/16/08 46.60 4604 1/21/09 47.19 4604 4/8/09 48.45 4602 7/7/09 49.41 4604	6.99
5/13/08 44.94 4606 8/5/08 46.61 4600 10/16/08 46.60 4600 1/21/09 47.19 4600 4/8/09 48.45 4600 7/7/09 49.41 4600	6.82
8/5/08 46.61 4604 10/16/08 46.60 4604 1/21/09 47.19 4604 4/8/09 48.45 4602 7/7/09 49.41 4601	6.98
10/16/08 46.60 4604 1/21/09 47.19 4604 4/8/09 48.45 4602 7/7/09 49.41 4600	6.28
1/21/09 47.19 460/ 4/8/09 48.45 460/ 7/7/09 49.41 460/	4.61
4/8/09 48.45 4602 7/7/09 49.41 4600	4.62
7/7/09 49.41 4601	4.03
7/7/09 49.41 4601	2.77
STEPHENS   808560   606981,766   3469072,799   4651,22   77733   4651,22	1.81
3121 11213 300300 000381.700 3403072.739 4031.22 10/7/09 50.33 4600	0.89
1/26/10 51.13 4600	0.09
4/20/10 51.24 4598	9.98
7/14/10 51.91 4598	9.31
1/18/11 52.98 4598	8.24
7/11/11 54.44 4596	6.78
2/6/08 352.10 4454	4.42
5/15/08 358.97 4447	7.55
8/5/08 Dry <44	126
10/16/08 347.00 4459	9.52
1/21/09 344.78 4461	1.74
4/10/09 349.64 4456	6.88
SUNBELT 201531 605998.250 3471735.149 4806.52 7/8/09 356.99 4448	9.53
10/5/09 Dry <44	126
1/21/10 Dry <44	126
4/19/10 Dry <44	126
7/12/10 Dry <44	126
1/19/11 Dry <44	126
8/25/11 Dry <44	126
2/13/08 26.50 4690	0.09
5/14/08 30.69 4685	5.90
7/24/08 32.06 4684	4.53
10/16/08 27.53 4688	0.06
1/20/09 29.77 4686	9.00
4/7/09 31.47 4688	
SWAN NR 607378.547 3470648.298 4716.59 7/8/09 33.61 4682	6.82
10/5/09 35.12 4681	6.82 5.12
1/21/10 36.64 4679	6.82 5.12 2.98
4/21/10 38.06 4678	6.82 5.12 2.98 1.47
7/19/10 39.67 4676	6.82 5.12 2.98 1.47 9.95
1/18/11 35.06 4681	6.82 5.12 2.98 1.47 9.95 8.53
7/12/11 39.32 4677	6.82 5.12 2.98 1.47 9.95 8.53 6.92



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
TM-02A	522574	604152.059	3472008.794	4808.43	8/12/09	349.13	4459.30
	-				11/4/09	348.97	4459.46
					3/10/10	348.19	4460.24
					4/6/10	353.86	4454.57
					7/6/10	349.20	4459.23
					2/10/11	347.60	4460.83
					7/13/11	348.14	4460.29
					3/12/08	127.14	4770.71
					5/20/08	127.14	4770.45
					8/6/08	128.02	4769.83
			3473711.046		11/12/08	128.00	4769.85
					2/26/09	126.94	4770.91
TM-03	522575	606366.130		4897.85	5/13/09	113.86	4783.99
TWI-05	322373				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
					2/26/08	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
			3468376.658	4707.88	2/16/09	159.28	4548.60
	522695	606055.975			5/13/09	158.81	4549.07
TM-06 MILLER					8/18/09	158.91	4548.97
					11/12/09	158.96	4548.92
					3/8/10	158.99	4548.89
					4/14/10	159.02	4548.86
					7/2/10	159.02	4548.75
					7/21/11	159.13	4548.00
					3/5/08	81.00	4636.71
					5/22/08	81.24	4636.47
					8/6/08	81.65	4636.47
					11/5/08 2/26/09	81.75 81.88	4635.96 4635.83
TM-16	522578	605588.075	3469842.199	4717.71	5/13/09	82.01	4635.70
					8/19/09	82.37	4635.34
					11/10/09	82.83	4634.88
					3/2/10	83.09	4634.62
					4/14/10	83.22	4634.49
					7/2/10	83.51	4634.20
					7/14/11	80.41	4637.30



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (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
TM-19A	522581	602458.710	3469197.426	4645.87	8/12/09	201.46	4444.41
					11/4/09	201.16	4444.71
					3/10/10	201.34	4444.53
					4/9/10	201.55	4444.32
					7/7/10	202.35	4443.52
					2/14/11	203.00	4442.87
					7/15/11	203.30	4442.57
					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
			3469104.903		2/18/09	212.31	4454.36
				4666.67	5/7/09	212.37	4454.30
TM-42	562554	603698.271			8/18/09	212.37	4453.90
					11/3/09	213.05	4453.62
					2/24/10	213.36	4453.31
					4/19/10	213.51	4453.16
					7/2/10	213.52	4453.15
					7/12/11	214.62	4452.05
					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
T. // 000				.=	4/17/09	122.73	4439.25
TVI 236	802236	600552.215	3467978.431	4561.98	7/21/09	123.96	4438.02
					10/19/09	123.88	4438.10
					2/2/10	122.26	4439.72
					4/23/10	122.70	4439.28
					7/15/10	125.08	4436.90
					7/15/11	127.23	4434.75
					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
TVI 713	567713	600729.095	3468412.946	4567.22	2/2/10	126.71	4440.51
					4/23/10	127.53	4439.69
					7/15/10	129.14	4438.08
					10/20/10	130.84	4436.38
					1/20/11	134.36	4432.86
					4/11/11	135.72	4431.50
					7/15/11	131.61	4435.61
	1				10/12/11	130.33	4436.89



Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation <sup>1</sup> (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					2/15/08	143.31	4443.58
					5/7/08	143.90	4442.99
					7/16/08	144.22	4442.67
					10/28/08	145.81	4441.08
					1/29/09	143.99	4442.90
					4/15/09	144.38	4442.51
					7/15/09	144.99	4441.90
WEIGKODE	044000	004454.054	2400050 055	4500.00	10/15/09	145.66	4441.23
WEISKOPF	641802	601154.951	3468658.855	4586.89	2/2/10	145.28	4441.61
					4/22/10	145.72	4441.17
					7/19/10	146.46	4440.43
					10/20/10	147.11	4439.78
					1/17/11	146.72	4440.17
					4/11/11	146.31	4440.58
					8/26/11	148.06	4438.83
					10/13/11	148.30	4438.59
					2/4/08	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
				10/28/08 146.01 2/10/09 144.83	144.83	4436.11	
					4/16/09	144.94	4436.00
					7/14/09	146.14	4434.80
ZANDED	005400	500070 000	0.407000.400	4500.04	10/13/09	146.77	4434.17
ZANDER	205126	599678.880	3467998.486	4580.94	1/26/10	146.34	4434.60
					4/22/10	146.27	4434.67
					7/21/10	147.81	4433.13
					10/19/10	147.80	4433.14
					1/18/11	147.52	4433.42
					4/6/11	147.84	4433.10
					7/13/11	148.91	4432.03
	1				10/12/11	149.50	4431.44

ADWR = Arizona Department of Water Resources

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

ft amsl = feet above mean sea level

#### NR = No Record



<sup>&</sup>lt;sup>1</sup> Survey Source: Survey conducted by Gilbert Technical Service, Inc and Arizona Land Sepcialists, Inc

<sup>&</sup>lt;sup>2</sup> Measuring point elevation for third quarter 2008 changed to reflect well survey completed on September 18, 2008

<sup>&</sup>lt;sup>3</sup> Depth to Water measurement provided by Arizona Water Company

<sup>&</sup>lt;sup>4</sup> Measuring point elevation changed to reflect survey results September 10, 2010 and applied to all measurements collected

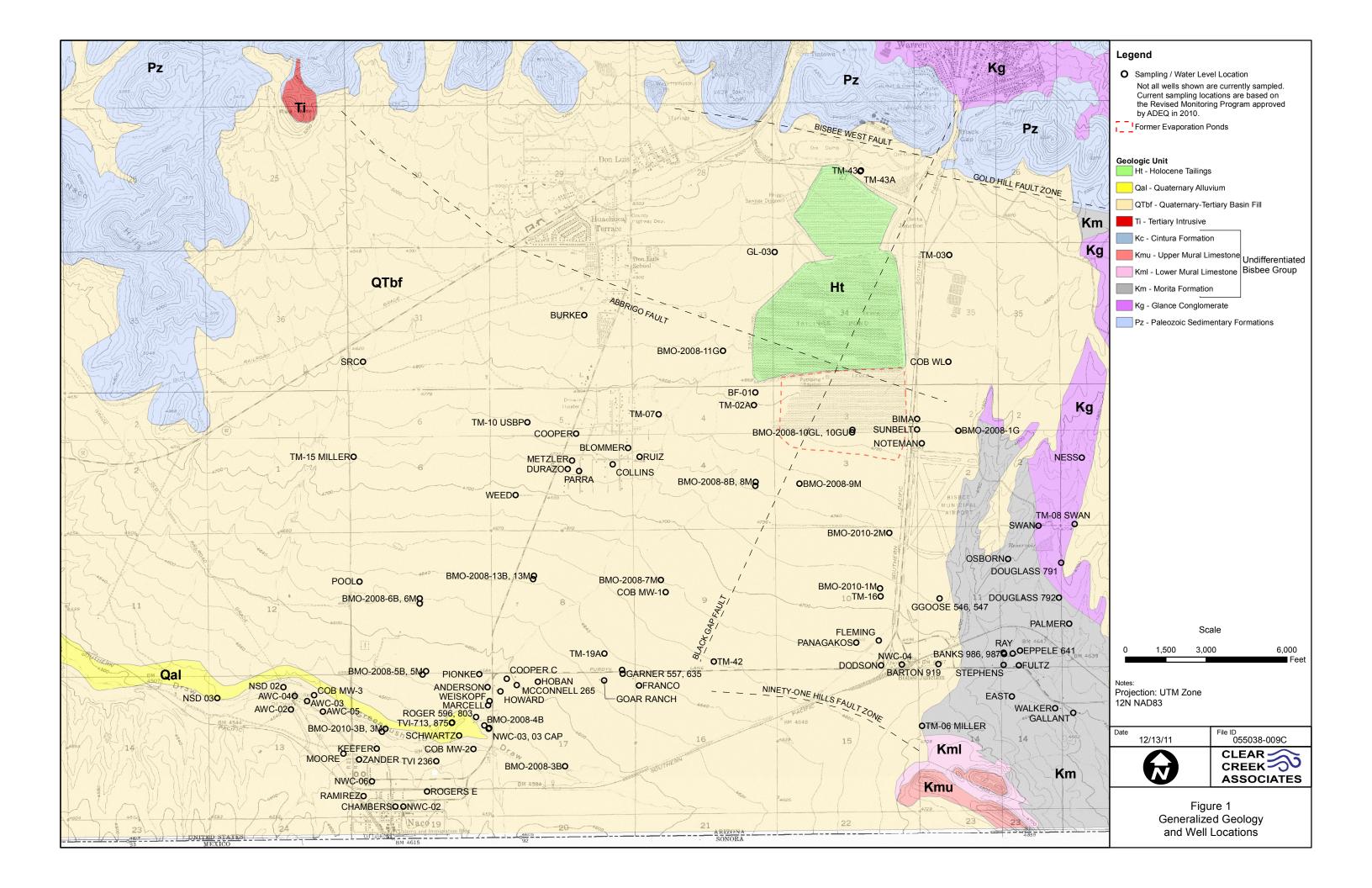
<sup>&</sup>lt;sup>5</sup> Depth to Water measurement provided by Naco Water Company

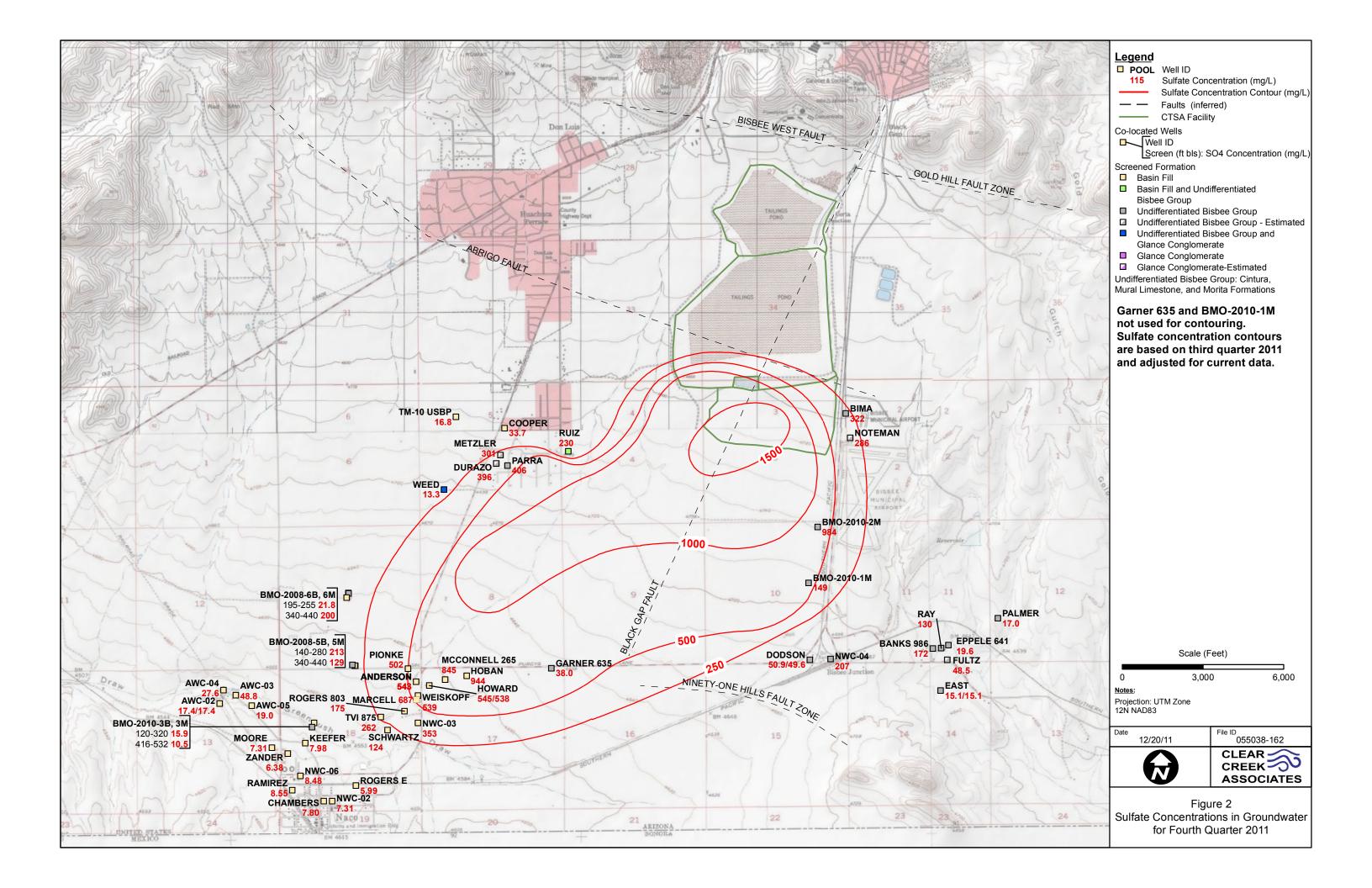
<sup>&</sup>lt;sup>6</sup> Measuring point elevation for second quarter 2009 changed to reflect well survey completed on April 27, 2009

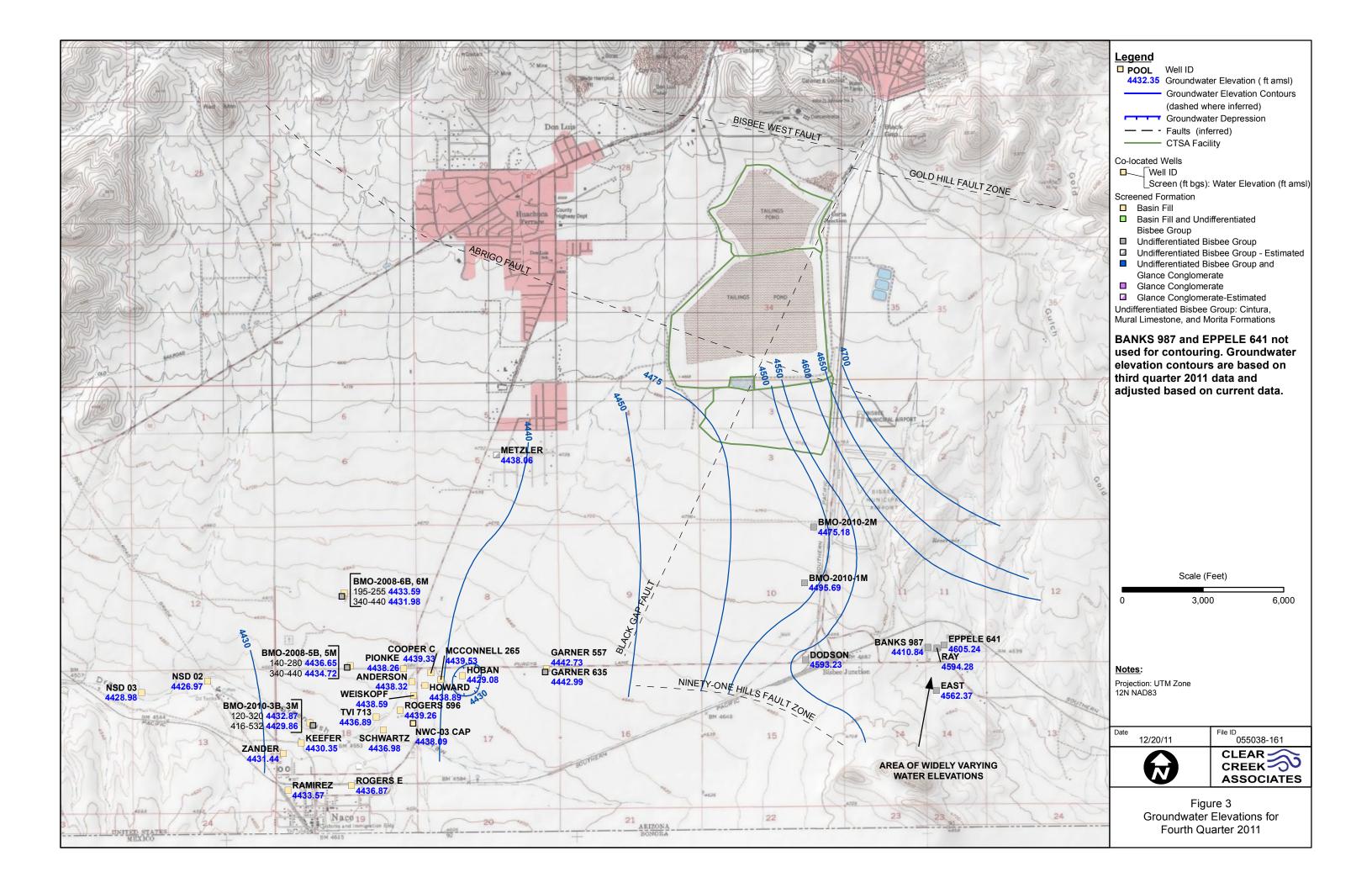
<sup>&</sup>lt;sup>7</sup> Well previously identified as ROGERS 803

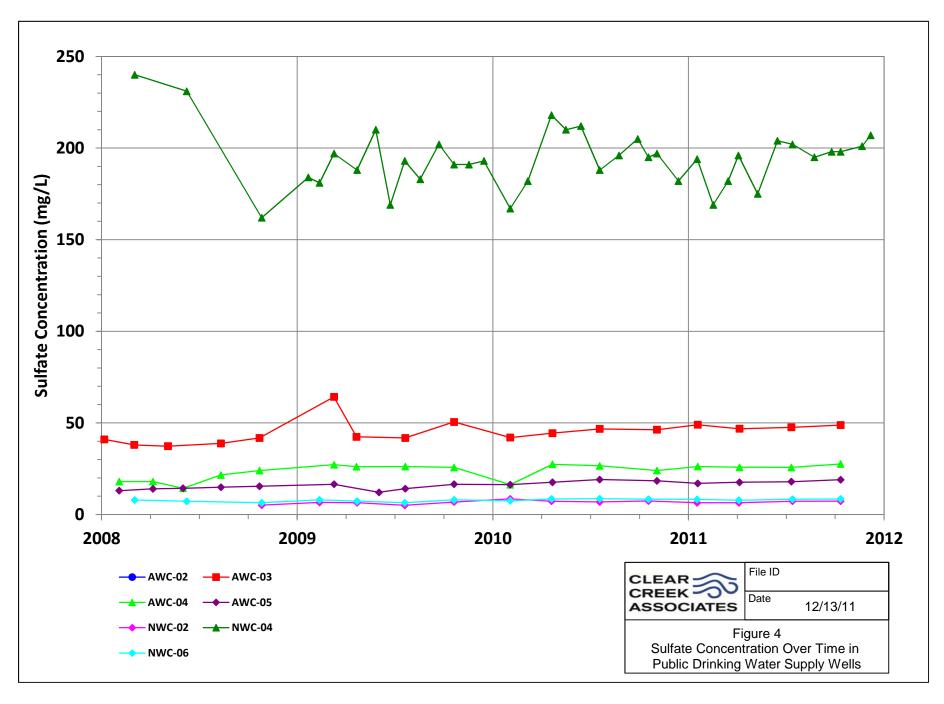
<sup>&</sup>lt;sup>8</sup> Measuring point elevation changed to reflect survey results September 10, 2010 and applied to all measurements collected

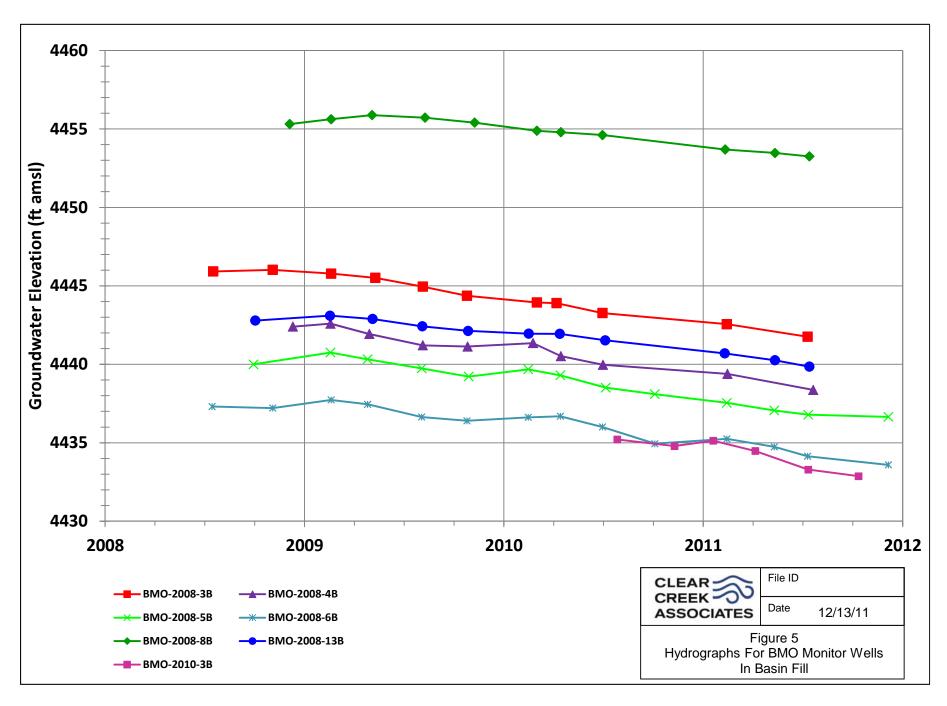
### **FIGURES**



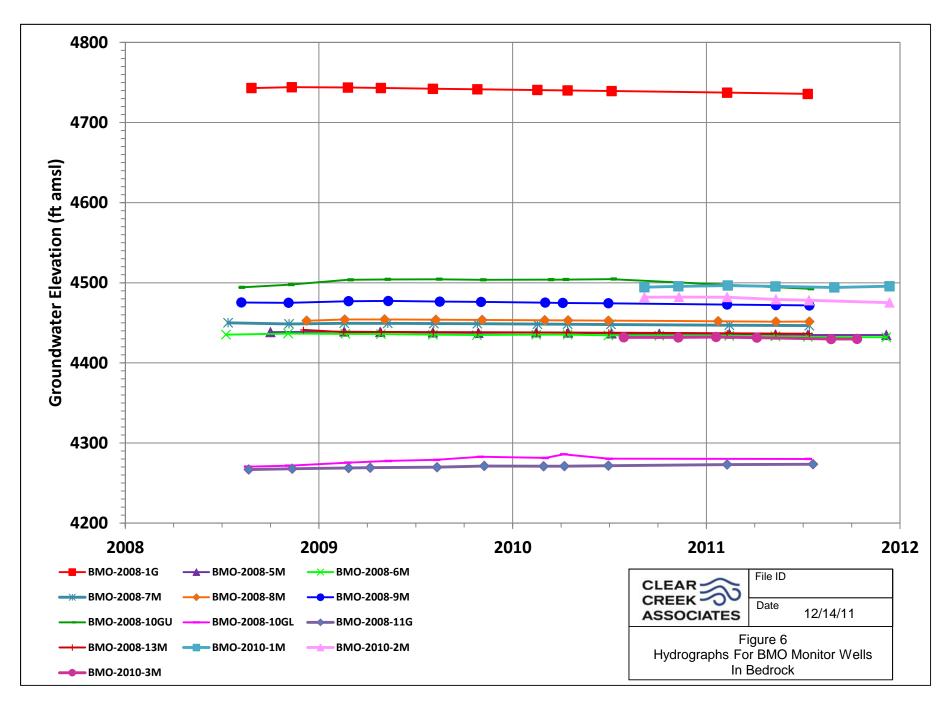








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# APPENDIX A DATA VERIFICATION REPORT

#### **APPENDIX A**

### **DATA VERIFICATION REPORT**

### FOURTH QUARTER 2011 GROUNDWATER MONITORING REPORT

### Prepared for:

### FREEPORT-MCMORAN COPPER QUEEN BRANCH

36 West Highway 92 Bisbee, Arizona 85603

### Prepared by:

### CLEAR CREEK ASSOCIATES, P.L.C.

221 North Court Avenue, Suite 101 Tucson, Arizona 85701

January 19, 2012

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#### 1. INTRODUCTION

This report summarizes the data verification review of groundwater samples collected and analyzed during the fourth quarter 2011 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 (ADEQ, 2010). Analytical results for groundwater samples collected for this project during the fourth quarter 2011 were provided to Clear Creek by SVL Analytical, Inc. (SVL) of Kellogg, Idaho for preparation of the fourth quarter 2011 Groundwater Monitoring Report.

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

The laboratory reports for the fourth quarter 2011 samples including COC forms, laboratory correspondence, QC summaries, data qualifiers, internal QA/QC tests performed by SVL and any case narratives are presented with the laboratory reports included in Appendix B. Based on the results of laboratory control samples, matrix spike/recovery and blank spikes, SVL did not advise of any modifications that should be made regarding the usability and data validation status of the laboratory test results. The analytical results for all 61 samples collected by Clear Creek and CQB are contained in 6 reports having the SVL Project numbers identified in the following table.

SVL ID	WELLS REPORTED						
Number of wells sampled: 49 Number of well samples collected (not including duplicates): 51 Number of duplicate samples collected: 4 Number of field and equipment blanks collected: 6 Total number of samples collected: 61							
W1J0362	AWC-02, AWC-03, AWC-04, AWC-05, BANKS 986, BMO-2010-3B, BMO-2010-3M, CHAMBERS, DUP20111012, DUP20111013, EAST, EB20111012, EB20111013, FB20111012, FB20111013, KEEFER, MOORE, PALMER, ROGERS 803, SCHWARTZ, TVI875, WEED, WEISKOPF, ZANDER						
W1J0376	ANDERSON, BIMA, DODSON, DUP, DUP, DURAZO, EB, EB, EPPELE 641, FB, FB, FULTZ, GARNER 635, HOWARD, MCCONNELL 265, METZLER, NOTEMAN, NWC-02, NWC-03, NWC-04, NWC-06, PARRA, PIONKE, RAY, ROGERS E, RUIZ						
W1K0537	COOPER, MARCELL, NWC-04						
W1L0181	NWC-04, TM-10						
W1L0146	BMO-2008-5B, BMO-2008-5M, BMO-2008-6B, BMO-2008-6M						
W1L0294	BMO-2010-1M, BMO-2010-2M, HOBAN						

#### 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 quality assurance and quality control 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 and at all wells where water level monitoring was conducted by Clear Creek and CQB. Water levels were measured while the well pump was off. However, it was not always possible to ascertain from the well owners how long the pump had been off. Before measuring the water level at each well, the battery on the water level indicator was checked and the sensitivity level was adjusted, if necessary. Each measurement was collected and verified by measuring the depth to water multiple times in order to obtain a consistent reading and accurate measurement.

#### 2.2 Groundwater Sampling

During this monitoring period, an attempt was made to collect groundwater samples from wells designated in the groundwater monitoring program approved by ADEQ (ADEQ, 2010). More detailed information regarding the wells sampled for water quality and water level measurements is listed in Tables 2, 3, and 4 of the main text.

### 2.2.1 Pre-Sampling Field Activities

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

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

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

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

During this monitoring period 55 groundwater samples were collected for analysis from 49 wells. Groundwater samples were collected by filtering the sample into a 250 milliliter bottle using clean filtration apparatus and one disposable 0.45-micron filter. All bottles were provided by SVL and maintained in a clean and secure work area until used in the field.

<sup>&</sup>lt;sup>2</sup> Field SC meter was calibrated using a standard stock solution of 3900 μS/cm



<sup>&</sup>lt;sup>1</sup> Field pH meter was calibrated using a three point calibration and pH buffers 4, 7, and 10

### 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 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 four days of sample collection and the time between sample collection and receipt of samples by SVL was one to five days. The samples were collected, shipped, and received by SVL within the established holding time for dissolved sulfate analysis in accordance with United States Environmental Protection Agency (EPA) Method 300.0.

## 4. LABORATORY QUALITY CONTROL

As specified in the QAPP, laboratory QC was maintained for all analyses through proper licensure, the use of approved analytical methods, QC measurements, appropriate turn-around-time for analysis (timeliness), method detection limits (MDLs), and practical quantitation limits (PQLs). Each of these controls is discussed in the following subsections.

The review of laboratory QC included a review to identify any qualified data and an assessment to determine their significance. Additionally, the laboratory QC summaries were reviewed to verify that results met QA criteria.

#### 4.1 Licensure

SVL is licensed with the Arizona Department of Health Services (license number AZ0538) and is accredited in accordance with the National Environmental Laboratory Accreditation Conference.

# 4.2 Analytical Method

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

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

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

Method	MDL	RL	Target MDL <sup>1</sup>
	(mg/L)	(mg/L)	(mg/L)
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 samples were analyzed for the EPA Method 300.0. The spike samples were prepared by adding a sulfate spike to randomly chosen samples. Spike recoveries for 13 of 16 analyses were above 110 percent. Instances in which analytical spike recoveries were unusable were qualified with an "M3" flag indicating that the analyte concentration was disproportionate to the spike level or an "M1" flag indicating that the spike level was too high. In each case where an M1 or M3 qualifier was used the laboratory control sample recovery was acceptable and no corrective action was required per the SVL Quality Manual and QAPP. The laboratory control samples were prepared by adding a sulfate spike to de-ionized water.

## 4.5.3 <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, 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 fourth quarter 2011, no field samples were re-analyzed at the request of Clear Creek. Sample re-analysis is sometimes requested based on comparison to historical results.

## 4.5.5 Field Blank Samples

During the fourth quarter 2011, 6 field blank samples were collected, including three field blanks (FB(20111010), FB(20111011) and FB20111013) and three equipment blanks (EB(20111010), EB(20111011) and EB20111013). Field blank samples were collected in accordance with procedures described in Section 4.2.1.5 of the QAPP. Field blank samples were collected and submitted along with other samples to evaluate the potential for contaminant introduction under field conditions. As required by Section 4.2.1.5 of the QAPP, a minimum of one field blank and one equipment blank sample was collected for every twenty samples. Analytical results from field blank and equipment blank samples showed no detections.

# 5. DATA QUALITY INDICATORS

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

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

Each of these DQIs is discussed below in relation to the fourth quarter 2011 groundwater sampling and analysis conducted by Clear Creek and CQB.

#### 5.1 Precision

Precision indicates how well a measurement can be reproduced. Precision is quantified by calculating the RPD between duplicate samples. For the purposes of QA/QC, precision was quantified by calculating the RPDs between duplicates among the following groups of duplicate samples:

- Laboratory duplicate samples
- Field duplicate samples

As discussed in Section 4.5.3 there were no exceedances of RPD QA criteria for any laboratory duplicates. During this monitoring period four field filtered duplicate samples (DUP(20111010), DUP(20111011), DUP20111012 and DUP20111013) were collected by Clear Creek and CQB for analysis. The collection of four duplicate samples meets QA/QC method and quantity goal as stated in Section 4.2.1.5 of the QAPP.

Sulfate results for the four duplicate samples collected are provided in the table below. The range of RPD values was between 0 and 2.59 percent, all within the 20 percent acceptance criteria for field duplicates, as stated in Section 3.3.1 of the QAPP. Overall, the DQI for precision is deemed to be met.

SVL Project No.	Well ID	Duplicate ID	Sample (mg/l)	Duplicate (mg/l)	RPD
W1J0362	EAST	DUP20111012	15.1	15.1	0.00%
W1J0362	AWC-02	DUP20111013	17.4	17.4	0.00%
W1J0376	DODSON	DUP(20111010)	50.9	49.6	2.59%
W1J0376	HOWARD	DUP(20111011)	545	538	1.29%

mg/L = milligrams per liter

#### **5.2** Bias

Bias is a systematic distortion of measurements causing consistent errors in one direction. Bias is managed in this data set by the consistent application of standardized sample collection and analysis procedures.

## 5.3 Accuracy

Accuracy is a measure of the agreement of a measurement to a known value and is measured using the recoveries from laboratory control samples. As discussed in Sections 4.5.1, 4.5.2, and 4.5.3 there were no significant exceedances of the recovery QA criteria for any of the calibration standards, analytical spikes, or laboratory duplicates, respectively. Based on this information, the overall accuracy of the data is judged sufficient for the purpose of aquifer characterization.

## 5.4 Representativeness

All samples were taken from locations specified in the Work Plan (HGC, 2008) following sampling procedures specified in the QAPP. Therefore, the samples are judged to provide a good representation of groundwater quality at the sampled locations. The analytical data are judged to be representative of groundwater conditions because the analyses used standard procedures and methods that met QA/QC guidelines of the QAPP.

# 5.5 Comparability

All samples were collected using standardized procedures (HGC, 2008) and were analyzed by SVL using standardized methods. Insofar as standardized sample collection and analytical methods are adhered to, the sample results should be comparable.

RPD = Relative Percent Difference

# 5.6 Completeness

All samples collected and subsequently analyzed and reported by SVL are judged to satisfy the QA/QC criteria for this project and are deemed usable for aquifer characterization. Thus, the completeness of analytical results is 100 percent.

# 5.7 Sensitivity

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

#### 6. REFERENCES

- Arizona Department of Environmental Quality (ADEQ). 2007. Mitigation Order on Consent, Docket No. P-121-07, In the Matter of: Phelps Dodge Corporation, Copper Queen Branch, located at 36 West Highway 92, Bisbee, Arizona, ADEQ Identification Number 100531. November 14, 2007.
- ADEQ. 2010. Correspondence from Cynthia Campbell, ADEQ, to Rebecca Sawyer, CQB, Re: Request to Modify Groundwater Monitoring Program, Mitigation Order on Consent No. P-127-07, Your Letter dated January 25, 2010. April 22, 2010.
- Hydro Geo Chem, Inc. 2008. Revision 1, Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Concentrator Tailing Storage Area, Cochise County, Arizona. July 3, 2008.

# APPENDIX B ANALYTICAL REPORTS



36 West Highway 92

Bisbee, AZ 85603

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch Sulfate Mitigation Order

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: **W1J0362**Reported: 28-Oct-11 14:47

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
PALMER	W1J0362-01	Ground Water	11-Oct-11 13:52	BD	14-Oct-2011
MOORE	W1J0362-02	Ground Water	11-Oct-11 15:20	BD	14-Oct-2011
KEEFER	W1J0362-03	Ground Water	11-Oct-11 16:35	BD	14-Oct-2011
BANKS 986	W1J0362-04	Ground Water	12-Oct-11 09:35	BD	14-Oct-2011
EAST	W1J0362-05	Ground Water	12-Oct-11 10:12	BD	14-Oct-2011
CHAMBERS	W1J0362-06	Ground Water	12-Oct-11 11:02	BD	14-Oct-2011
DUP20111012	W1J0362-07	Ground Water	12-Oct-11 11:40	BD	14-Oct-2011
RAMIREZ	W1J0362-08	Ground Water	12-Oct-11 12:12	BD	14-Oct-2011
ZANDER	W1J0362-09	Ground Water	12-Oct-11 13:05	BD	14-Oct-2011
TVI875	W1J0362-10	Ground Water	12-Oct-11 13:41	BD	14-Oct-2011
SCHWARTZ	W1J0362-11	Ground Water	12-Oct-11 15:20	BD	14-Oct-2011
ROGERS 803	W1J0362-12	Ground Water	12-Oct-11 15:47	BD	14-Oct-2011
WEED	W1J0362-13	Ground Water	12-Oct-11 16:27	BD	14-Oct-2011
BMO-2010-3M	W1J0362-14	Ground Water	13-Oct-11 11:06	BD	14-Oct-2011
FB20111013	W1J0362-15	Ground Water	13-Oct-11 11:45	BD	14-Oct-2011
EB20111013	W1J0362-16	Ground Water	13-Oct-11 11:50	BD	14-Oct-2011
AWC-05	W1J0362-17	Ground Water	13-Oct-11 12:35	BD	14-Oct-2011
BMO-2010-3B	W1J0362-18	Ground Water	13-Oct-11 12:26	BD	14-Oct-2011
AWC-03	W1J0362-19	Ground Water	13-Oct-11 12:45	BD	14-Oct-2011
AWC-02	W1J0362-20	Ground Water	13-Oct-11 13:00	BD	14-Oct-2011
DUP20111013	W1J0362-21	Ground Water	13-Oct-11 13:10	BD	14-Oct-2011
AWC-04	W1J0362-22	Ground Water	13-Oct-11 13:40	BD	14-Oct-2011
WEISKOPF	W1J0362-23	Ground Water	13-Oct-11 13:55	BD	14-Oct-2011

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL. Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



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

Project Name: Copper Queen Branch Sulfate Mitigation Order

Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

John Ken

Work Order: W1J0362 Reported: 28-Oct-11 14:47

Fax (208) 783-0891

Client Sample ID: PALMER

SVL Sample ID: W1J0362-01 (Ground Water)

Sample Report Page 1 of 1

Sampled: 11-Oct-11 13:52 Received: 14-Oct-11
Sampled By: BD

	r	(	,	٥.	impie riepore	7 mgc 7 07 7		Sample	ги бу. БО	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anior	ıs by Ion Chromatograj	phy								
EPA 300.0	Sulfate as SO4	17.0	mg/L	0.30	0.07		W143272	AEW	10/24/11 21:34	

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

John Kern



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

Project Name: Copper Queen Branch Sulfate Mitigation Order

Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

John Ken

Work Order: W1J0362 Reported: 28-Oct-11 14:47

Fax (208) 783-0891

Client Sample ID: MOORE

Sampled: 11-Oct-11 15:20 Received: 14-Oct-11

SVL Sample ID: W1J0362-02 (Ground Water)				Sample Report Page 1 of 1			Sampled By: BD			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatograj	ohy								
EPA 300.0	Sulfate as SO4	7.31	mg/L	0.30	0.07		W143272	AEW	10/24/11 21:43	

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 Sulfate Mitigation Order

Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Highway 92
Bisbee, AZ 85603
Work Order: **W1J0362**Reported: 28-Oct-11 14:47

Client Sample ID: KEEFER

SVI, Sample ID: W1,10362-03 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

	SVL Sample ID. WIJU	362-03 (Ground	vvater)	S	ample Report	Page 1 of 1		Sample	ed By: BD	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatograp	hy								
EPA 300.0	Sulfate as SO4	7.98	mg/L	0.30	0.07		W143272	AEW	10/24/11 22:12	

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

John Kern

Laboratory Director

Fax (208) 783-0891



John Ken

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: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: BANKS 986

SVI. Sample ID: W1.I0362-04 (Ground Water)

Sampled: 12-Oct-11 09:35 Received: 14-Oct-11

Received:	14-Oc
Commled Dry	DD

	SVL Sample ID: W130	1362-04 (Ground V	vater)	S	ample Report	Page I of I		Sample	ed By: BD	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	172	mg/L	1.50	0.37	5	W143272	AEW	10/24/11 22:21	D2

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

John Kern



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Project Name: Copper Queen Branch Sulfate Mitigation Order

Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

Method

Work Order: W1J0362

Fax (208) 783-0891

Reported: 28-Oct-11 14:47

Client Sample ID: EAST

SVL Sample ID: W1J0362-05 (Ground Water)

15.1

Result

Sample Report Page 1 of 1

Dilution

Sampled: 12-Oct-11 10:12 Received: 14-Oct-11

Sampled By: BD

Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

EPA 300.0 Sulfate as SO4

John Ken

mg/L

Units

RL

0.30

0.07

W143272

Batch

AEW

10/24/11 22:31

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

John Kern



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Project Name: Copper Queen Branch Sulfate Mitigation Order

Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

Work Order: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: CHAMBERS

SVL Sample ID: W1J0362-06 (Ground Water)

Sample Report Page 1 of 1

Sampled: 12-Oct-11 11:02 Received: 14-Oct-11

Fax (208) 783-0891

	SVL Sample ID: <b>W1J</b> (	0362-06 (Ground W	ater)	S	ample Report	Page 1 of 1		Sampled	l By: BD	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 7.80 mg/L 0.30 0.07 W143272 AEW 10/24/11 22:40

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

John Kern



Kellogg ID 83837-0929

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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: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: **DUP20111012** 

SVL Sample ID: W1J0362-07 (Ground Water)

Sample Report Page 1 of 1

Sampled: 12-Oct-11 11:40 Received: 14-Oct-11

	SVL Sample ID: W1J0362-07 (Ground Water)			Sample Report Page 1 of 1				Sampled By: BD		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 15.1 mg/L 0.30 0.07 W143272 AEW 10/24/11 22:50

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

Method

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: RAMIREZ

SVL Sample ID: W1J0362-08 (Ground Water)

Sample Report Page 1 of 1

Sampled: 12-Oct-11 12:12 Received: 14-Oct-11

	Sample Report Page 1 of 1			Sample	d By: BD	
RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes

<b>D.</b>			_	
Dissolved	Anions	by I	on C	hromatography

John Ken

EPA 300.0 **Sulfate as SO4** 8.55 mg/L 0.30 0.07 W143272 AEW 10/24/11 22:59

Units

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

John Kern



Bisbee, AZ 85603

Method

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

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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: W1J0362

Reported: 28-Oct-11 14:47

Received: 14-Oct-11

Client Sample ID: ZANDER Sampled: 12-Oct-11 13:05

SVL Sample ID: W1J0362-09 (Ground Water)

Sample Report Page 1 of 1

Sampled By: BD

Analyte

Result

Units

RL

MDL

Dilution

Batch

Analyst

Analyst

Analyzed

Notes

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 **Sulfate as SO4** 6.38 mg/L 0.30 0.07 W143272 AEW 10/25/11 13:20

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

John Ken

Bisbee, AZ 85603

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

Work Order: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: TVI875

SVI. Sample ID: W1.10362-10 (Ground Water)

Sample Report Page 1 of 1

Sampled: 12-Oct-11 13:41 Received: 14-Oct-11

	SVL Sample ID: W130	S	Page I of I	Sampled By: BD						
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	262	mg/L	15.0	3.70	50	W143272	AEW	10/24/11 23:38	D2

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

John Kern



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Freeport McMoRan - Copper Queen Branch

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

Work Order: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: **SCHWARTZ** 

SVL Sample ID: W1J0362-11 (Ground Water)

Sample Report Page 1 of 1

0.37

Sampled: 12-Oct-11 15:20 Received: 14-Oct-11

	BVE Sample 1B. WIO	oooz-11 (Ground V	vator j	3	ampie Keport	1 age 1 of 1		Sample	d By: BD	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Ani	ions by Ion Chromatogra	nhv								

1.50

mg/L

Dissolved Anions by Ion Chromatography
EPA 300.0 Sulfate as SO4

John Ken

W143272 AEW 10/25/11 00:06

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

124

John Kern



John Ken

Kellogg ID 83837-0929

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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: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: ROGERS 803

SVL Sample ID: W1J0362-12 (Ground Water)

Sample Report Page 1 of 1

Sampled: 12-Oct-11 15:47 Received: 14-Oct-11

	SVL Sample ID. WIJU	302-12 (Ground 1	valei)	38	ашріе Керогі	ragerori		Sample	ed By: BD	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatograp	hy								
EPA 300.0	Sulfate as SO4	175	mg/L	1.50	0.37	5	W143272	AEW	10/25/11 00:16	D2

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

John Kern



Kellogg ID 83837-0929

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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: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: WEED

SVL Sample ID: W1J0362-13 (Ground Water)

Sample Report Page 1 of 1

Sampled: 12-Oct-11 16:27 Received: 14-Oct-11

Sampled By: BD

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes

**Dissolved Anions by Ion Chromatography** 

John Ken

EPA 300.0 **Sulfate as SO4** 13.3 mg/L 0.30 0.07 W143272 AEW 10/25/11 00:25

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

John Kern



John Ken

Kellogg ID 83837-0929

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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: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: BMO-2010-3M

SVL Sample ID: W1.J0362-14 (Ground Water)

Sampled: 13-Oct-11 11:06 Received: 14-Oct-11

Sampled By:	BD

	SVL Sample ID. WIJ	7362-14 (Ground 1	water)	S	ample Report	Page I of I		Sample	ed By: BD	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	phy								
EPA 300.0	Sulfate as SO4	10.5	mg/L	0.30	0.07		W143272	AEW	10/25/11 00:35	

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

John Kern



Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

Method

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

Work Order: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: **FB20111013** 

SVL Sample ID: W1J0362-15 (Ground Water)

Sample Report Page 1 of 1

Sampled: 13-Oct-11 11:45 Received: 14-Oct-11

Sample 1D.	W 130362-15 (Ground Wate	#1 <i>)</i>	Si	ımpie Keport	rage 1 of 1		Sampleo	l By: BD	
Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes

Anions	hv	Ion	Chromatography
AIIIUIIS	IJ	1011	Chromatography

John Ken

EPA 300.0 Sulfate as SO4 < 0.30 mg/L 0.30 0.07 W143389 AEW 10/27/11 12:45

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

John Kern



Kellogg ID 83837-0929

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Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

Method

EPA 300.0

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: EB20111013

SVL Sample ID: W1J0362-16 (Ground Water)

Sample Report Page 1 of 1

Sampled: 13-Oct-11 11:50 Received: 14-Oct-11

10/27/11 12:55

ge 1 of 1		Sample	d By: BD	
Dilution	Batch	Analyst	Analyzed	Notes

Anions by Ion Chromatography	Anions	by Ion	Chromatography
------------------------------	--------	--------	----------------

John Ken

0.07

AEW

W143389

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

< 0.30

Units

mg/L

RL

0.30

Sulfate as SO4

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: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: AWC-05

SVL Sample ID: W1J0362-17 (Ground Water)

Sample Report Page 1 of 1

Sampled: 13-Oct-11 12:35 Received: 14-Oct-11

Sampled By: BD

Method Analyte Result Units RL MDL Dilution Batch Analyst Analyzed Notes
--

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 **Sulfate as SO4** 19.0 mg/L 0.30 0.07 W143272 AEW 10/25/11 00:44

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: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: BMO-2010-3B

SVL Sample ID: W1J0362-18 (Ground Water)

Sample Report Page 1 of 1

Sampled: 13-Oct-11 12:26 Received: 14-Oct-11

	S + E Sumpre 12: 11:00		·uto.,	54	ampic report	i age i oi i		Sample	ea By: BD	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	15.9	mg/L	0.30	0.07		W143272	AEW	10/25/11 00:54	

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

John Kern



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Freeport McMoRan - Copper Queen Branch Sulfate Mitigation Order

Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Highway 92 Bisbee, AZ 85603 Work Order: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: AWC-03

SVI, Sample ID: W1,10362-19 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

	SVL Sample ID. WIJ	Sample Report Page 1 of 1			Sampled By: BD					
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	48.8	mg/L	1.50	0.37	5	W143272	AEW	10/25/11 01:03	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: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: AWC-02

SVL Sample ID: W1J0362-20 (Ground Water)

Sample Report Page 1 of 1

Sampled: 13-Oct-11 13:00 Received: 14-Oct-11

	S VE Sumple IB: VIIO	302 20 (Sibalia )	rator,	54	i age i oi i	Sampled By: BD				
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	17.4	mg/L	1.50	0.37	5	W143272	AEW	10/25/11 01:13	D1

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

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Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: **DUP20111013** 

SVL Sample ID: W1.10362-21 (Ground Water)

Sampled: 13-Oct-11 13:10 Received: 14-Oct-11

	SVL Sample 1D. W130362-21 (Ground Water)					Sample Report Page 1 of 1 Sampled By: BD					
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anion	s by Ion Chromatograp	phy									
EPA 300.0	Sulfate as SO4	17.4	mg/L	1.50	0.37	5	W143272	AEW	10/25/11 01:23	D1	

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

John Kern



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Freeport McMoRan - Copper Queen Branch

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

Work Order: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: AWC-04

SVL Sample ID: W1J0362-22 (Ground Water)

Sample Report Page 1 of 1

Sampled: 13-Oct-11 13:40 Received: 14-Oct-11

|--|

	*	•	,		· r · · r ·			Sampi	cu by. bb	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatograp	hy								
EPA 300.0	Sulfate as SO4	27.6	mg/L	0.30	0.07		W143273	AEW	10/25/11 20:37	

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: W1J0362

Reported: 28-Oct-11 14:47

Client Sample ID: WEISKOPF

SVL Sample ID: W1J0362-23 (Ground Water)

Sample Report Page 1 of 1

Sampled: 13-Oct-11 13:55 Received: 14-Oct-11

	SVL Sample ID. W130362-23 (Ground Water)					Sample Report Page 1 of 1 San				
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	539	mg/L	7.50	1.85	25	W143273	AEW	10/25/11 21:07	D2

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

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Freeport McMoRan - Copper Queen Branch Sulfate Mitigation Order

Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Highway 92 Bisbee, AZ 85603 Work Order: W1J0362

Reported: 28-Oct-11 14:47

Quality Control - BLANK Data											
Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes			
Anions by Ion	Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	< 0.30	0.07	0.30	W143389	26-Oct-11				
Dissolved Anie	ons by Ion Chromatog	raphy									
EPA 300.0	Sulfate as SO4	mg/L	< 0.30	0.07	0.30	W143272	24-Oct-11				
EPA 300.0	Sulfate as SO4	mg/L	< 0.30	0.07	0.30	W143273	25-Oct-11				

Quality Control - LABORATORY CONTROL SAMPLE Data										
Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	W143389	26-Oct-11		
Dissolved Ani	ons by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	mg/L	10.4	10.0	104	90 - 110	W143272	24-Oct-11		
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	W143273	25-Oct-11		

Quality Control - DUPLICATE Data										
Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes	
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	14.6	14.7	0.2	20	W143389	26-Oct-11		
Dissolved Anio	ons by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	mg/L	1260	1290	2.6	20	W143272	24-Oct-11	D2	
EPA 300.0	Sulfate as SO4	mg/L	27.5	27.6	0.3	20	W143273	25-Oct-11		

Quality Cont	trol - MATRIX SPIKE	Data								
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	26.1	14.7	10.0	115	90 - 110	W143389	26-Oct-11	M1
EPA 300.0	Sulfate as SO4	mg/L	57.2	49.2	10.0	R > 4S	90 - 110	W143389	26-Oct-11	D2,M3
Dissolved Ani	ons by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	mg/L	1270	1290	10.0	R > 4S	90 - 110	W143272	24-Oct-11	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	17.4	6.38	10.0	111	90 - 110	W143272	25-Oct-11	M1
EPA 300.0	Sulfate as SO4	mg/L	39.5	27.6	10.0	119	90 - 110	W143273	25-Oct-11	M1
EPA 300.0	Sulfate as SO4	mg/L	31.1	19.6	10.0	115	90 - 110	W143273	26-Oct-11	M1



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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: **W1J0362**Bisbee, AZ 85603 Reported: 28-Oct-11 14:47

## **Notes and Definitions**

D1 Sample required dilution due to matrix.

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

M1 Matrix spike recovery was high, but the LCS recovery was acceptable.

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

acceptable.

LCS Laboratory Control Sample (Blank Spike)

RPD Relative Percent Difference

UDL A result is less than the detection limit

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

< RL A result is less than the reporting limit

MRL Method Reporting Limit
MDL Method Detection Limit

N/A Not Applicable



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Freeport McMoRan - Copper Queen Branch Sulfate Mitigation Order

Project Name: Copper Queen Branch Sulfate Mitigation Order

 36 West Highway 92
 Work Order:
 W1J0376

 Bisbee, AZ 85603
 Reported:
 01-Dec-11 16:38

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BIMA	W1J0376-01	Ground Water	10-Oct-11 15:18	ML	14-Oct-2011
DODSON	W1J0376-02	Ground Water	10-Oct-11 16:46	ML	14-Oct-2011
DUP	W1J0376-03	Ground Water	10-Oct-11 15:45	ML	14-Oct-2011
FB	W1J0376-04	Ground Water	10-Oct-11 16:30	ML	14-Oct-2011
EB	W1J0376-05	Ground Water	10-Oct-11 16:33	ML	14-Oct-2011
NOTEMAN	W1J0376-06	Ground Water	11-Oct-11 09:20	ML	14-Oct-2011
MCCONELL 265	W1J0376-07	Ground Water	11-Oct-11 13:27	ML	14-Oct-2011
GARNER 635	W1J0376-08	Ground Water	11-Oct-11 12:02	ML	14-Oct-2011
ANDERSON	W1J0376-09	Ground Water	11-Oct-11 14:39	ML	14-Oct-2011
HOWARD	W1J0376-10	Ground Water	11-Oct-11 15:41	ML	14-Oct-2011
PIONKE	W1J0376-11	Ground Water	11-Oct-11 18:07	ML	14-Oct-2011
DUP	W1J0376-12	Ground Water	11-Oct-11 13:30	ML	14-Oct-2011
EB	W1J0376-13	Ground Water	11-Oct-11 16:25	ML	14-Oct-2011
FB	W1J0376-14	Ground Water	11-Oct-11 16:19	ML	14-Oct-2011
EPPELE 641	W1J0376-15	Ground Water	12-Oct-11 10:03	ML	14-Oct-2011
FULTZ	W1J0376-16	Ground Water	12-Oct-11 11:18	ML	14-Oct-2011
METZLER	W1J0376-17	Ground Water	12-Oct-11 13:25	ML	14-Oct-2011
DURAZO	W1J0376-18	Ground Water	12-Oct-11 14:17	ML	14-Oct-2011
PARRA	W1J0376-19	Ground Water	12-Oct-11 15:42	ML	14-Oct-2011
RAY	W1J0376-20	Ground Water	12-Oct-11 17:17	ML	14-Oct-2011
NWC-06	W1J0376-21	Ground Water	13-Oct-11 09:44	ML	14-Oct-2011
NWC-04	W1J0376-22	Ground Water	13-Oct-11 08:29	ML	14-Oct-2011
NWC-03	W1J0376-23	Ground Water	13-Oct-11 09:12	ML	14-Oct-2011
NWC-02	W1J0376-24	Ground Water	13-Oct-11 10:12	ML	14-Oct-2011
RUIZ	W1J0376-25	Ground Water	13-Oct-11 11:39	ML	14-Oct-2011
ROGERS E	W1J0376-26	Ground Water	13-Oct-11 13:08	ML	14-Oct-2011

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

(Q6) SVL received the following containers outside of published EPA guidelines for preservation temperatures (0-6°C).

The guidelines do not pertain to nitric-preserved metals.

<b>Default Cooler</b>	(Received Temperature	e: -0.8°C)			
Labnumber	Container	Client ID	<u>Labnumber</u>	<u>Container</u>	Client ID
W1J0376-01 A	Filtered Raw HDPE	BIMA	W1J0376-02 A	Filtered Raw HDPE	DODSON
W1J0376-03 A	Filtered Raw HDPE	DUP	W1J0376-04 A	Filtered Raw HDPE	FB



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Bisbee, AZ 85603 Reported: 01-Dec-11 16:38

## Default Cooler (Received Temperature: -0.8°C) (Continued)

Labnumber	Container	Client ID	<u>Labnumber</u>	<u>Container</u>	Client ID
W1J0376-05 A	Filtered Raw HDPE	EB	W1J0376-06 A	Filtered Raw HDPE	NOTEMAN
W1J0376-07 A	Filtered Raw HDPE	MCCONELL 265	W1J0376-08 A	Filtered Raw HDPE	GARNER 635
W1J0376-09 A	Filtered Raw HDPE	ANDERSON	W1J0376-10 A	Filtered Raw HDPE	HOWARD
W1J0376-11 A	Filtered Raw HDPE	PIONKE	W1J0376-12 A	Filtered Raw HDPE	DUP
W1J0376-13 A	Filtered Raw HDPE	EB	W1J0376-14 A	Filtered Raw HDPE	FB
W1J0376-15 A	Filtered Raw HDPE	EPPELE 641	W1J0376-16 A	Filtered Raw HDPE	FULTZ
W1J0376-17 A	Filtered Raw HDPE	METZLER	W1J0376-18 A	Filtered Raw HDPE	DURAZO
W1J0376-19 A	Filtered Raw HDPE	PARRA	W1J0376-20 A	Filtered Raw HDPE	RAY
W1J0376-21 A	Filtered Raw HDPE	NWC-06	W1J0376-22 A	Filtered Raw HDPE	NWC-04
W1J0376-23 A	Filtered Raw HDPE	NWC-03	W1J0376-24 A	Filtered Raw HDPE	NWC-02
W1J0376-25 A	Filtered Raw HDPE	RUIZ	W1J0376-26 A	Filtered Raw HDPE	ROGERS E

#### Case Narrative

12/01/2011mab: Report reissued. Client requested SO4 reanalysis for sample -18. A dilution error was made; the corrected value is now reported.



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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: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: BIMA

SVL Sample ID: W1.J0376-01 (Ground Water)

Sample Report Page 1 of 1

Sampled: 10-Oct-11 15:18 Received: 14-Oct-11

	SVL Sample ID: W1JU	376-01 (Ground	water)	Sa	ample Report	Page I of I		Sample	ed By: ML	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatograp	hy								
EPA 300.0	Sulfate as SO4	322	mg/L	3.00	0.74	10	W143273	AEW	10/25/11 21:17	D2

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

John Kern



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Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

Method

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

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: DODSON

SVL Sample ID: W1J0376-02 (Ground Water)

50.9

Sample Report Page 1 of 1

Sampled: 10-Oct-11 16:46 Received: 14-Oct-11

Sampie Keport i	rage I of I		Sample	d By: ML	
MDL	Dilution	Batch	Analyst	Analyzed	Notes

<b>Dissolved Anions</b>	by	Ion	Chromatography

EPA 300.0 Sulfate as SO4

John Ken

mg/L 1.50 0.37

RL

Units

5 W143273 AEW

10/25/11 21:27

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: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: **DUP** 

Sampled: 10-Oct-11 15:45 Received: 14-Oct-11

Sampled By:	ML	

Dilution	Batch	Analyst		
	Buten	Allalyst	Analyzed	Notes
5	W143273	AEW	10/25/11 21:37	D1
_	5			

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: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: FB

SVL Sample ID: W1J0376-04 (Ground Water)

Sample Report Page 1 of 1

Sampled: 10-Oct-11 16:30 Received: 14-Oct-11

Sampled By: MI

	1		,	~ .		g		Sample	tu by. ML	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.07		W143273	AEW	10/25/11 21:47	

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: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: EB

SVL Sample ID: W1J0376-05 (Ground Water)

Sample Report Page 1 of 1

Sampled: 10-Oct-11 16:33 Received: 14-Oct-11

Sampled By: ML

	BVE Sample IB. WISC	Sample Report 1 age 1 of 1			Sampled By: ML					
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.07		W143273	AEW	10/25/11 22:16	

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

John Kern



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Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

Method

EPA 300.0

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

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: NOTEMAN

SVL Sample ID: W1J0376-06 (Ground Water)

286

Units

mg/L

RL

3.00

Sample Report Page 1 of 1

0.74

Sampled: 11-Oct-11 09:20 Received: 14-Oct-11

10/25/11 22:26

ple Report	Page I of I		Sample	d By: ML		_
MDL	Dilution	Batch	Analyst	Analyzed	Notes	

AEW

W143273

Dissolved	Anions	by	Ion	Chromatography

John Ken

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

Sulfate as SO4

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: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: MCCONELL 265

SVI. Sample ID: W1.I0376-07 (Ground Water)

Sampled: 11-Oct-11 13:27 Received: 14-Oct-11

SVL Sample ID: W1J0376-07 (Ground Water)					Sample Report Page 1 of 1				Sampled By: ML			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anion	s by Ion Chromatograp	ohy										
EPA 300.0	Sulfate as SO4	845	mg/L	15.0	3.70	50	W143273	AEW	10/25/11 22:36	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 - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: GARNER 635

Sampled: 11-Oct-11 12:02 Received: 14-Oct-11

SVL Sample ID: W1J0376-08 (Ground Water)				Sample Report Page 1 of 1				Sampled By: ML		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	hy								
EPA 300.0	Sulfate as SO4	38.0	mg/L	1.50	0.37	5	W143273	AEW	10/25/11 22:46	D1

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

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Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: **ANDERSON** 

Sampled: 11-Oct-11 14:39 Received: 14-Oct-11

SVL Sample ID: W1J0376-09 (Ground Water)					Sample Report Page 1 of 1				Sampled By: ML			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anion	s by Ion Chromatograp	hy										
EPA 300.0	Sulfate as SO4	543	mg/L	7.50	1.85	25	W143273	AEW	10/25/11 22:56	D2		

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

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Freeport McMoRan - Copper Queen Branch

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

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: HOWARD

SVI. Sample ID: W1.J0376-10 (Ground Water)

Sample Report Page 1 of 1

Sampled: 11-Oct-11 15:41 Received: 14-Oct-11

SVL Sample ID: W1J03/6-10 (Ground water)					Sample Report Page 1 of 1				Sampled By: ML		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anion	s by Ion Chromatograp	ohy									
EPA 300.0	Sulfate as SO4	545	mg/L	7.50	1.85	25	W143273	AEW	10/25/11 23:06	D2	

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

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36 West Highway 92 Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: PIONKE

Sampled: 11-Oct-11 18:07 Received: 14-Oct-11

SVL Sample ID: W1J0376-11 (Ground Water)					Sample Report Page 1 of 1				Sampled By: ML			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anion	ıs by Ion Chromatograp	ohy										
EPA 300.0	Sulfate as SO4	502	mg/L	7.50	1.85	25	W143273	AEW	10/25/11 23:16	D2		

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

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Freeport McMoRan - Copper Queen Branch

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

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: **DUP** 

SVI. Sample ID: W1.J0376-12 (Ground Water)

Sample Report Page 1 of 1

Sampled: 11-Oct-11 13:30 Received: 14-Oct-11

3 VL Sample 1D. W 130370-12 (Ground Water)					Sample Report Fage 1 of 1			Sampled By: ML			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anion	ns by Ion Chromatograp	hy									
EPA 300.0	Sulfate as SO4	538	mg/L	7.50	1.85	25	W143273	AEW	10/25/11 23:26	D2	

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

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Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

EPA 300.0

Project Name: Copper Queen Branch Sulfate Mitigation Order

AEW

W143273

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: EB

Sulfate as SO4

SVL Sample ID: W1J0376-13 (Ground Water)

Sample Report Page 1 of 1

0.07

Sampled: 11-Oct-11 16:25 Received: 14-Oct-11

Sample	d By: ML	
Analyst	Analyzed	Notes

10/25/11 23:36

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch
Dissolved Anion	s by Ion Chromatogra	phy					

mg/L

0.30

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

< 0.30

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: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: FB

SVI. Sample ID: W1.10376-14 (Ground Water)

Sample Report Page 1 of 1

Sampled: 11-Oct-11 16:19 Received: 14-Oct-11

	5 VE Sample 1D. W150570-14 (Ground Water)				ampie Keport	Sampled	By: ML			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 Sulfate as SO4 < 0.30 mg/L 0.30 0.07 W143273 AEW 10/25/11 23:46

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: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: EPPELE 641

SVL Sample ID: W1J0376-15 (Ground Water)

Sample Report Page 1 of 1

Sampled: 12-Oct-11 10:03 Received: 14-Oct-11 ampled By: ML

	r	( ) ( )	,		ampie rieport	- mgc - o		Sampled	Dy. ML	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 **Sulfate as SO4** 19.6 mg/L 0.30 0.07 W143273 AEW 10/26/11 00:15

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

AEW

W143273

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: FULTZ

SVI. Sample ID: W1.J0376-16 (Ground Water)

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

Sample Report Page 1 of 1

0.37

Sampled: 12-Oct-11 11:18 Received: 14-Oct-11

10/26/11 00:35

5 VE Sample 15. W100070-10 (Ground Water)				Sample Report 1 age 1 of 1				Sampled By: ML			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Ani	ons by Ion Chromatograp	ohy									

1.50

mg/L

EPA 300.0 Sulfate as SO4 48.5

> John Ken 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: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: **METZLER** 

SVL Sample ID: W1J0376-17 (Ground Water)

Sample Report Page 1 of 1

Sampled: 12-Oct-11 13:25 Received: 14-Oct-11

Received.	14-00
Compled Dy	MI

SVL Sample ID: W1J0376-17 (Ground water)					Sample Report Page 1 of 1				Sampled By: ML		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anior	ıs by Ion Chromatograj	ohy									
EPA 300.0	Sulfate as SO4	301	mg/L	15.0	3.70	50	W143273	AEW	10/26/11 12:41	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: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: **DURAZO** 

ID: W4 10270 40 (One and Water

Sample Depart Dage 1 of 1

Sampled: 12-Oct-11 14:17 Received: 14-Oct-11

SVL Sample ID: W1J0376-18 (Ground Water)					Sample Report Page 1 of 1 Sampled By: ML					
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	hy								
EPA 300.0	Sulfate as SO4	396	mg/L	7.50	1.85	25	W143273	AEW	10/26/11 00:55	D2

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

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Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: PARRA

SVL Sample ID: W1J0376-19 (Ground Water)

Sample Report Page 1 of 1

Sampled: 12-Oct-11 15:42 Received: 14-Oct-11

Sampled By:			ML					

	S + E Sumpre 1B: 11100	oro io (oroana i	ruco.,	5	ampie report	Tage Toll		Sample	ea By: ML	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	406	mg/L	7.50	1.85	25	W143274	AEW	10/26/11 15:10	D2

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

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36 West Highway 92 Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: RAY

Sampled: 12-Oct-11 17:17 Received: 14-Oct-11

	SVL Sample ID: W1J0376-20 (Ground Water)				Sample Report Page 1 of 1				Sampled By: ML		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anio	ons by Ion Chromatograp	ohy									
EPA 300.0	Sulfate as SO4	130	mg/L	1.50	0.37	5	W143274	AEW	10/26/11 15:20	D2	

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

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36 West Highway 92 Bisbee, AZ 85603

Method

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: NWC-06

Analyte

SVL Sample ID: W1J0376-21 (Ground Water)

Result

Sample Report Page 1 of 1

Dilution

MDL

Sampled: 13-Oct-11 09:44 Received: 14-Oct-11

Analyzed

Notes

ole Report Page 1 of 1	Sampled By:	ML	

Analyst

Batch

Dissolved	Anions	hy I	n Chron	natography
Dissurveu	AIIIUIIS	DV II	лі Спі Оп	iaiozi adiiv

John Ken

EPA 300.0 Sulfate as SO4	8.48	mg/L	0.30	0.07	W143274	AEW	10/26/11 15:30	
--------------------------	------	------	------	------	---------	-----	----------------	--

RL

Units

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: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: NWC-04

SVL Sample ID: W1J0376-22 (Ground Water)

Sample Report Page 1 of 1

Sampled: 13-Oct-11 08:29 Received: 14-Oct-11 Sampled By: ML

	2 · = 2 · · · · · · · · · · · · · · · ·	0:0 == (0:00::0::	10.00.7	5.	impic report	i i uge i oi i		Sampi	ed By: ML	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	198	mg/L	3.00	0.74	10	W143274	AEW	10/26/11 15:59	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 Sulfate Mitigation Order

Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Highway 92 Bisbee, AZ 85603

John Ken

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: **NWC-03**Sampled: 13-Oct-11 09:12

Received: 14-Oct-11

	SVL Sample ID: W1J0376-23 (Ground Water)				Sample Report Page 1 of 1				Sampled By: ML			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anion	ns by Ion Chromatograp	hy										
EPA 300.0	Sulfate as SO4	353	mg/L	7.50	1.85	25	W143274	AEW	10/26/11 16:09	D2		

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

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Freeport McMoRan - Copper Queen Branch

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

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: NWC-02

SVL Sample ID: W1.10376-24 (Ground Water)

Sample Report Page 1 of 1

Sampled: 13-Oct-11 10:12 Received: 14-Oct-11

Sampled By:	ML

	SVE Sample 1B. W100	07 0-24 (Oloulia	rator j		ашріс Керогі	1 age 1 of 1		Sample	ed By: ML	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anior	ıs by Ion Chromatograp	hy								
EPA 300 0	Sulfate as SO4	7 31	mg/L	0.30	0.07	•	W143274	AEW	10/26/11 16:19	

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: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: RUIZ

Sampled: 13-Oct-11 11:39 Received: 14-Oct-11

	SVL Sample ID: W1J0376-25 (Ground Water)					Sample Report Page 1 of 1				
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	hy								
EPA 300.0	Sulfate as SO4	230	mg/L	3.00	0.74	10	W143274	AEW	10/26/11 16:49	D2

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

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Freeport McMoRan - Copper Queen Branch

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

Work Order: W1J0376

Reported: 01-Dec-11 16:38

Client Sample ID: ROGERS E

SVL Sample ID: W1J0376-26 (Ground Water)

Sample Report Page 1 of 1

Sampled: 13-Oct-11 13:08 Received: 14-Oct-11

	2 2p	(0:00:0 10	,	5.	ampie report	ruge r or r		Sample	a By: ML	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes

Dissolved Anions by Ion Chromatography

John Ken

EPA 300.0 **Sulfate as SO4** 5.99 mg/L 0.30 0.07 W143274 AEW 10/26/11 16:59

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

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W1J0376

36 West Highway 92 Bisbee, AZ 85603

Work Order.	11 1005 / 0
Reported:	01-Dec-11 16:38

Quality Con	trol - BLANK Data							
Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Ani	ons by Ion Chromatog	raphy						
EPA 300.0	Sulfate as SO4	mg/L	< 0.30	0.07	0.30	W143273	25-Oct-11	

Quality Cont	trol - LABORATORY	CONTROL SAM	MPLE Data						
Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Ani	ons by Ion Chromatog	raphy							
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	W143273	25-Oct-11	
	Sulfate as SO4	mg/L	10.0	10.0	100	90 - 110	W143274	26-Oct-11	

Quality Con	trol - DUPLICATE Da	ta							
Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	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	27.5	27.6	0.3	20	W143273	25-Oct-11	

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									
EPA 300.0	Sulfate as SO4	mg/L	39.5	27.6	10.0	119	90 - 110	W143273	25-Oct-11	M1	
EPA 300.0	Sulfate as SO4	mg/L	31.1	19.6	10.0	115	90 - 110	W143273	26-Oct-11	M1	
EPA 300.0	Sulfate as SO4	mg/L	19.7	8.48	10.0	112	90 - 110	W143274	26-Oct-11	M1	
EPA 300.0	Sulfate as SO4	mg/L	18.1	5.99	10.0	121	90 - 110	W143274	26-Oct-11	M1	



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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: **W1J0376**Bisbee, AZ 85603 Reported: 01-Dec-11 16:38

## **Notes and Definitions**

D1 Sample required dilution due to matrix.

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

M1 Matrix spike recovery was high, but the LCS recovery was acceptable.

LCS Laboratory Control Sample (Blank Spike)

RPD Relative Percent Difference

UDL A result is less than the detection limit

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

< RL A result is less than the reporting limit

MRL Method Reporting Limit
MDL Method Detection Limit

N/A Not Applicable



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Freeport McMoRan - Copper Queen Branch Sulfate Mitigation Order

Project Name: Copper Queen Branch Sulfate Mitigation Order

36 West Highway 92

Bisbee, AZ 85603

Work Order: W1K0537

Reported: 09-Dec-11 09:11

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W1K0537-01	Ground Water	22-Nov-11 10:24	ML	23-Nov-2011
MARCELL	W1K0537-02	Ground Water	22-Nov-11 11:11	ML	23-Nov-2011
COOPER	W1K0537-03	Ground Water	22-Nov-11 12:51	ML	23-Nov-2011

 $Solid\ samples\ are\ analyzed\ on\ an\ as\text{-received},\ wet-weight\ basis,\ unless\ otherwise\ requested.\ Non-Detects\ are\ reported\ at\ the\ MDL.$ 

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: W1K0537

Reported: 09-Dec-11 09:11

Client Sample ID: NWC-04

SVL Sample ID: W1K0537-01 (Ground Water)

Sample Report Page 1 of 1

Sampled: 22-Nov-11 10:24 Received: 23-Nov-11

					_	7
Sa	mnle	d l	Rv	MI		

	SVE Sample ID. WIROSST-OT (Ground Water)				Sampled By: ML					
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	201	mg/L	3.00	0.39	10	W150052	AEW	12/05/11 15:27	D2

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

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Freeport McMoRan - Copper Queen Branch

36 West Highway 92 Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W1K0537

Reported: 09-Dec-11 09:11

Client Sample ID: MARCELL

SVI. Sample ID: W1K0537-02 (Ground Water)

Sample Report Page 1 of 1

Sampled: 22-Nov-11 11:11 Received: 23-Nov-11

Samp	led	$\mathbf{R}_{\mathbf{W}}$	ML

	3 VE Sample ID. WTK0937-02 (Ground Water)				Sample Report Page 1 01 1 Sampled By: ML					
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	687	mg/L	7.50	0.98	25	W150052	AEW	12/06/11 12:43	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: **W1K0537**Reported: 09-Dec-11 09:11

Client Sample ID: COOPER

SVL Sample ID: W1K0537-03 (Ground Water)

Sample Report Page 1 of 1

Sampled: 22-Nov-11 12:51 Received: 23-Nov-11

Sampled By: ML

		•	<u> </u>			0		Sumpre	a By. IVIE	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	33.7	mg/L	0.30	0.04		W150052	AEW	12/05/11 16:12	

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

John Kern



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: W1K0537
Reported: 09-Dec-11 09:11

- u -										
Quality C	Control - BLANK Data									
Method	Analyte	Units	Resu	ılt	MDL		MRL	Batch ID	Analyzed	Notes
Dissolved A	Anions by Ion Chromatogi	aphy								
EPA 300.0	Sulfate as SO4	mg/L	< 0.3	0	0.04		0.30	W150052	05-Dec-11	
Quality C	Control - LABORATORY	CONTROL SA	AMPLE Data							
Method	Analyte	Units	LCS Result		LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
	,		Testan		1100	100.	Ziiiito		,	
Dissolved A EPA 300.0	Anions by Ion Chromatogi Sulfate as SO4	aphy mg/L	10.1		10.0	101	90 - 110	W150052	05-Dec-11	
2111300.0	Surface as 50.	g.2	10.1		10.0	101	,	,,,150052	00 200 11	
Quality C	Control - DUPLICATE Dat	ta								
Method	Analyte	Units	Duplic Result	ate	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
D: 1 1	A	ī								
EPA 300.0	Anions by Ion Chromatogi Sulfate as SO4	raphy mg/L	0.42		0.43	0.2	20	W150052	05-Dec-11	
Quality C	Control - MATRIX SPIKE	Data	C:1	C1-	G:1	0/	A			
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved A	Anions by Ion Chromatogi	aphy								
EPA 300.0	Sulfate as SO4	mg/L	11.5	0.43	10.0	110	90 - 110	W150052	05-Dec-11	
EPA 300.0	Sulfate as SO4	mg/L	14.7	3.93	10.0	108	90 - 110	W150052	05-Dec-11	
			Note	es and Defi	nitions					
D2	Sample required dilution du	e to high concent	tration of target	analyte.						
LCS	Laboratory Control Sample	•	3	-						
RPD	Relative Percent Difference									
UDL	A result is less than the deter	ction limit								
R > 4S	% recovery not applicable, s	ample concentra	tion more than	four times gre	eater than spike lev	/el				
<rl< td=""><td>A result is less than the repo</td><td>rting limit</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></rl<>	A result is less than the repo	rting limit								
. m.										

Method Reporting Limit

Method Detection Limit

Not Applicable

MRL

MDL

N/A



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Freeport McMoRan - Copper Queen Branch

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

36 West Highway 92 Bisbee, AZ 85603 Work Order: **W1L0181**Reported: 12-Dec-11 16:30

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W1L0181-01	Ground Water	08-Dec-11 10:31	ML	09-Dec-2011
TM-10	W1L0181-02	Ground Water	08-Dec-11 13:15	CS	09-Dec-2011

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: W1L0181

Reported: 12-Dec-11 16:30

Client Sample ID: NWC-04

SVL Sample ID: W1L0181-01 (Ground Water)

Sample Report Page 1 of 1

Sampled: 08-Dec-11 10:31 Received: 09-Dec-11

Samp	led	$\mathbf{R}_{\mathbf{V}}$	MI.	

SVE Sample ID. WILDIOI-OI (Ground water)			Sample Report Page 1 of 1			Sampled By: ML				
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	207	mg/L	3.00	0.39	10	W150285	AEW	12/09/11 13:33	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

Method

Project Name: Copper Queen Branch Sulfate Mitigation Order

Work Order: W1L0181

Reported: 12-Dec-11 16:30

Client Sample ID: TM-10

SVL Sample ID: W1L0181-02 (Ground Water)

Result

16.8

Units

mg/L

RL

Sample Report Page 1 of 1

Sampled: 08-Dec-11 13:15 Received: 09-Dec-11

Sampled By: CS

Dilution Batch Analyst Analyzed Notes

Dissolved Anions by Ion Chromatography

EPA 300.0 Sulfate as SO4

John Ken

0.30 0.04 W150285 AEW

12/09/11 14:00

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
W1L0181
Reported: 12-Dec-11 16:30

0 11 0	. I DI ANIZE								
Quality Cont	trol - BLANK Data								
Method	Analyte	Units	Result	MDL		MRL	Batch ID	Analyzed	Notes
Dissolved Ani	ons by Ion Chromatog	raphy							
EPA 300.0	Sulfate as SO4	mg/L	< 0.30	0.04		0.30	W150285	09-Dec-11	
Quality Cont	trol - LABORATORY	CONTROL SA							
Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Ani	ons by Ion Chromatog	raphy							
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	W150285	09-Dec-11	
Quality Cont	trol - DUPLICATE Da	ta							
Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Ani	ons by Ion Chromatog	raphy							
EPA 300.0	Sulfate as SO4	mg/L	208	207	0.3	20	W150285	09-Dec-11	D2
Quality Cont	trol - MATRIX SPIKE	Data							
Method	Analyte	Units	Spike Sample Result Result (	Spike R) Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Ani	ons by Ion Chromatog	raphy							
EPA 300.0	Sulfate as SO4	mg/L	218 207	10.0	109	90 - 110	W150285	09-Dec-11	D2

#### **Notes and Definitions**

D2	Sample required dilution due to high concentration of target analyte.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference

Relative research 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



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

36 West Hwy 92 Work Order: **W1L0146**Bisbee, AZ 85603 Reported: 13-Dec-11 15:18

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2008-5M	W1L0146-01	Ground Water	07-Dec-11 10:45	CLS	08-Dec-2011
BMO-2008-5B	W1L0146-02	Ground Water	07-Dec-11 11:25	CLS	08-Dec-2011
BMO-2008-6M	W1L0146-03	Ground Water	07-Dec-11 13:25	CLS	08-Dec-2011
BMO-2008-6B	W1L0146-04	Ground Water	07-Dec-11 14:25	CLS	08-Dec-2011

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: **W1L0146**Bisbee, AZ 85603 Reported: 13-Dec-11 15:18

Client Sample ID: BMO-2008-5M

SVL Sample ID: W1L0146-01 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

Sample Report Page 1 of 1

	S VE Sample 1B: VVIE	71-10 01 (Ground	rutoi j	5	ampic report	1 age 1 01 1		Sampl	ed By: CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Ani	ons by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	129	mg/L	3.00	0.39	10	W150232	AEW	12/08/11 22:13	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: **W1L0146**Bisbee, AZ 85603 Reported: 13-Dec-11 15:18

Client Sample ID: BMO-2008-5B

SVI\_Sample ID: W11 0146-02 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

	SVL Sample ID. WILL	0146-02 (Ground V	valei)	3	ampie Keport	rage 1 of 1		Sample	ed By: CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatograp	phy								
EPA 300.0	Sulfate as SO4	213	mg/L	3.00	0.39	10	W150232	AEW	12/08/11 22:24	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: **W1L0146**Bisbee, AZ 85603 Reported: 13-Dec-11 15:18

Client Sample ID: BMO-2008-6M

SVI\_Sample ID: W11 0146-03 (Ground Water)

SvI\_Sample ID: W11 0146-03 (Ground Water)

Sample Report Page 1 of 1

	SVE Sumple 1B: VVIE	01-40-00 (Orbana V	vator,		ашріс Керогі	1 age 1 of 1		Sample	ed By: CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	200	mg/L	3.00	0.39	10	W150232	AEW	12/08/11 22:35	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: **W1L0146**Bisbee, AZ 85603 Reported: 13-Dec-11 15:18

Client Sample ID: BMO-2008-6B

SVI\_Sample ID: W11 0146-04 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

	SVL Sample ID. WIL	0146-04 (Ground V	valei)	3	атріе керогі	rage I of I		Sample	ed By: CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatograp	phy								
EPA 300.0	Sulfate as SO4	21.8	mg/L	1.50	0.20	5	W150232	AEW	12/08/11 22:46	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 Work Order: **W1L0146**Bisbee, AZ 85603 Reported: 13-Dec-11 15:18

<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 Chromatog Sulfate as SO4	raphy mg/L	<0.30	0.04	0.30	W150232	08-Dec-11	

<b>Quality Conti</b>	rol - LABORATORY	CONTROL SAN	MPLE Data						
Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anio EPA 300.0	ons by Ion Chromatogo Sulfate as SO4	raphy mg/L	10.1	10.0	101	90 - 110	W150232	08-Dec-11	

<b>Quality Contro</b>	ol - DUPLICATE Da	ta							
Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatog	ranhv							
EPA 300.0	Sulfate as SO4	mg/L	1260	1270	1.5	20	W150232	08-Dec-11	D2

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
	· · · · · · · · · · · · · · · · · · ·									
issolved Ani	ons by Ion Chromatog	raphy								
issolved Ani PA 300.0	ons by Ion Chromatog Sulfate as SO4	raphy mg/L	1310	1270	10.0	R > 4S	90 - 110	W150232	08-Dec-11	D2,N

#### **Notes and Definitions**

D1	Sample required dilution due to matrix.
ונו	Sample required dilution due to matrix.

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

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

acceptable.

LCS Laboratory Control Sample (Blank Spike)

RPD Relative Percent Difference

UDL A result is less than the detection limit

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

<RL A result is less than the reporting limit

MRL Method Reporting Limit
MDL Method Detection Limit

N/A Not Applicable



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Freeport McMoRan - Bisbee

36 West Hwy 92

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: W1L0294

36 West Hwy 92
Bisbee, AZ 85603
Work Order: W1L0294
Reported: 20-Dec-11 09:14

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2010-1M	W1L0294-01	Ground Water	13-Dec-11 17:00	CS	15-Dec-2011
BMO-2010-2M	W1L0294-02	Ground Water	13-Dec-11 17:40	CS	15-Dec-2011
HOBAN	W1L0294-03	Ground Water	14-Dec-11 09:40	CS	15-Dec-2011

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
Bisbee, AZ 85603
Work Order: W1L0294
Reported: 20-Dec-11 09:14

Client Sample ID: BMO-2010-1M

SVI, Sample ID: W11 0294-01 (Ground Water)

Sample Report Page 1 of 1

Sample Report Page 1 of 1

	SVL Sample ID. WILO294-01 (Ground water)					Page 1 of 1		Sampled By: CS		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	149	mg/L	3.00	0.39	10	W151240	AEW	12/16/11 10:52	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
Bisbee, AZ 85603
Work Order: W1L0294
Reported: 20-Dec-11 09:14

Client Sample ID: BMO-2010-2M
SVL Sample ID: W1L0294-02 (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

	STE Sumple 13. THEOLOT OF (Ground Hater)				Sample Report Lage 1 of 1			Sampled By: CS			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anio	ons by Ion Chromatograp	hy									
EPA 300.0	Sulfate as SO4	984	mg/L	30.0	3.90	100	W151240	AEW	12/16/11 11:01	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
Bisbee, AZ 85603
Work Order: W1L0294
Reported: 20-Dec-11 09:14

Client Sample ID: HOBAN
SVL Sample ID: W1L0294-03 (Ground Water)
Sample Report Page 1 of 1
Sample Report Page 1 of 1
Sample By: CS

	5 v E Sumple 15. W LEGEGT GO (STOUTH WATCH)					i i age i oi i	Sampled By: CS			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	ns by Ion Chromatograp	phy								
EPA 300.0	Sulfate as SO4	944	mg/L	15.0	1.95	50	W151240	AEW	12/16/11 11:10	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: W1L0294 Bisbee, AZ 85603

<b>Quality Con</b>	trol - BLANK Data							
Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Ani	ions by Ion Chromatog Sulfate as SO4	raphy mg/L	<0.30	0.04	0.30	W151240	15-Dec-11	

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	9.88	10.0	98.8	90 - 110	W151240	15-Dec-11			

Quality Control - DUPLICATE Data											
Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes		
Dissolved Anio	ons by Ion Chromatog	raphy									
EPA 300.0	Sulfate as SO4	mg/L	96.5	96.2	0.3	20	W151240	15-Dec-11	D2		

Quality Control - MATRIX SPIKE Data											
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved Anio EPA 300.0	ns by Ion Chromatog Sulfate as SO4	raphy mg/L	105	96.2	10.0	92.9	90 - 110	W151240	15-Dec-11	D2,M3	

#### **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.

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

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 Reported: 20-Dec-11 09:14

# APPENDIX C GROUNDWATER SAMPLING FORMS

Project No:	055038				Client:	Freeport Coppe	er Queen Brancl	<u> </u>	
Task No:					Date: _	10/11/11			
Well ID:	ANDER	LSON			Weather:	Sunny			
ADWR No:					Sampler:	MML	4	1 Was a contract to the contra	
				WELL DAT	A				
Well Dr	epth (ft bls):	236			Nominal	Size (inches)	Capacity Gallons per Li	near Foot	
	•	6				2 4	0.16 0.65		
	Diameter (in):		10			5	1.02 1.47		
Static Wate	r Level (ft bmp):	150.	, 1 7		8 2.61				
Casing \	Volume (gal):		x3 =			10	4.08		
Total Volun	ne Purged (gal):					g Volume = gallons	s/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	
	Pump On								
				5.87	21.8	1270	rear brown	water	
				6.65	21.2	1230	Front Sp clea	x	
							5 65		
					<u> </u>		Pump Off		
	FIELD PARAMET	TER STABILIZA	temporarie to a more in portion to the Santa Principal	r digitalgatologickapareignig (1984)		0.2 su pH, 2 degre	es C, and 200 μS/c		
			Harris SAN	APLE INFOF				Filtered	
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)	
ANDE	zsaN	14:39	Pory	250	}	3 <i>c</i> -0		λ	
			/ATER LEVEL	MEASURE	MENT COL	LECTION			
□ Water	level measuremer	nt collected.			icated (SNA telephorenis)	NESSITERIES HERITAGENIUM IN 1844 OUT	28.11.7777710413 (12.11.1) (12.17.78711-2-11.11.11.11.11.11.11.11.11.11.11.11.11.		
	ter level measurer		No access to w	ellhead/No po	nt in wellhead	I			
	ter level measurer								
1	ter level measurer	nent collected.	Well is pumping	g.					
☐ Other:			West	PURGING IN	IFORMATION				
☐ Purge	d 3 well volumes a	nd field parame	eters stabilized.	ATT HELD KIND WELLEN BURNE	inde Maria costavalia na isto	dilish Jerrie dilalah assir keperuntah menelih	FIGURE DESCRIPTION OF THE PROPERTY OF THE PROP		
☐ Purge	d 3 well volumes b	ased on previo	us water level a	ınd field parer	neters stabiliz	zed.			
☐ Purge	d well until field pa								
L	TANK	<u> </u>			. \ 0				
Additiona	l Comments:	Sampl	o from	tar	IK				
**************************************									

Project No:	055038				Client: Freeport Copper Queen Branch					
Task No:	10_				Date: _	<u>10-13-/</u>	7			
Well ID:	AINC	~07		1	Weather:	SUNY 17	0 s			
ADWR No:				;	Sampler:	B-70				
				WELL DAT	AIIIIIIIIIII					
Well D	epth (ft bis):				Nominal	Size (inches)	Capacity Gallons per Li			
	_					2 4	0.16 0.65	l l		
Casing I	Diameter (in):					5	1.02			
Static Wate	r Level (ft bmp):					6 8	1.47 2.61	i i		
Casing \	/olume (gal):		x3 =			10	4.08			
Total Volun	ne Purged (gal):				Casin	g Volume = gallons	/foot * water colum	ın (feet)		
			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		
	Pump On									
13:00	59:00:01:05:00:00:00:00:00:00:00:00:00:00:00:00:			(.72	25.)	464,6				
							Pump Off			
	FIELD PARAMET	ER STABILIZA	TION: Three c	onsecutive rea	dings within (	0.2 su pH, 2 degree	es C, and 200 μS/c	m)		
				IPLE INFOR						
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
		13.00								
17006	2011 1013	13:07								
		<u> </u>	ATERLEVEL		MENTI GOLI	l Fought				
	level measuremen		Na acasas to w	olihood/No no	t in wellhead					
	er level measurem ter level measurem				it iii weiiiieaa					
ı	ter level measurem									
☐ Other:					manga panggan di atau di saan saas s	svenje se jevajnice kroma se se state se se se	ngganaga dasayingan danga			
			WELL	PURGING IN	FORMATION					
☐ Purge	d 3 well volumes a	nd field parame	ters stabilized.							
1	d 3 well volumes be			ind field paren	neters stabiliz	ea.		•		
1	d well until field par	rameters stabili	zea.							
Other:	l Camma-t-									
Additiona	l Comments:									

Project No:	055038				Client:		er Queen Branch	1
Task No:	1.0			[	Date:	10-13-11		
Well ID:	AWC-				Veather:	Sung 7	03	
ADWR No:					Sampler:	BJO		
				WELL DAT	A	Cesino	Capacity	
Well De	pth (ft bls):				Nominal	Size (inches)	Gallons per Lir	ear Foot
	•					2 4	0.16 0.65	
_	iameter (in):					5 6	1.02 1.47	
Static Water	r Level (ft bmp):					8	2.61	
Casing V	/olume (gal):		x3 =			10	4.08 s/foot * water colum	n (feet)
Total Volum	ne Purged (gal):					g volume = gallon	s/loot water coloiii	
				D SAMPLIN	G PAUA	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (ºC)	Conductance (µS/cm)	Comme	nts
	Quinp On							
12:45	1			6.69	23.8	463.6		
							Pump Off	
	TITLD DADAMET	TED CTABILITY	TION: Three o		dinas within	] 0.2 su pH, 2 degre	es C, and 200 μS/c	n)
			and the same and the same and the same and all the	MPLE INFOR				
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Des	2-0Š	12:43	Poly	ZSOML	. /	300-0	Q	<b>Y</b>
MW	200	10.0	1,09	100-3110				
amisauceomoralismus						I FOTIONE		
			/ATTERNEEVE	LMEASURE				
	level measuremei er level measurer		No popos to u	velibead/No no	rt in wellhead	i		
	er ievel measurer ter level measurer					•		
	ter level measurer							
☐ Other:								
				PURGING IN	FORMATION			
☐ Purged	d 3 well volumes a d 3 well volumes b	and field parame	eters stabilized	and field paren	neters stabiliz	zed.		
	d 3 well volumes t d well until field pa			and note percit				
Other:				4.20	purge	<b>3</b>		
Additiona	I Comments:		· ·	<u> </u>	' '			

Project No:	055038				Client:	Freeport Coppe	Copper Queen Branch				
Task No:	1.0				Date:	10-13-1	)				
Well ID:	AW (	1-04			Weather:	Suny 80	)´«				
ADWR No:					Sampler:	BJD'					
				WELL DAT	AUFF						
Mall De	epth (ft bls):				Nominal	Casing Size (inches)	Capacity  Gallons per L	inear Foot			
	•					2	0.16 0.65	>			
Casing D	liameter (in):					4 5	1.02	1			
Static Water	r Level (ft bmp):					6 8	1.47 2.61				
Casing V	/olume (gal):		x3 =			10	4.08	1			
					Casin	g Volume = galions	s/foot * water colun	nn (feet)			
I otal Volum	e Purged (gal):			D SAMPLIN	G DATA						
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents			
	Pump On										
13:10		=10151555 (110251111025) (1455151555)		6-38	29.0	619,7					
1,7.10					•						
			tv			·		**			
							Pump Off				
	FIELD PARAMET	ER STABILIZ	ATION: Three c	onsecutive rea	dings within	0.2 su pH, 2 degree	es C, and 200 μS/c	m)			
			SA	IPLE INFOR	MATION	PAGE TEO REGISTRA PER GERMANIA. BARNISEN PROGESTRA DE BERNESTI					
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)			
Ala	1000	13:10	Q2/2	250m	1 1	300-0					
7100	, , , ,	173.10	109				<b>/</b>	/			
			ATER LEVEL	  MEASURE	MENT COLL	L ECTION					
□ Water k	evel measuremen	t collected.									
1	er level measurem		No access to w	ellhead/No po	t in wellhead						
1 . /	er level measuren										
1	er level measuren	ent collected.	Well is pumping	<b>]</b> .							
□ Other:			avie is	PURGING IN	ORMATION						
	3 weil volumes a	ad Gold parami									
	3 well volumes by			nd field parem	eters stabiliz	ed.					
1	well until field par			•							
1X Other:											
Additional	Comments:										

Project No:	055038				Client:		er Queen Branch			
Task No:	1.0				Date:	10-13-11				
Well ID:	AWCC	2<			Weather:	SUNNY BO	0ù			
ADWR No:					Sampler:	B50				
ADWK NO.				-WELL DAT						
Application of the second of the	Hade parangon product decision purpose of the company of the				Nominal	Casing Size (inches)	Capacity Gallons per Lir	near Foot		
Well D	epth (ft bis):				HOMME	2	0.16			
Casing I	Diameter (in):					4 5	0.65 1.02			
Static Wate	er Level (ft bmp):					6 8	1.47 2.61			
Casing '	Volume (gal):		x3 =			10	4.08			
_	•				Casin	g Volume = gallons	s/foot * water colum	n (feet)		
Total Volum	ne Purged (gal):		a Alana Elal	D SAMPLIN	G DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts		
	Pump On			tirijāki						
12:34		erasisa disensisi indelisisi i	envisitistenenstriktiktiktikisi	6.BZ	26.0	427.5				
1.645				*						
				<u> </u>						
							]			
								`		
							D 0#			
				<u>L</u>			Pump Off	~)		
	FIELD PARAMET	ER STABILIZA	Constant confirmation and constitutions			0.2 su pH, 2 degree	es C, and 200 µS/cr			
			SAM	IPLE INFOF	RMATION					
s	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
Ac	10-05	12:35	Pals	259WL	ł	300.0	1	V		
7,0	1 C CS	1000						7		
silluresi wildorda) silika		atividiistleäkkaisiupkilustet	ginadussių paksaulių							
			ATER LEVEL	MEASURE	MENIGUE					
	level measuremen							:		
	ter level measuren				rt in wellhead					
1	ter level measuren									
☐ No wa	ter level measuren	nent collected.	vven is pumpini	g.						
U Oller			WELL	PURGING IN	FORMATION					
	d 3 well volumes a	nd field narams			nggenurssinshipsisik	actoric de la martine production de 1920	gan nya matana matana pinda katana idia k	A CONTRACTOR OF THE PARTY OF TH		
	d 3 well volumes a d 3 well volumes b			ind field paren	neters stabiliz	ed.				
	d well until field pa			•						
□ Other										
L	al Comments:	Pump	Na							
,			J							
			······							
	1 18 <b>67</b> 11 m									

Project No:	055038			(	Client:	Freeport Coppe	r Queen Brancl	1
Task No:	1.0				Date:	10-12-11		
Well ID:	BANKS	986			Weather:	SUND 60	<u> </u>	
ADWR No:					Sampler:	35O		
				WELL DAT	Ak de de Colè			
Well De	pth (ft bls):	4	35		Nominal	Casing ( Size (inches)	Gallons per Lir	near Foot
			("			2 4	0.16 0.65	
Casing D	iameter (in):		•			5	1.02	
Static Water	Level (ft bmp):	$\mathcal{U}$	·			6	1.47 2.61	
Casing V	olume (gal):	<u>~ 366</u>	x3 = 9	<i>D</i> C		10	4.08	
Total Volum	ne Purged (gal):				Casin	g Volume = gallons	/foot * water colum	n (feet)
				D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (galions)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
8:30	Pump On				ellijaji pilsteris			
9:00	306	W	360	7.91	23.7	1531		
9:05		41					Discharge	dropped
9.75	45		375	7,87	21.3	181545	V	
9:25	55	41	381	7.88	21.2	1551		
9:28	DRY							
	:							
				<u> </u>			Pump Off	m\
esen euro d'Anaisse da Recente	FIELD PARAME	TER STABILIZ	reasons, team, orders and form, business, distance,		***************************************	0.2 su pH, 2 degree	is C, and 200 μο/G	
			SAI	APLE INFOE				
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BANI	ks 986	9-28	Poly	250ml		300-0	0	<u> </u>
9/3			7					
			VATER LEVEL	MEASURE	MENT COL	LECTION		
□ Water I	evel measuremer						CASTRES MESTICIBLE CONTRACTOR	1501545511114971121313115155115511
	evermeasuremer er level measurer		No access to w	ellhead/No po	rt in wellhead			
	er level measurer							
	er level measurer	nent collected.	Well is pumping	g.		-		
☐ Other:				PURGING IN	FORMATION			
	0 II lu 0	and field norm					entrologi, a gent kasin kumantanya kalesai 9721	
	3 well volumes a 3 well volumes b				neters stabiliz	æd.		
	well until field pa			·				
□ Other:								
Additional	Comments:	23	7.34 at	BAN	<u>ks, 98</u>	37	. //	<u> </u>
	oke to		, BANK.	5 _ 5 4	ytch	of the	well he	<u>s becn</u>
ac	ting up	Nece	y To To	~ ~ ( ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		full cons	rest.	
	act.	- 9 C	<del>7 // /</del>	7	1		7	

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h	
Task No:	10				Date:	11-51-01			
Well ID:	BANKS	5 98-	7		Weather:	SUNNY 60	沒		
ADWR No:					Sampler:	BJI			
		arios paraintentel Anti-programa		WELL DAT	A				
Wall D	epth (ft bis):				Nominal	Casing Size (inches)	Capacity Gallons per Li	near Foot	
	•					2			
Casing I	Diameter (in):		7 /:			4 5	1.02		
Static Wate	er Level (ft bmp):	237	<u> 54</u>			6 8			
Casing	Volume (gal):		x3 =			10		Comments  Comments  Comments  Comments  Comments  Comments  Comments  Comments  Comments  Comments  Comments  Comments  Comments	
	,				Casin	g Volume = gallons	s/foot * water colum	in (feet)	
l otal Volui	me Purged (gal):		kin in an ElEl	D SAMPLIN	G DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
	Rump On								
				<u> </u>				."	
				ļ			 		
							1		
	FIELD PARAMET	ER STABILIZA	taning of the company of the transfer bead to be		state (continue) in the contraction of the contract	0.2 su pH, 2 degree	es C, and 200 µS/c	m)	
			SAM	IPLE INFOR	MATION				
s	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative		
			ATER LEVEL	MEASURE	MENT COLI	LECTION			
☐ Water	level measuremen	t collected.							
□ No wa	ter level measuren	nent collected.	No access to w	elihead/No por	rt in wellhead				
	ter level measuren								
l	ter level measuren	nent collected.	Well is pumping	3.					
☐ Other.			naich)	PURGING IN	FORMATION				
	d 3 weli volumes a d 3 well volumes b			nd field narem	neters stabiliz	ed.			
3 "	d 3 well volumes b d well until field pa			na nois paren		<del></del>			
☐ Other:									
f.,	al Comments:	6)1-0	)						
/ 100001C									
						<u></u>			

Project No:	055038			(	Olient: I	Freeport Coppe	r Queen Branch			
Task No:					Date:	10/10/11				
Well ID:	BIMA			1	Weather:	Sunny				
ADWR No:				:	Sampler:	MMC '				
				WELL DAT	A					
VAI OIL EX	epth (ft bls):	465			Nominal	Casing ( Size (inches)	Capacity  Gallons per Lir	near Foot		
		411			2 0.16 4 0.65					
Casing I	Diameter (in):		1 (			5	1.02			
Static Wate	er Level (ft bmp):	N/A	From 10/19/10	=387,31)		6 8	1. <b>4</b> 7 2.61			
Casing '	Volume (gal):	(51)	) x3 = $()$	53)		10	4.08			
					Casin	g Volume = gallons	foot * water colum	n (feet)		
) otal Volu	me Purged (gal):		cara a FIEL	D SAMPLIN	G DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (℃) F	Specific Conductance (µS/cm)	Comme	ents		
	Pump On									
14122	Hele customer and expressions of		TO 141451141 TO 1414 TO 1414 TO 1414 TO 1414 TO 1414 TO 1414 TO 1414 TO 1414 TO 1414 TO 1414 TO 1414 TO 1414 T	,						
1433	111 ×	6.4		6.38	74.8	1500				
1444	22		4	-6.49	75.3	1510				
1447	25	5	7	-6,50	75,4	1520				
1455	33	- Q	J							
1518										
							Pump Off			
	FIELD PARAME	TER STABILIZA	manda for an analysis to begin to the and a first of the section of	throughout state of the equal to the collection of the collecti	C100-101-4-101-101-101-101-101-101-101-10	0.2 su pH, 2 degree	s C, and 200 μS/ci	m)		
			SAM	IPLE INFOR	MATION					
s	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
BIMA		1457	POLY	250		300.0	Ν	M		
<del> </del>	MA	1518	Poly	250	1	300.0	2	У		
			VATER LEVE	MEASURE	MENT COL	ECTION				
□ Water	level measureme						M 414 (1965) (SAN 1964) (1955) (1964) (1956)	350109 [1:0] [3:0]		
	ter level measuremen		No access to w	ellhead/No po	rt in wellhead					
No wa	iter level measurer	ment collected.	Obstruction in v	veli.						
1.	iter level measurer	ment collected.	Well is pumping	g.						
☐ Other:			Weit	PURGING IN	FORMATION					
	d 3 well volumes a	and field naram						elenik menencia menengi sebagai menen		
☐ Purge	d 3 well volumes b	pased on previo	ous water level a	and field paren	neters stabiliz	ed.	cal to	3,53,75		
	d well until field pa					£.				
☐ Other	•					\				
Additiona	al Comments:	Could	not ge	t cea	ding (n	U) below	-300+			
			<u> </u>		i ver					

	Groundwa	iter Samp	ling rom			كالمستوال والمستواري		
		e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de			Client:	Freeport Copp	er Queen Bran	ch
Project No:					Date:	12-	<u> 2-11                                  </u>	
ask No:	0.000	o e s	- 12		Weather:	Lunny -	- 48	
Vell ID:	13MO-	2008-5	D		Sampler:	Maristonlar.	L Shermon	1
DWR No:				WELL D/		C MATTER STATE OF THE STATE OF		
							Capacity	
	efe):	28	5		Nominal :	Bize (inches)	Gallons per 0.4	
/ell Depth (ft t	orai:	511				2	0.0	
asing Diamet	er (ln):		5 (			5	1.0	)2
		145	145			6	1.4	
tatic Water Le	evel (ft bmp):					8	2.(	="
asing Volume	e (azis):	139	7		10 4.08  Casing Volume = gallons/foot * water column			
-		417				g Volume ≠ galloni		Billi (1994)
Casing Volun	ues (gas).		FIE	LD SAMPLI	NG DATA			
Time	Elapsed Time (min)	Discharge Rate	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Com	nents
	family	(gpm)	(gallona)					
1100	ļ <u></u>	90	136	(0,9)	19.6	7,32		
1105		27	13)	6.96	19.8	731		
9115	15	27	405	7.	199	730		
7/125	25	27_	175	6.95	<del>- 1 1 - 1 -</del>	1		
7.								<u></u>
	· · · · · · · · · · · · · · · · · · ·							
		<b></b>						
		ļ			<u> </u>			
			S/A	MPLE INFO	RMATION			
, San	nple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
	708-5B	1125	plastic	250 ml	11	EPA 300.0	ríon <del>e</del>	filtered
V) 10 00	VU (10)	1/1		T			<u> </u>	
								<u> </u>
<u> </u>		<del> </del>						
<u></u>		<del> </del>	<del> </del>	<del>                                     </del>				
				<u> </u>				
and the second s								

#### Groundwater Sampling Form Freeport Copper Queen Branch Client: Project No: Date: Task No: BMO-2008-5M Weather: Well ID: Sampler: ADWR No: WELL DATA Casing Capacity Gallons per Linear Foot Nominal Size (inches) 0.16 Well Depth (ft bis): 0.65 4 1.02 Casing Diameter (in): 1.47 Static Water Level (ft bmp): 2.61 4.08 10 Casing Volume (gals): Casing Volume = gallons/foot \* water column (feet) 3 Casing Volumes (gals): FIELD SAMPLING DATA Specific Comments Total Discharge Temp рH Conductance **Elapsed Time** Discharge Rate (°C) (SU) (uS/cm) Time (min) (galions) (gpm) 7.07 10 011 SAMPLE INFORMATION Comments Preservative No. of Analysis Method Container Volume Containers Time Sample ID Туръ filtered none **EPA 300.0** 1 250 ml plastic Additional Comments:

299.7

	Groundwa	iter Samp	ling Form			أحبانه والمراوية والمساوات والمساوات	المسجودة فالمستوي والمفسو			
-leek N					Client:	Freeport Coppe		ch		
oject No:					Date:	12-7-11				
sk No:	0.00	2008-	16		Weather:	Sunny	- 1.5h			
ell ID:	(BIN G)-	- 2008-	(1)		Sampler:	Chartante	- 1.5h	MA		
OWR No:				WELL D		( MH-15 1.031-3	المساوات والمساوات والمساوات			
				AAFFF O			Capacity			
ell Cepth (ft i	ols):	26	5.'		Nominal	Size (inches) 2	Gallons per 0.	Linear Foot		
			511			4	0.4 1.4			
sing Diamet	er (in):	<del></del>	100 05			5	1.4			
atic Water Le	evel (ft bmp):	/	73.0			8	2.61 4.08			
sing Volume	e (gals):	7.	2.5			10				
		1)	17.5			g Volume ≈ gailon:	SILDOF - MATER CON	min (root)		
Casing Volum	nes (gais):		FIE	LD SAMPL	ING DATA					
Time	Elapsed Time (min)	Discharge Rate	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Com	nents		
10	<b>V</b>	(gpm)	(Benove)							
1340	~	5.1	15	7.24	20.7	338				
1745	15	5.1	75	7-24	20.9	329				
1410	30	5.1	150	3.27	20.8	330				
1425	45	<b>3</b> 5.1	225	7,28	7/7	>-/				
	<u> </u>									
		<u> </u>								
		<del> </del>								
					<u> </u>					
					DEMATION					
1				MPLE INFO	No. of		Preservative	Commer		
Sar	mple ID	Time	Container Type	Volume	Containers	Analysis Method	. Lisasi Agriae			
	008 6B		plastic	250 mi	1	EPA 300.0	rione	filtere		
1711112	UW WILL					<u></u>	·			
			1							
<u> </u>			<del>                                     </del>							
<u> </u>	And the second s		<u> </u>			and the second second second second second second second second second second second second second second second				
				,						

	Groundwa	ter Samp	iing Form						
		a, property and the second			Client:	Freeport Copp	er Queen Bran	ich	
Project No:		<u> </u>			Date:		-7-11		
Task No:		<del></del>	0 / 10		•		52		
Well ID:	13m	0- 201	28-6M		Weather:	Juany -	1 5/1000		
ADWR No:				أحسنب	Sampler: /	MASTOPHER	L Shirms		
				WELL D	ATA	Casino	Capacity		
	والمراوات والمستوالي والمراوات	Ц	50		Nominal :	Size (inches)	Gallons per Linear Foot 0.16		
Well Depth (ft I	ols): .		) W.			2	0"i 0".		
Casing Diamet	er (in):	5	*			5	1.0		
Static Water Le	wel (ft bmp):	194	1,92			6 8	1.4 2.4		
		2/0	· · ·			10	4.		
Casing Volume	e (gals):	<u> 260</u>	/		Casin	g Volume ≠ gailon	s/foot * water cold	umn (feet)	
3 Casing Volum	nes (gals):	7.80.	<u>C</u>	LD SAMPLI	NG DATA				
Time	Elapsed Time	Discharge Rate	Total Discharge	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Com	ments	
	(min)	(gpm)	(gailons)						
1295		2.	210	1.94	29.	108			
1255	10	2/	420	9.913	21.2	712			
1305	70	21	130	1.95	21.3	719			
1325	30 40	21	240	1,94	2/.3	70-			
() ~)	10			0 . /		 	·		
				<u> </u>	<u></u>				
				<u></u>					
		<u> </u>		-					
			S	AMPLE INFO	RMATION				
Sar	nple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments	
4.06	0 - CM		plastic	250 ml	1	EPA 300.0	rione	filtered	
15MD-	2008-CM	-	plastic						
		<del> </del>	<u> </u>	<del> </del>		,			
		<del> </del>	-						
			-	<del> </del>	<del></del>				
	and the substituting of the substitution of the substituting of the substituting of the substituting of the substituting of the substituting of the substituting of th								
Additional Co	mments:			and the second s		<u> </u>	والمناسب والمناسب والمناط والمناط والمناط	and the second s	
			<del></del>		<u></u>				
			25	5 . 1					

	Groundw	ater Sam	pling Forn	7						
Project No:					Client:	Freeport Cop	per Queen Bra	inch		
	- <del> </del>		1		Date:	12	13-11			
Task No:	A M	0-2011	2 - IM		Weather:	Parthe (	Tour			
Well ID:	DIT	<i>V</i>	<u> </u>		Sampler:	[heistapline	L Sterre	07		
ADWR No:				WELL D		<del>ن کار داد دی بری</del>				
! 							g Capacity	r I inear East		
Well Depth (ft i	bls):	-	550		Nominal	Size (inches)	Q	).16		
Casing Diamet	er (in):		511			4				
Static Water Le	evel (ft bmp):	2	22.86			6	1	1.47		
		<del></del>	333.1			8 10				
Casing Volume	gais):			· · · · · · · · ·	Casiı	ig Volume = galloi	ns/feet * water co	Gapacity Gallons per Linear Foot 0.16 0.65 1.02 1.47 2.61 4.08  If cot * water column (feet)  Comments		
3 Casing Volun	nes (gals):		000.8	LD SAMPL	NG DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Com	nments		
1350		(Rhu)	(Benone)							
1400	10	10	100	7,55	21.3	710				
1415	15	10	150	7. dil	3/2	<u> </u>				
1450	40	5	375	7,65	2111	7/2	<del></del>			
1550	120	3	1000	7,67	1/12	$-\frac{713}{2}$				
1700	1723		1.67676							
1 1976										
								<u> </u>		
	<u> </u>									
<del></del>	<u>.l</u>		SA	MPLE INFO	RMATION					
Sam	ple (D	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments		
BM0-2	019-1M	1700	plastic	250 ml	1	EPA 300.0	none	filtered		
							· · · · · · · · · · · · · · · · · · ·			
Additional Con	nments:				dan yang salah salah			angan pada gan daga da angan bangan ngan ngan		
			<u></u>							
	3271									

	Groundw	ater Sam	pling For	m	· · ·			
Project No:			· ·		Client:	Freeport Cop	per Queen Br	anch
Task No:					Date:	12-	13-11	
Well ID:	BMO-	2010-	2M		Weather:	May	10/	
ADWR No:					Sampler:	Phristo	der 1-51	ac c vn cu
ADIVA NO.	······································	<del></del>		WELL (		- 6-11 11 y		
	<u></u>	38			Alamina		ng Capacity	er Linear Foot
Well Depth (ft l	ois):		<u>(</u>	<u>.</u>	Nomina	2 0.16		0.16
Casing Diamet	er (in):	5			4			0.65 1.02
Static Water Le	vel (ft bmp):	17	0.98			6	1	1.47 2.61
Casing Volume	(gais):		. /			10	1	4.08
			33.3		Casi	ng Volume = gallo	ns/foot * water co	olumn (feet)
3 Casing Volum	ies (gals):		FII	ELD SAMPL	ING DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (galions)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Con	ıments
1710		(5)					,	
1715	5	/2	40	6.56	201	2,13		
1720	10	12	120	4.57	30.0	2./3		
1730	20	12	31.0	415	2012	3/4		
1790	30	1.2	266	600 t	<del>/-(): /-</del>	111		
<del></del>								
<del></del>							<u> </u>	<del></del>
			SA	MPLE INFO	RMATION			, <u>, , , , , , , , , , , , , , , , , , </u>
Samp	ole ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BM0-20	10-2M	1740	plastic	250 ml	1	EPA 300.0	попе	filtered
·							<del>,</del>	
dditional Com	ments:							gang gang at San sakang tina and tig
- Alth Alter Date		109.						
		<del></del>	<del></del>					

roject No:	055038			(	Client:	Freeport Coppe	r Queen Brancr	]
ask No:	1.0			į	Date:	10-13-11		
Vell ID:	BM0 - 20	10 - 3B			Weather:	<u>Suny 800</u>		
DWR No:					Sampler:	B56		penings/(Engles/ESE/(
				WELL DAT	Allendar	Casing C	Canacity	
Mail D	epth (ft bls):	330		· [	Nominal	Size (inches)	Gallons per Lir	ear Foot
	_	5"				2	0.16 0.65	
Casing I	Diameter (in):	11-7-7-	~7			5	1.02 1.47	
Static Water	er Level (ft bmp):	11/./	<u> </u>			6 8	2.61	
Casing '	Volume (gal):	218	x3 = 6	59		10	4.08	
Total Volum	me Purged (gal):				Casir	ng Volume = gallons	/foot * water colum	n (feet)
Total Void				D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
11:10	Pump On							
11:30	70	9	180	7.82	22-6	\$ 404.2		
11:50	40	9	360	7,53	22.9	408.6		
12:20	70	9	630	7.57	23.1	410.6		
12:25		9	675	7.63	23.4	4/1.2		
12.00								
							Pump Off	
	FIELD PARAMET	ER STABILIZ				0.2 su pH, 2 degree	es C, and 200 μS/α	m) Tangangganggan
			SAI	MPLE INFOF	RMATION			
S	sample ID	Time	Container Type	Volume	No. of Containers		Preservative	Filtered (y/n)
RM	0-2010-38	12:26	Pol	250nL	.	300-0	\$	4
							/	/
res Gras e			VATER LEVE	I MEASURE	MENT COL	LECTION		
							au en en en en en en en en en en en en en	1011 TE 11 200 10 10 10 10 10 10 10 10 10 10 10 10 1
Water No wa	· level measuremen ater level measuren	nent collected.	No access to v	velihead/No po	ort in wellhea	d		
☐ No wa	ater level measuren	nent collected.	Obstruction in	well.				
□ No wa	ater level measuren	nent collected.	Well is pumpin	ıg.			•	
☐ Other				PURGING IN	JEORMATIO			
					enficiente de la company			erjones:NeSfWjst::USf6jdFii
Purge	ed 3 well volumes a ed 3 well volumes b	nd field param ased on previo	neters stabilized ous water level	and field parer	meters stabili	ized.		
	ed well until field pa							
☐ Other								
Addition	al Comments:							
								1

roject No:	055038			(	Client: F	reeport Coppe	r Queen Branch			
ask No:	1.0			. [	Date:	10-13-11				
Vell ID:	BMO-Z	010-31	η	\	Weather:	SUNN,.	703			
					Sampler:	B50'				
ADWR No:				WELLDAT	A					
	at (B.b.l.)	5	7 l		Nominal	Size (inches)	Gallons per Lin	ear Foot		
Well De	epth (ft bls):		<u> </u>			2	0.16 0.65			
Casing I	Diameter (in):		<del>/</del>			5 .	1.02	city Gallons per Linear Foot  0.16 0.65 1.02 1.47 2.61 4.08 * water column (feet)  Comments  mp Off and 200 µS/cm)  Filtered		
Static Water	r Level (ft bmp):	120	.67			6 8		acity Gallons per Linear Foot  0.16 0.65 1.02 1.47 2.61 4.08 t* water column (feet)  Comments  Imp Off i, and 200 µS/cm)  Preservative  Filtered (y/n)		
Caeing '	Volume (gal):	420	x3 = 12	.66		10		Gallons per Linear Foot  0.16 0.65 1.02 1.47 2.61 4.08  ot * water column (feet)  Comments  Comments  Ump Off C, and 200 µS/cm)  Preservative  Filtered (y/n)		
_	•	120			Casin	g Volume = galions	/foot * water colum	n (feet)		
Total Volur	ne Purged (gal):			.D SAMPLIN	G DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts		
9:00	Pump On									
9:30	30	10	300	7.95	21.5	471.3				
19:00	60	10	600	8.03	27.8	377.1				
1.4.	90	10	900	7.78	23,0	374.8				
10:30	105	10	1050	7.72	23.3	376.3				
11:00	120	10	1200	7.73	23.6	375.8				
1										
	· · · · · · · · · · · · · · · · · · ·									
							Pump Off			
	FIELD PARAME	TER STABILIZ	ATION: Three o	consecutive rea	adings within	0.2 su pH, 2 degre	es C, and 200 μS/c	m)		
			SAI	MPLE INFOF	RMATION					
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method		(y/n)		
12m	0-2010-3m	11:06	Poly	250m	_ /	300-0	* Ø			
3/1/2		111				`				
			L WATER LEVE	MEASURE	MENT COL	LECTION				
							SUPERIOR SERVICE AND SERVICE			
Water	level measurementer level measurer	nt collecteu. ment collected	. No access to v	vellhead/No po	ort in wellhead	1				
	iter level measurei									
	ater level measure									
☐ Other	• \$240531680012536882548588			PURGING IN	IEOBWATIO)					
								KEERIN PERISTEMBISISI SALIN PERISTEMBISI DI		
12X Purge	ed 3 well volumes a ed 3 well volumes l	and field paran	neters stabilized ious water level	and field parer	meters stabili:	zed.				
	ed 3 well volumes i ed well until field pa									
☐ Othe										
Addition	al Comments:						·			

Project No:	055038			c	lient: F	reeport Copper	Queen Branch	
Task No:	(0)				Date:	10-12-11		
Well ID:	CHAN	BERS	>	V	Veather:	SUNN, 70	<u>) 's</u>	
ADWR No:				S	Sampler:	020_		
				WELL DAT		Casing C	Papacity	
Weil Der	oth (ft bis):	245			Nominal	Size (inches)	Gallons per Lin 0.16	ear Foot
	Casing Diameter (in):					2	0.65	
						5 6	1.02 1.47	
Static Water	Static Water Level (ft bmp):					8	2.61 4.08	
Casing V	Casing Volume (gal):		x3 =				foot * water column	(feet)
Total Volum	e Purged (gal):	<u> 710</u>		D SAMPLIN				
		Disabasas	Total			Specific		544
Time	Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	nts
10:48	Pump On							
10:51	3	15	<u>45</u>	7.60	23.1	419.4		
10:54	6	15	90	7.33	21.6	420.3		
10:57	9	15	135	7.29	21.1	422.6		
11:00	12_	5	180	7.33	7.2.6	47.5.8		
			:					
							Pump Off	
	FIELD PARAME	TER STABILIZ				0.2 su pH, 2 degree	es C, and 200 μS/cr	n)
			SAI	MPLE INFOR	MATION			
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Fittered (y/n)
CHU	M8ERS	11:02	Poly	25 Om	J 1	300.0	4	
	1.000	<u> </u>	7				,	/
			VATER LEVE	L MEASURE	MENT COL	LECTION		
□ Water I	level measureme					200000000000000000000000000000000000000		
No wat	er level measurer	nent collected	No access to v	vellhead/No po	rt in wellhead	l		
│ □ No wat	er level measurer	nent collected.	Obstruction in	well.				
1	ter level measurer	ment collected	. Well is pumpir	ıg.				
□ Other:			WELI	PURGING IN	FORMATION			den Paul (Barlander) Die Gregoria (Alexan
☐ Purged	d 3 well volumes a	and field param	neters stabilized					
☐ Purgeo	d 3 well volumes i	pased on previ	ous water level	and field parer	neters stabiliz	zed.		
1	d well until field pa	arameters stab	ilized.					
Other:	l Comments:	No po	rt in	(sellla a	ne!			
Purae	, 11	raneda	s stabi	126,	Minimu	m live b	7 7	<u>codity</u>
13 3	~ 3mis	he-couse	, yard	floods 1	WELL L	ual is run	to love	

oject No:	055038			C	lient: <u>F</u>	reeport Copper	r Queen Branch	)
sk No:	1				oate:	11 22 11		
il ID:	COOPE	R.		V	Veather:	Sunny	50'5	
					Sampler:	MML		
WR No:			ennes I (m. 1806 Prins II) Se pes las	WELL DAT		phale call		
W-11 D	anth (A blo):	325		-	Nominal S	Casing C Size (inches)	Gallons per Lin	ear Foot
Well Depth (ft bis):		60				2	0.16 0.65	
Casing I	Casing Diameter (in):					5	1.02	
tatic Water Level (ft bmp):		NA				6 8	1.47 2.61	
Casing '	Volume (gal):	NIA	x3 =			10	4.08	
rotal Valu	ne Purged (gal):				Casing	y Volume = gallons	/foot * water colum	n (feet)
otal Volu	ne ruigeo (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
<u> </u>	Pump On							pirille circles sto
<u>2:27</u> 2:30	Managara transfer and a second	7	35	7.77	20,9	428.4		
<del>2.3</del> 2373			70	7.85	21.6	424.8		
12:40			10.6	7,88	21.5	424.9		
12:4	7 ao		140	7.86	20.6	4210.1		
(A)								
	-							
							- OF	
							Pump Off	m)
	FIELD PARAME	TER STABILIZ	ATION: Three c	onsecutive rea	adings within (	0.2 su pH, 2 degree	38 C, and 200 μο/ο	
			SAI	MPLE INFOR	MAINUNUS			Filtered
S	Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)
COO	)=P	125/	Pory	250		300.0	2	k
<u> </u>								
			L WATER LEVEI	MEASURE	MENT COL	LECTION		
						ismesti se mieri en belegene en s		
☐ Wate	r level measureme ater level measure	nt collected.	No screes to w	velihead				
	ater level measure ater level measure							
	ater level measure							
☐ Othe					gensservjugstyma (Dail)			
				PURGING IN	FORMATION			
☐ Purg	ed 3 well volumes	and field paran	neters stabilized		notore etahiliz	red tas		
□ Purg	ed 3 well volumes ed well until field p	based on previ	ous water level : ilized	and neid parer	neters stabiliz	Marke ang e		
→ Purg □ Othe		aidineteis stät	miecu.					
		7	acie -	436	2-743	35	249-	7133
Addition	al Comments:	کر ہے۔	3113	<u> </u>				· · · · · · · · · · · · · · · · · · ·

roject No:	055038				Client: Freeport Copper Queen Branch				
ask No:	1.0				Date: 10/13/11				
/ell ID:	( W/bi	e C		\	Veather:				
DWR No:					Sampler:	MML '			
DVVK IVU.				WELL DAT					
	11 (O 11-)	22	· ^		Nominal	Casing ( Size (inches)	Capacity Gallons per Lir	near Foot	
Well D	epth (ft bis):	r			2		0.16 0.65		
Casing	Diameter (in):					5	1.02		
Static Water	er Level (ft bmp):	159.81				6 8	1.47 2.61		
Casing	Volume (gal):	88	x3 = 2	2(65)		10	4.08		
_		N. C.			Casing	g Volume = gallons	/foot * water colum	n (feet)	
Total Volu	me Purged (gal):			D SAMPLIN	G DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
							No sar	nole	
						خ	collect	cal	
							Pump Off		
	FIELD PARAME	TER STABILIZA	ATION: Three c	onsecutive rea	dings within	0.2 su pH, 2 degree	es C, and 200 μS/c	m)	
			SAI	MPLE INFOR	MATION				
\$	Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
	`								
			VATER LEVE	MEASURE	MENT COL	LECTION			
PANNET	r level measureme					<u>GENERALIE EN PERSONALIS EN PERSONALIS EN PERSONALIS EN PERSONALIS EN PERSONALIS EN PERSONALIS EN PERSONALIS E</u>			
□ No wa	ater level measurer	nent collected.	No access to w	/eilhead/No po	rt in wellhead				
□ No wa	ater level measure	ment collected.	Obstruction in	well.					
1	ater level measure	ment collected.	Well is pumpin	g.					
☐ Other			WEII	PURGING IN	FORMATION				
	ed 3 well volumes a	ad Fold norom						8 1000 BC 51 (ULS 20 BC 10	
☐ Purge	ed 3 well volumes t ed 3 well volumes t	pased on previo	ous water level	and field paren	neters stabiliz	æd.			
	ed well until field pa								
☐ Othe							A		
Addition	al Comments:	Opene k near	d Valu fence,	e wod ran o	ut of	ume ou water	t open could not	y pipe · "cestar	

Project No:	No: 055038				Client: Freeport Copper Queen Branch			
ask No:					Date:	10/10/	( (	
Well ID:	Dadso	<u> </u>			Weather:	Sunny		
ADWR No:					Sampler:	MML		
ADVIK NO.				WELL DA	A		Capacity	
Wall Do	pth (ft bls):	200			Nominal	Size (inches)	Gallons per Lir	near Foot
	•	1011				2	0.16 0.65	
Casing D	liameter (in):	<u> </u>				5	1.02 1.47	
Static Water Level (ft bmp):  Casing Volume (gal):		93.11				8	2.61	
		157	x3 = 식	71		10	4.08	n (fant)
Total Volun	ne Purged (gal):				<u> </u>	g Volume = gallons	/foot * water colum	n (ieet)
				D SAMPLIN	IG DATA	Secreta		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp Specific Conductance (°C) (µS/cm)		Comments	
1546	Rump On	arus (1. 1909) ji Dažilo iž sija						
1550	Ч	5	20	6.43	71.7	1350		
1557	1.1	9	83	6.75	18.9	1350		
1606	20	8	155	6036	709	1330		
1614	28	5	195	6.80	70.5			
1622	36	13	299	6.86	7010	1310		
1000	44	13	403	6.87	70.1	1280		
1641	55,	13	546	6.66	19.T	1280		
1445	59	<u> 13_</u>	518	16,19	20.9		Pump Off	
	CICLO DARAME	TER STARILIZ	ATION: Three c	onsecutive re	adings within	0.2 su pH, 2 degre	es C, and 200 μS/c	m)
			ser factors from the contract was a first and the	MPLE INFO				
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Dops	a. \	4016	POH	250		300.0	2	<u> </u>
2000	7	1646	POLY	250	,	300-0	2	X
			VATER LEVE		MENT COL	LECTION		
	level measureme				en faragin (S. 1914)			SENTERNAMENTAL SERVICES
☐ No wa	ievei measuieme ter level measurei	ment collected.	No access to w	ellhead/No p	ort in wellhead	į		
☐ No wa	ter level measure	ment collected.	Obstruction in	well.				
l	ter level measure	ment collected.	Well is pumpin	g.				
☐ Other:				PURGING I	NFORMATION			Na a e e e e e Buga e a a e e e
D Purae	d 3 well volumes a	and field param	eters stabilized					
☐ Purge	d 3 well volumes i	based on previ	ous water level a	and field pare	meters stabili	zed.		
	d well until field pa							
☐ Other								
Additiona	al Comments:							

Project No:	055038				Client: F	reeport Coppe	r Queen Branch	)
ask No:	1.0				Date:	10/12/11		
Vell ID:	DURAZ	0			Weather:	Sunny	*	
ADWR No:					Sampler:	MMC'		
				WELL DAT	A			
Mell De	epth (ft bis):	NH	<i>+</i>	<del></del>	Casing Nominal Size (inches)		Capacity Gallons per Lin	near Foot
	•		1			2	0.16 0.65	
Casing Diameter (in):						5	1.02	
Static Wate	r Level (ft bmp):	N_	<u> </u>			6 8	1.47 2.61	
Casing \	Casing Volume (gal):		x3 =			10	4.08	
Total Volume Purged (gal):		いる	50		Casing	g Volume = gallons	/foot * water columi	n (feet)
			福州県 原見	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
1347	Pump On	grandisə dərəb İndrazlayı						
1357	10	5	50	7.16	26.4	990		
1402	15	5	100	7.07	25.6	1000		
1467	20	ฮ์	150	7.22	25.2	1010		
1412	25	6	200	7.23	24.9	1000		
						<u>-</u>		
							Pump Off	
	FIELD PARAME	TER STABILIZA	TION: Three c	onsecutive re	adings within (	0.2 su pH, 2 degree	s C, and 200 μS/cr	m)
				VIPLE INFOR				
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
DAIS	RAZO	14:17	POLY	250	١	300.0		<u> </u>
DON	<u> </u>							
			I VATER ESVEI	MEASURE	I MENTEGOL	LECTION .		hindir ng garaga s
	level measuremer ter level measurer		No access to w	elihead/No po	nt in wellhead			
	ter level measurer							
	ter level measurer							
☐ Other:				PURGING IN	ISOS MATICAN			
☐ Purged	d 3 well volumes a d 3 well volumes b	ind field parami pased on previo	eters stabilized. Jus water level a	and field parer	neters stabiliz	ed.		
	d well until field pa							
☐ Other:								
Additiona	I Comments:							
					.,			

Project No:	055038			(			r Queen Branch	1
Fask No:	1.0				Date: _	10-12-11 SUNN, 70	7	
Well ID:	EAST			1	Weather:	5/Nnz 70	<u>'5</u>	
ADWR No:				;	Sampler:	(		
				WELL DAT	A		Capacity	
Well De	epth (ft bls):	12	5'	}	Nominal	Size (inches)	Gallons per Lir	near Foot
Casing Diameter (in):		(0				2	0.16 0. <del>6</del> 5	
_	•	17	14			5 6	1.02 1.47	
Static Wate	Static Water Level (ft bmp):		63.6			8	2.61	
Casing \	/olume (gal):		$x^3 = 2$	76		10	4.08 /foot * water colum	n (feet)
Total Volume Purged (gal):		32Y				g Volume = gallons	7100t Water Colum	
				D SAMPLIN	G DATA	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents
09:48	Pump On							
09:55	10	12	120	7.51	21.9	56 599.7		
10:00	15	17	180	7.36	21.6	€00.3		
10:05	20	12	240	7.31	21.5	599.3		
10-10	25	12	300	7.31	21.4	599.7		
			,					
							Pump Off	
		SED OTABILITA	ATION: Throng	one outive res	dings within	0.2 su pH .2 degree	es C, and 200 µS/c	m)
	FIELD PARAME	TER STABILIZ		VIPLE INFOR				
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
	- QET		Pole	250 M	WAT 1	300.0	8	<b>V</b>
E1.	<i>.</i>	10:12	0.7	25021	1,	300.0	103	1
DUP2	0119012	11:40	VATER LEVE		ALENT COL			
			V/SIEKTEEVE					
Water	level measureme ter level measurer	nt collected.	No access to w	ellhead/No po	ort in wellhead	İ		
	ter level measurer ter level measurer					•		
	ter level measurer							
☐ Other:								
				PURGING IN	I-ORMAIIOI			
Purge	d 3 well volumes a d 3 well volumes b	and field param	eters stabilized	and field narer	neters stabili:	zed.		
	d 3 well volumes t d well until field pa			and now parci				
☐ Other:								
Additiona	al Comments:							

Project No: 055038				Client: <u></u>	reeport Coppe	r Queen Branch		
Task No: 1-0				Date:	10/12/11			
Well ID: EPI	PELE (d-1)			Weather:	Sunn	4		
ADWR No:				Sampler:	MML			
			WELL DAT	Application				
Maril Danel (8 blo)	265	5		Nominal	Casing Size (inches)	Capacity Gallons per Lin	ear Foot	
Well Depth (ft bls):				2 0.16				
Casing Diameter (in	eter (in):		1.02	1.02				
Static Water Level (ft b		666			6 8	1.47 2.61		
Casing Volume (gal	): 593 <del>227</del>	- x3 = <i>₫</i>	a E		10	4.08		
•				Casin	g Volume = gallons	/foot * water column	ı (feet)	
Total Volume Purged (	gai): La la la la la la la la la la la la la la	s 2 a b FIEL	D SAMPLIN	G DATA				
Time Elapsed (mir	) Naic	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts	
1821 Pump	' (gpm)							
UU UU INEXELERINGII IN	17.1	140	7.28	20,9	5 <i>0</i> 0			
0841 10		280	<b>1 1 1 1 1 1 1 1 1 1</b>	21.2	500			
0851 20		406	7.34	21.1	500 500			
10 000		490	7.38	21.0	500			
0906 35	1	1 1 1	7.41	20.9	500			
0916 45		798	7.38	2091	500			
0928 57			1 130			DRY		
0940 6		9106						
						Pump Off		
FIFI D PAI	AMETER STABILIZ	ATION: Three o	onsecutive re	adings within (	0.2 su pH, 2 degre	es C, and 200 μS/cn	n)	
		The second secon	WPLE INFOR	erokomuruojalariniai-NATOMSS				
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
EPPELE 641	10:03	POLY	250	/	300.0		<u> </u>	
CEPELE U.								
		VATER LEVE	MEASURE	MENT COL	EGTION			
☐ No water level me	urement collected. asurement collected asurement collected asurement collected	. Obstruction in	well.	ort in wellhead				
Other:	astrement consciou	. Tron to pumpm	9.				oavvenorenij lalaus komis	
		WELL	PURGING IN	IFORMATION				
☐ Purged 3 well vol	ımes and field paran	neters stabilized						
☐ Purged 3 well vol	umes based on previ	ous water level :	and field parer	meters stabiliz	ed.			
	field parameters stab		اندا سلاح	ized				
☐ Purged well until			3 362 KDIL	したしひ				
□ Purged well until	+ field para				1 2119:41	1		
Deurged well until the Other: DRY  Additional Comme	+ field para	went d		~ 91010 gas	) <u>a+09:40</u>	)		
□ Purged well until	+ field para				0. a+09:40	)		

Ray Mote Durazo Evan-) Cali

Project No:	055038			1	Client:	Freeport Coppe	r Queen Brancl	7
Task No:	1.0				Date:	10/12/10	>	
Well ID:	FULTS	7_	<u> </u>		Weather:	sunny		
ADWR No:					Sampler:	MML		
				WELLDAY	A			
Mall D	epth (ft bls):	3	00 -4	400 per	Nominal	Casing Size (inches)	Capacity  Gallons per Lir	near Foot
	•		(I	· · /	/	2	0.16 0.65	
Casing [	Diameter (in):	<u> </u>	٨			5	1.02	į.
Static Water	r Level (ft bmp):	N				6 8	1.47 2.61	
Casing \	√olume (gal): ′	<u>-350</u>	x3 = 🗀	1050		10	4.08	
Total Volur	ne Purged (gal):	~ 349	<i>y</i>		<u> </u>	g Volume = gallons	/foot * water colum	n (feet)
			明明明明 <b>E</b> lEl	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1036	Pump On	orian ducki separa Burang separah						
1042	9	8	48	6.46	27.4	850		
1052	10	8	128	6.97	21.6	880		
1058	22	É	176	7.22	21.9	870		
1105	29	8	<u>232</u>	7.21	21.9	870		······································
1110	34	9	277	7.23	21.7	870		
1115	39	9	322_	7.22	21.7	8 70		
							Pump Off	
	EIELD DADAMET	ED STABILIZA	TION: Three o	onsecutive re	adings within	L 0.2 su pH, 2 degree	1	m)
	FIELD PARAWE			MPLE INFO	e maratamente a tromodete de			
s	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
FUL	TZ	11:18	Pay	250		300.0		
		gerdiciles (zamiiklise)	ATER LEVE	   MEASTRE	MENTEGOL	  Ection		
								itali en lugo den viero he n
	level measuremer ter level measuren		No access to w	/elihead/No po	ort in wellhead	i		
	ter level measuren					•		
□ No wa	ter level measurer	nent collected.	Well is pumpin	g.				
☐ Other.				PURGING IN	ILODMATION			
☐ Purge	d 3 well volumes a d 3 well volumes b	nd tield param lased on previo	eters stabilized ius water level :	and field parer	neters stabiliz	zed.		
☑ Purge	d well until field pa	rameters stabi	lized. —> Pc/	owne	r requ	iest		
□ Other					ŀ			-
Additiona	al Comments:	Last	WL=	63,8 <u>2</u>				
					<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>			
7	Der IN	- 1 W	ell vol	ume . 5	tabilize.	+ sumple	7	
	<u> </u>		<u>~ VI V </u>					

roject No:	055038			(	Client: _	reeport Coppe	r Queen Branch	]
ask No:	***************************************				Date:	10/11/11		
/ell ID:	GARNE	TR 55	7	1	Weather:	Sunny		
DWR No:	5585				Sampler:	MMU		
				WELL DAT				
Well De	epth (ft bis):		<b></b>	ŀ	Nominal	Size (inches)	Capacity Gallons per Lir	near Foot
	_					2	0.16 0.65	
Casing D	Diameter (in):	.00				5	1.02	
Static Wate	r Level (ft bmp):	195.	<u> </u>			6	1.47 2.61	
Casing V	/olume (gal):		x3 =			10	4.08	
Total Volum	ne Purged (gal):				Casin	g Volume = gallons	/foot * water colum	n (feet)
			heren (EG)	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Etimo On							
	(A Dieseller auch der Der Heile							
				<u> </u>				
		<i>*</i>					Pump Off	
	FIFT DADAMET	co ctabil 17/	TION: Three c	onsecutive rea	dings within (	0.2 su pH, 2 degree	Pump Off es C, and 200 μS/ci	m)
	FIELD PARAMET	ER STABILIZA		and the extreme translation transfer	wallen belander på gillige bledet i f	0.2 su pH, 2 degree	Pump Off es C, and 200 μS/α	n)
	FIELD PARAMET	ER STABILIZA	SA	onsecutive rea	MATION	).2 su pH, 2 degree	es C, and 200 µS/cr	
	FIELD PARAMET	ER STABILIZA		and the extreme translation transfer	wallen belanter på på 1911 bler i i	D.2 su pH, 2 degree	1	n) Filtered (y/n)
			SAI Container	VPLE INFOR	MATION No. of		es C, and 200 µS/cr	Filtered
			SAI Container	VPLE INFOR	MATION No. of		es C, and 200 µS/cr	Filtered
		Time	Container Type	MPLE INFOR	No. of Containers	Analysis Method	es C, and 200 µS/cr	Filtered
			SAI Container	VPLE INFOR	MATION No. of		es C, and 200 µS/cr	Filte
Sa  Water No wat		Time  M t collected. nent collected. nent collected.	Container Type  /ATER LEVEI  No access to w Obstruction in v	Volume Volume MEASURE relihead/No po	No. of Containers MENT COLL	Analysis Method	es C, and 200 µS/cr	Filtered
Sa  Water No wat	ample ID level measurementer level measurementer level measurementer level measurem	Time  M t collected. nent collected. nent collected.	Container Type  /ATER LEVEI  No access to w Obstruction in w Well is pumpin	Volume Volume MEASURE rellhead/No po	No. of Containers  MENT COLI	Analysis Method	es C, and 200 µS/cr	Filtered
Sa  Water  No wat  No wat  No wat  Other:	ample ID  level measurementer level measurementer level measurementer level measurementer level measurementer level measurem	Time  Via t collected.  ment collected.  ment collected.  ment collected.	Container Type  VATER LEVEL  No access to w Obstruction in w Well is pumpin	Volume  Volume  MEASURE  vellhead/No powell. g.  PURGING IN	No. of Containers  MENT COLI	Analysis Method	es C, and 200 µS/cr	Filtered
Sa  Water  No wat  No wat  No wat  Other:	level measurementer level	Time  Via t collected.  ment collected.  ment collected.  ment collected.	Container Type  VATER LEVEL  No access to w Obstruction in v Well is pumpin  WELL eters stabilized.	Volume  Volume  MEASURE  vellhead/No powell.  g.  PURGING IN	No. of Containers  MENT COL:  rt in wellhead	Analysis Method	es C, and 200 µS/cr	Filtered
Sa  Water No wat No wat No wat Purgeo	level measurementer level measurementer level measuremeter level measu	Time  What collected.  ment collected.  ment collected.  ment collected.  ment collected.	Container Type  VATER LEVEI  No access to w Obstruction in w Well is pumpin  WELL eters stabilized ous water level a	Volume  Volume  MEASURE  vellhead/No powell.  g.  PURGING IN	No. of Containers  MENT COL:  rt in wellhead	Analysis Method	es C, and 200 µS/cr	Filtered
Sa  Water  No wat  No wat  Other:  Purged  Purged  Purged	level measurementer level	Time  What collected.  ment collected.  ment collected.  ment collected.  ment collected.	Container Type  VATER LEVEI  No access to w Obstruction in w Well is pumpin  WELL eters stabilized ous water level a	Volume  Volume  MEASURE  vellhead/No powell.  g.  PURGING IN	No. of Containers  MENT COL:  rt in wellhead	Analysis Method	es C, and 200 µS/cr	Filtered
Sa  Water No wat No wat No wat Purgec Purgec Purgec Purgec Other:	level measurementer level measurementer level measuremeter level measuremeter level measurementer level me	Time  What collected.  ment collected.  ment collected.  ment collected.  ment collected.	Container Type  VATER LEVEI  No access to w Obstruction in w Well is pumpin  WELL eters stabilized. ous water level a lized.	Volume Volume MEASURE relihead/No powell. g. PURGING IN	No. of Containers  MENT COLL  It in wellhead  FORMATION  meters stabiliz	Analysis Method ECTION ed.	Preservative	Filtered
Sa  Water No wat No wat No wat Purgec Purgec Purgec Purgec Other:	level measurementer level	Time  What collected.  ment collected.  ment collected.  ment collected.  ment collected.	Container Type  VATER LEVEI  No access to w Obstruction in w Well is pumpin  WELL eters stabilized. ous water level a lized.	Volume Volume MEASURE relihead/No powell. g. PURGING IN	No. of Containers  MENT COLL  It in wellhead  FORMATION  meters stabiliz	Analysis Method	Preservative	Filtered
Sa  Water No wat No wat No wat Purgec Purgec Purgec Purgec Other:	level measurementer level measurementer level measuremeter level measuremeter level measurementer level me	Time  What collected.  ment collected.  ment collected.  ment collected.  ment collected.	Container Type  VATER LEVEI  No access to w Obstruction in w Well is pumpin  WELL eters stabilized. ous water level a lized.	Volume Volume MEASURE relihead/No powell. g. PURGING IN	No. of Containers  MENT COLL  It in wellhead  FORMATION  meters stabiliz	Analysis Method ECTION ed.	Preservative	Filtered

Project No:	055038				Client: F	reeport Copper	Queen Branch	<u> </u>
Task No:					Date:	10/11/11		
Well ID:	GARNE	VE 1535	>		Weather:	sunny		
	587				Sampler:	nunc 0		
ADWR No:				WELL DAT				
aliche i seren e d'arter e e l'arte	and the hint	680			Nominal	Casing ( Size (inches)	Gallons per Lin	ear Foot
	epth (ft bis):	<u> </u>				2	0.16 0.65	
Casing I	Diameter (in):					4 5	1.02	
Static Water	er Level (ft bmp):	19	<u> 7. 75</u>			6 8	1,47 2.61	
Casino '	Volume (gal):	483	x3 = \\	149		10	4.08	
-					Casin	g Volume = gallons	foot * water column	n (feet)
I otal Volu	me Purged (gal):			D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
1013	Pump On							
1018	5	9	46	7.08	22.7	400		
1038	25	12	285	7.43	23.7	400		
1103	90	13	610	7,55	24.0	460		
1128		16	1010	7.59	24.1	410		
114	3 90	16	1250	7,56		400		
1158	105	100	1490	7.57	24.2	400		
		Ž						
							D	
				<u> </u>		00	Pump Off	m)
-iligarjają (-iligarja)	FIELD PARAMET	TER STABILIZ				0.2 su pH, 2 degree	is O, and 200 μολοί	
				MPLE INFOR	######################################			Filtered
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)
GARA	JER 1635	12:02	POLY	250		300.0		<u>'</u> Y
			L VATER LEVEI	MEASURE	MENT COL	LECTION		
-El Water	· level measuremei					rgunn Sart nithuring a Kilik sa casa na Planika	uncere leteba laden vin Abbrete e XI antra 1866 bi	and publication and different translation of the
	rievei measuremei ater level measurer		No access to w	velihead/No po	ort in wellhead	I		
□ No wa	ater level measurer	nent collected.	Obstruction in v	weil.				
i	ater level measurer	nent collected.	Well is pumpin	g.				
☐ Other			well	PURGING IN	IFORMATION			
	2 upil upi	od field rece					en ser i en ser i dell'inserte participation	encembrackies in Tachengun (i lieb)
Purge	ed 3 well volumes a ed 3 well volumes b	na new param pased on previo	ous water level	and field parer	meters stabiliz	zed.		
	ed well until field pa							
☐ Other								
Addition	al Comments:							
					:			

.,	Groundwa	ater Sam	oling Forn	n	_				
Project No.		<u> </u>	<u> </u>		Client:	Freeport Cop	per Queen Bra	anch	
Project No:					Date:	12-75	4-1/		
Task No:	Hob				Weather:	Chastopler 1 Shamm			
Well ID:	<u> </u>			Sampler:	1 hout of	1 5hu	mn		
ADWR No:				WELL D		C/11-1-31 4111	·		
	<u> </u>					Casin	g Capacity		
Well Depth (ft b	ols):		00		Nominal	ominal Size (inches) Gailons per Lis 2 0.16			
Casing Diamete		<u></u>			<u> </u>	4	C	).65	
		11.8	13			<b>9</b>		1.02 1.47	
Static Water Le	atic Water Level (ft bmp):		• • •		1	8	1.0	2.61 1.08	
Casing Volume	(gals):		34.4		Coole	10 ng Volume = gailor			
3 Casing Volum	nes (gals):		<i>403.2</i>		<u> </u>	ig volume = ganor	18)100t Water 35	international	
			FII	ELD SAMPL	ING DATA	· ·			
Time	Elepsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µ3/cm)	Con	nments	
0840		100-7			-	1/2/15	<u> </u>	· ·	
0845	T	1.7.6	88	4.52	20,0	19/3			
0855	15	17.6	264	Gelel	20.4	1857		<del></del>	
0910	30	17./	528	6, 45	30.5	1071			
0970	60	17.6	1056	6.68	1/(),	10111			
	<u> </u>								
<u> </u>								<u> </u>	
			·						
			8/	AMPLE INFO	RMATION		<u> </u>		
Sam	ple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments	
Hobe	» N	0940	plastic	250 ml	1	EPA 300.0	none	filtered	
	- mants:						and the second second second second second second second second second second second second second second second	ang paganang di Santanan ang Paganang	
Additional Con		131.	R						
-P	P fot 2	20	<u> </u>						
y www	701	~~ <u>~</u>							

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	h
Task No:					Date:	10/11/11		
Well ID:	HOWART	>			Weather:	sunny		
ADWR No:					Sampler:	MML		
				WELL DAT	A			
Well Dr	epth (ft bls):	220			Nominal	Casing Size (inches)	Capacity Gallons per Linear Foot	
	Diameter (in):	6"			2 4		0.16 0.65	
	,		5,02			5	1.02 1.47	
Static Wate	r Level (ft bmp):	1000		~~		6 8	2.61	****
Casing \	/olume (gal):	<u> </u>	x3 = 1°	95		10	4.08	
Total Volum	ne Purged (gal):				]	g Volume = gallons	/foot * water colum	in (reet)
				D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1514	Pump On							
1519	5	13	65	6.93	2,518	1110		
1524	10	13	130	7.25	21.3	1090		
1529	15		195	7.21	24	1170		
153H	20		260	7-10	0.15	1220		
				<u> </u>			Pump Off	\
adissa kalendassa	FIELD PARAMET	ER STABILIZA	and an arranged by the section of the section of	Parada in territoria dell'espeta		0.2 su pH, 2 degree	s C, and 200 μS/C	
				APLE INFOR	(MAIION			
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Hon	IARD	1541	POLY	260	l	300.6		у
7	P	1541	POLY	250	1	300.0	<u> </u>	λ
		V)	VATER LEVEL	MEASURE	MENT COLI	ECTION		
□ Water	evel measuremen	t collected.			The state of the s			
☐ No wat	er level measurem	ent collected.	No access to w	eilhead/No po	rt in wellhead			
1	er level measuren							
☐ No wat	er level measuren	ent collected.	Well is pumping	<b>J</b> .				
			WELL	PURGING IN	FORMATION	nasnasnoses sauseis astronomia Uses sio 420 sio 850 astronomia si	eras este ermaso comes de Lucio est est sanctina	
☐ Purged	3 well volumes a	nd field parame	eters stabilized.		23 15 25 25 A sand 19 20 44 25 44 25 5			
	3 well volumes b			nd field paren	neters stabiliz	ed.		
· · · · · · · · · · · · · · · · · · ·	well until field par	rameters stabil	ized.					
Other:							1 ,	
Additiona	Comments:							
								<u></u>



Project No:	055038				Client:	Freeport Copper Queen Branch			
Task No:	1.0				Date:	10-11-11			
Well ID:	KEEF	?ER			Weather:	SUNN, 8	670's		
ADWR No:					Sampler:	B-TO			
an Pasangan Pasangan NGS Pasangan Pasangan				WELL DAT	Α				
Weil De	pth (ft bls):	24	5		Nomina	I Size (inches)	Capacity  Gallons per Linear Foot		
		6				2 4	0.16 0.65	1	
Casing D	iameter (in):					5	1.02	!	
Static Water	Level (ft bmp):	141.			6 1.47 8 2.61			į.	
Casing V	olume (gal):	153	x3 = 4	<u> 50  </u>		10	4.08		
Total Volum	ie Purged (gal):	52	S		Casi	ng Volume = galions	s/foot * water colun	ın (feet)	
			Harar (FIEL	D SAMPLIN	G DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Commi	ents	
16:00	Pump On								
16:10	10	15	150	7.55	21.5	468.0			
16.20	20	15	300	7.42	20.7	479.7			
16:30	30	15	<u>450</u>	7.39	20.7	95486.9			
16:36				<u> </u>			Pump Off		
CATEGORIS SEGUES ES	FIELD PARAMET	ER STABILIZA	menoventárnánálásstvájást prodúci			0.2 su pH, 2 degree	es C, and 200 μS/c	n)	
			SAI	APLE INFOR	MAIION				
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
KEE	CCR	16:35	Pol	250ml	81	300-0	d	V	
700	10.3	70 0	<del>```\</del>		X		7		
			eral alesti investi unalian el l'eje ser (n	I BAGNONDES					
			ATER LEVEL	IVIEASURE	VIEW BOOK				
101	evel measuremen er level measurem		No access to w	allhead/No nor	t in wellhead	i			
i .	er level measurem					•			
	er level measurem								
☐ Other:					Colonia de Caracteria (Salicia				
				Purging inf	ORMATION				
7 \	3 well volumes ar				atara atabili	and .			
, -	3 well volumes ba well until field par			na tiela parem	eters stabiliz	æa.			
Other:	wen until neid par	arrotora atabiii	204.						
L	Comments:								
			· · · · · · · · · · · · · · · · · · ·				***************************************		

Project No:	055038				Client:	reeport Coppe	r Queen Brancl	<u>n</u>
Task No:					Date:	10/11/1	1	
Well ID:	McConnel	L 265			Weather:	Sunne		
ADWR No:	529	265			Sampler:	MMC_ C	)	Miles and Miles
				WELLDAT	A	Cacing	Capacity	
Well De	epth (ft bis):	216			Nominal	Size (inches)	Gallons per Li	near Foot
	Diameter (in):	6"				2	0.16 0.65	
•	•		-7		5 6		1.02 1.47	
Static Wate	er Level (ft bmp):	<u>Ilelil</u>		7.17		8	2.61	
Casing \	Volume (gal):	81	x3 = '2	243		10	4.08 foot * water colum	
Total Volur	ne Purged (gal):	<u> </u>	>			g volume = galions	Water Colum	
			Total	D SAMPLIN	iciuava, I	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents
1302	Pump On							
1307	5	12	(00	6.58	22.4	1570		
1312	10	12	120	7.06	21.6	1590		
1317	15	12	180	7.10	21.8	1600		
1322	20	12	240	7-18	21.8	1590		
							Pump Off	
	FIFI D PARAMET	  ER STABILIZ/	ATION: Three c	l onsecutive re	adings within (	).2 su pH, 2 degree	es C, and 200 μS/c	m)
				MPLE INFOR				
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
McCa	NNELL		POLY	250	١	300.0		$\forall$
11100	MAIN ELL		, ,					
		i Tirkin k	L /ATER LEVEL	MEASURE	MENT COL	ECTION .		
₩ Water	level measuremer	nt collected.	aconte a dinamente de la composit			1991 (1991)   Helentre and San Leading		
□ No wa	ter level measuren	nent collected.			ort in wellhead			
	ter level measurer							
☐ No wa	ter level measurer	nent collected.	wen is pumping	<i>y.</i>				
			WEIL	PURGING IN	IFORMATION			Aparonis konsputes Kariot arotaleanes
Purge	d 3 well volumes a	ind field param	eters stabilized.					
	d 3 well volumes b			ind field parer	meters stabiliz	ed.		
☐ Purge	d well until field pa			_				
	al Comments:	H	anna HI	991301				
Additions	41 0011111101110.							

ask N: Date: NARCELL Weather: Sampler  Well Depth (ft bis): 220   Nominal Size uncles)   Oalong put Inter Fox    Casing Dameter (in):	haiamt Nio	055038				Client: <u>F</u>	reeport Coppe	Queen Branch	
MARCELL   Weather   SATTY	roject No:	1				Date:	11/22/11	· L	
DVR No:  Sample: NVELL DATA  Well Depth (ft bis):  Casing Diameter (in):  Up*  180 ** Per President Proof Static Water Level (ft bis):  Casing Volume (gal):  Total Volume Purged (gal):  Total Volume Purged (gal):  Time  Elapsed Time  Elapsed Time  Discharge (gam)  Discharge (gam)  Discharge (gam)  Discharge (gam)  FIELD SAMPLING DATA:  Time  Elapsed Time  Discharge (gam)  Disch		M ARA	=)_1			Weather:	Sunny		
Well Data   Casing Capacity   Casing Capacity   Casing Capacity   Office		MOTING				Sampler:	MML		poroció de la lexació de la lega.
Nominal Size (inches)   Gallons per Linear Foot   Casing Diameter (in)   Up	ADWK NO.		un er er er er er er er er er er er er er		WELL DAT	IA III III III III	Casing	Panacity	
Casing Diameter (in):  UN	VALUE D	anth (ft bla):	220			Nominal	Size (inches)	Gallons per Line	ar Foot
Static Water Level (th bmp): 180 * per previous surgement 6 1.47		•							
Casing Volume (gal): 59 x3 = 176 10 4.08  Total Volume Purged (gal): FIELD SAMPLING DATA  Time Elapsed Time (min) Discharge Rate (gpm) Elapsed Fine (min) Protection (gallons) (sU) Protection (gallons) (sU) Protection (gallons) (sU) Protection (gallons) (sU) Protection (gallons) (sU) Protection (gallons) (sU) Protection (gallons) (sU) Protection (gallons) (su) Protection (gallons) (su) Protection (gallons) (su) Protection (gallons) (su) Protection (gallons) (su) Protection (gallons) (su) Protection (gallons) (su) Protection (gallons) (gallons) (su) Protection (gallons) (gallons) (su) Protection (gallons) (gall	Casing I	Diameter (in):	Ψ'	<u>ለ</u> ደር ልና <b>ኖ</b> ህነኛ፣	24		5		
Casing Volume (gal):  Total Volume Purged (gal):  FIELD SAMPLING DATA  Time Elapsed Time (min) (gallons)  [Gallons]  [Gal	Static Water	er Level (ft bmp):			_	ent	8	2.61	
Time Elapsed Time (nint) Discharge Rate (gallons) Discharge Rate (gallons) Discharge Rate (gallons) Discharge Rate (gallons) Discharge Rate (gallons) Discharge Rate (gallons) Discharge Rate (gallons) Discharge Rate (gallons) Discharge Rate (gallons) Discharge Rate (gallons) Discharge Part D	Casing	Volume (gal):	59	x3 = <i>V</i>	16				(feet)
Time Elapsed Time (min) Discharge Rate (gpm) (gallons) (gb) Total PH Temp (Conductance (gs/sm)) (gs/sm	Total Volu	ne Purged (gal):					g Volume = gallons	700t Water Column	
Time Elapsed Time (min) Discharge Rate (gpm) Discharge (gallons) Pith Temp (SU) (FC) Conductance (uS/cm) Comments    0 S TO   Pump.Oh					D SAMPLII	NG DATA	Specific		
No of   No of   No of   No of   Sample   D   I'ill   Poly   250   I   300.0   No water level measurement collected.   No wat	Time	1 7	Rate	Discharge		1 ' 1	Conductance	Commen	ts
1057 7 11 77 7.33 20.5 1536 1107 17 187 1.32 7.25 20.4 1544 1107 17 187 7.29 21.0 1536 1107 17 187 7.29 21.0 1536  FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)  SAMPLE INFORMATION  Sample ID Time Container Type Volume Containers Analysis Method Preservative (y/n)  Marcell IIII Poly 250   300,0 N X  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No access to wellhead.  No water level measurement collected. Well is pumping.  Ø Other: Unclosed to Sauce of 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 3 well volumes based on previous water level and field paremeters stabilized.  Other:	in 5-0	Pump On	pares su qui serse. Suituis asi asia sa						
1107 17 187 7-29 210 1536  1107 17 Pump Off  FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)  SAMPLE INFORMATION  Sample ID Time Container Type Volume No. of Containers Type Volume No. of Containers Type IIII Poly 250 I 3000 N X  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No access to wellhead. No water level measurement collected. No access to wellhead. No water level measurement collected. Well is pumping. Other: Well Purged 3 well volumes and field parameters stabilized. Purged 3 well volumes based on previous water level and field parameters stabilized. Other:		-7	\\	77	7.83				
Pump Off   Pump Off		. 12_		132	ļ				
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)  SAMPLE INFORMATION  Sample ID  Time  Container Type  Volume  Containers  Volume  Containers  No. of Containers  Analysis Method  Preservative  (y/n)  Water level measurement collected.  No water level measurement collected. No access to wellhead.  No water level measurement collected. Obstruction in well.  No water level measurement collected. Well is pumping.  Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field paremeters stabilized.  Other:  O		17		\87_	7.29	240	1536		
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)  SAMPLE INFORMATION  Sample ID  Time  Container Type  Volume  Containers  Volume  Containers  No. of Containers  Analysis Method  Preservative  (y/n)  Water level measurement collected.  No water level measurement collected. No access to wellhead.  No water level measurement collected. Obstruction in well.  No water level measurement collected. Well is pumping.  Other:  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field paremeters stabilized.  Other:  O									
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)  SAMPLE INFORMATION  Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative (y/n)  Marcell IIII Paly 250 I 300/6 NV  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No water level measurement collected. No access to wellhead. No water level measurement collected. Obstruction in well. No water level measurement collected. Well is pumping. Other: Unable 45 300/6  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: Other:									
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)  SAMPLE INFORMATION  Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative (y/n)  Marcell IIII Paly 250 I 300/6 NV  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No water level measurement collected. No access to wellhead. No water level measurement collected. Obstruction in well. No water level measurement collected. Well is pumping. Other: Unable 45 300/6  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: Other:									
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)  SAMPLE INFORMATION  Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative (y/n)  Marcell IIII Paly 250 I 300/6 NV  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No water level measurement collected. No access to wellhead. No water level measurement collected. Obstruction in well. No water level measurement collected. Well is pumping. Other: Unable 45 300/6  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: Other:									
Sample ID  Time  Container Type  Volume  No. of Containers  No. of Con								Pump Off	
Sample ID  Time  Container Type  Volume  No. of Containers  No. of Con		TIELD DADAME	TER STARILIZ	ATION: Three o	consecutive r	l eadings within	L 0.2 su pH, 2 degre	es C, and 200 μS/cn	n)
Sample ID Time Container Type Volume No. of Containers Analysis Method Preservative (y/n)  Marcell IIII Poly 250 I 3000 H X  WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No water level measurement collected. No access to wellhead. No water level measurement collected. Obstruction in well. No water level measurement collected. Well is pumping. Other: Wall Purgel 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:		FIELD PARVAINE		SA	VIPLE INFO	RMATION			
WATER LEVEL MEASUREMENT COLLECTION  Water level measurement collected. No water level measurement collected. No access to wellhead. No water level measurement collected. Obstruction in well. No water level measurement collected. Well is pumping. Other: Unclose to Source  WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized. Purged well until field parameters stabilized. Other:		Sample ID	Time	Container		No. of	Analysis Method	Preservative	
Water level measurement collected.  No water level measurement collected. No access to wellhead.  No water level measurement collected. Obstruction in well.  No water level measurement collected. Well is pumping.  Other: Unclose To Source  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:	01.0		11.11	Palv	250	j	3000	N	<u> </u>
□ Water level measurement collected. □ No water level measurement collected. No access to wellhead. □ No water level measurement collected. Obstruction in well. □ No water level measurement collected. Well is pumping. □ Other: □ natole → Source ■ 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:	INITIAL	cen	11/11	+ 1017					
□ Water level measurement collected. □ No water level measurement collected. No access to wellhead. □ No water level measurement collected. Obstruction in well. □ No water level measurement collected. Well is pumping. □ Other: □ natole → Source  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:				L NATED LEVE	I MEASUR	EMENT COL	LECTION		
No water level measurement collected. No access to wellhead.  No water level measurement collected. Obstruction in well.  No water level measurement collected. Well is pumping.  Other: Unabole to source.  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:							SECURATE SEE ESECUTATION DE LA SECULIA DE LA SECULIA DE LA SECULIA DE LA SECULIA DE LA SECULIA DE LA SECULIA D		is the sufficient service to construct
No water level measurement collected. Obstruction in well.  No water level measurement collected. Well is pumping.  Other: Unable to Source  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:	□ Wate	r level measureme	int collected. ment collected	. No access to v	vellhead.				
No water level measurement collected. Well is pumping.  Other: Unclose to Source  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:	□ Now	ater level measure	ment collected	. Obstruction in	well.				
WELL PURGING INFORMATION  Purged 3 well volumes and field parameters stabilized.  Purged 3 well volumes based on previous water level and field parameters stabilized.  Purged well until field parameters stabilized.  Other:	□ No w	ater level measure	ment collected	. Well is pumpir	ng.				
Purged 3 well 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:	<b>妃 Othe</b>	r. Unable	48 30		DURGING	INFORMATIO			
<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>							del estratustica estractuación		
□ Purged well until field parameters stabilized. □ Other:	Purg	ed 3 well volumes ed 3 well volumes	and neid paran based on previ	ious water level	 and field par	emeters stabili	zed.		
□ Other:	☐ Purg	ed well until field p	arameters stat	oilized.					
Additional Comments:									
	Addition	nal Comments:							
			•						

Project No:	055038				Client: Freeport Copper Queen Branch			
rask No:	1.0				Date: _	10/12/1	and the state of	
Nell ID:	METZLE	e e			Weather:	Sunni	<u> (98)</u>	
ADWR No:					Sampler:	MMC (	J	
				WELL DA	A	Casing (	Canacity	
Well De	pth (ft bls):	35	<u> </u>		Nominal	Size (inches)	Gallons per Lir	near Foot
		(7	)			2	0.16 0.65	
_	iameter (in):	-	11/7			5	1.02 1.47	
Static Water	Level (ft bmp):	$\frac{1}{2}$	<i>7.7</i> / 0	67		8	2.61	
Casing V	olume (gal):	89	x3 = -2	<u>-                                    </u>	0	10   Volume = gallons	4.08	n (feet)
Total Volum	ne Purged (gal):					j volume = galloris	7100t Water Coloin	
				D SAMPLIN	(GIDAUA)	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	nts
12360	Pump On		an selitas asema ele El Disengent disente					
12:44	8	9	48	6.98	27.0	890		
12:52	16	6	910	7.22	22.2	<u>890</u>		
1302	26	6	156	7.02	2213	900		
1307	31	6	186	7.24	22.	890		
1315	39	6	234	7.26	22.2	900		
1321	45	1 2	270	7.27	1.52	910		
						-		
							Pump Off	
	EIELD DADAME	TED STARILIZA	ATION: Three c	onsecutive re	adings within (	l 0.2 su pH, 2 degree	ì ·	m)
				MPLE INFO				
			Container		No. of			Filtered
Sa	imple ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)
METZ	7150	1325	P02-Y	250	1	300.0	***************************************	<u> </u>
1,0,0								
			L VATER LEVEI	MEASURE	MENT COL	ECTION		
			7.511-11.81.4-					
Water	level measureme er level measurer	nt collected.	No access to U	allhead/No n	ort in wellhead			
	er level measurer er level measurer							
	er level measurer er level measurer							
☐ Other:								laa Madio Raanoesa Madaes
			WELL	PURGING II	NFORMATION			
Purge	d 3 well volumes a	and field param	eters stabilized			t		
	d 3 well volumes i			and field pare	meters stabiliz	ed.		
☐ Purged ☐ Other:	d well until field pa	arameters stabi	nzeu.					
	il Comments:							
Additions	u Oommatike.							

Project No:	055038	· .			Client:	Freeport Copper Queen Branch			
ask No:	1.0				Date:	10-11-11			
Vell ID:	MOOR	E			Weather:	SUNNY 70	Í		
DWR No:					Sampler:	B30			
				WELL DAT	Andrewski	Casing (			
Mall D	epth (ft bis):				Nominal	Size (inches)	Gallons per Lin	ear Foot	
	•		*			2 4	0.16 0.65		
Casing L	Diameter (in):		,			5	1.02 1.47		
Static Water	er Level (ft bmp):					6 8	2.61		
Casing '	Volume (gal):		<u>x3 = \</u>			10	4.08	/f4\	
Total Volur	me Purged (gal):			\	<u> </u>	g Volume = gallons	/foot * water columr	r (reet)	
			The state of the s	D SAMPLIN	IG DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Commer	nts	
iS:00	Pump On								
15:05	S	10	50	7.51	22.9	415.7			
15:10	10	10	100	7 7.38		415.8			
15:15	15	(0	150	7.31	22.5	419.0			
							Pump Off		
15.20	<u> </u>	TED STABILIZ	ATION: Three o	onsecutive re	adings within	1 0.2 su pH, 2 degree	es C, and 200 μS/cn	n)	
	FIELD PARAME	TER STABILIE	and the control of the second	VIPLE INFO	enderge et adioantificiel				
s	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
	•		. 1				1		
moe	PRE	15:20	Poly	2.50		300.0	Ø	<u> </u>	
moe	PRE		VATER LEVE		MENT COL		Ø	<u> </u>	
					/ EMENT COL		<b>%</b>	<b>Y</b>	
☐ Water	r level measuremer ater level measuren	nt collected.	VATER LEVEL  No access to w	MEASURE		LECTION	<b>Ø</b>	<u> </u>	
☐ Water No wa	r level measuremer ater level measuren ater level measuren	nt collected. ment collected. ment collected.	No access to w	L MEASURE		LECTION	8	<u> </u>	
☐ Water No wa	r level measuremer ater level measuren ater level measurer ater level measurer	nt collected. ment collected. ment collected.	No access to w	L MEASURE		LECTION	<b>8</b>		
☐ Water No wa	r level measuremer ater level measuren ater level measurer ater level measurer	nt collected. ment collected. ment collected.	VATER LEVEL  No access to w  Obstruction in w  Well is pumpin	MEASURE velihead/No po well. g.		LECTION			
☐ Water No wa ☐ No wa ☐ No wa ☐ Other	level measuremer ater level measuren ater level measurer ater level measurer	nt collected. ment collected. ment collected. ment collected.	No access to w Obstruction in v Well is pumpin	LMEASURE velihead/No po well. g. PURGING IN	ort in wellhead	LECTION			
☐ Water No wa ☐ No wa ☐ No wa ☐ Other	r level measuremer ater level measuren ater level measurer ater level measurer	nt collected. ment collected. ment collected. ment collected. ment collected.	No access to w Obstruction in v Well is pumpin WELL	L MEASURE velihead/No po well. g. PURGING IN	ort in wellhead	LECTION			
□ Water No wa □ No wa □ No wa □ Other □ Purge	level measuremer ater level measurer ater level measurer ater level measurer	nt collected. ment collected. ment collected. ment collected. ment dilected. and field paramoased on previo	No access to w Obstruction in w Well is pumpin WELL teters stabilized bus water level a	L MEASURE velihead/No po well. g. PURGING IN	ort in wellhead	LECTION			
□ Water No wa □ No wa □ No wa □ Other □ Purge	r level measurementer level measurenter level measurenter level measurenter level measurenter level measurenter level measurenter level well volumes te level well until field pa	nt collected. ment collected. ment collected. ment collected. ment collected. and field param based on previous parameters stability.	No access to w Obstruction in w Well is pumpin WELL neters stabilized ous water level a	MEASURE velihead/No po well. g. PURGING IN . and field parei	ort in wellhead	LECTION			
□ Water No wa □ No wa □ Other □ Purge □ Purge □ Purge □ Cother	r level measurementer level measurenter level measurenter level measurenter level measurenter level measurenter level measurenter level well volumes te level well until field pa	nt collected. ment collected. ment collected. ment collected. ment collected. and field param based on previous parameters stability.	No access to w Obstruction in w Well is pumpin WELL teters stabilized bus water level a	MEASURE velihead/No po well. g. PURGING IN . and field parei	ort in wellhead	LECTION			
□ Water No wa □ No wa □ Other □ Purge □ Purge □ Purge	r level measurement ater level measurementer level volumes at 3 well volumes at 3 well volumes bed well until field particular.	nt collected. ment collected. ment collected. ment collected. ment collected. and field param based on previous parameters stability.	No access to w Obstruction in w Well is pumpin WELL neters stabilized ous water level a	MEASURE velihead/No po well. g. PURGING IN . and field parei	ort in wellhead	LECTION			

Project No:	055038				Client: F	reeport Coppe	r Queen Branch	
ask No:					Date: _	10/11/11		
Well ID:	9-2-4	NOTEMAN	3		Weather:	Sunny		
	212483				Sampler:	MML		
ADWR No:				WELL DA				iki ku denganjan
		470			Nominal	Casing Size (inches)	Capacity Gallons per Lir	ear Foot
Well D	epth (ft bls):				Nomma	2	0.16	
Casing I	Diameter (in):	5			<u> </u>	4 5	0.65 1.02	
Static Wate	er Level (ft bmp):	NA		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		6	1.47 2.61	
Coning	Volume (gal):		x3 = - (	225		8 10	4.08	
_					Casing	g Volume = gallons	/foot * water colum	n (feet)
Total Volur	me Purged (gal):			D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
20:61	Pump On							
08:51	15	9	45	6.37	725228	1270		
0856	10	9	90	6.80	23,3	1250		
0901	15	9	135	6.93	23.5	1260		
0906		9	180	6,94	23.5	1260		
0911	20 25	. 9	725	6.96	23.4	1250		
6916	~	,			· · · · · · · · · · · · · · · · · · ·			
							Pump Off	
	FIELD PARAMET	TER STABILIZA	ATION: Three o	onsecutive re	adings within	0.2 su pH, 2 degree	es C, and 200 μS/ci	n)
				WPLE INFO				
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
110		0920	POLY	250		300.0		λ
	EMAN_							
		V	VATIER LEVE	L MEASURI	MENT GOL	EEGIIION		
	level measuremer				- + !1lbaad	ŀ		
	ater level measurer ater level measurer				on in weilnead	ı		
	ater level measurer ater level measurer							
☐ Other								riskopologijom sadam 19
			WELL	PURGING I	NFORMATION			
₩ Purge	ed 3 well volumes a	and field param	eters stabilized					
	ed 3 well volumes b			and field pare	meters stabiliz	zed.		
I	ed well until field pa	ırameters stabi	lized.					
Other		1 .1	Qua Nat	ala lum	= 327	54		
Addition	al Comments:	Last	availar	XX WL	341	<u>, , , , , , , , , , , , , , , , , , , </u>		

Project No:	055038			(	Client: Freeport Copper Queen Branch			
Task No:	1.0			1	Date:	12-7-11		
Well ID:	NSD.	-07_		1	Weather:	Cold .		
ADWR No:					Sampler:	220		
				WELL DAT				
184-9 D	anth (A bla):				Nominal	Casing Size (inches)	Capacity Galions per Li	near Foot
wen D	epth (ft bis):				, , , , , , , , , , , , , , , , , , , ,	2	0.16	
Casing I	Diameter (in):					4 5	0.65 1.02	
Static Wate	r Level (ft bmp):	104.41				6 8	1,47 2.61	
Casing \	/olume (gal):	•	x3 =			10	4.08	
_	•				Casin	g Volume = gallons	/foot * water colum	in (feet)
Total Volun	ne Purged (gal):			D SAMPLIN	G DATA	Senden en en		
	ACCOUNT THE PROPERTY OF THE PR	Discharge	Total		Temp	Specific		
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	(°C)	Conductance (µS/cm)	Comme	ents
	evimo On		(gallons)					
								- Chemical distribution of the second
							Pump Off	
			71011 71		dinan váthin (	2 cu nH 2 degree	es C, and 200 μS/c	m)
	FIELD PARAME	ERSTABILIZA	- to the state of	UPLE INFOR	STREET, STREET, CONTRACT OF STAINS			
								Filtered
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Anatysis Method	Preservative	(y/n)
								k
aas dasinja kirima išeda erjeje	ra naska ka karaca Nasha Pasa Hani (Maka M	rational State (State (						
		N .	AFFER LEVEL	MEASURE	VIENTE (OIL)	EGIJON		
I .	level measuremer							
i	er level measuren							
1	ter level measuren ter level measuren							
□ Other	lei level illeasuleii	nent consciou.	TTCII ID PUIIIPII	y·				
			WELL	PURGING IN	ORMATION			
☐ Purger	i 3 well volumes a	nd field paramo	eters stabilized.		3 leaves 2011 (1.202-21.103-104-104-104)			
	d 3 well volumes b			ind field parem	eters stabilize	ed.		
☐ Purge	d well until field pa	rameters stabil	ized.					
☐ Other:								
Additiona	Comments:	<u> </u>	<u> </u>					
2°								

Project No:	055038			(	Client:	Freeport Coppe	r Queen Branc	h
Task No:	1.0				Date:	12-7-1)		
Well ID:	NSD-C	3			Weather:	Cold		
ADWR No:					Sampler.	RY		
				WELLDAT				
ת ווכוע	epth (ft bis):		/		Nominal	Casing Size (inches)	Capacity Gallons per Li	near Foot
						2	0.16 0.65	
Casing I	Diameter (in):		3 N			<b>4</b> 5	1.02	
Static Water	er Level (ft bmp):	87.3	s <u>0                                    </u>			6 8	1.47 2.61	
Casing '	Volume (gal):		x3 =			10	4.08	l l
_	•				Casin	g Volume = gallons	s/foot * water colum	in (feet)
TOTAL VOIUS	me Purged (gal):		FIEL	DSAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	evino on							
	ndinoski dikatelia ili							
							and the same of th	
	-							
							Pump Off	
	FIELD PARAMET	ER STABILIZA	TION: Three c	onsecutive rea	dings within (	0.2 su pH, 2 degree	es C, and 200 μS/α	m)
			SAN	APLE INFOR	MATION			
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
								k
			ATER NEVEL	MEAGIRE	VENTONI	Есліом		
				operati altrinoisla ilea				
1	level measurement ter level measuren		No access to w	ellhead.				
1	ter level measuren							
	ter level measuren							
☐ Other.			OGRAGOS ESCRIPAÇÃO DA GALEOPER	altovice nu sanyapan karlombu	endredistriveliele			
			engupalik (Apada dala s	PURGING IN				
	d 3 well volumes a				otore etabilis	ed		
	d 3 well volumes b d well until field pa			niu neiu palen	ecers staviliz			
Other		MUDIC COUPIN	marqui SA s					
<u> </u>	al Comments:	601	0					
							· · · · · · · · · · · · · · · · · · ·	

Project No:	055038		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Client:	Freeport Coppe	r Queen Brancl	<u> </u>
Task No:	10				Date:	10/13	111	
Well ID:	NWC	-02			Weather:	<u> Sunn</u>	y 705	
ADWR No:					Sampler:	MML	0	
ADWA NO.				WELLDA				
LAV-U	onth (ff blo):			a second and a second of the	Nominal	Casing Size (inches)	Capacity Gallons per Lii	near Foot
vveii D	epth (ft bis):		a resident and a second second		,	2	0.16 0.65	1
Casing I	Diameter (in):					5	1.02	i
Static Water	er Level (ft bmp):					6 8	1.47 2.61	
Casing '	Volume (gal):		x3 =			10	4.08	
					Casin	g Volume = gallons	/foot * water colum	n (feet)
Letai Voiui	me Purged (gal):			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							
1000	unen engerte Auren kelende Eriki	N/A		7.28	22.6	370		
1005				7.42	22,0	360		
1010			:	745	21.9	370		
1010								
							Pump Off	
	FIELD PARAMET	TER STABILIZA	and the second of the second s	constitutive establicate todana configuração	caracacan de en electric de l'estable	0.2 su pH, 2 degree	es C, and 200 μS/α	m)
			SAM	APLE INFO	RMATION			
s	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NILLIC	<u>-02</u>	10:12	POLY	250	}	300,0		У
.000								
			VATER LEVEL	MEASURE	MENT COL	LECTION		
	level measuremer							1558 STEEL GETAMEN THE PLACE IN
	iter level measuren		No access to w	ellhead/No po	ort in wellhead			
	ter level measurer							
r	iter level measurer	nent collected.	Well is pumping	g.				
☐ Other:			- Lwei	DI IBCING II	IFORMATION			
☐ Purge	d 3 well volumes a d 3 well volumes b	na nela parami lased on previo	eiers siauliizeu. ius water level a	ind field pare	meters stabiliz	ed.		
	d well until field pa			-				
□ Other								
Additiona	al Comments:			li I				
,								
			<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>					

Project No:	055038				Client: <u>I</u>	Freeport Coppe	r Queen Branch	1
Task No:	1.0				Date:	<u> 10/13/11</u>		
Well ID:	NWC-	-03			Weather:	SUNNY		
ADWR No:					Sampler:	J		
				WELL DAT	Α			
Mall D	onth (ft bls):				Nominal	Casing Size (inches)	Capacity Gallons per Lir	near Foot
vvenD	epth (ft bls):					2	0.16 0.65	
Casing	Diameter (in):					4 5	1.02	
Static Water	er Level (ft bmp):					6 8	1.47 2.61	
Casing	Volume (gal):		x3 =			10	4.08	
-	•				Casin	g Volume = gallons	s/foot * water colum	n (feet)
i otal Volu	me Purged (gal):		i i i i i i i i i i i i i i i i i i i	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
	Pump On							
0900	For the Comment of the Comment of State	NAT		7.08	21.6	990		
0905		V · P		7.19	21.5	976		
100000				7.23	21.6	960		
<u> </u>								
							Pump Off	
	FIELD PARAME	TER STABILIZA	ATION: Three o	onsecutive re	adings within	0.2 su pH, 2 degre	es C, and 200 μS/cr	n)
			SAN	IPLE INFOR	RMATION			
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Alver	-03	0912	POLY	250	1	300.0		<u> </u>
19000								
			L VATER LEVEL	MEASIDE	MENTECOL	ЕСТІОЙ		
				<b>ルC- U</b> ろ				
	· level measuremer ater level measurer							
	iter level measurer iter level measurer							
!	iter level measurer							
☐ Other								
				PURGING IN	IFORMATION			
☐ Purge	ed 3 well volumes a	ind field param	eters stabilized.	and field most	natam etahilin	ha		
	ed 3 well volumes b ed well until field pa			ma nera parer	neters stabiliz	.cu.		
□ Other		nameters Stabl	negu.					w
L	al Comments:	Well	on fo	r ~5	≥hrs.			
Addition	ai Commenta.	V - V - V -	: 10	·				
		·						

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	<u>h</u>
Task No:					Date:	10/13/11		
Well ID:	NW	<u> </u>	CAP		Weather:	sunny		
ADWR No:		27684			Sampler:	MIMC		
				WELL DAT	Α			
Well D	epth (ft bls):	<b>P</b>			Nominal	Size (inches)	Capacity Gallons per Li	
	•				2 4		0.16 0.65	l l
	Diameter (in):	1977.70				5	1.02 1.47	i i
Static Water	er Level (ft bmp):	<u>134,</u>	15			6 8	2.61	
Casing '	Volume (gal):		x3 =			10	4.08	
Total Volur	ne Purged (gal):				Casin	g Volume = gallons	/foot * water colum	in (feet)
			新期 斯斯克尼	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On							
							Pump Off	
	FIELD PARAMET	I TER STABILIZA	ATION: Three c	onsecutive re	adings within	0.2 su pH, 2 degree	es C, and 200 µS/c	m)
				MPLE INFOR				
			Container	Volume	No. of	Analysis Method	Preservative	Filtered
S	ample ID	Time	Туре	Volume	Containers			(y/n)
Was included by Spie pilete			ajajsiotousisiaja (1559–1640–1646).					
			/ATER LEVE	MEASURE	MENI VUL			
	level measuremer							
	ter level measuren				nt in wellhead			
	ter level measurer							
1	ter level measurer	nent collected.	vveii is pumpin	y.				
Other:			AVE IN	PURGING IN	EORMATION			Sector Constitution of the
	d 3 well volumes a				notore etahilia	red		
	d 3 well volumes b			and neid barei	netera atabilit			
☐ Purge☐ Other	d well until field pa	rameters stabil	ız <del>c</del> u.					
		( A	11					
Additiona	al Comments:		<u> </u>					

Project No:	055038				Client: _	Freeport Coppe	r Queen Branc	1
rask No:					Date: _	10/13/11		
Well ID:	<b>H4</b> - 1	<u> </u>	-04		Weather:	SUNNU		
ADWR No:		1849			Sampler:	MML J		
				WELL DA				
Mail Do	pth (ft bls):				Nominal	Size (inches)	Capacity Gallons per Li	near Foot
						2	0.16 0.65	
Casing D	iameter (in):		$\leftarrow$			5	1.02 1.47	
Static Water	Level (ft bmp):					6 8	2.61	
Casing V	olume (gal):		x3 =			10	4.08	
Total Volum	e Purged (gal):					g Volume = galions	:/foot * water colum	in (teet)
				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							
0811	THE REPORT OF THE PROPERTY OF	NIA		6.79	22.7	780		
0816		•		7.28	22.9	790		
0821				7.39	23.1	800		
0826				7.46	23,3	770		
						·		
		<u> </u>					Pump Off	
			TION There		adinac within	 0.2 su pH, 2 degree	· ·	m)
	FIELD PARAME	ER STABILIZ		VIPLE INFO				
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
A DA EC	CIL	0829	POLY	250	į	300.0		Y
NNC		100-1						
			 VATER LEVE	   MEASURE	MENT COL	L LECTION		
□ Water I	evel measureme	nt collected.						
☐ No wat	er level measurer	nent collected.			ort in weilhead	I		
	er level measurer							
No wat	er level measurer	nent collected.	well is pumpin	g.				
			WELL	PURGING II	NFORMATION			
☐ Purged	i 3 well volumes a	and field param	eters stabilized					
☐ Purgeo	l 3 well volumes b	ased on previo	ous water level a	and field pare	meters stabiliz	ed.		
I	i well until field pa	rameters stabi	lized.					
Other:		1. v. H	has los	CIA Salva	2).4.0			
Additiona	l Comments:	Wall	has be	<u>en funi</u>	TIME!			
			,					

Project No:	055038				Client:				
Task No:					Date:	11/22/11			
Well ID:	MillYC-	04			Weather:	sunny	50's		
	NWC-1	51849			Sampler:	WWL 1	, 		
ADWR No:				WELL DAT					
		i ini termili in 2-a erredicioni	eramonda i innocessaria les i fermina		Nominal	Casing ( Size (inches)	Capacity Gallons per Lir	near Foot	
Well D	epth (ft bis):				Norma	2	0.16		
Casing I	Diameter (in):					5	0.65 1.02		
Static Wate	er Level (ft bmp):	NIA				6	1.47		
		A i. a	x3 =			8	2.61 4.08		
Casing	Volume (gal):		<u> </u>		Casin	g Volume = gallons	/foot * water colum	n (feet)	
Total Volu	me Purged (gal):	NA		D SAMPLIN					
				DOVINER		Specific		LISCUSSILISCUSI (MISOLOGISCOS)	
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents	
	Pump On								
1012	elective in the least minute before			7.30	22,3	873.5			
10 1/2				7.37	22.5	862.7			
1020			-	7.36	22.9	853.5			
1020									
							Pump Off		
	FIELD PARAMET	I FR STABILIZ	I ATION: Three o	onsecutive re	adings within	0.2 su pH, 2 degree	es C, and 200 μS/c	m)	
				VIPLE INFO					
s	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
. 45 1 1	e asi	10:00	Poly	250	1	300.0	2	*	
Lum	<u>C-04</u>	10:24	1017	1	+			<i></i>	
		otalaliis ja šuordes tärileta siis.	es a suppoministration (1981)	initalisi madalah sina sina sina	andikan kajaran Sila organ				
			VATER LEVE	L MEASURE	MENT COL	EGJION			
	level measuremer								
	ater level measurer								
	ater level measurer								
l	ater level measurer	nent collected.	vveii is pumpin	y,					
□ Other					NEORMATION				
☐ Purge	ed 3 well volumes a	ind field param	eters stabilized		motorn etabili	zed			
	ed 3 well volumes b ed well until field pa			and new pare	ווינינטוס סנמטווני				
□ Other		nameters stab	megu.						
L		Picono	runni	1 6 M	ane	l off			
Addition	al Comments:	rump	runnir	9 05					
							<u> </u>	······································	

Project No:	055038				Client: F	reeport Coppe	r Queen Branch		
ask No:	1				Date:	12/8/11			
Vell ID:	NWC-	<u> </u>			Weather:	Sunny	40's		
,	17000	<u> </u>			Sampler.	MML			
ADWR No:				WELL DAT					
n reni stasoblova i negalin	eauthrigheadh a chairtean a chairtean a	* / \ \			Nominal	Casing Size (inches)	Gapacity  Gallons per Lin	ear Foot	
Well De	pth (ft bis):				7,00	2	0.16		
Casing D	iameter (in):					4 5	1.02		
Static Water	Level (ft bmp):					6	1.47	acity Gallons per Linear Foot  0.16 0.65 1.02 1.47 2.61 4.08 t * water column (feet)  Comments  Sample	
Caeina V	folume (gal):		x3 =			8 10			
_	•				Casing	g Volume = gallons	s/foot * water columi	n (feet)	
Total Volum	e Purged (gal):			D SAMPLIN	G DATA				
		Discharge	Total	рH	Temp	Specific	<u> </u>		
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	(SU)	(°C)	Conductance (µS/cm)	Comme	111.5	
	enocon					<b>用表表情情况</b>			
1013	ngibakin ini Dasa bigisaki		etri sera en in incre ava da internas	7,26	21.8	884.8			
				7.21	22.3	902.6			
1019				7.33	22,60	881.4			
1024				7.33	22.3	872.2			
1031					_		Samo	sil.	
1021									
							Pump Off		
	FIELD PARAMET	TER STABILIZA	ATION: Three c	onsecutive re	adings within	0.2 su pH, 2 degre	es C, and 200 μS/α	m) supsupsellusisuosijiist	
				VPLE INFO					
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative		
	VC-044	10:31	POLY	250	1	300,0	N	Y \$65	
100	)C-Ø4	10/1							
			ATTER REVE		I -M=Nπ eol	I = and ex			
								KU INDILISA KATANASANASAN	
	level measureme		No appear to u	headilm					
	er level measurer ter level measurer								
	ier level measurer ier level measurer								
☐ Other:					odenamentajukan menassan jar				
			WELL	PURGING I	VEORMATION				
☐ Purged	i 3 well volumes a	and field param	eters stabilized	•					
	d 3 well volumes t			and field pare	meters stabiliz	zed.			
i .	d well until field pa	arameters stabi	lizea.						
Other:									
Additiona	il Comments:								

Project No:	055038				Client: F	reeport Coppe	r Queen Branch	1
ask No:	1.0				Date: _	10/13/1	<i>J</i>	
Well ID:		-00		42.	Weather:	Sunny.	70.5	
ADWR No:	5757	00			Sampler:	MML_		
				WELL DAT	A	Casing C	Capacity	
Well Der	oth (ft bls):				Nominal	Size (inches)	Gallons per Lin 0.16	ear Foot
Casinn Di	ameter (in):					2 4	0.65	
<del></del>						5	1.02 1.47	
	Level (ft bmp)		vo			8	2.61 4.08	
Casing Vo	ołume (gai):		x3 =		Casin	g Volume = gallons	/foot * water columi	n (feet)
_Tetal Volume	e Purged (gal):			D SAMPLIN				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
	Pump On							
0931		NH		7,36	22,4	350		
0936				7.48	22.4	350		
0941				7.51	2z.3	340		
			:					
							Pump Off	
1	I FIELD PARAMET	I TER STABILIZA	ATION: Three c	onsecutive re	adings within	0.2 su pH, 2 degree	s C, and 200 μS/cr	n)
			SAN	IPLE INFOR	RMATION			
Sai	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC	-00	09.44	POLY	250	Ì	300.0	,	<u> </u>
		Maria de M	VATER LEVE	MEASURE	MENT COL	LECTION	ofesepel de Politice. Hassalet harreninge	
□ Water k	evel measuremer	nt collected.						
☐ No wate	er level measurer	ment collected.	No access to w	ellhead/No po	rt in wellhead	I		
	er level measurer er level measurer							
☐ Other:	er level illeabulei	HOHE CONDUCTED.	Tronic paniph.	·		AURER POSA BURBURO MENSORE DESMONTADO PER		RURKAN PERKUBAN PERKUBI
			WELL	PURGING IN	IFORMATION			
☐ Purged	3 well volumes a	and field param	eters stabilized.		natam atahilin	har		
☐ Purged	3 well volumes b	oased on previo	ous water level a lized.	ano neio parei	neters stavilio	.cu.		
□ Other:	wen and new pe							
Additional	Comments:	Run	ning a	mut	30 MI	<u> </u>		

Project No:	055038			-	Client:	Freeport Coppe	r Queen Branch	)
Task No:	1.0				Date: _	10-11-11		
Well ID:	PALM CA	2			Weather:	SUNNY 7	O Ŝ	
					Sampler:	B30		
ADWR No:				WELL DAT				
	- th (ft his):				Nominal	Size (inches)	Capacity Gallons per Lii	near Foot
Well D	epth (ft bls):					2	0.16 0.65	
Casing I	Diameter (in):	_				5	1.02	
Static Water	er Level (ft bmp):	A	·			6 8	1.47 2.61	
Casing	Volume (gal):		x3 =			10	4.08	
_	_				Casin	ig Volume = gallons	s/foot * water colum	n (feet)
lotai Volui	ne Purged (gal):	. ar idələtlərin dəy		D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On							
			2029:00   PERCENTING   PERCENTING	7.85	2.2-0	510.4		
							Pump Off	
	FIELD PARAMET	ER STABILIZA				0.2 su pH, 2 degre	es C, and 200 μS/c	m)
			SAN	APLE INFO	RMATION			
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
P	9 LMER	13:52	Pa	ZSOW	1 I	300-0		<b>У</b>
3								/
			IATER LEVEL	MEASURE	MENT COL	LECTION		
□ Wate	· level measuremen							
D No wa	ater level measuren	nent collected.	No access to w	ellhead/No p	ort in wellhea	d		
1 No wa	ater level measuren	nent collected.	Obstruction in v	well.				
l	ater level measuren	nent collected.	Well is pumping	g.				
☐ Other				PURGING I	NEORMATIO	N		
	ed 3 well volumes a	ad fiold param						Asia (1975) (Cata (1984) Asia (1984)
☐ Purge	ed 3 well volumes a ed 3 well volumes b	ased on previo	us water level a	and field pare	meters stabili	zed.		
	ed well until field pa				1			
☐ Othe	END PU	-9 c 50	nngle f	non i	MANK			
Addition	al Comments:	<u> </u>	V					

roject No:	055038			•	Client:	Freeport Copper	Queen Branch	1
ask No:					Date:	10/12/1	\)	
Vell ID:	PARI	2.A-			Weather:	Sunn	4	
					Sampler:	MML		
DWR No:				WELL DA				
simulian i sait kilenin dahk	hausteralidation assemble to the	35	55		Nominal	Casing C Size (inches)	Capacity Gallons per Lir	near Foot
Well Do	epth (ft bis):	<u> </u>			140mmar	2	0.16	
Casing D	Diameter (in):		) 			5	1.02	
Static Water	r Level (ft bmp):	N	<u>IA</u>			6	1,47	
Casina \	Volume (gal):	NA	x3 =			8 10	·	
_	, '			<u> </u>	Casin	g Volume = gallons		
Total Volun	ne Purged (gal):			D SAMPLIN	IG DATA			
		Discharge	Total	pН	Temp	Specific	C	
Time	Elapsed Time (min)	Rate	Discharge (gallons)	(SU)	(°C)	Conductance (µS/cm)	Comme	nts
	Pump (An	(gpm)	(gallons)					
1500	7 Q		50	7,28	27.5	1070	en en en en en en en en en en en en en e	
1513	15	5	75	7,30	22.5	1080		
1518		5	100	7.35	22.2	1080		
1623		5	135	7.45	27.7	1076		
<u>1530</u>	27		175	7.44	22.3	1070		
1538		5_		1	1	, - , -	Gallons per Lin 0.16 0.65 1.02 1.47 2.61 4.08	
							Pump Off	<u> </u>
	EIELD DADAME	TER STARILIZ	ATION: Three o	onsecutive re	adings within	0.2 su pH, 2 degree		m)
			na den empresa la compatata presención de distribución de la compactación IPLE INFO	AUG State State Commission of the Commission of				
			Container		No. of		Droponotivo	Filtered
S	ample ID	Time	Туре	Volume	Containers	Analysis Method	Fleseivative	(y/n)
PARRA	-	15:42	POLY	250	ì	300.0		<u> </u>
1771707								
			 VATER LEVE		-MENT COL	I FOTION		
			VANETA EEVE	E MIS VOIDIV				
	level measuremen			. 111	- ut in wellhoor	a a		
	ter level measurer				OIT III WEIIIIEAC			
	ter level measurer ter level measurer							
☐ No wa		Henr Concord	Troil to pumpm	<i>3</i> .				
di or Godi				PURGING II	VEORMATION	<b>X</b>		
□ Purae	d 3 well volumes a	and field param	eters stabilized					
☐ Purge	d 3 well volumes t	pased on previ	ous water level :	and field pare	meters stabiliz	zed.		
	d well until field pa							
☐ Other								
Additiona	al Comments:							

Project No:	055038				Client:	Freeport Coppe	r Queen Branch	<u> </u>		
ask No:					Date:	10/11/11	/			
	PIONKE				Weather:	SUNNY				
Vell ID:	_ I IUNKE				Sampler:	MMC_				
ADWR No:			usa sada (Sarras Guards). Ale Sarras (Sarras Guards)	WELL DAT						
	992 (446) 665 (1991 693 (466) 646)		ng ng Asia tang paggagan at at and paggaga talihin	100	Name	Casing Size (inches)	Capacity Gallons per Lin	ear Foot		
Well De	epth (ft bis):	<u> 300</u>			Nominal	2	0.16			
Casing [	Diameter (in):	6				4 5	0.65 1.02			
Chatia Mata	er Level (ft bmp):	153	3,87			6	1.47			
	•			138		8 10		Comments		
Casing '	Volume (gal):	<u> </u>	x3 = 2	<u> </u>	Casin			n (feet)		
Total Volur	ne Purged (gal):					g volume – gallons				
				D SAMPLIN	IG DATA	Specific				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	nts		
1613	Pump On									
1630		Гч	68	695	21.8	1120				
1050	47	4	148	6.92	21.7	1(20				
1710	(07	4	228	6.99	21.4	1110				
1730	87		308	7.00	21.2	1110				
1750		11	388	7.01	21.0	1100				
1805	122	14	448	6.98	26,8	1100				
1000	122	<u> </u>								
							Pump Off			
	FIELD PARAME	I TER STABILIZ	ATION: Three o	onsecutive re	adings within	0.2 su pH, 2 degre	es C, and 200 μS/cr	n)		
		sous de la companie de la companie de la companie de la companie de la companie de la companie de la companie La companie de l		MPLE INFO						
S	ample ID	Time	Container Type	Volume	No. of Containers		Preservative	(y/n)		
7301	JKE	18:	POLY	250	l	300.0		Ä		
FION	JAC	110,								
			nginemas segiletsiyetid							
			WATER LEVE	L MEASURE	IMENT GOL					
Water	level measureme	nt collected.				,				
	iter level measurer				ort in Weilnead	2				
	ater level measurer ater level measurer									
☐ No wa		mem concorca	, TON 10 Parties	<b></b>				alemas popularitarem sublikios		
			WELL	PURGING II	NFORMATION	4				
☑ Purae	ed 3 well volumes a	and field paran	neters stabilized	,						
□ Purge	ed 3 well volumes t	oased on previ	ous water level	and field pare	meters stabili	zed.				
	ed well until field pa									
☐ Other										
Addition	al Comments:									
			<u></u>							

Project No:	055038				Client: <u> </u>	Freeport Coppe	r Queen Brancl	1
Task No:	1.0				Date:	10-12-11		
Well ID:	RAM	IREE			Weather:	SUNNY 7	<u>05                                     </u>	
ADWR No:					Sampler:	355 <u> </u>		
				WELL DAT	A			
Well D	epth (ft bls):	<u>-</u>	o ′		Nominal	Size (inches)	Capacity Gallons per Lir	near Foot
	•		1			2 4	0.16 0.65	***
Casing L	Diameter (in):	<u> </u>	- 71			5	1.02 1.47	
Static Water	er Level (ft bmp):					6 8	2.61	
. Casing \	Volume (gal):	202	x3 = 6	06		10	4.08	<i>(</i> )
Total Volur	ne Purged (gal):	629	7			g Volume = gallons	/foot * water colum	n (feet)
				D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (galions)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
11:20	Pump On	ensig siya si Gararasi da						ang dhan ang
1:40	20	12	Z40	7.47	23.0	412.6	i	
11.50	30	12	360	7.42.	253 23.9	410-6		
12:00	40	12	480	7.82	23.2	410-5		
12:10	So	12	600	7.40	23.3	412.7		
							Pump Off	
	FIELD DARAMET	CED STABILIT	ATION: Three c	onsecutive rea	dinas within (	L 0.2 su pH, 2 degree	es C, and 200 μS/c	m)
	FIELD PARAME		eterotesi Anasi faminamateti Aestesi (1914)	VIPLE INFOR	THE BEST ADMINISTRATION AND ADMINISTRATION OF THE PARTY O			
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
20	MIREZ	17:17	Poly	250mz	1	300-0	Ø	$\checkmark$
K M	WINCE.	1/21/0	704					/
			 VATER LEVEI	MEAGNE	L MENT CAL	FCTION		
	level measuremer ter level measurer		No access to w	relihead/No no	rt in wellhead			
	ter level measurer ter level measurer							
1	iter level measurer							
☐ Other:								
				PURGING IN	FURMATION			
Purge	d 3 well volumes a d 3 well volumes b	and field param	eters stabilized.	and field paren	neters stabiliz	ed.		
	d 3 well volumes o d well until field pa			and now percit	Juni			
☐ Other								
Additiona	al Comments:							
				······				

roject No:							Ours P		
	055038				Client: <u>F</u>	reeport Copper	Gneeu Rtauct	]	
isk No:					Date:	10/12/	13		
ell ID:	RAY			\	Weather:	<u>Sunn</u>	4		
DWR No:					Sampler:	MML			
				WELL DAT	A	Casing C	apacity		
Well Der	oth (ft bis):	100	) <u> </u>		Nominal S	Size (inches)	Gallons per Lin 0.16	ear Foot	
	ameter (in):	10"				2	0.65		
_	•	= 2	663		5 1.02 6 1.47				
Static Water	Level (ft bmp):		_			8	2.61		
Casing Vo	olume (gal):	<u>68</u>	<u>x3 = ∂</u>	<u> </u>		10	4.08	- (foot)	
Total Volume	e Purged (gal):					Volume = gallons/	root - water colum	ii (ieel)	
				D SAMPLIN	G DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts	
11044	Pump On	gros de aossids Suggisti Suggis		irdinijus GRS. Lienskidas ja					
11049	5	8	40	690	24.0	1250			
1654	10	8	80	7.06	21-2	1240			
11059	15	8	120	7.05	20,7	1240			
1707	23	8	184	7.03	21.8	1250			
1712	28	8	224	7.06	21.6	1250			
	FIELD PARAME	TER STABILIZ	ATION: Three c	onsecutive rea	ndings within C	0.2 su pH, 2 degree	Pump Off s C, and 200 μS/cr	m)	
	energie des gerber de la la la la la la la la la la la la la			WPLE INFOR					
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
		_	- <del></del>						
RA	$\sim$	10:17	POLY	2,50	١	300 · O	a	Ä	
RA	14	17:17	POLY	2,50	١	300.0	g. Territoria, participator	Y	
RA	14		· ·		١			Y	
Water le No wate No wate No wate Other: Purged Purged Purged	evel measurementer level m	nt collected. ment collected. ment collected. ment collected. ment dilected.	No access to w. Obstruction in v. Well is pumping.  WELL neters stabilized ous water level a	MEASURE vellhead/No po well. g. PURGING IN	rt in wellhead	ECTION			
✓ Water le  No wate  No wate  Other:  Purged  Purged  Purged  Other:	evel measurementer level measurer er level measu	nt collected. ment collected. ment collected. ment collected. ment dilected.	No access to w. Obstruction in v. Well is pumping.  WELL neters stabilized ous water level a	MEASURE vellhead/No po well. g. PURGING IN	rt in wellhead	ECTION			
✓ Water le  No wate  No wate  Other:  Purged  Purged  Purged  Other:	evel measurementer level m	nt collected. ment collected. ment collected. ment collected. ment dilected.	No access to w. Obstruction in v. Well is pumping.  WELL neters stabilized ous water level a	MEASURE vellhead/No po well. g. PURGING IN	rt in wellhead	ECTION			



- ::

Project No:	055038	55038				Freeport Coppe	· Queen Branch			
Task No:	1.0				Date:	0-12-11				
Well ID:	ROGE	jes 5	96	,	Weather:	SUNLY 8	bOs			
ADWR No:					Sampler:	B50/				
			arandik (S) la dise Luda B. S. La	WELL DAT	A					
Well De	epth (ft bis):				Nominal	Casing Size (inches)	Capacity Gallons per Li	near Foot		
	•					2	0.16 0.65	,		
Casing D	Diameter (in):	.~ O	0			4 5	1.02			
Static Wate	r Level (ft bmp):	<u> 138</u>	}.09			6 8	1.47 2.61	i i		
Casing \	/olume (gal):		x3 =			10	4.08			
_	•				Casin	g Volume = gallons	/foot * water colum	n (feet)		
i otai voiun	ne Purged (gal):		ang is is 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		
	Rumo (en	nara e e e								
	Militari Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria			HARRISTI ORANI SERVICE						
							Pump Off			
		ED CTADUIZA	TION: Throng	Descritive rea	dinne within (	).2 su pH, 2 degree	·	m)		
E EEDEUGISTEST	FIELD PARAMET	ER STABILIZA		MPLE INFOR	Participal Carl Laterania					
						edojače kao delovijo je problema iz T		Filtered		
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)		
			. , , , , ,							
				<u> </u>						
					vauno needenkaalii saasi ni eeno			Tēdi isas kajas istaudijas ibies		
		W	ATER LEVEL	MEASURE	MENT COLL	ECTION				
Water I	evel measuremen	t collected.								
	er level measurem				t in wellhead					
1	er level measuren									
1 .	er level measuren	ent collected. \	Well is pumping	<b>]</b> .						
☐ Other:			WER	PURGING IN	ORMATION					
☐ Purged	3 well volumes a	nd field nereme					modernistaskisiasiasidelijasi	mesa agamente élektroppa (9535		
	3 well volumes b			nd field parem	eters stabilize	ed.				
	well until field par			•						
☐ Other:										
Additional	Comments:	WLO								
****								***************************************		

Project No:	055038				Client:		r Queen Branch			
Task No:	[,6				Date: _	10-12-11				
Well ID:	ROGER	es 80	3	· · · · · · · · · · · · · · · · · · ·	Weather:	Suny 80	<u>) (</u>			
ADWR No:					Sampler:	BJD				
				WELL DAT	A					
Well De	epth (ft bls):	14	10		Nominal	Casing (Size (inches)	Gallons per Li	inear Foot		
			l,			2	0.16 0.65			
Casing D	liameter (in):	<u>D</u>				5	1.02			
Static Water	r Level (ft bmp):					6 8	1.47 2.61			
Casing V	/olume (gal):		x3 =			10	4.08			
_					Casing Volume = gallons/foot * water column (feet)					
Total Volun	ne Purged (gal):			D SAMPLIN	G DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents		
15:30	Pump On									
15:35	5	— <b>7</b>	35	7.45	ZZ-3	658.4				
15:40	10	7	70	7.39	41.6	6625				
15:45	15	1 7	105	7.41	21.8	665.3	·			
13.13	, ,		100							
		-								
							Pump Off			
	FIELD PARAME	TER STABILIZ	ATION: Three c	onsecutive rea	dings within (	).2 su pH, 2 degree	s C, and 200 μS/c	cm)		
	en in de la completa de la completa de la completa de la completa de la completa de la completa de la completa	ung greense Alberteen	SAN	IPLE INFOR	MATION					
Sa	ımple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
0 - 1 6	-05 227	15:47	Pai.	250ml	7	300.0	G C	Y		
ROGE	285 803	1,7	100	7.12				/		
			L VATER LEVEI		l Wantarahi					
			VAVIER LEVE	= IVI=ASUM=						
	evel measuremer		N	-Whand this ma	d in wallboad					
	er level measurer er level measurer				it iii Weiineau					
l .	er level measurer er level measurer							Ŋ.		
☐ Other:										
			WELL	PURGING IN	FORMATION					
	l 3 well volumes a									
	i 3 well volumes b			ınd field parem	neters stabiliz	ed.				
Purged Other:	i well until field pa	ırameters stabi	lized.							
L	I O	138.0	ጓዋ .	ROG	FRS.	596				
Additiona	I Comments:	100.0	<i>J</i> • , , <u>)</u>	~~~	6,	- 1				
_										
								<u></u>		

Project No:	055038		·	1	Client: Freeport Copper Queen Branch				
rask No:	10				Date:	10/13/	1 (		
Vell ID:	ROGER	25 E	· · · · · · · · · · · · · · · · · · ·		Weather:	Sunny	805		
ADWR No:	2160				Sampler:	MML'			
			konisti og ladingspille January	WELL DAT	Α				
Wall De	pth (ft bls):	2	90'		Nominal	Casing Size (inches)	Capacity Gallons per Lin	ear Foot	
	•		0			2 4	0.16 0.65		
Casing D	iameter (in):					5	1.02 1.47		
Static Water	r Level (ft bmp):	10.	0.79			6 8	2.61		
Casing V	/olume (gal):	200	x3 = (c	000		10	4.08	(foot)	
Total Volum	ne Purged (gal):					y Volume = gallon	s/foot * water column	i (leet)	
			e il in la 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	
1205	Pump On								
1215	10	10	100	7.50	22.7	<u> 580</u>			
1225	10	10	200	7.53	22.1	<u> 370                                   </u>			
1235	30_	10	300	7,45	22.0	370			
1245	40	10	400	7.53	22.	3570			
1255	50	10	500	7,44	223	370			
1305	60	10	600	7.52	. 22.2	370			
							Pump Off		
		TED CTABILITA	ATION: Three c	onsecutive re	adings within (	.2 su pH, 2 degre	es C, and 200 μS/cr	n)	
	PIELD PARAIVE	IER STABILE		MPLE INFO					
Se	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	l Preservative	Filtered (y/n)	
0.65	-o< +	1308	POLY	250	١	360.0	,	Y	
ROBE	IPS E	1300							
			 VATER LEVE	I MEASURI	MENT COLL	Ection			
			VAILERGLEVE						
Water	level measureme	nt collected.	N to 11	vallbaad/Na n	ort in wellhead				
	ter level measurer ter level measurer				OIT III WOMIOGO				
	ter level measurei ter level measurei								
☐ Other.					esvermiserved Militeresius	Estructure Estructura (NVC21856)			
					NFORMATION				
Purge	d 3 well volumes a	and field param	eters stabilized	d Eisld ware	matara atahili-	·ed			
Purge	d 3 well volumes l d well until field pa	based on previo	ous water level : ilized	ano nelo pare	meters stabiliz	.50.			
☐ Purge		arametera atdu	a passivituri full o						
L	al Comments:	Hanna	<u>metel</u>						
AUGINOTIC	a commonio.				i.				

Project No:	055038				Client: _	reeport Coppe	r Queen Branch	1
ask No.	1.0				Date:	10/13/1		
Vell ID:	RUIZ	-		1	Weather:	Suppy	70's	
					Sampler:	MML		
ADWR No:				WELL DAT	A			
		312			Nominal	Size (inches)	Capacity Gallons per Lir	ear Foot
Well D	epth (ft bls):	, tl				2	0.16 0.65	
Casing	Diameter (in):		λ			4 5	1.02	
Static Water	er Level (ft bmp):	2	<u> </u>			6 8	1.47 2.61	
Casing	Volume (gal):		x3 =			10	4.08	
					Casin	g Volume = gallons	/foot * water colum	n (feet)
lotal Volu	me Purged (gal):			D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
11:19	Rump On a		partie 530 Tabba aba					
11:24	5	4.5	22.5	6.97	22.5	790		
11:28	, 9	4.5	40.5	7.13	21.7	810		
11:32		4.5	62.5	7.17	21.6	810		
11:35		4.6	72.0	7.19	21.5	810		
							·	
							1	
ı							5 0#	
				<u> </u>			Pump Off	
	FIELD PARAME	TER STABILIZA				u.2 su pm, 2 degre	es C, and 200 μS/ci	
				MPLE INFOR				Filtered
5	Sample ID	Time	Container Type	Volume	No. of Containers		Preservative	(y/n)
RI	177	11:39	POLY	250	1	300.0		7
		West and the second	I IATER LEVE	L MEASURE	MENT COL	LECTION		
□ Wate	r level measureme	nt collected.						
☐ No-w	ater level measurer	ment collected.	No access to v	veilhead/No po	ort in wellhead	i		
No w	ater level measurer	ment collected.	Obstruction in	well.				
1	ater level measurer	ment collected.	Well is pumpin	ıg.				
☐ Other			wali	PURGING IN	IFORMATION			
	ed 3 well volumes a	and field parami						
☐ Purge	ed 3 well volumes b	pased on previo	us water level	and field parei	meters stabiliz	zed.		
	ed well until field pa							
☐ Othe	r:			· 1 1	1	1 706	7	
Addition	al Comments:	Sound	er 1057	tens	101 0 3 co	<u> </u>	Bango (no	evous)
	TON'S filling		· · · · · · · · · · · · · · · · · · ·		<u> </u>	y y	STORY SPIN	
	( )	<u> </u>						

Project No:	055038			(	Client:		r Queen Branch	)
Task No:	1.0			t	Date:	H-10-13	<u>z-//</u>	
Well ID:	SCHO	JART	Έ		Weather: ≤	500 gall	<u> </u>	
ADWR No:				,	Sampler:	<u> </u>		o-sinehmenevitianisems
ding basi				WELLDAT	A	Casina	Capacity	
Well De	epth (ft bls):	30	5 5		Nominal	Size (inches)	Gallons per Lin	ear Foot
	•	6	ρ			2 4	0.16 0.65	
-	Diameter (in):		<del>4-1</del>			5 6	1.02 1.47	
Static Water	er Level (ft bmp):		<u> « 51 — 7                                    </u>	6/		8	2.61	
Casing \	Volume (gal):		x3 = 76	26		10	4.08 /foot * water column	n (feet)
Total Volur	ne Purged (gal):	<u> </u>	0			ig Volume = gallons	9100t water column	i (lect)
				D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
14:00	Pump On	e man er er er Bolskierer blief	sprevingspectus. Springspecies					
14:2		10	200	7.31	23.6	631.2		
14:40	40	10	400	7.35	72.6	633.0		
15:00	60	10	600	7.37	2/.9	637.2		
15:10	70	10	700	7.35	22.9	635.8		
							Pump Off	
15:22	<u> </u>	FED CTARN IZ	ATION: Three c	oppositive res	dings within	0.2 su pH, 2 degree	es C, and 200 μS/cr	n)
	FIELD PARAME	IER STABILIZ		MPLE INFOR				
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method		Filtered (y/n)
SCH	WARTZ	15:20	Pola	ZSOML	1	300.0	8	<u> </u>
			L VATER LEVEI	MEASURE	I MENT COL	LECTION		
Mater								yersasinkonominishineen.
No wa	level measuremer	n collected. ment collected.	No access to w	ellhead/No po	rt in wellhead	i		
	iter level measurer							
☐ No wa	ater level measurer	ment collected.	Well is pumpin	g.				
☐ Other				PURGING IN	FORMATION			
								ISBN 1889BBBBBBBBBBBBBB
Purge	ed 3 well volumes a ed 3 well volumes b	ma nela param pased on previo	ous water level :	and field paren	neters stabili	zed.		
	ed well until field pa			-				
☐ Other								
Additiona	al Comments:							
www.								

	Groundwa	ater Sam	pling Form	n						
Project No:	<u> </u>				Cilent:	Freeport Cop	per Queen Bra	ınch		
		<del></del>			Date:	12-8-	(/			
Task No:			0 1-	061	Weather:	Sunay	120			
Well ID:	JM-11	//	15000ler	Valin (	1	Chr. stoplar		înta a		
ADWR No:				WELL C	Sampler:	MESIGIAG		77(7)(2)		
·				AAEFF F	T	Casin	g Capacity	· · · · · · · · · · · · · · · · · · ·		
Well Depth (ft	bis):	2	90"		Nomina	Size (inches)	inches) Gallons per Linear Foo 0.16			
Casing Diamet						2 4 5	a	.65 .02		
Static Water L	evel (ft bmp):	Bolow	Airline			6 8	1 2	.47 .61		
Casing Volum	e (gals):				Casi	10 ng Volume = gallor		.08 Iumn (feet)		
3 Casing Volu	mes (gals):	<u></u>			<u> </u>	19 (0101110				
				ELD SAMPL	ING DATA	Specific	<u>,,,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (galions)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Com	ments		
1214		(01)					0.0			
1215					·	·	135 apte	- 10 socoal		
1240				110	140	7.81	1) > 0/5/10	<u>, [17_3670)4</u>		
1250				6,97	19.7	382				
1300				1.84	191	300	Samples	/		
13.15	<u> </u>			4.75		- 101				
<del></del>										
							<del></del>			
					<u> </u>					
			S/	AMPLE INFO	RMATION	<u> </u>		· · · · · · · · · · · · · · · · · · ·		
Sam	nple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	» Preservative	Comments		
TM-1	0	1315	plastic	250 ml	1	EPA 300.0	none	filtered		
								<u> </u>		
					<u> </u>					
							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
			<u> </u>				and the first term of the second of the seco			
Additional Con	nments:	batt =	or A.J.	16 - 1/2 1	Nativ					
Danaded_	10 dx2+	), <u>41</u>	I do	1 1 1	10 000	Appox 10	second 5			
Stocted Du	mp - Immad	'T/Y 0	1.15/Warga#		<del>ce / (// -</del>					

Project No:	055038			(	Client: F	reeport Copper	Queen Branch			
Task No:	1.0				Date:	10-12-11	7			
Well ID:	TVI	713		1	Neather:	50~~ T	<u>03</u>			
			······································		Sampler:	BJD				
ADWR No:				WELL DAT						
injenije eisegnermes vi					Nominal	Casing ( Size (inches)	Capacity  Gallons per Lin	ear Foot		
Well De	pth (ft bis):				1401111101	2	0.16			
Casing D	iameter (in):					4 5	0.65 1.02			
Static Water	Level (ft bmp):	130	2.33_			6	1.47 2.61			
Casina V	olumo (aal):		x3 =			8 10	4.08			
Casing v	olume (gal):				Casing	g Volume = gallons	foot * water colum	n (feet)		
Total Volum	e Purged (gal):	erenesvandense	能服的。 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	D SAMPLIN	GDATA					
		Discharge	Total			Specific				
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	nts		
	Pump On									
		eg Grig III keelgaa pata ka ii ii sa sa sa sa								
							Pump Off			
	I FIELD PARAME	I □ER STABILIZ/	ATION: Three c	onsecutive rea	dings within (	0.2 su pH, 2 degree	s C, and 200 μS/cr	n)		
				APLE INFOR				iš pēc jer kradinis Lietojas iš pasta		
			Container	Vakuma	No. of	Analysis Method	Preservative	Filtered		
Sa	mple ID	Time	Туре	Volume	Containers	Analysis metrico	. , , , , , , , , , , , , , , , , , , ,	(y/n)		
			L VATIER LEVEL	MEASURE	MENIT COL	IEGIION				
								en kieri salnenkierisen gar		
☐ Water	evel measureme er level measurer	nt collected.	No access to w	ellhead/No po	rt in wellhead					
	er level measurer er level measurer									
	er level measure									
☐ Other:					Secretaria					
				PURGING IN	FORMATION					
☐ Purgeo	3 well volumes a	and field param	eters stabilized.		natam atabili-	end.				
☐ Purgeo	i 3 well volumes i	pased on previous	ous water level a	and neid paren	neters stabiliz	.cu.				
☐ Purged ☐ Other:	l well until field pa	irameters stabi	nacu.							
	l Commonto:									
Additiona	l Comments:									
						···				

Project No:	055038			(	Client:	Freeport Coppe	r Queen Branch	1
Task No:	10				Date: _	10-12-11		
Well ID:		75			Weather:	Sunny 80	ي ک	
ADWR No:					Sampler:	8 <del>110</del>		
ADWA NO.				WELL DAT	A			
\8(-1) D-	ath (ff hig):	33	<u></u>		Nominal	Size (inches)	Capacity Gallons per Lir	near Foot
vveli De	pth (ft bis):	<u></u>	8 '			2	0.16 0.65	
Casing D	iameter (in):			· · · · · · · · · · · · · · · · · · ·		<b>4</b> 5	1.02	
Static Water	Level (ft bmp):		<u> </u>			6 8	1.47 2.61	
Casing V	olume (gal):	525	x3 = /.	5 75		10	4.08	
-			7500		Casin	g Volume = gallons	s/foot * water colum	n (feet)
i otal volum	e Purged (gal):		FIEL	D SAMPLIN	G DATA			er ve dar de del ed eg Silver grænder er
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
13:25	Pump On							
13:30		500	<i>1500</i>	7.40	22.5	892.2		
13:35	10	500	5000	7.33	21.9	878.4		
13:40	15	500	9500	7,35	22,7	868.5		
1234 60								
							Pump Off	
	FIELD PARAME	TER STABILIZ				0.2 su pH, 2 degre	es C, and 200 μS/c	m)
			SAM	APLE INFOF	RMATION			
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TV	1875	13:41	Poll	ZSONZ	1	300-0		<b>Y</b>
			/					/
			I VATER LEVEL	MEASURE	MENT COL	LECTION		
□ Water I	evel measureme	nt collected.						
No wat	er level measurer	ment collected.	No access to w	ellhead/No po	ort in wellhead	1		
	er level measurer							
I	er level measure	ment collected.	well is pumpini	g.				
☐ Other:			an in a new ELL	PURGING IN	IFORMATION			lijari 125 di Gradadi. 25. grada da da di di
□ Purgeo	i 3 well volumes a	and field param	eters stabilized.			Transplace   Trans	<i></i>	713
Purgeo	3 well volumes l	pased on previo	ous water level a	and field parer	neters stabiliz	zedBased	" ON TVIT	115
Purged	i well until field pa	arameters stabi	lized.					
☐ Other:		****	1 .		176 7-			
Additiona	l Comments:	<u>, Sw.ļ</u>	<u>. at `</u>	713 <del>*</del> 7	130.33			
0=50	o gen	besterd	<u> </u>	Aconger	Keeper			
	$\overline{}$							

Project No:	055038				Client:	Freeport Coppe		1
Task No:	1.0				Date:	10-12-1		
Well ID:	WE	.ED			Weather:	Surry 70	<b>ジ</b>	
ADWR No:					Sampler:	B59		
				WELL DA	A		Capacity	
Well De	epth (ft bls):	32	C		Nominal	Size (inches)	Gallons per Lir	near Foot
	Diameter (in):					2 4	0.16 0.65	
_		NE	<b>1</b>			5 6	1.02 1.47	
Static Water	r Level (ft bmp):	170				8	2.61	
Casing V	/olume (gal):	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	x3 =			10	4.08	
Total Volum	ne Purged (gal):				<u> </u>	g Volume = galions	moot water colum	ii (ieet)
				D SAMPLIN	IG DATA	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	nts
16:05	Pump On							
16:10	5	ૅક	Z5	7.69	21.8	381.4		
16.20	15	<i>5</i>	75	7.62	21.6	382.8		
1625	20	5	<u> /60</u>	7.62	21.7	387.8		
							Pump Off	
	CICLD DADAME	TER STARILIZA	ATION: Three c	onsecutive re	adings within	I 0.2 su pH, 2 degree	1	n)
				APLE INFOR	comerciale la local de l'estra l'estra			
Sa	ımple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
,	) EED	16:27	B1.	ZSONL	1	300.0	<b>V</b>	Y
<u> </u>	Jee D	1000	707					/
			 /ATER LEVEL	MEACHE	MENTECOL	I FOTION		
	level measuremer er level measuren		No access to w	ellhead/No po	ort in wellhead	I		
	er level measurer							
1	er level measurer	nent collected.	Well is pumping	g.				
☐ Other.			awein	PURGING IN	IEORMATION			
	i 3 well volumes a							
	i 3 well volumes a I 3 well volumes b				neters stabiliz	red.		
	i well until field pa						ł	
☐ Other:								
Additiona	l Comments:							

roject No:	055038				Client: F		r Queen Branch	1
ask No:	1.0				Date: _	10-13-11	7	
/ell ID:	61E.1S	KOPF		1	Weather:	500NY 80	3	
DWR No:					Sampler:	BJ0		
				WELL DAT	A			
Well De	epth (ft bls):	200	>		Nominal	Size (inches)	Capacity Gallons per Lir	ear Foot
	•	<u> (4</u>				2 4	0.16 0.65	
Casing E	Diameter (in):	:110	7 A			5	1.02 1.47	
Static Wate	r Level (ft bmp):	148		~ 1	ì	6 8	2.61	•
Casing \	/olume (gal):	77	x3 = 2	<u>31                                    </u>		10	4.08	/f t\
Total Volun	ne Purged (gal):	2	50			g Volume = gallon:	s/foot * water colum	n (teet)
ali 189 (ran ) 45 (18) y 17 (18)   50 (18)				D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts
13:30	Pump On							
13:40	10	10	160	7.15	24.0	1267		
13:45	· I	10	150	708	23.1	1288		
13:50	20	10	200	7.07	72.8	1299		***************************************
							Pump Off	
		CED CEADILIZ	ATION: Three o	onsecutive re	adings within	0.2 su pH, 2 degre	es C, and 200 μS/c	m)
	FIELD PARAME	TER STABILIZ	received and the residence of the court french to	MPLE INFO				
			Container		No. of			Filtered
s	ample ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)
()61	SKOPF	13:55	Poly	ZSOMI	1	300-0	0	1
MEI	2 VOLT	173,55	1197	, , , ,				1
			L VATERILEVE	I MEASURE	MENT COL			
			V/ 1/1=1311-1-1/1-					
₩ Water   □ No wa	level measureme ter level measurer	nt collected. Dent collected	No access to v	velihead/No po	ort in wellhead	j		
□ No wa	ter level measurer	ment collected	Obstruction in	well.				
	iter level measure							
☐ Other:				PURGING II	(EOPMATIO)			
								THURSDING NO.
⊅ Purge	d 3 well volumes and 3 well volumes i	and tield param pased on previ	ieters stabilized ous water level	and field pare	meters stabiliz	zed.		
	id 3 well volumes i id well until field pa							
☐ Other								
Additiona	al Comments:							

Project No:	055038				Client: _	Freeport Copper Queen Branch			
Task No:	1.0				Date: [	0-12-1			
Well ID:	ZAN	DER	1		Weather:	SUNN> 80	١ (		
ADWR No:					Sampler:	BOD .			
	er er i den egentiler de lest Douze, sie sie solen japanen			WELL DAT	A	Casino	Capacity		
Well De	pth (ft bis):	28	0′		Nominal	Size (inches)	Gallons per Lir 0.16	near Foot	
Casing D	iameter (in):	6	O			2 4	0.65		
	Level (ft bmp):	14	9.50			5 6	1.02 1.47		
	olume (gal):		ン x3 = S	76		8 10	2.61 4.08		
	•		100		Casin	g Volume = gallons	/foot * water colum	n (feet)	
Total Volum	e Purged (gal):			D SAMPLIN	G DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	nts	
12:25	Pump On								
12:35	10	15	<i>I</i> So	7.42	23.1	428.9			
12.45	20	15	30°	7.33	22.1	426.3			
12:55	30	15	450	7.35	22.2	426.2			
13:06	FIELD PARAMET	ER STABILIZ		antitolismaaaaaaaaaaaaaaaa	masaderastrieraid.	0.2 su pH, 2 degre	Pump Off es C, and 200 μS/ci	n)	
				APLE INFOI T				Filtered	
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)	
ZAN	DES	13:05	Poly	250ml	, /	300.0	Ø	У	
No wate No wate No wate Other: Purged Purged Purged Purged	evel measuremer er level measuren er level measuren er level measuren 3 well volumes a 3 well volumes b i well until field pa	nt collected. nent collected. nent collected. nent collected. nent collected.	Obstruction in v Well is pumping WELL teters stabilized. bus water level a	elihead/No po well. g. PURGING IN	ort in wellhead				

