



Sierrita Operations

December 20, 2007

Via Certified Mail #7006 2150 0004 3614 0784
Return Receipt Requested

Mr. Robert Casey
Arizona Department of Environmental Quality
Water Quality Enforcement Unit
1110 West Washington Street
Phoenix, Arizona 85007-2935

Re: Groundwater Monitoring Report, Fourth Quarter 2007
Phelps Dodge Sierrita, Inc. – Mitigation Order on Consent, Docket No. P-50-06

Dear Mr. Casey:

Phelps Dodge Sierrita, Inc., operating as Freeport McMoRan Copper and Gold, Sierrita Operations ("Sierrita"), submits three copies of the attached Quarterly Groundwater Monitoring Report that provides the results of groundwater monitoring conducted in the fourth quarter of 2007 in the vicinity of the Sierrita Tailing Impoundment. This document was prepared by Hydro Geo Chem, Inc. as described in Section 3.3 of the Work Plan.

Please do not hesitate to contact Mr. Stuart Brown at (503) 675-5252 or myself at (520) 648-8857 if you have any question regarding this submittal.

Very Truly Yours,

A handwritten signature in black ink, appearing to read 'Ned Hall'.

E. L. (Ned) Hall
Chief Environmental Engineer

ELH:ms
Attachment
20071220-001

xc: John Broderick, Sierrita Operations
 Chad Fretz, Sierrita Operations
 Ray Lazuk, Freeport McMoRan Copper and Gold, Inc.
 Stuart Brown, Bridgewater Group, Inc.

**FOURTH QUARTER 2007
GROUNDWATER MONITORING REPORT
TASKS 2.2 AND 2.4 OF AQUIFER CHARACTERIZATION PLAN
MITIGATION ORDER ON CONSENT DOCKET NO. P-50-06
PIMA COUNTY, ARIZONA**

Prepared for:

PHELPS DODGE SIERRITA, INC.
6200 West Duval Mine Road
Green Valley, Arizona 85614

Prepared by:

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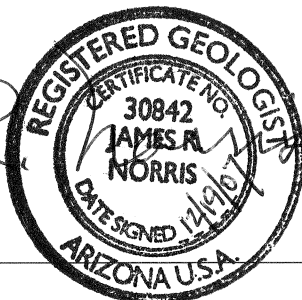
December 19, 2007

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TASKS 2.2 AND 2.4 OF AQUIFER CHARACTERIZATION PLAN
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PIMA COUNTY, ARIZONA**

Prepared for:

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Approved by:

James R. Norris
Arizona Registered Geologist No. 30842

Prepared by:



Daniel R. Simpson
Senior Hydrogeologist

December 19, 2007

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B	Fourth Quarter 2007 Data Verification Report for Groundwater Samples Collected for Extended Parameters by Hydro Geo Chem, Inc.
C	Analytical Data Reports from ACZ Laboratories, Inc.
D	Hydro Geo Chem, Inc. Groundwater Sampling Forms

1. INTRODUCTION

This data report provides the results of groundwater monitoring conducted in the fourth quarter of 2007 in the vicinity of the Phelps Dodge Sierrita, Inc. (PDSI) Tailing Impoundment (PDSTI). Groundwater monitoring was conducted by PDSI pursuant to Tasks 2.2 and 2.4 of the Work Plan (Hydro Geo Chem, Inc. (HGC), 2006a) to characterize sulfate in the vicinity of the PDSTI. The Work Plan was submitted to and approved by the Arizona Department of Environmental Quality (ADEQ) pursuant to the Mitigation Order on Consent Docket No. P-50-06. HGC prepared this groundwater monitoring report on behalf of PDSI.

1.1 Scope of Groundwater Monitoring

The scope of the groundwater monitoring program is described in Sections 3.3.2 and 3.3.4 and Appendix G of the Work Plan (HGC, 2006a). Groundwater monitoring for Task 2.2 consists of water elevation measurement and collection of groundwater samples from wells in the vicinity of the PDSTI. Task 2.4 addresses the installation and monitoring of additional offsite wells to further define the extent of the sulfate plume.

1.1.1 Groundwater Monitoring for Task 2.2

The Work Plan identifies two purposes for the groundwater monitoring program required in Task 2.2: plume monitoring and regional monitoring. Plume monitoring is conducted quarterly at wells that are proximal to the sulfate plume in order to track the plume's location in

the aquifer. Regional monitoring to characterize regional hydrologic conditions using wells that are outside the area of the sulfate plume was completed in the third quarter of 2007 (HGC, 2007c). This report presents the results of plume monitoring conducted during the fourth quarter of 2007. Pursuant to the Work Plan, the only constituent of interest for quarterly plume monitoring is sulfate.

Table 1 lists all wells identified in the Work Plan for quarterly monitoring, their availability for sampling in the fourth quarter of 2007, and their sampling status. As discussed in the Work Plan, Table 1 consists of wells that are under the control of PDSI and others that are not. PDSI agreed to contact owners of private wells and wells owned by water companies identified in the Work Plan for sampling in order to obtain access for sampling. The Work Plan acknowledged that access to some wells may not be permitted by well owners and that some wells may be inappropriate for sampling due to their construction characteristics. Table 1 also includes a list of alternate wells identified by the Work Plan for sampling that have been used in place of wells that were unable to be sampled.

Analytical data for plume monitoring during the fourth quarter of 2007 were obtained from two sources: PDSI and HGC. Groundwater sampling and analysis methods used by PDSI and HGC are described in the Quality Assurance Project Plan (QAPP) contained in Appendix E of the Work Plan (HGC, 2006a). Results of groundwater monitoring for Task 2.2 are presented in Section 2.1.

1.1.2 Groundwater Monitoring for Task 2.4

Section 2.4 of the Work Plan proposed the installation of additional offsite monitoring wells at six locations to define the extent of the sulfate plume, to provide installations for ongoing monitoring, to characterize aquifer materials and hydraulic properties, and to determine bedrock depth. Well installation was focused in the northern and eastern portions of the plume because these areas have the greater uncertainty in the distribution of sulfate and are of concern with respect to future plume migration. During September and October 2007 wells MO-2007-3B, -4A, -4B, -5B, -6A, and -6B were installed, developed, pump tested, and water level and water quality samples collected according to Sections 4.2 and 4.3 of the QAPP. Wells installed pursuant to Task 2.4 of the Work Plan are added to the quarterly plume monitoring list for Task 2.2. Results of groundwater monitoring for Task 2.4 are presented in Section 2.1.

1.2 Update to Third Quarter 2007 Groundwater Monitoring Report

During the preparation of the fourth quarter groundwater report it was determined that the benchmark and measuring point elevation data for MO-2007-3C and the depth to water measurement at MO-2007-5C were incorrectly reported in the third quarter report. The static depth to water recorded on August 23, 2007 was 294.04 feet, not 270 feet as previously reported. The revised groundwater elevation data for the Third Quarter 2007 Groundwater Monitoring Report (HGC, 2007c) is provided in the following table.

Update to MO-2007-3C Groundsurface, Measuring Point and Groundwater Elevation

WELL ID (ADWR NUMBER)	DATE	Q3-07 REVISED GROUNDSURFACE EVEVATION (ft amsl)	Q3-07 MEASURING POINT ELEVATION (ft amsl)	Q3-07 REVISED MEASURING POINT ELEVATION (ft amsl)	Q3-07 REVISED GROUNDWATER ELEVATION (ft amsl)
MO-2007-3C (906817)	7/05/07	2908.99	2910.74	2910.09	2553.79

Update to MO-2007-5C Depth to Water and Groundwater Elevation

WELL ID (ADWR NUMBER)	DATE	Q3-07 DEPTH TO WATER FROM MEASURING POINT (feet)	Q3-07 REVISED DEPTH TO WATER FROM MEASURING POINT (feet)	Q3-07 REVISED GROUNDWATER ELEVATION (ft amsl)
MO-2007-5C (907457)	8/23/07	270.00	294.04	2650.29

ADWR = Arizona Department of Water Resources
ft amsl = feet above mean sea level

2. GROUNDWATER MONITORING RESULTS

2.1 Results of Monitoring for Tasks 2.2 and 2.4

Analytical results and groundwater elevation data for the fourth quarter of 2007 are tabulated in Table 2 and Table 3, respectively. Figure 1 shows the concentrations of dissolved sulfate in the wells sampled in the fourth quarter 2007. Comparison of dissolved and total sulfate concentrations in Table 2 indicates negligible difference between the two measurements. The highest sulfate concentration measured at co-located wells was used for concentration contouring. Figure 2 shows groundwater elevations in the fourth quarter 2007. Groundwater elevations were calculated using the depth to water measurements made under static (nonpumping) conditions for all wells shown. Water level data for the IW-series wells were not used to estimate groundwater elevation contours for Figure 2 because the depth to water was measured while the wells were pumping.

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 reviews groundwater data collected by PDSI and HGC during the fourth quarter of 2007, and is included in Appendix A. In this quarter, samples were collected from six MO-2007 series wells (MO-2007-3B, -4A, -4B, -5B, -6A and -6B), previously unsampled for this project. As this was their initial sampling for plume monitoring, an extended suite of analytes was evaluated (Table 4). Because these samples

had an expanded analyte list, a separate data verification report is provided for them in Appendix B.

Analytical laboratory reports for samples collected by PDSI and HGC in the fourth quarter of 2007 are provided in portable document format on the compact disc in Appendix C. Copies of groundwater sampling forms for samples collected by HGC are in Appendix D.

As determined by the analytical data verification review, all data for samples collected in the fourth quarter of 2007 by HGC and PDSI are of acceptable quality for use in the aquifer characterization being conducted pursuant to the Work Plan.

3. DISCUSSION

This data report provides the results of groundwater monitoring conducted in the vicinity of the PDSTI for the fourth quarter of 2007. As presented in Table 1, during this monitoring period 78 wells were identified for quarterly quality sampling and 71 wells were identified for water level monitoring. Groundwater samples were collected from 72 plume area wells and depth to water measurements were collected at 80 wells.

Groundwater samples and water level measurements were not collected from all the wells identified in the Work Plan for a variety of reasons, including owner limitations on access, unsuitable well construction, inability to contact the owner, obstruction in well, or a well no longer existing. The specific reason(s) for not sampling these wells are provided in Table 1. In some cases, alternate wells were identified and sampled as described in Table 1. Overall, groundwater monitoring conducted during the fourth quarter of 2007 is deemed to have met the objective of identifying the location of the sulfate plume from PDSTI.

3.1 Sulfate Distribution

Figure 1 shows the distribution of sulfate concentrations. The concentration contours shown in Figure 1 are inferred assuming that sulfate concentrations in the aquifer are spatially correlated, although a strict linear interpolation was not applied. Sulfate concentration contours of 50, 100, 250, 500, 1000, and 1500 milligrams per liter (mg/L) are shown as requested by

ADEQ (2006). The contours are based on the highest sulfate concentration measured in co-located wells.

Sulfate concentration data are available this quarter from six new wells (MO-2007-3B, -4A, -4B, -5B, -6A, and -6B) installed and sampled for Task 2.4 of the Work Plan. The MO-2007 series wells installed for Task 2.4 are along the eastern, northern, and northwestern margins of the sulfate plume (Figure 1) and better constrain the limits of the plume compared to previous data sets.

Based on the sulfate concentration data on Figure 1, the sulfate plume from the PDSTI (as defined by the 250 mg/L sulfate concentration contour) extends northeast from the southeastern corner of the PDSTI to the vicinity of the CW-3 and MO-2007-5 wells. The plume extends north from the CW-3/MO-2007-5 wells to Duval Mine Road, just south of the MO-2007-1 wells. The northern extent of the sulfate plume is north of wells CW-7 and MH-26 and south of wells NP-2; MO-2007-3B and -3C; MO-2007-1A, -1B, and -1C; TMM-1; and M-8, which have sulfate concentrations between 7.2 and 90 mg/L.

3.2 Groundwater Elevation

Groundwater elevations are shown on Figure 2. Groundwater elevations decrease from west to east in the immediate vicinity of PDSTI, and from south to north across the central portion of the study area near Green Valley. Comparison of the fourth quarter 2007 water elevations with those shown in previous reports (HGC, 2006a, 2006b, 2007a, 2007b and 2007c)

indicates no substantive difference in groundwater elevations and consequent flow directions. The overall pattern of groundwater flow indicated by groundwater elevations is consistent with expected regional groundwater flow patterns in the southern portion of the Tucson groundwater basin.

The water elevation in co-located wells screened at different depth varies by less than two feet in the north part of the study area. In the south half of the study area, the deepest screened interval at co-located wells MH-13A, -13B, and -13C; CW-3 and MO-2007-5B and -5C; and MO-2007-6A and -6B has lower water elevations than the more shallow wells. The largest vertical water level differences are in MO-2007-5C and MO-2007-6B, which have water levels 20.52 feet and 16.11 feet lower than the overlying wells at those locations. These water level differences will be verified by ongoing monitoring for Task 2.2.

4. REFERENCES

- Arizona Department of Environmental Quality. 2006. Correspondence from Robert Casey to John Brack, Regarding: Mitigation Order on Consent, Docket P-50-06-Work Plan Response. September 22, 2006.
- Hydro Geo Chem, Inc. (HGC). 2006a. Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Phelps Dodge Sierrita Tailing Impoundment, Pima County, Arizona. August 11, 2006, revised October 31, 2006.
- HGC. 2006b. Groundwater Monitoring Report, Fourth Quarter 2006, Tasks 2.2 and 2.3 of Aquifer Characterization Plan, Mitigation Order on Consent Docket No. P-50-06. December 29, 2006.
- HGC. 2007a. First Quarter 2007, Groundwater Monitoring Report, Tasks 2.2 and 2.3 of Aquifer Characterization Plan, Mitigation Order on Consent Docket No. P-50-06. March 30, 2007.
- HGC. 2007b. Second Quarter 2007, Groundwater Monitoring Report, Tasks 2.2 and 2.3 of Aquifer Characterization Plan, Mitigation Order on Consent Docket No. P-50-06. June 28, 2007.
- HGC. 2007c. Third Quarter 2007, Groundwater Monitoring Report, Tasks 2.2, 2.3, and 2.4 of Aquifer Characterization Plan, Mitigation Order on Consent Docket No. P-50-06. September 26, 2007.

TABLES

TABLE 1
Summary of Groundwater Monitoring for Mitigation Order Docket No. P-50-06 for Fourth Quarter 2007

Well Name	ADWR 55 Well Registry Number	Owner	Purpose	Casing or Well Depth (feet)	Work Plan Specification		Q4-2007 Monitoring		Status	Substitute Well
					Water Level Measurement	Water Quality Sampling	Water Level Measured?	Water Quality Sample Collected?		
WELLS FOR QUARTERLY MONITORING CONTROLLED BY PDSI										
ESP-1	623102	PDSI	Plume Monitoring	1020	Q	Q	YES	YES	Water quality sample collected in October 2007	
ESP-2	623103	PDSI	Plume Monitoring	1044	Q	Q	YES	YES	Water quality sample collected in October 2007	
ESP-3	623104	PDSI	Plume Monitoring	1043	Q	Q	NO	YES	Water quality sample collected in October 2007; unable to obtain water level due to obstruction	
ESP-4	623105	PDSI	Plume Monitoring	1045	Q	Q	YES	YES	Water quality sample collected in October 2007	
ESP-5	623106	PDSI	Plume Monitoring	950	Q	-	YES	NO	Well identified for water level measurement only	55-515867
IW-1	623129	PDSI	Plume Monitoring	855	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-2	623130	PDSI	Plume Monitoring	1035	Q	Q	NO	YES	Water quality sample collected in October 2007; unable to obtain water level - probe would not fit through sampling port	
IW-3A	623131	PDSI	Plume Monitoring	1047	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-4	623132	PDSI	Plume Monitoring	946	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-5	623133	PDSI	Plume Monitoring	956	-	Q	NO	YES	Water quality sample collected in October 2007; unable to obtain water level - probe would not fit through sampling port	
IW-6A	545565	PDSI	Plume Monitoring	492	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-8	508236	PDSI	Plume Monitoring	783	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-9	508238	PDSI	Plume Monitoring	853	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-10	508237	PDSI	Plume Monitoring	831	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-11	508235	PDSI	Plume Monitoring	605	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-12	545555	PDSI	Plume Monitoring	625	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-13	545556	PDSI	Plume Monitoring	495	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-14	545557	PDSI	Plume Monitoring	550	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-15	545558	PDSI	Plume Monitoring	548	-	Q	YES	NO	Mechanical failure reported by PDSI	
IW-16	545559	PDSI	Plume Monitoring	470	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-17	545560	PDSI	Plume Monitoring	502	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-18	545561	PDSI	Plume Monitoring	508	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-19	545562	PDSI	Plume Monitoring	544	-	Q	NO	NO	Mechanical failure reported by PDSI	
IW-20	545563	PDSI	Plume Monitoring	506	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-21	545564	PDSI	Plume Monitoring	620	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-22	200554	PDSI	Plume Monitoring	590	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-23	200555	PDSI	Plume Monitoring	964	-	Q	YES	YES	Water quality sample collected in October 2007	
IW-24	200556	PDSI	Plume Monitoring	880	-	Q	NO	YES	Sounding tube removed; no access to well	
MH-1	803629	PDSI	Plume Monitoring	520	Q	-	YES	NO	Well identified for water level measurement only	
MH-3	803630	PDSI	Plume Monitoring	535	Q	-	YES	NO	Well identified for water level measurement only	
MH-4	803631	PDSI	Plume Monitoring	540	Q	-	NO	NO	Obstruction in well prevented water level measurement	
MH-5	803632	PDSI	Plume Monitoring	640	Q	-	YES	NO	Well identified for water level measurement only	
MH-6	803633	PDSI	Plume Monitoring	960	Q	-	YES	NO	Well identified for water level measurement only	
MH-7	803634	PDSI	Plume Monitoring	1100	Q	-	YES	NO	Well identified for water level measurement only	
MH-9	803635	PDSI	Plume Monitoring	1400	Q	-	YES	NO	Well identified for water level measurement only	
MH-10	803636	PDSI	Plume Monitoring	600	Q	Q	YES	YES	Water quality sample collected in October 2007	
MH-11	803637	PDSI	Plume Monitoring	820	Q	Q ¹	YES	YES	Water quality sample collected in October 2007	
MH-12	803638	PDSI	Plume Monitoring	800	Q	Q ¹	YES	YES	Water quality sample collected in October 2007	
MH-13A	904071	PDSI	Plume Monitoring	660	Q	Q	YES	YES	Water quality sample collected in October 2007	
MH-13B	904072	PDSI	Plume Monitoring	960	Q	Q	YES	YES	Water quality sample collected in October 2007	
MH-13C	904073	PDSI	Plume Monitoring	1360	Q	Q	YES	YES	Water quality sample collected in October 2007	
MH-14	528098	PDSI	Plume Monitoring	561	Q	-	YES	NO	Well identified for water level measurement only	
MH-15E	528094	PDSI	Plume Monitoring	467	Q	-	YES	NO	Well identified for water level measurement only	
MH-15W	528093	PDSI	Plume Monitoring	466	Q	-	YES	NO	Well identified for water level measurement only	
MH-16E	528100	PDSI	Plume Monitoring	460	Q	-	YES	NO	Well identified for water level measurement only	
MH-16W	528099	PDSI	Plume Monitoring	460	Q	-	YES	NO	Well identified for water level measurement only	
MH-24	563799	PDSI	Plume Monitoring	468	Q	-	YES	NO	Well identified for water level measurement only	
MH-25A	201528	PDSI	Plume Monitoring	530	Q	Q	YES	YES	Water quality sample collected in October 2007	
MH-25B	208429	PDSI	Plume Monitoring	680	Q	Q	YES	YES	Water quality sample collected in October 2007	
MH-25C	208426	PDSI	Plume Monitoring	1101	Q	Q	YES	YES	Water quality sample collected in October 2007	
MH-26A	201527	PDSI	Plume Monitoring	538	Q	Q	YES	YES	Water quality sample collected in October 2007	
MH-26B	208427	PDSI	Plume Monitoring	735	Q	Q	YES	YES	Water quality sample collected in October 2007	
MH-26C	208428	PDSI	Plume Monitoring	910	Q	Q	YES	YES	Water quality sample collected in October 2007	
MH-28	903648	PDSI	Plume Monitoring	490	Q	Q	YES	YES	Water quality sample collected in October 2007	
MH-29	903649	PDSI	Plume Monitoring	475	Q	Q	YES	YES	Water quality sample collected in October 2007	
MH-30	903884	PDSI	Plume Monitoring	920	Q	Q	YES	YES	Water quality sample collected in October 2007	
PZ-7	561870	PDSI	Plume Monitoring	155	Q	Q	YES	YES	Water quality sample collected in October 2007	
PZ-8	561866	PDSI	Plume Monitoring	280	Q	Q	YES	YES	Water quality sample collected in October 2007	
PZ-9	561859	PDSI	Plume Monitoring	230	Q	Q	YES	NO	Water level measurement collected November 8, 2007; unable to collect water quality sample-insufficient saturated thickness (< 2 feet)	
MITIGATION ORDER WELLS INSTALLED IN 2007 FOR QUARTERLY MONITORING CONTROLLED BY PDSI										
MO-2007-1A	907342	PDSI	Plume Monitoring	610	Q	Q	YES	YES	Water quality sample collected in October 2007	
MO-2007-1B	907210	PDSI	Plume Monitoring	910	Q	Q	YES	YES	Water quality sample collected in October 2007	
MO-2007-1C	907209	PDSI	Plume Monitoring	1190	Q	Q	YES	YES	Water quality sample collected in October 2007	
MO-2007-2	906765	PDSI	Plume Monitoring	685	Q	Q	YES	YES	Water quality sample collected in October 2007	
MO-2007-3B	906816	PDSI	Plume Monitoring	950	Q	Q	YES	YES	Water quality samples collected in September and October 2007	
MO-2007-3C	906817	PDSI	Plume Monitoring	1330	Q	Q	YES	YES	Water quality sample collected in October 2007	
MO-2007-4A	907213	PDSI	Plume Monitoring	570	Q	Q	YES	YES	Water quality sample collected in October 2007	
MO-2007-4B	907212	PDSI	Plume Monitoring	950	Q	Q	YES	YES	Water quality sample collected in October 2007	
MO-2007-4C	907211	PDSI	Plume Monitoring	1140	Q	Q	YES	YES	Water quality sample collected in October 2007	
MO-2007-5B	907456	PDSI	Plume Monitoring	970	Q	Q	YES	YES	Water quality sample collected in October 2007	
MO-2007-5C	907457	PDSI	Plume Monitoring	1360	Q	Q	YES	YES	Water quality sample collected in October 2007	
MO-2007-6A	907607	PDSI	Plume Monitoring	620	Q	Q	YES	YES	Water quality sample collected in October 2007	
MO-2007-6B	907606	PDSI	Plume Monitoring	950	Q	Q	YES	YES	Water quality sample collected in October 2007	

TABLE 1
Summary of Groundwater Monitoring for Mitigation Order Docket No. P-50-06 for Fourth Quarter 2007

Well Name	ADWR 55 Well Registry Number	Owner	Purpose	Casing or Well Depth (feet)	Work Plan Specification		Q4-2007 Monitoring		Status	Substitute Well
					Water Level Measurement	Water Quality Sampling	Water Level Measured?	Water Quality Sample Collected?		
WELLS FOR QUARTERLY MONITORING NOT CONTROLLED BY PDSI										
1350	NA	TBPI	Plume Monitoring	NA	Q	-	YES	NO	Well identified for water level measurement only	
CC OF GV	501760	CC OF GV	Plume Monitoring	955	Q	Q	NO	YES	Water quality sample collected in October 2007; water level not collected because pump was running	55-640274
CW-3	627483	CWC	Plume Monitoring	501	Q	Q	YES	YES	Water quality sample collected in November 2007	
CW-6	627485	CWC	Plume Monitoring	840	Q	Q	YES	YES	Water quality sample collected in October 2007	
CW-7	502546	CWC	Plume Monitoring	1065	Q	Q	YES	YES	Water quality sample collected in October 2007	
CW-8	543600	CWC	Plume Monitoring	1200	Q	Q	YES	YES	Water quality sample collected in October 2007	
CW-9	588121	CWC	Plume Monitoring	1000	Q	Q	YES	YES	Water quality sample collected in October 2007	
CW-10	207982	CWC	Plume Monitoring	1140	Q	Q	YES	YES	Water quality sample collected in October 2007	
GV-1-GVDWID	603428	GVDWID	Plume Monitoring	645	Q	Q	NO	YES	Water quality sample collected in October 2007; unable to obtain water level - Solinst probe would not fit through sampling port	
GV-2-GVDWID	603429	GVDWID	Plume Monitoring	560	Q	Q	YES	YES	Water quality sample collected in October 2007	
HAVEN GOLF	515867	Haven Golf	Plume Monitoring	500	Q	Q	NO	YES	Water quality sample collected in October 2007; unable to obtain water level due to obstruction	55-623106
I-9	608526	TBPI	Plume Monitoring	900	Q	Q	NO	NO	Well abandonment completed in October 2007	None
I-10	608525	TBPI	Plume Monitoring	932	Q	Q	NO	YES	Water quality sample collected in October 2007; unable to obtain water level due to obstruction	
M-6	87388	TBPI	Plume Monitoring	660	Q	Q	NO	NO	Well unavailable for monitoring	M-9, 55-501652
M-8	87390	TBPI	Plume Monitoring	660	Q	Q	YES	YES	Water quality sample collected in October 2007	
M-9	501652	TBPI	Plume Monitoring	440	Q	Q	YES	YES	Water quality sample collected in October 2007	M-6, 55-87388
M-10	501653	TBPI	Plume Monitoring	1050	Q	Q	YES	YES	Water quality sample collected in October 2007	
NP-2	605898	CWC	Plume Monitoring	515	Q	Q	YES	YES	Water quality sample collected in November 2007	
SCHNEIKER	611220	Schneiker	Plume Monitoring	495	Q	Q	NO	NO	Owner did not respond to access request	
SI WELL-GVDWID	208825	GVDWID	Plume Monitoring	650	Q	Q	YES	YES	Water quality sample collected in October 2007	
TMM-1 ²	616156	Pima County	Plume Monitoring	500	Q	Q	YES	YES	Water quality sample collected in October 2007	None

Notes:

1 = MH-11 and MH-12 added to sampling list after Work Plan approved

2 = Formally listed as Davis-Monthan (55-804995) and PC Parks (55-616156) wells; determined to be the same well located at the Titan Missile Museum (TMM)

ADWR = Arizona Department of Water Resources

Q = Quarterly

PDSI = Phelps Dodge Sierrita, Inc.

TBPI = Twin Buttes Properties, Inc.

CWC = Community Water Company of Green Valley

GVDWID = Green Valley Domestic Water Improvement District

CC of GV = Country Club of Green Valley

TABLE 2
Analytical Results for Fourth Quarter 2007 Groundwater Monitoring

Well Name	ADWR 55 Well Registry Number	Sample Date	pH (SU)	EC (µS/cm)	Temperature (deg C)	Sulfate, total	Sulfate, dissolved
WELLS FOR QUARTERLY [PLUME] MONITORING CONTROLLED BY PSDI							
ESP-1	623102	10/12/07	7.51	494	27.7	NA	110
ESP-2	623103	10/12/07	7.56	337	27.8	NA	30
ESP-3	623104	10/12/07	7.70	350	27.3	NA	40
ESP-4	623105	10/12/07	7.60	739	26.9	NA	360
IW-1	623129	10/05/07	6.95	1128	30.0	NA	570
IW-2	623130	10/05/07	6.69	449	30.1	NA	70
IW-3A	623131	10/05/07	6.62	1511	29.0	NA	1600
IW-4	623132	10/05/07	6.57	1772	28.0	NA	1600
IW-5	623133	10/11/07	6.70	1450	29.3	NA	1730
IW-6A	545565	10/12/07	6.88	1498	27.7	NA	1850
IW-8	508236	10/05/07	6.69	1829	29.0	NA	1600
IW-9	508238	10/05/07	6.59	1875	29.5	NA	1600
IW-10	508237	10/12/07	6.69	1479	24.2	NA	1700
IW-11	508235	10/12/07	6.86	1488	24.3	NA	1700
IW-12	545555	10/22/07	7.57	1237	22.8	NA	1650
IW-13	545556	10/22/07	6.78	1371	22.9	NA	1840
IW-14	545557	10/22/07	6.61	1344	22.5	NA	1840
IW-16	545569	10/22/07	6.53	1289	23.5	NA	1800
IW-17	545560	10/22/07	6.78	1293	24.7	NA	1770
IW-18	545561	10/22/07	6.53	1293	23.2	NA	1730
IW-20	545563	10/04/07	6.82	1684	29.4	NA	1600
IW-21	545564	10/22/07	6.44	1348	25.2	NA	1650
IW-22	200554	10/12/07	6.71	1532	23.7	NA	1750
IW-23	200555	10/12/07	6.57	1468	23.9	NA	1720
IW-24	200556	10/12/07	6.74	1445	23.5	NA	1720
MH-10	803636	10/16/07	7.00	1163	28.2	NA	1420
MH-11	803637	10/03/07	6.76	1582	29.2	NA	1590
MH-12	803638	10/02/07	6.97	1395	29.9	NA	1180
MH-13A	904071	10/04/07	6.92	1780	27.1	NA	1720
MH-13B	904072	10/03/07	7.27	1473	29.8	NA	1110
MH-13C	904073	10/04/07	9.07	305	30.8	NA	20
MH-25A	201528	10/03/07	7.59	323	27.7	NA	20
MH-25B	208429	10/03/07	7.05	1550	28.1	NA	1670
MH-25C	208426	10/03/07	7.12	1459	29.6	NA	1280
MH-26A	201527	10/02/07	7.52	328	26.9	NA	10
MH-26B	208427	10/02/07	7.07	1601	29.0	NA	1620
MH-26C	208428	10/02/07	7.52	1180	29.1	NA	750
MH-28	903548	10/11/07	6.91	1524	26.6	NA	1950
MH-29	903649	10/11/07	6.95	1476	26.2	NA	1710
MH-30	903884	10/02/07	6.98	1791	30.9	NA	1830
PZ-7	561870	10/16/07	7.13	764	24.6	NA	400
PZ-8	561868	10/05/07	7.22	1961	24.6	NA	460
MITIGATION ORDER WELLS INSTALLED IN 2007 FOR QUARTERLY [PLUME] MONITORING CONTROLLED BY PSDI							
MO-2007-1A	907342	10/09/07	7.59	372	28.7	NA	20
MO-2007-1B	907210	10/09/07	7.72	372	29.8	NA	30
MO-2007-1C	907209	10/09/07	7.70	484	30.7	NA	90
MO-2007-2	906765	10/09/07	7.08	1060	31.6	NA	560
MO-2007-3B ¹	906816	09/10/07	7.53	373	28.7	38	38
MO-2007-3B	906816	10/09/07	7.75	372	29.6	NA	40
MO-2007-3C	906817	10/10/07	8.05	528	31.5	NA	110
MO-2007-4A	907213	10/09/07	7.46	412	27.5	37.2	37
MO-2007-4B	907212	10/11/07	7.93	376	26.4	37.5	37.5
MO-2007-4C	907211	10/12/07	7.81	456	30.7	80.4	80.1
MO-2007-5B	907456	10/12/07	7.63	1150	29.9	392	402
MO-2007-5C	907457	10/13/07	8.01	726	33.7	269	265
MO-2007-6A	907607	10/02/07	7.52	405	28.5	27	26.5
MO-2007-6A [DUP]	907607	10/02/07	7.52	405	28.5	26.5	26.5
MO-2007-6B	907606	10/04/07	7.70	483	33.1	93.5	93.6
WELLS FOR QUARTERLY [PLUME] MONITORING NOT CONTROLLED BY PSDI							
CC OF GV	501760	10/03/07	7.31	560	25.7	89.1	88.7
CW-3	627483	11/06/07	7.57	449	25.6	57.1	57.5
CW-6	627485	10/02/07	7.55	438	27.5	54	54.2
CW-7	502546	10/02/07	7.41	1932	27.8	940	940
CW-8	543600	10/02/07	7.74	1267	30.0	434	463
CW-8 [DUP]	543600	10/02/07	7.74	1267	30.0	456	466
CW-9	588121	10/02/07	7.55	405	27.7	46.3	46.4
CW-10	207982	10/02/07	7.55	381	30.3	47.4	47.7
GV-1-GVDWID	603428	10/03/07	7.42	447	26.9	43.7	43.8
GV-2-GVDWID	603429	10/03/07	7.40	643	23.8	196	190
HAVEN GOLF	515687	10/04/07	7.76	371	25.9	111	118
I-10	608525	10/08/07	7.22	958	30.5	NA	530
M-8	87390	10/08/07	7.61	362	26.8	NA	20
M-9	501652	10/08/07	7.68	437	28.5	NA	70
M-10	501653	10/08/07	7.85	421	30.3	NA	80
NP-2	605898	11/06/07	7.57	426	25.4	41.9	41.7
SI WELL-GVDWID	208825	10/03/07	7.37	380	26.8	6.2	6.5
TMM-1	616156	10/04/07	7.06	722	25.4	7.2	7.2

Notes:

All units are in milligrams per liter (mg/L) unless otherwise noted.

ADWR = Arizona Department of Water Resources

SU = Standard Units

EC = Electric Conductivity

µS/cm = microsiemens per centimeter

deg C = degrees Celsius

NA = Not Analyzed

¹ = Water Quality sample collected in Q3 during pump test; reported in Q4

TABLE 3
Groundwater Elevation Data for Water Levels Collected in Fourth Quarter 2007

WELL NAME	ADWR 55 WELL REGISTRY NUMBER	SURVEY SOURCE	UTM NORTH (NAD83, meters)	UTM EAST (NAD83, meters)	BENCHMARK ELEVATION (NAVD88 ft amsl)	HEIGHT OF MEASURING POINT ABOVE BENCHMARK (feet)	MEASURING POINT ELEVATION (ft amsl)	DATE	DEPTH TO WATER FROM MEASURING POINT (feet)	GROUNDWATER ELEVATION (ft amsl)
WELLS FOR QUARTERLY [PLUME] MONITORING CONTROLLED BY PDSI										
ESP-1	623102	PDSI	3526448.677	499969.682	2954.87	-1.44	2953.43	10/12/07	343.00	2610.43
ESP-2	623103	PDSI	3526924.656	500241.637	2933.45	1.15	2934.60	10/12/07	342.26	2592.34
ESP-4	623105	PDSI	3526132.758	499916.830	2957.70	0.39	2958.60	10/12/07	352.41	2606.19
ESP-5	623106	PDSI	3527082.232	502007.895	2819.13	2.06	2820.00	11/08/07	228.42	2591.58
IW-1	623129	PDSI	3521277.779	496905.892	3144.29	0.40	3144.69	10/19/07 ¹	399.90	2744.79
IW-3A	623131	PDSI	3521722.640	497366.220	3119.63	1.82	3121.45	10/19/07 ¹	427.80	2693.65
IW-4	623132	PDSI	3522465.879	497371.700	3137.31	-0.25	3137.06	10/19/07 ¹	428.90	2708.16
IW-6A	545565	PDSI	3523708.756	497381.226	3131.86	0.40	3132.26	10/17/07 ¹	433.35	2698.91
IW-8	508236	PDSI	3522020.520	497368.253	3119.22	2.97	3122.19	10/19/07 ¹	436.80	2685.39
IW-9	508238	PDSI	3522207.639	497369.791	3102.64	0.30	3102.94	10/19/07 ¹	379.00	2723.94
IW-10	508237	PDSI	3523122.199	497370.367	3129.49	0.15	3129.64	10/18/07 ¹	465.25	2664.39
IW-11	508235	PDSI	3523428.954	497371.414	3127.30	-0.10	3127.20	10/17/07 ¹	430.00	2697.20
IW-12	545555	PDSI	3523969.869	497364.911	3137.91	0.27	3138.18	10/17/07 ¹	433.00	2705.18
IW-13	545556	PDSI	3524166.673	497363.820	3142.84	0.51	3143.35	10/17/07 ¹	413.30	2730.05
IW-14	545557	PDSI	3524373.122	497367.126	3146.10	0.32	3146.42	10/16/07 ¹	480.00	2666.42
IW-15	545558	PDSI	3524567.261	497372.873	3151.41	0.61	3152.02	10/16/07 ¹	390.30	2761.72
IW-16	545559	PDSI	3524782.868	497370.651	3162.42	0.43	3162.85	10/16/07 ¹	409.17	2753.68
IW-17	545560	PDSI	3525002.869	497373.717	3160.19	0.57	3160.76	10/16/07 ¹	427.70	2733.06
IW-18	545561	PDSI	3525169.771	497374.056	3170.20	0.95	3171.15	10/16/07 ¹	445.25	2725.90
IW-20	545563	PDSI	3525568.770	497364.739	3163.80	0.41	3164.21	10/16/07 ¹	424.15	2740.06
IW-21	545564	PDSI	3525773.266	497374.585	3170.69	0.68	3171.37	10/16/07 ¹	442.10	2729.27
IW-22	200554	PDSI	3523273.592	497369.590	3124.84	3.41	3128.25	10/18/07 ¹	435.75	2692.50
IW-23	200555	PDSI	3522970.788	497369.237	3125.03	3.50	3128.53	10/18/07 ¹	518.95	2609.58
MH-1	803629	PDSI	3525872.911	497372.392	3178.06	1.21	3179.27	11/08/07	440.10	2739.17
MH-3	803630	PDSI	3525270.181	497472.430	3155.26	0.61	3155.87	10/20/07	422.15	2733.72
MH-5	803632	PDSI	3523725.339	497477.352	3123.23	0.24	3123.47	11/08/07	392.95	2730.52
MH-6	803633	PDSI	3522770.451	497436.646	3133.93	0.04	3133.97	11/08/07	380.30	2753.67
MH-7	803634	PDSI	3522016.471	497502.475	3110.15	1.08	3111.23	11/08/07	370.60	2740.63
MH-9	803635	PDSI	3521252.607	496438.181	3162.51	0.06	3162.57	11/08/07	367.95	2794.62
MH-10	803636	PDSI	3521236.861	495717.770	3187.83	0.01	3187.84	10/16/07	357.60	2830.24
MH-11	803637	PDSI	3524463.648	498749.381	3041.44	0.32	3041.76	10/03/07	373.80	2667.96
MH-12	803638	PDSI	3525207.002	498772.161	3052.67	2.41	3055.08	10/02/07	423.17	2631.91
MH-13A	904071	PDSI	3523793.443	498823.857	3025.18	1.05	3026.23	10/04/07	331.70	2694.53
MH-13B	904072	PDSI	3523787.358	498829.881	3023.93	1.70	3025.63	10/03/07	335.90	2689.73
MH-13C	904073	PDSI	3523793.032	498797.461	3026.81	1.65	3028.46	10/04/07	340.75	2687.71
MH-14	528098	PDSI	3525269.340	497517.626	3150.77	0.00	3150.77	10/17/07	422.80	2727.97
MH-15E	528094	PDSI	3523274.327	497584.800	3111.03	0.34	3111.37	10/20/07	387.08	2724.29
MH-15W	528093	PDSI	3523275.003	497524.067	3115.58	1.49	3117.07	10/17/07	393.10	2723.97
MH-16E	528100	PDSI	3521870.233	497576.673	3096.82	0.90	3097.72	10/20/07	355.55	2742.17
MH-16W	528099	PDSI	3521870.818	497516.074	3098.61	1.63	3100.24	10/17/07	357.75	2742.49
MH-24	563799	PDSI	3523709.046	497390.515	3131.22	-0.06	3131.16	11/08/07	400.50	2730.66
MH-25A	201528	PDSI	3526510.175	498880.349	3055.81	0.76	3056.57	10/03/07	454.69	2601.88
MH-25B	208429	PDSI	3526515.244	498870.343	3056.21	2.01	3058.22	10/03/07	456.01	2602.21
MH-25C	208426	PDSI	3526491.132	498874.666	3056.71	0.53	3057.24	10/03/07	455.19	2602.05
MH-26A	201527	PDSI	3527818.233	498852.692	3069.54	1.35	3070.89	10/02/07	496.12	2574.77
MH-26B	208427	PDSI	3527814.016	498839.900	3067.27	1.84	3069.11	10/02/07	493.18	2575.93
MH-26C	208428	PDSI	3527806.770	498865.240	3068.68	1.82	3070.50	10/02/07	496.58	2573.92
MH-28	903548	PDSI	3524609.980	497471.427	3141.51	0.67	3142.18	10/11/07	403.00	2739.18
MH-29	903649	PDSI	3522805.518	497604.326	3122.24	0.91	3123.15	10/11/07	381.92	2741.23
MH-30	903884	PDSI	3525926.812	496682.307	3231.92	0.53	3232.45	10/02/07	416.95	2815.50
PZ-7	561870	PDSI	3526357.485	492533.171	3548.61	0.56	3549.17	10/16/07	139.49	3409.68
PZ-8	561866	PDSI	3524196.243	492972.681	3480.18	0.18	3480.36	10/05/07	205.30	3275.06
PZ-9	561859	PDSI	3525568.717	493180.504	3508.07	0.00	3508.07	11/08/07	228.50	3279.57
MITIGATION ORDER WELLS INSTALLED IN 2007 FOR QUARTERLY [PLUME] MONITORING CONTROLLED BY PDSI										
MO-2007-1A	907342	PDSI	3529331.380	500016.947	2967.69	-0.54	2967.15	10/09/07	428.32	2538.83
MO-2007-1B	907210	PDSI	3529325.119	500021.574	2967.69	-1.34	2966.35	10/09/07	429.20	2537.15
MO-2007-1C	907209	PDSI	3529328.959	500013.405	2967.69	-3.35	2964.34	10/09/07	427.02	2537.32
MO-2007-2	906765	PDSI	3527621.102	497912.410	3152.73	0.88	3153.61	10/09/07	576.60	2577.01
MO-2007-3B ²	906816	PDSI	3528508.801	500522.491	2910.74	0.01	2910.75	09/10/07	359.38	2551.37
MO-2007-3B								10/09/07	359.55	2551.20
MO-2007-3C	906817	PDSI	3528508.743	500529.713	2910.74	-0.65	2910.09	10/10/07	359.85	2550.24
MO-2007-4A	907213	PDSI	3525634.956	500383.682	2923.65	-0.18	2923.47	10/09/07	307.67	2615.80
MO-2007-4B	907212	PDSI	3525613.952	500380.947	2923.65	-0.43	2923.22	10/11/07	308.72	2614.50
MO-2007-4C	907211	PDSI	3525624.484	500382.217	2923.65	-0.16	2923.49	10/12/07	308.78	2614.71
MO-2007-5B	907456	PDSI	3523743.376	500013.850	2947.08	-3.66	2943.42	10/12/07	268.27	2675.15
MO-2007-5C	907457	PDSI	3523736.459	500014.152	2947.08	-2.75	2944.33	10/13/07	289.70	2654.63
MO-2007-6A	907607	PDSI	3521842.050	498367.161	3041.93	0.56	3042.49	10/02/07	303.60	2738.89
MO-2007-6B	907606	PDSI	3521849.495	498367.887	3041.93	0.02	3041.95	10/04/07	319.17	2722.78
WELLS FOR QUARTERLY [PLUME] MONITORING NOT CONTROLLED BY PDSI										
1350	ND	TBPI	3528452.906	499357.609	NA	NA	3033.25	11/08/07	477.30	2555.95
CW-3	627483	HGC	3523809.985	500047.663	2941.25	0.46	2941.71	11/06/07	269.98	2671.73
CW-6	627485	CWC	3525794.239	500891.072	2866.00	1.00	2867.00	10/02/07	253.05	2613.95
CW-7	502546	CWC	3528094.155	499659.842	2986.00	1.50	2987.50	10/02/07	427.60	2559.90
CW-8	543600	CWC	3525661.191	499798.520	2956.00	1.50	2957.50	10/02/07	340.60	2616.90
CW-9	588121	CWC	3528740.784	501072.040	2833.00	1.30	2834.30	10/02/07	310.70	2523.60
CW-10	207982	CWC	3523455.502	500913.364	2867.00	1.50	2868.50	10/02/07	190.85	2677.65
GV-2-GVDWID	603429	HGC	3521654.457	499786.207	2929.28	1.20	2930.48	10/03/07	199.33	2731.15
M-8	87390	PDSI	3529692.237	499658.916	2999.42	NA	2999.65	10/08/07	465.65	2534.00
M-9	501652	PDSI	3530303.954	499984.173	2971.98	NA	2972.97	10/08/07	453.15	2519.82
M-10	501653	PDSI	3530143.114	499659.027	3005.01	NA	3005.62	10/08/07	478.45	2527.17
NP-2	605898	HGC	3528517.116	500582.904	2905.96	0.60	2906.56	11/06/07	355.10	2551.46
SI WELL-GVDWID	208825	HGC	3519509.930	497227.175	3040.56	2.10	3042.66	10/03/07	244.40	2798.26
TMM-1	616156	HGC	3529736.231	500018.323	2970.59	-3.50	2967.09	10/04/07	437.58	2529.51

Notes:

ADWR = Arizona Department of Water Resources

NAVD 88 = North American Vertical Datum of 1988

NAD 83 = North American Datum of 1983

UTM = Universal Transverse Mercator

ft amsl = feet above mean sea level

PDSI = Phelps Dodge Sierrita, Inc.

TBPI = Twin Buttes Properties, Inc.

HGC = Hydro Geo Chem, Inc.

CWC = Community Water Company of Green Valley

NA = Not Available

1 = Water level measurement was collected under dynamic conditions and not used for contouring

2 = Water level measurement collected in Q3 during pump test; reported in Q4

3 = Ground surface elevation estimated using USGS topographic map; approximation verified using Google Earth

TABLE 4
Analytical Results for Groundwater Samples Collected for an Extended Suite of Analytes

Well Name	ADWR 55 Well Registry Number	Sample Date	Calcium, dissolved	Magnesium, dissolved	Potassium, dissolved	Sodium, dissolved	Chloride, dissolved	Fluoride, dissolved	Nitrate as N, dissolved	Nitrite as N, dissolved	Nitrate/Nitrite as N, dissolved	Bicarbonate as CaCO ₃	Carbonate as CaCO ₃	Hydroxide as CaCO ₃	Total Alkalinity	Residue, Filterable (TDS) @ 180°C
MO-2007-3B	906816	09/10/07	31.5	2.8	3.1	44.1	7.0	0.5	0.33	< 0.01	0.33	134	<2	<2	134	250
MO-2007-4A	907213	10/09/07	42.8	6.2	3.3	37.1	10.2	0.3	0.93	<0.01	0.93	155	5	<2	160	270
MO-2007-4B	907212	10/11/07	41.6	4.3	2.9	35.7	9.1	0.6	0.77	< 0.01	0.77	143	<2	<2	143	230
MO-2007-5B	907456	10/12/07	84.4	3.7	5.5	164.0	44.5	1.2	1.97	0.01	1.98	95	<2	<2	95	780
MO-2007-6A	907607	10/02/07	36.3	5.4	3.8	39.8	10.5	0.3	0.99	<0.01	0.99	164	<2	<2	164	920
MO-2007-6A [DUP]	907607	10/02/07	36.4	5.4	3.8	40.0	10.5	0.3	0.98	<0.01	0.98	163	<2	<2	163	260
MO-2007-6B	907606	10/04/07	28.1	2.9	11.3	60.6	10.9	0.5	0.67	0.02	0.69	119	5	<2	125	400

Notes:

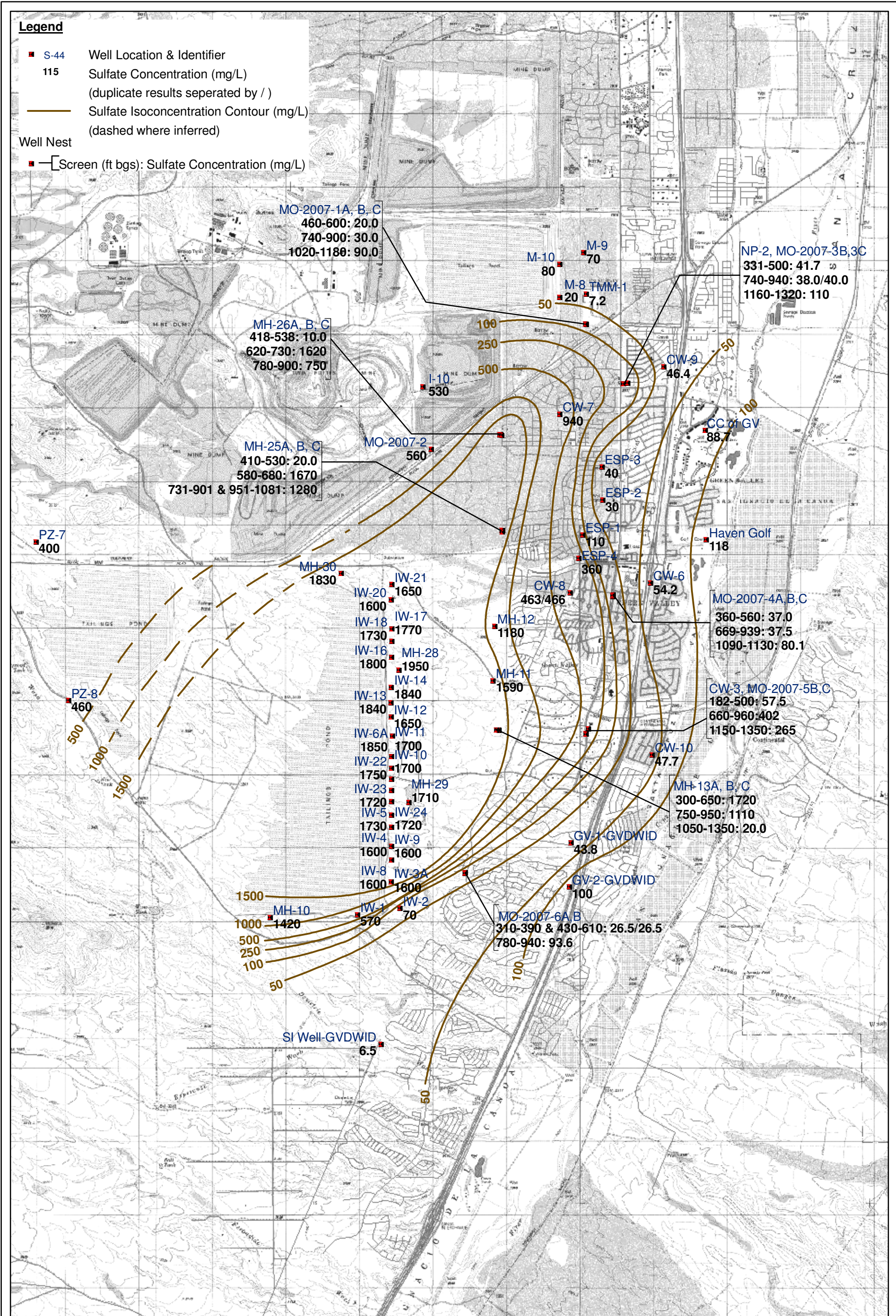
All units are in milligrams per liter (mg/L) unless otherwise noted,

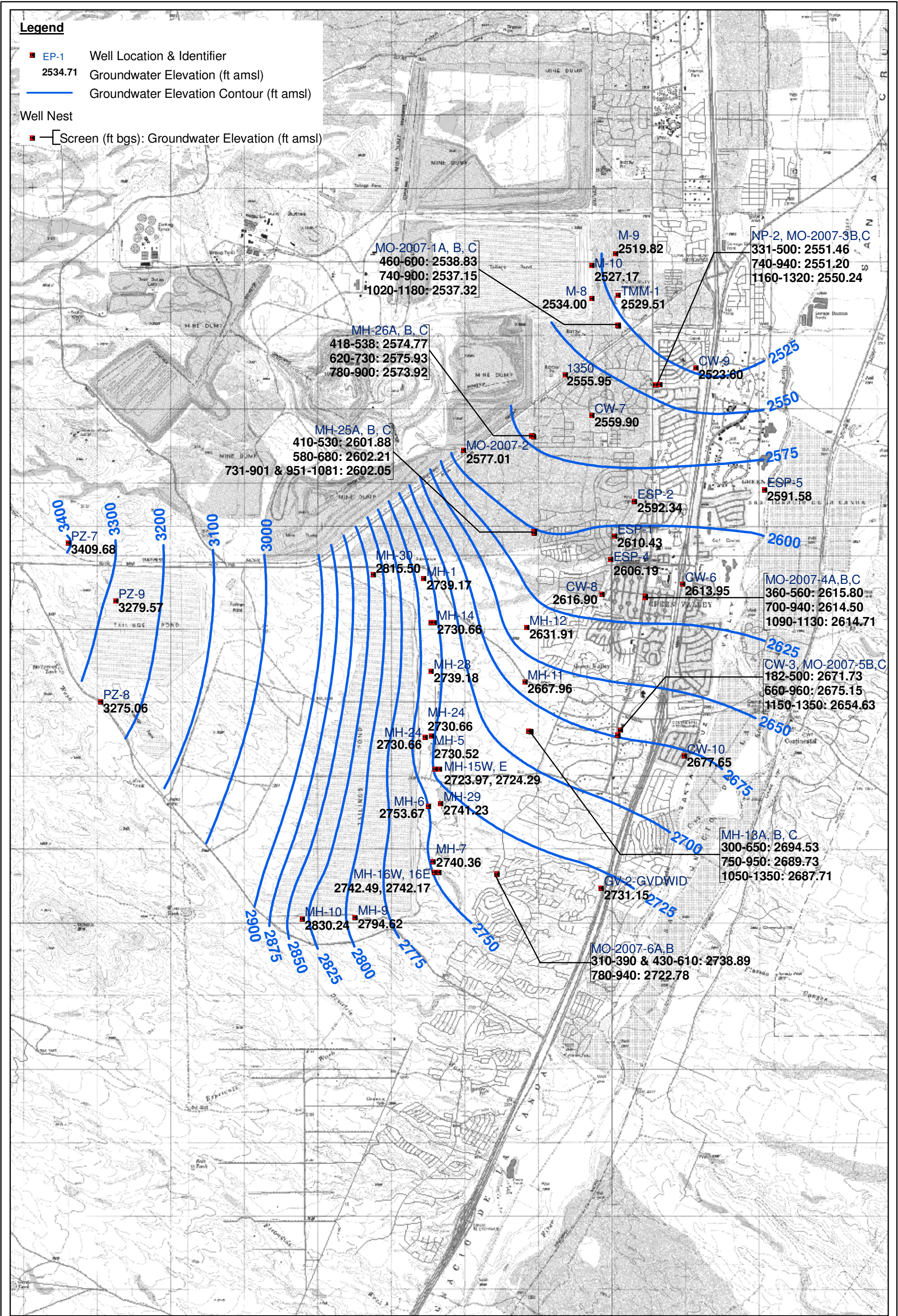
ADWR = Arizona Department of Water Resources

TDS = Total Dissolved Solids

DUP = Duplicate sample

FIGURES





APPENDIX A

**FOURTH QUARTER 2007
DATA VERIFICATION REPORT FOR GROUNDWATER SAMPLES
COLLECTED BY PHELPS DODGE SIERRITA, INC.
AND HYDRO GEO CHEM, INC.**

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COLLECTED BY PHELPS DODGE SIERRITA, INC.
AND HYDRO GEO CHEM, INC.

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1. INTRODUCTION

This report summarizes the data verification review of groundwater samples collected and analyzed during the fourth quarter 2007 (Q4-2007) by Phelps Dodge Sierrita, Inc. (PDSI) and Hydro Geo Chem, Inc. (HGC) pursuant to Mitigation Order on Consent Docket No. P-50-06 (MO). PDSI conducted groundwater sampling and analysis at wells under its control with the exception of Twin Buttes Properties, Inc. wells 1350, I-10, M-8, M-9 and M-10. HGC collected groundwater samples from wells outside the control of PDSI. All analytical results for groundwater samples collected for this project during the fourth quarter of 2007 were provided to HGC either by PDSI or ACZ Laboratories Inc (ACZ) for preparation of the Q4-2007 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 E of HGC, 2006) for field sampling, chain-of-custody (COC) documentation, laboratory analysis, and reporting. This report does not review field sampling or sample handling for samples collected by PDSI since this information is evaluated following the provisions of the *Quality Assurance/Quality Control Plan for Water Monitoring, Phelps Dodge Sierrita, Inc.* (PDSI, 2005). This report does review field sampling for samples collected by HGC. Additionally, sample handling and laboratory QA/QC data are evaluated according to the data quality indicators (DQIs) given in the QAPP.

Appendix C of the main text of this report contains laboratory reports for Q4-2007 samples collected by PDSI and HGC including COC forms, laboratory correspondence, QC summaries, data qualifiers, and any case narratives. The Q4-2007 analytical results for all 83 samples collected by PDSI and HGC and are contained in 19 reports having the ACZ Project numbers identified in Table A.1.

The results of the internal QA/QC tests performed by ACZ are presented with the laboratory reports included in Appendix C. Based on the results of surrogate spike recoveries, matrix spike/recovery and matrix spike duplicate tests, ACZ did not advise HGC of any modifications that should be made regarding the usability and data validation status of the laboratory test results.

2. HGC FIELD OPERATIONS

Field operations for this project consisted of the following for all monitoring wells sampled by HGC:

- Static water level monitoring,
- Well purging (minimum of 3 wetted casing volumes),
- Collection of water quality field parameters (pH, electrical conductivity [EC], and temperature in degrees Celsius [°C]),
- Collection of groundwater samples for water quality analysis, and
- Equipment decontamination.

All documentation of 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 collected by HGC at 18 wells during the fourth quarter of 2007. In all cases, the wells were allowed to come to static conditions before collecting the water level measurement. Before measuring the static 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 groundwater samples were collected from wells designated for sampling in the quarterly monitoring schedule of the Work Plan. Additionally, groundwater samples were collected from the newly installed MO-2007 series monitoring wells and one regional well. More detailed information regarding the wells sampled for water quality and water level measurements is listed in Table 1 of the main text.

2.2.1 Pre-Sampling Field Activities

On each day of sampling, the pH¹ and EC² probes were calibrated. In addition, the water level indicator was checked for a signal, which indicates a working meter and 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 EC probes to ensure their 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 all activities related to the collection of groundwater samples as part of this project. These objectives were met by 1) replenishing or obtaining supplies of de-ionized 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 de-ionized water to properly decontaminate field equipment prior to the start of sampling each day and after

¹ Field pH meter was calibrated using a two point calibration and pH buffers 4 and 7.

² Field EC meter was calibrated using a standard stock solution of 1413 $\mu\text{S}/\text{cm}$ (microsiemens per centimeter).

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

Ideally, three wetted casing volumes were purged from each well prior to sampling. However, when three casing volumes could not be purged, this information was noted on the groundwater sampling form (Appendix D) at each well for which this was the case. In cases where purging was necessary prior to sample collection the 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. Field parameters were monitored until a consistent measurement was obtained.

During this monitoring period, filtered and unfiltered groundwater samples were collected for analysis 18 plume monitoring wells not under the control of PDSI. Filtered and unfiltered groundwater samples were collected concurrently by using a container to collect an initial sample for separation into bottles for filtered and unfiltered analyses. After collecting the initial sample, the unfiltered sample was collected by pouring a 500-milliliter aliquot of the initial sample into a non-preserved bottle for sulfate analysis. Then each filtered sample was collected by filtering the remaining portion of the initial sample using a clean filtration apparatus and one unused, disposable 0.45-micron filter. All bottles were provided by ACZ. Bottles were

checked for the correct preservative and maintained in a clean and secure work area, until used in the field.

2.2.3 Post-Sampling Field Activities

Post sampling field activities consisted of equipment decontamination, sample storage, and sample shipping. Field equipment that comes into contact with the sample was decontaminated using a small amount of Alconox detergent and de-ionized water. After washing, the equipment was rinsed thoroughly with de-ionized 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 ACZ. In addition, each set of samples collected from each well was individually bagged (without ice) to prevent the label from getting soaked with water and rubbing off or becoming illegible.

2.3 Well Survey

On August 1, September 9, and October 15, 2007, ground surface and measuring-point elevation surveys were completed for newly installed wells MO-2007-4A, -4B, -5B, -5C, -6A, and -6B. The survey was conducted by AMEC Infrastructure, Inc. These data are shown in Table 3 and Figure 2 of the main report.

3. SAMPLE HANDLING

All samples collected by PDSI and HGC were shipped to ACZ for analysis. COC documentation accompanied all samples submitted and included the sample name, collection date and time. COCs contained in laboratory reports included the date and time the samples were received by ACZ. As noted on the analytical data reports from ACZ, all of the sample bottles were received intact, properly preserved, and in good condition.

The temperatures of the following four shipping containers (identified by their laboratory login numbers) exceeded 4 °C upon receipt at the laboratory:

ACZ Project ID	Sample Collection Date	Sample Relinquished Date	Sample Received Date by ACZ	Temperature Upon Receipt (°C)
L65451	10/02/07	10/02/07	10/04/07	6
L65452	10/02/07	10/02/07	10/04/07	6
L65468	10/02/07-10/04/07	10/04/07	10/05/07	4.4
L65858	10/22/07	10/23/07	10/24/07	5

As noted in the above table, all samples were shipped within one to two days of sample collection, and the time between sample collection and receipt of samples by ACZ also ranged from one to two days. These temperature exceedances are not considered to have a significant impact on the analytical results pertaining to the sulfate analysis for these samples.

4. LABORATORY QUALITY CONTROL

As specified in the QAPP, laboratory QC was maintained for all analysis 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

ACZ is licensed with the Arizona Department of Health Services (license number AZ0102) and is accredited in accordance with the National Environmental Laboratory Accreditation Conference.

4.2 Analytical Methods

The following list identifies the methods used for sulfate analysis during this monitoring period:

- SM4500 SO4-D (Gravimetric): sulfate
- EPA 300.0 (Ion-Chromatography): sulfate

4.3 Method Detection Limits (MDLs) and Practical Quantification Limits (PQLs)

The MDLs and PQLs of the analytical methods used by ACZ are shown in the following table. The MDLs for analyses of samples were equal to or less than the target MDLs identified in the QAPP.

Parameter	MDL (mg/L)	PQL (mg/L)	Target MDL ¹ (mg/L)
Sulfate	0.5	3	10

Notes:

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

4.4 Timeliness

All samples submitted for sulfate analysis (filtered and unfiltered) were analyzed within the twenty-eight day holding time specified by each of the methods used for analysis.

4.5 Quality Control Measurements

The following QC samples were prepared and analyzed:

- Preparation blanks, calibration blanks, and calibration verification standards
- Analytical spikes and analytical spike duplicates
- Laboratory control samples
- Laboratory duplicate samples
- Field blank samples

4.5.1 Preparation Blanks, Calibration Blanks, and Calibration Verification Standards

Preparation blanks were run with each group of samples submitted for sulfate analyses using the gravimetric method (SM4500 SO₄-D). All preparation blanks were prepared from analyte-free water and treated as routine samples. Analytical results of all of the preparation blanks showed that no target analytes were detected at the indicated MDL.

Results from the analyses of the initial calibration blanks and initial calibration verification standards conducted by EPA method 300.0 also 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 that were analyzed showed percent recoveries that were within the acceptance criteria specified by the ACZ QA plan and the QAPP.

4.5.2 Analytical Spikes and Analytical Spike Duplicates

Analytical spike and spike duplicate samples were analyzed for all sulfate samples that were analyzed using EPA method 300.0. Spike recoveries for all sulfate analyses were between 90 and 110 percent and are within the range of acceptability based on the acceptance criteria set by ACZ.

4.5.3 Laboratory Control Samples

Laboratory control samples were run for each group of samples submitted for sulfate analysis using the gravimetric method of analysis. Recoveries for all laboratory control samples were within the acceptance criteria specified by ACZ.

4.5.4 Laboratory Duplicate Samples

Analyses of laboratory duplicate samples were also reviewed as part of this quality data verification report. Field duplicate samples are discussed in Section 5.1. The relative percent difference (RPDs) for most laboratory duplicate samples were within 20 percent, which is the tolerance range set by the laboratory. In many instances, the data were qualified with an “RA” flag indicating that the RPD was not used for data validation because the sample concentration was less than ten times the MDL, which is too low for accurate evaluation according to ACZ. In all cases where the RPD could be calculated, the results met QA criteria and demonstrate an appropriate level of precision in laboratory analysis of these samples.

4.5.5 Field Blank Samples

During the fourth quarter of 2007, a total of four field blank samples were collected. Three of these were field and equipment blank samples containing filtered de-ionized water (TB101607A, EQB101607A, and EQB-100407-F), and one field blank sample collected using unfiltered de-ionized water (FB-100407). All of these samples were collected in the field and were 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 sample was collected for every 20 samples collected. This requirement was exceeded during this monitoring period by the collection of an additional equipment blank sample. Analytical results from field blank samples TB101607A, EQB101607A, and FB-100407 showed no detections. However, sulfate was detected in equipment blank sample EQB-100407-F at a concentration of 0.6 mg/L. This low level detection of sulfate is not considered significant given the concentrations of sulfate in the samples.

5. DATA QUALITY INDICATORS

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

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

Each of these DQIs is discussed below in relation to the Q3-2007 groundwater sampling and analysis conducted by PDSI.

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 Sections 4.5.2 and 4.5.4, there were no exceedances of RPD QA criteria for any laboratory duplicates.

During this monitoring period, a total of six field duplicate samples were collected. Four of these (DUP100507A, DUP100907A, DUP101607C, and DUP102007A) were collected by PDSI for filtered analysis, whereas the other two (MO-2007-DUP and DUP-100207) were collected by HGC for filtered and unfiltered sulfate analysis. The collection of six duplicate samples exceeds the QA/QC goal of collecting one duplicate sample for every twenty groundwater samples collected, as stated in Section 4.2.1.5 of the QAPP.

Results for the six duplicate field samples collected are provided in Table A.2. The range of RPD values was between zero and 7.79 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.

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 respectively, there were no significant exceedances of the recovery QA criteria

for any of the calibration standards, analytical spikes, or laboratory control standards. 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, 2006) using sampling procedures specified in the QAPP. Therefore, the samples are judged to provide a good representation of groundwater quality at the 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, 2006 and PDSI, 2005) and were analyzed by ACZ using standardized methods. Insofar as standardized sample collection and analytical methods are adhered to, the sample results should be comparable.

5.6 Completeness

All samples collected by PDSI and HGC were subsequently analyzed and reported by ACZ Laboratories. All samples collected by PDSI and analyzed by ACZ 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 methods used to analyze the PDSI samples meet the MDL requirements specified in Table E.2 of the QAPP. Therefore, the analytical sensitivity is considered acceptable for use in aquifer characterization.

6. REFERENCES

- Hydro Geo Chem, Inc (HGC). 2006. Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Phelps Dodge Sierrita Tailing Impoundment, Pima County, Arizona. August 11, 2006, revised October 31, 2006.
- Phelps Dodge Sierrita, Inc. (PDSI). 2005. Quality Assurance/Quality Control Plan for Water Monitoring, Phelps Dodge Sierrita, Inc. June 2005.

TABLES

TABLE A.1
ACZ Project ID and Associated Wells

ACZ Project ID	Wells Reported
<i>Number of wells sampled by PDSI¹: 52</i> <i>Number of duplicate samples collected: 4</i> <i>Number of blank samples collected: 2 (1 field blank and 1 equipment blank)</i>	
L65468	MH-12, MH-26A, MH-26B, MH-26C, MH-30, IW-20
L65469	MH11, MH-13A, MH-13B, MH-13C, MH-25A, MH-25B, MH-25C
L65522	IW-1, IW-2, IW-3A, IW-4, IW-8, IW-9, PZ-8, DUP100507A
L65636	IW-5
L65641	MH-28, MH-29
L65683	IW-6A, IW-10, IW-11, IW-22, IW-23, IW-24
L65684	M-8, M-9, M-10, I-10, MO2007-1A, MO-2007-1B, MO-2007-1C, MO2007-2, MO-2007-3B, MO-2007-3C, ESP-1, ESP-2, ESP-3, ESP-4, DUP100907A
L65740	MH-10, PZ-7, EQB101607A, TB101607A, DUP101607C
L65858	IW-12, IW-13, IW-14, IW-16, IW-17, IW-18, IW-21, DUP102207A
<i>Number of wells sampled by HGC²: 21</i> <i>Number of duplicate samples collected: 2</i> <i>Number of blank samples collected: 2 (1 unfiltered field blank and 1 equipment blank)</i>	
L65942	MO-2007-3B ³
L65451	CW-6, CW-7, CW-8, CW-9, CW-10, DUP100207
L65452	MO-2007-6A, MO-2007-DUP
L65476	HAVEN GOLF, TMM, GV-1-GVDWID, GV-2-GVDWID, CC of GV, SIWELL, EQB-100407, FB100407
L65477	MO-2007-6B
L65562	MO-2007-4A
L65645	MO-2007-4B
L65663	MO-2007-5B
L65680	MO-2007-4C, MO-2007-5C
L66148	NP-2, CW-3

Notes:

- 1) All samples collected by PDSI were filtered in the field using one disposable 0.45-micron filter per sample.
- 2) Samples collected by HGC were both filtered and unfiltered unless noted, and all filtered samples were collected using a 0.45-micron filter.
- 3) Sample collected in Q3 during pump test; reported in Q4

TABLE A.2
Relative Percent Difference (RPD) of Duplicate Field Samples

Well ID	CW-8			MO-2007-6A			IW-3A			IW-12			MH-10			MO-2007-3B		
ACZ Project Number:	L65451	L65451		L65452	L65452		L65522	L65522		L65858	L65858		L65740	L65740		L65684	L65684	
Parameter	Field Sample (mg/L)	Duplicate (mg/L)	RPD (%)	Field Sample (mg/L)	Duplicate (mg/L)	RPD (%)	Field Sample (mg/L)	Duplicate (mg/L)	RPD (%)	Field Sample (mg/L)	Duplicate (mg/L)	RPD (%)	Field Sample (mg/L)	Duplicate (mg/L)	RPD (%)	Field Sample (mg/L)	Duplicate (mg/L)	RPD (%)
Sulfate (filtered)	463	466	0.65	26.5	26.5	0.00	1600	1480	7.79	1650	1640	0.61	1420	1460	2.78	40	40	0.00
Sulfate (unfiltered)	434	456	4.94	27	26.5	1.87	NA	NA	0.00	NA	NA	0.00	NA	NA	0.00	NA	NA	0.00

Notes:
ACZ = ACZ Laboratories, Inc.
mg/L = milligrams per liter
NA = Not Analyzed

APPENDIX B

**FOURTH QUARTER 2007
DATA VERIFICATION REPORT FOR GROUNDWATER SAMPLES
COLLECTED FOR EXTENDED PARAMETERS
BY HYDRO GEO CHEM, INC.**

APPENDIX B

FOURTH QUARTER 2007

DATA VERIFICATION REPORT FOR GROUNDWATER SAMPLES

COLLECTED FOR EXTENDED PARAMETERS BY

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1. INTRODUCTION

This report summarizes the data verification review of groundwater samples collected and analyzed for extended parameters¹ from six wells (MO-2007-3B, -4A, -4B, -5B, -6A and -6B) during the fourth quarter 2007 (Q4-2007). Groundwater samples from these six wells were collected by Hydro Geo Chem, Inc. (HGC) pursuant to Mitigation Order on Consent Docket No. P-50-06. Analytical results for groundwater samples collected from these wells were provided to HGC by the analytical laboratory, ACZ Laboratories Inc (ACZ), for preparation of the Q4-2007 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 E of HGC, 2006) for field sampling, chain-of-custody (COC) documentation, laboratory analysis, and reporting. This report does not review field sampling or sample handling for samples collected by HGC from these six wells since this information is evaluated in Appendix A of the main text. Laboratory QA/QC data for water quality samples submitted for wells MO-2007-3B, -4A, -4B, -5B, -6A and -6B and analyzed for extended parameters are evaluated according to the data quality indicators (DQIs) given in the QAPP.

Appendix C of the main text of this report contains laboratory reports for samples reviewed as part of this data verification report including COC forms, laboratory correspondence, QC summaries, data qualifiers, and any case narratives. The analytical results

¹ Extended parameters consist of the following: calcium, magnesium, sodium, potassium, alkalinity, total dissolved solids, chloride, nitrate, and nitrite.

for samples collected as part of this data verification report pertain to six samples collected by HGC and are contained in six reports having the following ACZ Project numbers.

ACZ Project ID	Well Reported
<i>Number of wells reviewed as part of this report: <u>6</u></i>	
L64942	MO-2007-3B
L65562	MO-2007-4A
L65645	MO-2007-4B
L65680	MO-2007-5B
L65451	MO-2007-6A
L65477	MO-2007-6B

Note:

Samples collected were both filtered and unfiltered unless noted, and all filtered samples were collected using a 0.45-micron filter.

The results of the internal QA/QC tests performed by ACZ are presented with the laboratory reports included in Appendix C. Based on the results of surrogate spike recoveries, matrix spike/recovery and matrix spike duplicate tests, ACZ did not advise HGC of any modifications that should be made regarding the usability and data validation status of the laboratory test results.

2. LABORATORY QUALITY CONTROL

As specified in the QAPP, laboratory QC was maintained for all analysis 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.

2.1 Licensure

ACZ is licensed with the Arizona Department of Health Services (license number AZ0102) and is accredited in accordance with the National Environmental Laboratory Accreditation Conference.

2.2 Analytical Methods

All analyses performed used the following U.S. Environmental Protection Agency (EPA) approved analytical methods that meet the requirements stated in Section 5.3 of the QAPP regarding target methods and target MDLs.

- EPA 300.0 [Ion-Chromatography (IC)]: sulfate, chloride, fluoride
- EPA 200.7 [Inductively Coupled Plasma (ICP)]: calcium, magnesium, potassium, sodium
- EPA 353.2 [Automated Cadmium Reduction (ACR)]: nitrate/nitrite
- EPA SM2320B (Titration): alkalinity
- EPA 160.1 (Gravimetric): total dissolved solids

Two of these methods, IC (EPA 300.0) and ICP (EPA 200.7), involve direct injection of the sample into the analytical instrument, which does not require the analysis of preparation blanks. The other methods listed are classical wet chemistry techniques that require the use of preparation blanks under the ACZ quality assurance plan and the QAPP.

2.3 Method Detection Limits (MDLs) and Practical Quantification Limits (PQLs)

The MDLs and PQLs of the analytical methods used by ACZ are shown in the following table. The MDLs for analyses of samples were equal to or less than the target MDLs identified in the QAPP.

Parameter	MDL (mg/L)	PQL (mg/L)	Target MDL ¹ (mg/L)
Sulfate	0.5	3	10
Calcium	0.2	1	0.2
Magnesium	0.2	1	0.2
Potassium	0.3	2	0.3
Sodium	0.3	2	0.3
Alkalinity	2	20	2
Chloride	0.5	3	1
Fluoride	0.1	0.5	0.1
Nitrate/Nitrite	0.02	0.1	0.02
Total Dissolved Solids	10	20	10

Notes:

¹ Target MDL from Table E.2 of QAPP

mg/L = milligrams per liter

2.4 Timeliness

Holding times were derived from EPA methods utilized and were calculated beginning from the time of sample collection. The majority of samples submitted to the laboratory were analyzed within their recommended method-specific holding times except for nitrate/nitrite as N and nitrite analyses in the following: One sample collected on September 10, 2007 (FGW-MO-2007-3B) was qualified with an “HC” flag, referring to an initial analysis within the holding time and reanalysis past the holding time, which was required due to a QC failure during the initial analysis. Samples collected on October 2, 2007 (MO-2007-6AF and MO-2007-DUPF) were qualified with an “HE” flag, indicating analysis performed past the holding time because sample was received with less than half the holding time remaining. One sample collected on October 12, 2007 (MO-2007-5BF) was qualified with an “H1” flag, indicating that the sample analysis was performed past the holding time. The holding time for both nitrate/nitrite as N and nitrite is 48 hours from collection to analysis. No data were rejected on the basis of the holding time exceedances and were accepted as usable.

2.5 Quality Control Measurements

The following QC samples were prepared and analyzed:

- Preparation blanks, calibration blanks, and calibration verification standards
- Analytical spikes and analytical spike duplicates
- Laboratory control samples
- Laboratory duplicate samples
- Field blank samples

2.5.1 Preparation Blanks, Calibration Blanks, and Calibration Verification Standards

Preparation blanks were run with each group of samples submitted for alkalinity and TDS analyses. All preparation blanks were prepared from analyte-free water and treated as routine samples. Analytical results of all of the preparation blanks showed that no target analytes were detected at the indicated MDL.

Results from the analyses of the initial calibration blanks and initial calibration verification standards conducted by IC (EPA 300.0), ICP (EPA 200.7), and ACR (EPA 353.2) methods 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 that were analyzed showed percent recoveries that were within the acceptance criteria specified by the ACZ QA plan and the QAPP.

2.5.2 Analytical Spikes and Analytical Spike Duplicates

Analytical spike and spike duplicate samples were analyzed for the following methods: IC (EPA 300.0), ICP (EPA 200.7), and ACR (EPA 353.2). Spike recoveries for most analytes were within the range of acceptability based on the acceptance criteria set by ACZ. In one instance the analytical spike recovery was low and was qualified with an “M2” flag. However, the method control sample recovery was acceptable and the low matrix spike recovery was not considered to affect the overall accuracy of the dataset.

2.5.3 Laboratory Control Samples

Laboratory control samples were run for each group of samples submitted for alkalinity and total dissolved solids. Recoveries for all laboratory control samples were within the acceptance criteria specified by ACZ.

2.5.4 Laboratory Duplicate Samples

Analyses of laboratory duplicate samples were also reviewed as part of this quality data verification report. Field duplicate samples are discussed in Section 5.1. The RPDs for most laboratory duplicate samples were within 20 percent, which is the tolerance range set by the laboratory. In many instances, the data were qualified with an “RA” flag indicating that the RPD was not used for data validation because the sample concentration was less than ten times the MDL, which is too low for accurate evaluation according to ACZ. In all but four of these cases, the data was qualified with an “RA” flag, but the RPD was within the acceptance criteria set forth in the QAPP. In all cases, where the RPD could be calculated, the results met QA criteria and demonstrate an appropriate level of precision in laboratory analysis of these samples.

2.5.5 Field Blank Samples

Field blanks for the analysis of the extended parameters analyzed were not submitted. Field blanks were submitted for the analysis of sulfate and are discussed in Section 4.5.5 of Appendix A in the main text.

3. 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 Q4-2007 groundwater sampling and analysis conducted by PDSI.

3.1 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 the duplicates for each parameter analyzed among the following groups of duplicate samples.

- Laboratory duplicate Samples
- Field duplicate samples

As discussed in section 2.5.4 there were no exceedances of RPD QA criteria for any laboratory duplicates, and the DQI for precision is deemed to be met.

3.2 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.

3.3 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 2.5.1 and 2.5.2 respectively, there were no significant exceedances of the recovery QA criteria for any of the calibration standards, analytical spikes, or laboratory control standards. Based on this information, the overall accuracy of the data is judged sufficient for the purpose of aquifer characterization.

3.4 Representativeness

All samples were taken from locations specified in the Work Plan (HGC, 2006) using sampling procedures specified in the QAPP. Therefore, the samples are judged to provide a good representation of groundwater quality at the 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.

3.5 Comparability

All samples were collected using standardized procedures (HGC, 2006 and PDSI, 2005) and were analyzed by ACZ using standardized methods. Insofar as standardized sample collection and analytical methods are adhered to, the sample results should be comparable.

3.6 Completeness

All samples collected by PDSI and HGC were subsequently analyzed and reported by ACZ Laboratories. All samples collected by PDSI and analyzed by ACZ 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.

3.7 Sensitivity

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

4. REFERENCES

Hydro Geo Chem, Inc (HGC). 2006. Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Phelps Dodge Sierrita Tailing Impoundment, Pima County, Arizona. August 11, 2006, revised October 31, 2006.

Phelps Dodge Sierrita, Inc. (PDSI). 2005. Quality Assurance/Quality Control Plan for Water Monitoring, Phelps Dodge Sierrita, Inc. June 2005.

APPENDIX C

ANALYTICAL DATA REPORTS FROM ACZ LABORATORIES, INC.

September 27, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Bill Dorris, Jim Norris, Dan Simpson

Project ID: OJ03Z5

ACZ Project ID: L64942

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 11, 2007. This project has been assigned to ACZ's project number, L64942. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L64942. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after October 27, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: FGW-MO-2007-3B

ACZ Sample ID: **L64942-01**

Date Sampled: 09/10/07 14:26

Date Received: 09/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	28.7			mS/cm			09/10/07 14:26	ma
pH (Field)	Field Measurement	7.5			units			09/10/07 14:26	ma
Temperature (Field)	Field Measurement	373.0			C			09/10/07 14:26	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	31.5			mg/L	0.2	1	09/13/07 18:06	msh
Magnesium, dissolved	M200.7 ICP	2.8			mg/L	0.2	1	09/13/07 18:06	msh
Potassium, dissolved	M200.7 ICP	3.1			mg/L	0.3	2	09/13/07 18:06	msh
Sodium, dissolved	M200.7 ICP	44.1			mg/L	0.3	2	09/13/07 18:06	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		134			mg/L	2	20	09/19/07 0:00	lcp
Carbonate as CaCO ₃			U		mg/L	2	20	09/19/07 0:00	lcp
Hydroxide as CaCO ₃			U		mg/L	2	20	09/19/07 0:00	lcp
Total Alkalinity		134		*	mg/L	2	20	09/19/07 0:00	lcp
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.3			%			09/27/07 0:00	calc
Sum of Anions		3.7			meq/L	0.1	0.5	09/27/07 0:00	calc
Sum of Cations		3.8			meq/L	0.1	0.5	09/27/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	7			mg/L	1	5	09/14/07 11:05	ccp
Fluoride	M300.0 - Ion Chromatography	0.5		*	mg/L	0.1	0.5	09/13/07 20:30	ccp
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.33			mg/L	0.02	0.1	09/27/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.33			mg/L	0.02	0.1	09/11/07 20:09	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	09/19/07 20:29	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	250			mg/L	10	20	09/14/07 15:06	ear
Sulfate	300.0 - Ion Chromatography	38		*	mg/L	1	5	09/14/07 11:05	ccp
TDS (calculated)	Calculation	209			mg/L	10	50	09/27/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.20						09/27/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-MO-2007-3B

ACZ Sample ID: **L64942-02**

Date Sampled: 09/10/07 14:26

Date Received: 09/11/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	38		*	mg/L	1	5	09/14/07 11:23	ccp

Arizona license number: AZ0102

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64942**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232583													
WG232583PBW1	PBW	09/19/07 10:18				U	mg/L		-20	20			
WG232583LCSW2	LCSW	09/19/07 10:30	WC070917-1	820		829.6	mg/L	101.2	90	110			
WG232583PBW2	PBW	09/19/07 13:42				U	mg/L		-20	20			
WG232583LCSW5	LCSW	09/19/07 13:55	WC070917-1	820		838.2	mg/L	102.2	90	110			
L64945-01DUP	DUP	09/19/07 15:21			451	452.8	mg/L				0.4	20	
WG232583PBW3	PBW	09/19/07 16:51				U	mg/L		-20	20			
WG232583LCSW8	LCSW	09/19/07 17:04	WC070917-1	820		840.6	mg/L	102.5	90	110			
WG232583PBW4	PBW	09/19/07 20:24				U	mg/L		-20	20			
WG232583LCSW11	LCSW	09/19/07 20:36	WC070917-1	820		842.6	mg/L	102.8	90	110			
WG232583LCSW14	LCSW	09/19/07 23:19	WC070917-1	820		846.6	mg/L	103.2	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232231													
WG232231ICV	ICV	09/13/07 17:01	II070911-1	100		97.12	mg/L	97.1	95	105			
WG232231ICB	ICB	09/13/07 17:05				U	mg/L		-0.6	0.6			
WG232231LFB	LFB	09/13/07 17:20	II070829-11	67.97008		69.37	mg/L	102.1	85	115			
L64933-02AS	AS	09/13/07 17:32	II070829-11	67.97008	80.4	149.47	mg/L	101.6	85	115			
L64933-02ASD	ASD	09/13/07 17:35	II070829-11	67.97008	80.4	149.24	mg/L	101.3	85	115	0.15	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232234													
WG232234ICV	ICV	09/13/07 15:59	WI070910-1	20		19.89	mg/L	99.5	90	110			
WG232234ICB	ICB	09/13/07 16:17				U	mg/L		-1.5	1.5			
WG232234LFB	LFB	09/13/07 16:35	WI070727-1	30		29.34	mg/L	97.8	90	110			
L64532-01DUP	DUP	09/13/07 17:11			69	70.9	mg/L				2.7	20	
L64532-02AS	AS	09/13/07 17:47	WI070727-1	30	8.4	36.91	mg/L	95	90	110			

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232234													
WG232234ICV	ICV	09/13/07 15:59	WI070910-1	3.984		4.19	mg/L	105.2	90	110			
WG232234ICB	ICB	09/13/07 16:17				U	mg/L		-0.3	0.3			
WG232234LFB	LFB	09/13/07 16:35	WI070727-1	1.5		1.54	mg/L	102.7	90	110			
L64532-01DUP	DUP	09/13/07 17:11			44.6	45.71	mg/L				2.5	20	
L64532-02AS	AS	09/13/07 17:47	WI070727-1	1.5	4.3	5.51	mg/L	80.7	90	110			M2

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232231													
WG232231ICV	ICV	09/13/07 17:01	II070911-1	100		98.04	mg/L	98	95	105			
WG232231ICB	ICB	09/13/07 17:05				U	mg/L		-0.6	0.6			
WG232231LFB	LFB	09/13/07 17:20	II070829-11	54.96908		55.54	mg/L	101	85	115			
L64933-02AS	AS	09/13/07 17:32	II070829-11	54.96908	7.1	64.3	mg/L	104.1	85	115			
L64933-02ASD	ASD	09/13/07 17:35	II070829-11	54.96908	7.1	64.05	mg/L	103.6	85	115	0.39	20	

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64942**

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232070													
WG232070ICV	ICV	09/11/07 18:54	WI070911-1	2.416		2.428	mg/L	100.5	90	110			
WG232070ICB	ICB	09/11/07 18:55				U	mg/L		-0.06	0.06			
WG232070LFB	LFB	09/11/07 19:00	WI070911-4	2		2.052	mg/L	102.6	90	110			
L64923-01AS	AS	09/11/07 19:21	WI070911-4	2	.64	2.564	mg/L	96.2	90	110			
L64924-01DUP	DUP	09/11/07 19:24			.67	.707	mg/L				5.4	20	

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232665													
WG232665ICV	ICV	09/19/07 20:15	WI070911-1	.609		.613	mg/L	100.7	90	110			
WG232665ICB	ICB	09/19/07 20:16				U	mg/L		-0.03	0.03			
WG232665LFB1	LFB	09/19/07 20:22	WI070911-4	1		1.007	mg/L	100.7	90	110			
L64923-01AS	AS	09/19/07 20:24	WI070911-4	1	U	.959	mg/L	95.9	90	110			
L64924-01DUP	DUP	09/19/07 20:27			U	U	mg/L				0	20	RA
WG232665LFB2	LFB	09/19/07 21:00	WI070911-4	1		1.008	mg/L	100.8	90	110			

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232231													
WG232231ICV	ICV	09/13/07 17:01	II070911-1	20		19.91	mg/L	99.6	95	105			
WG232231ICB	ICB	09/13/07 17:05				U	mg/L		-0.9	0.9			
WG232231LFB	LFB	09/13/07 17:20	II070829-11	99.76186		102.39	mg/L	102.6	85	115			
L64933-02AS	AS	09/13/07 17:32	II070829-11	99.76186	1.5	109.32	mg/L	108.1	85	115			
L64933-02ASD	ASD	09/13/07 17:35	II070829-11	99.76186	1.5	109.12	mg/L	107.9	85	115	0.18	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232320													
WG232320PBW	PBW	09/14/07 14:55				10	mg/L		-20	20			
WG232320LCSW	LCSW	09/14/07 14:57	PCN27694	261		288	mg/L	110.3	80	120			
L64959-01DUP	DUP	09/14/07 15:23			3780	3774	mg/L				0.2	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232231													
WG232231ICV	ICV	09/13/07 17:01	II070911-1	100		99.91	mg/L	99.9	95	105			
WG232231ICB	ICB	09/13/07 17:05				U	mg/L		-0.9	0.9			
WG232231LFB	LFB	09/13/07 17:20	II070829-11	98.21624		100.88	mg/L	102.7	85	115			
L64933-02AS	AS	09/13/07 17:32	II070829-11	98.21624	1.7	106.91	mg/L	107.1	85	115			
L64933-02ASD	ASD	09/13/07 17:35	II070829-11	98.21624	1.7	106.52	mg/L	106.7	85	115	0.37	20	

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L64942**

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232234													
WG232234ICV	ICV	09/13/07 15:59	WI070910-1	50.1		52.62	mg/L	105	90	110			
WG232234ICB	ICB	09/13/07 16:17				U	mg/L		-1.5	1.5			
WG232234LFB	LFB	09/13/07 16:35	WI070727-1	30		30.67	mg/L	102.2	90	110			
L64532-01DUP	DUP	09/13/07 17:11			U	U	mg/L				0	20	RA
L64532-02AS	AS	09/14/07 11:59	WI070727-1	300	494	798.9	mg/L	101.6	90	110			

Phelps Dodge SierritaACZ Project ID: **L64942**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64942-01	WG232234	Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG232665	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG232234	Sulfate	300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG232583	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L64942-02	WG232234	Sulfate	300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L64942**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64942
Date Received: 9/11/2007
Received By:
Date Printed: 9/11/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?			
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
NA4410		2.2	16

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64942
Date Received: 9/11/2007
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L64942-01	FGW-MO-2007-3B		Y									<input type="checkbox"/>
L64942-02	UGW-MO-2007-3B											<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

October 19, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Bill Dorris, Jim Norris, Dan Simpson

Project ID: OJ03Z5

ACZ Project ID: L65451

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 04, 2007. This project has been assigned to ACZ's project number, L65451. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65451. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 19, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CW-6F

ACZ Sample ID: **L65451-01**

Date Sampled: 10/02/07 11:26

Date Received: 10/04/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	438			mS/cm			10/02/07 11:26	ma
pH (Field)	Field Measurement	7.6			units			10/02/07 11:26	ma
Temperature (Field)	Field Measurement	27.5			C			10/02/07 11:26	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	54.2			mg/L	0.5	3	10/11/07 18:14	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CW-6

ACZ Sample ID: **L65451-02**

Date Sampled: 10/02/07 11:26

Date Received: 10/04/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	438			mS/cm			10/02/07 11:26	ma
pH (Field)	Field Measurement	7.6			units			10/02/07 11:26	ma
Temperature (Field)	Field Measurement	27.5			C			10/02/07 11:26	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	54.0		*	mg/L	0.5	3	10/11/07 18:32	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CW-7F

ACZ Sample ID: **L65451-03**

Date Sampled: 10/02/07 11:55

Date Received: 10/04/07

Sample Matrix: *Ground Water*

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	1932			mS/cm			10/02/07 12:55	ma
pH (Field)	Field Measurement	7.4			units			10/02/07 12:55	ma
Temperature (Field)	Field Measurement	27.8			C			10/02/07 12:55	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	940			mg/L	10	50	10/12/07 10:38	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CW-7

ACZ Sample ID: **L65451-04**

Date Sampled: 10/02/07 11:55

Date Received: 10/04/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	1932			mS/cm			10/02/07 12:55	ma
pH (Field)	Field Measurement	7.4			units			10/02/07 12:55	ma
Temperature (Field)	Field Measurement	27.8			C			10/02/07 12:55	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	940		*	mg/L	10	50	10/12/07 10:56	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CW-8F

ACZ Sample ID: **L65451-05**

Date Sampled: 10/02/07 13:40

Date Received: 10/04/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	1267			mS/cm			10/02/07 13:40	ma
pH (Field)	Field Measurement	7.7			units			10/02/07 13:40	ma
Temperature (Field)	Field Measurement	30.0			C			10/02/07 13:40	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	463			mg/L	5	30	10/12/07 11:14	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CW-8

ACZ Sample ID: **L65451-06**

Date Sampled: 10/02/07 13:40

Date Received: 10/04/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	1267			mS/cm			10/02/07 13:40	ma
pH (Field)	Field Measurement	7.7			units			10/02/07 13:40	ma
Temperature (Field)	Field Measurement	30.0			C			10/02/07 13:40	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	434		*	mg/L	5	30	10/12/07 11:32	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CW-9F

ACZ Sample ID: **L65451-07**

Date Sampled: 10/02/07 10:57

Date Received: 10/04/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	405			mS/cm			10/02/07 10:57	ma
pH (Field)	Field Measurement	7.6			units			10/02/07 10:57	ma
Temperature (Field)	Field Measurement	27.7			C			10/02/07 10:57	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	46.4			mg/L	0.5	3	10/11/07 20:39	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CW-9

ACZ Sample ID: **L65451-08**

Date Sampled: 10/02/07 10:57

Date Received: 10/04/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	405			mS/cm			10/02/07 10:57	ma
pH (Field)	Field Measurement	7.6			units			10/02/07 10:57	ma
Temperature (Field)	Field Measurement	27.7			C			10/02/07 10:57	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	46.3		*	mg/L	0.5	3	10/11/07 20:57	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CW-10F

ACZ Sample ID: **L65451-09**

Date Sampled: 10/02/07 09:25

Date Received: 10/04/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	381			mS/cm			10/02/07 9:25	ma
pH (Field)	Field Measurement	7.6			units			10/02/07 9:25	ma
Temperature (Field)	Field Measurement	30.3			C			10/02/07 9:25	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	47.7			mg/L	0.5	3	10/11/07 21:33	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CW-10

ACZ Sample ID: **L65451-10**

Date Sampled: 10/02/07 09:25

Date Received: 10/04/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	381			mS/cm			10/02/07 9:25	ma
pH (Field)	Field Measurement	7.6			units			10/02/07 9:25	ma
Temperature (Field)	Field Measurement	30.3			C			10/02/07 9:25	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	47.4		*	mg/L	0.5	3	10/11/07 22:09	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: DUP100207F

ACZ Sample ID: **L65451-11**

Date Sampled: 10/02/07 13:43

Date Received: 10/04/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	466			mg/L	5	30	10/12/07 11:50	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: DUP100207

ACZ Sample ID: **L65451-12**

Date Sampled: 10/02/07 13:43

Date Received: 10/04/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	456		*	mg/L	5	30	10/12/07 12:08	jlf

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L65451**

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG234134													
WG234134ICV	ICV	06/11/07 13:52	WI070910-1	50.1		51.51	mg/L	102.8	90	110			
WG234134ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG234134LFB1	LFB	10/11/07 12:30	WI070727-1	30		32.06	mg/L	106.9	90	110			
L65089-12DUP	DUP	10/11/07 17:20			129	129	mg/L				0	20	
L65089-16AS	AS	10/11/07 17:56	WI070727-1	30	U	29.69	mg/L	99	90	110			
WG234134LFB2	LFB	10/11/07 21:15	WI070727-1	30		30.14	mg/L	100.5	90	110			
L65451-09DUP	DUP	10/11/07 21:51			47.7	47.66	mg/L				0.1	20	
L65451-10AS	AS	10/11/07 22:27	WI070727-1	30	47.4	75.63	mg/L	94.1	90	110			

Phelps Dodge Sierrita

ACZ Project ID: **L65451**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65451-02	WG234134	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65451-04	WG234134	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65451-06	WG234134	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65451-08	WG234134	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65451-10	WG234134	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65451-12	WG234134	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L65451**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L65451
Date Received: 10/4/2007
Received By:
Date Printed: 10/5/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
1964	6	17

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L65451
Date Received: 10/4/2007
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65451-01	CW-6F									X		<input type="checkbox"/>
L65451-02	CW-6									X		<input type="checkbox"/>
L65451-03	CW-7F									X		<input type="checkbox"/>
L65451-04	CW-7									X		<input type="checkbox"/>
L65451-05	CW-8F									X		<input type="checkbox"/>
L65451-06	CW-8									X		<input type="checkbox"/>
L65451-07	CW-9F									X		<input type="checkbox"/>
L65451-08	CW-9									X		<input type="checkbox"/>
L65451-09	CW-10F									X		<input type="checkbox"/>
L65451-10	CW-10									X		<input type="checkbox"/>
L65451-11	DUP100207F									X		<input type="checkbox"/>
L65451-12	DUP100207									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

Bill Dorris
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

October 25, 2007

Cc: Jim Norris

Project ID: OJ03DL
ACZ Project ID: L65468 – SULFATE ONLY

Bill Dorris:

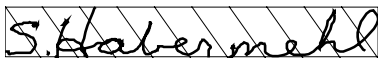
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 05, 2007. This project was assigned to ACZ's project number, L65468. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65468. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute. Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all the requirements of NELAC.

This report should be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-12

ACZ Sample ID: **L65468-01**

Date Sampled: 10/02/07 13:00

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1180		*	mg/L	10	50	10/08/07 15:43	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-26A

ACZ Sample ID: **L65468-02**

Date Sampled: 10/02/07 09:47

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	10	B	*	mg/L	10	50	10/08/07 15:46	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-26B

ACZ Sample ID: **L65468-03**

Date Sampled: 10/02/07 10:32

Date Received: 10/05/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1620		*	mg/L	10	50	10/08/07 15:49	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-26C

ACZ Sample ID: **L65468-04**

Date Sampled: 10/02/07 09:35

Date Received: 10/05/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	750		*	mg/L	10	50	10/08/07 15:52	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-30

ACZ Sample ID: **L65468-05**

Date Sampled: 10/02/07 12:34

Date Received: 10/05/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1830		*	mg/L	10	50	10/08/07 15:54	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-20

ACZ Sample ID: **L65468-06**

Date Sampled: 10/04/07 11:20

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1600		*	mg/L	100	500	10/08/07 15:57	ear

Arizona license number: AZ0102

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65468**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233788													
WG233788PBW1	PBW	10/05/07 17:34				U	mg/L		-20	20			
WG233788LCSW2	LCSW	10/05/07 17:47	WC070928-1	820		834	mg/L	101.7	90	110			
WG233788PBW2	PBW	10/05/07 20:17				U	mg/L		-20	20			
WG233788LCSW5	LCSW	10/05/07 20:28	WC070928-1	820		841.5	mg/L	102.6	90	110			
WG233788PBW3	PBW	10/05/07 23:47				U	mg/L		-20	20			
WG233788LCSW8	LCSW	10/05/07 23:59	WC070928-1	820		830.9	mg/L	101.3	90	110			
WG233788PBW3	PBW	10/06/07 9:12				8.5	mg/L		-20	20			
WG233788LCSW8	LCSW	10/06/07 9:24	WC070928-1	820		833	mg/L	101.6	90	110			
WG233788PBW4	PBW	10/06/07 12:50				2.7	mg/L		-20	20			
WG233788LCSW11	LCSW	10/06/07 13:02	WC070928-1	820		840.1	mg/L	102.5	90	110			
L65469-01DUP	DUP	10/06/07 14:29			113	109.2	mg/L				3.4	20	
WG233788LCSW14	LCSW	10/06/07 15:59	WC070928-1	820		842.5	mg/L	102.7	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	2		1.98	mg/L	99	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.09	0.09			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	1		1.017	mg/L	101.7	85	115			
L65325-04AS	AS	10/14/07 8:39	II071012-2	1	U	.977	mg/L	97.7	85	115			
L65325-04ASD	ASD	10/14/07 8:43	II071012-2	1	U	.991	mg/L	99.1	85	115	1.42	20	
L65469-07AS	AS	10/14/07 10:11	II071012-2	1	U	1.136	mg/L	113.6	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	1	U	1.182	mg/L	118.2	85	115	3.97	20	MA

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.02006		.01827	mg/L	91.1	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0012	0.0012			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.01		.00914	mg/L	91.4	85	115			
L65465-05AS	AS	10/10/07 1:55	MS071004-4	.01	U	.00856	mg/L	85.6	70	130			
L65465-05ASD	ASD	10/10/07 2:00	MS071004-4	.01	U	.0087	mg/L	87	70	130	1.62	20	
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.02	U	.01874	mg/L	93.7	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.02	U	.01913	mg/L	95.7	70	130	2.06	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.05		.05294	mg/L	105.9	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0015	0.0015			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.05		.05197	mg/L	103.9	85	115			
L65465-05AS	AS	10/10/07 1:55	MS071004-4	.05	U	.05388	mg/L	107.8	70	130			
L65465-05ASD	ASD	10/10/07 2:00	MS071004-4	.05	U	.05314	mg/L	106.3	70	130	1.38	20	
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.1	.003	.1223	mg/L	119.3	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.1	.003	.1235	mg/L	120.5	70	130	0.98	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65468**

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234330													
WG234330ICV	ICV	10/18/07 1:15	II071009-7	2		2.0921	mg/L	104.6	95	105			
WG234330ICB	ICB	10/18/07 1:19				U	mg/L		-0.009	0.009			
WG234330LFB	LFB	10/18/07 1:36	II071012-2	.5		.5287	mg/L	105.7	85	115			
L65325-04AS	AS	10/18/07 1:56	II071012-2	.5	.005	.5497	mg/L	108.9	85	115			
L65325-04ASD	ASD	10/18/07 2:00	II071012-2	.5	.005	.5494	mg/L	108.9	85	115	0.05	20	
L65469-07AS	AS	10/18/07 3:27	II071012-2	.5	.011	.5668	mg/L	111.2	85	115			
L65469-07ASD	ASD	10/18/07 3:31	II071012-2	.5	.011	.5585	mg/L	109.5	85	115	1.48	20	

WG234690

WG234690ICV	ICV	10/20/07 23:34	II071009-7	2		1.9821	mg/L	99.1	95	105			
WG234690ICB	ICB	10/20/07 23:38				U	mg/L		-0.009	0.009			
WG234690LFB	LFB	10/20/07 23:54	II071012-2	.5		.4912	mg/L	98.2	85	115			
L65468-01AS	AS	10/21/07 0:38	II071012-2	1	.047	1.0068	mg/L	96	85	115			
L65468-01ASD	ASD	10/21/07 0:41	II071012-2	1	.047	1.0258	mg/L	97.9	85	115	1.87	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.05		.05048	mg/L	101	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0003	0.0003			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.05		.04968	mg/L	99.4	85	115			
L65465-05AS	AS	10/10/07 1:55	MS071004-4	.05	U	.05104	mg/L	102.1	70	130			
L65465-05ASD	ASD	10/10/07 2:00	MS071004-4	.05	U	.05011	mg/L	100.2	70	130	1.84	20	
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.1	U	.10514	mg/L	105.1	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.1	U	.10674	mg/L	106.7	70	130	1.51	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.05		.05197	mg/L	103.9	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0003	0.0003			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.05		.04969	mg/L	99.4	85	115			
L65465-05AS	AS	10/10/07 1:55	MS071004-4	.05	U	.0509	mg/L	101.8	70	130			
L65465-05ASD	ASD	10/10/07 2:00	MS071004-4	.05	U	.05021	mg/L	100.4	70	130	1.36	20	
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.1	U	.09786	mg/L	97.9	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.1	U	.09962	mg/L	99.6	70	130	1.78	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	100		97.97	mg/L	98	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.6	0.6			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	67.97008		69.01	mg/L	101.5	85	115			
L65325-04AS	AS	10/14/07 8:39	II071012-2	67.97008	5.8	73.85	mg/L	100.1	85	115			
L65325-04ASD	ASD	10/14/07 8:43	II071012-2	67.97008	5.8	72.69	mg/L	98.4	85	115	1.58	20	
L65469-07AS	AS	10/14/07 10:11	II071012-2	67.97008	6.2	81.13	mg/L	110.2	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	67.97008	6.2	82.86	mg/L	112.8	85	115	2.11	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65468**

Chloride 325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234080													
WG234080ICB	ICB	10/10/07 10:07				U	mg/L		-3	3			
WG234080ICV	ICV	10/10/07 10:07	WI070314-1	55		57.5	mg/L	104.5	90	110			
WG234080LFB1	LFB	10/10/07 17:18	WI070712-1	30		33	mg/L	110	90	110			
L65366-01AS	AS	10/10/07 17:18	WI070712-1	30	61	87.4	mg/L	88	90	110			M2
L65366-02DUP	DUP	10/10/07 17:18			61	60.8	mg/L				0.3	20	
WG234080LFB2	LFB	10/10/07 17:27	WI070712-1	30		32.8	mg/L	109.3	90	110			
WG234080LFB3	LFB	10/10/07 17:37	WI070712-1	30		33	mg/L	110	90	110			
L65468-06AS	AS	10/10/07 17:49	10XCL	30	120	156	mg/L	120	90	110			M1
L65469-01DUP	DUP	10/10/07 17:49			110	112	mg/L				1.8	20	

Chromium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	2		1.901	mg/L	95.1	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.03	0.03			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	.5		.494	mg/L	98.8	85	115			
L65325-04AS	AS	10/14/07 8:39	II071012-2	.5	U	.489	mg/L	97.8	85	115			
L65325-04ASD	ASD	10/14/07 8:43	II071012-2	.5	U	.479	mg/L	95.8	85	115	2.07	20	
L65469-07AS	AS	10/14/07 10:11	II071012-2	.5	U	.541	mg/L	108.2	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	.5	U	.552	mg/L	110.4	85	115	2.01	20	

Cobalt, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234330													
WG234330ICV	ICV	10/18/07 1:15	II071009-7	2		1.993	mg/L	99.7	95	105			
WG234330ICB	ICB	10/18/07 1:19				U	mg/L		-0.03	0.03			
WG234330LFB	LFB	10/18/07 1:36	II071012-2	.5		.524	mg/L	104.8	85	115			
L65325-04AS	AS	10/18/07 1:56	II071012-2	.5	U	.542	mg/L	108.4	85	115			
L65325-04ASD	ASD	10/18/07 2:00	II071012-2	.5	U	.541	mg/L	108.2	85	115	0.18	20	
L65469-07AS	AS	10/18/07 3:27	II071012-2	.5	U	.549	mg/L	109.8	85	115			
L65469-07ASD	ASD	10/18/07 3:31	II071012-2	.5	U	.546	mg/L	109.2	85	115	0.55	20	
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		1.915	mg/L	95.8	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.03	0.03			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	.5		.5	mg/L	100	85	115			
L65502-05AS	AS	10/19/07 20:53	II071012-2	1	U	.998	mg/L	99.8	85	115			
L65502-05ASD	ASD	10/19/07 21:05	II071012-2	1	U	.993	mg/L	99.3	85	115	0.5	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65468**

Conductivity @25C 120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233788													
WG233788LCSW1	LCSW	10/05/07 17:36	PCN28067	1408.8		1495	µmhos/crr	106.1	90	110			
WG233788LCSW4	LCSW	10/05/07 20:18	PCN28067	1408.8		1507	µmhos/crr	107	90	110			
WG233788LCSW7	LCSW	10/05/07 23:49	PCN28067	1408.8		1495	µmhos/crr	106.1	90	110			
WG233788LCSW7	LCSW	10/06/07 9:13	PCN28067	1408.8		1487	µmhos/crr	105.6	90	110			
WG233788LCSW10	LCSW	10/06/07 12:51	PCN28067	1408.8		1479	µmhos/crr	105	90	110			
L65469-01DUP	DUP	10/06/07 14:29			3030	3020	µmhos/crr				0.3	20	
WG233788LCSW13	LCSW	10/06/07 15:50	PCN28067	1408.8		1471	µmhos/crr	104.4	90	110			

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	2		1.889	mg/L	94.5	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.03	0.03			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	.5		.488	mg/L	97.6	85	115			
L65325-04AS	AS	10/14/07 8:39	II071012-2	.5	U	.48	mg/L	96	85	115			
L65325-04ASD	ASD	10/14/07 8:43	II071012-2	.5	U	.472	mg/L	94.4	85	115	1.68	20	
L65469-07AS	AS	10/14/07 10:11	II071012-2	.5	U	.555	mg/L	111	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	.5	U	.559	mg/L	111.8	85	115	0.72	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234151													
WG234151ICV	ICV	10/11/07 15:43	WI071011-4	.3		.299	mg/L	99.7	90	110			
WG234151ICB	ICB	10/11/07 15:44				U	mg/L		-0.009	0.009			
WG234156													
WG234156ICV	ICV	10/11/07 16:25	WI071011-4	.3		.3206	mg/L	106.9	90	110			
WG234156ICB	ICB	10/11/07 16:26				U	mg/L		-0.015	0.015			
WG234013LRB	LRB	10/11/07 16:27				U	mg/L		-0.015	0.015			
WG234013LFB	LFB	10/11/07 16:28	WI071008-2	.2		.2143	mg/L	107.2	90	110			
L65465-02DUP	DUP	10/11/07 16:29			U	U	mg/L				0	20	RA
L65465-03LFM	LFM	10/11/07 16:31	WI071008-2	.2	U	.2227	mg/L	111.4	90	110			M1
L65468-05DUP	DUP	10/11/07 16:41			U	U	mg/L				0	20	RA
L65468-06LFM	LFM	10/11/07 16:43	WI071008-2	.2	U	.2336	mg/L	116.8	90	110			M1

Phelps Dodge Sierrita

ACZ Project ID: **L65468**

Project ID: OJ03DL

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233860													
WG233860ICV	ICV	10/08/07 11:23	WC070825-1	1.992		2.07	mg/L	103.9	90	110			
WG233860ICB	ICB	10/08/07 11:30				U	mg/L		-0.3	0.3			
WG233860LFB1	LFB	10/08/07 11:38	WC070730-1	5		4.9	mg/L	98	90	110			
WG233860LFB2	LFB	10/08/07 14:42	WC070730-1	5		4.81	mg/L	96.2	90	110			
L65478-02AS	AS	10/08/07 17:32	WC070730-1	5	.6	5.62	mg/L	100.4	90	110			
L65478-02DUP	DUP	10/08/07 17:35			.6	.58	mg/L				3.4	20	RA

WG234027

WG234027ICV	ICV	10/10/07 10:57	WC070825-1	1.992		2.08	mg/L	104.4	90	110			
WG234027ICB	ICB	10/10/07 11:04				U	mg/L		-0.3	0.3			
WG234027LFB1	LFB	10/10/07 11:14	WC070730-1	5		4.95	mg/L	99	90	110			
L65469-06AS	AS	10/10/07 14:04	WC070730-1	5	.1	5	mg/L	98	90	110			
L65469-06DUP	DUP	10/10/07 14:11			.1	.15	mg/L				40	20	RA
WG234027LFB2	LFB	10/10/07 14:18	WC070730-1	5		4.84	mg/L	96.8	90	110			

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	2		1.938	mg/L	96.9	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.06	0.06			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	1		1.008	mg/L	100.8	85	115			
L65325-04AS	AS	10/14/07 8:39	II071012-2	1	U	.981	mg/L	98.1	85	115			
L65325-04ASD	ASD	10/14/07 8:43	II071012-2	1	U	.964	mg/L	96.4	85	115	1.75	20	
L65469-07AS	AS	10/14/07 10:11	II071012-2	1	.09	1.198	mg/L	110.8	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	1	.09	1.216	mg/L	112.6	85	115	1.49	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.05		.05347	mg/L	106.9	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0003	0.0003			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.05		.05227	mg/L	104.5	85	115			
L65465-05AS	AS	10/10/07 1:55	MS071004-4	.05	.0001	.05486	mg/L	109.5	70	130			
L65465-05ASD	ASD	10/10/07 2:00	MS071004-4	.05	.0001	.0529	mg/L	105.6	70	130	3.64	20	
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.1	.0035	.10472	mg/L	101.2	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.1	.0035	.1048	mg/L	101.3	70	130	0.08	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	100		98.98	mg/L	99	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.6	0.6			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	54.96908		55.58	mg/L	101.1	85	115			
L65325-04AS	AS	10/14/07 8:39	II071012-2	54.96908	.4	55.67	mg/L	100.5	85	115			
L65325-04ASD	ASD	10/14/07 8:43	II071012-2	54.96908	.4	54.59	mg/L	98.6	85	115	1.96	20	
L65469-07AS	AS	10/14/07 10:11	II071012-2	54.96908	.8	62	mg/L	111.3	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	54.96908	.8	63.3	mg/L	113.7	85	115	2.08	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65468**

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234330													
WG234330ICV	ICV	10/18/07 1:15	II071009-7	2		1.9707	mg/L	98.5	95	105			
WG234330ICB	ICB	10/18/07 1:19				U	mg/L		-0.015	0.015			
WG234330LFB	LFB	10/18/07 1:36	II071012-2	.5		.5468	mg/L	109.4	85	115			
L65325-04AS	AS	10/18/07 1:56	II071012-2	.5	.017	.5793	mg/L	112.5	85	115			
L65325-04ASD	ASD	10/18/07 2:00	II071012-2	.5	.017	.5822	mg/L	113	85	115	0.5	20	
L65469-07AS	AS	10/18/07 3:27	II071012-2	.5	U	.5805	mg/L	116.1	85	115			MA
L65469-07ASD	ASD	10/18/07 3:31	II071012-2	.5	U	.5735	mg/L	114.7	85	115	1.21	20	

WG234561

WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		1.9256	mg/L	96.3	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.015	0.015			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	.5		.537	mg/L	107.4	85	115			
L65502-05AS	AS	10/19/07 20:53	II071012-2	1	.48	1.523	mg/L	104.3	85	115			
L65502-05ASD	ASD	10/19/07 21:05	II071012-2	1	.48	1.534	mg/L	105.4	85	115	0.72	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233953													
WG233953ICV	ICV	10/16/07 9:55	II070927-1	.00498		.00516	mg/L	103.6	95	105			
WG233953ICB	ICB	10/16/07 9:57				U	mg/L		-0.0002	0.0002			
WG233953LRB	LRB	10/16/07 10:39				U	mg/L		-0.00044	0.00044			
WG233953LFB	LFB	10/16/07 10:42	II071002-9	.002		.00203	mg/L	101.5	85	115			
L65468-01LFM	LFM	10/16/07 11:19	II071002-9	.002	.0008	.00315	mg/L	117.5	85	115			MA
L65468-01LFMD	LFMD	10/16/07 11:21	II071002-9	.002	.0008	.00263	mg/L	91.5	85	115	17.99	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	2		1.933	mg/L	96.7	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.03	0.03			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	.5		.443	mg/L	88.6	85	115			
L65325-04AS	AS	10/14/07 8:39	II071012-2	.5	.02	.455	mg/L	87	85	115			
L65325-04ASD	ASD	10/14/07 8:43	II071012-2	.5	.02	.442	mg/L	84.4	85	115	2.9	20	MA
L65469-07AS	AS	10/14/07 10:11	II071012-2	.5	.02	.503	mg/L	96.6	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	.5	.02	.518	mg/L	99.6	85	115	2.94	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65468**

Project ID: OJ03DL

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234330													
WG234330ICV	ICV	10/18/07 1:15	II071009-7	2		1.982	mg/L	99.1	95	105			
WG234330ICB	ICB	10/18/07 1:19				U	mg/L		-0.03	0.03			
WG234330LFB	LFB	10/18/07 1:36	II071012-2	.5		.519	mg/L	103.8	85	115			
L65325-04AS	AS	10/18/07 1:56	II071012-2	.5	U	.535	mg/L	107	85	115			
L65325-04ASD	ASD	10/18/07 2:00	II071012-2	.5	U	.54	mg/L	108	85	115	0.93	20	
L65469-07AS	AS	10/18/07 3:27	II071012-2	.5	U	.545	mg/L	109	85	115			
L65469-07ASD	ASD	10/18/07 3:31	II071012-2	.5	U	.538	mg/L	107.6	85	115	1.29	20	

WG234561

WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		1.902	mg/L	95.1	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.03	0.03			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	.5		.504	mg/L	100.8	85	115			
L65502-05AS	AS	10/19/07 20:53	II071012-2	1	U	1.001	mg/L	100.1	85	115			
L65502-05ASD	ASD	10/19/07 21:05	II071012-2	1	U	.999	mg/L	99.9	85	115	0.2	20	

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234273													
WG234273ICV	ICV	10/13/07 14:44	WI070911-1	2.416		2.343	mg/L	97	90	110			
WG234273ICB	ICB	10/13/07 14:46				U	mg/L		-0.06	0.06			
WG234273LFB1	LFB	10/13/07 14:49	WI070911-4	2		1.917	mg/L	95.9	90	110			
WG234273LFB2	LFB	10/13/07 15:27	WI070911-4	2		1.957	mg/L	97.9	90	110			
L65468-06DUP	DUP	10/13/07 15:36			2.34	2.358	mg/L				0.8	20	
L65468-05AS	AS	10/13/07 15:55	WI070911-4	4	2.31	6.062	mg/L	93.8	90	110			

WG234424

WG234424ICV	ICV	10/16/07 20:41	WI070911-1	2.416		2.286	mg/L	94.6	90	110			
WG234424ICB	ICB	10/16/07 20:42				U	mg/L		-0.06	0.06			
WG234424LFB	LFB	10/16/07 20:43	WI070911-4	2		1.899	mg/L	95	90	110			
L65468-02AS	AS	10/16/07 21:04	WI070911-4	2	.99	2.987	mg/L	99.9	90	110			
L65468-03DUP	DUP	10/16/07 21:07			1.97	1.965	mg/L				0.3	20	

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233788													
WG233788LCSW3	LCSW	10/05/07 17:49	PCN27958	6		6.03	units	100.5	90	110			
WG233788LCSW6	LCSW	10/05/07 20:31	PCN27958	6		6.04	units	100.7	90	110			
WG233788LCSW9	LCSW	10/06/07 0:01	PCN27958	6		6.04	units	100.7	90	110			
WG233788LCSW9	LCSW	10/06/07 9:27	PCN27958	6		6.04	units	100.7	90	110			
WG233788LCSW12	LCSW	10/06/07 13:05	PCN27958	6		6.04	units	100.7	90	110			
L65469-01DUP	DUP	10/06/07 14:29			8.1	8.06	units				0.5	20	
WG233788LCSW15	LCSW	10/06/07 16:02	PCN27958	6		6.04	units	100.7	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65468**

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234330													
WG234330ICV	ICV	10/18/07 1:15	II071009-7	20		20.32	mg/L	101.6	95	105			
WG234330ICB	ICB	10/18/07 1:19				U	mg/L		-0.9	0.9			
WG234330LFB	LFB	10/18/07 1:36	II071012-2	99.76186		109.53	mg/L	109.8	85	115			
L65325-04AS	AS	10/18/07 1:56	II071012-2	99.76186	2	115.43	mg/L	113.7	85	115			
L65325-04ASD	ASD	10/18/07 2:00	II071012-2	99.76186	2	113.92	mg/L	112.2	85	115	1.32	20	
L65469-07AS	AS	10/18/07 3:27	II071012-2	99.76186	2.6	118.08	mg/L	115.8	85	115			MA
L65469-07ASD	ASD	10/18/07 3:31	II071012-2	99.76186	2.6	114.63	mg/L	112.3	85	115	2.97	20	

WG234561

WG234561ICV	ICV	10/19/07 20:09	II071009-7	20		20.48	mg/L	102.4	95	105			
WG234561ICB	ICB	10/19/07 20:13				.45	mg/L		-0.9	0.9			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	99.76186		104.26	mg/L	104.5	85	115			
L65502-05AS	AS	10/19/07 20:53	II071012-2	199.52372	34.2	252.61	mg/L	109.5	85	115			
L65502-05ASD	ASD	10/19/07 21:05	II071012-2	199.52372	34.2	254.45	mg/L	110.4	85	115	0.73	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233773													
WG233773PBW	PBW	10/05/07 14:30				U	mg/L		-20	20			
WG233773LCSW	LCSW	10/05/07 14:32	PCN28206	260		254	mg/L	97.3	80	120			
L65468-06DUP	DUP	10/05/07 15:30			2740	2750	mg/L				0.4	20	

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.05		.05203	mg/L	104.1	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0003	0.0003			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.05		.04827	mg/L	96.5	85	115			
L65465-05AS	AS	10/10/07 1:55	MS071004-4	.05	.0006	.05116	mg/L	101.1	70	130			
L65465-05ASD	ASD	10/10/07 2:00	MS071004-4	.05	.0006	.05044	mg/L	99.7	70	130	1.42	20	
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.1	.0014	.12604	mg/L	124.6	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.1	.0014	.12028	mg/L	118.9	70	130	4.68	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	100		99.04	mg/L	99	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.9	0.9			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	98.21624		98.19	mg/L	100	85	115			
L65325-04AS	AS	10/14/07 8:39	II071012-2	98.21624	31.6	127.04	mg/L	97.2	85	115			
L65325-04ASD	ASD	10/14/07 8:43	II071012-2	98.21624	31.6	125.03	mg/L	95.1	85	115	1.59	20	
L65469-07AS	AS	10/14/07 10:11	II071012-2	98.21624	71.3	179.13	mg/L	109.8	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	98.21624	71.3	180.71	mg/L	111.4	85	115	0.88	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65468**

Project ID: OJ03DL

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233894													
WG233894PBW	PBW	10/08/07 15:35				U	mg/L		-30	30			
WG233894LCSW	LCSW	10/08/07 15:37	WC070903-2	100		87	mg/L	87	80	120			
L65469-03DUP	DUP	10/08/07 16:09			20	U	mg/L				200	20	RA

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.05		.05442	mg/L	108.8	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0003	0.0003			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.05		.05164	mg/L	103.3	85	115			
L65465-05AS	AS	10/10/07 1:55	MS071004-4	.05	U	.05462	mg/L	109.2	70	130			
L65465-05ASD	ASD	10/10/07 2:00	MS071004-4	.05	U	.05265	mg/L	105.3	70	130	3.67	20	
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.1	U	.09904	mg/L	99	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.1	U	.1011	mg/L	101.1	70	130	2.06	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234330													
WG234330ICV	ICV	10/18/07 1:15	II071009-7	2		1.981	mg/L	99.1	95	105			
WG234330ICB	ICB	10/18/07 1:19				U	mg/L		-0.03	0.03			
WG234330LFB	LFB	10/18/07 1:36	II071012-2	.5		.54	mg/L	108	85	115			
L65325-04AS	AS	10/18/07 1:56	II071012-2	.5	U	.556	mg/L	111.2	85	115			
L65325-04ASD	ASD	10/18/07 2:00	II071012-2	.5	U	.564	mg/L	112.8	85	115	1.43	20	
L65469-07AS	AS	10/18/07 3:27	II071012-2	.5	.01	.607	mg/L	119.4	85	115			MA
L65469-07ASD	ASD	10/18/07 3:31	II071012-2	.5	.01	.565	mg/L	111	85	115	7.17	20	
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		1.931	mg/L	96.6	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.03	0.03			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	.5		.531	mg/L	106.2	85	115			
L65502-05AS	AS	10/19/07 20:53	II071012-2	1	.03	1.067	mg/L	103.7	85	115			
L65502-05ASD	ASD	10/19/07 21:05	II071012-2	1	.03	1.071	mg/L	104.1	85	115	0.37	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65468**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65468-01	WG233953	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234279	Molybdenum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG234156	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233860	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234424	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65468-02	WG233953	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234279	Molybdenum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG234156	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233860	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233894	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65468-03	WG233953	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234279	Molybdenum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG234156	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233860	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233894	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L65468**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65468-04	WG234279	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG233953	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234279	Molybdenum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Potassium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Zinc, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500Cl-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG234156	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234027	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65468-05	WG233894	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234279	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG233953	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234279	Molybdenum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500Cl-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG234156	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234027	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233894	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L65468**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65468-06	WG234279	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG233953	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234279	Molybdenum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Potassium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Zinc, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500Cl-E	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG234156	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234027	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65468-08	WG234156	Cyanide, total	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L65468**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65468
Date Received: 10/5/2007
Received By:
Date Printed: 10/5/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?	X		
12) Are samples requiring no headspace, headspace free?		X	
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

All vials for samples 3 and 4 contained headspace.

Contact (For any discrepancies, the client must be contacted)

The client was not contacted.

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
256	4.4	16

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65468
 Date Received: 10/5/2007
 Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65468-01	MH-12	Y			Y							<input type="checkbox"/>
L65468-02	MH-26A	Y			Y							<input type="checkbox"/>
L65468-03	MH-26B	Y			Y							<input type="checkbox"/>
L65468-04	MH-26C	Y			Y							<input type="checkbox"/>
L65468-05	MH-30	Y			Y							<input type="checkbox"/>
L65468-06	IW-20	Y			Y							<input type="checkbox"/>
L65468-07	VOA TB091807-10									X		<input type="checkbox"/>
L65468-08	TB061307-28									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

CHAIN of CUSTODY

465468

Address: 6200 W Duval Mine Rd
Green Valley, AZ 85614
Telephone: 520-648-8873

E-mail: jimn@hginc.com
Telephone: 520-293-1500 EXT 112

Address: _____

 Telephone: _____

YES	
NO	

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

ANALYSES REQUESTED (attach list or use quote number)

of Containers

AMBIENT
SUITE

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

"Copy of Report" to Jim Norris contains only SO₄ results with QC Summary.

UPS TRACKING # 1Z 867 7E4 22 1000 3318

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

DATE:TIME

10-5.07 / 11.27

Bill Dorris
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

October 30, 2007

Cc: Jim Norris

Project ID: OJ03DL
ACZ Project ID: L65469 – SULFATE ONLY

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 05, 2007. This project was assigned to ACZ's project number, L65469. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65469. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute. Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all the requirements of NELAC.

This report should be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-11

ACZ Sample ID: **L65469-01**

Date Sampled: 10/03/07 14:50

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1590		*	mg/L	10	50	10/08/07 16:00	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-13B

ACZ Sample ID: **L65469-02**

Date Sampled: 10/03/07 14:36

Date Received: 10/05/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1110		*	mg/L	10	50	10/08/07 16:03	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-25A

ACZ Sample ID: **L65469-03**

Date Sampled: 10/03/07 11:28

Date Received: 10/05/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	20	B	*	mg/L	10	50	10/08/07 16:06	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-25B

ACZ Sample ID: **L65469-04**

Date Sampled: 10/03/07 09:00

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1670		*	mg/L	10	50	10/08/07 16:11	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-25C

ACZ Sample ID: **L65469-05**

Date Sampled: 10/03/07 10:45

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1280		*	mg/L	10	50	10/08/07 16:14	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-13A

ACZ Sample ID: **L65469-06**

Date Sampled: 10/04/07 08:24

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1720		*	mg/L	10	50	10/08/07 16:17	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-13C

ACZ Sample ID: **L65469-07**

Date Sampled: 10/04/07 10:45

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	20	B	*	mg/L	10	50	10/08/07 16:20	ear

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65469**

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233788													
WG233788PBW1	PBW	10/05/07 17:34				U	mg/L		-20	20			
WG233788LCSW2	LCSW	10/05/07 17:47	WC070928-1	820		834	mg/L	101.7	90	110			
WG233788PBW2	PBW	10/05/07 20:17				U	mg/L		-20	20			
WG233788LCSW5	LCSW	10/05/07 20:28	WC070928-1	820		841.5	mg/L	102.6	90	110			
WG233788PBW3	PBW	10/05/07 23:47				U	mg/L		-20	20			
WG233788LCSW8	LCSW	10/05/07 23:59	WC070928-1	820		830.9	mg/L	101.3	90	110			
WG233788PBW3	PBW	10/06/07 9:12				8.5	mg/L		-20	20			
WG233788LCSW8	LCSW	10/06/07 9:24	WC070928-1	820		833	mg/L	101.6	90	110			
WG233788PBW4	PBW	10/06/07 12:50				2.7	mg/L		-20	20			
WG233788LCSW11	LCSW	10/06/07 13:02	WC070928-1	820		840.1	mg/L	102.5	90	110			
L65469-01DUP	DUP	10/06/07 14:29			113	109.2	mg/L				3.4	20	
L65470-05DUP	DUP	10/06/07 15:48			357	357.3	mg/L				0.1	20	
WG233788LCSW14	LCSW	10/06/07 15:59	WC070928-1	820		842.5	mg/L	102.7	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	2		1.98	mg/L	99	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.09	0.09			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	1		1.017	mg/L	101.7	85	115			
L65469-07AS	AS	10/14/07 10:11	II071012-2	1	U	1.136	mg/L	113.6	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	1	U	1.182	mg/L	118.2	85	115	3.97	20	MA

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.02006		.01827	mg/L	91.1	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0012	0.0012			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.01		.00914	mg/L	91.4	85	115			
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.02	U	.01874	mg/L	93.7	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.02	U	.01913	mg/L	95.7	70	130	2.06	20	
WG234075													
WG234075ICV	ICV	10/11/07 3:49	MS071004-2	.02006		.02028	mg/L	101.1	90	110			
WG234075ICB	ICB	10/11/07 3:55				U	mg/L		-0.0012	0.0012			
WG234075LFB	LFB	10/11/07 4:06	MS071004-4	.01		.00974	mg/L	97.4	85	115			
L65325-04AS	AS	10/11/07 4:17	MS071004-4	.01	.0015	.01261	mg/L	111.1	70	130			
L65325-04ASD	ASD	10/11/07 4:23	MS071004-4	.01	.0015	.01288	mg/L	113.8	70	130	2.12	20	

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L65469**

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.05		.05294	mg/L	105.9	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0015	0.0015			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.05		.05197	mg/L	103.9	85	115			
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.1	.003	.1223	mg/L	119.3	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.1	.003	.1235	mg/L	120.5	70	130	0.98	20	
WG234075													
WG234075ICV	ICV	10/11/07 3:49	MS071004-2	.05		.05446	mg/L	108.9	90	110			
WG234075ICB	ICB	10/11/07 3:55				U	mg/L		-0.0015	0.0015			
WG234075LFB	LFB	10/11/07 4:06	MS071004-4	.05		.05534	mg/L	110.7	85	115			
L65325-04AS	AS	10/11/07 4:17	MS071004-4	.05	.0075	.08347	mg/L	151.9	70	130			M1
L65325-04ASD	ASD	10/11/07 4:23	MS071004-4	.05	.0075	.08623	mg/L	157.5	70	130	3.25	20	M1

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234330													
WG234330ICV	ICV	10/18/07 1:15	II071009-7	2		2.0921	mg/L	104.6	95	105			
WG234330ICB	ICB	10/18/07 1:19				U	mg/L		-0.009	0.009			
WG234330LFB	LFB	10/18/07 1:36	II071012-2	.5		.5287	mg/L	105.7	85	115			
L65469-07AS	AS	10/18/07 3:27	II071012-2	.5	.011	.5668	mg/L	111.2	85	115			
L65469-07ASD	ASD	10/18/07 3:31	II071012-2	.5	.011	.5585	mg/L	109.5	85	115	1.48	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.05		.05048	mg/L	101	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0003	0.0003			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.05		.04968	mg/L	99.4	85	115			
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.1	U	.10514	mg/L	105.1	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.1	U	.10674	mg/L	106.7	70	130	1.51	20	
WG234075													
WG234075ICV	ICV	10/11/07 3:49	MS071004-2	.05		.05258	mg/L	105.2	90	110			
WG234075ICB	ICB	10/11/07 3:55				U	mg/L		-0.0003	0.0003			
WG234075LFB	LFB	10/11/07 4:06	MS071004-4	.05		.05335	mg/L	106.7	85	115			
L65325-04AS	AS	10/11/07 4:17	MS071004-4	.05	U	.07002	mg/L	140	70	130			M1
L65325-04ASD	ASD	10/11/07 4:23	MS071004-4	.05	U	.07219	mg/L	144.4	70	130	3.05	20	M1

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65469**

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.05		.05197	mg/L	103.9	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0003	0.0003			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.05		.04969	mg/L	99.4	85	115			
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.1	U	.09786	mg/L	97.9	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.1	U	.09962	mg/L	99.6	70	130	1.78	20	
WG234075													
WG234075ICV	ICV	10/11/07 3:49	MS071004-2	.05		.05322	mg/L	106.4	90	110			
WG234075ICB	ICB	10/11/07 3:55				U	mg/L		-0.0003	0.0003			
WG234075LFB	LFB	10/11/07 4:06	MS071004-4	.05		.05327	mg/L	106.5	85	115			
L65325-04AS	AS	10/11/07 4:17	MS071004-4	.05	U	.06207	mg/L	124.1	70	130			
L65325-04ASD	ASD	10/11/07 4:23	MS071004-4	.05	U	.0642	mg/L	128.4	70	130	3.37	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	100		97.97	mg/L	98	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.6	0.6			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	67.97008		69.01	mg/L	101.5	85	115			
L65469-07AS	AS	10/14/07 10:11	II071012-2	67.97008	6.2	81.13	mg/L	110.2	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	67.97008	6.2	82.86	mg/L	112.8	85	115	2.11	20	

Chloride 325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234080													
WG234080ICB	ICB	10/10/07 10:07				U	mg/L		-3	3			
WG234080ICV	ICV	10/10/07 10:07	WI070314-1	55		57.5	mg/L	104.5	90	110			
WG234080LFB1	LFB	10/10/07 17:18	WI070712-1	30		33	mg/L	110	90	110			
WG234080LFB2	LFB	10/10/07 17:27	WI070712-1	30		32.8	mg/L	109.3	90	110			
WG234080LFB3	LFB	10/10/07 17:37	WI070712-1	30		33	mg/L	110	90	110			
L65468-06AS	AS	10/10/07 17:49	10XCL	30	120	156	mg/L	120	90	110			M1
L65469-01DUP	DUP	10/10/07 17:49			110	112	mg/L				1.8	20	

Chromium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	2		1.901	mg/L	95.1	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.03	0.03			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	.5		.494	mg/L	98.8	85	115			
L65469-07AS	AS	10/14/07 10:11	II071012-2	.5	U	.541	mg/L	108.2	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	.5	U	.552	mg/L	110.4	85	115	2.01	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65469**

Cobalt, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234330													
WG234330ICV	ICV	10/18/07 1:15	II071009-7	2		1.993	mg/L	99.7	95	105			
WG234330ICB	ICB	10/18/07 1:19				U	mg/L		-0.03	0.03			
WG234330LFB	LFB	10/18/07 1:36	II071012-2	.5		.524	mg/L	104.8	85	115			
L65469-07AS	AS	10/18/07 3:27	II071012-2	.5	U	.549	mg/L	109.8	85	115			
L65469-07ASD	ASD	10/18/07 3:31	II071012-2	.5	U	.546	mg/L	109.2	85	115	0.55	20	

Conductivity @25C 120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233788													
WG233788LCSW1	LCSW	10/05/07 17:36	PCN28067	1408.8		1495	µmhos/crr	106.1	90	110			
WG233788LCSW4	LCSW	10/05/07 20:18	PCN28067	1408.8		1507	µmhos/crr	107	90	110			
WG233788LCSW7	LCSW	10/05/07 23:49	PCN28067	1408.8		1495	µmhos/crr	106.1	90	110			
WG233788LCSW7	LCSW	10/06/07 9:13	PCN28067	1408.8		1487	µmhos/crr	105.6	90	110			
WG233788LCSW10	LCSW	10/06/07 12:51	PCN28067	1408.8		1479	µmhos/crr	105	90	110			
L65469-01DUP	DUP	10/06/07 14:29			3030	3020	µmhos/crr				0.3	20	
L65470-05DUP	DUP	10/06/07 15:48			4120	4110	µmhos/crr				0.2	20	
WG233788LCSW13	LCSW	10/06/07 15:50	PCN28067	1408.8		1471	µmhos/crr	104.4	90	110			

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	2		1.889	mg/L	94.5	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.03	0.03			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	.5		.488	mg/L	97.6	85	115			
L65469-07AS	AS	10/14/07 10:11	II071012-2	.5	U	.555	mg/L	111	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	.5	U	.559	mg/L	111.8	85	115	0.72	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65469**

Project ID: OJ03DL

Cyanide, total

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234158													
WG234158ICV	ICV	10/11/07 17:40	WI071011-4	.3		.2824	mg/L	94.1	90	110			
WG234158ICB	ICB	10/11/07 17:41				U	mg/L		-0.015	0.015			
WG234042LRB	LRB	10/11/07 17:42				U	mg/L		-0.015	0.015			
WG234042LFB	LFB	10/11/07 17:43	WI071008-2	.2		.1987	mg/L	99.4	90	110			
L65459-01DUP	DUP	10/11/07 17:57			U	U	mg/L				0	20	RA
L65459-02LFM	LFM	10/11/07 17:58	WI071008-2	.2	U	.1856	mg/L	92.8	90	110			
WG234820													
WG234820ICV	ICV	10/23/07 14:38	WI071011-4	.3		.2791	mg/L	93	90	110			
WG234820ICB	ICB	10/23/07 14:39				U	mg/L		-0.015	0.015			
WG234826													
WG234826ICV	ICV	10/23/07 15:55	WI071011-4	.3		.2807	mg/L	93.6	90	110			
WG234826ICB	ICB	10/23/07 15:55				U	mg/L		-0.015	0.015			
WG234647LRB	LRB	10/23/07 15:57				U	mg/L		-0.015	0.015			
WG234647LFB	LFB	10/23/07 15:58	WI071008-2	.2		.181	mg/L	90.5	90	110			
L65469-07LFM	LFM	10/23/07 16:01	WI071008-2	.2	U	.2062	mg/L	103.1	90	110			
L65510-05DUP	DUP	10/23/07 16:12			U	U	mg/L				0	20	RA
L65542-01LFM	LFM	10/23/07 16:13	WI071008-2	.2	U	.172	mg/L	86	90	110			
L65469-06DUP	DUP	10/23/07 16:23			U	U	mg/L				0	20	RA

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234027													
WG234027ICV	ICV	10/10/07 10:57	WC070825-1	1.992		2.08	mg/L	104.4	90	110			
WG234027ICB	ICB	10/10/07 11:04				U	mg/L		-0.3	0.3			
WG234027LFB1	LFB	10/10/07 11:14	WC070730-1	5		4.95	mg/L	99	90	110			
L65469-06AS	AS	10/10/07 14:04	WC070730-1	5	.1	5	mg/L	98	90	110			
L65469-06DUP	DUP	10/10/07 14:11			.1	.15	mg/L				40	20	RA
WG234027LFB2	LFB	10/10/07 14:18	WC070730-1	5		4.84	mg/L	96.8	90	110			
L65490-02AS	AS	10/10/07 15:37	WC070730-1	5	U	4.91	mg/L	98.2	90	110			
L65490-02DUP	DUP	10/10/07 15:53			U	U	mg/L				0	20	RA

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	2		1.938	mg/L	96.9	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.06	0.06			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	1		1.008	mg/L	100.8	85	115			
L65469-07AS	AS	10/14/07 10:11	II071012-2	1	.09	1.198	mg/L	110.8	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	1	.09	1.216	mg/L	112.6	85	115	1.49	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65469**

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.05		.05347	mg/L	106.9	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0003	0.0003			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.05		.05227	mg/L	104.5	85	115			
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.1	.0035	.10472	mg/L	101.2	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.1	.0035	.1048	mg/L	101.3	70	130	0.08	20	
WG234075													
WG234075ICV	ICV	10/11/07 3:49	MS071004-2	.05		.05421	mg/L	108.4	90	110			
WG234075ICB	ICB	10/11/07 3:55				U	mg/L		-0.0003	0.0003			
WG234075LFB	LFB	10/11/07 4:06	MS071004-4	.05		.05159	mg/L	103.2	85	115			
L65325-04AS	AS	10/11/07 4:17	MS071004-4	.05	U	.05034	mg/L	100.7	70	130			
L65325-04ASD	ASD	10/11/07 4:23	MS071004-4	.05	U	.05227	mg/L	104.5	70	130	3.76	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	100		98.98	mg/L	99	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.6	0.6			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	54.96908		55.58	mg/L	101.1	85	115			
L65469-07AS	AS	10/14/07 10:11	II071012-2	54.96908	.8	62	mg/L	111.3	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	54.96908	.8	63.3	mg/L	113.7	85	115	2.08	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234330													
WG234330ICV	ICV	10/18/07 1:15	II071009-7	2		1.9707	mg/L	98.5	95	105			
WG234330ICB	ICB	10/18/07 1:19				U	mg/L		-0.015	0.015			
WG234330LFB	LFB	10/18/07 1:36	II071012-2	.5		.5468	mg/L	109.4	85	115			
L65469-07AS	AS	10/18/07 3:27	II071012-2	.5	U	.5805	mg/L	116.1	85	115			MA
L65469-07ASD	ASD	10/18/07 3:31	II071012-2	.5	U	.5735	mg/L	114.7	85	115	1.21	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65469**

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233953													
WG233953ICV	ICV	10/16/07 9:55	II070927-1	.00498		.00516	mg/L	103.6	95	105			
WG233953ICB	ICB	10/16/07 9:57				U	mg/L		-0.0002	0.0002			
WG233953LRB	LRB	10/16/07 10:39				U	mg/L		-0.00044	0.00044			
WG233953LFB	LFB	10/16/07 10:42	II071002-9	.002		.00203	mg/L	101.5	85	115			
L65468-01LFM	LFM	10/16/07 11:19	II071002-9	.002	.0008	.00315	mg/L	117.5	85	115			MA
L65468-01LFMD	LFMD	10/16/07 11:21	II071002-9	.002	.0008	.00263	mg/L	91.5	85	115	17.99	20	

WG233854

WG233854ICV	ICV	10/17/07 18:04	II070927-1	.00498		.00504	mg/L	101.2	95	105			
WG233854ICB	ICB	10/17/07 18:07				U	mg/L		-0.0002	0.0002			

WG234254

WG234254LRB	LRB	10/17/07 19:20				U	mg/L		-0.00044	0.00044			
WG234254LFB	LFB	10/17/07 19:22	II071002-9	.002		.00205	mg/L	102.5	85	115			
L65447-01LFM	LFM	10/17/07 19:27	II071002-9	.002	U	.00212	mg/L	106	85	115			
L65447-01LFMD	LFMD	10/17/07 19:35	II071002-9	.002	U	.0022	mg/L	110	85	115	3.7	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	2		1.933	mg/L	96.7	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.03	0.03			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	.5		.443	mg/L	88.6	85	115			
L65469-07AS	AS	10/14/07 10:11	II071012-2	.5	.02	.503	mg/L	96.6	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	.5	.02	.518	mg/L	99.6	85	115	2.94	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234330													
WG234330ICV	ICV	10/18/07 1:15	II071009-7	2		1.982	mg/L	99.1	95	105			
WG234330ICB	ICB	10/18/07 1:19				U	mg/L		-0.03	0.03			
WG234330LFB	LFB	10/18/07 1:36	II071012-2	.5		.519	mg/L	103.8	85	115			
L65469-07AS	AS	10/18/07 3:27	II071012-2	.5	U	.545	mg/L	109	85	115			
L65469-07ASD	ASD	10/18/07 3:31	II071012-2	.5	U	.538	mg/L	107.6	85	115	1.29	20	

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L65469**

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234273													
WG234273ICV	ICV	10/13/07 14:44	WI070911-1	2.416		2.343	mg/L	97	90	110			
WG234273ICB	ICB	10/13/07 14:46				U	mg/L		-0.06	0.06			
WG234273LFB1	LFB	10/13/07 14:49	WI070911-4	2		1.917	mg/L	95.9	90	110			
WG234273LFB2	LFB	10/13/07 15:27	WI070911-4	2		1.957	mg/L	97.9	90	110			
L65468-06DUP	DUP	10/13/07 15:36			2.34	2.358	mg/L				0.8	20	
L65468-05AS	AS	10/13/07 15:55	WI070911-4	4	2.31	6.062	mg/L	93.8	90	110			
WG234423													
WG234423ICV	ICV	10/16/07 19:39	WI070911-1	2.416		2.408	mg/L	99.7	90	110			
WG234423ICB	ICB	10/16/07 19:40				U	mg/L		-0.06	0.06			
WG234424													
WG234424ICV	ICV	10/16/07 20:41	WI070911-1	2.416		2.286	mg/L	94.6	90	110			
WG234424ICB	ICB	10/16/07 20:42				U	mg/L		-0.06	0.06			
WG234424LFB	LFB	10/16/07 20:43	WI070911-4	2		1.899	mg/L	95	90	110			
L65468-02AS	AS	10/16/07 21:04	WI070911-4	2		2.987	mg/L	99.9	90	110			
L65468-03DUP	DUP	10/16/07 21:07			1.97	1.965	mg/L				0.3	20	

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233788													
WG233788LCSW3	LCSW	10/05/07 17:49	PCN27958	6		6.03	units	100.5	90	110			
WG233788LCSW6	LCSW	10/05/07 20:31	PCN27958	6		6.04	units	100.7	90	110			
WG233788LCSW9	LCSW	10/06/07 0:01	PCN27958	6		6.04	units	100.7	90	110			
WG233788LCSW9	LCSW	10/06/07 9:27	PCN27958	6		6.04	units	100.7	90	110			
WG233788LCSW12	LCSW	10/06/07 13:05	PCN27958	6		6.04	units	100.7	90	110			
L65469-01DUP	DUP	10/06/07 14:29			8.1	8.06	units				0.5	20	
L65470-05DUP	DUP	10/06/07 15:48			8.5	8.47	units				0.4	20	
WG233788LCSW15	LCSW	10/06/07 16:02	PCN27958	6		6.04	units	100.7	90	110			

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234330													
WG234330ICV	ICV	10/18/07 1:15	II071009-7	20		20.32	mg/L	101.6	95	105			
WG234330ICB	ICB	10/18/07 1:19				U	mg/L		-0.9	0.9			
WG234330LFB	LFB	10/18/07 1:36	II071012-2	99.76186		109.53	mg/L	109.8	85	115			
L65469-07AS	AS	10/18/07 3:27	II071012-2	99.76186	2.6	118.08	mg/L	115.8	85	115			MA
L65469-07ASD	ASD	10/18/07 3:31	II071012-2	99.76186	2.6	114.63	mg/L	112.3	85	115	2.97	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65469**

Project ID: OJ03DL

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233855													
WG233855PBW	PBW	10/08/07 9:45				U	mg/L		-20	20			
WG233855LCSW	LCSW	10/08/07 9:47	PCN28214	260		274	mg/L	105	80	120			
L65497-03DUP	DUP	10/08/07 10:13			250	246	mg/L				1.6	20	
WG233879													
WG233879PBW	PBW	10/08/07 13:25				U	mg/L		-20	20			
WG233879LCSW	LCSW	10/08/07 13:26	PCN28214	260		278	mg/L	106.5	80	120			
L65475-02DUP	DUP	10/08/07 13:48			5820	5788	mg/L				0.6	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.05		.05203	mg/L	104.1	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0003	0.0003			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.05		.04827	mg/L	96.5	85	115			
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.1	.0014	.12604	mg/L	124.6	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.1	.0014	.12028	mg/L	118.9	70	130	4.68	20	
WG234075													
WG234075ICV	ICV	10/11/07 3:49	MS071004-2	.05		.0541	mg/L	108.2	90	110			
WG234075ICB	ICB	10/11/07 3:55				U	mg/L		-0.0003	0.0003			
WG234075LFB	LFB	10/11/07 4:06	MS071004-4	.05		.05232	mg/L	104.6	85	115			
L65325-04AS	AS	10/11/07 4:17	MS071004-4	.05	.0024	.07618	mg/L	147.6	70	130			M1
L65325-04ASD	ASD	10/11/07 4:23	MS071004-4	.05	.0024	.0822	mg/L	159.6	70	130	7.6	20	M1

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234279													
WG234279ICV	ICV	10/14/07 7:57	II071009-7	100		99.04	mg/L	99	95	105			
WG234279ICB	ICB	10/14/07 8:01				U	mg/L		-0.9	0.9			
WG234279LFB	LFB	10/14/07 8:18	II071012-2	98.21624		98.19	mg/L	100	85	115			
L65469-07AS	AS	10/14/07 10:11	II071012-2	98.21624	71.3	179.13	mg/L	109.8	85	115			
L65469-07ASD	ASD	10/14/07 10:15	II071012-2	98.21624	71.3	180.71	mg/L	111.4	85	115	0.88	20	

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233894													
WG233894PBW	PBW	10/08/07 15:35				U	mg/L		-30	30			
WG233894LCSW	LCSW	10/08/07 15:37	WC070903-2	100		87	mg/L	87	80	120			
L65469-03DUP	DUP	10/08/07 16:09			20	U	mg/L				200	20	RA

Phelps Dodge Sierrita

ACZ Project ID: **L65469**

Project ID: OJ03DL

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233987													
WG233987ICV	ICV	10/10/07 1:20	MS071004-2	.05		.05442	mg/L	108.8	90	110			
WG233987ICB	ICB	10/10/07 1:26				U	mg/L		-0.0003	0.0003			
WG233987LFB	LFB	10/10/07 1:37	MS071004-4	.05		.05164	mg/L	103.3	85	115			
L65468-06AS	AS	10/10/07 3:10	MS071004-4	.1	U	.09904	mg/L	99	70	130			
L65468-06ASD	ASD	10/10/07 3:15	MS071004-4	.1	U	.1011	mg/L	101.1	70	130	2.06	20	
WG234178													
WG234178ICV	ICV	10/11/07 18:48	MS071004-2	.05		.05428	mg/L	108.6	90	110			
WG234178ICB	ICB	10/11/07 18:54				U	mg/L		-0.0003	0.0003			
WG234178LFB	LFB	10/11/07 19:05	MS071004-4	.05		.05722	mg/L	114.4	85	115			
L65418-03AS	AS	10/11/07 19:16	MS071004-4	.05	U	.0581	mg/L	116.2	70	130			
L65418-03ASD	ASD	10/11/07 19:22	MS071004-4	.05	U	.05991	mg/L	119.8	70	130	3.07	20	

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234330													
WG234330ICV	ICV	10/18/07 1:15	II071009-7	2		1.981	mg/L	99.1	95	105			
WG234330ICB	ICB	10/18/07 1:19				U	mg/L		-0.03	0.03			
WG234330LFB	LFB	10/18/07 1:36	II071012-2	.5		.54	mg/L	108	85	115			
L65469-07AS	AS	10/18/07 3:27	II071012-2	.5	.01	.607	mg/L	119.4	85	115			MA
L65469-07ASD	ASD	10/18/07 3:31	II071012-2	.5	.01	.565	mg/L	111	85	115	7.17	20	

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ACZ Project ID: **L65469**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65469-01	WG234042	Cyanide, total	M335.4 - Manual Distillation	QB	Method-specified preservation criteria cannot be met due to sample matrix.
	WG234279	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG233953	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234279	Molybdenum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Potassium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Zinc, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500CI-E	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG234158	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234027	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233894	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65469-02	WG234279	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234075	Beryllium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG234330	Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG233953	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234279	Molybdenum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Potassium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Zinc, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500CI-E	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG234158	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234027	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233894	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ Project ID: **L65469**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65469-03	WG234279	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG233953	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234279	Molybdenum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Potassium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Zinc, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500Cl-E	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG234158	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234027	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65469-04	WG233894	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234279	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG233953	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Potassium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Zinc, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500Cl-E	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG234158	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234027	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65469-05	WG233894	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L65469**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65469-05	WG234279	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234075	Arsenic, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
		Beryllium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG234330	Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Potassium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234075	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG234330	Zinc, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500CI-E	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG234158	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234027	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233894	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65469-06	WG234647	Cyanide, total	M335.4 - Manual Distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
	WG234279	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Potassium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Zinc, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500CI-E	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG234826	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234027	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233894	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L65469**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65469-07	WG234647	Cyanide, total	M335.4 - Manual Distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
	WG234279	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234330	Manganese, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Potassium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Zinc, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG234080	Chloride	325.2 / SM4500Cl-E	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG234826	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234027	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233894	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65469-09	WG234647	Cyanide, total	M335.4 - Manual Distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
	WG234826		M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L65469**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65469
Date Received: 10/5/2007
Received By:
Date Printed: 10/5/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?	X		
12) Are samples requiring no headspace, headspace free?	X		
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (μR/hr)
1332	2.4	14

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65469
Date Received: 10/5/2007
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65469-01	MH-11		Y		Y							<input type="checkbox"/>
L65469-02	MH-13B		Y		Y							<input type="checkbox"/>
L65469-03	MH-25A		Y		Y							<input type="checkbox"/>
L65469-04	MH-25B		Y		Y							<input type="checkbox"/>
L65469-05	MH-25C		Y		Y							<input type="checkbox"/>
L65469-06	MH-13A		Y		Y							<input type="checkbox"/>
L65469-07	MH-13C		Y		Y							<input type="checkbox"/>
L65469-08	VOA TB091807-11									X		<input type="checkbox"/>
L65469-09	TB091807-05									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Bill Dorris
Company: Phelps Dodge Sierrita
E-mail: Billy-Dorris@FMI.com

Address: 6200 W Duval Mine Rd
Green Valley, AZ 85614
Telephone: 520-648-8873

Copy of Report to:

Name: Jim Norris
Company: Hydro Geo Chem

E-mail: jimm@hginc.com
Telephone: 520-293-1500 Ext 112

Invoice to:

Name:
Company:
E-mail:

Address:

Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES

NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:																				
Project/PO #:	<u>OJ03DL</u>																			
Reporting state for compliance testing:																				
Sampler's Name:																				
Are any samples NRC licensable material?																				
SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers																	
<u>MH-11</u>	<u>10-3-07 / 14:50</u>	<u>GW</u>	<u>8</u>																	
<u>MH-13B</u>	<u>10-3-07 / 14:36</u>	<u>GW</u>	<u>8</u>																	
<u>MH-25A</u>	<u>10-3-07 / 11:28</u>	<u>GW</u>	<u>8</u>																	
<u>MH-25B</u>	<u>10-3-07 / 9:00</u>	<u>GW</u>	<u>8</u>																	
<u>MH-25C</u>	<u>10-3-07 / 10:45</u>	<u>GW</u>	<u>8</u>																	
<u>MH-13A</u>	<u>10-4-07 / 8:24</u>	<u>GW</u>	<u>8</u>																	
<u>MH-13C</u>	<u>10-4-07 / 10:45</u>	<u>GW</u>	<u>8</u>																	

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

"Copy of Report" to Jim Norris contains only SO₄ results with QC Summary.

UPS TRACKING # 1Z 867 7E4 22 1000 3309

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<u>Billy F. Dorris</u>	<u>10-4-07 / 15:00</u>	<u>LPL</u>	<u>10-5-07 11:41</u>

October 22, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Bill Dorris, Jim Norris, Dan Simpson

Project ID: OJ03Z5

ACZ Project ID: L65476

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 05, 2007. This project has been assigned to ACZ's project number, L65476. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65476. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 22, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: HAVEN GOLFF

ACZ Sample ID: **L65476-01**

Date Sampled: 10/04/07 12:10

Date Received: 10/05/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	722			mS/cm			10/04/07 10:35	ma
pH (Field)	Field Measurement	7.1			units			10/04/07 10:35	ma
Temperature (Field)	Field Measurement	25.4			C			10/04/07 10:35	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	118			mg/L	1	5	10/17/07 10:29	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: HAVEN GOLF

ACZ Sample ID: **L65476-02**

Date Sampled: 10/04/07 12:10

Date Received: 10/05/07

Sample Matrix: *Ground Water*

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	722			mS/cm			10/04/07 10:35	ma
pH (Field)	Field Measurement	7.1			units			10/04/07 10:35	ma
Temperature (Field)	Field Measurement	25.4			C			10/04/07 10:35	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	111		*	mg/L	3	10	10/17/07 11:05	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: TMM-1F

ACZ Sample ID: **L65476-03**

Date Sampled: 10/04/07 10:35

Date Received: 10/05/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	371			mS/cm			10/04/07 12:10	ma
pH (Field)	Field Measurement	7.8			units			10/04/07 12:10	ma
Temperature (Field)	Field Measurement	25.9			C			10/04/07 12:10	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	7.2			mg/L	0.5	3	10/16/07 22:26	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: TMM-1

ACZ Sample ID: **L65476-04**

Date Sampled: 10/04/07 10:35

Date Received: 10/05/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	371			mS/cm			10/04/07 12:10	ma
pH (Field)	Field Measurement	7.8			units			10/04/07 12:10	ma
Temperature (Field)	Field Measurement	25.9			C			10/04/07 12:10	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	7.2		*	mg/L	0.5	3	10/16/07 22:44	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: GATTERERF

ACZ Sample ID: **L65476-05**

Date Sampled: 10/03/07 15:40

Date Received: 10/05/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	5.5			mg/L	0.5	3	10/16/07 23:02	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: GATTERER

ACZ Sample ID: **L65476-06**

Date Sampled: 10/03/07 15:40

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	5.2		*	mg/L	0.5	3	10/16/07 23:20	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: EQB-100407-F

ACZ Sample ID: **L65476-07**

Date Sampled: 10/04/07 14:30

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	0.6	B		mg/L	0.5	3	10/16/07 23:38	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: EQB-100407

ACZ Sample ID: **L65476-08**

Date Sampled: 10/04/07 14:30

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography		U	*	mg/L	0.5	3	10/17/07 0:33	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: FB-100407

ACZ Sample ID: **L65476-09**

Date Sampled: 10/04/07 14:30

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography		U		mg/L	0.5	3	10/17/07 0:51	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: GV-1-GVDWIDF

ACZ Sample ID: **L65476-10**

Date Sampled: 10/03/07 11:05

Date Received: 10/05/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	43.8			mg/L	0.5	3	10/17/07 1:09	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: GV-1-GVDWID

ACZ Sample ID: **L65476-11**

Date Sampled: 10/03/07 11:05

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	43.7		*	mg/L	0.5	3	10/17/07 1:27	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: GV-2-GVDWIDF

ACZ Sample ID: **L65476-12**

Date Sampled: 10/03/07 10:10

Date Received: 10/05/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	100			mg/L	3	10	10/17/07 11:41	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: GV-2-GVDWID

ACZ Sample ID: **L65476-13**

Date Sampled: 10/03/07 10:10

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	106		*	mg/L	1	5	10/17/07 12:18	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CC OF GVF

ACZ Sample ID: **L65476-14**

Date Sampled: 10/03/07 13:50

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	88.7			mg/L	0.5	3	10/17/07 2:58	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CC OF GV

ACZ Sample ID: **L65476-15**

Date Sampled: 10/03/07 13:50

Date Received: 10/05/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	89.1		*	mg/L	0.5	3	10/17/07 3:16	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: SIWELLF

ACZ Sample ID: **L65476-16**

Date Sampled: 10/03/07 09:05

Date Received: 10/05/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	6.5			mg/L	0.5	3	10/17/07 4:10	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: SIWELL

ACZ Sample ID: **L65476-17**

Date Sampled: 10/03/07 09:05

Date Received: 10/05/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	6.2		*	mg/L	0.5	3	10/17/07 4:28	jlf

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L65476**

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG234389													
WG234389ICV	ICV	06/11/07 13:52	WI070910-1	50.1		51.51	mg/L	102.8	90	110			
WG234389ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG234389LFB1	LFB	10/16/07 20:55	WI070727-1	30		28.1	mg/L	93.7	90	110			
L65476-11DUP	DUP	10/17/07 1:45			43.7	43.8	mg/L				0.2	20	
WG234389LFB2	LFB	10/17/07 5:41	WI070727-1	30		30.22	mg/L	100.7	90	110			
L65476-01DUP	DUP	10/17/07 10:47			118	117.7	mg/L				0.3	20	
L65476-02AS	AS	10/17/07 11:23	WI070727-1	150	111	268.7	mg/L	105.1	90	110			
L65476-12AS	AS	10/17/07 11:59	WI070727-1	150	100	252.5	mg/L	101.7	90	110			

Phelps Dodge Sierrita

ACZ Project ID: **L65476**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65476-02	WG234389	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65476-04	WG234389	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65476-06	WG234389	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65476-08	WG234389	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65476-11	WG234389	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65476-13	WG234389	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65476-15	WG234389	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65476-17	WG234389	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L65476**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L65476
Date Received: 10/5/2007
Received By:
Date Printed: 10/9/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
1375	1.2	14

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L65476
 Date Received: 10/5/2007
 Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65476-01	HAVEN GOLFF									X		<input type="checkbox"/>
L65476-02	HAVEN GOLF									X		<input type="checkbox"/>
L65476-03	TMM-1F									X		<input type="checkbox"/>
L65476-04	TMM-1									X		<input type="checkbox"/>
L65476-05	GATTERERF									X		<input type="checkbox"/>
L65476-06	GATTERER									X		<input type="checkbox"/>
L65476-07	EQB-100407-F									X		<input type="checkbox"/>
L65476-08	EQB-100407									X		<input type="checkbox"/>
L65476-09	FB-100407									X		<input type="checkbox"/>
L65476-10	GV-1-GVDWIDF									X		<input type="checkbox"/>
L65476-11	GV-1-GVDWID									X		<input type="checkbox"/>
L65476-12	GV-2-GVDWIDF									X		<input type="checkbox"/>
L65476-13	GV-2-GVDWID									X		<input type="checkbox"/>
L65476-14	CC OF GVF									X		<input type="checkbox"/>
L65476-15	CC OF GV									X		<input type="checkbox"/>
L65476-16	SIWELLF									X		<input type="checkbox"/>
L65476-17	SIWELL									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY**Report to:**

Name: Dan Simpson
 Company: Hydro Geo Chem Inc.
 E-mail: dans@hgcinc.com

Address: 51 West Wermore Road
Tucson, AZ 85705
 Telephone: 520-293-1500x133

Copy of Report to:

Name: Ned Hall/Bill Dorris/Jim Norris
 Company: PDST/HGL

E-mail: Jimn@hgcinc.com/billy.dorris@fmi.com
 Telephone: 520-293-1500x112/520-648-8873

Invoice to:

Name: Ned Hall
 Company: PDST
 E-mail: ned-hall@fmi.com

Address: 6200 W. Duval Mine Road
PO Box 527 Green Valley, AZ 85622
 Telephone: 520-648-8857

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES ☒
 NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: Sierrita Sul/Fate
 Project/PO #: OJD325
 Reporting state for compliance testing: AZ
 Sampler's Name: M. Arneson
 Are any samples NRC licensable material? No

SAMPLE IDENTIFICATION		DATE:TIME	Matrix	# of Containers			pH	EL	Temp				
HAVEN GOLF		10/4/07: 1210	GW	1	X		7.06	722	25.4				
HAVEN GOLF		10/4/07: 1210		1	X		7.06	722	25.4				
TMM-1F		10/4/07: 1035		1	X		7.76	371	25.9				
TMM-1		10/4/07: 1035		1	X		7.76	371	25.9				
GATTERER F		10/3/07: 1540		1	X								
GATTERER		10/3/07: 1540		1	X								
EQB-100407-F		10/4/07: 1430		1	X								
EQB-100407		10/4/07: 1430		1	X								
FB-100407		10/4/07: 1430		1	X								

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

* F is a Filtered Sample

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<u>[Signature]</u>	<u>10/4/07: 1527</u>	<u>LRL</u>	<u>10-5-07 11:24</u>

ACZ Laboratories, Inc.**CHAIN of CUSTODY**

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

65476

Report to:

Name:

Address:

Company:

E-mail:

Telephone:

Copy of Report to:

Name:

E-mail:

Company:

Telephone:

Invoice to:

Name:

Address:

Company:

E-mail:

Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES
NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #:

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material?

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SO ₄ ⁻	pH	EC	Temp						
GV-1-GVDWIDF	10/3/07: 1105	GW	1	X									
GV-1-GVDWID	10/3/07: 1105		1	X									
GV-2-GVDWIDF	10/3/07: 1010		1	X									
GV-2-GVDWID	10/3/07: 1010		1	X									
CC of GVF	10/3/07: 1350		1	X									
CC of GV	10/3/07: 1350		1	X									
SIWELLF	10/3/07: 0905		1	X									
SIWELL	10/3/07: 0905		1	X									

Matrix

SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

* F is a Filtered Sample

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

10/4/07: 1527

10-5-07 11:29

October 22, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Bill Dorris, Jim Norris, Dan Simpson

Project ID: OJ03Z5

ACZ Project ID: L65477

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 05, 2007. This project has been assigned to ACZ's project number, L65477. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65477. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 22, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-6BF

ACZ Sample ID: **L65477-01**

Date Sampled: 10/04/07 14:00

Date Received: 10/05/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	483			mS/cm			10/14/07 14:00	ma
pH (Field)	Field Measurement	7.7			units			10/14/07 14:00	ma
Temperature (Field)	Field Measurement	33.1			C			10/14/07 14:00	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	28.1			mg/L	0.2	1	10/14/07 4:30	erf
Magnesium, dissolved	M200.7 ICP	2.9			mg/L	0.2	1	10/14/07 4:30	erf
Potassium, dissolved	M200.7 ICP	11.3			mg/L	0.3	2	10/14/07 4:30	erf
Sodium, dissolved	M200.7 ICP	60.6			mg/L	0.3	2	10/14/07 4:30	erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		119		*	mg/L	2	20	10/09/07 0:00	lcp
Carbonate as CaCO ₃		5	B	*	mg/L	2	20	10/09/07 0:00	lcp
Hydroxide as CaCO ₃			U	*	mg/L	2	20	10/09/07 0:00	lcp
Total Alkalinity		125		*	mg/L	2	20	10/09/07 0:00	lcp
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-2.1			%			10/19/07 0:00	calc
Sum of Anions		4.8			meq/L	0.1	0.5	10/19/07 0:00	calc
Sum of Cations		4.6			meq/L	0.1	0.5	10/19/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	10.9			mg/L	0.5	3	10/12/07 1:10	jlf
Fluoride	M300.0 - Ion Chromatography	0.5		*	mg/L	0.1	0.5	10/12/07 1:10	jlf
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.67			mg/L	0.02	0.1	10/19/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.69		*	mg/L	0.02	0.1	10/05/07 20:02	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.02	B	*	mg/L	0.01	0.05	10/05/07 20:02	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	400			mg/L	10	20	10/08/07 13:50	ear
Sulfate	300.0 - Ion Chromatography	93.6			mg/L	0.5	3	10/12/07 1:10	jlf
TDS (calculated)	Calculation	287			mg/L	10	50	10/19/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.39						10/19/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-6B

ACZ Sample ID: **L65477-02**

Date Sampled: 10/04/07 14:00

Date Received: 10/05/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	483			mS/cm			10/14/07 14:01	ma
pH (Field)	Field Measurement	7.7			units			10/14/07 14:01	ma
Temperature (Field)	Field Measurement	33.1			C			10/14/07 14:01	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	93.5		*	mg/L	0.5	3	10/12/07 1:29	jlf

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita

ACZ Project ID: **L65477**

Project ID: OJ03Z5

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233896													
WG233896PBW1	PBW	10/09/07 10:20				22.1	mg/L		-20	20			B4
WG233896LCSW2	LCSW	10/09/07 10:32	WC070928-1	820		816.3	mg/L	99.5	90	110			
L65479-02DUP	DUP	10/09/07 13:23			5	5.8	mg/L				14.8	20	RA
WG233896PBW2	PBW	10/09/07 13:29				U	mg/L		-20	20			
WG233896LCSW5	LCSW	10/09/07 13:40	WC070928-1	820		833.8	mg/L	101.7	90	110			
WG233896PBW3	PBW	10/09/07 16:16				U	mg/L		-20	20			
WG233896LCSW8	LCSW	10/09/07 16:28	WC070928-1	820		845.7	mg/L	103.1	90	110			
WG233896PBW4	PBW	10/09/07 19:23				U	mg/L		-20	20			
WG233896LCSW11	LCSW	10/09/07 19:36	WC070928-1	820		853.5	mg/L	104.1	90	110			
WG233896LCSW14	LCSW	10/09/07 22:37	WC070928-1	820		846.9	mg/L	103.3	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234289													
WG234289ICV	ICV	10/14/07 2:11	II071009-7	100		99.61	mg/L	99.6	95	105			
WG234289ICB	ICB	10/14/07 2:16				U	mg/L		-0.6	0.6			
WG234289LFB	LFB	10/14/07 2:32	II071012-2	67.97008		75.27	mg/L	110.7	85	115			
L65410-03AS	AS	10/14/07 4:00	II071012-2	67.97008	15.9	91.41	mg/L	111.1	85	115			
L65410-03ASD	ASD	10/14/07 4:05	II071012-2	67.97008	15.9	88.99	mg/L	107.5	85	115	2.68	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG234134													
WG234134ICV	ICV	06/11/07 13:52	WI070910-1	20		20.34	mg/L	101.7	90	110			
WG234134ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG234134LFB1	LFB	10/11/07 12:30	WI070727-1	30		30.84	mg/L	102.8	90	110			
WG234134LFB2	LFB	10/11/07 21:15	WI070727-1	30		29.41	mg/L	98	90	110			
L65451-09DUP	DUP	10/11/07 21:51			8.4	8.44	mg/L				0.5	20	
L65451-10AS	AS	10/11/07 22:27	WI070727-1	30	8.2	37.81	mg/L	98.7	90	110			

Phelps Dodge Sierrita

ACZ Project ID: **L65477**

Project ID: OJ03Z5

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG234134													
WG234134ICV	ICV	06/11/07 13:52	WI070910-1	3.984		4.13	mg/L	103.7	90	110			
WG234134ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG234134LFB1	LFB	10/11/07 12:30	WI070727-1	1.5		1.58	mg/L	105.3	90	110			
WG234134LFB2	LFB	10/11/07 21:15	WI070727-1	1.5		1.51	mg/L	100.7	90	110			
L65451-09DUP	DUP	10/11/07 21:51			.6	.64	mg/L				6.5	20	RA
L65451-10AS	AS	10/11/07 22:27	WI070727-1	1.5	.7	2.18	mg/L	98.7	90	110			

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234289													
WG234289ICV	ICV	10/14/07 2:11	II071009-7	100		100.54	mg/L	100.5	95	105			
WG234289ICB	ICB	10/14/07 2:16				U	mg/L		-0.6	0.6			
WG234289LFB	LFB	10/14/07 2:32	II071012-2	54.96908		59.92	mg/L	109	85	115			
L65410-03AS	AS	10/14/07 4:00	II071012-2	54.96908	.9	62.54	mg/L	112.1	85	115			
L65410-03ASD	ASD	10/14/07 4:05	II071012-2	54.96908	.9	60.93	mg/L	109.2	85	115	2.61	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233802													
WG233802ICV	ICV	10/05/07 19:08	WI070911-1	2.416		2.388	mg/L	98.8	90	110			
WG233802ICB	ICB	10/05/07 19:09				U	mg/L		-0.06	0.06			
WG233802LFB1	LFB	10/05/07 19:13	WI070911-4	2		1.988	mg/L	99.4	90	110			
WG233802LFB2	LFB	10/05/07 19:51	WI070911-4	2		2.004	mg/L	100.2	90	110			
L65470-06AS	AS	10/05/07 19:53	WI070911-4	2		1.945	mg/L	97.3	90	110			
L65470-07DUP	DUP	10/05/07 20:00			.03	.023	mg/L				26.4	20	RA

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233802													
WG233802ICV	ICV	10/05/07 19:08	WI070911-1	.609		.604	mg/L	99.2	90	110			
WG233802ICB	ICB	10/05/07 19:09				U	mg/L		-0.03	0.03			
WG233802LFB1	LFB	10/05/07 19:13	WI070911-4	1		.988	mg/L	98.8	90	110			
WG233802LFB2	LFB	10/05/07 19:51	WI070911-4	1		1.023	mg/L	102.3	90	110			
L65470-06AS	AS	10/05/07 19:53	WI070911-4	1		.974	mg/L	97.4	90	110			
L65470-07DUP	DUP	10/05/07 20:00				U	mg/L				0	20	RA

Phelps Dodge Sierrita

ACZ Project ID: **L65477**

Project ID: OJ03Z5

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234289													
WG234289ICV	ICV	10/14/07 2:11	II071009-7	20		20.02	mg/L	100.1	95	105			
WG234289ICB	ICB	10/14/07 2:16				U	mg/L		-0.9	0.9			
WG234289LFB	LFB	10/14/07 2:32	II071012-2	99.76186		107.85	mg/L	108.1	85	115			
L65410-03AS	AS	10/14/07 4:00	II071012-2	99.76186	.9	113.9	mg/L	113.3	85	115			
L65410-03ASD	ASD	10/14/07 4:05	II071012-2	99.76186	.9	111.92	mg/L	111.3	85	115	1.75	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233879													
WG233879PBW	PBW	10/08/07 13:25				U	mg/L		-20	20			
WG233879LCSW	LCSW	10/08/07 13:26	PCN28214	260		278	mg/L	106.5	80	120			
L65502-01DUP	DUP	10/08/07 14:09			4120	4156	mg/L				0.9	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234289													
WG234289ICV	ICV	10/14/07 2:11	II071009-7	100		99.93	mg/L	99.9	95	105			
WG234289ICB	ICB	10/14/07 2:16				U	mg/L		-0.9	0.9			
WG234289LFB	LFB	10/14/07 2:32	II071012-2	98.21624		106.13	mg/L	108.1	85	115			
L65410-03AS	AS	10/14/07 4:00	II071012-2	98.21624	36.6	143.53	mg/L	108.9	85	115			
L65410-03ASD	ASD	10/14/07 4:05	II071012-2	98.21624	36.6	140.73	mg/L	106	85	115	1.97	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG234134													
WG234134ICV	ICV	06/11/07 13:52	WI070910-1	50.1		51.51	mg/L	102.8	90	110			
WG234134ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG234134LFB1	LFB	10/11/07 12:30	WI070727-1	30		32.06	mg/L	106.9	90	110			
WG234134LFB2	LFB	10/11/07 21:15	WI070727-1	30		30.14	mg/L	100.5	90	110			
L65451-09DUP	DUP	10/11/07 21:51			47.7	47.66	mg/L				0.1	20	
L65451-10AS	AS	10/11/07 22:27	WI070727-1	30	47.4	75.63	mg/L	94.1	90	110			

Phelps Dodge SierritaACZ Project ID: **L65477**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65477-01	WG233896	Bicarbonate as CaCO ₃	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
		Carbonate as CaCO ₃	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG234134	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233896	Hydroxide as CaCO ₃	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG233802	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233896	Total Alkalinity	SM2320B - Titration	B4	Target analyte detected in blank at or above the acceptance criteria.
			SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234134	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L65477**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L65477
Date Received: 10/5/2007
Received By:
Date Printed: 10/5/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
1375	1.2	14

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L65477
Date Received: 10/5/2007
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65477-01	MO-2007-6BF		Y									<input type="checkbox"/>
L65477-02	MO-2007-6B									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

CHAIN of CUSTODY

Report to:

Address: 51 West Wetmore Rd
Tucson AZ 85705
Telephone: 520 293-1500 x133

Copy of Report to:

E-mail: Jimn@hgcinc.com, billy-dorris@fmi.com
Telephone: 520 293-1500 648-8873

Invoice to:

Address: 6200 W. Deval Mine Rd
PO Box 527 Green Valley, AZ 85622
Telephone: 520 648-4857

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES	<input checked="" type="checkbox"/>
NO	<input type="checkbox"/>

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

# of Containers	2 Mg Na ₂ K	K TDS 304	- F ⁻ NO ₂ ⁻ NO ₃ ⁻	OH ⁻					
-----------------	------------------------	-----------	--	-----------------	--	--	--	--	--

[illegible]

Matrix	SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

* F is a filtered sample

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<i>[Signature]</i>	10/4/07 1513	WPL	10-5-07 11:25

Bill Dorris
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

October 30, 2007

Cc: Jim Norris

Project ID: OJ03DL
ACZ Project ID: L65522 – SULFATE ONLY

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 09, 2007. This project was assigned to ACZ's project number, L65522. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65522. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute. Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all the requirements of NELAC.

This report should be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-1

ACZ Sample ID: **L65522-01**

Date Sampled: 10/05/07 10:25

Date Received: 10/09/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	570			mg/L	10	50	10/11/07 11:02	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-2

ACZ Sample ID: **L65522-02**

Date Sampled: 10/05/07 10:50

Date Received: 10/09/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	70			mg/L	10	50	10/11/07 11:05	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-3A

ACZ Sample ID: **L65522-03**

Date Sampled: 10/05/07 12:05

Date Received: 10/09/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1600			mg/L	100	500	10/11/07 11:08	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-4

ACZ Sample ID: **L65522-04**

Date Sampled: 10/05/07 13:40

Date Received: 10/09/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1600			mg/L	100	500	10/11/07 11:11	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-8

ACZ Sample ID: **L65522-05**

Date Sampled: 10/05/07 12:35

Date Received: 10/09/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1600			mg/L	100	500	10/11/07 11:14	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-9

ACZ Sample ID: **L65522-06**

Date Sampled: 10/05/07 13:15

Date Received: 10/09/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1600			mg/L	100	500	10/11/07 11:17	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: PZ-8

ACZ Sample ID: **L65522-07**

Date Sampled: 10/05/07 09:53

Date Received: 10/09/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	460			mg/L	10	50	10/11/07 11:20	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: DUP100507A

ACZ Sample ID: **L65522-08**

Date Sampled: 10/05/07 00:00

Date Received: 10/09/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1480			mg/L	10	50	10/11/07 11:23	ear

Arizona license number: AZ0102

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65522**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234142													
WG234142PBW1	PBW	10/11/07 13:49				2.1	mg/L		-20	20			
WG234142LCSW2	LCSW	10/11/07 14:01	WC070928-1	820		805.8	mg/L	98.3	90	110			
L65520-04DUP	DUP	10/11/07 16:04			16	15.5	mg/L				3.2	20	RA
WG234142PBW2	PBW	10/11/07 16:55				U	mg/L		-20	20			
WG234142LCSW5	LCSW	10/11/07 17:07	WC070928-1	820		823.7	mg/L	100.5	90	110			
L65535-03DUP	DUP	10/11/07 18:27			299	299.2	mg/L				0.1	20	
WG234142PBW3	PBW	10/11/07 19:57				U	mg/L		-20	20			
WG234142LCSW8	LCSW	10/11/07 20:09	WC070928-1	820		828.8	mg/L	101.1	90	110			
WG234142PBW4	PBW	10/11/07 23:16				U	mg/L		-20	20			
WG234142LCSW11	LCSW	10/11/07 23:27	WC070928-1	820		828	mg/L	101	90	110			
WG234142LCSW14	LCSW	10/12/07 2:41	WC070928-1	820		831.4	mg/L	101.4	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		2.013	mg/L	100.7	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.09	0.09			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	1		1.069	mg/L	106.9	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	1	.03	1.078	mg/L	104.8	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	1	.03	1.093	mg/L	106.3	85	115	1.38	20	

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234002													
WG234002ICV	ICV	10/10/07 12:27	MS071004-2	.02006		.01922	mg/L	95.8	90	110			
WG234002ICB	ICB	10/10/07 12:33				U	mg/L		-0.0012	0.0012			
WG234002LFB	LFB	10/10/07 12:38	MS071004-4	.01		.01061	mg/L	106.1	85	115			
L65462-03AS	AS	10/10/07 14:09	MS071004-4	.01	U	.00956	mg/L	95.6	70	130			
L65462-03ASD	ASD	10/10/07 14:14	MS071004-4	.01	U	.00991	mg/L	99.1	70	130	3.6	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234002													
WG234002ICV	ICV	10/10/07 12:27	MS071004-2	.05		.05145	mg/L	102.9	90	110			
WG234002ICB	ICB	10/10/07 12:33				U	mg/L		-0.0015	0.0015			
WG234002LFB	LFB	10/10/07 12:38	MS071004-4	.05		.05572	mg/L	111.4	85	115			
L65462-03AS	AS	10/10/07 14:09	MS071004-4	.05	.0035	.05758	mg/L	108.2	70	130			
L65462-03ASD	ASD	10/10/07 14:14	MS071004-4	.05	.0035	.05779	mg/L	108.6	70	130	0.36	20	

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234690													
WG234690ICV	ICV	10/20/07 23:34	II071009-7	2		1.9821	mg/L	99.1	95	105			
WG234690ICB	ICB	10/20/07 23:38				U	mg/L		-0.009	0.009			
WG234690LFB	LFB	10/20/07 23:54	II071012-2	.5		.4912	mg/L	98.2	85	115			
L65522-02AS	AS	10/21/07 1:17	II071012-2	.5	.025	.5473	mg/L	104.5	85	115			
L65522-02ASD	ASD	10/21/07 1:21	II071012-2	.5	.025	.5426	mg/L	103.5	85	115	0.86	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65522**

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234002													
WG234002ICV	ICV	10/10/07 12:27	MS071004-2	.05		.04667	mg/L	93.3	90	110			
WG234002ICB	ICB	10/10/07 12:33				U	mg/L		-0.0003	0.0003			
WG234002LFB	LFB	10/10/07 12:38	MS071004-4	.05		.04882	mg/L	97.6	85	115			
L65462-03AS	AS	10/10/07 14:09	MS071004-4	.05	U	.04911	mg/L	98.2	70	130			
L65462-03ASD	ASD	10/10/07 14:14	MS071004-4	.05	U	.04943	mg/L	98.9	70	130	0.65	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234002													
WG234002ICV	ICV	10/10/07 12:27	MS071004-2	.05		.04735	mg/L	94.7	90	110			
WG234002ICB	ICB	10/10/07 12:33				U	mg/L		-0.0003	0.0003			
WG234002LFB	LFB	10/10/07 12:38	MS071004-4	.05		.05011	mg/L	100.2	85	115			
L65462-03AS	AS	10/10/07 14:09	MS071004-4	.05	U	.04607	mg/L	92.1	70	130			
L65462-03ASD	ASD	10/10/07 14:14	MS071004-4	.05	U	.04658	mg/L	93.2	70	130	1.1	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	100		99.08	mg/L	99.1	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.6	0.6			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	67.97008		71.36	mg/L	105	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	67.97008	45.5	116.3	mg/L	104.2	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	67.97008	45.5	116.03	mg/L	103.8	85	115	0.23	20	

Chloride

325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234392													
WG234392ICB	ICB	10/17/07 10:02				U	mg/L		-3	3			
WG234392ICV	ICV	10/17/07 10:02	WI070314-1	55		57	mg/L	103.6	90	110			
WG234392LFB1	LFB	10/17/07 10:38	WI070712-1	30		32.5	mg/L	108.3	90	110			
WG234392LFB2	LFB	10/17/07 10:41	WI070712-1	30		32.6	mg/L	108.7	90	110			
L65190-06AS	AS	10/17/07 10:49	10XCL	30	100	120	mg/L	66.7	90	110			M2
WG234392LFB3	LFB	10/17/07 10:56	WI070712-1	30		32.5	mg/L	108.3	90	110			
L65508-05AS	AS	10/17/07 10:58	20XCL	30	840	851	mg/L	36.7	90	110			M2
L65550-12DUP	DUP	10/17/07 11:05			46	46.1	mg/L				0.2	20	
L65508-06DUP	DUP	10/17/07 11:16			860	855	mg/L				0.6	20	
L65522-04AS	AS	10/17/07 11:16	10XCL	30	150	178	mg/L	93.3	90	110			
L65522-05DUP	DUP	10/17/07 11:16			140	134	mg/L				4.4	20	

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		1.954	mg/L	97.7	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.03	0.03			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	.5		.505	mg/L	101	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	.5	U	.515	mg/L	103	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	.5	U	.515	mg/L	103	85	115	0	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65522**

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		1.915	mg/L	95.8	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.03	0.03			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	.5		.5	mg/L	100	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	.5	U	.514	mg/L	102.8	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	.5	U	.507	mg/L	101.4	85	115	1.37	20	

Conductivity @25C

120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234142													
WG234142LCSW1	LCSW	10/11/07 13:50	PCN28067	1408.8		1520	µmhos/crr	107.9	90	110			
L65520-04DUP	DUP	10/11/07 16:04			51	50.7	µmhos/crr				0.6	20	
WG234142LCSW4	LCSW	10/11/07 16:56	PCN28067	1408.8		1516	µmhos/crr	107.6	90	110			
L65535-03DUP	DUP	10/11/07 18:27			796	799	µmhos/crr				0.4	20	
WG234142LCSW7	LCSW	10/11/07 19:58	PCN28067	1408.8		1505	µmhos/crr	106.8	90	110			
WG234142LCSW10	LCSW	10/11/07 23:17	PCN28067	1408.8		1504	µmhos/crr	106.8	90	110			
WG234142LCSW13	LCSW	10/12/07 2:32	PCN28067	1408.8		1497	µmhos/crr	106.3	90	110			

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		1.947	mg/L	97.4	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.03	0.03			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	.5		.514	mg/L	102.8	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	.5	U	.519	mg/L	103.8	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	.5	U	.526	mg/L	105.2	85	115	1.34	20	

Cyanide, total

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234602													
WG234602ICV	ICV	10/18/07 20:57	WI071011-4	.3		.2768	mg/L	92.3	90	110			
WG234602ICB	ICB	10/18/07 20:58				U	mg/L		-0.015	0.015			
WG234526LRB	LRB	10/18/07 20:59				U	mg/L		-0.015	0.015			
WG234526LFB	LFB	10/18/07 21:00	WI071008-2	.2		.1967	mg/L	98.4	90	110			
L65522-07LFM	LFM	10/18/07 21:09	WI071008-2	.2	U	.1948	mg/L	97.4	90	110			
L65522-08DUP	DUP	10/18/07 21:11			.035	.0461	mg/L				27.4	20	RA

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234210													
WG234210ICV	ICV	10/12/07 10:54	WC071011-1	2		2.11	mg/L	105.5	90	110			
WG234210ICB	ICB	10/12/07 11:00				U	mg/L		-0.3	0.3			
WG234210LFB1	LFB	10/12/07 11:06	WC070730-1	5		5	mg/L	100	90	110			
L65497-09AS	AS	10/12/07 11:20	WC070730-1	5	.2	3.41	mg/L	64.2	90	110			M2
L65497-09DUP	DUP	10/12/07 11:27			.2	.19	mg/L				5.1	20	RA
L65522-03AS	AS	10/12/07 12:41	WC070730-1	5	.3	5.27	mg/L	99.4	90	110			
L65522-03DUP	DUP	10/12/07 12:48			.3	.27	mg/L				10.5	20	RA
WG234210LFB2	LFB	10/12/07 14:00	WC070730-1	5		4.9	mg/L	98	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65522**

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		1.975	mg/L	98.8	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.06	0.06			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	1		1.056	mg/L	105.6	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	1	.35	1.384	mg/L	103.4	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	1	.35	1.387	mg/L	103.7	85	115	0.22	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234002													
WG234002ICV	ICV	10/10/07 12:27	MS071004-2	.05		.04659	mg/L	93.2	90	110			
WG234002ICB	ICB	10/10/07 12:33				U	mg/L		-0.0003	0.0003			
WG234002LFB	LFB	10/10/07 12:38	MS071004-4	.05		.04879	mg/L	97.6	85	115			
L65462-03AS	AS	10/10/07 14:09	MS071004-4	.05	U	.04877	mg/L	97.5	70	130			
L65462-03ASD	ASD	10/10/07 14:14	MS071004-4	.05	U	.04938	mg/L	98.8	70	130	1.24	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	100		100.35	mg/L	100.4	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.6	0.6			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	54.96908		57.34	mg/L	104.3	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	54.96908	10.1	68.14	mg/L	105.6	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	54.96908	10.1	68.12	mg/L	105.6	85	115	0.03	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		1.9256	mg/L	96.3	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.015	0.015			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	.5		.537	mg/L	107.4	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	.5	.03	.5675	mg/L	107.5	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	.5	.03	.5684	mg/L	107.7	85	115	0.16	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233854													
WG233854ICV	ICV	10/17/07 18:04	II070927-1	.00498		.00504	mg/L	101.2	95	105			
WG233854ICB	ICB	10/17/07 18:07				U	mg/L		-0.0002	0.0002			
WG234254													
WG234254LRB	LRB	10/17/07 19:20				U	mg/L		-0.00044	0.00044			
WG234254LFB	LFB	10/17/07 19:22	II071002-9	.002		.00205	mg/L	102.5	85	115			
L65447-01LFM	LFM	10/17/07 19:27	II071002-9	.002	U	.00212	mg/L	106	85	115			
L65447-01LFMD	LFMD	10/17/07 19:35	II071002-9	.002	U	.0022	mg/L	110	85	115	3.7	20	
L65522-03LFM	LFM	10/17/07 20:05	II071002-9	.002	.0002	.00243	mg/L	111.5	85	115			
L65522-03LFMD	LFMD	10/17/07 20:07	II071002-9	.002	.0002	.0023	mg/L	105	85	115	5.5	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65522**

Project ID: OJ03DL

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		1.982	mg/L	99.1	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.03	0.03			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	.5		.444	mg/L	88.8	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	.5	U	.451	mg/L	90.2	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	.5	U	.447	mg/L	89.4	85	115	0.89	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		1.902	mg/L	95.1	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.03	0.03			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	.5		.504	mg/L	100.8	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	.5	U	.511	mg/L	102.2	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	.5	U	.513	mg/L	102.6	85	115	0.39	20	

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234512													
WG234512ICV	ICV	10/17/07 19:24	WI070911-1	2.416		2.532	mg/L	104.8	90	110			
WG234512ICB	ICB	10/17/07 19:26				U	mg/L		-0.06	0.06			
WG234512LFB1	LFB	10/17/07 19:27	WI070911-4	2		2.136	mg/L	106.8	90	110			
L65497-13DUP	DUP	10/17/07 19:48			.76	.756	mg/L				0.5	20	
L65497-13AS	AS	10/17/07 19:49	WI070911-4	2	.76	2.903	mg/L	107.2	90	110			
WG234512LFB2	LFB	10/17/07 20:06	WI070911-4	2		2.095	mg/L	104.8	90	110			
WG234664													
WG234664ICV	ICV	10/19/07 18:20	WI070911-1	2.416		2.502	mg/L	103.6	90	110			
WG234664ICB	ICB	10/19/07 18:21				U	mg/L		-0.06	0.06			
WG234663													
WG234663ICV	ICV	10/19/07 19:01	WI070911-1	2.416		2.525	mg/L	104.5	90	110			
WG234663ICB	ICB	10/19/07 19:02				U	mg/L		-0.06	0.06			
WG234663LFB1	LFB	10/19/07 19:04	WI070911-4	2		1.969	mg/L	98.5	90	110			
L65517-02AS	AS	10/19/07 19:25	WI070911-4	2	.13	2.294	mg/L	108.2	90	110			
L65517-03DUP	DUP	10/19/07 19:27			.22	.23	mg/L				4.4	20	
WG234663LFB2	LFB	10/19/07 19:42	WI070911-4	2		1.98	mg/L	99	90	110			

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234142													
WG234142LCSW3	LCSW	10/11/07 14:03	PCN27958	6		6.05	units	100.8	90	110			
L65520-04DUP	DUP	10/11/07 16:04			7.6	7.65	units				0.7	20	
WG234142LCSW6	LCSW	10/11/07 17:10	PCN27958	6		6.06	units	101	90	110			
L65535-03DUP	DUP	10/11/07 18:27			8.1	8.09	units				0.1	20	
WG234142LCSW9	LCSW	10/11/07 20:12	PCN27958	6		6.08	units	101.3	90	110			
WG234142LCSW12	LCSW	10/11/07 23:29	PCN27958	6		6.06	units	101	90	110			
WG234142LCSW15	LCSW	10/12/07 2:44	PCN27958	6		6.08	units	101.3	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65522**

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	20		20.48	mg/L	102.4	95	105			
WG234561ICB	ICB	10/19/07 20:13				.45	mg/L		-0.9	0.9			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	99.76186		104.26	mg/L	104.5	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	99.76186	5.5	113.78	mg/L	108.5	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	99.76186	5.5	114.62	mg/L	109.4	85	115	0.74	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG233965													
WG233965PBW	PBW	10/09/07 15:15				U	mg/L		-20	20			
WG233965LCSW	LCSW	10/09/07 15:17	PCN28214	260		296	mg/L	113.4	80	120			
L65520-03DUP	DUP	10/09/07 15:43			U	U	mg/L				0	20	RA

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234002													
WG234002ICV	ICV	10/10/07 12:27	MS071004-2	.05		.053	mg/L	106	90	110			
WG234002ICB	ICB	10/10/07 12:33				U	mg/L		-0.0003	0.0003			
WG234002LFB	LFB	10/10/07 12:38	MS071004-4	.05		.05427	mg/L	108.5	85	115			
L65462-03AS	AS	10/10/07 14:09	MS071004-4	.05	.008	.06827	mg/L	120.5	70	130			
L65462-03ASD	ASD	10/10/07 14:14	MS071004-4	.05	.008	.06733	mg/L	118.7	70	130	1.39	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	100		100.33	mg/L	100.3	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.9	0.9			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	98.21624		102.35	mg/L	104.2	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	98.21624	38.7	141.1	mg/L	104.3	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	98.21624	38.7	141.07	mg/L	104.2	85	115	0.02	20	

Sulfate

SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234125													
WG234125PBW	PBW	10/11/07 10:50				U	mg/L		-30	30			
WG234125LCSW	LCSW	10/11/07 10:53	WC070903-2	100		98	mg/L	98	80	120			
L65522-08DUP	DUP	10/11/07 11:26			1480	1513	mg/L				2.2	20	

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234002													
WG234002ICV	ICV	10/10/07 12:27	MS071004-2	.05		.0476	mg/L	95.2	90	110			
WG234002ICB	ICB	10/10/07 12:33				U	mg/L		-0.0003	0.0003			
WG234002LFB	LFB	10/10/07 12:38	MS071004-4	.05		.05278	mg/L	105.6	85	115			
L65462-03AS	AS	10/10/07 14:09	MS071004-4	.05	U	.04904	mg/L	98.1	70	130			
L65462-03ASD	ASD	10/10/07 14:14	MS071004-4	.05	U	.04971	mg/L	99.4	70	130	1.36	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65522**

Project ID: OJ03DL

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234561													
WG234561ICV	ICV	10/19/07 20:09	II071009-7	2		1.931	mg/L	96.6	95	105			
WG234561ICB	ICB	10/19/07 20:13				U	mg/L		-0.03	0.03			
WG234561LFB	LFB	10/19/07 20:29	II071012-2	.5		.531	mg/L	106.2	85	115			
L65522-02AS	AS	10/19/07 21:55	II071012-2	.5	U	.532	mg/L	106.4	85	115			
L65522-02ASD	ASD	10/19/07 21:59	II071012-2	.5	U	.526	mg/L	105.2	85	115	1.13	20	

Phelps Dodge Sierrita

ACZ Project ID: L65522

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65522-01	WG234392	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG234602	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234210	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233965	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234142	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65522-02	WG234392	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG234602	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234210	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233965	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234142	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65522-03	WG234392	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG234602	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234210	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233965	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65522-04	WG234602	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234210	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233965	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65522-05	WG234602	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234210	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233965	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge SierritaACZ Project ID: **L65522**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65522-06	WG234526	Cyanide, total	M335.4 - Manual Distillation	QB	Method-specified preservation criteria cannot be met due to sample matrix.
	WG234602		M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234210	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233965	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65522-07	WG234602	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234210	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233965	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65522-08	WG234602	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234210	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG233965	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L65522**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65522
Date Received: 10/9/2007
Received By:
Date Printed: 10/9/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?		X	
12) Are samples requiring no headspace, headspace free?	X		
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

The client was not contacted.

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
568	2	16

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65522
 Date Received: 10/9/2007
 Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65522-01	IW-1		Y		Y							<input type="checkbox"/>
L65522-02	IW-2		Y		Y							<input type="checkbox"/>
L65522-03	IW-3A		Y		Y							<input type="checkbox"/>
L65522-04	IW-4		Y		Y							<input type="checkbox"/>
L65522-05	IW-8		Y		Y							<input type="checkbox"/>
L65522-06	IW-9		Y		Y							<input type="checkbox"/>
L65522-07	PZ-8		Y		Y							<input type="checkbox"/>
L65522-08	DUP100507A		Y		Y							<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

ACZ Laboratories, Inc.

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Billy Dorris
Company: Phelps Dodge Sierrita
E-mail: Billy-Dorris@FMI.com

Address: 6200 W. Duval mine Rd
Green Valley, AZ. 85614
Telephone: 520-648-8873

Copy of Report to:

Name: Jim Norris
Company: Hydro Geo Chem

E-mail: jimn@hginc.com
Telephone: 520-293-1500 Ext 112

Invoice to:

Name: _____

Company: _____

E-mail: _____

Address: _____

Telephone: _____

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES
NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: 0503DL

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material?

of Containers

SAMPLE IDENTIFICATION	DATE:TIME	Matrix
IW-1	10-5-07 / 10:25	GW
IW-2	10-5-07 / 10:50	GW
IW-3A	10-5-07 / 12:05	GW
IW-4	10-5-07 / 13:40	GW
IW-8	10-5-07 / 12:35	GW
IW-9	10-5-07 / 13:15	GW
PZ-8	10-5-07 / 9:53	GW
DUP100507A	10-5-07 /	GW

8
8
8
8
8
8
8

AMBIENT
SUITE

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

"Copy of report" to Jim Norris contains only SD_y results with QC summary.

UPS TRACKING # 1Z 867 7E4 22 1000 3292

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Billy F. Davis

10-8-07 / 15:00

WPK

10-9-07 11:07

October 24, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Bill Dorris, Jim Norris, Dan Simpson

Project ID: OJ03Z5

ACZ Project ID: L65562

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 10, 2007. This project has been assigned to ACZ's project number, L65562. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65562. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 24, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-4A

ACZ Sample ID: **L65562-01**

Date Sampled: 10/09/07 14:45

Date Received: 10/10/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	412			mS/cm			10/09/07 14:45	njb
pH (Field)	Field Measurement	7.5			units			10/09/07 14:45	njb
Temperature (Field)	Field Measurement	27.5			C			10/09/07 14:45	njb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	42.8			mg/L	0.2	1	10/20/07 18:06	erf
Magnesium, dissolved	M200.7 ICP	6.2			mg/L	0.2	1	10/20/07 18:06	erf
Potassium, dissolved	M200.7 ICP	3.3			mg/L	0.3	2	10/20/07 18:06	erf
Sodium, dissolved	M200.7 ICP	37.1			mg/L	0.3	2	10/20/07 18:06	erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		155			mg/L	2	20	10/11/07 0:00	lcp
Carbonate as CaCO ₃		5	B		mg/L	2	20	10/11/07 0:00	lcp
Hydroxide as CaCO ₃			U		mg/L	2	20	10/11/07 0:00	lcp
Total Alkalinity		160		*	mg/L	2	20	10/11/07 0:00	lcp
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			10/24/07 0:00	calc
Sum of Anions		4.3			meq/L	0.1	0.5	10/24/07 0:00	calc
Sum of Cations		4.3			meq/L	0.1	0.5	10/24/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	10.2			mg/L	0.5	3	10/19/07 19:50	ccp
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	10/19/07 19:50	ccp
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.93			mg/L	0.02	0.1	10/24/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.93		*	mg/L	0.02	0.1	10/10/07 18:44	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	10/10/07 18:44	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	270			mg/L	10	20	10/11/07 12:53	ear
Sulfate	300.0 - Ion Chromatography	37.0			mg/L	0.5	3	10/19/07 19:50	ccp
TDS (calculated)	Calculation	239			mg/L	10	50	10/24/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.13						10/24/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-4A

ACZ Sample ID: **L65562-02**

Date Sampled: 10/09/07 14:45

Date Received: 10/10/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	37.2		*	mg/L	0.5	3	10/19/07 20:08	ccp

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita

ACZ Project ID: **L65562**

Project ID: OJ03Z5

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234142													
WG234142PBW1	PBW	10/11/07 13:49				2.1	mg/L		-20	20			
WG234142LCSW2	LCSW	10/11/07 14:01	WC070928-1	820		805.8	mg/L	98.3	90	110			
WG234142PBW2	PBW	10/11/07 16:55				U	mg/L		-20	20			
WG234142LCSW5	LCSW	10/11/07 17:07	WC070928-1	820		823.7	mg/L	100.5	90	110			
WG234142PBW3	PBW	10/11/07 19:57				U	mg/L		-20	20			
WG234142LCSW8	LCSW	10/11/07 20:09	WC070928-1	820		828.8	mg/L	101.1	90	110			
WG234142PBW4	PBW	10/11/07 23:16				U	mg/L		-20	20			
WG234142LCSW11	LCSW	10/11/07 23:27	WC070928-1	820		828	mg/L	101	90	110			
L65566-01DUP	DUP	10/12/07 0:52			38	37.4	mg/L				1.6	20	
WG234142LCSW14	LCSW	10/12/07 2:41	WC070928-1	820		831.4	mg/L	101.4	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234667													
WG234667ICV	ICV	10/20/07 16:22	II071009-7	100		98.84	mg/L	98.8	95	105			
WG234667ICB	ICB	10/20/07 16:25				U	mg/L		-0.6	0.6			
WG234667LFB	LFB	10/20/07 16:39	II071012-2	67.97008		66.17	mg/L	97.4	85	115			
L65555-01AS	AS	10/20/07 17:56	II071012-2	67.97008	6.7	75.37	mg/L	101	85	115			
L65555-01ASD	ASD	10/20/07 17:59	II071012-2	67.97008	6.7	73.74	mg/L	98.6	85	115	2.19	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG234617													
WG234617ICV1	ICV	10/19/07 13:12	WI071019-1	20		19.22	mg/L	96.1	90	110			
WG234617ICB1	ICB	10/19/07 13:30				U	mg/L		-1.5	1.5			
WG234617LFB1	LFB	10/19/07 13:48	WI070727-1	30		29.11	mg/L	97	90	110			
WG234617LFB2	LFB	10/19/07 22:33	WI070727-1	30		30.05	mg/L	100.2	90	110			
L65535-07AS	AS	10/23/07 17:18	WI070727-1	300	432	724.7	mg/L	97.6	90	110			
L65535-07DUP	DUP	10/23/07 17:36			432	430.1	mg/L				0.4	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65562**

Project ID: OJ03Z5

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG234617													
WG234617ICV1	ICV	10/19/07 13:12	WI071019-1	3.984		3.94	mg/L	98.9	90	110			
WG234617ICB1	ICB	10/19/07 13:30				U	mg/L		-0.3	0.3			
WG234617LFB1	LFB	10/19/07 13:48	WI070727-1	1.5		1.49	mg/L	99.3	90	110			
L65535-07AS	AS	10/19/07 19:14	WI070727-1	1.5	.5	2.03	mg/L	102	90	110			
L65535-07DUP	DUP	10/19/07 19:32			.5	.54	mg/L				7.7	20	RA
WG234617LFB2	LFB	10/19/07 22:33	WI070727-1	1.5		1.55	mg/L	103.3	90	110			

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234667													
WG234667ICV	ICV	10/20/07 16:22	II071009-7	100		100.12	mg/L	100.1	95	105			
WG234667ICB	ICB	10/20/07 16:25				U	mg/L		-0.6	0.6			
WG234667LFB	LFB	10/20/07 16:39	II071012-2	54.96908		53.47	mg/L	97.3	85	115			
L65555-01AS	AS	10/20/07 17:56	II071012-2	54.96908	1.3	56.81	mg/L	101	85	115			
L65555-01ASD	ASD	10/20/07 17:59	II071012-2	54.96908	1.3	55.82	mg/L	99.2	85	115	1.76	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234081													
WG234081ICV	ICV	10/10/07 18:07	WI070911-1	2.416		2.513	mg/L	104	90	110			
WG234081ICB	ICB	10/10/07 18:08				U	mg/L		-0.06	0.06			
WG234081LFB1	LFB	10/10/07 18:13	WI070911-4	2		2.069	mg/L	103.5	90	110			
L65550-11AS	AS	10/10/07 18:34	WI070911-4	2	U	2.09	mg/L	104.5	90	110			
L65550-12DUP	DUP	10/10/07 18:37			.04	.054	mg/L				29.8	20	RA
WG234081LFB2	LFB	10/10/07 19:18	WI070911-4	2		2.157	mg/L	107.9	90	110			

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234081													
WG234081ICV	ICV	10/10/07 18:07	WI070911-1	.609		.616	mg/L	101.1	90	110			
WG234081ICB	ICB	10/10/07 18:08				U	mg/L		-0.03	0.03			
WG234081LFB1	LFB	10/10/07 18:13	WI070911-4	1		.991	mg/L	99.1	90	110			
L65550-11AS	AS	10/10/07 18:34	WI070911-4	1	.02	1.075	mg/L	105.5	90	110			
L65550-12DUP	DUP	10/10/07 18:37			U	U	mg/L				0	20	RA
WG234081LFB2	LFB	10/10/07 19:18	WI070911-4	1		1.055	mg/L	105.5	90	110			

Phelps Dodge Sierrita

ACZ Project ID: **L65562**

Project ID: OJ03Z5

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234667													
WG234667ICV	ICV	10/20/07 16:22	II071009-7	20		20.04	mg/L	100.2	95	105			
WG234667ICB	ICB	10/20/07 16:25				U	mg/L		-0.9	0.9			
WG234667LFB	LFB	10/20/07 16:39	II071012-2	99.76186		97.21	mg/L	97.4	85	115			
L65555-01AS	AS	10/20/07 17:56	II071012-2	99.76186	.8	103.8	mg/L	103.2	85	115			
L65555-01ASD	ASD	10/20/07 17:59	II071012-2	99.76186	.8	101.44	mg/L	100.9	85	115	2.3	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234143													
WG234143PBW	PBW	10/11/07 12:40				10	mg/L		-20	20			
WG234143LCSW	LCSW	10/11/07 12:42	PCN28214	260		284	mg/L	109.2	80	120			
L65583-02DUP	DUP	10/11/07 13:06			2400	2410	mg/L				0.4	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234667													
WG234667ICV	ICV	10/20/07 16:22	II071009-7	100		99.56	mg/L	99.6	95	105			
WG234667ICB	ICB	10/20/07 16:25				U	mg/L		-0.9	0.9			
WG234667LFB	LFB	10/20/07 16:39	II071012-2	98.21624		95.02	mg/L	96.7	85	115			
L65555-01AS	AS	10/20/07 17:56	II071012-2	98.21624	2.4	101.46	mg/L	100.9	85	115			
L65555-01ASD	ASD	10/20/07 17:59	II071012-2	98.21624	2.4	99.39	mg/L	98.8	85	115	2.06	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG234617													
WG234617ICV1	ICV	10/19/07 13:12	WI071019-1	50.1		49.65	mg/L	99.1	90	110			
WG234617ICB1	ICB	10/19/07 13:30				U	mg/L		-1.5	1.5			
WG234617LFB1	LFB	10/19/07 13:48	WI070727-1	30		30.34	mg/L	101.1	90	110			
L65535-07AS	AS	10/19/07 19:14	WI070727-1	30	7.5	37.38	mg/L	99.6	90	110			
L65535-07DUP	DUP	10/19/07 19:32			7.5	7.57	mg/L				0.9	20	
WG234617LFB2	LFB	10/19/07 22:33	WI070727-1	30		30.83	mg/L	102.8	90	110			

Phelps Dodge SierritaACZ Project ID: **L65562**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65562-01	WG234617	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234081	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234142	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L65562-02	WG234617	Sulfate	300.0 - Ion Chromatography	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L65562**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L65562
Date Received: 10/10/2007
Received By:
Date Printed: 10/11/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
NA4622	1.8	16

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L65562
 Date Received: 10/10/2007
 Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65562-01	MO-2007-4A		Y									<input type="checkbox"/>
L65562-02	MO-2007-4A									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Dan Simpson
Company: HGC, Inc.
E-mail: dans@hgcinc.com

Address: 51 W. Wetmore Rd
Tucson, AZ 85705

Telephone: (520) 293-1500

Copy of Report to:

Name: Red hall / Bill Dorris / Jim Norris
Company: PDSE / HGC

E-mail: jimnola@cin.com, billy-dorris@fmi.com
Telephone: (520) 293-1500 x.112, (520) 648-8873

Invoice to:

Name: Ned Hall
Company: PDSE
E-mail: ned.hall@fmi.com

Address: 6200 W. Dugall Mine Rd.
P.O. Box 527 G. Valley, AZ 85622
Telephone: (520) 648-8857

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES	<input checked="" type="checkbox"/>
NO	<input type="checkbox"/>

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

As indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: Sierrita Short

Project/PO #: 0J0325

Reporting state for compliance testing: AT

Sampler's Name: N.J. Bc 66

Are any samples NRC licensable material? *NO*

Number of Containers	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
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SAMPLE IDENTIFICATION	DATE:TIME	Matrix	#	Ca	Alk	Cl	V	pH	EC	T°C
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MO-707-4A	10/9/70 14:45	FW	2	X	X			7.46	417	7.5
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[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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[illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible]

Matrix	SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)
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REMARKS

- Green dot & white dot bottles are filtered samples
- no dot bottle is raw/unfiltered

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY: DATE:TIME RECEIVED BY: DATE:TIME

10/9/07	15:30	10/10/07	10:14
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			11

November 09, 2007

Report to:

Bill Dorris

Phelps Dodge Sierrita

P.O. Box 527

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Jim Norris

Project ID: OJ03DL

ACZ Project ID: L65636

Bill Dorris:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 12, 2007. This project has been assigned to ACZ's project number, L65636. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65636. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after December 09, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.



Phelps Dodge Sierrita

November 09, 2007

Project ID: OJ03DL

ACZ Project ID: L65636

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 1 ground water sample from Phelps Dodge Sierrita on October 12, 2007. The sample was received in good condition. Upon receipt, the sample custodian removed the sample from the cooler, inspected the contents, and logged the sample into ACZ's computerized Laboratory Information Management System (LIMS). The sample was assigned ACZ LIMS project number L65636. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

This sample was analyzed for inorganic, organic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. The Mercury data required a re-analysis due to suspected contamination. Data was qualified with an N1 flag.

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-5

ACZ Sample ID: **L65636-01**

Date Sampled: 10/11/07 11:40

Date Received: 10/12/07

Sample Matrix: Ground Water

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation			*				10/20/07 16:48	aml

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.06	0.3	10/25/07 10:57	erf
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	10/15/07 17:10	jjr
Arsenic, dissolved	M200.8 ICP-MS	0.0021			mg/L	0.0005	0.001	10/15/07 17:10	jjr
Barium, dissolved	M200.7 ICP	0.032			mg/L	0.006	0.03	10/25/07 10:57	erf
Beryllium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	10/15/07 17:10	jjr
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	10/15/07 17:10	jjr
Calcium, dissolved	M200.7 ICP	533			mg/L	0.4	2	10/25/07 10:57	erf
Chromium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	10/25/07 10:57	erf
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	10/25/07 10:57	erf
Copper, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	10/25/07 10:57	erf
Iron, dissolved	M200.7 ICP		U		mg/L	0.04	0.1	10/25/07 10:57	erf
Lead, dissolved	M200.8 ICP-MS	0.0013			mg/L	0.0001	0.0005	10/15/07 17:10	jjr
Magnesium, dissolved	M200.7 ICP	94.7			mg/L	0.4	2	10/25/07 10:57	erf
Manganese, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	10/25/07 10:57	erf
Mercury, dissolved	M245.1 CVAA		U	*	mg/L	0.0002	0.001	10/24/07 15:54	gme
Molybdenum, dissolved	M200.7 ICP	0.05	B	*	mg/L	0.02	0.1	10/29/07 17:39	djt
Nickel, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	10/25/07 10:57	erf
Potassium, dissolved	M200.7 ICP	7.4			mg/L	0.6	3	10/25/07 10:57	erf
Selenium, dissolved	M200.8 ICP-MS	0.0017			mg/L	0.0001	0.0005	10/15/07 17:10	jjr
Sodium, dissolved	M200.7 ICP	171			mg/L	0.6	3	10/25/07 10:57	erf
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	10/15/07 17:10	jjr
Zinc, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	10/25/07 10:57	erf

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-5

ACZ Sample ID: **L65636-01**

Date Sampled: 10/11/07 11:40

Date Received: 10/12/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		169			mg/L	2	20	10/15/07 0:00	aeH
Carbonate as CaCO ₃			U		mg/L	2	20	10/15/07 0:00	aeH
Hydroxide as CaCO ₃			U		mg/L	2	20	10/15/07 0:00	aeH
Total Alkalinity		169			mg/L	2	20	10/15/07 0:00	aeH
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-2.8			%			10/30/07 0:00	calc
Sum of Anions		44.5			meq/L	0.1	0.5	10/30/07 0:00	calc
Sum of Cations		42.1			meq/L	0.1	0.5	10/30/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	170			mg/L	10	50	10/23/07 14:24	mls
Conductivity @25C	120.1 / SM2510B	3180			umhos/cm	1	10	10/15/07 17:39	aeH
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.005	0.03	10/23/07 14:54	lbn/ccp
Fluoride	SM4500F-C	0.2	B		mg/L	0.1	0.5	10/17/07 13:04	cas
Hardness as CaCO ₃	SM2340B - Calculation	1720			mg/L	1	7	10/30/07 0:00	calc
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.06		*	mg/L	0.02	0.1	10/20/07 15:25	pjb
pH (lab)	150.1 / SM4500H+ B								
pH		7.8	H		units	0.1	0.1	10/15/07 0:00	aeH
pH measured at		21.0			C	0.1	0.1	10/15/07 0:00	aeH
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3040			mg/L	10	20	10/15/07 12:09	ear
Sulfate	SM4500 SO ₄ -D	1730			mg/L	10	50	10/16/07 10:14	aeH
TDS (calculated)	Calculation	2810			mg/L	10	50	10/30/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.08						10/30/07 0:00	calc

Arizona license number: AZ0102

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L65636**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234306													
WG234306PBW1	PBW	10/15/07 11:34				U	mg/L		-20	20			
WG234306LCSW2	LCSW	10/15/07 11:47	WC071015-1	820		808.8	mg/L	98.6	90	110			
WG234306PBW2	PBW	10/15/07 15:36				U	mg/L		-20	20			
WG234306LCSW5	LCSW	10/15/07 15:49	WC071015-1	820		821	mg/L	100.1	90	110			
L65639-03DUP	DUP	10/15/07 18:16			775	773.4	mg/L				0.2	20	
WG234306PBW3	PBW	10/15/07 18:22				U	mg/L		-20	20			
WG234306LCSW8	LCSW	10/15/07 18:35	WC071015-1	820		824.9	mg/L	100.6	90	110			
WG234306PBW4	PBW	10/15/07 21:25				U	mg/L		-20	20			
WG234306LCSW11	LCSW	10/15/07 21:36	WC071015-1	820		822	mg/L	100.2	90	110			
WG234306LCSW14	LCSW	10/16/07 0:26	WC071015-1	820		821.1	mg/L	100.1	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	2		2.029	mg/L	101.5	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.09	0.09			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	1		1.003	mg/L	100.3	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	1	U	1.079	mg/L	107.9	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	1	U	1.047	mg/L	104.7	85	115	3.01	20	

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.02006		.01796	mg/L	89.5	90	110			
WG234261ICB	ICB	10/15/07 15:35				.00041	mg/L		-0.0012	0.0012			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.01		.00949	mg/L	94.9	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.01	U	.00873	mg/L	87.3	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.01	U	.00866	mg/L	86.6	70	130	0.81	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.05		.0513	mg/L	102.6	90	110			
WG234261ICB	ICB	10/15/07 15:35				U	mg/L		-0.0015	0.0015			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.05		.04993	mg/L	99.9	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.05	.0021	.05197	mg/L	99.7	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.05	.0021	.05181	mg/L	99.4	70	130	0.31	20	

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	2		2.0527	mg/L	102.6	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.009	0.009			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	.5		.4938	mg/L	98.8	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	.5	.114	.6133	mg/L	99.9	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	.5	.114	.5991	mg/L	97	85	115	2.34	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65636**

Project ID: OJ03DL

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.05		.0498	mg/L	99.6	90	110			
WG234261ICB	ICB	10/15/07 15:35				U	mg/L		-0.0003	0.0003			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.05		.04847	mg/L	96.9	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.05	U	.05156	mg/L	103.1	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.05	U	.05202	mg/L	104	70	130	0.89	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.05		.05201	mg/L	104	90	110			
WG234261ICB	ICB	10/15/07 15:35				U	mg/L		-0.0003	0.0003			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.05		.05102	mg/L	102	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.05	U	.04675	mg/L	93.5	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.05	U	.04648	mg/L	93	70	130	0.58	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	100		98.89	mg/L	98.9	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.6	0.6			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	67.97008		68.56	mg/L	100.9	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	67.97008	52.8	120.16	mg/L	99.1	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	67.97008	52.8	117.42	mg/L	95.1	85	115	2.31	20	

Chloride

325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234819													
WG234819ICB	ICB	10/23/07 12:55				U	mg/L		-3	3			
WG234819ICV	ICV	10/23/07 12:55	WI070314-1	55		57.3	mg/L	104.2	90	110			
WG234819LFB2	LFB	10/23/07 13:54	WI070712-1	30		32.1	mg/L	107	90	110			
L65609-02DUP	DUP	10/23/07 14:24			180	185	mg/L				2.7	20	
WG234819LFB1	LFB	10/23/07 14:43	WI070712-1	30		32.6	mg/L	108.7	90	110			
WG234819LFB3	LFB	10/23/07 14:43	WI070712-1	30		33.1	mg/L	110.3	90	110			
L65609-01AS	AS	10/23/07 14:44	WI070712-1	30	27	56.8	mg/L	99.3	90	110			

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	2		1.954	mg/L	97.7	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.03	0.03			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	.5		.494	mg/L	98.8	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	.5	U	.504	mg/L	100.8	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	.5	U	.491	mg/L	98.2	85	115	2.61	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65636**

Project ID: OJ03DL

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	2		1.946	mg/L	97.3	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.03	0.03			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	.5		.498	mg/L	99.6	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	.5	U	.505	mg/L	101	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	.5	U	.496	mg/L	99.2	85	115	1.8	20	

Conductivity @25C

120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234306													
WG234306LCSW1	LCSW	10/15/07 11:36	PCN28067	1408.8		1412	µmhos/crr	100.2	90	110			
WG234306LCSW4	LCSW	10/15/07 15:38	PCN28067	1408.8		1413	µmhos/crr	100.3	90	110			
L65639-03DUP	DUP	10/15/07 18:16			1400	1409	µmhos/crr				0.6	20	
WG234306LCSW7	LCSW	10/15/07 18:24	PCN28067	1408.8		1404	µmhos/crr	99.7	90	110			
WG234306LCSW10	LCSW	10/15/07 21:26	PCN28067	1408.8		1404	µmhos/crr	99.7	90	110			
WG234306LCSW13	LCSW	10/16/07 0:16	PCN28067	1408.8		1395	µmhos/crr	99	90	110			

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	2		1.992	mg/L	99.6	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.03	0.03			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	.5		.503	mg/L	100.6	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	.5	U	.512	mg/L	102.4	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	.5	U	.502	mg/L	100.4	85	115	1.97	20	

Cyanide, total

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234820													
WG234820ICV	ICV	10/23/07 14:38	WI071011-4	.3		.2791	mg/L	93	90	110			
WG234820ICB	ICB	10/23/07 14:39				U	mg/L		-0.015	0.015			
WG234682LRB	LRB	10/23/07 14:40				U	mg/L		-0.015	0.015			
L65636-01DUP	DUP	10/23/07 14:55			U	U	mg/L				0	20	RA
L65638-01LFM	LFM	10/23/07 14:56	WI071008-2	.2	.01	.2217	mg/L	105.9	90	110			
WG234682LFB	LFB	10/23/07 15:06	WI071008-2	.2		.1864	mg/L	93.2	90	110			

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234433													
WG234433ICV	ICV	10/17/07 10:18	WC071011-1	2		2.14	mg/L	107	90	110			
WG234433ICB	ICB	10/17/07 10:25				U	mg/L		-0.3	0.3			
WG234433LFB1	LFB	10/17/07 10:35	WC070730-1	5		5.15	mg/L	103	90	110			
L65609-03AS	AS	10/17/07 12:06	WC070730-1	5	2.6	7.47	mg/L	97.4	90	110			
L65609-03DUP	DUP	10/17/07 12:13			2.6	2.57	mg/L				1.2	20	
WG234433LFB2	LFB	10/17/07 13:24	WC070730-1	5		5.05	mg/L	101	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65636**

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	2		2.011	mg/L	100.6	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.06	0.06			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	1		1.023	mg/L	102.3	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	1	U	1.066	mg/L	106.6	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	1	U	1.036	mg/L	103.6	85	115	2.85	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.05		.05035	mg/L	100.7	90	110			
WG234261ICB	ICB	10/15/07 15:35				U	mg/L		-0.0003	0.0003			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.05		.04971	mg/L	99.4	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.05	.0013	.05109	mg/L	99.6	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.05	.0013	.05193	mg/L	101.3	70	130	1.63	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	100		101.44	mg/L	101.4	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.6	0.6			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	54.96908		55.47	mg/L	100.9	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	54.96908	6.8	63.92	mg/L	103.9	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	54.96908	6.8	62.46	mg/L	101.3	85	115	2.31	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	2		1.9247	mg/L	96.2	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.015	0.015			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	.5		.5174	mg/L	103.5	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	.5	U	.5304	mg/L	106.1	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	.5	U	.5188	mg/L	103.8	85	115	2.21	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234528													
WG234528ICV	ICV	10/24/07 11:28	II071016-1	.005		.00479	mg/L	95.8	95	105			
WG234528ICB	ICB	10/24/07 11:30				U	mg/L		-0.0002	0.0002			
WG234528LRB	LRB	10/24/07 11:33				U	mg/L		-0.00044	0.00044			
WG234528LFB	LFB	10/24/07 11:37	II071017-2	.002		.00212	mg/L	106	85	115			
L65591-05LFM	LFM	10/24/07 12:18	II071017-2	.002	U	.00193	mg/L	96.5	85	115			
L65591-05LFMD	LFMD	10/24/07 12:20	II071017-2	.002	U	.00206	mg/L	103	85	115	6.52	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65636**

Project ID: OJ03DL

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235172													
WG235172ICV	ICV	10/29/07 17:20	II071009-7	2		2.039	mg/L	102	95	105			
WG235172ICB	ICB	10/29/07 17:24				U	mg/L		-0.03	0.03			
WG235172LFB	LFB	10/29/07 17:36	II071029-3	.5		.508	mg/L	101.6	85	115			
L65644-01AS	AS	10/29/07 18:04	II071029-3	.5	U	.4	mg/L	80	85	115			M2
L65644-01ASD	ASD	10/29/07 18:13	II071029-3	.5	U	.414	mg/L	82.8	85	115	3.44	20	M2

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	2		1.941	mg/L	97.1	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.03	0.03			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	.5		.502	mg/L	100.4	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	.5	U	.507	mg/L	101.4	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	.5	U	.501	mg/L	100.2	85	115	1.19	20	

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234683													
WG234683ICV	ICV	10/20/07 14:32	WI070911-1	2.416		2.437	mg/L	100.9	90	110			
WG234683ICB	ICB	10/20/07 14:33				U	mg/L		-0.06	0.06			
WG234684													
WG234684ICV	ICV	10/20/07 14:50	WI070911-1	2.416		2.442	mg/L	101.1	90	110			
WG234684ICB	ICB	10/20/07 14:51				U	mg/L		-0.06	0.06			
WG234684LFB	LFB	10/20/07 14:52	WI070911-4	2		2.003	mg/L	100.2	90	110			
L65609-03AS	AS	10/20/07 15:13	WI070911-4	2	U	2.104	mg/L	105.2	90	110			
L65609-04DUP	DUP	10/20/07 15:16			.02	.032	mg/L				46.2	20	RA

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234306													
WG234306LCSW3	LCSW	10/15/07 11:49	PCN27958	6		6.03	units	100.5	90	110			
WG234306LCSW6	LCSW	10/15/07 15:51	PCN27958	6		6.05	units	100.8	90	110			
L65639-03DUP	DUP	10/15/07 18:16			8.7	8.69	units				0.1	20	
WG234306LCSW9	LCSW	10/15/07 18:37	PCN27958	6		6.05	units	100.8	90	110			
WG234306LCSW12	LCSW	10/15/07 21:38	PCN27958	6		6.03	units	100.5	90	110			
WG234306LCSW15	LCSW	10/16/07 0:29	PCN27958	6		6.05	units	100.8	90	110			

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	20		20.23	mg/L	101.2	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.9	0.9			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	99.76186		99.78	mg/L	100	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	99.76186	3.8	107.34	mg/L	103.8	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	99.76186	3.8	105.18	mg/L	101.6	85	115	2.03	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65636**

Project ID: OJ03DL

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234317													
WG234317PBW	PBW	10/15/07 11:50				U	mg/L		-20	20			
WG234317LCSW	LCSW	10/15/07 11:52	PCN28213	260		248	mg/L	95.4	80	120			
L65640-01DUP	DUP	10/15/07 12:18			450	438	mg/L				2.7	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.05		.05177	mg/L	103.5	90	110			
WG234261ICB	ICB	10/15/07 15:35				U	mg/L		-0.0003	0.0003			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.05		.05122	mg/L	102.4	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.05	.0017	.05297	mg/L	102.5	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.05	.0017	.05729	mg/L	111.2	70	130	7.84	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	100		100.92	mg/L	100.9	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.9	0.9			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	98.21624		96.63	mg/L	98.4	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	98.21624	15.1	114.62	mg/L	101.3	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	98.21624	15.1	111.85	mg/L	98.5	85	115	2.45	20	

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234360													
WG234360PBW	PBW	10/16/07 9:28				U	mg/L		-30	30			
WG234360LCSW	LCSW	10/16/07 9:31	WC070903-2	100		100	mg/L	100	80	120			
L65642-01DUP	DUP	10/16/07 10:50			2300	2420	mg/L				5.1	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.05		.05394	mg/L	107.9	90	110			
WG234261ICB	ICB	10/15/07 15:35				U	mg/L		-0.0003	0.0003			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.05		.05095	mg/L	101.9	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.05	U	.05229	mg/L	104.6	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.05	U	.05298	mg/L	106	70	130	1.31	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234915													
WG234915ICV	ICV	10/25/07 9:25	II071009-7	2		1.929	mg/L	96.5	95	105			
WG234915ICB	ICB	10/25/07 9:28				U	mg/L		-0.03	0.03			
WG234915LFB	LFB	10/25/07 9:42	II071012-2	.5		.507	mg/L	101.4	85	115			
L65646-02AS	AS	10/25/07 11:15	II071012-2	.5	U	.532	mg/L	106.4	85	115			
L65646-02ASD	ASD	10/25/07 11:19	II071012-2	.5	U	.511	mg/L	102.2	85	115	4.03	20	

Phelps Dodge SierritaACZ Project ID: **L65636**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65636-01	WG234682	Cyanide, total	M335.4 - Manual Distillation	QB	Method-specified preservation criteria cannot be met due to sample matrix.
	WG234528	Mercury, dissolved	M245.1 CVAA	N1	See Case Narrative.
	WG235172	Molybdenum, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG234820	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234684	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-5

ACZ Sample ID: **L65636-01**

Date Sampled: 10/11/07 11:40

Date Received: 10/12/07

Sample Matrix: Ground Water

Volatile Organics by GC/MSAnalysis Method: **M8260B GC/MS**

Extract Method:

Workgroup: WG234655

Analyst: jj

Extract Date:

Analysis Date: 10/19/07 17:21

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/L	4	10
Carbon Disulfide	75-15-0		U	1	*	ug/L	4	10
Ethylbenzene	100-41-4		U	1	*	ug/L	4	10
m p Xylene	1330-20-7		U	1	*	ug/L	10	30
o Xylene	95-47- 6		U	1	*	ug/L	4	10
Toluene	108-88-3		U	1	*	ug/L	4	10
Total Xylene			U	1	*	ug/L	10	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	76.4		1	*	%	70	130
Dibromofluoromethane	1868-53-7	121.8		1	*	%	70	130
Toluene-d8	2037-26-5	102.1		1	*	%	70	130



Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCNI/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

B	Analyte detected in daily blank
H	Analysis exceeded method hold time.
J	Analyte concentration detected at a value between MDL and PQL
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	Analyte was analyzed for but not detected at the indicated MDL
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
W	Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride.
X	Quality control sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
P	Analyte concentration differs from second detector by more than 40%.
E	Analyte concentration is estimated due to result exceeding calibration range.
M	Analyte concentration is estimated due to matrix interferences.

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December, 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Organic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita

ACZ Project ID: **L65636**

Project ID: IW-5

Volatile Organics by GC/MS

M8260B GC/MS

WG234655

LCSW	Sample ID: WG234655LCSW		PCN/SCN: SCN0002811				Analyzed: 10/19/07 15:40			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	100		93.7	ug/L	93.7	70	130			
CARBON DISULFIDE	100		90.9	ug/L	90.9	70	130			
M P XYLENE	200		195	ug/L	97.5	70	130			
O XYLENE	100		98	ug/L	98.0	70	130			
TOLUENE	100		94	ug/L	94.0	70	130			
BROMOFLUOROBENZENE (surr)				%	104.5	70	130			
DIBROMOFLUOROMETHANE (surr)				%	93.3	70	130			
TOLUENE-D8 (surr)				%	101.8	70	130			

LCSWD	Sample ID: WG234655LCSWD		PCN/SCN: SCN0002811				Analyzed:		10/19/07 16:13	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	100		94.3	ug/L	94.3	70	130	0.6	20	
CARBON DISULFIDE	100		93.3	ug/L	93.3	70	130	2.6	20	
M P XYLENE	200		201	ug/L	100.5	70	130	3	20	
O XYLENE	100		101	ug/L	101.0	70	130	3	20	
TOLUENE	100		96.7	ug/L	96.7	70	130	2.8	20	
BROMOFLUOROBENZENE (surr)				%	103.6	70	130			
DIBROMOFLUOROMETHANE (surr)				%	97.0	70	130			
TOLUENE-D8 (surr)				%	101.6	70	130			

PBW	Sample ID: WG234655PBW						Analyzed:		10/19/07 15:06	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE			U	ug/L		-10	10			
CARBON DISULFIDE			U	ug/L		-10	10			
ETHYL BENZENE			U	ug/L		-10	10			
M P XYLENE			U	ug/L		-30	30			
O XYLENE			U	ug/L		-10	10			
TOLUENE			U	ug/L		-10	10			
BROMOFLUOROBENZENE (surr)				%	80.2	70	130			
DIBROMOFLUOROMETHANE (surr)				%	111.1	70	130			
TOLUENE-D8 (surr)				%	103.2	70	130			

Phelps Dodge SierritaACZ Project ID: **L65636**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
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No extended qualifiers associated with this analysis

Phelps Dodge Sierrita

ACZ Project ID: **L65636**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65636
Date Received: 10/12/2007
Received By:
Date Printed: 10/12/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?		X	
12) Are samples requiring no headspace, headspace free?	X		
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
1631	3.4	18

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65636
Date Received: 10/12/2007
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65636-01	IW-5		Y		Y							<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____



Laboratories, Inc.

165636

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Bill Dorris
Company: FM Copper & Gold Sierrita
E-mail: Billy-Dorris@FMI.com

Address: 6200 W. Duval Mine Rd
Green Valley, AZ 85614
Telephone: 520 648 8873

Copy of Report to:

Name: Jim Norris
Company: Hydro Geo Chem

E-mail: jimn@hginc.com
Telephone: 520-293-1500 Ext 112

Invoice to:

Name:
Company:
E-mail:

Address:

Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES ☐
NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:
Project/PO #: OJ03DL
Reporting state for compliance testing:
Sampler's Name:
Are any samples NRC licensable material?

of Containers

SAMPLE IDENTIFICATION **DATE:TIME** **Matrix**

<u>IW-5</u>	<u>10-11-07/11:40</u>	<u>GW</u>	<u>8</u>	<u>AMBIENT</u>															
				<u>SUITE</u>															

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

"Copy of report" to Jim Norris contains only SO₄ results with QC Summary.

UPS TRACKING # 1Z 867 7E4 22 1000 3256

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RFCEIVED BY:

DATE:TIME

Billy F. Dorris 10-11-07/15:00 WLL 10-12-07/11:02

Bill Dorris
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

November 01, 2007

Cc: Jim Norris

Project ID: OJ03DL
ACZ Project ID: L65641 – SULFATE ONLY

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 12, 2007. This project was assigned to ACZ's project number, L65641. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65641. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute. Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all the requirements of NELAC.

This report should be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-28

ACZ Sample ID: **L65641-01**

Date Sampled: 10/11/07 11:09

Date Received: 10/12/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1950			mg/L	10	50	10/16/07 10:39	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-29

ACZ Sample ID: **L65641-02**

Date Sampled: 10/11/07 10:25

Date Received: 10/12/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1710			mg/L	10	50	10/16/07 10:42	aeH

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65641**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234306													
WG234306PBW1	PBW	10/15/07 11:34				U	mg/L		-20	20			
WG234306LCSW2	LCSW	10/15/07 11:47	WC071015-1	820		808.8	mg/L	98.6	90	110			
WG234306PBW2	PBW	10/15/07 15:36				U	mg/L		-20	20			
WG234306LCSW5	LCSW	10/15/07 15:49	WC071015-1	820		821	mg/L	100.1	90	110			
WG234306PBW3	PBW	10/15/07 18:22				U	mg/L		-20	20			
WG234306LCSW8	LCSW	10/15/07 18:35	WC071015-1	820		824.9	mg/L	100.6	90	110			
L65642-04DUP	DUP	10/15/07 19:51			485	483.8	mg/L				0.2	20	
WG234306PBW4	PBW	10/15/07 21:25				U	mg/L		-20	20			
WG234306LCSW11	LCSW	10/15/07 21:36	WC071015-1	820		822	mg/L	100.2	90	110			
WG234306LCSW14	LCSW	10/16/07 0:26	WC071015-1	820		821.1	mg/L	100.1	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	2		2.005	mg/L	100.3	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.09	0.09			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	1		.997	mg/L	99.7	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	1	U	1.033	mg/L	103.3	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	1	U	1.025	mg/L	102.5	85	115	0.78	20	

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.02006		.01796	mg/L	89.5	90	110			
WG234261ICB	ICB	10/15/07 15:35				.00041	mg/L		-0.0012	0.0012			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.01		.00949	mg/L	94.9	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.01	U	.00873	mg/L	87.3	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.01	U	.00866	mg/L	86.6	70	130	0.81	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.05		.0513	mg/L	102.6	90	110			
WG234261ICB	ICB	10/15/07 15:35				U	mg/L		-0.0015	0.0015			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.05		.04993	mg/L	99.9	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.05	.0021	.05197	mg/L	99.7	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.05	.0021	.05181	mg/L	99.4	70	130	0.31	20	

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	2		2.0167	mg/L	100.8	95	105			
WG234835ICB	ICB	10/23/07 21:05				.0032	mg/L		-0.009	0.009			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	.5		.4966	mg/L	99.3	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	.5	.015	.5141	mg/L	99.8	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	.5	.015	.5083	mg/L	98.7	85	115	1.13	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65641**

Project ID: OJ03DL

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.05		.0498	mg/L	99.6	90	110			
WG234261ICB	ICB	10/15/07 15:35				U	mg/L		-0.0003	0.0003			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.05		.04847	mg/L	96.9	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.05	U	.05156	mg/L	103.1	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.05	U	.05202	mg/L	104	70	130	0.89	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.05		.05201	mg/L	104	90	110			
WG234261ICB	ICB	10/15/07 15:35				U	mg/L		-0.0003	0.0003			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.05		.05102	mg/L	102	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.05	U	.04675	mg/L	93.5	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.05	U	.04648	mg/L	93	70	130	0.58	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	100		97.79	mg/L	97.8	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.6	0.6			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	67.97008		68.07	mg/L	100.1	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	67.97008	49.2	115.12	mg/L	97	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	67.97008	49.2	113.15	mg/L	94.1	85	115	1.73	20	

Chloride

325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235049													
WG235049ICV	ICV	10/26/07 14:24	WI070314-1	55		55.1	mg/L	100.2	90	110			
WG235049ICB	ICB	10/26/07 14:25				1.2	mg/L		-3	3			
WG235049LFB1	LFB	10/26/07 14:26	WI070712-1	30		30	mg/L	100	90	110			
L65500-01AS	AS	10/26/07 14:28	WI070712-1	30	19	51.7	mg/L	109	90	110			
L65500-02DUP	DUP	10/26/07 14:30			12	11.7	mg/L				2.5	20	
L65646-01AS	AS	10/26/07 14:44	WI070712-1	30	3	29.3	mg/L	87.7	90	110			M2
WG235049LFB2	LFB	10/26/07 14:54	WI070712-1	30		31.3	mg/L	104.3	90	110			
L65641-02DUP	DUP	10/26/07 15:29			150	152	mg/L				1.3	20	

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	2		1.933	mg/L	96.7	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.03	0.03			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	.5		.492	mg/L	98.4	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	.5	U	.487	mg/L	97.4	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	.5	U	.482	mg/L	96.4	85	115	1.03	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65641**

Project ID: OJ03DL

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	2		1.918	mg/L	95.9	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.03	0.03			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	.5		.49	mg/L	98	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	.5	U	.489	mg/L	97.8	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	.5	U	.473	mg/L	94.6	85	115	3.33	20	

Conductivity @25C

120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234306													
WG234306LCSW1	LCSW	10/15/07 11:36	PCN28067	1408.8		1412	µmhos/crr	100.2	90	110			
WG234306LCSW4	LCSW	10/15/07 15:38	PCN28067	1408.8		1413	µmhos/crr	100.3	90	110			
WG234306LCSW7	LCSW	10/15/07 18:24	PCN28067	1408.8		1404	µmhos/crr	99.7	90	110			
L65642-04DUP	DUP	10/15/07 19:51			2740	2730	µmhos/crr				0.4	20	
WG234306LCSW10	LCSW	10/15/07 21:26	PCN28067	1408.8		1404	µmhos/crr	99.7	90	110			
WG234306LCSW13	LCSW	10/16/07 0:16	PCN28067	1408.8		1395	µmhos/crr	99	90	110			

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	2		1.962	mg/L	98.1	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.03	0.03			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	.5		.502	mg/L	100.4	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	.5	U	.503	mg/L	100.6	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	.5	U	.492	mg/L	98.4	85	115	2.21	20	

Cyanide, total

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234820													
WG234820ICV	ICV	10/23/07 14:38	WI071011-4	.3		.2791	mg/L	93	90	110			
WG234820ICB	ICB	10/23/07 14:39				U	mg/L		-0.015	0.015			
WG234682LRB	LRB	10/23/07 14:40				U	mg/L		-0.015	0.015			
L65636-01DUP	DUP	10/23/07 14:55			U	U	mg/L				0	20	RA
L65638-01LFM	LFM	10/23/07 14:56	WI071008-2	.2	.01	.2217	mg/L	105.9	90	110			
WG234682LFB	LFB	10/23/07 15:06	WI071008-2	.2		.1864	mg/L	93.2	90	110			

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234433													
WG234433ICV	ICV	10/17/07 10:18	WC071011-1	2		2.14	mg/L	107	90	110			
WG234433ICB	ICB	10/17/07 10:25				U	mg/L		-0.3	0.3			
WG234433LFB1	LFB	10/17/07 10:35	WC070730-1	5		5.15	mg/L	103	90	110			
L65609-03AS	AS	10/17/07 12:06	WC070730-1	5	2.6	7.47	mg/L	97.4	90	110			
L65609-03DUP	DUP	10/17/07 12:13			2.6	2.57	mg/L				1.2	20	
WG234433LFB2	LFB	10/17/07 13:24	WC070730-1	5		5.05	mg/L	101	90	110			

Phelps Dodge Sierrita

ACZ Project ID: **L65641**

Project ID: OJ03DL

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	2		1.989	mg/L	99.5	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.06	0.06			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	1		1.035	mg/L	103.5	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	1	U	1.028	mg/L	102.8	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	1	U	1.016	mg/L	101.6	85	115	1.17	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.05		.05035	mg/L	100.7	90	110			
WG234261ICB	ICB	10/15/07 15:35				U	mg/L		-0.0003	0.0003			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.05		.04971	mg/L	99.4	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.05	.0013	.05109	mg/L	99.6	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.05	.0013	.05193	mg/L	101.3	70	130	1.63	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	100		100.07	mg/L	100.1	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.6	0.6			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	54.96908		55.89	mg/L	101.7	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	54.96908	15.5	72.22	mg/L	103.2	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	54.96908	15.5	71.43	mg/L	101.7	85	115	1.1	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	2		1.8959	mg/L	94.8	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.015	0.015			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	.5		.519	mg/L	103.8	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	.5	.039	.5174	mg/L	95.7	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	.5	.039	.5075	mg/L	93.7	85	115	1.93	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234528													
WG234528ICV	ICV	10/24/07 11:28	II071016-1	.005		.00479	mg/L	95.8	95	105			
WG234528ICB	ICB	10/24/07 11:30				U	mg/L		-0.0002	0.0002			
WG234528LRB	LRB	10/24/07 11:33				U	mg/L		-0.00044	0.00044			
WG234528LFB	LFB	10/24/07 11:37	II071017-2	.002		.00212	mg/L	106	85	115			
L65585-05LFM	LFM	10/24/07 11:42	II071017-2	.002	U	.00222	mg/L	111	85	115			
L65585-05LFMD	LFMD	10/24/07 11:46	II071017-2	.002	U	.00211	mg/L	105.5	85	115	5.08	20	
L65591-05LFM	LFM	10/24/07 12:18	II071017-2	.002	U	.00193	mg/L	96.5	85	115			
L65591-05LFMD	LFMD	10/24/07 12:20	II071017-2	.002	U	.00206	mg/L	103	85	115	6.52	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65641**

Project ID: OJ03DL

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	2		1.954	mg/L	97.7	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.03	0.03			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	.5		.412	mg/L	82.4	85	115			LA
L65493-02AS	AS	10/23/07 22:21	II071012-2	.5	U	.403	mg/L	80.6	85	115			M2
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	.5	U	.396	mg/L	79.2	85	115	1.75	20	M2

WG235172

WG235172ICV	ICV	10/29/07 17:20	II071009-7	2		2.039	mg/L	102	95	105			
WG235172ICB	ICB	10/29/07 17:24				U	mg/L		-0.03	0.03			
WG235172LFB	LFB	10/29/07 17:36	II071029-3	.5		.508	mg/L	101.6	85	115			
L65644-01AS	AS	10/29/07 18:04	II071029-3	.5	U	.4	mg/L	80	85	115			M2
L65644-01ASD	ASD	10/29/07 18:13	II071029-3	.5	U	.414	mg/L	82.8	85	115	3.44	20	M2

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	2		1.907	mg/L	95.4	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.03	0.03			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	.5		.489	mg/L	97.8	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	.5	U	.486	mg/L	97.2	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	.5	U	.478	mg/L	95.6	85	115	1.66	20	

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234683													
WG234683ICV	ICV	10/20/07 14:32	WI070911-1	2.416		2.437	mg/L	100.9	90	110			
WG234683ICB	ICB	10/20/07 14:33				U	mg/L		-0.06	0.06			
WG234684													
WG234684ICV	ICV	10/20/07 14:50	WI070911-1	2.416		2.442	mg/L	101.1	90	110			
WG234684ICB	ICB	10/20/07 14:51				U	mg/L		-0.06	0.06			
WG234684LFB	LFB	10/20/07 14:52	WI070911-4	2		2.003	mg/L	100.2	90	110			
L65609-03AS	AS	10/20/07 15:13	WI070911-4	2	U	2.104	mg/L	105.2	90	110			
L65609-04DUP	DUP	10/20/07 15:16			.02	.032	mg/L				46.2	20	RA

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234306													
WG234306LCSW3	LCSW	10/15/07 11:49	PCN27958	6		6.03	units	100.5	90	110			
WG234306LCSW6	LCSW	10/15/07 15:51	PCN27958	6		6.05	units	100.8	90	110			
WG234306LCSW9	LCSW	10/15/07 18:37	PCN27958	6		6.05	units	100.8	90	110			
L65642-04DUP	DUP	10/15/07 19:51			8.1	8.05	units				0.6	20	
WG234306LCSW12	LCSW	10/15/07 21:38	PCN27958	6		6.03	units	100.5	90	110			
WG234306LCSW15	LCSW	10/16/07 0:29	PCN27958	6		6.05	units	100.8	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65641**

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	20		20.36	mg/L	101.8	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.9	0.9			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	99.76186		102.38	mg/L	102.6	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	99.76186	1.4	108.07	mg/L	106.9	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	99.76186	1.4	107.27	mg/L	106.1	85	115	0.74	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234373													
WG234373PBW	PBW	10/16/07 11:05				U	mg/L		-20	20			
WG234373LCSW	LCSW	10/16/07 11:07	PCN28213	260		254	mg/L	97.7	80	120			
L65659-03DUP	DUP	10/16/07 11:33			2220	2230	mg/L				0.4	20	

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.05		.05177	mg/L	103.5	90	110			
WG234261ICB	ICB	10/15/07 15:35				U	mg/L		-0.0003	0.0003			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.05		.05122	mg/L	102.4	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.05	.0017	.05297	mg/L	102.5	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.05	.0017	.05729	mg/L	111.2	70	130	7.84	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	100		101.44	mg/L	101.4	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.9	0.9			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	98.21624		100.57	mg/L	102.4	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	98.21624	8	111.66	mg/L	105.5	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	98.21624	8	110.57	mg/L	104.4	85	115	0.98	20	

Sulfate

SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234360													
WG234360PBW	PBW	10/16/07 9:28				U	mg/L		-30	30			
WG234360LCSW	LCSW	10/16/07 9:31	WC070903-2	100		100	mg/L	100	80	120			
L65642-01DUP	DUP	10/16/07 10:50			2300	2420	mg/L				5.1	20	

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234261													
WG234261ICV	ICV	10/15/07 15:29	MS071004-2	.05		.05394	mg/L	107.9	90	110			
WG234261ICB	ICB	10/15/07 15:35				U	mg/L		-0.0003	0.0003			
WG234261LFB	LFB	10/15/07 15:41	MS071004-4	.05		.05095	mg/L	101.9	85	115			
L65636-01AS	AS	10/15/07 17:16	MS071004-4	.05	U	.05229	mg/L	104.6	70	130			
L65636-01ASD	ASD	10/15/07 17:22	MS071004-4	.05	U	.05298	mg/L	106	70	130	1.31	20	

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L65641**

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234835													
WG234835ICV	ICV	10/23/07 21:02	II071009-7	2		1.907	mg/L	95.4	95	105			
WG234835ICB	ICB	10/23/07 21:05				U	mg/L		-0.03	0.03			
WG234835LFB	LFB	10/23/07 21:21	II071012-2	.5		.496	mg/L	99.2	85	115			
L65493-02AS	AS	10/23/07 22:21	II071012-2	.5	U	.514	mg/L	102.8	85	115			
L65493-02ASD	ASD	10/23/07 22:25	II071012-2	.5	U	.492	mg/L	98.4	85	115	4.37	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65641**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65641-01	WG234261	Antimony, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
		Arsenic, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
		Beryllium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
		Cadmium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
		Lead, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
	WG235172	Molybdenum, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG234261	Selenium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
		Thallium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
	WG234820	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234684	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65641-02	WG234682	Cyanide, total	M335.4 - Manual Distillation	QB	Method-specified preservation criteria cannot be met due to sample matrix.
	WG234261	Antimony, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
		Arsenic, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
		Beryllium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
		Cadmium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
		Lead, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
	WG234835	Molybdenum, dissolved	M200.7 ICP	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [< MDL].
			M200.7 ICP	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG234261	Selenium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
		Thallium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
	WG235049	Chloride	325.2 / SM4500Cl-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG234820	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234684	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L65641**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65641
Date Received: 10/12/2007
Received By:
Date Printed: 10/12/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?		X	
12) Are samples requiring no headspace, headspace free?	X		
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
1878	0.5	17

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65641
Date Received: 10/12/2007
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65641-01	MH-28		Y		Y							<input type="checkbox"/>
L65641-02	MH-29		Y		Y							<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: <i>Bill Dorris</i>	Address: <i>6200 W. Duval Mine Rd</i>
Company: <i>FM Copper & Gold Sierrita</i>	<i>Green Valley, AZ 85614</i>
E-mail: <i>Billy — Dorris @ FME . com</i>	Telephone: <i>520-648-8873</i>

Copy of Report to:

Name: Jim Norris	E-mail: jimn@hginc.com
Company: Hydro Geo Chem	Telephone: 520-293-1500 Ex+ 112

Invoice to:

Name:		Address:
Company:		
E-mail:		Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES
NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

[illegible]

REMARKS

"Copy of Report" to Jim Norris contains only SO₄ results with QC Summary. Please generate a third report that contains the "Quarterly Suite" results with QC Summary and send with "Ambient Suite" results to Bill Dorris.

UPS TRACKING # 1Z 867 7E4 22 1000 3265

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Billie F. Davis	10-11-07/15:00	KULL	10-12-07/11:10

October 30, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Bill Dorris, Jim Norris, Dan Simpson

Project ID: OJ03Z5

ACZ Project ID: L65645

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 12, 2007. This project has been assigned to ACZ's project number, L65645. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65645. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 30, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-4B-F

ACZ Sample ID: **L65645-01**

Date Sampled: 10/11/07 08:20

Date Received: 10/12/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	376			mS/cm			10/11/07 8:20	nb
pH (Field)	Field Measurement	7.9			units			10/11/07 8:20	nb
Temperature (Field)	Field Measurement	26.4			C			10/11/07 8:20	nb
Turbidity (Field)	Field Measurement	5.12			NTU			10/11/07 8:20	nb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	41.6			mg/L	0.2	1	10/25/07 19:49	djt
Magnesium, dissolved	M200.7 ICP	4.3			mg/L	0.2	1	10/25/07 19:49	djt
Potassium, dissolved	M200.7 ICP	2.9			mg/L	0.3	2	10/25/07 19:49	djt
Sodium, dissolved	M200.7 ICP	35.7		*	mg/L	0.3	2	10/25/07 19:49	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		143			mg/L	2	20	10/15/07 0:00	aeh
Carbonate as CaCO ₃			U		mg/L	2	20	10/15/07 0:00	aeh
Hydroxide as CaCO ₃			U		mg/L	2	20	10/15/07 0:00	aeh
Total Alkalinity		143		*	mg/L	2	20	10/15/07 0:00	aeh
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.3			%			10/30/07 0:00	calc
Sum of Anions		3.9			meq/L	0.1	0.5	10/30/07 0:00	calc
Sum of Cations		4.0			meq/L	0.1	0.5	10/30/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	9.1			mg/L	0.5	3	10/25/07 3:01	ccp
Fluoride	M300.0 - Ion Chromatography	0.6		*	mg/L	0.1	0.5	10/25/07 3:01	ccp
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.77			mg/L	0.02	0.1	10/30/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.77			mg/L	0.02	0.1	10/12/07 18:34	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	10/12/07 18:34	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	230			mg/L	10	20	10/16/07 11:24	ear
Sulfate	300.0 - Ion Chromatography	37.6			mg/L	0.5	3	10/25/07 3:01	ccp
TDS (calculated)	Calculation	221			mg/L	10	50	10/30/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.04						10/30/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-4B

ACZ Sample ID: **L65645-02**

Date Sampled: 10/11/07 08:20

Date Received: 10/12/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	37.5			mg/L	0.5	3	10/25/07 3:19	ccp

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L65645**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234306													
WG234306PBW1	PBW	10/15/07 11:34				U	mg/L		-20	20			
WG234306LCSW2	LCSW	10/15/07 11:47	WC071015-1	820		808.8	mg/L	98.6	90	110			
WG234306PBW2	PBW	10/15/07 15:36				U	mg/L		-20	20			
WG234306LCSW5	LCSW	10/15/07 15:49	WC071015-1	820		821	mg/L	100.1	90	110			
WG234306PBW3	PBW	10/15/07 18:22				U	mg/L		-20	20			
WG234306LCSW8	LCSW	10/15/07 18:35	WC071015-1	820		824.9	mg/L	100.6	90	110			
WG234306PBW4	PBW	10/15/07 21:25				U	mg/L		-20	20			
WG234306LCSW11	LCSW	10/15/07 21:36	WC071015-1	820		822	mg/L	100.2	90	110			
L65660-04DUP	DUP	10/15/07 22:50			234	233.1	mg/L				0.4	20	
WG234306LCSW14	LCSW	10/16/07 0:26	WC071015-1	820		821.1	mg/L	100.1	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234965													
WG234965ICV	ICV	10/25/07 18:15	II071009-6	100		101.88	mg/L	101.9	95	105			
WG234965ICB	ICB	10/25/07 18:19				U	mg/L		-0.6	0.6			
WG234965LFB	LFB	10/25/07 18:31	II071012-2	67.97008		71.35	mg/L	105	85	115			
L65644-01AS	AS	10/25/07 19:33	II071012-2	67.97008	.3	74.03	mg/L	108.5	85	115			
L65644-01ASD	ASD	10/25/07 19:36	II071012-2	67.97008	.3	73.36	mg/L	107.5	85	115	0.91	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG234870													
WG234870ICV	ICV	10/24/07 14:38	WI071019-1	20		19.89	mg/L	99.5	90	110			
WG234870ICB	ICB	10/24/07 14:57				U	mg/L		-1.5	1.5			
WG234870LFB1	LFB	10/24/07 15:15	WI070727-1	30		29.32	mg/L	97.7	90	110			
WG234870LFB2	LFB	10/25/07 0:00	WI070727-1	30		29.44	mg/L	98.1	90	110			
L65634-05AS	AS	10/25/07 17:18	WI070727-1	1500	230	1745	mg/L	101	90	110			
L65634-05DUP	DUP	10/25/07 17:36			230	223	mg/L				3.1	20	RA

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L65645**

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG234870													
WG234870ICV	ICV	10/24/07 14:38	WI071019-1	3.984		4.1	mg/L	102.9	90	110			
WG234870ICB	ICB	10/24/07 14:57				U	mg/L		-0.3	0.3			
WG234870LFB1	LFB	10/24/07 15:15	WI070727-1	1.5		1.51	mg/L	100.7	90	110			
WG234870LFB2	LFB	10/25/07 0:00	WI070727-1	1.5		1.55	mg/L	103.3	90	110			
L65634-05AS	AS	10/25/07 0:36	WI070727-1	3	.7	3.73	mg/L	101	90	110			
L65634-05DUP	DUP	10/25/07 0:54			.7	.75	mg/L				6.9	20	RA

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234965													
WG234965ICV	ICV	10/25/07 18:15	II071009-6	100		101.9	mg/L	101.9	95	105			
WG234965ICB	ICB	10/25/07 18:19				U	mg/L		-0.6	0.6			
WG234965LFB	LFB	10/25/07 18:31	II071012-2	54.96908		57.06	mg/L	103.8	85	115			
L65644-01AS	AS	10/25/07 19:33	II071012-2	54.96908	U	59.34	mg/L	108	85	115			
L65644-01ASD	ASD	10/25/07 19:36	II071012-2	54.96908	U	59.11	mg/L	107.5	85	115	0.39	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234250													
WG234250ICV	ICV	10/12/07 17:50	WI070911-1	2.416		2.559	mg/L	105.9	90	110			
WG234250ICB	ICB	10/12/07 17:51				U	mg/L		-0.06	0.06			
WG234250LFB1	LFB	10/12/07 17:55	WI070911-4	2		2.154	mg/L	107.7	90	110			
WG234250LFB2	LFB	10/12/07 18:33	WI070911-4	2		2.148	mg/L	107.4	90	110			
L65645-01AS	AS	10/12/07 18:35	WI070911-4	2	.77	2.885	mg/L	105.8	90	110			
L65646-01DUP	DUP	10/12/07 18:42			1.76	1.778	mg/L				1	20	

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234250													
WG234250ICV	ICV	10/12/07 17:50	WI070911-1	.609		.612	mg/L	100.5	90	110			
WG234250ICB	ICB	10/12/07 17:51				U	mg/L		-0.03	0.03			
WG234250LFB1	LFB	10/12/07 17:55	WI070911-4	1		1.001	mg/L	100.1	90	110			
WG234250LFB2	LFB	10/12/07 18:33	WI070911-4	1		1.015	mg/L	101.5	90	110			
L65645-01AS	AS	10/12/07 18:35	WI070911-4	1	U	.991	mg/L	99.1	90	110			
L65646-01DUP	DUP	10/12/07 18:42			U	U	mg/L				0	20	RA

Phelps Dodge Sierrita

ACZ Project ID: **L65645**

Project ID: OJ03Z5

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234965													
WG234965ICV	ICV	10/25/07 18:15	II071009-6	20		19.79	mg/L	99	95	105			
WG234965ICB	ICB	10/25/07 18:19				U	mg/L		-0.9	0.9			
WG234965LFB	LFB	10/25/07 18:31	II071012-2	99.76186		103.8	mg/L	104	85	115			
L65644-01AS	AS	10/25/07 19:33	II071012-2	99.76186	.9	106.37	mg/L	105.7	85	115			
L65644-01ASD	ASD	10/25/07 19:36	II071012-2	99.76186	.9	105.55	mg/L	104.9	85	115	0.77	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234373													
WG234373PBW	PBW	10/16/07 11:05				U	mg/L		-20	20			
WG234373LCSW	LCSW	10/16/07 11:07	PCN28213	260		254	mg/L	97.7	80	120			
L65659-03DUP	DUP	10/16/07 11:33			2220	2230	mg/L				0.4	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234965													
WG234965ICV	ICV	10/25/07 18:15	II071009-6	100		101.69	mg/L	101.7	95	105			
WG234965ICB	ICB	10/25/07 18:19				U	mg/L		-0.9	0.9			
WG234965LFB	LFB	10/25/07 18:31	II071012-2	98.21624		101.4	mg/L	103.2	85	115			
L65644-01AS	AS	10/25/07 19:33	II071012-2	98.21624	.9	104.77	mg/L	105.8	85	115			
L65644-01ASD	ASD	10/25/07 19:36	II071012-2	98.21624	.9	103.63	mg/L	104.6	85	115	1.09	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG234870													
WG234870ICV	ICV	10/24/07 14:38	WI071019-1	50.1		51.76	mg/L	103.3	90	110			
WG234870ICB	ICB	10/24/07 14:57				U	mg/L		-1.5	1.5			
WG234870LFB1	LFB	10/24/07 15:15	WI070727-1	30		30.58	mg/L	101.9	90	110			
WG234870LFB2	LFB	10/25/07 0:00	WI070727-1	30		30.19	mg/L	100.6	90	110			
L65634-05AS	AS	10/25/07 17:18	WI070727-1	1500	1610	3110	mg/L	100	90	110			
L65634-05DUP	DUP	10/25/07 17:36			1610	1571	mg/L				2.5	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65645**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65645-01	WG234965	Sodium, dissolved	M200.7 ICP	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG234870	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234250	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234306	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L65645**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L65645
Date Received: 10/12/2007
Received By:
Date Printed: 10/12/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (μR/hr)
NA4651	3.2	16

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L65645
 Date Received: 10/12/2007
 Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65645-01	MO-2007-4B-F		Y									<input type="checkbox"/>
L65645-02	MO-2007-4B									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

White - Return with sample. Yellow - Retain for your records.

October 30, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Dan Simpson, Jim Norris, Bill Dorris

Project ID: OJ03Z5

ACZ Project ID: L65663

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 13, 2007. This project has been assigned to ACZ's project number, L65663. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65663. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 30, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-5B-F

ACZ Sample ID: **L65663-01**

Date Sampled: 10/12/07 10:30

Date Received: 10/13/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	1150			mS/cm			10/12/07 10:30	njb
pH (Field)	Field Measurement	7.6			units			10/12/07 10:30	njb
Temperature (Field)	Field Measurement	29.9			C			10/12/07 10:30	njb
Turbidity (Field)	Field Measurement	3.48			NTU			10/12/07 10:30	njb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	84.8			mg/L	0.2	1	10/26/07 18:25	djt
Magnesium, dissolved	M200.7 ICP	3.7			mg/L	0.2	1	10/26/07 18:25	djt
Potassium, dissolved	M200.7 ICP	5.5			mg/L	0.3	2	10/26/07 18:25	djt
Sodium, dissolved	M200.7 ICP	164			mg/L	0.3	2	10/26/07 18:25	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		95			mg/L	2	20	10/16/07 0:00	aeh
Carbonate as CaCO ₃			U		mg/L	2	20	10/16/07 0:00	aeh
Hydroxide as CaCO ₃			U		mg/L	2	20	10/16/07 0:00	aeh
Total Alkalinity		95			mg/L	2	20	10/16/07 0:00	aeh
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.4			%			10/30/07 0:00	calc
Sum of Anions		11.8			meq/L	0.1	0.5	10/30/07 0:00	calc
Sum of Cations		11.9			meq/L	0.1	0.5	10/30/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	44.5			mg/L	0.5	3	10/25/07 8:09	ccp
Fluoride	M300.0 - Ion Chromatography	1.2		*	mg/L	0.1	0.5	10/25/07 8:09	ccp
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	1.97			mg/L	0.04	0.2	10/30/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.98	H	*	mg/L	0.04	0.2	10/16/07 20:16	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.01	BH	*	mg/L	0.01	0.05	10/16/07 19:45	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	780			mg/L	10	20	10/16/07 12:06	ear
Sulfate	300.0 - Ion Chromatography	402			mg/L	5	30	10/25/07 21:32	ccp
TDS (calculated)	Calculation	771			mg/L	10	50	10/30/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.01						10/30/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-5B

ACZ Sample ID: **L65663-02**

Date Sampled: 10/12/07 10:30

Date Received: 10/13/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	392			mg/L	5	30	10/25/07 21:50	ccp

Arizona license number: AZ0102

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L65663**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234306													
WG234306PBW1	PBW	10/15/07 11:34				U	mg/L		-20	20			
WG234306LCSW2	LCSW	10/15/07 11:47	WC071015-1	820		808.8	mg/L	98.6	90	110			
WG234306PBW2	PBW	10/15/07 15:36				U	mg/L		-20	20			
WG234306LCSW5	LCSW	10/15/07 15:49	WC071015-1	820		821	mg/L	100.1	90	110			
WG234306PBW3	PBW	10/15/07 18:22				U	mg/L		-20	20			
WG234306LCSW8	LCSW	10/15/07 18:35	WC071015-1	820		824.9	mg/L	100.6	90	110			
WG234306PBW4	PBW	10/15/07 21:25				U	mg/L		-20	20			
WG234306LCSW11	LCSW	10/15/07 21:36	WC071015-1	820		822	mg/L	100.2	90	110			
L65663-01DUP	DUP	10/16/07 0:15			95	94.3	mg/L				0.7	20	
WG234306LCSW14	LCSW	10/16/07 0:26	WC071015-1	820		821.1	mg/L	100.1	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234966													
WG234966ICV	ICV	10/26/07 17:04	II071009-7	100		99.78	mg/L	99.8	95	105			
WG234966ICB	ICB	10/26/07 17:08				U	mg/L		-0.6	0.6			
WG234966LFB	LFB	10/26/07 17:20	II071012-2	67.97008		78.02	mg/L	114.8	85	115			
L65660-10AS	AS	10/26/07 18:10	II071012-2	339.8504	604	972	mg/L	108.3	85	115			
L65660-10ASD	ASD	10/26/07 18:13	II071012-2	339.8504	604	963.2	mg/L	105.7	85	115	0.91	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG234870													
WG234870ICV	ICV	10/24/07 14:38	WI071019-1	20		19.89	mg/L	99.5	90	110			
WG234870ICB	ICB	10/24/07 14:57				U	mg/L		-1.5	1.5			
WG234870LFB1	LFB	10/24/07 15:15	WI070727-1	30		29.32	mg/L	97.7	90	110			
WG234870LFB2	LFB	10/25/07 0:00	WI070727-1	30		29.44	mg/L	98.1	90	110			
L65660-04AS	AS	10/25/07 4:50	WI070727-1	30	37.3	65.68	mg/L	94.6	90	110			
L65660-04DUP	DUP	10/25/07 5:44			37.3	37.29	mg/L				0	20	
L65660-04AS	AS	10/25/07 20:01	WI070727-1	150	37	186.4	mg/L	99.6	90	110			
L65660-04DUP	DUP	10/25/07 20:19			37	37.3	mg/L				0.8	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65663**

Project ID: OJ03Z5

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG234870													
WG234870ICV	ICV	10/24/07 14:38	WI071019-1	3.984		4.1	mg/L	102.9	90	110			
WG234870ICB	ICB	10/24/07 14:57				U	mg/L		-0.3	0.3			
WG234870LFB1	LFB	10/24/07 15:15	WI070727-1	1.5		1.51	mg/L	100.7	90	110			
WG234870LFB2	LFB	10/25/07 0:00	WI070727-1	1.5		1.55	mg/L	103.3	90	110			
L65660-04AS	AS	10/25/07 4:50	WI070727-1	1.5	.3	1.81	mg/L	100.7	90	110			
L65660-04DUP	DUP	10/25/07 5:44			.3	.29	mg/L				3.4	20	RA

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234966													
WG234966ICV	ICV	10/26/07 17:04	II071009-7	100		99.99	mg/L	100	95	105			
WG234966ICB	ICB	10/26/07 17:08				U	mg/L		-0.6	0.6			
WG234966LFB	LFB	10/26/07 17:20	II071012-2	54.96908		63.04	mg/L	114.7	85	115			
L65660-10AS	AS	10/26/07 18:10	II071012-2	274.8454	510	802.2	mg/L	106.3	85	115			
L65660-10ASD	ASD	10/26/07 18:13	II071012-2	274.8454	510	787.3	mg/L	100.9	85	115	1.87	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234423													
WG234423ICV	ICV	10/16/07 19:39	WI070911-1	2.416		2.408	mg/L	99.7	90	110			
WG234423ICB	ICB	10/16/07 19:40				U	mg/L		-0.06	0.06			
WG234423LFB	LFB	10/16/07 19:44	WI070911-4	2		1.984	mg/L	99.2	90	110			
L65673-01DUP	DUP	10/16/07 19:49			.15	.146	mg/L				2.7	20	RA
L65663-01AS	AS	10/16/07 20:17	WI070911-4	4	1.98	6.221	mg/L	106	90	110			

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234423													
WG234423ICV	ICV	10/16/07 19:39	WI070911-1	.609		.625	mg/L	102.6	90	110			
WG234423ICB	ICB	10/16/07 19:40				U	mg/L		-0.03	0.03			
WG234423LFB	LFB	10/16/07 19:44	WI070911-4	1		1.007	mg/L	100.7	90	110			
L65663-01AS	AS	10/16/07 19:46	WI070911-4	1	.01	1.036	mg/L	102.6	90	110			
L65673-01DUP	DUP	10/16/07 19:49			U	U	mg/L				0	20	RA

Phelps Dodge Sierrita

ACZ Project ID: **L65663**

Project ID: OJ03Z5

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234966													
WG234966ICV	ICV	10/26/07 17:04	II071009-7	20		20.15	mg/L	100.8	95	105			
WG234966ICB	ICB	10/26/07 17:08				U	mg/L		-0.9	0.9			
WG234966LFB	LFB	10/26/07 17:20	II071012-2	99.76186		112.66	mg/L	112.9	85	115			
L65660-10AS	AS	10/26/07 18:10	II071012-2	498.8093	5	565.6	mg/L	112.4	85	115			
L65660-10ASD	ASD	10/26/07 18:13	II071012-2	498.8093	5	570.9	mg/L	113.5	85	115	0.93	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234382													
WG234382PBW	PBW	10/16/07 11:44				U	mg/L		-20	20			
WG234382LCSW	LCSW	10/16/07 11:46	PCN28213	260		264	mg/L	101.5	80	120			
L65663-01DUP	DUP	10/16/07 12:08			780	762	mg/L				2.3	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234966													
WG234966ICV	ICV	10/26/07 17:04	II071009-7	100		100.83	mg/L	100.8	95	105			
WG234966ICB	ICB	10/26/07 17:08				U	mg/L		-0.9	0.9			
WG234966LFB	LFB	10/26/07 17:20	II071012-2	98.21624		110.42	mg/L	112.4	85	115			
L65660-10AS	AS	10/26/07 18:10	II071012-2	491.0812	35	572.2	mg/L	109.4	85	115			
L65660-10ASD	ASD	10/26/07 18:13	II071012-2	491.0812	35	578.9	mg/L	110.8	85	115	1.16	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG234870													
WG234870ICV	ICV	10/24/07 14:38	WI071019-1	50.1		51.76	mg/L	103.3	90	110			
WG234870ICB	ICB	10/24/07 14:57				U	mg/L		-1.5	1.5			
WG234870LFB1	LFB	10/24/07 15:15	WI070727-1	30		30.58	mg/L	101.9	90	110			
WG234870LFB2	LFB	10/25/07 0:00	WI070727-1	30		30.19	mg/L	100.6	90	110			
L65660-04AS	AS	10/25/07 20:01	WI070727-1	150	218	365.7	mg/L	98.5	90	110			
L65660-04DUP	DUP	10/25/07 20:19			218	215.4	mg/L				1.2	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65663**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65663-01	WG234870	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG234423	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H1	Sample analysis performed past holding time.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H1	Sample analysis performed past holding time.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L65663**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L65663
Date Received: 10/13/2007
Received By:
Date Printed: 10/13/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
NA4668	3.4	14

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L65663
Date Received: 10/13/2007
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65663-01	MO-2007-5B-F		Y									<input type="checkbox"/>
L65663-02	MO-2007-5B									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

November 01, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Dan Simpson, Bill Dorris

Project ID: OJ03Z5

ACZ Project ID: L65680

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 16, 2007. This project has been assigned to ACZ's project number, L65680. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65680. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after December 01, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-4CF

ACZ Sample ID: **L65680-01**

Date Sampled: 10/12/07 18:15

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	80.1			mg/L	0.5	3	10/26/07 16:01	ccp

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-4C

ACZ Sample ID: **L65680-02**

Date Sampled: 10/12/07 18:15

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	80.4			mg/L	0.5	3	10/26/07 16:19	ccp

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-5CF

ACZ Sample ID: **L65680-03**

Date Sampled: 10/13/07 13:05

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	265			mg/L	5	30	10/27/07 17:45	ccp

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-5C

ACZ Sample ID: **L65680-04**

Date Sampled: 10/13/07 13:05

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	269			mg/L	5	30	10/27/07 18:40	ccp

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L65680**

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG235022													
WG235022ICV	ICV	10/26/07 11:29	WI071019-1	50.1		52.43	mg/L	104.7	90	110			
WG235022ICB	ICB	10/26/07 11:47				U	mg/L		-1.5	1.5			
WG235022LFB1	LFB	10/26/07 12:05	WI070727-1	30		31.61	mg/L	105.4	90	110			
WG235022LFB2	LFB	10/26/07 20:50	WI070727-1	30		30.34	mg/L	101.1	90	110			
L65595-01AS	AS	10/27/07 17:09	WI070727-1	300	430	731.2	mg/L	100.4	90	110			
L65595-01DUP	DUP	10/27/07 17:27			430	425.9	mg/L				1	20	
L65680-03AS	AS	10/27/07 18:03	WI070727-1	300	265	561.8	mg/L	98.9	90	110			
L65680-03DUP	DUP	10/27/07 18:21			265	263.9	mg/L				0.4	20	

Phelps Dodge SierritaACZ Project ID: **L65680**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
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No extended qualifiers associated with this analysis

Phelps Dodge Sierrita

ACZ Project ID: **L65680**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L65680
Date Received: 10/16/2007
Received By:
Date Printed: 10/17/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
NA4672	2.3	18

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L65680
 Date Received: 10/16/2007
 Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65680-01	MO-2007-4CF									X		<input type="checkbox"/>
L65680-02	MO-2007-4C									X		<input type="checkbox"/>
L65680-03	MO-2007-5CF									X		<input type="checkbox"/>
L65680-04	MO-2007-5C									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH - Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

ACZ Laboratories, Inc.

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Dan Simpson
Company: HYDRO GEO CHEM INC.
E-mail: dan.s@hgcinc.com

Address: 51 W. Wetmore Rd.
TULSA, AZ 85708
Telephone: (520) 293-1500

Copy of Report to:

Name: WHD Unit 1 Bill Davis
Company: PD SI

E-mail: billy.dorris@fmi.com
Telephone: (520) 648-8837

Invoice to:

Name: NED HALL
Company: PDSE
E-mail: ned_hall@fmi.com

Address: 6200 W. DUALINE Rd
P.O. Box 5276, UMBAY, AZ 85622
Telephone: (520) 648-8857

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES	<input checked="" type="checkbox"/>
NO	<input type="checkbox"/>

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: Sierra sulfate
Project/PO #: 030325
Reporting state for compliance testing: AZ
Sampler's Name: N.J. Bado
Are any samples NRC licensable material?

SAMPLE IDENTIFICATION	DATE:TIME	Matrix
-----------------------	-----------	--------

MO-2007-4CF	10/12/07	18:15	
MO-2007-4C	10/12/07	18:15	
MO-2007-5CF	10/13/07	17:05	
MO-2007-5C	10/13/07	17:05	

of Containers

13

✓

X

X

X

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

~~F~~ F = Filtered Sample

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

18151 20000	1011507 0900	125	1011603 813

Bill Dorris
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

November 09, 2007

Cc: Jim Norris

Project ID: OJ03DL
ACZ Project ID: L65683 – SULFATE ONLY

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 16, 2007. This project was assigned to ACZ's project number, L65683. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65683. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute. Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all the requirements of NELAC.

This report should be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-6A

ACZ Sample ID: **L65683-01**

Date Sampled: 10/12/07 13:25

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1850			mg/L	10	50	10/19/07 11:55	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-10

ACZ Sample ID: **L65683-02**

Date Sampled: 10/12/07 09:05

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1700		*	mg/L	10	50	10/19/07 11:59	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-11

ACZ Sample ID: **L65683-03**

Date Sampled: 10/12/07 12:50

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1700		*	mg/L	10	50	10/19/07 12:00	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-22

ACZ Sample ID: **L65683-04**

Date Sampled: 10/12/07 09:20

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1750		*	mg/L	10	50	10/19/07 12:02	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-23

ACZ Sample ID: **L65683-05**

Date Sampled: 10/12/07 08:50

Date Received: 10/16/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1720		*	mg/L	10	50	10/19/07 12:03	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-24

ACZ Sample ID: **L65683-06**

Date Sampled: 10/12/07 08:25

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1720		*	mg/L	10	50	10/19/07 12:05	ear

Arizona license number: AZ0102

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65683**

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234469													
WG234469PBW1	PBW	10/17/07 14:54				U	mg/L		-20	20			
WG234469LCSW2	LCSW	10/17/07 15:06	WC071015-1	820		814.5	mg/L	99.3	90	110			
WG234469PBW2	PBW	10/17/07 17:56				U	mg/L		-20	20			
WG234469LCSW5	LCSW	10/17/07 18:08	WC071015-1	820		814.4	mg/L	99.3	90	110			
WG234469PBW3	PBW	10/17/07 20:47				U	mg/L		-20	20			
WG234469LCSW8	LCSW	10/17/07 21:00	WC071015-1	820		816.6	mg/L	99.6	90	110			
L65683-06DUP	DUP	10/17/07 23:38			145	145.8	mg/L				0.6	20	
WG234469PBW4	PBW	10/17/07 23:44				U	mg/L		-20	20			
WG234469LCSW11	LCSW	10/17/07 23:56	WC071015-1	820		811.9	mg/L	99	90	110			
WG234469LCSW14	LCSW	10/18/07 2:53	WC071015-1	820		808	mg/L	98.5	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	2		2.029	mg/L	101.5	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.09	0.09			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	1		1.086	mg/L	108.6	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	1	U	1.043	mg/L	104.3	85	115			
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	1	U	1.029	mg/L	102.9	85	115	1.35	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234413													
WG234413ICV	ICV	10/17/07 3:02	MS071004-2	.02006		.01958	mg/L	97.6	90	110			
WG234413ICB	ICB	10/17/07 3:08				U	mg/L		-0.0012	0.0012			
WG234413LFB	LFB	10/17/07 3:14	MS071004-4	.01		.00966	mg/L	96.6	85	115			
L65659-06AS	AS	10/17/07 4:51	MS071004-4	.01	U	.00873	mg/L	87.3	70	130			
L65659-06ASD	ASD	10/17/07 4:57	MS071004-4	.01	U	.0089	mg/L	89	70	130	1.93	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234413													
WG234413ICV	ICV	10/17/07 3:02	MS071004-2	.05		.05188	mg/L	103.8	90	110			
WG234413ICB	ICB	10/17/07 3:08				U	mg/L		-0.0015	0.0015			
WG234413LFB	LFB	10/17/07 3:14	MS071004-4	.05		.04926	mg/L	98.5	85	115			
L65659-06AS	AS	10/17/07 4:51	MS071004-4	.05	.0023	.05224	mg/L	99.9	70	130			
L65659-06ASD	ASD	10/17/07 4:57	MS071004-4	.05	.0023	.05308	mg/L	101.6	70	130	1.6	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65683**

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235076													
WG235076ICV	ICV	10/26/07 20:16	II071009-7	2		2.0211	mg/L	101.1	95	105			
WG235076ICB	ICB	10/26/07 20:20				U	mg/L		-0.009	0.009			
WG235076LFB	LFB	10/26/07 20:37	II071012-2	.5		.5401	mg/L	108	85	115			
L65682-06AS	AS	10/26/07 21:15	II071012-2	.5	.003	.5458	mg/L	108.6	85	115			
L65682-06ASD	ASD	10/26/07 21:19	II071012-2	.5	.003	.5338	mg/L	106.2	85	115	2.22	20	
L65714-02AS	AS	10/26/07 22:06	II071012-2	.5	.061	.5688	mg/L	101.6	85	115			
L65714-02ASD	ASD	10/26/07 22:10	II071012-2	.5	.061	.5624	mg/L	100.3	85	115	1.13	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234413													
WG234413ICV	ICV	10/17/07 3:02	MS071004-2	.05		.05109	mg/L	102.2	90	110			
WG234413ICB	ICB	10/17/07 3:08				U	mg/L		-0.0003	0.0003			
WG234413LFB	LFB	10/17/07 3:14	MS071004-4	.05		.04879	mg/L	97.6	85	115			
L65659-06AS	AS	10/17/07 4:51	MS071004-4	.05	U	.04965	mg/L	99.3	70	130			
L65659-06ASD	ASD	10/17/07 4:57	MS071004-4	.05	U	.05238	mg/L	104.8	70	130	5.35	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234413													
WG234413ICV	ICV	10/17/07 3:02	MS071004-2	.05		.05193	mg/L	103.9	90	110			
WG234413ICB	ICB	10/17/07 3:08				U	mg/L		-0.0003	0.0003			
WG234413LFB	LFB	10/17/07 3:14	MS071004-4	.05		.04948	mg/L	99	85	115			
L65659-06AS	AS	10/17/07 4:51	MS071004-4	.05	U	.04598	mg/L	92	70	130			
L65659-06ASD	ASD	10/17/07 4:57	MS071004-4	.05	U	.04619	mg/L	92.4	70	130	0.46	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	100		101.55	mg/L	101.6	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.6	0.6			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	67.97008		73.66	mg/L	108.4	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	67.97008	U	72.16	mg/L	106.2	85	115			
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	67.97008	U	70.84	mg/L	104.2	85	115	1.85	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65683**

Chloride 325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234962													
WG234962ICB	ICB	10/25/07 10:45				U	mg/L		-3	3			
WG234962ICV	ICV	10/25/07 10:45	WI070314-1	55		57	mg/L	103.6	90	110			
WG234962LFB1	LFB	10/25/07 14:27	WI070712-1	30		31.9	mg/L	106.3	90	110			
L65682-01AS	AS	10/25/07 14:34	WI070712-1	30	5	39.4	mg/L	114.7	90	110			M1
L65682-02DUP	DUP	10/25/07 14:34			7	6.6	mg/L				5.9	20	RA
WG234962LFB2	LFB	10/25/07 14:35	WI070712-1	30		32.7	mg/L	109	90	110			
WG234962LFB3	LFB	10/25/07 15:50	WI070712-1	30		32.8	mg/L	109.3	90	110			

WG235504

WG235504ICB	ICB	11/02/07 7:49				U	mg/L		-3	3			
WG235504ICV	ICV	11/02/07 7:49	WI070314-1	55		57.7	mg/L	104.9	90	110			
WG235504LFB1	LFB	11/02/07 8:42	WI070712-1	30		32.2	mg/L	107.3	90	110			
L65683-04AS	AS	11/02/07 8:55	10XCL	30	140	169	mg/L	96.7	90	110			
L65683-05DUP	DUP	11/02/07 8:55			160	156	mg/L				2.5	20	
WG235504LFB3	LFB	11/02/07 9:02	WI070712-1	30		32.6	mg/L	108.7	90	110			
WG235504LFB2	LFB	11/02/07 12:33	WI070712-1	30		34.8	mg/L		90	110			

Chromium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	2		2.012	mg/L	100.6	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.03	0.03			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	.5		.556	mg/L	111.2	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	.5	U	.562	mg/L	112.4	85	115			
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	.5	U	.547	mg/L	109.4	85	115	2.71	20	

Cobalt, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	2		1.95	mg/L	97.5	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.03	0.03			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	.5		.531	mg/L	106.2	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	.5	U	.542	mg/L	108.4	85	115			
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	.5	U	.517	mg/L	103.4	85	115	4.72	20	

Conductivity @25C 120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234469													
WG234469LCSW1	LCSW	10/17/07 14:55	PCN28067	1408.8		1435	µmhos/crr	101.9	90	110			
WG234469LCSW4	LCSW	10/17/07 17:58	PCN28067	1408.8		1443	µmhos/crr	102.4	90	110			
WG234469LCSW7	LCSW	10/17/07 20:49	PCN28067	1408.8		1437	µmhos/crr	102	90	110			
L65683-06DUP	DUP	10/17/07 23:38			3230	3220	µmhos/crr				0.3	20	
WG234469LCSW10	LCSW	10/17/07 23:46	PCN28067	1408.8		1432	µmhos/crr	101.6	90	110			
WG234469LCSW13	LCSW	10/18/07 2:43	PCN28067	1408.8		1425	µmhos/crr	101.1	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65683**

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	2		1.952	mg/L	97.6	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.03	0.03			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	.5		.535	mg/L	107	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	.5	U	.545	mg/L	109	85	115			
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	.5	U	.538	mg/L	107.6	85	115	1.29	20	

Cyanide, total

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234935													
WG234935ICV	ICV	10/24/07 20:12	WI071011-4	.3		.287	mg/L	95.7	90	110			
WG234935ICB	ICB	10/24/07 20:13				U	mg/L		-0.015	0.015			
WG234784LRB	LRB	10/24/07 20:14				U	mg/L		-0.015	0.015			
WG234784LFB	LFB	10/24/07 20:15	WI071023-2	.2		.1889	mg/L	94.5	90	110			
L65659-04DUP	DUP	10/24/07 20:29			U	U	mg/L				0	20	RA
L65659-05LFM	LFM	10/24/07 20:30	WI071023-2	.2	U	.194	mg/L	97	90	110			
WG234937													
WG234937ICV	ICV	10/24/07 20:44	WI071011-4	.3		.2942	mg/L	98.1	90	110			
WG234937ICB	ICB	10/24/07 20:45				U	mg/L		-0.015	0.015			
WG234818LRB	LRB	10/24/07 20:46				U	mg/L		-0.015	0.015			
WG234818LFB	LFB	10/24/07 20:46	WI071023-2	.2		.1968	mg/L	98.4	90	110			
L65683-02DUP	DUP	10/24/07 20:49			U	.011	mg/L				200	20	RA
L65683-03LFM	LFM	10/24/07 20:51	WI071023-2	.2	U	.2145	mg/L	107.3	90	110			
L65714-05DUP	DUP	10/24/07 21:00			U	U	mg/L				0	20	RA
L65714-06LFM	LFM	10/24/07 21:02	WI071023-2	.2	U	.2024	mg/L	101.2	90	110			

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234519													
WG234519ICV	ICV	10/18/07 10:19	WC071011-1	2		2.16	mg/L	108	90	110			
WG234519ICB	ICB	10/18/07 10:26				U	mg/L		-0.3	0.3			
WG234519LFB1	LFB	10/18/07 10:38	WC070730-1	5		5.12	mg/L	102.4	90	110			
WG234519LFB2	LFB	10/18/07 14:49	WC070730-1	5		4.95	mg/L	99	90	110			
L65683-04AS	AS	10/18/07 16:17	WC070730-1	5	.2	5.3	mg/L	102	90	110			
L65683-04DUP	DUP	10/18/07 16:25			.2	.19	mg/L				5.1	20	RA

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	2		1.998	mg/L	99.9	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.06	0.06			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	1		1.074	mg/L	107.4	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	1	U	1.091	mg/L	109.1	85	115			
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	1	U	1.062	mg/L	106.2	85	115	2.69	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65683**

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234413													
WG234413ICV	ICV	10/17/07 3:02	MS071004-2	.05		.05043	mg/L	100.9	90	110			
WG234413ICB	ICB	10/17/07 3:08				U	mg/L		-0.0003	0.0003			
WG234413LFB	LFB	10/17/07 3:14	MS071004-4	.05		.04864	mg/L	97.3	85	115			
L65659-06AS	AS	10/17/07 4:51	MS071004-4	.05	U	.04937	mg/L	98.7	70	130			
L65659-06ASD	ASD	10/17/07 4:57	MS071004-4	.05	U	.04976	mg/L	99.5	70	130	0.79	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	100		101.43	mg/L	101.4	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.6	0.6			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	54.96908		58.98	mg/L	107.3	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	54.96908	U	57.95	mg/L	105.4	85	115			
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	54.96908	U	56.33	mg/L	102.5	85	115	2.84	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	2		1.9531	mg/L	97.7	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.015	0.015			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	.5		.563	mg/L	112.6	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	.5	U	.5662	mg/L	113.2	85	115			
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	.5	U	.5549	mg/L	111	85	115	2.02	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234875													
WG234875ICV	ICV	10/25/07 17:39	II071016-1	.00498		.00514	mg/L	102.8	95	105			
WG234875ICB	ICB	10/25/07 17:41				U	mg/L		-0.0002	0.0002			
WG234875LRB	LRB	10/25/07 17:45				U	mg/L		-0.00044	0.00044			
WG234875LFB	LFB	10/25/07 17:47	II071017-2	.002		.00225	mg/L	112.5	85	115			
L65683-04LFM	LFM	10/25/07 18:27	II071017-2	.002	U	.0021	mg/L	105	85	115			
L65683-04LFMD	LFMD	10/25/07 18:29	II071017-2	.002	U	.00217	mg/L	108.5	85	115	3.28	20	
WG234875ICV2	ICV	10/26/07 9:23	II071016-1	.00498		.00493	mg/L	98.6	95	105			
WG234875ICB2	ICB	10/26/07 9:26				U	mg/L		-0.0002	0.0002			
L65500-01LFM	LFM	10/26/07 9:31	II071017-2	.002	U	.00203	mg/L	101.5	85	115			
L65500-01LFMD	LFMD	10/26/07 9:35	II071017-2	.002	U	.00208	mg/L	104	85	115	2.43	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	2		2.05	mg/L	102.5	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.03	0.03			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	.5		.426	mg/L	85.2	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	.5	U	.402	mg/L	80.4	85	115			M2
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	.5	U	.398	mg/L	79.6	85	115	1	20	M2

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65683**

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	2		1.892	mg/L	94.6	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.03	0.03			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	.5		.502	mg/L	100.4	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	.5	U	.513	mg/L	102.6	85	115			
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	.5	U	.494	mg/L	98.8	85	115	3.77	20	

WG235105

WG235105ICV	ICV	10/29/07 6:24	II071009-7	2		1.911	mg/L	95.6	95	105			
WG235105ICB	ICB	10/29/07 6:28				U	mg/L		-0.03	0.03			
WG235105LFB	LFB	10/29/07 6:43	II071012-2	.5		.533	mg/L	106.6	85	115			
L65585-07AS	AS	10/29/07 7:04	II071012-2	.5	U	.556	mg/L	111.2	85	115			
L65585-07ASD	ASD	10/29/07 7:15	II071012-2	.5	U	.529	mg/L	105.8	85	115	4.98	20	
L65714-02AS	AS	10/29/07 7:44	II071012-2	.5	U	.535	mg/L	107	85	115			
L65714-02ASD	ASD	10/29/07 7:48	II071012-2	.5	U	.533	mg/L	106.6	85	115	0.37	20	

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234978													
WG234978ICV	ICV	10/25/07 18:25	WI070911-1	2.416		2.378	mg/L	98.4	90	110			
WG234978ICB	ICB	10/25/07 18:26				U	mg/L		-0.06	0.06			
WG234978LFB1	LFB	10/25/07 18:30	WI070911-4	2		1.878	mg/L	93.9	90	110			
L65682-05AS	AS	10/25/07 18:49	WI070911-4	2	.06	1.973	mg/L	95.7	90	110			
L65682-06DUP	DUP	10/25/07 18:52			.05	.054	mg/L				7.7	20	RA
WG234978LFB2	LFB	10/25/07 19:05	WI070911-4	2		1.909	mg/L	95.5	90	110			

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234469													
WG234469LCSW3	LCSW	10/17/07 15:09	PCN27958	6		6.03	units	100.5	90	110			
WG234469LCSW6	LCSW	10/17/07 18:11	PCN27958	6		6.05	units	100.8	90	110			
WG234469LCSW9	LCSW	10/17/07 21:03	PCN27958	6		6.03	units	100.5	90	110			
L65683-06DUP	DUP	10/17/07 23:38			7.8	7.84	units				0.5	20	
WG234469LCSW12	LCSW	10/17/07 23:59	PCN27958	6		6.05	units	100.8	90	110			
WG234469LCSW15	LCSW	10/18/07 2:56	PCN27958	6		6.04	units	100.7	90	110			

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	20		20.09	mg/L	100.5	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.9	0.9			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	99.76186		108.22	mg/L	108.5	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	99.76186	U	105.82	mg/L	106.1	85	115			
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	99.76186	U	104.91	mg/L	105.2	85	115	0.86	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65683**

Project ID: OJ03DL

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234496													
WG234496PBW	PBW	10/17/07 16:10				U	mg/L		-20	20			
WG234496LCSW	LCSW	10/17/07 16:12	PCN28213	260		254	mg/L	97.7	80	120			
L65683-03DUP	DUP	10/17/07 16:36			2950	2906	mg/L				1.5	20	
L65733-01DUP	DUP	10/17/07 16:59			2340	2306	mg/L				1.5	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234413													
WG234413ICV	ICV	10/17/07 3:02	MS071004-2	.05		.05298	mg/L	106	90	110			
WG234413ICB	ICB	10/17/07 3:08				U	mg/L		-0.0003	0.0003			
WG234413LFB	LFB	10/17/07 3:14	MS071004-4	.05		.04926	mg/L	98.5	85	115			
L65659-06AS	AS	10/17/07 4:51	MS071004-4	.05	U	.0546	mg/L	109.2	70	130			
L65659-06ASD	ASD	10/17/07 4:57	MS071004-4	.05	U	.0563	mg/L	112.6	70	130	3.07	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	100		101.78	mg/L	101.8	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.9	0.9			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	98.21624		106.08	mg/L	108	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	98.21624	U	103.49	mg/L	105.4	85	115			
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	98.21624	U	102.47	mg/L	104.3	85	115	0.99	20	

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234624													
WG234624PBW	PBW	10/19/07 11:38				U	mg/L		-30	30			
WG234624LCSW	LCSW	10/19/07 11:39	WC070903-2	100		103	mg/L	103	80	120			
L65683-01DUP	DUP	10/19/07 11:57			1850	1845	mg/L				0.3	20	
L65684-05DUP	DUP	10/19/07 12:15			20	16	mg/L				22.2	20	RA

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234413													
WG234413ICV	ICV	10/17/07 3:02	MS071004-2	.05		.05317	mg/L	106.3	90	110			
WG234413ICB	ICB	10/17/07 3:08				U	mg/L		-0.0003	0.0003			
WG234413LFB	LFB	10/17/07 3:14	MS071004-4	.05		.04907	mg/L	98.1	85	115			
L65659-06AS	AS	10/17/07 4:51	MS071004-4	.05	U	.05077	mg/L	101.5	70	130			
L65659-06ASD	ASD	10/17/07 4:57	MS071004-4	.05	U	.05119	mg/L	102.4	70	130	0.82	20	

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L65683**

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234986													
WG234986ICV	ICV	10/26/07 12:35	II071009-7	2		1.981	mg/L	99.1	95	105			
WG234986ICB	ICB	10/26/07 12:39				U	mg/L		-0.03	0.03			
WG234986LFB	LFB	10/26/07 12:51	II071012-2	.5		.538	mg/L	107.6	85	115			
L65682-06AS	AS	10/26/07 13:41	II071012-2	.5	U	.535	mg/L	107	85	115			
L65682-06ASD	ASD	10/26/07 13:44	II071012-2	.5	U	.528	mg/L	105.6	85	115	1.32	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65683**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65683-02	WG234624	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65683-03	WG234624	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65683-04	WG234624	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65683-05	WG234624	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65683-06	WG234624	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L65683**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65683
Date Received: 10/16/2007
Received By:
Date Printed: 10/16/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?	X		
12) Are samples requiring no headspace, headspace free?		X	
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

The VOA trip blank TB091807-09 contained headspace.

Contact (For any discrepancies, the client must be contacted)

The client was not contacted.

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
1713	2.1	18

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65683
 Date Received: 10/16/2007
 Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65683-01	IW-6A		Y		Y							<input type="checkbox"/>
L65683-02	IW-10		Y		Y							<input type="checkbox"/>
L65683-03	IW-11		Y		Y							<input type="checkbox"/>
L65683-04	IW-22		Y		Y							<input type="checkbox"/>
L65683-05	IW-23		Y		Y							<input type="checkbox"/>
L65683-06	IW-24		Y		Y							<input type="checkbox"/>
L65683-07	TB091807-04									X		<input type="checkbox"/>
L65683-08	TB091807-09									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

October 26, 2007

Report to:

Bill Dorris

Phelps Dodge Sierrita

P.O. Box 527

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Jim Norris

Project ID: OF03DL

ACZ Project ID: L65684

Bill Dorris:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 16, 2007. This project has been assigned to ACZ's project number, L65684. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65684. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 26, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.



Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: M-8

ACZ Sample ID: **L65684-01**

Date Sampled: 10/08/07 09:15

Date Received: 10/16/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	20	B	*	mg/L	10	50	10/19/07 12:07	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: M-9

ACZ Sample ID: **L65684-02**

Date Sampled: 10/08/07 12:35

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	70		*	mg/L	10	50	10/19/07 12:08	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: M-10

ACZ Sample ID: **L65684-03**

Date Sampled: 10/08/07 11:02

Date Received: 10/16/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	80		*	mg/L	10	50	10/19/07 12:10	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: I-10

ACZ Sample ID: **L65684-04**

Date Sampled: 10/08/07 13:15

Date Received: 10/16/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	530		*	mg/L	10	50	10/19/07 12:11	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: MO-2007-1A

ACZ Sample ID: **L65684-05**

Date Sampled: 10/09/07 11:17

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	20	B	*	mg/L	10	50	10/19/07 12:13	ear

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: MO-2007-1B

ACZ Sample ID: **L65684-06**

Date Sampled: 10/09/07 12:52

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	30	B	*	mg/L	10	50	10/19/07 13:37	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: MO-2007-1C

ACZ Sample ID: **L65684-07**

Date Sampled: 10/09/07 10:48

Date Received: 10/16/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	90		*	mg/L	10	50	10/19/07 13:39	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: MO-2007-2

ACZ Sample ID: **L65684-08**

Date Sampled: 10/09/07 08:15

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	560		*	mg/L	10	50	10/19/07 13:41	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: MO-2007-3B

ACZ Sample ID: **L65684-09**

Date Sampled: 10/09/07 14:25

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	40	B	*	mg/L	10	50	10/19/07 13:43	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: MO-2007-3C

ACZ Sample ID: **L65684-10**

Date Sampled: 10/09/07 09:50

Date Received: 10/16/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	110		*	mg/L	10	50	10/19/07 13:45	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: ESP-1

ACZ Sample ID: **L65684-11**

Date Sampled: 10/12/07 11:20

Date Received: 10/16/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	110		*	mg/L	10	50	10/19/07 13:47	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: ESP-2

ACZ Sample ID: **L65684-12**

Date Sampled: 10/12/07 10:56

Date Received: 10/16/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	30	B	*	mg/L	10	50	10/19/07 13:50	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: ESP-3

ACZ Sample ID: **L65684-13**

Date Sampled: 10/12/07 12:05

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	40	B	*	mg/L	10	50	10/19/07 13:52	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: ESP-4

ACZ Sample ID: **L65684-14**

Date Sampled: 10/12/07 11:44

Date Received: 10/16/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	360		*	mg/L	10	50	10/19/07 13:54	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OF03DL

Sample ID: DUP100907A

ACZ Sample ID: **L65684-15**

Date Sampled: 10/09/07 00:00

Date Received: 10/16/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	40	B	*	mg/L	10	50	10/19/07 13:56	aeH

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OF03DL

ACZ Project ID: **L65684**

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234624													
WG234624PBW	PBW	10/19/07 11:38				U	mg/L		-30	30			
WG234624LCSW	LCSW	10/19/07 11:39	WC070903-2	100		103	mg/L	103	80	120			
L65684-05DUP	DUP	10/19/07 12:15			20	16	mg/L				22.2	20	RA
WG234637													
WG234637PBW	PBW	10/19/07 13:33				U	mg/L		-30	30			
WG234637LCSW	LCSW	10/19/07 13:35	WC070903-2	100		80	mg/L	80	80	120			
L65684-15DUP	DUP	10/19/07 13:58			40	41	mg/L				2.5	20	RA

Phelps Dodge Sierrita

ACZ Project ID: L65684

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L65684-01	WG234624	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-02	WG234624	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-03	WG234624	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-04	WG234624	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-05	WG234624	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-06	WG234637	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-07	WG234637	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-08	WG234637	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-09	WG234637	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-10	WG234637	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-11	WG234637	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-12	WG234637	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-13	WG234637	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-14	WG234637	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L65684-15	WG234637	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L65684**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OF03DL

ACZ Project ID: L65684
Date Received: 10/16/2007
Received By:
Date Printed: 10/16/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
1072	1	17

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OF03DL

ACZ Project ID: L65684
Date Received: 10/16/2007
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65684-01	M-8									X		<input type="checkbox"/>
L65684-02	M-9									X		<input type="checkbox"/>
L65684-03	M-10									X		<input type="checkbox"/>
L65684-04	I-10									X		<input type="checkbox"/>
L65684-05	MO-2007-1A									X		<input type="checkbox"/>
L65684-06	MO-2007-1B									X		<input type="checkbox"/>
L65684-07	MO-2007-1C									X		<input type="checkbox"/>
L65684-08	MO-2007-2									X		<input type="checkbox"/>
L65684-09	MO-2007-3B									X		<input type="checkbox"/>
L65684-10	MO-2007-3C									X		<input type="checkbox"/>
L65684-11	ESP-1									X		<input type="checkbox"/>
L65684-12	ESP-2									X		<input type="checkbox"/>
L65684-13	ESP-3									X		<input type="checkbox"/>
L65684-14	ESP-4									X		<input type="checkbox"/>
L65684-15	DUP100907A									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

LL65684



Laboratories, Inc.

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Bill Dorris
 Company: Freemont McMoran Co & Av Sierrita
 E-mail: Billy-Dorris@FMI.Com

Address: 6200 W Duval Mine Rd
Green Valley, AZ 85614
 Telephone: 520 648 8873

Copy of Report to:

Name: Jim Norris
 Company: Hydro Geo Chem

E-mail: jimn@hginc.com
 Telephone: 520-293-1500 EXT 112

Invoice to:

Name:
 Company:
 E-mail:

Address:
 Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES ☐
 NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:
 Project/PO #: OJ03 DL
 Reporting state for compliance testing:
 Sampler's Name:
 Are any samples NRC licensable material?

of Containers

SAMPLE IDENTIFICATION	DATE:TIME	Matrix																		
M-8	10-8-07/ 9:15	GW	1																	
M-9	10-8-07/ 12:35	GW	1																	
M-10	10-8-07/ 11:02	GW	1																	
I-10	10-8-07/ 13:15	GW	1																	
MO-2007-1A	10-9-07/ 11:17	GW	1																	
MO-2007-1B	10-9-07/ 12:52	GW	1																	
MO-2007-1C	10-9-07/ 10:48	GW	1																	
MO-2007-2	10-9-07/ 8:15	GW	1																	
MO-2007-3B	10-9-07/ 14:25	GW	1																	
MO-2007-3C	10-10-07/ 9:50	GW	1																	

Sulfate
 SM4500 SO4-D

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

"Copy of Report" to Jim Norris contains only SO4 results with QC Summary.

UPS TRACKING # 1Z 867 7E4 22 1000 3238

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<u>Billy F. Dorris</u>	<u>10-15-07/ 15:00</u>	<u>KLJ</u>	<u>10-16-07 8:36</u>

ACZ Laboratories, Inc.

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Bill Dorris
Company: Freeport McMoran Cu & Au Sierrita
E-mail: Billy-Dorris@FMI.com

Address: 6200 W Duval Mine Rd
Green Valley, AZ 85614
Telephone: 520 648-8873

Copy of Report to:

Name: Jim Norris
Company: Hydro Geo Chem

E-mail: jimn@hginc.com
Telephone: 520-293-1500 Ext 112

Invoice to:

Name:
Company:
E-mail:

Address:

Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES
NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: OJ03DL

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material?

of Containers

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	ANALYSES REQUESTED
Esp-1	10-12-07 / 11:20	GW	1	Sulfate SM4500 SO4-D
Esp-2	10-12-07 / 10:56	GW	1	
Esp-3	10-12-07 / 12:05	GW	1	
Esp-4	10-12-07 / 11:44	GW	1	
DUP100907A	10-9-07	GW	1	

Matrix

SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

"Copy of Report" to Jim Norris contains only SO4 results with QC Summary.

UPS TRACKING # 1Z 867 7E4 22 1000 3238

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

<u>Bill, F. Dorris</u>	<u>10-15-07/15:00</u>	<u>KW</u>	<u>10-16-07 8:36</u>

Bill Dorris
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

November 12, 2007

Cc: Jim Norris

Project ID: OJ03DL
ACZ Project ID: L65740 – SULFATE ONLY

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 18, 2007. This project was assigned to ACZ's project number, L65740. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65740. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute. Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all the requirements of NELAC.

This report should be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-10

ACZ Sample ID: **L65740-01**

Date Sampled: 10/16/07 11:45

Date Received: 10/18/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1420			mg/L	10	50	10/23/07 8:58	cas

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: PZ-7

ACZ Sample ID: **L65740-02**

Date Sampled: 10/16/07 12:51

Date Received: 10/18/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	400			mg/L	10	50	10/23/07 9:01	cas

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: EQB101607A

ACZ Sample ID: **L65740-03**

Date Sampled: 10/16/07 12:00

Date Received: 10/18/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D		U		mg/L	10	50	10/23/07 9:04	cas

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: TB101607A

ACZ Sample ID: **L65740-04**

Date Sampled: 10/16/07 12:00

Date Received: 10/18/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D		U		mg/L	10	50	10/23/07 9:07	cas

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: DUP101607C

ACZ Sample ID: **L65740-05**

Date Sampled: 10/16/07 00:00

Date Received: 10/18/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1460			mg/L	10	50	10/23/07 9:10	cas

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65740**

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234677													
WG234677PBW1	PBW	10/20/07 13:21				U	mg/L		-20	20			
WG234677LCSW2	LCSW	10/20/07 13:34	WC071015-1	820		812.4	mg/L	99.1	90	110			
L65751-05DUP	DUP	10/20/07 16:39			159	159.2	mg/L				0.1	20	
WG234677PBW2	PBW	10/20/07 16:45				U	mg/L		-20	20			
WG234677LCSW5	LCSW	10/20/07 16:57	WC071015-1	820		833.3	mg/L	101.6	90	110			
WG234677PBW3	PBW	10/20/07 19:53				U	mg/L		-20	20			
WG234677LCSW8	LCSW	10/20/07 20:03	WC071015-1	820		824.6	mg/L	100.6	90	110			
WG234677PBW4	PBW	10/20/07 22:44				U	mg/L		-20	20			
WG234677LCSW11	LCSW	10/20/07 22:57	WC071015-1	820		818.1	mg/L	99.8	90	110			
WG234677LCSW14	LCSW	10/21/07 2:05	WC071015-1	820		818.4	mg/L	99.8	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235072													
WG235072ICV1	ICV	10/26/07 17:23	II071009-7	2		1.955	mg/L	97.8	95	105			
WG235072ICB	ICB	10/26/07 17:27				U	mg/L		-0.09	0.09			
WG235072LFB	LFB	10/26/07 17:44	II071012-2	1		.999	mg/L	99.9	85	115			
L65698-03AS	AS	10/26/07 18:51	II071012-2	1	U	.924	mg/L	92.4	85	115			
L65698-03ASD	ASD	10/26/07 18:55	II071012-2	1	U	.958	mg/L	95.8	85	115	3.61	20	
WG235065													
WG235065ICV	ICV	10/28/07 23:38	II071009-7	2		1.98	mg/L	99	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.09	0.09			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	1		1.032	mg/L	103.2	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	1	U	1.064	mg/L	106.4	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	1	U	1.08	mg/L	108	85	115	1.49	20	
WG235707													
WG235707ICV	ICV	11/06/07 23:54	II071009-7	2		1.925	mg/L	96.3	95	105			
WG235707ICB	ICB	11/06/07 23:58				U	mg/L		-0.09	0.09			
WG235707LFB	LFB	11/07/07 0:14	II071029-3	1		1.062	mg/L	106.2	85	115			
L65914-01AS	AS	11/07/07 0:39	II071029-3	1	U	1.086	mg/L	108.6	85	115			
L65914-01ASD	ASD	11/07/07 0:51	II071029-3	1	U	1.1	mg/L	110	85	115	1.28	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234548													
WG234548ICV	ICV	10/18/07 19:31	MS071004-2	.02006		.01812	mg/L	90.3	90	110			
WG234548ICB	ICB	10/18/07 19:37				U	mg/L		-0.0012	0.0012			
WG234548LFB	LFB	10/18/07 19:42	MS071004-4	.01		.01035	mg/L	103.5	85	115			
L65627-01AS	AS	10/18/07 19:59	MS071004-4	.01	U	.00868	mg/L	86.8	70	130			
L65627-01ASD	ASD	10/18/07 20:04	MS071004-4	.01	U	.00892	mg/L	89.2	70	130	2.73	20	
L65740-01AS	AS	10/18/07 21:05	MS071004-4	.01	U	.0091	mg/L	91	70	130			
L65740-01ASD	ASD	10/18/07 21:10	MS071004-4	.01	U	.00921	mg/L	92.1	70	130	1.2	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65740**

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234548													
WG234548ICV	ICV	10/18/07 19:31	MS071004-2	.05		.04797	mg/L	95.9	90	110			
WG234548ICB	ICB	10/18/07 19:37				U	mg/L		-0.0015	0.0015			
WG234548LFB	LFB	10/18/07 19:42	MS071004-4	.05		.04676	mg/L	93.5	85	115			
L65627-01AS	AS	10/18/07 19:59	MS071004-4	.05	.0179	.06529	mg/L	94.8	70	130			
L65627-01ASD	ASD	10/18/07 20:04	MS071004-4	.05	.0179	.06725	mg/L	98.7	70	130	2.96	20	
L65740-01AS	AS	10/18/07 21:05	MS071004-4	.05	.0016	.04995	mg/L	96.7	70	130			
L65740-01ASD	ASD	10/18/07 21:10	MS071004-4	.05	.0016	.05068	mg/L	98.2	70	130	1.45	20	

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235072													
WG235072ICV1	ICV	10/26/07 17:23	II071009-7	2		2.0227	mg/L	101.1	95	105			
WG235072ICB	ICB	10/26/07 17:27				U	mg/L		-0.009	0.009			
WG235072LFB	LFB	10/26/07 17:44	II071012-2	.5		.5017	mg/L	100.3	85	115			
L65698-03AS	AS	10/26/07 18:51	II071012-2	.5	.016	.494	mg/L	95.6	85	115			
L65698-03ASD	ASD	10/26/07 18:55	II071012-2	.5	.016	.5105	mg/L	98.9	85	115	3.29	20	

WG235065

WG235065ICV	ICV	10/28/07 23:38	II071009-7	2		2.0638	mg/L	103.2	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.009	0.009			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	.5		.5404	mg/L	108.1	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	.5	.159	.7004	mg/L	108.3	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	.5	.159	.704	mg/L	109	85	115	0.51	20	

WG235707

WG235707ICV	ICV	11/06/07 23:54	II071009-7	2		1.9853	mg/L	99.3	95	105			
WG235707ICB	ICB	11/06/07 23:58				U	mg/L		-0.009	0.009			
WG235707LFB	LFB	11/07/07 0:14	II071029-3	.5		.526	mg/L	105.2	85	115			
L65914-01AS	AS	11/07/07 0:39	II071029-3	.5	.096	.6221	mg/L	105.2	85	115			
L65914-01ASD	ASD	11/07/07 0:51	II071029-3	.5	.096	.6435	mg/L	109.5	85	115	3.38	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234548													
WG234548ICV	ICV	10/18/07 19:31	MS071004-2	.05		.04793	mg/L	95.9	90	110			
WG234548ICB	ICB	10/18/07 19:37				U	mg/L		-0.0003	0.0003			
WG234548LFB	LFB	10/18/07 19:42	MS071004-4	.05		.04796	mg/L	95.9	85	115			
L65627-01AS	AS	10/18/07 19:59	MS071004-4	.05	U	.04716	mg/L	94.3	70	130			
L65627-01ASD	ASD	10/18/07 20:04	MS071004-4	.05	U	.05002	mg/L	100	70	130	5.89	20	
L65740-01AS	AS	10/18/07 21:05	MS071004-4	.05	U	.04785	mg/L	95.7	70	130			
L65740-01ASD	ASD	10/18/07 21:10	MS071004-4	.05	U	.04987	mg/L	99.7	70	130	4.13	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65740**

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234548													
WG234548ICV	ICV	10/18/07 19:31	MS071004-2	.05		.05152	mg/L	103	90	110			
WG234548ICB	ICB	10/18/07 19:37				U	mg/L		-0.0003	0.0003			
WG234548LFB	LFB	10/18/07 19:42	MS071004-4	.05		.05018	mg/L	100.4	85	115			
L65627-01AS	AS	10/18/07 19:59	MS071004-4	.05	U	.0497	mg/L	99.4	70	130			
L65627-01ASD	ASD	10/18/07 20:04	MS071004-4	.05	U	.05133	mg/L	102.7	70	130	3.23	20	
L65740-01AS	AS	10/18/07 21:05	MS071004-4	.05	U	.04499	mg/L	90	70	130			
L65740-01ASD	ASD	10/18/07 21:10	MS071004-4	.05	U	.04652	mg/L	93	70	130	3.34	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235072													
WG235072ICV1	ICV	10/26/07 17:23	II071009-7	100		97.19	mg/L	97.2	95	105			
WG235072ICB	ICB	10/26/07 17:27				U	mg/L		-0.6	0.6			
WG235072LFB	LFB	10/26/07 17:44	II071012-2	67.97008		65.94	mg/L	97	85	115			
L65698-03AS	AS	10/26/07 18:51	II071012-2	67.97008	291	331.03	mg/L	58.9	85	115			M3
L65698-03ASD	ASD	10/26/07 18:55	II071012-2	67.97008	291	337.83	mg/L	68.9	85	115	2.03	20	M3

WG235065

WG235065ICV	ICV	10/28/07 23:38	II071009-7	100		98.11	mg/L	98.1	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.6	0.6			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	67.97008		71.43	mg/L	105.1	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	67.97008	55.9	125.22	mg/L	102	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	67.97008	55.9	125.65	mg/L	102.6	85	115	0.34	20	

WG235796

WG235796ICV1	ICV	11/07/07 13:20	II071009-7	100		96.19	mg/L	96.2	95	105			
WG235796ICB1	ICB	11/07/07 13:23				.35	mg/L		-0.6	0.6			
WG235796LFB	LFB	11/07/07 13:36	II071029-3	67.97008		68.2	mg/L	100.3	85	115			
L65847-01AS	AS	11/07/07 14:13	II071029-3	67.97008	31.1	95.97	mg/L	95.4	85	115			
L65847-01ASD	ASD	11/07/07 14:16	II071029-3	67.97008	31.1	96.81	mg/L	96.7	85	115	0.87	20	

Chloride

325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235137													
WG235137ICB	ICB	10/29/07 11:07				U	mg/L		-3	3			
WG235137ICV	ICV	10/29/07 11:07	WI070314-1	55		59.9	mg/L	108.9	90	110			
WG235137LFB1	LFB	10/29/07 12:34	WI070712-1	30		32.2	mg/L	107.3	90	110			
WG235137LFB2	LFB	10/29/07 12:38	WI070712-1	30		33	mg/L	110	90	110			
L65738-08AS	AS	10/29/07 12:44	WI070712-1	30	9	40.7	mg/L	105.7	90	110			
L65738-09DUP	DUP	10/29/07 12:46			6	5.5	mg/L				8.7	20	RA
WG235137LFB3	LFB	10/29/07 12:48	WI070712-1	30		33.1	mg/L	110.3	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65740**

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235072													
WG235072ICV1	ICV	10/26/07 17:23	II071009-7	2		1.894	mg/L	94.7	95	105			
WG235072ICB	ICB	10/26/07 17:27				U	mg/L		-0.03	0.03			
WG235072LFB	LFB	10/26/07 17:44	II071012-2	.5		.495	mg/L	99	85	115			
L65698-03AS	AS	10/26/07 18:51	II071012-2	.5	U	.46	mg/L	92	85	115			
L65698-03ASD	ASD	10/26/07 18:55	II071012-2	.5	U	.48	mg/L	96	85	115	4.26	20	
WG235065													
WG235065ICV	ICV	10/28/07 23:38	II071009-7	2		1.974	mg/L	98.7	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.03	0.03			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	.5		.539	mg/L	107.8	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	.5	U	.553	mg/L	110.6	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	.5	U	.557	mg/L	111.4	85	115	0.72	20	
WG235707													
WG235707ICV	ICV	11/06/07 23:54	II071009-7	2		1.901	mg/L	95.1	95	105			
WG235707ICB	ICB	11/06/07 23:58				U	mg/L		-0.03	0.03			
WG235707LFB	LFB	11/07/07 0:14	II071029-3	.5		.533	mg/L	106.6	85	115			
L65914-01AS	AS	11/07/07 0:39	II071029-3	.5	U	.538	mg/L	107.6	85	115			
L65914-01ASD	ASD	11/07/07 0:51	II071029-3	.5	U	.551	mg/L	110.2	85	115	2.39	20	

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235065													
WG235065ICV	ICV	10/28/07 23:38	II071009-7	2		1.97	mg/L	98.5	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.03	0.03			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	.5		.546	mg/L	109.2	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	.5	U	.554	mg/L	110.8	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	.5	U	.557	mg/L	111.4	85	115	0.54	20	
WG235323													
WG235323ICV1	ICV	10/31/07 12:19	II071009-7	2		1.987	mg/L	99.4	95	105			
WG235323ICB1	ICB	10/31/07 12:23				U	mg/L		-0.03	0.03			
WG235323LFB	LFB	10/31/07 12:36	II071012-2	.5		.502	mg/L	100.4	85	115			
L65740-02AS	AS	10/31/07 12:48	II071012-2	.5	U	.503	mg/L	100.6	85	115			
L65740-02ASD	ASD	10/31/07 12:52	II071012-2	.5	U	.519	mg/L	103.8	85	115	3.13	20	
WG235796													
WG235796ICV1	ICV	11/07/07 13:20	II071009-7	2		1.893	mg/L	94.7	95	105			
WG235796ICB1	ICB	11/07/07 13:23				U	mg/L		-0.03	0.03			
WG235796LFB	LFB	11/07/07 13:36	II071029-3	.5		.498	mg/L	99.6	85	115			
L65847-01AS	AS	11/07/07 14:13	II071029-3	.5	U	.483	mg/L	96.6	85	115			
L65847-01ASD	ASD	11/07/07 14:16	II071029-3	.5	U	.492	mg/L	98.4	85	115	1.85	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65740**

Project ID: OJ03DL

Conductivity @25C

120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234677													
WG234677LCSW1	LCSW	10/20/07 13:23	PCN28067	1408.8		1455	µmhos/crr	103.3	90	110			
L65751-05DUP	DUP	10/20/07 16:39			347	343	µmhos/crr				1.2	20	
WG234677LCSW4	LCSW	10/20/07 16:47	PCN28067	1408.8		1460	µmhos/crr	103.6	90	110			
WG234677LCSW7	LCSW	10/20/07 19:54	PCN28067	1408.8		1447	µmhos/crr	102.7	90	110			
WG234677LCSW10	LCSW	10/20/07 22:46	PCN28067	1408.8		1432	µmhos/crr	101.6	90	110			
WG234677LCSW13	LCSW	10/21/07 1:56	PCN28067	1408.8		1414	µmhos/crr	100.4	90	110			

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235065													
WG235065ICV	ICV	10/28/07 23:38	II071009-7	2		1.987	mg/L	99.4	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.03	0.03			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	.5		.544	mg/L	108.8	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	.5	U	.553	mg/L	110.6	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	.5	U	.556	mg/L	111.2	85	115	0.54	20	
WG235104													
WG235104ICV	ICV	10/29/07 19:06	II071009-7	2		1.894	mg/L	94.7	95	105			
WG235104ICB	ICB	10/29/07 19:10				U	mg/L		-0.03	0.03			
WG235104LFB	LFB	10/29/07 19:27	II071012-2	.5		.499	mg/L	99.8	85	115			
L65698-05AS	AS	10/29/07 20:38	II071012-2	.5	U	.55	mg/L	110	85	115			
L65698-05ASD	ASD	10/29/07 20:42	II071012-2	.5	U	.548	mg/L	109.6	85	115	0.36	20	
WG235707													
WG235707ICV	ICV	11/06/07 23:54	II071009-7	2		1.906	mg/L	95.3	95	105			
WG235707ICB	ICB	11/06/07 23:58				U	mg/L		-0.03	0.03			
WG235707LFB	LFB	11/07/07 0:14	II071029-3	.5		.524	mg/L	104.8	85	115			
L65914-01AS	AS	11/07/07 0:39	II071029-3	.5	U	.534	mg/L	106.8	85	115			
L65914-01ASD	ASD	11/07/07 0:51	II071029-3	.5	U	.553	mg/L	110.6	85	115	3.5	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65740**

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234935													
WG234935ICV	ICV	10/24/07 20:12	WI071011-4	.3		.287	mg/L	95.7	90	110			
WG234935ICB	ICB	10/24/07 20:13				U	mg/L		-0.015	0.015			
WG234937													
WG234937ICV	ICV	10/24/07 20:44	WI071011-4	.3		.2942	mg/L	98.1	90	110			
WG234937ICB	ICB	10/24/07 20:45				U	mg/L		-0.015	0.015			
WG234818LRB	LRB	10/24/07 20:46				U	mg/L		-0.015	0.015			
WG234818LFB	LFB	10/24/07 20:46	WI071023-2	.2		.1968	mg/L	98.4	90	110			
L65683-02DUP	DUP	10/24/07 20:49			U	.011	mg/L				200	20	RA
L65683-03LFM	LFM	10/24/07 20:51	WI071023-2	.2	U	.2145	mg/L	107.3	90	110			
L65714-05DUP	DUP	10/24/07 21:00			U	U	mg/L				0	20	RA
L65714-06LFM	LFM	10/24/07 21:02	WI071023-2	.2	U	.2024	mg/L	101.2	90	110			
WG235018													
WG235018ICV	ICV	10/25/07 20:04	WI071011-4	.3		.2864	mg/L	95.5	90	110			
WG235018ICB	ICB	10/25/07 20:05				U	mg/L		-0.015	0.015			
WG234896LRB	LRB	10/25/07 20:06				U	mg/L		-0.015	0.015			
WG234896LFB	LFB	10/25/07 20:07	WI071023-2	.2		.1869	mg/L	93.5	90	110			
L65740-05DUP	DUP	10/25/07 20:09			U	.0117	mg/L				200	20	RA
L65741-01LFM	LFM	10/25/07 20:11	WI071023-2	.2	U	.2119	mg/L	106	90	110			

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234609													
WG234609ICV	ICV	10/19/07 10:59	WC071011-1	2		2.07	mg/L	103.5	90	110			
WG234609ICB	ICB	10/19/07 11:06				U	mg/L		-0.3	0.3			
WG234609LFB1	LFB	10/19/07 11:15	WC070730-1	5		5.12	mg/L	102.4	90	110			
L65738-06AS	AS	10/19/07 13:34	WC070730-1	5	.3	5.58	mg/L	105.6	90	110			
L65738-06DUP	DUP	10/19/07 13:41			.3	.3	mg/L				0	20	RA
WG234609LFB2	LFB	10/19/07 14:52	WC070730-1	5		5	mg/L	100	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65740**

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235072													
WG235072ICV1	ICV	10/26/07 17:23	II071009-7	2		1.943	mg/L	97.2	95	105			
WG235072ICB	ICB	10/26/07 17:27				U	mg/L		-0.06	0.06			
WG235072LFB	LFB	10/26/07 17:44	II071012-2	1		1.012	mg/L	101.2	85	115			
L65698-03AS	AS	10/26/07 18:51	II071012-2	1	49	45.973	mg/L	-302.7	85	115			M3
L65698-03ASD	ASD	10/26/07 18:55	II071012-2	1	49	46.986	mg/L	-201.4	85	115	2.18	20	M3

WG235065

WG235065ICV	ICV	10/28/07 23:38	II071009-7	2		1.983	mg/L	99.2	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.06	0.06			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	1		1.095	mg/L	109.5	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	1	.29	1.392	mg/L	110.2	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	1	.29	1.384	mg/L	109.4	85	115	0.58	20	

WG235707

WG235707ICV	ICV	11/06/07 23:54	II071009-7	2		1.918	mg/L	95.9	95	105			
WG235707ICB	ICB	11/06/07 23:58				U	mg/L		-0.06	0.06			
WG235707LFB	LFB	11/07/07 0:14	II071029-3	1		1.068	mg/L	106.8	85	115			
L65914-01AS	AS	11/07/07 0:39	II071029-3	1	U	1.072	mg/L	107.2	85	115			
L65914-01ASD	ASD	11/07/07 0:51	II071029-3	1	U	1.114	mg/L	111.4	85	115	3.84	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234548													
WG234548ICV	ICV	10/18/07 19:31	MS071004-2	.05		.04489	mg/L	89.8	90	110			
WG234548ICB	ICB	10/18/07 19:37				.00011	mg/L		-0.0003	0.0003			
WG234548LFB	LFB	10/18/07 19:42	MS071004-4	.05		.04414	mg/L	88.3	85	115			
L65627-01AS	AS	10/18/07 19:59	MS071004-4	.05	U	.04297	mg/L	85.9	70	130			
L65627-01ASD	ASD	10/18/07 20:04	MS071004-4	.05	U	.04469	mg/L	89.4	70	130	3.92	20	
L65740-01AS	AS	10/18/07 21:05	MS071004-4	.05	U	.04521	mg/L	90.4	70	130			
L65740-01ASD	ASD	10/18/07 21:10	MS071004-4	.05	U	.04572	mg/L	91.4	70	130	1.12	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65740**

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235072													
WG235072ICV1	ICV	10/26/07 17:23	II071009-7	100		97.96	mg/L	98	95	105			
WG235072ICB	ICB	10/26/07 17:27				U	mg/L		-0.6	0.6			
WG235072LFB	LFB	10/26/07 17:44	II071012-2	54.96908		53.56	mg/L	97.4	85	115			
L65698-03AS	AS	10/26/07 18:51	II071012-2	54.96908	129	169.58	mg/L	73.8	85	115			M2
L65698-03ASD	ASD	10/26/07 18:55	II071012-2	54.96908	129	172.86	mg/L	79.8	85	115	1.92	20	M2

WG235065

WG235065ICV	ICV	10/28/07 23:38	II071009-7	100		98.89	mg/L	98.9	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.6	0.6			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	54.96908		57.24	mg/L	104.1	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	54.96908	30.7	87.86	mg/L	104	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	54.96908	30.7	88.31	mg/L	104.8	85	115	0.51	20	

WG235707

WG235707ICV	ICV	11/06/07 23:54	II071009-7	100		96.18	mg/L	96.2	95	105			
WG235707ICB	ICB	11/06/07 23:58				U	mg/L		-0.6	0.6			
WG235707LFB	LFB	11/07/07 0:14	II071029-3	54.96908		57.3	mg/L	104.2	85	115			
L65914-01AS	AS	11/07/07 0:39	II071029-3	54.96908	44.3	100.9	mg/L	103	85	115			
L65914-01ASD	ASD	11/07/07 0:51	II071029-3	54.96908	44.3	103.93	mg/L	108.5	85	115	2.96	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235065													
WG235065ICV	ICV	10/28/07 23:38	II071009-7	2		1.9457	mg/L	97.3	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.015	0.015			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	.5		.5665	mg/L	113.3	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	.5	.444	.9887	mg/L	108.9	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	.5	.444	.9921	mg/L	109.6	85	115	0.34	20	

WG235104

WG235104ICV	ICV	10/29/07 19:06	II071009-7	2		1.8999	mg/L	95	95	105			
WG235104ICB	ICB	10/29/07 19:10				U	mg/L		-0.015	0.015			
WG235104LFB	LFB	10/29/07 19:27	II071012-2	.5		.5297	mg/L	105.9	85	115			
L65698-05AS	AS	10/29/07 20:38	II071012-2	.5	.01	.5847	mg/L	114.9	85	115			
L65698-05ASD	ASD	10/29/07 20:42	II071012-2	.5	.01	.5788	mg/L	113.8	85	115	1.01	20	

WG235833

WG235833ICV	ICV	11/07/07 16:21	II071009-7	2		1.9645	mg/L	98.2	95	105			
WG235833ICB	ICB	11/07/07 16:25				U	mg/L		-0.015	0.015			
WG235833LFB	LFB	11/07/07 16:38	II071029-3	.5		.5249	mg/L	105	85	115			
L65942-03AS	AS	11/07/07 17:22	II071029-3	.5	U	.5282	mg/L	105.6	85	115			
L65942-03ASD	ASD	11/07/07 17:25	II071029-3	.5	U	.5273	mg/L	105.5	85	115	0.17	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65740**

Project ID: OJ03DL

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234875													
WG234875ICV	ICV	10/25/07 17:39	II071016-1	.00498		.00514	mg/L	102.8	95	105			
WG234875ICB	ICB	10/25/07 17:41				U	mg/L		-0.0002	0.0002			
WG234875ICV2	ICV	10/26/07 9:23	II071016-1	.00498		.00493	mg/L	98.6	95	105			
WG234875ICB2	ICB	10/26/07 9:26				U	mg/L		-0.0002	0.0002			
WG234876													
WG234876LRB	LRB	10/25/07 19:04				U	mg/L		-0.00044	0.00044			
WG234876LFB	LFB	10/25/07 19:06	II071017-2	.002		.00218	mg/L	109	85	115			
L65737-05LFM	LFM	10/25/07 19:45	II071017-2	.002	.0002	.00216	mg/L	98	85	115			
L65737-05LFMD	LFMD	10/25/07 19:47	II071017-2	.002	.0002	.00228	mg/L	104	85	115	5.41	20	
WG235039													
WG235039ICV	ICV	10/30/07 12:39	II071016-1	.00498		.00523	mg/L	105	95	105			
WG235039ICB	ICB	10/30/07 12:42				U	mg/L		-0.0002	0.0002			
WG235039ICV2	ICV	11/02/07 8:27	II071016-1	.00498		.00512	mg/L	102.8	95	105			
WG235039ICB2	ICB	11/02/07 8:29				U	mg/L		-0.0002	0.0002			
WG235039ICV3	ICV	11/02/07 10:56	II071016-1	.00498		.00471	mg/L	94.6	95	105			
WG235039ICB3	ICB	11/02/07 10:59				U	mg/L		-0.0002	0.0002			
WG235038													
WG235038LRB	LRB	10/30/07 14:55				U	mg/L		-0.00044	0.00044			
WG235038LFB	LFB	10/30/07 14:57	II071017-2	.002		.00179	mg/L	89.5	85	115			
L65659-01LFM	LFM	10/30/07 15:03	II071017-2	.002	U	.00199	mg/L	99.5	85	115			
L65659-01LFMD	LFMD	10/30/07 15:06	II071017-2	.002	U	.00214	mg/L	107	85	115	7.26	20	
WG235038ICV	ICV	11/02/07 16:11	II071016-1	.00498		.0049	mg/L	98.4	95	105			
WG235038ICB	ICB	11/02/07 16:13				U	mg/L		-0.0002	0.0002			
L65740-05LFM	LFM	11/02/07 16:30	II071017-2	.002	.0003	.00189	mg/L	79.5	85	115			M2
L65740-05LFMD	LFMD	11/02/07 16:32	II071017-2	.002	.0003	.00184	mg/L	77	85	115	2.68	20	M2

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235104													
WG235104ICV	ICV	10/29/07 19:06	II071009-7	2		1.994	mg/L	99.7	95	105			
WG235104ICB	ICB	10/29/07 19:10				U	mg/L		-0.03	0.03			
WG235104LFB	LFB	10/29/07 19:27	II071012-2	.5		.5	mg/L	100	85	115			
L65698-05AS	AS	10/29/07 20:38	II071012-2	.5	U	.439	mg/L	87.8	85	115			
L65698-05ASD	ASD	10/29/07 20:42	II071012-2	.5	U	.44	mg/L	88	85	115	0.23	20	
WG235174													
WG235174ICV	ICV	10/29/07 21:30	II071009-7	2		2.089	mg/L	104.5	95	105			
WG235174ICB	ICB	10/29/07 21:34				U	mg/L		-0.03	0.03			
WG235174LFB	LFB	10/29/07 21:47	II071029-3	.5		.509	mg/L	101.8	85	115			
L65737-01AS	AS	10/29/07 22:36	II071029-3	.5	U	.508	mg/L	101.6	85	115			
L65737-01ASD	ASD	10/29/07 22:39	II071029-3	.5	U	.492	mg/L	98.4	85	115	3.2	20	
WG235796													
WG235796ICV1	ICV	11/07/07 13:20	II071009-7	2		1.934	mg/L	96.7	95	105			
WG235796ICB1	ICB	11/07/07 13:23				.024	mg/L		-0.03	0.03			
WG235796LFB	LFB	11/07/07 13:36	II071029-3	.5		.521	mg/L	104.2	85	115			
L65847-01AS	AS	11/07/07 14:13	II071029-3	.5	.02	.484	mg/L	92.8	85	115			
L65847-01ASD	ASD	11/07/07 14:16	II071029-3	.5	.02	.485	mg/L	93	85	115	0.21	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65740**

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235065													
WG235065ICV	ICV	10/28/07 23:38	II071009-7	2		1.937	mg/L	96.9	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.03	0.03			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	.5		.53	mg/L	106	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	.5	U	.541	mg/L	108.2	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	.5	U	.553	mg/L	110.6	85	115	2.19	20	
WG235383													
WG235383ICV	ICV	11/01/07 1:43	II071009-7	2		1.908	mg/L	95.4	95	105			
WG235383ICB	ICB	11/01/07 1:47				U	mg/L		-0.03	0.03			
WG235383LFB	LFB	11/01/07 2:03	II071029-3	.5		.512	mg/L	102.4	85	115			
L65740-03AS	AS	11/01/07 2:19	II071029-3	.5	U	.535	mg/L	107	85	115			
L65740-03ASD	ASD	11/01/07 2:23	II071029-3	.5	U	.532	mg/L	106.4	85	115	0.56	20	
WG235833													
WG235833ICV	ICV	11/07/07 16:21	II071009-7	2		1.932	mg/L	96.6	95	105			
WG235833ICB	ICB	11/07/07 16:25				U	mg/L		-0.03	0.03			
WG235833LFB	LFB	11/07/07 16:38	II071029-3	.5		.489	mg/L	97.8	85	115			
L65942-03AS	AS	11/07/07 17:22	II071029-3	.5	U	.505	mg/L	101	85	115			
L65942-03ASD	ASD	11/07/07 17:25	II071029-3	.5	U	.495	mg/L	99	85	115	2	20	

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235098													
WG235098ICV	ICV	10/27/07 18:39	WI070911-1	2.416		2.574	mg/L	106.5	90	110			
WG235098ICB	ICB	10/27/07 18:40				U	mg/L		-0.06	0.06			
WG235098LFB1	LFB	10/27/07 18:44	WI070911-4	2		2.053	mg/L	102.7	90	110			
L65738-09AS	AS	10/27/07 18:47	WI070911-4	2	U	2.055	mg/L	102.8	90	110			
L65740-01DUP	DUP	10/27/07 18:49			2.24	2.229	mg/L				0.5	20	
WG235098LFB2	LFB	10/27/07 19:22	WI070911-4	2		2.1	mg/L	105	90	110			

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234677													
WG234677LCSW3	LCSW	10/20/07 13:36	PCN27958	6		6.06	units	101	90	110			
L65751-05DUP	DUP	10/20/07 16:39			8.7	8.69	units				0.1	20	
WG234677LCSW6	LCSW	10/20/07 17:00	PCN27958	6		6.07	units	101.2	90	110			
WG234677LCSW9	LCSW	10/20/07 20:06	PCN27958	6		6.07	units	101.2	90	110			
WG234677LCSW12	LCSW	10/20/07 23:00	PCN27958	6		6.07	units	101.2	90	110			
WG234677LCSW15	LCSW	10/21/07 2:08	PCN27958	6		6.06	units	101	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65740**

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235072													
WG235072ICV1	ICV	10/26/07 17:23	II071009-7	20		19.94	mg/L	99.7	95	105			
WG235072ICB	ICB	10/26/07 17:27				U	mg/L		-0.9	0.9			
WG235072LFB	LFB	10/26/07 17:44	II071012-2	99.76186		97.44	mg/L	97.7	85	115			
L65698-03AS	AS	10/26/07 18:51	II071012-2	99.76186	6.1	101.36	mg/L	95.5	85	115			
L65698-03ASD	ASD	10/26/07 18:55	II071012-2	99.76186	6.1	103.84	mg/L	98	85	115	2.42	20	
WG235065													
WG235065ICV	ICV	10/28/07 23:38	II071009-7	20		20.25	mg/L	101.3	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.9	0.9			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	99.76186		105.66	mg/L	105.9	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	99.76186	2.6	112.54	mg/L	110.2	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	99.76186	2.6	113.48	mg/L	111.1	85	115	0.83	20	
WG235707													
WG235707ICV	ICV	11/06/07 23:54	II071009-7	20		19.59	mg/L	98	95	105			
WG235707ICB	ICB	11/06/07 23:58				U	mg/L		-0.9	0.9			
WG235707LFB	LFB	11/07/07 0:14	II071029-3	99.76186		105.36	mg/L	105.6	85	115			
L65914-01AS	AS	11/07/07 0:39	II071029-3	99.76186	.6	112.49	mg/L	112.2	85	115			
L65914-01ASD	ASD	11/07/07 0:51	II071029-3	99.76186	.6	115.72	mg/L	115.4	85	115	2.83	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234608													
WG234608PBW	PBW	10/19/07 8:50				U	mg/L		-20	20			
WG234608LCSW	LCSW	10/19/07 8:52	PCN28213	260		274	mg/L	105.4	80	120			
L65740-03DUP	DUP	10/19/07 9:39			U	U	mg/L				0	20	RA
WG234610													
WG234610PBW	PBW	10/19/07 9:45				U	mg/L		-20	20			
WG234610LCSW	LCSW	10/19/07 9:47	PCN28213	260		270	mg/L	103.8	80	120			
L65743-01DUP	DUP	10/19/07 10:13			2860	2856	mg/L				0.1	20	

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234548													
WG234548ICV	ICV	10/18/07 19:31	MS071004-2	.05		.05315	mg/L	106.3	90	110			
WG234548ICB	ICB	10/18/07 19:37				U	mg/L		-0.0003	0.0003			
WG234548LFB	LFB	10/18/07 19:42	MS071004-4	.05		.05091	mg/L	101.8	85	115			
L65627-01AS	AS	10/18/07 19:59	MS071004-4	.05	U	.05758	mg/L	115.2	70	130			
L65627-01ASD	ASD	10/18/07 20:04	MS071004-4	.05	U	.0594	mg/L	118.8	70	130	3.11	20	
L65740-01AS	AS	10/18/07 21:05	MS071004-4	.05	.0008	.0571	mg/L	112.6	70	130			
L65740-01ASD	ASD	10/18/07 21:10	MS071004-4	.05	.0008	.05761	mg/L	113.6	70	130	0.89	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65740**

Project ID: OJ03DL

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235072													
WG235072ICV1	ICV	10/26/07 17:23	II071009-7	100		97.96	mg/L	98	95	105			
WG235072ICB	ICB	10/26/07 17:27				U	mg/L		-0.9	0.9			
WG235072LFB	LFB	10/26/07 17:44	II071012-2	98.21624		94.84	mg/L	96.6	85	115			
L65698-03AS	AS	10/26/07 18:51	II071012-2	98.21624	6.2	96.42	mg/L	91.9	85	115			
L65698-03ASD	ASD	10/26/07 18:55	II071012-2	98.21624	6.2	98.65	mg/L	94.1	85	115	2.29	20	

WG235065

WG235065ICV	ICV	10/28/07 23:38	II071009-7	100		99.8	mg/L	99.8	95	105			
WG235065ICV	ICV	10/28/07 23:38	II071009-7	100		102.52	mg/L	102.5	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-6	6			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.9	0.9			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	98.21624		101.9	mg/L	103.8	85	115			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	98.21624		104.39	mg/L	106.3	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	98.21624	49.2	153.52	mg/L	106.2	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	98.21624	49.2	154.42	mg/L	107.1	85	115	0.58	20	

WG235707

WG235707ICV	ICV	11/06/07 23:54	II071009-7	100		96.6	mg/L	96.6	95	105			
WG235707ICV	ICV	11/06/07 23:54	II071009-7	100		98.21	mg/L	98.2	95	105			
WG235707ICB	ICB	11/06/07 23:58				U	mg/L		-6	6			
WG235707ICB	ICB	11/06/07 23:58				U	mg/L		-0.9	0.9			
WG235707LFB	LFB	11/07/07 0:14	II071029-3	98.21624		101.1	mg/L	102.9	85	115			
WG235707LFB	LFB	11/07/07 0:14	II071029-3	98.21624		102.82	mg/L	104.7	85	115			
L65914-01AS	AS	11/07/07 0:39	II071029-3	98.21624	305	393.95	mg/L	90.6	85	115			
L65914-01ASD	ASD	11/07/07 0:51	II071029-3	98.21624	305	407.58	mg/L	104.4	85	115	3.4	20	

Sulfate

SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234778													
WG234778PBW	PBW	10/23/07 8:17				U	mg/L		-30	30			
WG234778LCSW	LCSW	10/23/07 8:20	WC070903-2	100		92	mg/L	92	80	120			
L65747-16DUP	DUP	10/23/07 9:29			240	240	mg/L				0	20	

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234548													
WG234548ICV	ICV	10/18/07 19:31	MS071004-2	.05		.05422	mg/L	108.4	90	110			
WG234548ICB	ICB	10/18/07 19:37				U	mg/L		-0.0003	0.0003			
WG234548LFB	LFB	10/18/07 19:42	MS071004-4	.05		.05261	mg/L	105.2	85	115			
L65627-01AS	AS	10/18/07 19:59	MS071004-4	.05	U	.05061	mg/L	101.2	70	130			
L65627-01ASD	ASD	10/18/07 20:04	MS071004-4	.05	U	.05306	mg/L	106.1	70	130	4.73	20	
L65740-01AS	AS	10/18/07 21:05	MS071004-4	.05	U	.05331	mg/L	106.6	70	130			
L65740-01ASD	ASD	10/18/07 21:10	MS071004-4	.05	U	.05152	mg/L	103	70	130	3.42	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65740**

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235065													
WG235065ICV	ICV	10/28/07 23:38	II071009-7	2		1.954	mg/L	97.7	95	105			
WG235065ICB	ICB	10/28/07 23:42				U	mg/L		-0.03	0.03			
WG235065LFB	LFB	10/28/07 23:56	II071012-2	.5		.535	mg/L	107	85	115			
L65738-01AS	AS	10/29/07 0:54	II071012-2	.5	.04	.565	mg/L	105	85	115			
L65738-01ASD	ASD	10/29/07 0:58	II071012-2	.5	.04	.574	mg/L	106.8	85	115	1.58	20	
WG235104													
WG235104ICV	ICV	10/29/07 19:06	II071009-7	2		1.925	mg/L	96.3	95	105			
WG235104ICB	ICB	10/29/07 19:10				U	mg/L		-0.03	0.03			
WG235104LFB	LFB	10/29/07 19:27	II071012-2	.5		.508	mg/L	101.6	85	115			
L65698-05AS	AS	10/29/07 20:38	II071012-2	.5	.04	.582	mg/L	108.4	85	115			
L65698-05ASD	ASD	10/29/07 20:42	II071012-2	.5	.04	.578	mg/L	107.6	85	115	0.69	20	
WG235796													
WG235796ICV1	ICV	11/07/07 13:20	II071009-7	2		1.894	mg/L	94.7	95	105			
WG235796ICB1	ICB	11/07/07 13:23				U	mg/L		-0.03	0.03			
WG235796LFB	LFB	11/07/07 13:36	II071029-3	.5		.499	mg/L	99.8	85	115			
L65847-01AS	AS	11/07/07 14:13	II071029-3	.5	U	.507	mg/L	101.4	85	115			
L65847-01ASD	ASD	11/07/07 14:16	II071029-3	.5	U	.537	mg/L	107.4	85	115	5.75	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65740**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
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No extended qualifiers associated with this analysis

Phelps Dodge Sierrita

ACZ Project ID: **L65740**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65740
Date Received: 10/18/2007
Received By:
Date Printed: 10/19/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?		X	
12) Are samples requiring no headspace, headspace free?	X		
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (μR/hr)
1658	1.6	16

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65740
 Date Received: 10/18/2007
 Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65740-01	MH-10		Y		Y							<input type="checkbox"/>
L65740-02	PZ-7		Y		Y							<input type="checkbox"/>
L65740-03	EQB101607A		Y		Y							<input type="checkbox"/>
L65740-04	TB101607A		Y		Y							<input type="checkbox"/>
L65740-05	DUP101607C		Y		Y							<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH -Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

L65740

CHAIN of CUSTODY

Report to:

Name: Billy Dorris
Company: Freeport McMoran Cu & Au Sierrita
E-mail: Billy-Dorris@FMI.com

Address: 6200 W. Duval Mine Rd
Green Valley, AZ 85614
Telephone: 520-648-8873

Copy of Report to:

Name: Jim Norris
Company: Hydro Geo Chem

E-mail: jimn@hginc.com
Telephone: 520-293-1500 Ext 112

Invoice to:

Name:
Company:
E-mail:

Address:

Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES ☐
NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: OJ03DL

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material?

of Containers

SAMPLE IDENTIFICATION DATE:TIME Matrix

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers
MH-10	10-16-07 / 11:45	GW	8
PZ-7	10-16-07 / 12:51	GW	8
EQB101607A	10-16-07 / 12:00	GW	8
TB101607A	10-16-07 / 12:00	GW	8
DUP101607C	10-16-07 /	GW	8

AMBIENT
SUITE

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

"Copy of Report" to Jim Norris contains only SO₄ results with QC Summary.

UPS TRACKING # 1Z 867 7E4 22 1000 3229

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Billy F. Dorris

10-17-07 / 15:00

KU

10-18-07 9:03

Bill Dorris
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

November 28, 2007

Cc: Jim Norris

Project ID: OJ03DL
ACZ Project ID: L65858 – SULFATE ONLY

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 24, 2007. This project was assigned to ACZ's project number, L65858. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L65858. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute. Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all the requirements of NELAC.

This report should be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Phelps Dodge Sierrita

November 21, 2007

Project ID: OJ03DL

ACZ Project ID: L65858

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 10 ground water samples from Phelps Dodge Sierrita on October 24, 2007. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L65858. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic, organic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. Some of the mercury results may have been qualified with the N1 flag. The chemist noted that these samples required a verification re-analysis.

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-12

ACZ Sample ID: **L65858-01**

Date Sampled: 10/22/07 07:50

Date Received: 10/24/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1650			mg/L	50	250	11/01/07 11:53	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-13

ACZ Sample ID: **L65858-02**

Date Sampled: 10/22/07 08:10

Date Received: 10/24/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1840			mg/L	10	50	11/01/07 11:56	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-14

ACZ Sample ID: **L65858-03**

Date Sampled: 10/22/07 08:20

Date Received: 10/24/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1840			mg/L	50	250	11/01/07 12:02	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-16

ACZ Sample ID: **L65858-04**

Date Sampled: 10/22/07 08:40

Date Received: 10/24/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1800			mg/L	50	250	11/01/07 12:05	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-17

ACZ Sample ID: **L65858-05**

Date Sampled: 10/22/07 08:55

Date Received: 10/24/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1770			mg/L	50	250	11/01/07 12:08	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-18

ACZ Sample ID: **L65858-06**

Date Sampled: 10/22/07 09:15

Date Received: 10/24/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1730			mg/L	10	50	11/01/07 12:10	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-21

ACZ Sample ID: **L65858-07**

Date Sampled: 10/22/07 09:40

Date Received: 10/24/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1650			mg/L	10	50	11/01/07 12:13	aeH

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: DUP102207A

ACZ Sample ID: **L65858-08**

Date Sampled: 10/22/07 00:00

Date Received: 10/24/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1640			mg/L	10	50	11/01/07 12:16	aeH

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L65858**

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235069													
WG235069PBW2	PBW	10/26/07 18:54				U	mg/L		-20	20			
WG235069LCSW5	LCSW	10/26/07 19:07	WC071015-1	820		828.1	mg/L	101	90	110			
L65858-06DUP	DUP	10/26/07 20:40			128	127.7	mg/L				0.2	20	
L65873-04DUP	DUP	10/26/07 21:53			13	13.1	mg/L				0.8	20	RA
WG235069PBW3	PBW	10/26/07 21:58				U	mg/L		-20	20			
WG235069LCSW8	LCSW	10/26/07 22:11	WC071015-1	820		817.9	mg/L	99.7	90	110			
WG235069PBW4	PBW	10/27/07 1:04				U	mg/L		-20	20			
WG235069LCSW11	LCSW	10/27/07 1:16	WC071015-1	820		816.4	mg/L	99.6	90	110			
WG235069LCSW14	LCSW	10/27/07 4:13	WC071015-1	820		840.6	mg/L	102.5	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	2		2.026	mg/L	101.3	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.09	0.09			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	1		1.054	mg/L	105.4	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	2	U	2.195	mg/L	109.8	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	2	U	2.111	mg/L	105.6	85	115	3.9	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234995													
WG234995ICV	ICV	10/26/07 17:25	MS071004-2	.02006		.01852	mg/L	92.3	90	110			
WG234995ICB	ICB	10/26/07 17:30				U	mg/L		-0.0012	0.0012			
WG234995LFB	LFB	10/26/07 17:42	MS071004-4	.01		.0102	mg/L	102	85	115			
L65775-01AS	AS	10/26/07 17:53	MS071004-4	.2	U	.2086	mg/L	104.3	70	130			
L65775-01ASD	ASD	10/26/07 17:59	MS071004-4	.2	U	.2086	mg/L	104.3	70	130	0	20	
L65858-03AS	AS	10/26/07 19:12	MS071004-4	.01	U	.01237	mg/L	123.7	70	130			
L65858-03ASD	ASD	10/26/07 19:18	MS071004-4	.01	U	.01311	mg/L	131.1	70	130	5.81	20	MA

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65858**

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234995													
WG234995ICV	ICV	10/26/07 17:25	MS071004-2	.05		.05212	mg/L	104.2	90	110			
WG234995ICB	ICB	10/26/07 17:30				U	mg/L		-0.0015	0.0015			
WG234995LFB	LFB	10/26/07 17:42	MS071004-4	.05		.05127	mg/L	102.5	85	115			
L65775-01AS	AS	10/26/07 17:53	MS071004-4	1	U	1.046	mg/L	104.6	70	130			
L65775-01ASD	ASD	10/26/07 17:59	MS071004-4	1	U	1.027	mg/L	102.7	70	130	1.83	20	
L65858-03AS	AS	10/26/07 19:12	MS071004-4	.05	.0037	.06008	mg/L	112.8	70	130			
L65858-03ASD	ASD	10/26/07 19:18	MS071004-4	.05	.0037	.06311	mg/L	118.8	70	130	4.92	20	

WG235175

WG235175ICV	ICV	10/29/07 20:09	MS071004-2	.05		.05009	mg/L	100.2	90	110			
WG235175ICB	ICB	10/29/07 20:14				.00071	mg/L		-0.0015	0.0015			
WG235175LFB	LFB	10/29/07 20:19	2XMULTI	.1		.09923	mg/L	99.2	85	115			
L65847-12AS	AS	10/29/07 20:29	2XMULTI	.1	.0009	.09902	mg/L	98.1	70	130			
L65847-12ASD	ASD	10/29/07 20:34	2XMULTI	.1	.0009	.0983	mg/L	97.4	70	130	0.73	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235673													
WG235673ICV	ICV	11/06/07 13:01	II071009-7	2		1.9755	mg/L	98.8	95	105			
WG235673ICB	ICB	11/06/07 13:04				U	mg/L		-0.009	0.009			
WG235673LFB	LFB	11/06/07 13:18	II071029-3	.5		.4499	mg/L	90	85	115			
L65858-03AS	AS	11/06/07 14:10	II071029-3	1	.049	.9848	mg/L	93.6	85	115			
L65858-03ASD	ASD	11/06/07 14:14	II071029-3	1	.049	.989	mg/L	94	85	115	0.43	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234995													
WG234995ICV	ICV	10/26/07 17:25	MS071004-2	.05		.05092	mg/L	101.8	90	110			
WG234995ICB	ICB	10/26/07 17:30				U	mg/L		-0.0003	0.0003			
WG234995LFB	LFB	10/26/07 17:42	MS071004-4	.05		.05102	mg/L	102	85	115			
L65775-01AS	AS	10/26/07 17:53	MS071004-4	1	U	1.0366	mg/L	103.7	70	130			
L65775-01ASD	ASD	10/26/07 17:59	MS071004-4	1	U	1.0344	mg/L	103.4	70	130	0.21	20	
L65858-03AS	AS	10/26/07 19:12	MS071004-4	.05	U	.06295	mg/L	125.9	70	130			
L65858-03ASD	ASD	10/26/07 19:18	MS071004-4	.05	U	.06752	mg/L	135	70	130	7.01	20	MA
WG235175													
WG235175ICV	ICV	10/29/07 20:09	MS071004-2	.05		.05011	mg/L	100.2	90	110			
WG235175ICB	ICB	10/29/07 20:14				U	mg/L		-0.0003	0.0003			
WG235175LFB	LFB	10/29/07 20:19	2XMULTI	.1		.1009	mg/L	100.9	85	115			
L65847-12AS	AS	10/29/07 20:29	2XMULTI	.1	U	.1042	mg/L	104.2	70	130			
L65847-12ASD	ASD	10/29/07 20:34	2XMULTI	.1	U	.1025	mg/L	102.5	70	130	1.64	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65858**

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234995													
WG234995ICV	ICV	10/26/07 17:25	MS071004-2	.05		.05174	mg/L	103.5	90	110			
WG234995ICB	ICB	10/26/07 17:30				U	mg/L		-0.0003	0.0003			
WG234995LFB	LFB	10/26/07 17:42	MS071004-4	.05		.05206	mg/L	104.1	85	115			
L65775-01AS	AS	10/26/07 17:53	MS071004-4	1	U	1.0498	mg/L	105	70	130			
L65775-01ASD	ASD	10/26/07 17:59	MS071004-4	1	U	1.0404	mg/L	104	70	130	0.9	20	
L65858-03AS	AS	10/26/07 19:12	MS071004-4	.05	U	.04723	mg/L	94.5	70	130			
L65858-03ASD	ASD	10/26/07 19:18	MS071004-4	.05	U	.04935	mg/L	98.7	70	130	4.39	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	100		99.93	mg/L	99.9	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.6	0.6			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	67.97008		71.29	mg/L	104.9	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	135.94016	556	691.36	mg/L	99.6	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	135.94016	556	680	mg/L	91.2	85	115	1.66	20	

Chloride

325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235569													
WG235569ICB	ICB	11/03/07 11:09				U	mg/L		-3	3			
WG235569ICV	ICV	11/03/07 11:09	WI070314-1	55		57.9	mg/L	105.3	90	110			
WG235569LFB1	LFB	11/03/07 11:36	WI070712-1	30		32.7	mg/L	109	90	110			
L65852-04DUP	DUP	11/03/07 11:44			U	U	mg/L				0	20	RA
WG235569LFB2	LFB	11/03/07 11:52	WI070712-1	30		32.9	mg/L	109.7	90	110			
L65852-03AS	AS	11/03/07 12:28	WI070712-1	300	U	323	mg/L	107.7	90	110			
WG235579													
WG235579ICB	ICB	11/03/07 11:09				U	mg/L		-3	3			
WG235579ICV	ICV	11/03/07 11:09	WI070314-1	55		57.9	mg/L	105.3	90	110			
WG235579LFB1	LFB	11/03/07 14:44	WI070712-1	30		32.8	mg/L	109.3	90	110			
L65833-01AS	AS	11/03/07 14:44	WI070712-1	30	7	40.1	mg/L	110.3	90	110			
L65858-03DUP	DUP	11/03/07 15:08			120	126	mg/L				4.9	20	
WG235579LFB2	LFB	11/03/07 15:28	WI070712-1	30		32.3	mg/L	107.7	90	110			

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	2		1.982	mg/L	99.1	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.03	0.03			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	.5		.53	mg/L	106	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	1	U	1.064	mg/L	106.4	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	1	U	1.051	mg/L	105.1	85	115	1.23	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65858**

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	2		2.005	mg/L	100.3	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.03	0.03			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	.5		.53	mg/L	106	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	1	U	1.069	mg/L	106.9	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	1	U	1.044	mg/L	104.4	85	115	2.37	20	

Conductivity @25C

120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235069													
WG235069LCSW1	LCSW	10/26/07 15:55	PCN28067	1408.8		1395	µmhos/crr	99	90	110			
WG235069LCSW4	LCSW	10/26/07 18:56	PCN28067	1408.8		1404	µmhos/crr	99.7	90	110			
L65858-06DUP	DUP	10/26/07 20:40			2970	2990	µmhos/crr				0.7	20	
L65873-04DUP	DUP	10/26/07 21:53			44	44.8	µmhos/crr				1.8	20	
WG235069LCSW7	LCSW	10/26/07 21:59	PCN28067	1408.8		1399	µmhos/crr	99.3	90	110			
WG235069LCSW10	LCSW	10/27/07 1:05	PCN28067	1408.8		1401	µmhos/crr	99.4	90	110			
WG235069LCSW13	LCSW	10/27/07 4:02	PCN28067	1408.8		1394	µmhos/crr	98.9	90	110			

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	2		2.017	mg/L	100.9	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.03	0.03			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	.5		.531	mg/L	106.2	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	1	U	1.069	mg/L	106.9	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	1	U	1.05	mg/L	105	85	115	1.79	20	

Cyanide, total

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235442													
WG235442ICV	ICV	11/01/07 13:13	WI071026-3	.3		.2796	mg/L	93.2	90	110			
WG235442ICB	ICB	11/01/07 13:14				U	mg/L		-0.015	0.015			
WG235476													
WG235476ICV	ICV	11/01/07 16:42	WI071026-3	.3		.2816	mg/L	93.9	90	110			
WG235476ICB	ICB	11/01/07 16:43				U	mg/L		-0.015	0.015			
WG235236LRB	LRB	11/01/07 16:44				U	mg/L		-0.015	0.015			
L65834-01DUP	DUP	11/01/07 16:47			U	U	mg/L				0	20	RA
L65841-01LFM	LFM	11/01/07 16:49	WI071023-2	.2	U	.2088	mg/L	104.4	90	110			
L65858-05DUP	DUP	11/01/07 16:59			U	U	mg/L				0	20	RA
L65858-06LFM	LFM	11/01/07 17:00	WI071023-2	.2	U	.2326	mg/L	116.3	90	110			M1
WG235236LFB	LFB	11/01/07 17:10	WI071023-2	.2		.2075	mg/L	103.8	90	110			

Phelps Dodge Sierrita

ACZ Project ID: **L65858**

Project ID: OJ03DL

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235215													
WG235215ICV	ICV	10/30/07 11:13	WC071019-5	2		2.12	mg/L	106	90	110			
WG235215ICB	ICB	10/30/07 11:20				U	mg/L		-0.3	0.3			
WG235215LFB1	LFB	10/30/07 11:30	WC070730-1	5		4.98	mg/L	99.6	90	110			
WG235215LFB2	LFB	10/30/07 14:28	WC070730-1	5		4.74	mg/L	94.8	90	110			
L65847-09AS	AS	10/30/07 15:54	WC070730-1	5	U	5.09	mg/L	101.8	90	110			
L65847-09DUP	DUP	10/30/07 15:59			U	.1	mg/L				0	20	RA
WG235361													
WG235361ICV	ICV	10/31/07 15:23	WC071019-5	2		2.17	mg/L	108.5	90	110			
WG235361ICB	ICB	10/31/07 15:30				U	mg/L		-0.3	0.3			
WG235361LFB1	LFB	10/31/07 15:38	WC070730-1	5		5.02	mg/L	100.4	90	110			
L65858-03AS	AS	10/31/07 16:56	WC070730-1	5	.2	4.93	mg/L	94.6	90	110			
L65858-03DUP	DUP	10/31/07 17:03			.2	.25	mg/L				22.2	20	RA
WG235361LFB2	LFB	10/31/07 18:10	WC070730-1	5		5.14	mg/L	102.8	90	110			

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	2		2	mg/L	100	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.06	0.06			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	1		1.07	mg/L	107	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	2	U	2.144	mg/L	107.2	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	2	U	2.104	mg/L	105.2	85	115	1.88	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234995													
WG234995ICV	ICV	10/26/07 17:25	MS071004-2	.05		.05161	mg/L	103.2	90	110			
WG234995ICB	ICB	10/26/07 17:30				U	mg/L		-0.0003	0.0003			
WG234995LFB	LFB	10/26/07 17:42	MS071004-4	.05		.05264	mg/L	105.3	85	115			
L65775-01AS	AS	10/26/07 17:53	MS071004-4	1	U	1.0738	mg/L	107.4	70	130			
L65775-01ASD	ASD	10/26/07 17:59	MS071004-4	1	U	1.05	mg/L	105	70	130	2.24	20	
L65858-03AS	AS	10/26/07 19:12	MS071004-4	.05	.0005	.05202	mg/L	103	70	130			
L65858-03ASD	ASD	10/26/07 19:18	MS071004-4	.05	.0005	.05402	mg/L	107	70	130	3.77	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	100		100.93	mg/L	100.9	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.6	0.6			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	54.96908		56.74	mg/L	103.2	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	109.93816	117	231.63	mg/L	104.3	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	109.93816	117	227.61	mg/L	100.6	85	115	1.75	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65858**

Project ID: OJ03DL

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	2		1.991	mg/L	99.6	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.015	0.015			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	.5		.563	mg/L	112.6	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	1	U	1.119	mg/L	111.9	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	1	U	1.101	mg/L	110.1	85	115	1.62	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235354													
WG235354ICV	ICV	11/06/07 11:57	II071026-1	.00498		.00489	mg/L	98.2	95	105			
WG235354ICB	ICB	11/06/07 12:01				U	mg/L		-0.0002	0.0002			
WG235354ICV2	ICV	11/07/07 7:58	II071026-1	.00498		.00509	mg/L	102.2	95	105			
WG235354ICB2	ICB	11/07/07 8:00				U	mg/L		-0.0002	0.0002			
WG235355													
WG235355LRB	LRB	11/06/07 14:22				U	mg/L		-0.00044	0.00044			
WG235355LFB	LFB	11/06/07 14:24	II071017-2	.002		.00198	mg/L	99	85	115			
L65847-01LFM	LFM	11/06/07 14:33	II071017-2	.002	U	.00205	mg/L	102.5	85	115			
L65847-01LFMD	LFMD	11/06/07 14:35	II071017-2	.002	U	.00197	mg/L	98.5	85	115	3.98	20	
L65858-06LFM	LFM	11/06/07 15:03	II071017-2	.002	U	.00198	mg/L	99	85	115			
L65858-06LFMD	LFMD	11/06/07 15:06	II071017-2	.002	U	.00204	mg/L	102	85	115	2.99	20	
WG235355ICV	ICV	11/07/07 7:58	II071026-1	.00498		.00509	mg/L	102.2	95	105			
WG235355ICB	ICB	11/07/07 8:00				U	mg/L		-0.0002	0.0002			
WG236558													
WG236558ICV	ICV	11/20/07 8:53	II071119-1	.00501		.0052	mg/L	103.8	95	105			
WG236558ICB	ICB	11/20/07 8:55				U	mg/L		-0.0002	0.0002			
WG236558LRB	LRB	11/20/07 8:59				U	mg/L		-0.00044	0.00044			
WG236558LFB	LFB	11/20/07 9:02	II071115-2	.002		.00184	mg/L	92	85	115			
L65916-01LFM	LFM	11/20/07 9:15	II071115-2	.002	U	.00198	mg/L	99	85	115			
L65916-01LFMD	LFMD	11/20/07 9:17	II071115-2	.002	U	.00191	mg/L	95.5	85	115	3.6	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	2		2.016	mg/L	100.8	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.03	0.03			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	.5		.518	mg/L	103.6	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	1	.05	1.092	mg/L	104.2	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	1	.05	1.068	mg/L	101.8	85	115	2.22	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L65858**

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	2		1.981	mg/L	99.1	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.03	0.03			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	.5		.53	mg/L	106	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	1	U	1.062	mg/L	106.2	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	1	U	1.042	mg/L	104.2	85	115	1.9	20	

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235490													
WG235490ICV	ICV	11/01/07 18:01	WI070911-1	2.416		2.416	mg/L	100	90	110			
WG235490ICB	ICB	11/01/07 18:02				U	mg/L		-0.06	0.06			
WG235497													
WG235497ICV	ICV	11/01/07 19:19	WI070911-1	2.416		2.459	mg/L	101.8	90	110			
WG235497ICB	ICB	11/01/07 19:20				U	mg/L		-0.06	0.06			
WG235497LFB1	LFB	11/01/07 19:22	WI070911-4	2		2.127	mg/L	106.4	90	110			
WG235497LFB2	LFB	11/01/07 20:00	WI070911-4	2		2.105	mg/L	105.3	90	110			
L65852-03AS	AS	11/01/07 20:03	WI070911-4	200	U	197.8	mg/L	98.9	90	110			
L65852-04DUP	DUP	11/01/07 20:05			5	4.4	mg/L				12.8	20	RA

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235069													
WG235069LCSW3	LCSW	10/26/07 16:08	PCN27958	6		6	units	100	90	110			
WG235069LCSW6	LCSW	10/26/07 19:09	PCN27958	6		5.98	units	99.7	90	110			
L65858-06DUP	DUP	10/26/07 20:40			7.7	7.74	units				0.5	20	
L65873-04DUP	DUP	10/26/07 21:53			7.4	7.49	units				1.2	20	
WG235069LCSW9	LCSW	10/26/07 22:14	PCN27958	6		5.97	units	99.5	90	110			
WG235069LCSW12	LCSW	10/27/07 1:20	PCN27958	6		5.96	units	99.3	90	110			
WG235069LCSW15	LCSW	10/27/07 4:17	PCN27958	6		5.95	units	99.2	90	110			

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	20		20.25	mg/L	101.3	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.9	0.9			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	99.76186		101.96	mg/L	102.2	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	199.52372	7.4	222.12	mg/L	107.6	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	199.52372	7.4	219.16	mg/L	106.1	85	115	1.34	20	

Phelps Dodge Sierrita

ACZ Project ID: **L65858**

Project ID: OJ03DL

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234973													
WG234973PBW	PBW	10/25/07 12:35				U	mg/L		-20	20			
WG234973LCSW	LCSW	10/25/07 12:36	PCN28207	260		270	mg/L	103.8	80	120			
L65858-07DUP	DUP	10/25/07 13:14			2830	2796	mg/L				1.2	20	
WG234977													
WG234977PBW	PBW	10/25/07 13:30				U	mg/L		-20	20			
WG234977LCSW	LCSW	10/25/07 13:31	PCN28207	260		260	mg/L	100	80	120			
L65873-04DUP	DUP	10/25/07 14:09			40	40	mg/L				0	20	RA

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234995													
WG234995ICV	ICV	10/26/07 17:25	MS071004-2	.05		.05301	mg/L	106	90	110			
WG234995ICB	ICB	10/26/07 17:30				U	mg/L		-0.0003	0.0003			
WG234995LFB	LFB	10/26/07 17:42	MS071004-4	.05		.05242	mg/L	104.8	85	115			
L65775-01AS	AS	10/26/07 17:53	MS071004-4	1	U	1.0616	mg/L	106.2	70	130			
L65775-01ASD	ASD	10/26/07 17:59	MS071004-4	1	U	1.0298	mg/L	103	70	130	3.04	20	
L65858-03AS	AS	10/26/07 19:12	MS071004-4	.05	.0014	.05437	mg/L	105.9	70	130			
L65858-03ASD	ASD	10/26/07 19:18	MS071004-4	.05	.0014	.05602	mg/L	109.2	70	130	2.99	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	100		101.12	mg/L	101.1	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.9	0.9			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	98.21624		100.52	mg/L	102.3	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	196.43248	154	356.01	mg/L	102.8	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	196.43248	154	349.24	mg/L	99.4	85	115	1.92	20	

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235431													
WG235431PBW	PBW	11/01/07 11:25				U	mg/L		-30	30			
WG235431LCSW	LCSW	11/01/07 11:27	WC070903-2	100		98	mg/L	98	80	120			
L65858-02DUP	DUP	11/01/07 11:59			1840	1858	mg/L				1	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG234995													
WG234995ICV	ICV	10/26/07 17:25	MS071004-2	.05		.0539	mg/L	107.8	90	110			
WG234995ICB	ICB	10/26/07 17:30				U	mg/L		-0.0003	0.0003			
WG234995LFB	LFB	10/26/07 17:42	MS071004-4	.05		.05393	mg/L	107.9	85	115			
L65775-01AS	AS	10/26/07 17:53	MS071004-4	1	U	1.1008	mg/L	110.1	70	130			
L65775-01ASD	ASD	10/26/07 17:59	MS071004-4	1	U	1.0694	mg/L	106.9	70	130	2.89	20	
L65858-03AS	AS	10/26/07 19:12	MS071004-4	.05	U	.05083	mg/L	101.7	70	130			
L65858-03ASD	ASD	10/26/07 19:18	MS071004-4	.05	U	.05289	mg/L	105.8	70	130	3.97	20	

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L65858**

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235588													
WG235588ICV	ICV	11/05/07 12:23	II071009-7	2		1.969	mg/L	98.5	95	105			
WG235588ICB	ICB	11/05/07 12:26				U	mg/L		-0.03	0.03			
WG235477													
WG235477LFB	LFB	11/05/07 14:52	II071029-3	.5		.515	mg/L	103	85	115			
L65858-03AS	AS	11/05/07 16:06	II071029-3	1	U	1.032	mg/L	103.2	85	115			
L65858-03ASD	ASD	11/05/07 16:10	II071029-3	1	U	1.002	mg/L	100.2	85	115	2.95	20	

Phelps Dodge SierritaACZ Project ID: **L65858**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
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No extended qualifiers associated with this analysis

Phelps Dodge Sierrita

ACZ Project ID: **L65858**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65858
Date Received: 10/24/2007
Received By:
Date Printed: 10/24/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?	X		
12) Are samples requiring no headspace, headspace free?	X		
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
1564	5.0	16

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L65858
Date Received: 10/24/2007
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L65858-01	IW-12		Y		Y							<input type="checkbox"/>
L65858-02	IW-13		Y		Y							<input type="checkbox"/>
L65858-03	IW-14		Y		Y							<input type="checkbox"/>
L65858-04	IW-16		Y		Y							<input type="checkbox"/>
L65858-05	IW-17		Y		Y							<input type="checkbox"/>
L65858-06	IW-18		Y		Y							<input type="checkbox"/>
L65858-07	IW-21		Y		Y							<input type="checkbox"/>
L65858-08	DUP102207A		Y		Y							<input type="checkbox"/>
L65858-09	CN TB091807-03									X		<input type="checkbox"/>
L65858-10	TB091807-12									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

November 29, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Dan Simpson, Jim Norris, Bill Dorris

Project ID: OJ03Z5

ACZ Project ID: L66148

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 07, 2007. This project has been assigned to ACZ's project number, L66148. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L66148. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after December 29, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CW-3F

ACZ Sample ID: **L66148-01**

Date Sampled: 11/06/07 11:05

Date Received: 11/07/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	57.5			mg/L	0.5	3	11/28/07 0:18	ccp

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: CW-3

ACZ Sample ID: **L66148-02**

Date Sampled: 11/06/07 11:05

Date Received: 11/07/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	57.1			mg/L	0.5	3	11/28/07 0:36	ccp

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: NP-2F

ACZ Sample ID: **L66148-03**

Date Sampled: 11/06/07 13:45

Date Received: 11/07/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	41.9			mg/L	0.5	3	11/28/07 1:31	ccp

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: NP-2

ACZ Sample ID: **L66148-04**

Date Sampled: 11/06/07 13:45

Date Received: 11/07/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	41.7			mg/L	0.5	3	11/28/07 1:49	ccp

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
U	Analyte was analyzed for but not detected at the indicated MDL

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L66148**

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG235265													
WG235265ICV	ICV	11/05/07 10:20	WI071019-1	50.1		51.82	mg/L	103.4	90	110			
WG235265ICB	ICB	11/05/07 10:38				U	mg/L		-1.5	1.5			
WG236889													
WG236889ICV	ICV	11/27/07 14:02	WI071019-1	50.1		50.59	mg/L	101	90	110			
WG236889ICB	ICB	11/27/07 14:21				U	mg/L		-1.5	1.5			
WG236889LFB	LFB	11/27/07 14:39	WI070727-1	30		29.42	mg/L	98.1	90	110			
WG236889LFB2	LFB	11/28/07 7:51	WI070727-1	30		29.69	mg/L	99	90	110			
L66143-03AS	AS	11/28/07 15:31	WI070727-1	600	320	919	mg/L	99.8	90	110			
L66143-03DUP	DUP	11/28/07 15:49			320	318	mg/L				0.6	20	

Phelps Dodge SierritaACZ Project ID: **L66148**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
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No extended qualifiers associated with this analysis

Phelps Dodge Sierrita

ACZ Project ID: **L66148**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L66148
Date Received: 11/7/2007
Received By:
Date Printed: 11/7/2007

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
NA4871	2.7	17

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

Phelps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L66148
 Date Received: 11/7/2007
 Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L66148-01	CW-3F									X		<input type="checkbox"/>
L66148-02	CW-3									X		<input type="checkbox"/>
L66148-03	NP-2F									X		<input type="checkbox"/>
L66148-04	NP-2									X		<input type="checkbox"/>

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH -Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: DAN SIMPSON
Company: Hydro Geo Chem, Inc.
E-mail: dans@hgcinc.com

Address: 51 W. Wetmore #101
Tucson, Az. 85705-1678
Telephone: 520-293-1500 x133

Copy of Report to:

Name: Ned Hall / Billy Dorris / Jim Norris
Company: PDSE / HGC

E-mail: jmn@hgcinc.com/Billy-Dorris@FMT.com
Telephone: 520-293-1500x142/520-648-8873

Invoice to:

Name: Ned Hall
Company: POSI
E-mail: Ned-Hall@FMI.com

Address: 6200 W, Duval Mine Rd.
P.O. Box 527 Green Valley, Az. 85622
Telephone: 520-648-8857

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES	<input checked="" type="checkbox"/>
NO	<input type="checkbox"/>

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:	Sierrita Sulfate
Project/PO #:	050325
Reporting state for compliance testing:	AZ
Sampler's Name:	Mark Arneson / Mark O'Boyle
Are any samples NRC licensable material?	NO

of Containers

SD-14

SAMPLE IDENTIFICATION	DATE:TIME	Matrix
-----------------------	-----------	--------

CW-3F	11-6-07	1105	6W	1	X
CW-3	11-6-07	1105	6W	1	X
NP-2F	11-6-07	1345	6W	1	X
NP-2	11-6-07	1345	6W	1	X

Matrix	SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)
--------	--

REMARKS

$F \sim$ Filtered Sample

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Mark O'Boyle

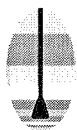
11-6-07 1415

WPL

11/7/07 11:20

APPENDIX D

HYDRO GEO CHEM, INC. GROUNDWATER SAMPLING FORMS



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55- 501760Well Name: CC of GVProject Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 10/3 / 2007Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 855Casing Diameter ("d", in.): 16"Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NADepth to Water ("b", ft): (7/9/07) 259.79One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ — Gallons, (3 Casing Volumes — gal) No Purge read

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: Pump 1307 Time Completed: — Total Purge Time: — minPurge Method: Pump Pump Setting (depth): — Total Purge Volume: — gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (μhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
1337	800	25.7	557	7.23		None	Clear
1342		25.2	560	7.29			
1346		25.0	560	7.31			

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1350 Time Completed: 1352Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
CC of GV F	1350	PLASTIC	250 ml	1	300.0	NONE	FILTERED
CC of GV	1350	PLASTIC	500 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55-627483Well Name: CW-3Project Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 11 / 6 / 2007Sampler: MO/MA

WELL INFORMATION

Total Well Depth ("a", ft): 500Casing Diameter ("d", in.): 16"Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NADepth to Water ("b", ft): (807 267) 269.98One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 2413 Gallons, (3 Casing Volumes 7,238 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 9:30 Time Completed: 11:05 Total Purge Time: 95 minPurge Method: Pump Pump Setting (depth): Total Purge Volume: ~7,200 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (µhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Turb	Notes
9:40	75 gpm	25.5	454	7.57		None	0.45	
9:50	75 gpm	25.5	449	7.60		None	0.36	
10:00	75 gpm	25.6	449	7.57		—	0.00	
10:10	75 gpm	25.6	447	7.57		—	0.17	
10:20	75 gpm	25.6	448	7.58		—	0.04 0.23	
10:40	75 gpm	25.5	448	7.62		—	0.20	
11:00	75 gpm	25.6	449	7.57		—	0.15	

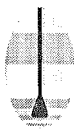
SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 11:05 Time Completed: 11:07Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
CW-3F		PLASTIC	250 ml	1	300.0	NONE	FILTERED
CW-3		PLASTIC	500 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55- 627485Well Name: CW-6Project Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 10/2/2007Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 840Casing Diameter ("d", in.): 16"Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NADepth to Water ("b", ft): 253.05One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 6131 Gallons, (3 Casing Volumes) 18393 gal

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1012Time Completed: 1125Total Purge Time: 73 minPurge Method: PumpPump Setting (depth): Total Purge Volume: 51100 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (μhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
1118	700	28.5	430	7.53			
1122		27.5	437	7.60			
1125		27.5	438	7.55			

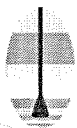
SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1125 Time Completed: 1126Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
CW-6F	1126	PLASTIC	250 ml	1	300.0	NONE	FILTERED
CW-6	1126	PLASTIC	500 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55- 502546Well Name: CW-7Project Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 10/2 / 2007Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 1065Casing Diameter ("d", in.): 12"Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NADepth to Water ("b", ft): 427.60One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ Gallons, (3 Casing Volumes) 275616 gal41972 MA
374811245 = 9 min Purge

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1240 Time Completed: 1255 Total Purge Time: 15 minPurge Method: pump Pump Setting (depth): _____ Total Purge Volume: 18000 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (μhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
1243	1200	28.6	1872	7.25		None	
1246		27.9	1920	7.38			
1251		27.8	1932	7.41			

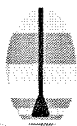
SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1250 Time Completed: 1257Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
CW-7F	1255	PLASTIC	250 ml	1	300.0	NONE	FILTERED
CW-7	1255	PLASTIC	500 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55- 543600Well Name: CW-8Project Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 10/ 2 / 2007Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 1200Casing Diameter ("d", in.): 16"Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NADepth to Water ("b", ft): 340.60One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 8983 Gallons, (3 Casing Volumes 26948 gal)15 min Purge

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1320 Time Completed: 1343 Total Purge Time: 23 minPurge Method: Pump Pump Setting (depth): Total Purge Volume: 4370 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (µhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
<u>1323</u>	<u>1900</u>	<u>31.1</u>	<u>1118</u>	<u>7.77</u>		<u>None</u>	<u>clear</u>
<u>1327</u>		<u>30.3</u>	<u>1203</u>	<u>7.71</u>			
<u>1332</u>		<u>30.0</u>	<u>1267</u>	<u>7.74</u>			

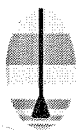
SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: Time Completed: Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
<u>CW-8F</u>	<u>1340</u>	<u>PLASTIC</u>	<u>250 ml</u>	<u>1</u>	<u>300.0</u>	<u>NONE</u>	<u>FILTERED</u>
<u>CW-8</u>	<u>1340</u>	<u>PLASTIC</u>	<u>500 ml</u>	<u>1</u>	<u>300.0</u>	<u>NONE</u>	<u>UNFILTERED</u>
<u>DUP100207F</u>	<u>1343</u>	<u>"</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>"</u>	<u>Filtered</u>
<u>DUP100207</u>	<u>1343</u>	<u>"</u>	<u>500</u>	<u>1</u>	<u>300.0</u>	<u>"</u>	<u>unfiltered</u>

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time
<u>DUP100207</u>			



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55- 588121Well Name: CW-9Project Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 10/2 / 2007Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 1000Casing Diameter ("d", in.): 20" Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NA Depth to Water ("b", ft): 310.70One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 11260 Gallons, (3 Casing Volumes) 33782 gal
11260

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1024 Time Completed: 1057 Total Purge Time: 33 minPurge Method: Pump Pump Setting (depth): Total Purge Volume: 33000 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (μhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
1008							
1025	1000	22.7	398	7.35		None	Clear
1035		22.1	401	7.53			
1045		22.6	400	7.54			
1055		22.7	405	7.55			

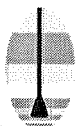
SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1055 Time Completed: 1057Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
CW-9F	1057	PLASTIC	250 ml	1	300.0	NONE	FILTERED
CW-9	1057	PLASTIC	500 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55-207982Well Name: CW-10Project Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 10/2/2007Sampler: M. Ainsworth

WELL INFORMATION

Total Well Depth ("a", ft): 1140Casing Diameter ("d", in.): 12"Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NADepth to Water ("b", ft): 190.85One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 5575 Gallons, (3 Casing Volumes 16727 gal) = 11.2 min for full purge

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 9:07 Time Completed: 9:25 Total Purge Time: 18 minPurge Method: Pump Pump Setting (depth): — Total Purge Volume: 27,000 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (µhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
9:09	1500	26.4	375	7.27		None	Clear
9:11	1500	28.6	367	7.47			
9:15		29.8	382	7.55			
9:20		30.3	381	7.55			

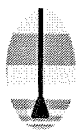
SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 9:23 Time Completed: 9:25Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
CW-10F	0925	PLASTIC	250 ml	1	300.0	NONE	FILTERED
CW-10	0925	PLASTIC	500 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55- 632969Well Name: GattererProject Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 10 / 3 / 2007Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 345Casing Diameter ("d", in.): 8"Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NADepth to Water ("b", ft): 260.95One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ Gallons, (3 Casing Volumes gal) No purgeRead

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1520 Time Completed: 1540 Total Purge Time: 20 minPurge Method: Drain Tank Pump Setting (depth): Total Purge Volume: 100 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (μhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
1520	4-5	28.4	400	7.30		None	Clear
1525		26.9	391	7.43			
1530		26.6	395	7.41			Pump is on
1535		26.6	395	7.45			

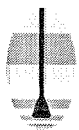
SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1540 Time Completed: 1543Sampling Method, Type of Sampling Pump or Bailer:

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
GATTERERF	1540	PLASTIC	250 ml	1	300.0	NONE	FILTERED
GATTERER	1540	PLASTIC	500 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55- 603428Well Name: GV-1-GVDWIDProject Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 10/3 / 2007Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 675DTW 271.00 8/6/07Casing Diameter ("d", in.): 16Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NADepth to Water ("b", ft): 218.11 (4-10-07)One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 4460 Gallons, (3 Casing Volumes 13380 gal) 20 min Purge

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1039 Time Completed: 1105 Total Purge Time: 26 minPurge Method: Pump Pump Setting (depth): — Total Purge Volume: 18200 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (μhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
1040	700	26.6	449	7.47			
1046	"	26.7	457	7.42			
1050	"	26.7	455	7.45			
1100	"	26.9	447	7.42			

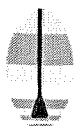
SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1105 Time Completed: 1108Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
GV-1-GVDWIDF	1105	PLASTIC	250 ml	1	300.0	NONE	FILTERED
GV-1-GVDWID	1105	PLASTIC	500 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55- 603429Well Name: GV-2-GVDWIDProject Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 10/3 / 2007Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 560Casing Diameter ("d", in.): 16

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NADepth to Water ("b", ft): 199.33One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 3760 Gallons, (3 Casing Volumes 11280 gal) 16 min Purge

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 0951Time Completed: 1010Total Purge Time: 19 minPurge Method: PumpPump Setting (depth): —Total Purge Volume: 13870 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (μhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
<u>0951</u>	<u>730</u>	<u>24.1</u>	<u>643</u>	<u>7.36</u>		<u>None</u>	<u>Clear</u>
<u>0955</u>	<u>"</u>	<u>23.9</u>	<u>644</u>	<u>7.38</u>			
<u>1000</u>	<u>"</u>	<u>23.8</u>	<u>645</u>	<u>7.32</u>			
<u>1007</u>	<u>"</u>	<u>23.8</u>	<u>643</u>	<u>7.40</u>			

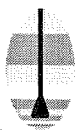
SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1010 Time Completed: 1012Sampling Method, Type of Sampling Pump or Bailer: —

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
<u>GV-2-GVDWIDF</u>	<u>1010</u>	<u>PLASTIC</u>	<u>250 ml</u>	<u>1</u>	<u>300.0</u>	<u>NONE</u>	<u>FILTERED</u>
<u>GV-2-GVDWID</u>	<u>1010</u>	<u>PLASTIC</u>	<u>500 ml</u>	<u>1</u>	<u>300.0</u>	<u>NONE</u>	<u>UNFILTERED</u>

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55-515867Well Name: Haven GolfProject Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: / / 2007Sampler: M. Aineson

WELL INFORMATION

Total Well Depth ("a", ft): 500Casing Diameter ("d", in.): 14" Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NA Depth to Water ("b", ft): Previously (160')One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ Gallons, (3 Casing Volumes 8157 gal) 2719 8 min Purge

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1135 Time Completed: 1210 Total Purge Time: 35 minPurge Method: Pump Pump Setting (depth): Total Purge Volume: 38500 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (µhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
	450						
1158	1100	25.0	707	7.00			
1203		25.0	723	7.06			
1207		25.4	722	7.06			

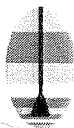
SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1210 Time Completed: 1212Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
HAVEN GOLF	1210	PLASTIC	250 ml	1	300.0	NONE	FILTERED
HAVEN GOLF	1210	PLASTIC	500 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

INITIAL SAMPLING

ADWR Well No: 55-906816

Well Name: MO-2007-3B

Project Name/Number: PDSI Sierrita GW Monitoring (78306.4)

Date: 9/10 / 2007

Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 950

Casing Diameter ("d", in.): 5"

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): 359.38

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ Gallons, (3 Casing Volumes gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: Time Completed: Total Purge Time: min

Purge Method: Pump Setting (depth): Total Purge Volume: gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (μhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
<u>1415</u>	<u>51</u>	<u>28.7</u>	<u>375</u>	<u>7.53</u>		<u>None</u>	<u>Pumping began at 1100</u>
<u>1423</u>	<u>51</u>	<u>28.7</u>	<u>373</u>	<u>7.53</u>			

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1426 Time Completed: 1428

Sampling Method, Type of Sampling Pump or Bailer: Submersible

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW-MO-2007-3B	<u>1426</u>	PLASTIC	125 ml/250 ml	2	300.1/200.7	NONE/HNO3	FILTERED
UGW-MO-2007-3B	<u>1426</u>	PLASTIC	250 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

INITIAL SAMPLE

Project Name/Number: ~~HS-1 Kent 64800~~
PDSI-783000

Well No: Mo-2007-4A

Date: 10-9-07

Recorder/Sampler: NJ. Babb

WELL INFORMATION

Total Well Depth: 570 ft

Screened Interval (ft) From: 360 To: 560

Casing Diameter ("d", in.): 5"

Depth to Water & Time ("b", ft btic): 307.67

Well/Packer Depth ("a", ft): 570

One Wetted Casing Volume: $(a - b) * d^2 * 0.0408 = \underline{267.6}$ gallons, (3 Casing Volumes ~~803~~ 803 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 14:00

Time Completed: 14:45

Total Purge Time: ~~00:00:00~~

Purge Method: 10-hp Grundfos

Pump Depth & Setting: 533'ff btoe

Total Purge Volume: ~~92.1550~~

[illegible]

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 14:45

Time Completed: 14:45

Sampling Method: Pump or Bailer:

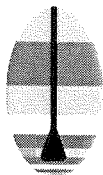
Sample No	Time	Container Type	Volume	No of Containers	Analysis Method	Preservative	Notes
Mo-2007-4A	14:45			2	ANIONS & CATIONS		
" " "	"			1	1	NONE	

QUALITY CONTROL SAMPLE RECORD *N/A*

Orig. Sample No	Type	QC Sample No	Time

TRANSDUCER RECORD

Transducer #: 109089 Battery Remaining: 95% Memory Remaining: _____ Replace Time: _____ WL/Time: 715 ft btic _____
Notes: measurement is depth of transducer below H2O 66.070 @ 9:15AM



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Initial Sample

Project Name/Number: ~~416-001-54800~~
PDSE - 783000

Well No: MO-2007-4B

Date: 10-11-07

Recorder/Sampler: NJ. Babb

WELL INFORMATION

Total Well Depth: 950 ft
Casing Diameter ("d", in.): 5" id
Well/Packer Depth ("a", ft): 950
One Wetted Casing Volume: $(a - b) * d^2 * 0.0408 =$ 653.3 gallons, (3 Casing Volumes 1960 gal)

Screened Interval (ft) From: 700 To: 940
Depth to Water & Time ("b", ft btic): 308.72 @ 7:30 AM

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 7:40 Time Completed: 8:20 Total Purge Time: 40 mins
Purge Method: 10-hp - Grundfos Pump Depth & Setting: 533' ft bgs Total Purge Volume: 2000 - gallons

Actual or Elapsed Time (Min)	Extraction Rate/Vol	pH	Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/l)	Temp (°C)	Odor	Notes
7:40	50	8.25						
14:35	50	7.88	381	8.43	N/A	26.9	Nº	discharge clear
7:54	50	8.25	376	10.93	"	22.1	"	" "
8:01	"	8.03	382	22.4	"	25.0	"	" "
8:16	"	7.93	376	25.12	"	26.4	"	" "

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 8:20 Time Completed: 8:20
Sampling Method: Pump or Bailer:

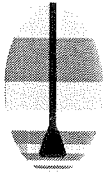
Sample No	Time	Container Type	Volume	No of Containers	Analysis Method	Preservative	Notes
MO-2007-4B-F	8:20			2			filtered ^{green dot} white dot
MO-2007-4B	"			1			Raw

QUALITY CONTROL SAMPLE RECORD N/A

Orig. Sample No	Type	QC Sample No	Time

TRANSDUCER RECORD

Transducer #: _____ Battery Remaining: _____ Memory Remaining: _____ Replace Time: _____ WL/Time: _____ ft btic
Notes: _____



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

PDSE 783000

Project Name/Number: ~~Hexcel Kent 64800~~Well No: Mo-2007-4BDate: 10/10/07Recorder/Sampler: NJ.B

WELL INFORMATION

Total Well Depth: 950 ftScreened Interval (ft) From: 20 To: 940Casing Diameter ("d", in.): 5" IN.Depth to Water & Time ("b", ft btic): 309.47 @ 13:25Well/Packer Depth ("a", ft): 950One Wetted Casing Volume: $(a - b) * d^2 * 0.0408 =$ 653.3 gallons, (3 Casing Volumes 1960 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: ~~13:25~~ 13:45Time Completed: ~~19:46~~ 19:46Total Purge Time: 6 hrsPurge Method: lake purgesPump Depth & Setting: 19:46Total Purge Volume: 14,310

Actual or Elapsed Time (Min)	Extraction Rate/Vol	pH	Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/l)	Temp (°C)	Odor	Notes
13:50	13 gpm	8.88	269	37.2	N/A	29.5	NO	slightly cloudy
14:35	13 gpm	7.77	388	13.3	"	31.4	"	" "
14:45	Increased to 30 for 1 hr							→ 60 mins @ 13 gpm = 780 gals
14:55	30 gpm	7.80	386	5.29	N/A	31.0	"	
15:30	30 gpm	7.79	"	3.07	"	"	"	80 mins @ 30 gpm
15:45	Increased to full open							= 1800 gals
15:55	SI	7.79	385	4.72	N/A	29.9	"	clear 3 hrs 50 mins
16:35	SI	7.80	383	2.66	"	29.6	"	" @ SI gpm
17:55	SI	7.84	386	12.6	"	28.7	"	" ⇒ 11,730 gallons
18:40	S2	7.87	390	12.1	"	27.5	"	"
19:35	S2	7.88	381	12.43	"	26.9	"	clear

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 7:88Time Completed: 26.9Sampling Method: Pump or Bailer:

Sample No	Time	Container Type	Volume	No of Containers	Analysis Method	Preservative	Notes
A sample collected on 10/11/07							
- note not time expired to set samples to B UPS							
- will purge & sample in morning							

QUALITY CONTROL SAMPLE RECORD

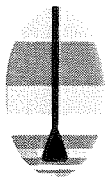
Orig. Sample No	Type	QC Sample No	Time

TRANSDUCER RECORD

Transducer #: _____ Battery Remaining: _____ Memory Remaining: _____ Replace Time: _____ WL/Time: _____ ft btic

Notes: _____

4th str GW-sample (4C)



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project Name/Number: Hexachlorocyclopentadiene
PSI-783000

Well No: MO-2007-4C

Date: 10-12-07

Recorder/Sampler: NS/Bob

WELL INFORMATION

Total Well Depth: 1140 ft
Casing Diameter ("d", in.): 5" IN.
Well/Packer Depth ("a", ft): 1140' bto
One Wetted Casing Volume: $(a - b) * d^2 * 0.0408 =$ 848 gallons, (3 Casing Volumes 2544 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 12:16 Time Completed: 18:15 Total Purge Time: _____
Purge Method: 559.95 450 Pump Depth & Setting: 360' bto Total Purge Volume: _____

Actual or Elapsed Time (Min)	Extraction Rate/Vol	pH	Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/l)	Temp (°C)	Odor	Notes
12:23	8.0 gpm	9.24	431	5.93	N/A	29.3	N	Basin @ 12:16
12:45	"	9.03	423	6.55	"	27.7	"	"
15:45	"	7.89	455	2.79	"	31.3	"	"
17:45	"	7.81	456	1.85	"	30.7	"	"
18:15	sample obtained							
18:16	pump off							

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 18:15 Time Completed: 18:15
Sampling Method: Pump or Bailer

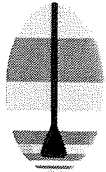
Sample No	Time	Container Type	Volume	No of Containers	Analysis Method	Preservative	Notes
MO-2007-4C-F	18:15			1		filtered	
MO-2007-4C	18:15			1		RAW/UN-filtered	

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No	Type	QC Sample No	Time

TRANSDUCER RECORD

Transducer #: _____ Battery Remaining: _____ Memory Remaining: _____ Replace Time: _____ WL/Time: _____ ft bto
Notes: _____



HYDRO GEO CHEM, INC. Groundwater Sampling Form

INITIAL SAMPLE

Project Name/Number: Honeywell 64800
PDSE-783060

Well No: MO-2007-58

Date: 10-12-07

Recorder/Sampler: N.J. Ba 66

WELL INFORMATION

Total Well Depth: 970 ft

Screened Interval (ft) From: 660 To: 960'

Casing Diameter ("d", in.): 5" in

Depth to Water & Time ("b", ft btic): 268.27 @ 8:04

Well/Packer Depth ("a", ft): 970

One Wetted Casing Volume: $(a - b) * d^2 * 0.0408 =$ 716 gallons, (3 Casing Volumes 2148 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 8:04 Time Completed: 10:30 Total Purge Time: 2 hrs 26 mins

Purge Method: 10 hp - 2 strokes Pump Depth & Setting: 533 ft 6 ss Total Purge Volume: 4150 - gallons

Actual or Elapsed Time (Min)	Extraction Rate/Vol	pH	Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/l)	Temp (°C)	Odor	Notes
8:05	16	8.41	1072	14.5	N/A	24.4	NO	slightly cloudy
8:35	11	8.35	928	25.2	"	27.7	"	" "
8:55	11	8.22	1030	5.31	"	28.7	"	clear 9:05 Increased flow
9:10	30	8.18	1058	2.45	"	29.3	"	61 mins @ 16 gpm = 976
9:40	30	"	1130	3.04	"	29.4	"	clear 30 gpm boric @ 9:05
9:47	"	7.56	1114	N/A	"	29.5	"	11 re-calibrated Hanna probe
10:15	56 gpm	7.65	1133	16.7	"	29.8	"	clear, increased flow @ 10:06
10:25	"	7.63	1150	3.48	"	29.9	"	clear
10:30	OBTAINED SAMPLES							

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 10:30

Time Completed: 10:30

Sampling Method: Pump or Bailer: _____

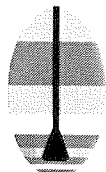
Sample No	Time	Container Type	Volume	No of Containers	Analysis Method	Preservative	Notes
MO-2007-58-f	10:30	small plastic	3	1	ANIONS	HNO3	green dot
MO-2007-58-f	"	small plastic	3	1	CATIONS		white dot
MO-2007-58	"	larger plastic	3	1		RAW	

QUALITY CONTROL SAMPLE RECORD *N/A*

Orig. Sample No	Type	QC Sample No	Time

TRANSDUCER RECORD

Transducer #: _____ Battery Remaining: _____ Memory Remaining: _____ Replace Time: _____ WL/Time: _____ ft btic _____
Notes: _____



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project Name/Number: Hexcel Kent 64800

Well No: Mo-2007-5C

Date: 10-13-07

Recorder/Sampler: N.J. Rabb

WELL INFORMATION

Total Well Depth: 1360 ft

Screened Interval (ft) From: 1150 To: 1350

Casing Diameter ("d", in.): 5" in.

Depth to Water & Time ("b", ft btic): 289.70' @ 9:10

Well/Packer Depth ("a", ft): 1360

One Wetted Casing Volume: $(a - b) * d^2 * 0.0408 =$ 1092 gallons, (3 Casing Volumes 3276 gal)
3276 gal / 50 gpm = 65.5 mins

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 11:57

Time Completed: 13:04

Total Purge Time: 67 minutes

Purge Method: 10-hp

Pump Depth & Setting: 405'

Total Purge Volume: 3350 gals

Actual or Elapsed Time (Min)	Extraction Rate/Vol	pH	Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/l)	Temp (°C)	Odor	Notes
								11:50 calibrated probes
12:00	50 gpm	8.89	844	7.69	N/A	26.6	NO	Discharge clear
12:25	"	8.21	733	126.0	11	31.2	"	very cloudy, mostly non-transparent
12:35	"	8.06	735	85.6	11	33.2	"	cloudy, mostly non-transparent
12:45	"	8.04	731	61.5	11	33.4	"	cloudy, semi-transparent
12:55	"	8.03	723	34.0	11	33.6	"	" " "
13:03	"	8.01	726	28.6	11	33.7	"	slightly cloudy
13:05	→							→ obtained samples
13:06	→							→ pump-off

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 13:05

Time Completed: 13:05

Sampling Method: Pump or Bailer: 10-hp Grundfos

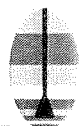
Sample No	Time	Container Type	Volume	No of Containers	Analysis Method	Preservative	Notes
Mo-2007-5C-F	13:05	5m, plastic	6	1	sulphate	none	Filtered
Mo-2007-5C	"	" "	3	1	"	"	Non-Filtered

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No	Type	QC Sample No	Time

TRANSDUCER RECORD

Transducer #: _____ Battery Remaining: _____ Memory Remaining: _____ Replace Time: _____ WL/Time: _____ ft btic _____
Notes: _____



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Initial Sample

ADWR Well No: 55-907607

Well Name: MO-2007-6A

Project Name/Number: PDSI Sierrita GW Monitoring (78306.2)

Date: 10/2 / 2007

Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 620

Casing Diameter ("d", in.): 5"

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): 303.60

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _ Gallons, (3 Casing Volumes _____ gal)

No Purge Req
Caulker test in progress

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (µhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
1422	55	28.7	406	7.54			
1426	55	28.6	405	7.53			
1445	55	28.5	405	7.52			

SAMPLING INFORMATION AND SAMPLE RECORD

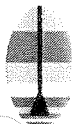
Time Started: _____ Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
MO-2007-6AF	1455	PLASTIC	125ml / 250 ml	2	300.0 / 200.7	NONE / HNO ₃	FILTERED
MO-2007-6A	1455	PLASTIC	250 ml	1	300.0	NONE	UNFILTERED
MO-2007-DUPF	1500	"	125 / 250	2	300.0 / 200.7	NONE / HNO ₃	Filtered
MO-2007-DUP	1500	"	250 /	1	300.0	NONE	Unfiltered

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Initial Sample

ADWR Well No: 55-907606

Well Name: MO-2007-6B

Project Name/Number: PDSI Sierrita GW Monitoring (78306.2)

Date: 10/4 / 2007

Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 950

Casing Diameter ("d", in.): 5"

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): 319.17 DB

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ Gallons, (3 Casing Volumes gal) *Aquifer test in progress*

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1322

Time Completed: 1400

Total Purge Time: 38 min

Purge Method: Pump

Pump Setting (depth):

Total Purge Volume: 129 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (μhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
<u>1322</u>	<u>34</u>	<u>33.5</u>	<u>479</u>	<u>7.63</u>		<u>None</u>	<u>Tan. Turbidity is 170 NTU</u>
<u>1330</u>	<u>"</u>	<u>33.2</u>	<u>486</u>	<u>7.64</u>			
<u>1337</u>	<u>"</u>	<u>33.2</u>	<u>484</u>	<u>7.71</u>			<u>Water color is still grey/tan</u>
<u>1350</u>	<u>"</u>	<u>33.2</u>	<u>483</u>	<u>7.69</u>			
<u>1356</u>		<u>33.1</u>	<u>483</u>	<u>7.70</u>			

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1400

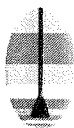
Time Completed: 1402

Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
<u>MO-2007-6BF</u>	<u>1400</u>	<u>PLASTIC</u>	<u>125ml / 250 ml</u>	<u>2</u>	<u>300.0 / 200.7</u>	<u>NONE / HNO3</u>	<u>FILTERED</u>
<u>MO-2007-6B</u>	<u>1400</u>	<u>PLASTIC</u>	<u>250 ml</u>	<u>1</u>	<u>300.0</u>	<u>NONE</u>	<u>UNFILTERED</u>

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55-605898Well Name: NP-2Project Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 11 / 6 / 2007Sampler: MA/MA

WELL INFORMATION

Total Well Depth ("a", ft): 486Casing Diameter ("d", in.): 12"Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NADepth to Water ("b", ft): (8/07 352) 355.10One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 76.9 Gallons, (3 Casing Volumes 2307 gal)46 min

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 12:57Time Completed: 13:45Total Purge Time: 48 minPurge Method: PumpPump Setting (depth): Total Purge Volume: 2300 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (μhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Turbid	Notes
1300	50	27.1	429	7.45	—	NONE	1.01	
1305	50	25.5	427	7.67	—	—	8.12	
1310	50	25.4	429	7.65	—	—	15.16.10	light rust color
1320	50	25.4	426	7.63	—	—	almost clean	8.04
1330	50	25.4	428	7.60	—	—	clear	9.11
1340	50	25.4	426	7.57	—	—	7.30	

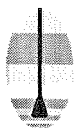
SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 13:45Time Completed: 13:47Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
NP-2F	<u>1345</u>	PLASTIC	250 ml	1	300.0	NONE	FILTERED
NP-2	<u>1346</u>	PLASTIC	500 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55- 208825Well Name: SI WellProject Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 10 / 3 / 2007Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 650Casing Diameter ("d", in.): 16Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NADepth to Water ("b", ft): 244.40One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 4241 Gallons, (3 Casing Volumes 12721 gal) 13 min Purge

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 0845 Time Completed: 0905 Total Purge Time: 20 minPurge Method: Pump Pump Setting (depth): — Total Purge Volume: 20000 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (µhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
847	1000	26.7	375	7.27			
851	"	26.8	380	7.39			
858	"	26.8	380	7.39			
901	"	26.8	380	7.37			

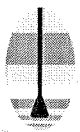
SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 0905 Time Completed: 0907Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
SIWELLF	0905	PLASTIC	250 ml	1	300.0	NONE	FILTERED
SIWELL	0905	PLASTIC	500 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR Well No: 55- 616156Well Name: Tmm-1Project Name/Number: PDSI Sierrita GW Monitoring (78306.2)Date: 10 / 4 / 2007Sampler: M. Aineson

WELL INFORMATION

Total Well Depth ("a", ft): 459Casing Diameter ("d", in.): 10"Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NADepth to Water ("b", ft): 437.58One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 90.0 Gallons, (3 Casing Volumes 270 gal) 45 min Purge

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 0925 Time Completed: 1035 Total Purge Time: 10 minPurge Method: Pump Pump Setting (depth): — Total Purge Volume: 60 gal

Time (min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (µhos/cm)	pH (SU)	D.O. (mg/l)	Odor	Notes
0928	6	24.7	275	7.76		None	Slightly tan
0932		25.9		7.76			well pumped dry
1033		25.9	371	7.76			

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1035 Time Completed: 1037Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
Tmm-1F	1035	PLASTIC	250 ml	1	300.0	NONE	FILTERED
Tmm-1		PLASTIC	500 ml	1	300.0	NONE	UNFILTERED

QUALITY CONTROL SAMPLE RECORD

Sample No.	Type	QC Sample No.	Time