

Sierrita Operations Environment, Land & Water Department 6200 West Duval Mine Road PO Box 527 Green Valley, Arizona 85622-0527

April 26, 2012

Via Certified Mail # 7011 1150 0000 0283 7020 Return Receipt Requested

Ms. Mindy Cross Arizona Department of Environmental Quality Water Quality Compliance Section 1110 West Washington Street Phoenix, Arizona 85007-2935

Re: Semiannual Groundwater Monitoring Report for Samples Collected During the Fourth Quarter 2011 and First Quarter 2012 <u>Mitigation Order on Consent Docket No. P-50-06</u>

Dear Ms. Cross:

Attached please find three (3) hard copies and one (1) disc of the Semiannual Groundwater Monitoring Report for Samples Collected during the Fourth Quarter 2011 and First Quarter 2012, prepared by Clear Creek Associates for Freeport-McMoRan Sierrita Inc. (Sierrita). This document provides results of groundwater monitoring conducted during the fourth quarter of 2011 and the first quarter of 2012, as agreed upon and described on letter from ADEQ to Sierrita dated April 17, 2009.

Please do not hesitate to contact me at (520) 393-2696 if you have any question regarding this submittal.

Sincerely,

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Martha G. Mottley Chief Environmental Engineer Freeport-McMoRan Sierrita Inc.

MGM/ms Attachment 20120425_001

 xc: Henry Darwin, Arizona Department of Environmental Quality Marcia Colquitt, Arizona Department of Environmental Quality John Broderick, Sierrita Lana Fretz, Sierrita Ned Hall, Freeport-McMoRan Copper & Gold Stuart Brown, Freeport-McMoRan Copper & Gold Jim Norris, Clear Creek Associates

SEMIANNUAL GROUNDWATER MONITORING REPORT FOR SAMPLES COLLECTED DURING THE FOURTH QUARTER 2011 AND FIRST QUARTER 2012

MITIGATION ORDER ON CONSENT DOCKET NO. P-50-06 PIMA COUNTY, ARIZONA



Prepared for:

FREEPORT-MCMORAN SIERRITA INC. 6200 West Duval Mine Road Green Valley, Arizona 85614

Prepared by:

CLEAR CREEK ASSOCIATES, P.L.C. 221 North Court Avenue Tucson, Arizona 85701 (520) 622-3222

April 23, 2012

SEMIANNUAL GROUNDWATER MONITORING REPORT FOR SAMPLES COLLECTED DURING THE FOURTH QUARTER 2011 AND FIRST QUARTER 2012

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Prepared for:

FREEPORT-MCMORAN SIERRITA INC.

6200 West Duval Mine Road Green Valley, Arizona 85614



James R. Norris Arizona Registered Geologist No. 30842

April 23, 2012

TABLE OF CONTENTS

1.		DDUCTION Scope of Groundwater Monitoring	
2.		NDWATER MONITORING	
	2.1	Monitoring Results	2
		Quality Assurance/Quality Control Review	
3.	FINDI	NGS	3
4.	REFE	RENCES	5

TABLES

1	C 1'	0 1 1 1	C D	-Implementation	α 1 α	N <i>T</i> I I I I I I I I I I
	Sampling	Nchedule	tor Pre	Implementation	l -roundwater	VIOnitoring
1	Samonne	Schould	IOI I IC	-monunation		MUMIUME
	···· · · · ·					· · · 0

- 2 Analytical Results for Fourth Quarter 2011 and First Quarter 2012 Groundwater Monitoring
- 3 Groundwater Elevation Data for Fourth Quarter 2011 and First Quarter 2012

FIGURES

- 1 Sampling Locations for Pre-Implementation Groundwater Monitoring
- 2 Sulfate Concentrations in Groundwater Fourth Quarter 2011
- 3 Sulfate Concentrations in Groundwater First Quarter 2012
- 4 Groundwater Elevations for Fourth Quarter 2011
- 5 Groundwater Elevations for First Quarter 2012

APPENDICES

- A Data Verification Report
- B Analytical Data Reports
- C Time Series Graphs of Sulfate Concentration
- D Time Series Graphs of Groundwater Elevation



1. INTRODUCTION

This report provides the results of groundwater monitoring conducted in the fourth quarter 2011 and first quarter 2012 in the vicinity of the Freeport-McMoRan Sierrita Inc. (Sierrita) Tailing Impoundment (STI). Monitoring was conducted by Sierrita to characterize groundwater sulfate concentrations and groundwater elevations in the vicinity of the STI. This semiannual groundwater monitoring report was prepared by Clear Creek Associates on behalf of Sierrita.

1.1 Scope of Groundwater Monitoring

Quarterly groundwater monitoring pursuant to the Mitigation Order on Consent Docket No. P-50-06 has been conducted since the fourth quarter 2006. Initially, the locations and frequency of groundwater sampling were specified by the Work Plan (Hydro Geo Chem, Inc. [HGC], 2006a) submitted to and approved by Arizona Department of Environmental Quality (ADEQ). The purpose of the groundwater monitoring under the Work Plan was to document sulfate concentrations and water levels to determine the lateral and vertical extent of the sulfate plume and provide data for the development of conceptual and numerical models of the plume. Submittal of the Aquifer Characterization Report (HGC, 2009a), Feasibility Study (HGC, 2008) and Mitigation Plan (HGC, 2009b) fulfilled the objectives of monitoring recommended by the Work Plan.

In 2009, the groundwater monitoring requirements (sample locations and frequency) were revised in collaboration with ADEQ. The objectives of the revised groundwater monitoring plan are to track the location of the plume edge and monitor drinking water supply wells near the plume prior to implementation of the additional mitigation measures recommended in the Feasibility Study.

The details of the pre-implementation groundwater monitoring program are outlined in letters from Sierrita to ADEQ on May 15, 2009 (Sierrita, 2009a) and June 12, 2009 (Sierrita, 2009b). Wells identified for annual, quarterly, and semiannual monitoring for pre-implementation groundwater monitoring are shown in Table 1 and Figure 1.

Groundwater sampling and analysis methods followed by Sierrita are described in the Quality Assurance Project Plan (QAPP) contained in Appendix E of the Work Plan (HGC, 2006a). Results of groundwater monitoring are presented in Section 2.1.

1

2. GROUNDWATER MONITORING

2.1 Monitoring Results

Analytical results and groundwater elevation data for the fourth quarter 2011 and first quarter 2012 are tabulated in Table 2 and Table 3, respectively. Figure 2 shows the concentrations of dissolved sulfate in the wells sampled in the fourth quarter 2011. Figure 3 shows the dissolved sulfate concentrations in drinking water supply wells in the vicinity of the plume and their corresponding sentinel wells in the first quarter 2012. The highest sulfate concentration measured at co-located wells was used for concentration contouring¹. Groundwater elevations in the fourth quarter 2012 are presented on Figures 4 and 5, respectively. Groundwater elevations were calculated using the depth to water measurements taken under non-pumping conditions whenever possible.

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 Sierrita during the fourth quarter 2011 and first quarter 2012, and is included as Appendix A. Analytical laboratory reports for samples collected in fourth quarter 2011 and first quarter 2012 are provided in portable document format on the compact diskette in Appendix B. As determined by the analytical data verification review, the data are of acceptable quality for use in the groundwater monitoring program conducted pursuant to the Mitigation Order.

¹ The 250 milligram per liter (mg/L) sulfate contour in the vicinity of the MO-2007-1 wells is drawn based on the calculated maximum distance of 900 feet that the sulfate plume could have migrated since groundwater concentrations at MO-2007-1C exceeded 250 mg/L in the fourth quarter of 2009. The distance migrated was calculated based on groundwater velocity of 399 feet per year determined using an average hydraulic gradient of 0.00882 between MO-2007-1C and TMM-1, a hydraulic conductivity of 31 feet per day, and an assumed porosity of 25 percent. The distance is considered a maximum because groundwater velocity was calculated with the highest measured hydraulic gradients between the MO-2007-1 wells and TMM-1 and the highest hydraulic conductivity measured at the MO-2009-1 wells.



3. FINDINGS

This semiannual data report provides the results of groundwater monitoring conducted in the vicinity of the STI for the fourth quarter 2011 and first quarter 2012 (Table 1). Groundwater samples and, if possible, depth to water measurements were collected from 28 plume area wells during the fourth quarter 2011. In the first quarter 2012 groundwater samples and, if possible, depth to water measurements were collected from 14 plume area wells.

All wells were sampled according to the schedule presented in the pre-implementation groundwater monitoring plan except well ESP-4 which was not sampled in the fourth quarter 2011 due to mechanical problems with the pump.

- Sulfate concentration data indicate that the sulfate plume from the STI (as defined by the 250 mg/L sulfate concentration contour) extends northeast from the southeastern corner of the tailing impoundment to the vicinity of co-located wells CW-3/MO-2007-5. The plume extends northward from wells CW-3/MO-2007-5 to north of the MO-2007-1 wells (Figures 2 and 3). Comparison of the fourth quarter 2011 and first quarter 2012 sulfate concentration data with those collected in previous quarters does not indicate any significant change to the plume geometry, although there has been downgradient movement at the north end of the plume as discussed below.
- Appendix C presents time series graphs of sulfate concentrations for drinking water supply wells in the vicinity of the edge of the plume, sentinel wells between the plume and the drinking supply wells, and other monitoring wells that document the edge of the plume.
 - The time series graphs for water supply wells CW-6, CW-9, CW-10, GV-01-GVDWID, and GV-02-GVDWID indicate that sulfate concentrations are less than the interim action trigger level of 135 mg/L (HGC, 2006b) and steady or declining over time (i.e. GV-02-GVDWID).
 - Time series graphs for sentinel wells MO-2007-3B, MO-2007-4A, MO-2007-4B, MO-2007-6A, and MO-2009-1 indicate that sulfate concentrations are steady over time and below 135 mg/L, which is the trigger level for more frequent monitoring at sentinel wells (Sierrita, 2009a). Sulfate concentrations at sentinel wells MO-2007-3C and MO-2007-6B are below 135 mg/L and decrease slightly over time whereas concentrations at MO-2007-4C and NP-2 increase slightly.
 - Time series graphs for wells along the edge of the plume indicate sulfate concentrations are relatively steady or decline over time except at MO-2007-1B, MO-2007-1C, and ESP-1. Sulfate concentrations increased at MO-2007-1B and MO-2007-1C which are positioned at the leading edge of the plume. The sulfate concentrations in MO-2007-1B and MO-2007-1C are expected to increase until the



3

mitigation measures identified by the Feasibility Study and Mitigation Plan are implemented. Sulfate concentrations at ESP-1 have increased since 2008.

• Appendix D presents time series graphs of groundwater elevation at the sentinel wells. The time series graphs show that water levels at these wells are relatively steady over time. Groundwater elevations for the sentinel wells are generally slightly higher in the first and second quarter than during the third and fourth quarters.



4. **REFERENCES**

- 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. Interim Action Identification, Technical Memorandum for Mitigation Order on Consent Docket No. P-50-06, Pima County, Arizona. December 22, 2006.
- HGC. 2008. Feasibility Study for Mitigation of Sulfate in the Vicinity of the Freeport-McMoRan Sierrita Inc. Tailing Impoundment, Mitigation Order on Consent Docket No. P-50-06. October 22, 2008.
- HGC. 2009a. Revision 1, Aquifer Characterization Report, Task 5 of Aquifer Characterization Plan, Mitigation Order on Consent Docket No. P-50-06. Pima County, Arizona. January 30, 2009.
- HGC. 2009b. Mitigation Plan for Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Freeport-McMoRan Sierrita Inc. Tailing Impoundment, Mitigation Order on Consent Docket No. P-50-06. May 8, 2009.
- Sierrita. 2009a. Letter from Ned Hall (Sierrita) to Cynthia Campbell (ADEQ) Regarding Mitigation Order on Consent, Docket P-50-06, Response to ADEQ Comments on Recommended Groundwater Monitoring for Sulfate. May 15, 2009.
- Sierrita. 2009b. Letter from Ned Hall (Sierrita) to Cynthia Campbell (ADEQ) Regarding Mitigation Order on Consent, Docket P-50-06, Supplemental Information on Recommended Groundwater Monitoring for Sulfate. June 12, 2009.
- Sierrita. 2012. Letter from Martha Mottley (Sierrita) to Mindi Cross (ADEQ) Regarding Mitigation Order on Consent, Docket P-50-06, ADEQ Letter of February 12, 2012 Regarding Groundwater Monitoring Report for Second and Third Quarters of 2011. March 16, 2012.



TABLES

TABLE 1 Sampling Schedule for Pre-Implementation Groundwater Monitoring

Well Name	ADWR 55 Well Registry No.	Owner	Annual Sampling Second Quarter	Quarterly Sampling Third Quarter	Semiannual Sampling Fourth Quarter	Quarterly Sampling First Quarter
CC of GV	501760	Sierrita	✓			
CW-3	627483	CWC	\checkmark		✓	
CW-6	627485	CWC	\checkmark	✓	✓	\checkmark
CW-7	502546	CWC	WLO			
CW-8	543600	CWC	WLO			
CW-9	588121	CWC	\checkmark	✓	✓	\checkmark
CW-10	207982	CWC	\checkmark	✓	✓	\checkmark
ESP-1	623102	Sierrita	\checkmark		✓	
ESP-2	623103	Sierrita	\checkmark		✓	
ESP-3	623104	Sierrita	✓		✓	
ESP-4	623105	Sierrita	✓		✓	
ESP-5	623106	Sierrita	WLO			
GV-01-GVDWID	603428	GVDWID	\checkmark	✓	✓	\checkmark
GV-02-GVDWID	603429	GVDWID	✓	✓	✓	\checkmark
GV-SI-GVDWID	208825	GVDWID	\checkmark			
HAVEN GOLF	515867	Haven Golf	\checkmark			
I-10	608525	TBPI	✓			
IW-1	623129	Sierrita	\checkmark			
IW-2A	216464	Sierrita	✓			
IW-3A	623131	Sierrita	✓			
IW-4	623132	Sierrita	✓			
IW-5A	623133	Sierrita	✓			
IW-6A	545565	Sierrita	✓			
IW-8	508236	Sierrita	✓			
IW-9	508238	Sierrita	✓			
IW-10	508237	Sierrita	✓			
IW-11	508235	Sierrita	✓			
IW-12	545555	Sierrita	✓			
IW-13	545556	Sierrita	✓			
IW-14	545557	Sierrita	\checkmark			
IW-15	545558	Sierrita	✓			
IW-16	545559	Sierrita	WLO			
IW-17	545560	Sierrita	WLO			
IW-18	545561	Sierrita	WLO			
IW-19	545562	Sierrita	\checkmark			
IW-20	545563	Sierrita	✓			



TABLE 1 Sampling Schedule for Pre-Implementation Groundwater Monitoring

Well Name	ADWR 55 Well Registry No.	Owner	Annual Sampling Second Quarter	Quarterly Sampling Third Quarter	Semiannual Sampling Fourth Quarter	Quarterly Sampling First Quarter
IW-21	545564	Sierrita	~			
IW-22	200554	Sierrita	\checkmark			
IW-23	200555	Sierrita	\checkmark			
IW-24	200556	Sierrita	✓			
M-8	87390	TBPI	✓		~	
M-9	501652	TBPI	✓			
M-10	501653	TBPI	✓		✓	
M-20	906595	TBPI	✓			
MH-1	803629	Sierrita	WLO			
MH-3	803630	Sierrita	WLO			
MH-5	803632	Sierrita	WLO			
MH-6	803633	Sierrita	WLO			
MH-7	803634	Sierrita	WLO			
MH-9	803635	Sierrita	WLO			
MH-10	803636	Sierrita	✓			
MH-11	803637	Sierrita	✓			
MH-13A	904071	Sierrita	✓			
MH-13B	904072	Sierrita	✓			
MH-13C	904073	Sierrita	✓			
MH-14	528098	Sierrita	WLO			
MH-15E	528094	Sierrita	WLO			
MH-15W	528093	Sierrita	WLO			
MH-16E	528100	Sierrita	WLO			
MH-16W	528099	Sierrita	WLO			
MH-24	563799	Sierrita	WLO			
MH-25A	201528	Sierrita	✓			
MH-25B	208429	Sierrita	✓			
MH-25C	208426	Sierrita	✓			
MH-26A	201527	Sierrita	~			
MH-26B	208427	Sierrita	~			
MH-26C	208428	Sierrita	~			
MH-28	903648	Sierrita	~		 ✓ 	
MH-29	903649	Sierrita	~		✓	
MH-30	903884	Sierrita	~			
MO-2007-1A	907342	Sierrita	~		✓	
MO-2007-1B	907210	Sierrita	~		✓	



TABLE 1 Sampling Schedule for Pre-Implementation Groundwater Monitoring

Well Name	ADWR 55 Well Registry No.	Owner	Annual Sampling Second Quarter	Quarterly Sampling Third Quarter	Semiannual Sampling Fourth Quarter	Quarterly Sampling First Quarter
MO-2007-1C	907209	Sierrita	\checkmark		✓	
MO-2007-2	906765	Sierrita	\checkmark			
MO-2007-3B ¹	906816	Sierrita	\checkmark	✓	✓	✓
MO-2007-3C ¹	906817	Sierrita	\checkmark	✓	✓	✓
MO-2007-4A ²	907213	Sierrita	\checkmark	✓	✓	✓
MO-2007-4B ²	907212	Sierrita	\checkmark	✓	✓	✓
MO-2007-4C ²	907211	Sierrita	\checkmark	✓	✓	✓
MO-2007-5B	907456	Sierrita	\checkmark		✓	
MO-2007-5C	907457	Sierrita	\checkmark		✓	
MO-2007-6A ³	907607	Sierrita	\checkmark	✓	✓	✓
MO-2007-6B ³	907606	Sierrita	\checkmark	✓	✓	✓
MO-2009-1 ⁴	910458	Sierrita	\checkmark	✓	✓	✓
NP-2 ¹	605898	CWC	\checkmark	✓	✓	✓
PZ-7	561870	Sierrita	\checkmark			
PZ-8	561866	Sierrita	\checkmark			
TMM-1	616156	Pima County	\checkmark		 ✓ 	
1350	ND	TBPI	WLO			

Notes:

ADWR = Arizona Department of Water Resources CC OF GV = Country Club of Green Valley CWC = Community Water Company of Green Valley GVDWID = Green Valley Domestic Water Improvement District

ND = No Data

Sierrita = Freeport-McMoRan Sierrita Inc.

TBPI = Twin Buttes Properties, Inc.

WLO = Water Level Only

- ¹ Sentinel Well for CW-9
- ² Sentinel Well for CW-6
- ³ Sentinel Well for GV-01-GVDWID and GV-02-GVDWID
- ⁴ Sentinel Well for CW-10



TABLE 2

Analytical Results for Fourth Quarter 2011 and First Quarter 2012 Groundwater Monitoring

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temperature (deg C)	Specific Conductance (µS/cm)	Sulfate, Dissolved (mg/L)
CW-3	627483	12/5/11	7.79	22.7	437	55.18
		12/14/11	7.76	23.7	429	54.50
CW-6	627485	12/14/11 DUP	7.76	23.7	429	54.42
		1/24/12	7.49	25.2	303	60.17
CW-9	500101	12/14/11	7.69	26.5	373	43.80
CW-9	588121	1/24/12	7.70	25.1	262	45.60
CW/ 10	207092	12/14/11	7.81	29.8	370	49.24
CW-10	207982	1/24/12	7.77	28.7	265	52.32
ESP-1	623102	12/13/11	7.49	26.1	1046	387.52
ESP-2	623103	11/22/11	7.84	26.0	350	26.65
ESP-3	623104	11/22/11	7.95	27.6	337	34.18
GV-01-GVDWID	603428	12/7/11	7.68	25.4	416	39.31
GV-01-GVDVID	003420	3/14/12	7.61	26.0	406	35.56
	602420	12/7/11	7.53	21.8	578	77.88
GV-02-GVDWID	603429	3/14/12	7.37	23.8	566	77.35
M-8	087390	11/17/11	7.88	23.6	522	84.577
M-10	501653	11/16/11	8.04	27.6	612	162
MH-28	903548	10/4/11	7.12	25.8	1390	1800
MH-29	903649	10/4/11	6.91	25.3	1765	1600
MO-2007-1A	907342	10/6/11	7.79	23.4	371	16.143
MO-2007-1B	907210	10/6/11	7.84	24.8	1178	604.67
MO-2007-1D	907210	10/6/11 DUP	7.84	24.8	1178	614.84
MO-2007-1C	907209	10/6/11	8.10	25.9	942	393.94
		10/5/11	8.04	25.7	395	37.822
MO-2007-3B	906816	11/22/11	8.00	26.1	286	36.7
		1/11/12	7.55	27.0	211	39.00
MO-2007-3C	906817	10/5/11	8.28	29.3	524	96.818
10-2007-30	900017	1/11/12	7.92	29.4	283	104.03
MO-2007-4A	907213	10/5/11	7.82	24.1	435	34.47
MO-2007-4A	907213	1/17/12	7.54	24.5	274	37.55
		10/5/11	8.01	27.6	401	34.194
MO-2007-4B	907212	10/5/2011 DUP	8.01	27.6	401	33.36
		1/17/12	7.81	26.7	259	33.14
MO-2007-4C	907211	10/5/11	8.43	30.0	505	89.355
WIO-2007-40	907211	1/12/12	8.52	29.5	329	92.92
MO-2007-5B	907456	11/21/11	7.98	27.2	1249	494.3
MO-2007-5C	907457	11/21/11	8.58	26.4	780	235.98
		10/6/11	8.05	25.8	402	34.109
MO-2007-6A	907607	1/11/12	7.47	26.8	234	43.51
		1/11/12 DUP	7.47	26.8	234	42.97
MO-2007-6B	907606	10/6/11	8.08	27.0	405	55.342
WIC-2007-0D	907000	1/11/12	7.57	29.9	235	57.78
MO-2009-1	910458	12/1/11	8.57	28.9	479	91.82
WIQ-2003-1	310430	1/11/12	8.18	29.9	292	93.84



TABLE 2

Analytical Results for Fourth Quarter 2011 and First Quarter 2012 Groundwater Monitoring

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temperature (deg C)	Specific Conductance (µS/cm)	Sulfate, Dissolved (mg/L)
NP-2	605898	12/5/11	8.11	23.1	396	58.63
NF-2	000090	3/21/12	7.86	24.9	337	64.11
TMM-1	616156	12/21/11	7.10	20.4	1580	<0.5

Notes:

ADWR = Arizona Department of Water Resources

SU = Standard Units

deg C = degrees Celsius

 μ S/cm = microsiemens per centimeter

mg/L = milligrams per Liter

DUP = Duplicate sample

TABLE 3Groundwater Elevation Data for Fourth Quarter 2011 and First Quarter 2012

Well Name	ADWR 55 Registry No.	Survey Source	UTM North (m)	UTM East (m)	Measuring Point Elevation (ft amsl)	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)
CW-3	627483	HGC	3523809.985	500047.663	2941.71	12/5/11	274.20	2667.51
CW-6	627485	CWC	3525794.239	500891.072	2867.00	12/14/11	253.57	2613.43
000-0	027405	000	3525794.239	500691.072	2007.00	1/24/12	252.33	2614.67
CW-9	588121	CWC	3528740.784	501072.040	2834.30	12/14/11	314.17	2520.13
000-9	500121	0000	5526740.764	501072.040	2004.00	1/24/12	312.56	2521.74
CW-10	207982	CWC	3523455.502	500913.364	2868.50	12/14/11	191.70	2676.80
000-10	201902	0000	5525455.502	500915.504	2000.30	1/24/12	189.73	2678.77
ESP-1	623102	Sierrita	3526448.677	499969.682	2953.43	11/22/11	357.82	2595.61
LOFT	023102	Siema	5520440.077	499909.002	2900.40	12/13/11	355.60	2597.83
ESP-2	623103	Sierrita	3526924.656	500241.637	2934.60	11/22/11	347.26	2587.34
ESP-3	623104	Sierrita	3527377.239	500234.067	2935.80	11/22/11	364.91	2570.89
ESP-4	623105	Sierrita	3526132.758	499916.830	2958.60	11/22/11	356.91	2601.69
GV-01-GVDWID	603428	GVDWID	3522254.157	499812.869	2942.35	12/7/11	233.20	2709.15
GV-01-GVDWID	003420	GVDVID	5522254.157	499012.009	2942.33	3/14/12	234.25	2708.10
GV-02-GVDWID	603429	GVDWID	3521654.457	499786.207	2930.47	12/7/11	204.43	2726.04
00-02-00D00D	003423		3321034.437	433700.207	2330.47	3/14/12	204.35	2726.12
M-8	87390	Sierrita	3529692.237	499658.916	2999.53	11/17/11	471.23	2528.30
M-10	501653	Sierrita	3530143.114	499659.027	3005.68	11/16/11	484.66	2521.02
MH-28	903548	Sierrita	3524609.980	497471.427	3142.18	10/4/11	397.90	2744.28
MH-29	903649	Sierrita	3522805.518	497604.326	3123.15	10/4/11	380.25	2742.90
MO-2007-1A	907342	Sierrita	3529331.380	500016.947	2967.65	10/6/11	433.60	2534.05
MO-2007-1B	907210	Sierrita	3529325.119	500021.574	2966.82	10/6/11	434.10	2532.72
MO-2007-1C	907209	Sierrita	3529328.959	500013.405	2968.58	10/6/11	431.80	2536.78
MO-2007-3B	906816	Sierrita	3528508.801	500522.491	2912.15	11/22/11	365.10	2547.05
WIO-2007-3D	300010	Siema	3320300.001	500522.491	2312.15	1/11/12	363.36	2548.79
MO-2007-3C	906817	Sierrita	3528508.743	500529.713	2911.90	10/5/11	365.50	2546.40
10-2007-30	300017	Siema	3320300.743	300323.713	2911.90	1/11/12	363.36	2548.54
MO-2007-4A	907213	Sierrita	3525634.956	500383.682	2923.63	10/5/11	312.50	2611.13
WO-2007-4A	907213	Siema	3323034.930	500505.002	2923.03	1/17/12	310.05	2613.58
MO-2007-4B	907212	Sierrita	3525613.952	500380.947	2923.57	10/5/11	313.50	2610.07
WIC-2007-4D	301212	Siemid		500500.347	2323.31	1/17/12	309.81	2613.76
MO-2007-4C	907211	Sierrita	3525624.484	500382.217	2923.66	10/5/11	314.80	2608.86
WIC-2007-4C	307211	Siemia		500502.217	2323.00	1/12/12	311.00	2612.66
MO-2007-5B	907456	Sierrita	3523743.376	500013.850	2944.35	11/21/11	273.28	2671.07



TABLE 3Groundwater Elevation Data for Fourth Quarter 2011 and First Quarter 2012

Well Name	ADWR 55 Registry No.	Survey Source	UTM North (m)	UTM East (m)	Measuring Point Elevation (ft amsl)	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)
MO-2007-5C	907457	Sierrita	3523736.459	500014.152	2944.91	11/21/11	280.98	2663.93
MO-2007-6A	907607	Sierrita	3521842.050	498367.161	3043.37	10/6/11	311.10	2732.27
MO-2007-0A	307007	Siema	3321042.030	490307.101	0040.07	1/11/12	311.24	2732.13
MO-2007-6B	907606	Sierrita	3521849.495	498367.887	3043.05	10/6/11	319.92	2723.13
WO-2007-0B	907000	Siema	5521649.495	490307.007	3043.05	1/11/12	320.03	2723.02
MO-2009-1	910458	Sierrita	3523369.438	500534.089	2890.78	12/1/11	219.96	2670.82
10-2009-1	310430	Siema	3323309.430	500554.005	2890.78	1/11/12	222.55	2668.23
NP-2	605898	HGC	3528517.116	500582.904	2906.56	12/5/11	360.27	2546.29
INF -Z	000090	160	5520517.110	500582.904	2300.30	3/21/12	358.10	2548.46
TMM-1	616156	HGC	3529736.231	500018.323	2967.08	12/21/11	435.50	2531.58

Notes:

ADWR = Arizona Department of Water Resources

CWC = Community Water Company of Green Valley

ft amsl = feet above mean sea level

GVDWID = Green Valley Domestic Water Improvement District

HGC = Hydro Geo Chem, Inc.

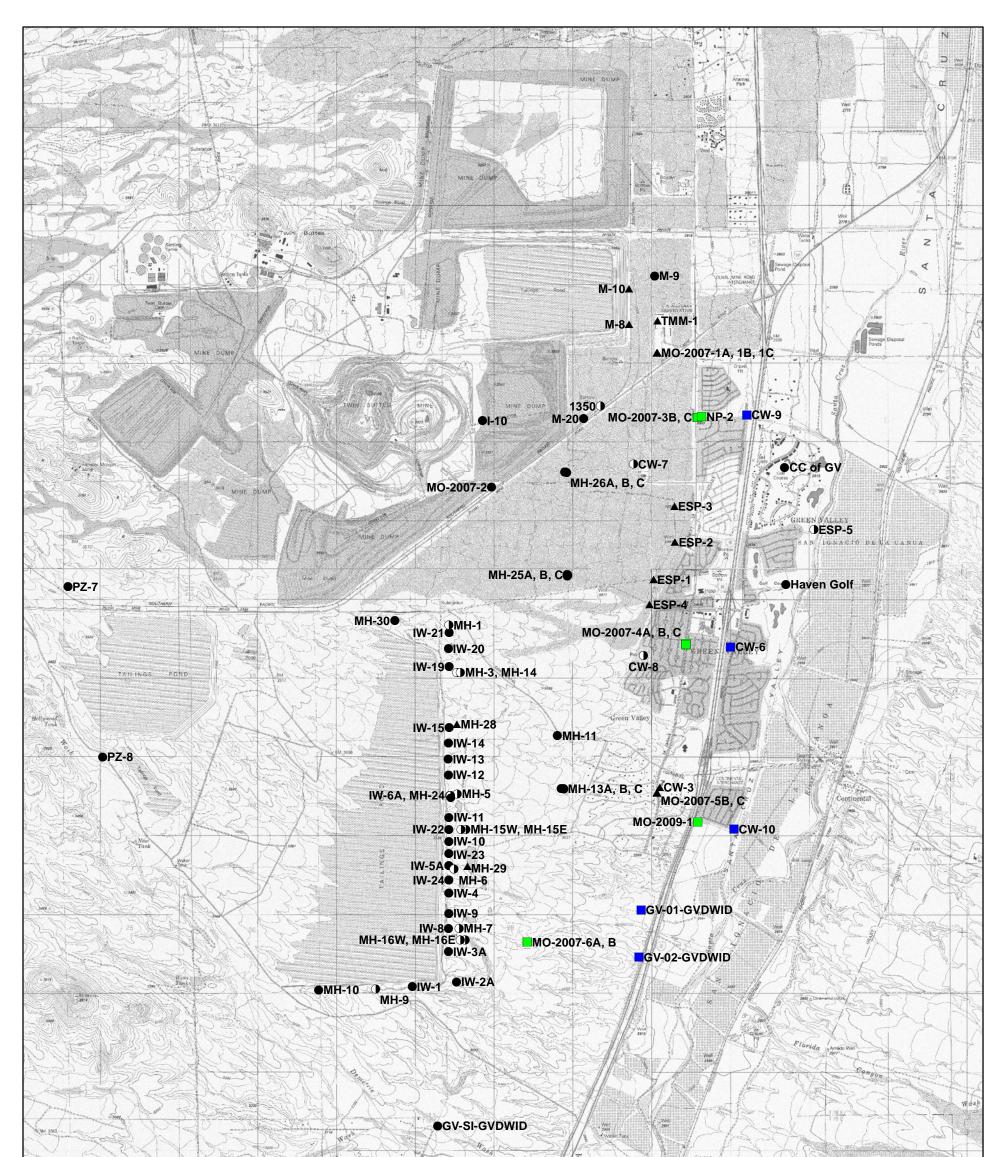
m = meters

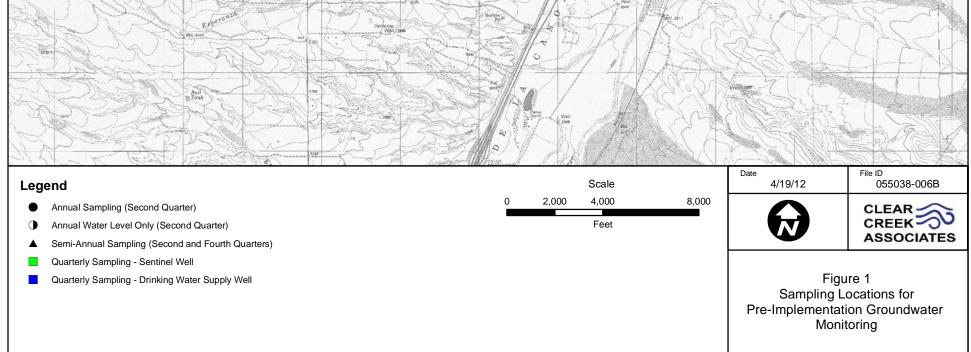
Sierrita = Freeport-McMoRan Sierrita Inc.

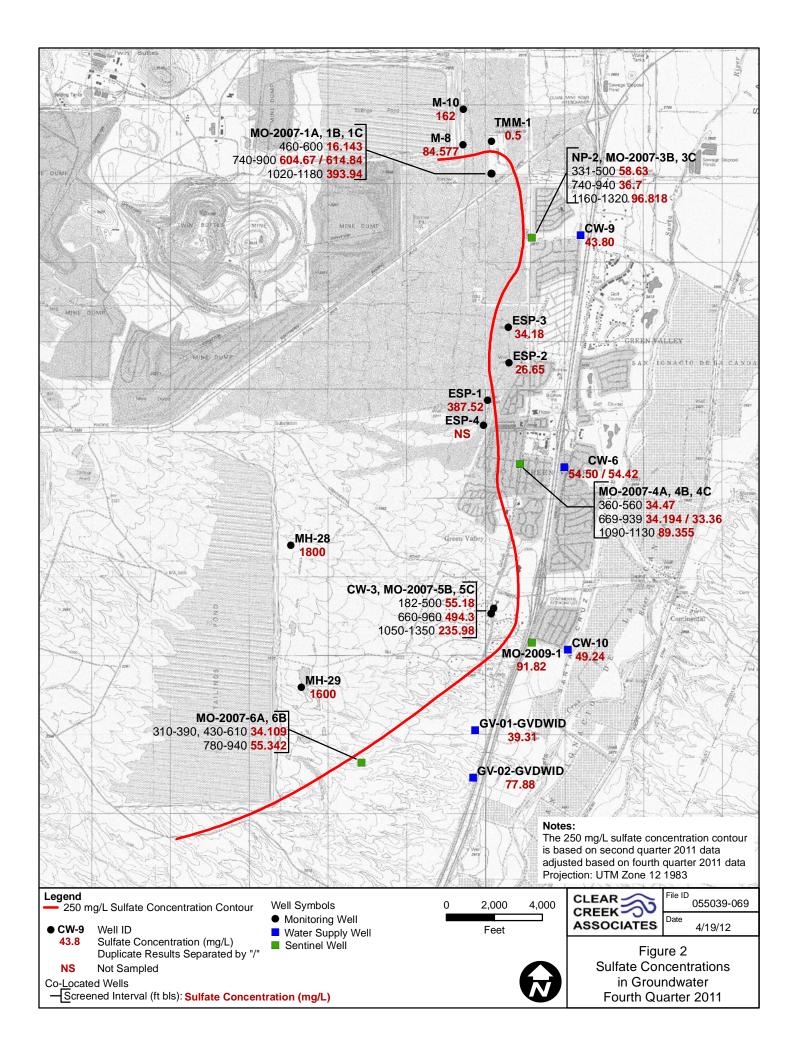
UTM = Universal Transverse Mercator, Zone 12 North American Datum 1983 (NAD83)

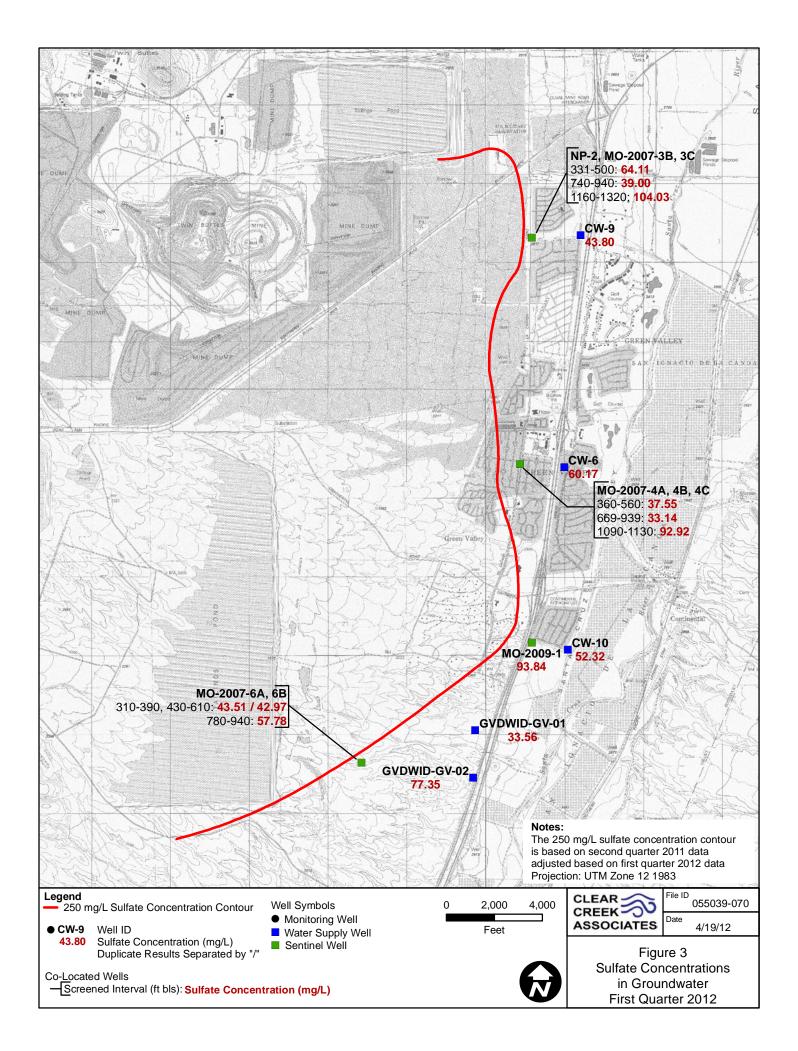


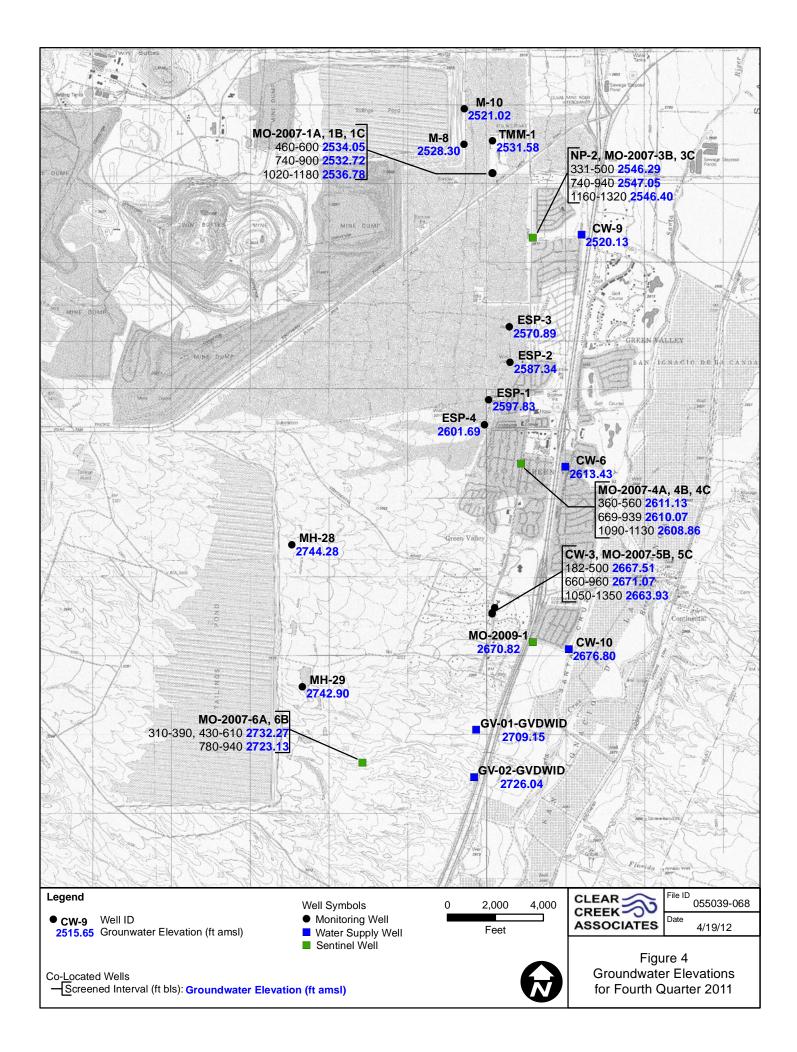
FIGURES

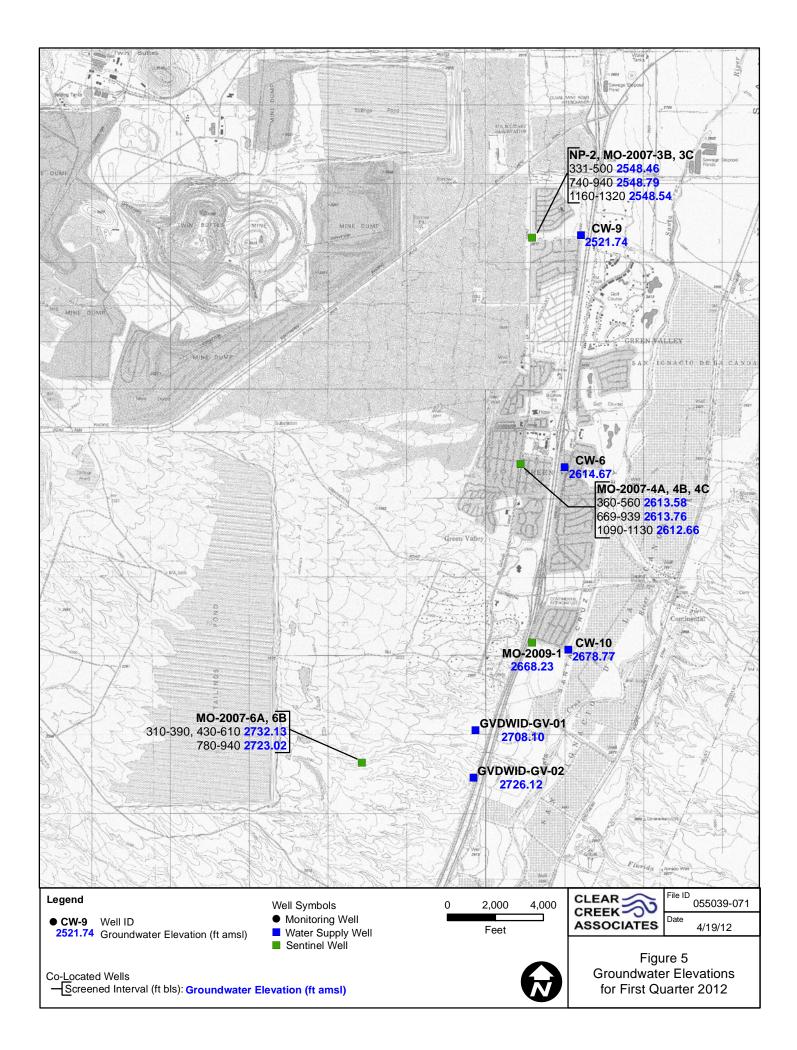












APPENDIX A

DATA VERIFICATION REPORT

GROUNDWATER SAMPLES COLLECTED BY FREEPORT-MCMORAN SIERRITA INC. DURING FOURTH QUARTER 2011 AND FIRST QUARTER 2012

APPENDIX A

DATA VERIFICATION REPORT

GROUNDWATER SAMPLES COLLECTED BY FREEPORT-MCMORAN SIERRITA INC. DURING THE FOURTH QUARTER 2011 AND FIRST QUARTER 2012

Prepared for:

FREEPORT-MCMORAN SIERRITA INC.

6200 West Duval Mine Road Green Valley, Arizona 85614

Prepared by:

Clear Creek Associates, P.L.C. 221 North Court Avenue Suite 101 Tucson, Arizona 85701

April 23, 2012

TABLE OF CONTENTS

1.	INTR	ODUCTION	1
2.	LABC 2.1	ORATORY QUALITY CONTROL	
	2.2	Analytical Methods	
	2.3	Method Detection Limits (MDLs) and Practical Quantification Limits (PQLs)	
	2.4	Timeliness	
	2.5	Quality Control Measurements	4
		2.5.1 Preparation Blanks, Calibration Blanks, and Calibration Verification Standards	4
		2.5.2 Analytical Spikes and Analytical Spike Duplicates	
		2.5.3 Laboratory Control Samples	
		2.5.4 Laboratory Duplicate Samples	5
3.	DATA	A QUALITY INDICATORS	6
	3.1	Precision	6
	3.2	Bias	7
	3.3	Accuracy	7
	3.4	Representativeness	7
	3.5	Comparability	8
	3.6	Completeness	
	3.7	Sensitivity	8
4.	REFE	RENCES	9

V:\Projects\G & K\055039_Sierrita Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2011 Q4 and 2012 Q1 Semiannual Report\Q4 11 and Q1 12 Appendix A DV Report.doc

1. INTRODUCTION

This report summarizes the data verification review of groundwater samples collected and analyzed during the fourth quarter 2011 and first quarter 2012 by Freeport-McMoRan Sierrita Inc. (Sierrita) pursuant to Mitigation Order on Consent Docket No. P-50-06. All analytical results for groundwater samples collected during this reporting period were provided to Sierrita by ACZ Laboratories, Inc. (ACZ) for preparation of the Semiannual Groundwater Monitoring Report.

This report does not review field sampling or sample handling procedures for Sierrita. Sierrita collected samples following the methods in the *Quality Assurance/Quality Control (QA/QC) Plan for Water Monitoring, Phelps Dodge Sierrita, Inc.* (PDSI, 2005) in Appendix E of the Work Plan (Hydro Geo Chem, Inc. [HGC], 2006). Additionally, laboratory QA/QC data are evaluated according to the data quality indicators (DQIs) given in the Quality Assurance Project Plan (QAPP) (HGC, 2006).

Appendix B of the main text of this report contains laboratory reports for samples collected by Sierrita including Chain of Custody (COC) forms, laboratory correspondence, QC summaries, data qualifiers, and any case narratives. The analytical results for all 49 samples collected are contained in 13 reports having the ACZ Project numbers identified in the following table.

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



Sierrita Semiannual Groundwater Monitoring Report Appendix A Data Verification Report

1

V:\Projects\G & K\055039_Sierrita Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2011 Q4 and 2012 Q1 Semiannual Report\Q4 11 and Q1 12 Appendix A DV Report.doc

ACZ Project ID	Wells Reported					
Number of dupli	2011 samples collected: 31 cate samples collected: 3 samples collected: 34					
L91123	MH-28, MH-29					
L91570	MO-2007-1A, MO-2007-1B, MO-2007-1C, MO-2007-3B, MO-2007-3C , MO-2007-4A, MO-2007-4B, MO-2007-4C, MO-2007-6B, MO-2007-6A, DUP20111005A, DUP20111006A					
L91977	M-8, M-20					
L91978	M-9, M-10					
L92157	157 M-2007-3B, M-2007-5B, M-2007-5C, ESP-2, ESP-3, MO2009-1					
L92273	CW-3, NP-2, GV-1, GV-2					
L92406	ESP-1, CW-6, CW-9, CW-10, DUP20111214A					
L92480	TMM-1					
Number of dupli	12 samples collected: 14 cate samples collected: 1 samples collected: 15					
L92736	L92736 MO-2007-3B, MO-2007-3C, MO-2007-4C, MO-2007-6A, MO-2007-6B, MO-2009-1, DUP20120111A					
L92839	MO-2007-4A, MO-2007-4B					
L92953	CW-6, CW-9, CW-10					
L93580	GV-1, GV-2					
L93745	NP-2					

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 turnaround 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

The following methods were used for sulfate analysis during this monitoring period:

- U.S. Environmental Protection Agency (EPA) 300.0 (Ion-Chromatography)
- ASTM International Method D516-02 (Turbidimetric)

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.

V:\Projects\G & K\055039_Sierrita Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2011 Q4 and 2012 Q1 Semiannual Report\Q4 11 and Q1 12 Appendix A DV Report.doc

Method	MDL (mg/L)	PQL (mg/L)	Target MDL ¹ (mg/L)
EPA 300.0	0.5	3	10
D516-02	5	30	10

mg/L = milligrams per liter

¹ Target MDL from Table E.2 of QAPP

2.4 Timeliness

Holding time was derived from the EPA methods utilized and was calculated beginning from the time of sample collection in the field. All samples submitted for sulfate analysis were analyzed within the twenty-eight day holding time specified by each of the methods used for analysis.

2.5 Quality Control Measurements

The following laboratory 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

2.5.1 Preparation Blanks, Calibration Blanks, and Calibration Verification Standards

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

Initial calibration blanks and initial calibration verification standards were analyzed prior to each group of samples. The results of each initial calibration blank analyzed showed no detections of the target analyte. Analytical results for the initial calibration verification standards and laboratory fortified blanks showed percent recoveries that were within the acceptance criteria specified by the ACZ QA plan and the QAPP.

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2.5.2 Analytical Spikes and Analytical Spike Duplicates

Analytical spike and spike duplicate samples were analyzed for 10 percent of the samples that were analyzed. The spike samples were prepared by adding a sulfate spike to one randomly chosen sample out of every ten samples analyzed. Spike recoveries for all analyses were between 90 and 110 percent. Instances in which analytical spike recoveries were high, low or unusable are qualified with an "M1", "M2" or "M3" flag, respectively. There were no cases where an "M1" flag was used in the fourth quarter 2011 and first quarter 2012. In each case where an "M2" or "M3" qualifier was used, the method control sample recovery was checked to insure that it is acceptable. The method control samples were prepared by adding a sulfate spike to deionized water.

2.5.3 Laboratory Control Samples

Laboratory control samples were run for each group of samples submitted for sulfate analysis following the method of analysis. 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 3.1. The relative percent difference (RPDs) for all laboratory duplicate samples were within 20 percent, which is the tolerance range set by the laboratory. The RPD is not used for data validation if the sample concentration is less than ten times the method detection limit. In cases where the RPD was used for data validation based on laboratory standard operating procedure, the results met QA criteria and demonstrated appropriate levels of precision for laboratory analysis of these samples.



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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 groundwater sampling and analysis conducted by Sierrita.

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 duplicates among the following groups of duplicate samples:

- Laboratory duplicate samples
- Field duplicate samples

As discussed in Sections 2.5.2 and 2.5.4, there were no exceedances of RPD QA criteria based on laboratory standard operating procedures for any laboratory duplicates. During this monitoring period, a total of 4 field duplicate samples were collected by Sierrita for filtered sulfate analysis (DUP20111005A, DUP20111006A, DUP20111214A, and DUP20120111A). The collection of 4 field duplicate samples does not meet the QA/QC goal of collecting one duplicate sample for every ten groundwater samples collected, as stated in Section 6 of Sierrita's quality assurance quality control plan, but exceeds the goal of collecting one duplicate sample for every twenty groundwater samples as stated in the Work Plan (HGC, 2006)

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Results of the field duplicate samples collected are provided in the table below. The range of RPD values was between 0.15 and 2.47 percent, all within the 20 percent acceptance criteria for field duplicates, as stated in Section 3.3.1 of the QAPP. Overall, the DQI for precision is met.

SV/L Droject No	Well ID	Duplicate ID	Sample (mg/l)	Duplicate (mg/l)	RPD
SVL Project No.	Weil ID	Duplicate ID	Sample (mg/l)	Duplicate (mg/l)	RFD
L91570	MO-2007-4B	DUP20111005A	34.194	33.36	2.47%
L91570	MO-2007-1B	DUP20111006A	604.67	614.84	1.67%
L92406	CW-6	DUP20111214A	54.50	54.42	0.15%
L92736	MO-2007-6A	DUP20120111A	43.51	42.97	1.25%

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

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, 2.5.2, and 2.5.3 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.

3.4 **Representativeness**

All samples were taken from locations specified in the Pre-implementation Monitoring Plan (Sierrita, 2009) 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.

CLEAR CREEK ASSOCIATES	Sierrita Semiannual Groundwater Monitoring Report Appendix A Data Verification Report
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V:\Projects\G & K\055039_Sierrita Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2011 Q4 and 2012 Q1 Semiannual Report\Q4 11 and Q1 12 Appendix A DV Report.doc

3.5 Comparability

All samples were collected using standardized procedures (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 Sierrita were subsequently analyzed and reported by ACZ. All samples 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 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.



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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.
- Sierrita. 2009. Letter from Ned Hall (Sierrita) to Cynthia Campbell (ADEQ) Regarding Mitigation Order on Consent, Docket P-50-06, Response to ADEQ Comments on Recommended Groundwater Monitoring for Sulfate. May 15, 2009.



Sierrita Semiannual Groundwater Monitoring Report Data Verification Report

9

V:\Projects\G & K\055039_Sierrita Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2011 Q4 and 2012 Q1 Semiannual Report\Q4 11 and Q1 12 Appendix A DV Report.doc

APPENDIX B

ANALYTICAL DATA REPORTS



October 21, 2011

Report to: Aaron Hilshorst FMI Gold & Copper - Sierrita 6200 W. Duval Mine Rd. Green Valley, AZ 85614

cc: Ben Daigneau

Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS03X3 ACZ Project ID: L91123

Aaron Hilshorst:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 07, 2011. This project has been assigned to ACZ's project number, L91123. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L91123. 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 21, 2011. 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.

S. Habermehl

Scott Habermehl has reviewed and approved this report.





October 21, 2011

Project ID: ZS03X3 ACZ Project ID: L91123

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 ground water samples from FMI Gold & Copper - Sierrita on October 7, 2011. 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 L91123. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic 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.

1. The TDS values have been flagged with the N1 qualifier on the extended qualifier report. The chemist noted that the drying oven was out of range. Data comparison to historical values may be warranted.



Project ID:	ZS03X3
Sample ID:	MH-28

Inorganic Analytical Results

ACZ Sample ID:	L91123-01
Date Sampled:	10/04/11 11:13
Date Received:	10/07/11
Sample Matrix:	Ground Water

Metals Analysis								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Antimony, dissolved	M200.8 ICP-MS		U	mg/L	0.0008	0.004	10/15/11 3:16	msh
Arsenic, dissolved	M200.8 ICP-MS		U	mg/L	0.001	0.004	10/15/11 3:16	msh
Beryllium, dissolved	M200.8 ICP-MS		U	mg/L	0.0002	0.001	10/15/11 3:16	msh
Cadmium, dissolved	M200.8 ICP-MS		U	mg/L	0.0002	0.001	10/15/11 3:16	msh
Chromium, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	10/11/11 14:31	jjc
Cobalt, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	10/11/11 14:31	jjc
Copper, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	10/11/11 14:31	jjc
Lead, dissolved	M200.8 ICP-MS	0.0007	В	mg/L	0.0002	0.001	10/15/11 3:16	msh
Magnesium, dissolved	M200.7 ICP	103		mg/L	0.2	1	10/11/11 14:31	jjc
Molybdenum, dissolved	d M200.7 ICP	0.04	В	mg/L	0.01	0.05	10/11/11 14:31	jjc
Nickel, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	10/11/11 14:31	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0007		mg/L	0.0002	0.0005	10/15/11 3:16	msh
Thallium, dissolved	M200.8 ICP-MS	0.0002	В	mg/L	0.0002	0.001	10/15/11 3:16	msh
Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Fluoride	SM4500F-C	0.1	В *	mg/L	0.1	0.5	10/13/11 17:37	las
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1.07		mg/L	0.02	0.1	10/14/11 23:24	pjb
Residue, Filterable (TDS) @180C	SM2540C	3170		mg/L	10	20	10/07/11 15:42	las
Sulfate	D516-02 - Turbidimetric	1800	*	mg/L	100	500	10/13/11 9:47	сср



Inorganic Analytical Results

ACZ Sample ID:	L91123-02
Date Sampled:	10/04/11 08:49
Date Received:	10/07/11
Sample Matrix:	Ground Water

Metals Analysis								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Antimony, dissolved	M200.8 ICP-MS		U	mg/L	0.0008	0.004	10/15/11 3:20	msh
Arsenic, dissolved	M200.8 ICP-MS		U	mg/L	0.001	0.004	10/15/11 3:20	msh
Beryllium, dissolved	M200.8 ICP-MS		U	mg/L	0.0002	0.001	10/15/11 3:20	msh
Cadmium, dissolved	M200.8 ICP-MS		U	mg/L	0.0002	0.001	10/15/11 3:20	msh
Chromium, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	10/11/11 14:34	jjc
Cobalt, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	10/11/11 14:34	jjc
Copper, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	10/11/11 14:34	jjc
Lead, dissolved	M200.8 ICP-MS	0.0003	В	mg/L	0.0002	0.001	10/15/11 3:20	msh
Magnesium, dissolved	M200.7 ICP	92.3		mg/L	0.2	1	10/11/11 14:34	jjc
Molybdenum, dissolved	d M200.7 ICP	0.02	В	mg/L	0.01	0.05	10/11/11 14:34	jjc
Nickel, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	10/11/11 14:34	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0006		mg/L	0.0002	0.0005	10/15/11 3:20	msh
Thallium, dissolved	M200.8 ICP-MS	0.0003	В	mg/L	0.0002	0.001	10/15/11 3:20	msh
Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Fluoride	SM4500F-C	0.1	В *	mg/L	0.1	0.5	10/13/11 17:52	las
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.40		mg/L	0.02	0.1	10/14/11 23:26	pjb
Residue, Filterable (TDS) @180C	SM2540C	2940	*	mg/L	10	20	10/08/11 13:32	ndm
Sulfate	D516-02 - Turbidimetric	1600	*	mg/L	100	500	10/13/11 9:47	сср



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

Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

(800) 334-5493

Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS03X3

Antimony, disso	olved		M200.8 IC	P-MS									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG311607													
WG311607ICV	ICV	10/15/11 2:47	MS111007-2	.02		.02163	mg/L	108.2	90	110			
WG311607ICB	ICB	10/15/11 2:51				.00089	mg/L		-0.0012	0.0012			
WG311607LFB	LFB	10/15/11 2:55	MS111006-3	.01		.00963	mg/L	96.3	85	115			
L90986-02AS	AS	10/15/11 3:06	MS111006-3	.02	U	.01892	mg/L	94.6	70	130			
L90986-02ASD	ASD	10/15/11 3:09	MS111006-3	.02	U	.01933	mg/L	96.7	70	130	2.14	20	
Arsenic, dissolv	ved		M200.8 IC	P-MS									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG311607													
WG311607ICV	ICV	10/15/11 2:47	MS111007-2	.05		.05234	mg/L	104.7	90	110			
WG311607ICB	ICB	10/15/11 2:51				U	mg/L		-0.0015	0.0015			
WG311607LFB	LFB	10/15/11 2:55	MS111006-3	.05005		.05063	mg/L	101.2	85	115			
L90986-02AS	AS	10/15/11 3:06	MS111006-3	.1001	.001	.1046	mg/L	103.5	70	130			
L90986-02ASD	ASD	10/15/11 3:09	MS111006-3	.1001	.001	.099	mg/L	97.9	70	130	5.5	20	
Beryllium, disso	olved		M200.8 IC	P-MS									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG311607													
WG311607ICV	ICV	10/15/11 2:47	MS111007-2	.05		.04742	mg/L	94.8	90	110			
WG311607ICB	ICB	10/15/11 2:51				U	mg/L		-0.0003	0.0003			
WG311607LFB	LFB	10/15/11 2:55	MS111006-3	.05005		.04535	mg/L	90.6	85	115			
L90986-02AS	AS	10/15/11 3:06	MS111006-3	.1001	U	.09374	mg/L	93.6	70	130			
L90986-02ASD	ASD	10/15/11 3:09	MS111006-3	.1001	U	.09346	mg/L	93.4	70	130	0.3	20	
Cadmium, disse	olved		M200.8 IC	P-MS									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG311607													
WG311607ICV	ICV	10/15/11 2:47	MS111007-2	.05		.05184	mg/L	103.7	90	110			
WG311607ICB	ICB	10/15/11 2:51				U	mg/L		-0.0003	0.0003			
WG311607LFB	LFB	10/15/11 2:55	MS111006-3	.0501		.04994	mg/L	99.7	85	115			
L90986-02AS	AS	10/15/11 3:06	MS111006-3	.1002	U	.09554	mg/L	95.3	70	130			
L90986-02ASD	ASD	10/15/11 3:09	MS111006-3	.1002	U	.0936	mg/L	93.4	70	130	2.05	20	
Chromium, diss	solved		M200.7 IC	Р									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG311221													
WG311221ICV	ICV	10/11/11 13:48	II110816-1	2		1.963	mg/L	98.2	95	105			
WG311221ICB	ICB	10/11/11 13:54				U	mg/L		-0.03	0.03			
WG311221LFB	LFB	10/11/11 14:07	II111006-5	.5		.483	mg/L	96.6	85	115			
L91063-01AS	AS	10/11/11 14:13	II111006-5	.5	U	.479	mg/L	95.8	85	115			
L91063-01ASD	ASD	10/11/11 14:16	II111006-5	.5	U	.487	mg/L	97.4	85	115	1.66	20	

(800) 334-5493

Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS03X3

Cobalt, dissolve	d		M200.7 IC	P									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG311221													
WG311221ICV	ICV	10/11/11 13:48	ll110816-1	2		1.976	mg/L	98.8	95	105			
WG311221ICB	ICB	10/11/11 13:54				U	mg/L		-0.03	0.03			
WG311221LFB	LFB	10/11/11 14:07	II111006-5	.5		.49	mg/L	98	85	115			
L91063-01AS	AS	10/11/11 14:13	ll111006-5	.5	U	.493	mg/L	98.6	85	115			
L91063-01ASD	ASD	10/11/11 14:16	ll111006-5	.5	U	.499	mg/L	99.8	85	115	1.21	20	
Copper, dissolv	ed		M200.7 IC	P									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG311221													
WG311221ICV	ICV	10/11/11 13:48	II110816-1	2		1.947	mg/L	97.4	95	105			
WG311221ICB	ICB	10/11/11 13:54				U	mg/L		-0.03	0.03			
WG311221LFB	LFB	10/11/11 14:07	II111006-5	.5		.487	mg/L	97.4	85	115			
L91063-01AS	AS	10/11/11 14:13	II111006-5	.5	.06	.555	mg/L	99	85	115			
L91063-01ASD	ASD	10/11/11 14:16	ll111006-5	.5	.06	.555	mg/L	99	85	115	0	20	
Fluoride			SM4500F	-C									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG311464													
WG311464ICV	ICV	10/13/11 15:19	WC111004-7	2		1.98	mg/L	99	95	105			
WG311464ICB	ICB	10/13/11 15:26				U	mg/L		-0.3	0.3			
WG311464LFB1	LFB	10/13/11 15:35	WC110818-4	5.005		4.75	mg/L	94.9	90	110			
L91104-02AS	AS	10/13/11 17:12	WC110818-4	5.005	.1	4.93	mg/L	96.5	90	110			
L91104-02DUP	DUP	10/13/11 17:15			.1	.11	mg/L				9.5	20	RA
WG311464LFB2	LFB	10/13/11 18:20	WC110818-4	5.005		4.58	mg/L	91.5	90	110			
Lead, dissolved			M200.8 IC	P-MS									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG311607													
WG311607ICV	ICV	10/15/11 2:47	MS111007-2	.05		.0496	mg/L	99.2	90	110			
WG311607ICB	ICB	10/15/11 2:51				U	mg/L		-0.0003	0.0003			
WG311607LFB	LFB	10/15/11 2:55	MS111006-3	.05005		.04808	mg/L	96.1	85	115			
L90986-02AS	AS	10/15/11 3:06	MS111006-3	.1001	.0003	.09784	mg/L	97.4	70	130			
L90986-02ASD	ASD	10/15/11 3:09	MS111006-3	.1001	.0003	.09442	mg/L	94	70	130	3.56	20	
Magnesium, dis	solved		M200.7 IC	P									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG311221													
WG311221ICV	ICV	10/11/11 13:48	ll110816-1	100		100.6	mg/L	100.6	95	105			
WG311221ICB	ICB	10/11/11 13:54				U	mg/L		-0.6	0.6			
WG311221LFB	LFB	10/11/11 14:07	ll111006-5	50.0051		50.7	mg/L	101.4	85	115			
L91063-01AS	AS	10/11/11 14:13	ll111006-5	50.0051	.8	51.8	mg/L	102	85	115			
L91063-01ASD	ASD	10/11/11 14:16	II111006-5	50.0051	.8	51.99	mg/L	102.4	85	115	0.37	20	

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Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS03X3

WG311221 WG311221ICV ICV 10/11/11 13:48 II10816-1 2 2.004 mg/L 100.2 95 105 WG311221ICB ICB 10/11/11 13:54 U mg/L -0.03 0.03 WG311221ICB ICB 10/11/11 13:54 U mg/L 101 85 115 L91063-01AS AS 10/11/11 14:13 II11006-5 .5 U .504 mg/L 100.8 85 115 L91063-01ASD ASD 10/11/11 14:16 II11006-5 .5 U .508 mg/L 101.6 85 115 0.79 20 Nickel, dissolved M200.7 ICP AC2 ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qu WG311221 ICV ICV 10/11/11 13:48 II110816-1 2.002 2.087 mg/L 104.2 95 105 WG311221ICV ICV 10/11/11 13:48 II11006-5 .5 U mg/L -0.03 </th <th>ual</th>	ual
WG311221ICV ICV 10/11/11 13:48 II10816-1 2 2.004 mg/L 100.2 95 105 WG311221ICB ICB 10/11/11 13:54 II11006-5 .5 .505 mg/L 101 85 115 L91063-01AS AS 10/11/11 14:07 II11006-5 .5 U .504 mg/L 101.8 85 115 L91063-01ASD ASD 10/11/11 14:16 II11006-5 .5 U .508 mg/L 101.8 85 115 0.79 20 Nickel, dissolved M200.7 ICP M200.7 ICP M20311221ICV ICV 10/11/11 13:48 II110816-1 2.002 2.087 mg/L 104.2 95 105 . . M WG311221ICV ICV 10/11/11 13:48 II110816-1 2.002 2.087 mg/L 104.2 95 105 .	ual
WG311221ICB ICB 10/11/11 13:54 U mg/L -0.03 0.03 WG311221LFB LFB 10/11/11 14:07 II11006-5 .5 .505 mg/L 101 85 115 L91063-01AS AS 10/11/11 14:13 II11006-5 .5 U .504 mg/L 100.8 85 115	ual
WG311221LFB LFB 10/11/11 14:07 II11006-5 .5 .505 mg/L 101 85 115 L91063-01AS AS 10/11/11 14:13 II11006-5 .5 U .508 mg/L 100.8 85 115 .79 20 Nickel, dissolved M200.7 ICP M200.7 ICP M200.7 ICP M2011/11 13:48 II110816-1 2.002 2.087 mg/L 104.2 95 105 M200.7 Qumg/L WG311221 ICV ICV 10/11/11 13:48 II110816-1 2.002 2.087 mg/L 104.2 95 105 400 M200.7 Qumg/L -0.03 0.03 <th< td=""><td>ual</td></th<>	ual
L91063-01AS L91063-01ASD AS ASD 10/11/11 14:13 10/11/11 14:16 II11006-5 II11006-5 .5 .5 U .504 .508 mg/L mg/L 100.8 101.6 85 115 .5 .79 20 Nickel, dissolved M200.7 ICP M200.7 ICP M200.7 ICP M200.7 ICP M2017 QC Sample Found Units Rec Lower Upper RPD Limit Question WG311221 VWG311221 ICV 10/11/11 13:48 II110816-1 2.002 2.087 mg/L 104.2 95 105 V V WG311221ICV ICV 10/11/11 13:48 II11006-5 .5 U mg/L 104.2 95 105 V V WG311221ICB ICB 10/11/11 13:54 U mg/L 0 mg/L 97.2 85 115 V V UG311221LFB LFB 10/11/11 14:07 II11006-5 .5 U .486 mg/L 97.2 85 115 1.21 20 V Uigitigitigitigitigitigitigitigitigitigi	ual
L91063-01ASD ASD 10/11/11 14:16 II11006-5 .5 U .508 mg/L 101.6 85 115 0.79 20 Nickel, dissolved M200.7 ICP ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Question WG311221 ICV 10/11/11 13:48 II110816-1 2.002 2.087 mg/L 104.2 95 105 5 486 95 105 5 486 95 105 5 5 101 101.21 <td>ual</td>	ual
Nickel, dissolved M200.7 ICP ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qu WG311221 WG311221ICV ICV 10/11/11 13:54 II110816-1 2.002 2.087 mg/L 104.2 95 105 486 497 -0.03 0.03 493 <td>ual</td>	ual
ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qu WG311221 WG3112211CV ICV 10/11/11 13:48 II110816-1 2.002 2.087 mg/L 104.2 95 105 - - - - - 0.03 0.03 - - - - 0.03 0.03 - - - 0.03 0.03 - - - 0.03 0.03 - - - 0.03 0.03 - - 0.03 0.03 - - 0.03 0.03 - - 0.03 0.03 - - 0.03 0.03 - - 0.03 0.03 - - 0.03 0.03 - - 0.03 0.03 - - 105 - 105 1.21 20 103 0.11/11/11/11/11/11/11/11/11/11/11/11/11/	ual
WG311221 ICV 10/11/11 13:48 II10816-1 2.002 2.087 mg/L 104.2 95 105 WG311221ICV ICB 10/11/11 13:54 U mg/L -0.03 0.03 0.03 WG311221LFB ICB 10/11/11 13:54 U mg/L -0.03 0.03 0.03 WG311221LFB ICB 10/11/11 14:07 II11006-5 .5 .486 mg/L 97.2 85 115 L91063-01AS AS 10/11/11 14:13 II11006-5 .5 U .494 mg/L 98.8 85 115 L91063-01ASD ASD 10/11/11 14:16 II111006-5 .5 U .5 mg/L 100 85 115 1.21 20 Nitrate/Nitrite as N M353.2 - H2SO4 preserved M353.2 - H2SO4 preserved V AcZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qu WG311618 U Type Analyzed PCN/SCN QC Sample Found Units<	ual
WG311221ICV WG311221ICB WG311221ICB LFB ICV 10/11/11 13:48 10/11/11 13:54 II10816-1 2.002 2.087 mg/L mg/L 104.2 95 105 105 WG311221ICB WG311221LFB L91063-01AS L91063-01ASD ICB 10/11/11 14:07 II11006-5 .5 .486 mg/L 97.2 85 115 L91063-01AS L91063-01ASD AS 10/11/11 14:13 II11006-5 .5 U .494 mg/L 98.8 85 115 L91063-01ASD L91063-01ASD ASD 10/11/11 14:16 II11006-5 .5 U .494 mg/L 98.8 85 115 L91063-01ASD L91063-01ASD ASD 10/11/11 14:16 II11006-5 .5 U .494 mg/L 100 85 115 .401 L91063-01ASD L91063-01ASD ASD 10/11/11 14:16 II11006-5 .5 U .5 mg/L 100 85 115 1.21 20 Nitrate/Nitrite as N M353.2 - H2SO4 preserved M353.2 - H2SO4 Penserved Imit Qu M353.2 Number of the second s	
WG311221ICB ICB 10/11/11 13:54 U mg/L -0.03 0.03 WG311221LFB LFB 10/11/11 14:07 II11006-5 .5 .486 mg/L 97.2 85 115	
WG311221LFB LFB 10/11/11 14:07 II11006-5 .5 .486 mg/L 97.2 85 115 L91063-01AS AS 10/11/11 14:13 II111006-5 .5 U .494 mg/L 98.8 85 115 L91063-01ASD ASD 10/11/11 14:16 II111006-5 .5 U .494 mg/L 98.8 85 115 L91063-01ASD ASD 10/11/11 14:16 II111006-5 .5 U .5 mg/L 100 85 115 1.21 20 Nitrate/Nitrite as N M353.2 - H2SO4 preserved M353.2 - H2SO4 preserved Rec Lower Upper RPD Limit Question MC2 ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Question WG311618 L	
L91063-01AS AS 10/11/11 14:13 II11006-5 .5 U .494 mg/L 98.8 85 115 L91063-01ASD ASD 10/11/11 14:16 II111006-5 .5 U .5 mg/L 100 85 115 1.21 20 Nitrate/Nitrite as N M353.2 - H2SO4 preserved ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qu WG311618 V	
L91063-01ASD ASD 10/11/11 14:16 II111006-5 .5 U .5 mg/L 100 85 115 1.21 20 Nitrate/Nitrite as N ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qu WG311618 V	
Nitrate/Nitrite as N M353.2 - H2SO4 preserved ACZ ID Type Analyzed PCN/SCN QC Sample WG311618	
ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qu WG311618	
WG311618	
	ual
WG311618ICV ICV 10/14/11 20:21 WI111001-2 2.416 2.378 mg/L 98.4 90 110	
WG311618ICB ICB 10/14/11 20:23 U mg/L -0.06 0.06	
WG311622	
WG311622LFB1 LFB 10/14/11 22:57 WI110813-3 2 2.049 mg/L 102.5 90 110	
L91093-03AS AS 10/14/11 23:16 WI110813-3 2 .45 2.452 mg/L 100.1 90 110	
L91093-04DUP DUP 10/14/11 23:18 .75 .745 mg/L 0.7 20	
WG311622LFB2 LFB 10/14/11 23:40 WI110813-3 2 2.008 mg/L 100.4 90 110	
Residue, Filterable (TDS) @180C SM2540C	
ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qu	ual
WG311155	
WG311155PBW PBW 10/07/11 15:33 10 mg/L -20 20	
WG311155LCSW LCSW 10/07/11 15:33 PCN37647 260 264 mg/L 101.5 80 120	
L91123-01DUP DUP 10/07/11 15:42 3170 3166 mg/L 0.1 20	
WG311172	
WG311172PBW PBW 10/08/11 13:14 U mg/L -20 20	
WG311172LCSW LCSW 10/08/11 13:15 PCN37648 260 252 mg/L 96.9 80 120	
L91150-04DUP DUP 10/08/11 13:45 720 728 mg/L 1.1 20	
Selenium, dissolved M200.8 ICP-MS	
ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qu	ual
WG311607	
WG311607ICV ICV 10/15/11 2:47 MS111007-2 .05 .05258 mg/L 105.2 90 110	
WG311607ICB ICB 10/15/11 2:51 U mg/L -0.0003 0.0003	
WG311607LFB LFB 10/15/11 2:55 MS111006-3 .05005 .04878 mg/L 97.5 85 115	
L90986-02AS AS 10/15/11 3:06 MS111006-3 .1001 U .09814 mg/L 98 70 130	
L90986-02ASD ASD 10/15/11 3:09 MS111006-3 .1001 U .09464 mg/L 94.5 70 130 3.63 20	

(800) 334-5493

Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS03X3

Sulfate			D516-02 -	Turbidim	etric								
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG311456													
WG311456ICB	ICB	10/13/11 8:29				U	mg/L		-3	3			
WG311456ICV	ICV	10/13/11 8:29	WI111012-2	20		19.6	mg/L	98	90	110			
WG311456LFB	LFB	10/13/11 9:15	WI110714-1	9.99		9.5	mg/L	95.1	90	110			
L91092-03DUP	DUP	10/13/11 9:43			2000	1990	mg/L				0.5	20	
L91092-03AS	AS	10/13/11 9:43	SO4TURB10	10	2000	2000	mg/L	0	90	110			M
Thallium, disso	lved		M200.8 IC	P-MS									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG311607													
WG311607ICV	ICV	10/15/11 2:47	MS111007-2	.05		.05404	mg/L	108.1	90	110			
WG311607ICB	ICB	10/15/11 2:51				U	mg/L		-0.0003	0.0003			
WG311607LFB	LFB	10/15/11 2:55	MS111006-3	.0501		.0524	mg/L	104.6	85	115			
L90986-02AS	AS	10/15/11 3:06	MS111006-3	.1002	U	.10724	mg/L	107	70	130			
L90986-02ASD	ASD	10/15/11 3:09	MS111006-3	.1002	U	.10372	mg/L	103.5	70	130	3.34	20	



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

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L91123-01	WG311464	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).
	WG311456	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
L91123-02	WG311464	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).
	WG311172	Residue, Filterable (TDS) @180C	SM2540C	N1	See Case Narrative.
	WG311456	Sulfate	D516-02 - Turbidimetric	М3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.



ACZ Project ID: L91123

No certification qualifiers associated with this analysis

Sample Receipt

FMI Gold & Copper - Sierrita ZS03X3	ACZ Proje Date Rece		L91123 10/07/2011 09:18		
	Receive	eceived By:		ksj	
	Date Pr	inted:	10)/7/2011	
Receipt Verification					
		YES	NO	NA	
1) Does this project require special handling procedures such as CLP protocol?				Х	
2) Are the custody seals on the cooler intact?		Х			
3) Are the custody seals on the sample containers intact?				Х	
4) Is there a Chain of Custody or other directive shipping papers present?		Х			
5) Is the Chain of Custody complete?		Х			
6) Is the Chain of Custody in agreement with the samples received?		Х			
7) Is there enough sample for all requested analyses?		Х		=	
8) Are all samples within holding times for requested analyses?		Х		=	
9) Were all sample containers received intact?		Х			
10) Are the temperature blanks present?				Х	
11) Are the trip blanks (VOA and/or Cyanide) present?			L	Х	
12) Are samples requiring no headspace, headspace free?			L	Х	
13) Do the samples that require a Foreign Soils Permit have one?				Х	

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 (℃)	Rad (µR/hr)
3484	1.3	15

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

Notes

FMI Gold & Copper - Sierrita

ZS03X3

Sample Receipt

ACZ Project ID:	L91123
Date Received:	10/07/2011 09:18
Received By:	ksj
Date Printed:	10/7/2011

Sample Container Preservation

SAMPLE C	LIENT ID		R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	0 < 2	T >12	N/A	RAD	ID
L91123-01 N	MH-28		Y		Y			1					
L91123-02 N	1H-29			Y		Y							
Sample Container Preservation Legend													
Abbreviation Description Container Type		e Pr	Preservative/Limits										
R	Raw/Nitric	RED		pН	pH must be < 2								
В	Filtered/Sulfuric	BLUE		pН	pH must be < 2								
BK	Filtered/Nitric	BLACK		pН	pH must be < 2								
G	Filtered/Nitric	GREEM	١	pН	pH must be < 2								
0	Raw/Sulfuric	ORANO	ЭE	pН	l must be	< 2							
Р	Raw/NaOH	PURPL	.E	pН	l must be	> 12 *							
т	Raw/NaOH Zinc Acetate	TAN		pН	l must be	> 12							
Y	Raw/Sulfuric	YELLO	W	pН	pH must be < 2								
YG	Raw/Sulfuric	YELLO	W GLA	SS pH	l must be	< 2							
N/A	No preservative needed	Not app	olicable										
RAD	Gamma/Beta dose rate	Not app	olicable	mu	ust be < 2	250 µR/	hr						

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

2773 Downhill Drive Steambo Report to:					-							
Name: Aaron Hilshorst			Addre									
Company: Freeport-McM	oRan Sierrita Inc.		Green Valley, AZ 85614									
E-mail: aaron_hilshorst@f	mi.com		Telephone: 520-393-2601									
Copy of Report to:								_				
Name: Ben Daigneau			E-mail: bdaigneau@clearcreekassociates.com									
Company: Clear Creek As	sociates		Telephone: 520-622-3222									
Invoice to:			,									
Name:			Address:									
Company:												
E-mail:			Telep									
If sample(s) received past he analysis before expiration, s				•	ete			YES NO				
If "NO" then ACZ will contact	ct client for further ins	struction. If neithe	er "YES'	' nor "NC								
is indicated, ACZ will procee			HT is ex	cpired, ar	nd data wi	li be qua	lified.					
Are samples for CO DW Con If yes, please include state f								YES NO	×			
PROJECT INFORMATION			·	ANALY:	ses reou	ESTED (attaet) a			number		
Quote #:												
Project/PO #: Coming So		lers										
Reporting state for complia			of Containers	er								
Sampler's Name:			้อื่	Ť								
Are any samples NRC lice		IS NO	to to	Quarterly								
SAMPLE IDENTIFICATI	ON DATE.T	IML Matrix		 +								
MH-28	10/4/11:11:		3	×		_						
MH-29	10/4/11:08:4	49 GW	3	×		_						
							<u> </u>	+	==			
		_		+								
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				+			+					
<u>.</u>	<u> </u>											
			<u> </u>					1				
<u> </u>			<u> </u>					+				
Matrix SW (Surface Water)) · GW (Ground Water) · W	WW (Waste Water) - D'	U (Drinki	ing Water)	· SL (Sludge) · SO (So	il) · OL (O	il) · Other	(Specify)			
8 MARKS												
o py of report to Ben Da	ignosu contains onl	v "SOA" results a	with Of	C S	0.00							
	igneau contains on	y 504 lesuits v	witti Q	c summ	iaiy.							
PS Tracking #1Z 867 7.	E4 23 1000 7778											
ĴŪ Š												
	Plages refer to AC7	e terme & conditiv	nne loc	ated on 1		io eino n	t this (:(16 1				
	Please refer to ACZ'		ons loc		the revers		f this Co	JC.	DA "I	_: ? IMF		
	. BY:	's terms & conditio DA II HATE) ~6-((」を:の						JC.	DA 1	_: ? IMI		

FRMAD050.01.15.09

White - Return with sample. Yellow - Retain for your records.

OPage014 of 14



November 04, 2011

Report to: Aaron Hilshorst FMI Gold & Copper - Sierrita 6200 W. Duval Mine Rd. Green Valley, AZ 85614 Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS000007L ACZ Project ID: L91570

Aaron Hilshorst:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 28, 2011. This project has been assigned to ACZ's project number, L91570. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L91570. 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 04, 2011. 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.

S. Habernet

Scott Habermehl has reviewed and approved this report.







Project ID:	ZS0000007L
Sample ID:	MO-2007-1A

ACZ Sample ID: **L91570-01** Date Sampled: 10/06/11 08:52 Date Received: 10/28/11 Sample Matrix: Ground Water

Wet Chemistry									
Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	16.143			mg/L	0.5	2.5	11/01/11 2:39	сср



Project ID:	ZS0000007L
Sample ID:	MO-2007-1C

ACZ Sample ID: **L91570-02** Date Sampled: 10/06/11 10:02 Date Received: 10/28/11 Sample Matrix: Ground Water

Wet Chemistry									
Parameter	EPA Method	Result	Qual >	KQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	393.94			mg/L	5	25	11/01/11 3:00	сср



Project ID:	ZS0000007L
Sample ID:	MO-2007-1B

ACZ Sample ID: **L91570-03** Date Sampled: 10/06/11 11:39 Date Received: 10/28/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	604.67		mg/L	5	25	11/01/11 13:32	2 ccp



Project ID:	ZS0000007L
Sample ID:	MO-2007-6B

ACZ Sample ID: L91570-04 Date Sampled: 10/06/11 13:51 Date Received: 10/28/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	55.342		mg/L	0.5	2.5	11/01/11 4:04	сср



Project ID:	ZS0000007L
Sample ID:	MO-2007-6A

ACZ Sample ID: L91570-05 Date Sampled: 10/06/11 14:48 Date Received: 10/28/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	34.109		mg/L	0.5	2.5	11/01/11 4:46	сср



Project ID:	ZS0000007L
Sample ID:	MO-2007-4B

ACZ Sample ID: **L91570-06** Date Sampled: 10/05/11 11:20 Date Received: 10/28/11 Sample Matrix: Ground Water

Wet Chemistry									
Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	34.194			mg/L	0.5	2.5	11/01/11 5:07	сср



Project ID:	ZS0000007L
Sample ID:	MO-2007-4C

ACZ Sample ID: **L91570-07** Date Sampled: 10/05/11 11:22 Date Received: 10/28/11 Sample Matrix: Ground Water

Wet Chemistry									
Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	89.355			mg/L	0.5	2.5	11/01/11 5:28	сср



Project ID:	ZS0000007L
Sample ID:	MO-2007-3B

ACZ Sample ID: **L91570-08** Date Sampled: 10/05/11 16:30 Date Received: 10/28/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	37.822		mg/L	0.5	2.5	11/01/11 6:31	сср



Project ID:	ZS0000007L
Sample ID:	MO-2007-3C

ACZ Sample ID: **L91570-09** Date Sampled: 10/05/11 15:57 Date Received: 10/28/11 Sample Matrix: Ground Water

Wet Chemistry									
Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	96.818			mg/L	2.5	12.5	11/01/11 6:53	сср



Project ID:	ZS0000007L
Sample ID:	MO-2007-4A

ACZ Sample ID: **L91570-10** Date Sampled: 10/05/11 10:06 Date Received: 10/28/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	34.470		mg/L	0.5	2.5	11/01/11 7:14	сср



Project ID:	ZS0000007L
Sample ID:	DUP20111005A

ACZ Sample ID: **L91570-11** Date Sampled: 10/05/11 00:00 Date Received: 10/28/11 Sample Matrix: Ground Water

Wet Chemistry									
Parameter	EPA Method	Result	Qual 2	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	33.360			mg/L	0.5	2.5	11/01/11 7:35	сср

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS000007L
Sample ID:	DUP20111006A

ACZ Sample ID: **L91570-12** Date Sampled: 10/06/11 00:00 Date Received: 10/28/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	614.84		mg/L	5	25	11/01/11 14:14	4 сср



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

Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

Inorganic QC Summary

ZS000007L

Project ID:

FMI Gold & Copper - Sierrita

Sulfate	Sulfate M300.0 - Ion Chromatography												
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG312206													
WG312206ICV1	ICV	10/25/11 9:27	WI111003-1	49.95		50.921	mg/L	101.9	90	110			
WG312206ICB	ICB	10/25/11 9:48				U	mg/L		-1.5	1.5			
WG312575													
WG312575LFB	LFB	10/31/11 22:05	WI110713-2	30		31.053	mg/L	103.5	90	110			
L91508-01DUP	DUP	10/31/11 22:47			42.894	42.756	mg/L				0.3	20	
L91508-02AS	AS	10/31/11 23:29	WI110713-2	30	47.347	76.088	mg/L	95.8	90	110			
L91570-04AS	AS	11/01/11 4:25	WI110713-2	30	55.342	84.071	mg/L	95.8	90	110			
L91570-03DUP	DUP	11/01/11 13:53			604.67	595.82	mg/L				1.5	20	



(800) 334-5493

ACZ Project ID: L91570

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM PARAMETER	METHOD	QUAL DESCRIPTION	

No extended qualifiers associated with this analysis



ACZ Project ID: L91570

No certification qualifiers associated with this analysis

Sample Receipt

FMI Gold & Copper - Sierrita ZS000007L	ACZ Proje Date Rece			L91570 1 09:38
	Receive	ed By:		ksj
	Date Pr	inted:	10/2	28/2011
Receipt Verification				
		YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?				Х
2) Are the custody seals on the cooler intact?		Х		
3) Are the custody seals on the sample containers intact?				Х
4) Is there a Chain of Custody or other directive shipping papers present?		Х		
5) Is the Chain of Custody complete?		Х		
6) Is the Chain of Custody in agreement with the samples received?		Х		
7) Is there enough sample for all requested analyses?		Х		
8) Are all samples within holding times for requested analyses?		Х		
9) Were all sample containers received intact?		Х		
10) Are the temperature blanks present?				Х
11) Are the trip blanks (VOA and/or Cyanide) present?				Х
12) Are samples requiring no headspace, headspace free?				Х
13) Do the samples that require a Foreign Soils Permit have one?				Х

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 (℃)	Rad (µR/hr)
2989	1.8	15

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

Notes

FMI Gold & Copper - Sierrita

ZS000007L

Sample Receipt

ACZ Project ID:	L91570
Date Received:	10/28/2011 09:38
Received By:	ksj
Date Printed:	10/28/2011

Sample Container Preservation

						-						
SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	0 < 2	T >12	N/A	RAD	ID
L91570-01	MO-2007-1A									Х		
L91570-02	MO-2007-1C									Х		
L91570-03	MO-2007-1B									Х		
L91570-04	MO-2007-6B									Х		
L91570-05	MO-2007-6A									Х		
L91570-06	MO-2007-4B									Х		
L91570-07	MO-2007-4C									Х		
L91570-08	MO-2007-3B									Х		
L91570-09	MO-2007-3C									Х		
L91570-10	MO-2007-4A									Х		
L91570-11	DUP20111005A									Х		
L91570-12	DUP20111006A									Х		
Sample C	Container Preservation Lege	end										
Abbreviatio	n Description	Container Type	Pr	eservativ	ve/Limit	ts						
R	Raw/Nitric	RED	pН	must be	e < 2							
В	Filtered/Sulfuric	BLUE	pН	must be	e < 2							
BK	Filtered/Nitric	BLACK	pН	must be	e < 2							
G	Filtered/Nitric	GREEN	pН	must be	e < 2							
0	Raw/Sulfuric	ORANGE	pН	must be	e < 2							
Р	Raw/NaOH	PURPLE	pН	must be	> 12 *							
Т	Raw/NaOH Zinc Acetate	TAN	pН	must be	> 12							
Y	Raw/Sulfuric	YELLOW	pН	must be	< 2							
YG	Raw/Sulfuric	YELLOW GLAS	S pH	must be	< 2							
N/A	No preservative needed	Not applicable										

Not applicable must be < 250 μ R/hr

* pH check performed by analyst prior to sample preparation

Gamma/Beta dose rate

Sample IDs Reviewed By: ksj

RAD

Report to. Name: Aaron Hilshorst Company: Freeport-McM E-mail: aaron_hilshorst@				15							
Company: Freeport-McM											
			Addre	ss: 620)0 W. E	uval N	line R	load			
E-mail: aaron_hilshorst@	AoRan Sierrita Inc.			Gre	en Val	ley, Az	Z 8561	4			
)fmi.com		Telep	hone:	520-393	3-2601					
Copy of Report to											
Name:		E-mai	l:								
Company:	Company:										
Invoice to:											
Name:			Addre	SS:							
Company:											
E-mail:			Telep	hone:							
analysis before expiration,	holding time (HT), or if insuffici , shall ACZ proceed with reques	sted short	HT ana	lyses?					YES NO		
	act client for further instruction eed with the requested analyse					will be	qualif	iad			
Are samples for CO DW Co		3, 670		.pii 00, 1		WIII 23	quan	164.	YES		
· ·	o forms. Results will be reported	d to PQL.							NO	×	
PROJECT INFORMATIC	DN				′SES RE	OUEST	ED (of	tach lis	st or use	e quote	numbecc
Quote #:				<u> </u> ୍ଧ							
Project/PO #: ZS00000)7L		of Containers			- 1					
Reporting state for compl	liance testing:		ntai	ULFATE							
Sampler's Name:			ုပ္ရ								
	ensable material? Yes No		# of								
SAMPLE IDENTIFICA	TION DATE: TIME	Matrix		S							
MO-2007-1A	10/06/11 : 0852	GW	1	×							
MO-2007-1C	10/06/11 : 1002	GW	1	×							
MO-2007-1B	10/06/11 : 1139	GW	1	×							
MO-2007-6B	10/06/11 : 1351	GW	1	×							
MO-2007-6A	10/06/11 : 1448	GW	1	×							
MO-2007-4B	10/05/11 : 1120	GW	1	×							
MO-2007-4C	10/05/11 : 1122	GW	1	×							
MO-2007-3B	10/05/11 : 1630	GW	1	×							
MO-2007-3C	10/05/11 : 1557	GW	1	×							
MO-2007-4A	10/05/11 : 1006	GW	1	×							

_

AGZ Lab	oratories, Ind	c. (2	15	<i>)</i> C	~	С	HAIN	l of	CUS	STODY
	Springs, CO 80487 (800)) 334-5493		("	/ -						
Report to:			T								
Name: Aaron Hilshorst			Addre	ess: 620	00 W. D	uval N	Mine R	load			
Company: Freeport-McMoF				een Vall			4				
E-mail: aaron_hilshorst@fm	i.com		Telep	hone:	520-393	3-2601					·
Copy of Report to:											
Name:			E-ma	il:							
Company:			Telep	hone:							
Invoice to:		 									
Name:			Addre	ess:							
Company:											
E-mail:			Telep	hone:							<u> </u>
If sample(s) received past hold	ling time (HT), or if insufi	icient HT rer			lete				YES		
analysis before expiration, sha	• • •				·				NO		
If "NO" then ACZ will contact of									-		
is indicated, ACZ will proceed		ses, even if	HT is e	xpired, a	and data	will be	e qualifi	ied.			
Are samples for CO DW Comp	-								YES		
If yes, please include state for PROJECT INFORMATION	ms. Results will be repoi	rted to PQL.		ANALY	ZSES RE	QUES	IFD (at	tach list	NO	× auote	numberi
Quote #:				S							
Project/PO #: ZS000007L			srs								
Reporting state for compliant			of Containers								
	je testing.		out								
Sampler's Name:			5								
Are any samples NRC licens SAMPLE IDENTIFICATIO		Matrix	#	SULFATE							
DUP20111005A	10/05/11	GW	1	×							
DUP20111006A	10/06/11	GW	1	×							
DOI 20111000A	10/00/11										
		<u> </u>	<u> </u>								
			┨────								
								\vdash			
			L								
Matrix SW (Surface Water)	GW (Ground Water) · WW (Wa	aste Water) · D	N (Drink	ing Water	r) · SL (Slu	ıdge) · S	60 (Soil)	OL (Oil)	• Other	(Specify)	
REMARKS											
UPS Tracking # 1Z 867 7E	4 23 1000 7787										
5											
	ease refer to ACZ's tern	ne & conditiu	ne loo	ated on	the rev	eree o	ide of f	hie COC	•		
RELINQUISHED F		ns & condition	AIS 100		RECEIV				<i></i>	DATE	TIM
			ſ								
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UPS				1	Ŧ	2	· · · · · · · · · · · · · · · · · · ·		10.0	<u>98.1</u>	14:28
			<u> </u>								
FRMAD050.01.15.09	White - Return with sa	mple. Yelle	ow - Re	tain for y	our reco	rds.					



December 02, 2011

Report to: Aaron Hilshorst FMI Gold & Copper - Sierrita 6200 W. Duval Mine Rd. Green Valley, AZ 85614 Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS0000012F ACZ Project ID: L91977

Aaron Hilshorst:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 18, 2011. This project has been assigned to ACZ's project number, L91977. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L91977. 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 January 02, 2012. 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.

S. Habermehl

Scott Habermehl has reviewed and approved this report.







Project ID:	ZS0000012F
Sample ID:	M-8

ACZ Sample ID: **L91977-01** Date Sampled: 11/17/11 08:49 Date Received: 11/18/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XC	Q Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	84.577		mg/L	0.5	2.5	11/29/11 18:44	t ccp



Project ID: ZS0000012F Sample ID: M-20

ACZ Sample ID: **L91977-02** Date Sampled: 11/17/11 10:06 Date Received: 11/18/11 Sample Matrix: Ground Water

Wet Chemistry									
Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	1686.85			mg/L	25	125	11/29/11 19:05	5 сср



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

Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (A

Inorganic QC Summary

(800) 334-5493

FMI Gold & Copper - Sierrita

Project ID:

ZS0000012F

Sulfate	Sulfate M300.0 - Ion Chromatography												
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG313886													
WG313886ICV	ICV	11/18/11 13:56	WI111003-14	49.95		50.309	mg/L	100.7	90	110			
WG313886ICB	ICB	11/18/11 14:17				U	mg/L		-1.5	1.5			
WG314303													
WG314303LFB1	LFB	11/29/11 16:16	WI111109-1	30		30.047	mg/L	100.2	90	110			
L91971-01DUP	DUP	11/29/11 16:58			214.769	213.875	mg/L				0.4	20	
L91971-02AS	AS	11/29/11 17:41	WI111109-1	150	219.651	364.905	mg/L	96.8	90	110			
WG314303LFB2	LFB	11/30/11 2:28	WI111109-1	30		29.475	mg/L	98.3	90	110			



(800) 334-5493

ACZ Project ID: L91977

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM PARAMETER	METHOD	QUAL DESCRIPTION	

No extended qualifiers associated with this analysis



ACZ Project ID: L91977

No certification qualifiers associated with this analysis

AGZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

FMI Gold & Copper - Sierrita ZS0000012F	ACZ Proje Date Rec		1/18/201	L91977 1 10:06
	Receive	ed By:		ksj
	Date Pr	inted:	11/2	21/2011
Receipt Verification				
		YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?				Х
2) Are the custody seals on the cooler intact?		Х		
3) Are the custody seals on the sample containers intact?				Х
4) Is there a Chain of Custody or other directive shipping papers present?		Х		
5) Is the Chain of Custody complete?		Х		
6) Is the Chain of Custody in agreement with the samples received?		Х		
7) Is there enough sample for all requested analyses?		Х		
8) Are all samples within holding times for requested analyses?		Х		
9) Were all sample containers received intact?		Х		
10) Are the temperature blanks present?				Х
11) Is the trip blank for Cyanide present?				Х
12) Is the trip blank for VOA present?				Х

13) Are samples requiring no headspace, headspace free?

14) Do the samples that require a Foreign Soils Permit have one?

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 (℃)	Rad (µR/hr)
3043	2.1	18

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

Notes

Х

Х

AGZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita

ZS0000012F

Sample Receipt

ACZ Project ID: L91977 Date Received: 11/18/2011 10:06 Received By: ksj Date Printed: 11/21/2011

Sample Container Preservation

SAMPLE CLIENT ID		R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	0 < 2	T >12	N/A	RAD	ID
L91977-01 M-8							I.			Х		
L91977-02 M-20										Х		
Sample Co	ntainer Preservation Lege	end										
Abbreviation	Description	Contai	ner Type	e Pre	eservati	ve/Limit	s					
R	Raw/Nitric	RED		pН	must be	e < 2						
В	Filtered/Sulfuric	BLUE		pН	pH must be < 2							
BK	Filtered/Nitric			pH must be < 2								
G	Filtered/Nitric	GREEM	N	pH must be < 2								
0	Raw/Hydrochloric	ORAN	pН	pH must be < 2								
Р	Raw/NaOH	PURPL	PURPLE			pH must be > 12 *						
т	Raw/NaOH Zinc Acetate	TAN		pН	pH must be > 12							
Y	Raw/Sulfuric	YELLO	W	pН	pH must be < 2							
YG Raw/Sulfuric			W GLAS	SS pH	S pH must be < 2							
N/A	No preservative needed	Not ap	olicable									
RAD	Gamma/Beta dose rate	Not ap	olicable	mu	st be <	250 µR/h	nr					

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By:

Name: Aaron Hilshorst Company: Freeport-McM E-mail: aaron_hilshorst@ Copy of Report to. Name: Ben Daigneau Company: Clear Creek A hvorce to Name: Company: E-mail:	fmi.com		Telep	Gr	00 W. Duv een Valley 520-648-8	, AZ 8561					
E-mail: aaron_hilshorst@ Copy of Report to. Name: Ben Daigneau Company: Clear Creek A Invoice to Name: Company:	fmi.com						4				
Copy of Report to. Name: Ben Daigneau Company: Clear Creek A Invoice to Name: Company:				hone:	520-648-8	844					
Name: Ben Daigneau Company: Clear Creek A Invoice to Name: Company:	ssociates		E-ma								
Company: Clear Creek A hyence to Name: Company:	ssociates		E-ma								
Company: Clear Creek A hyence to Name: Company:	ssociates			il: bdai	gneau@cle	arcreekas	sociate	s.com			
Name: Company:			Telep	hone:	520-622-3	222					
Name: Company:				÷							
Company:			Addre	200 [.]							
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		-	Telen	hone:							
	olding time (HT), or if insufficie	l ent HT rea	•		lete			YES			
analysis before expiration,	shall ACZ proceed with request	ted short	HT ana	alyses?				NO			
	et client for further instruction. The with the requested analyses					ll he qualif	ied				
Are samples for CO DW Co			111 13 6.	xpi100,		n be quan		YES			
	forms. Results will be reported	to PQL.						NO	×		
PROJECTINEORMATIO	N				YBES REOU	ÆSiED (a	ttach lis	t or asi	e quote	number	
Quote #:		6	EPA 375								
Project/PO #: ZS000001	4	Ler.	<u>d</u>						1		
Reporting state for compli	4	ntaj	by EPA 300 or						1		
Sampler's Name:			of Containers	EPA						1	
	e any samples NRC licensable material? Yes No			SO4 by						1	
SAMPLE IDENTIFICAT					-	_					
M-8	11/17/2011;08:49	GW	1	×	┨──┤──	_					
M-20	11/17/2011 ; 10:06	GW		×							
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Matrix SW (Surface Wate	r) · GW (Ground Water) · WW (Waste	Water) · D	U (Drink	ing Wate	r) · SL (Sludge	a) · SO (Soil)	· OL (Oil)	·Other	(Specify)		
REMARKS							. ,				
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FRMAD050.01.15.09

7

White - Return with sample. Yellow - Retain for your records.

Page-100 f 10



December 02, 2011

Report to: Aaron Hilshorst FMI Gold & Copper - Sierrita 6200 W. Duval Mine Rd. Green Valley, AZ 85614 Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS0000012F ACZ Project ID: L91978

Aaron Hilshorst:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 18, 2011. This project has been assigned to ACZ's project number, L91978. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L91978. 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 January 02, 2012. 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.

S. Habermehl

Scott Habermehl has reviewed and approved this report.







Inorganic Analytical Results

FMI Gold & Copper - Sierrita

Project ID:	ZS0000012F
Sample ID:	M-10

ACZ Sample ID: **L91978-01** Date Sampled: 11/16/11 09:52 Date Received: 11/18/11 Sample Matrix: Ground Water

Metals Analysis								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Antimony, dissolved	M200.8 ICP-MS		U	mg/L	0.0004	0.002	11/30/11 10:22	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0061		mg/L	0.0005	0.002	11/30/11 10:22	pmc
Beryllium, dissolved	M200.8 ICP-MS		U	mg/L	0.0001	0.0005	11/30/11 10:22	pmc
Cadmium, dissolved	M200.8 ICP-MS	0.0002	В	mg/L	0.0001	0.0005	11/30/11 10:22	pmc
Chromium, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	11/29/11 11:25	mfm
Cobalt, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	11/29/11 11:25	mfm
Copper, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	11/29/11 11:25	mfm
Lead, dissolved	M200.8 ICP-MS	0.0006		mg/L	0.0001	0.0005	11/30/11 10:22	pmc
Magnesium, dissolved	M200.7 ICP	12.1		mg/L	0.2	1	11/29/11 11:25	mfm
Molybdenum, dissolve	d M200.7 ICP	0.02	В	mg/L	0.01	0.05	11/29/11 11:25	mfm
Nickel, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	11/29/11 11:25	mfm
Selenium, dissolved	M200.8 ICP-MS	0.0011		mg/L	0.0001	0.0003	11/30/11 10:22	pmc
Thallium, dissolved	M200.8 ICP-MS		U	mg/L	0.0001	0.0005	11/30/11 10:22	pmc
Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Fluoride	SM4500F-C	0.7	*	mg/L	0.1	0.5	11/29/11 12:44	las
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.73		mg/L	0.02	0.1	11/30/11 21:09	pjb
Residue, Filterable (TDS) @180C	SM2540C	430		mg/L	10	20	11/21/11 12:49	cra
Sulfate	D516-02 - Turbidimetric	162	*	mg/L	5	30	11/30/11 18:53	mpb



Project ID: ZS0000012F Sample ID: M-9

Inorganic Analytical Results

ACZ Sample ID:	L91978-02
Date Sampled:	11/16/11 14:46
Date Received:	11/18/11
Sample Matrix:	Ground Water

Metals Analysis								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Antimony, dissolved	M200.8 ICP-MS		U	mg/L	0.0004	0.002	11/30/11 10:25	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0054		mg/L	0.0005	0.002	11/30/11 10:25	pmc
Beryllium, dissolved	M200.8 ICP-MS		U	mg/L	0.0001	0.0005	11/30/11 10:25	pmc
Cadmium, dissolved	M200.8 ICP-MS		U	mg/L	0.0001	0.0005	11/30/11 10:25	pmc
Chromium, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	11/29/11 11:28	mfm
Cobalt, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	11/29/11 11:28	mfm
Copper, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	11/29/11 11:28	mfm
Lead, dissolved	M200.8 ICP-MS	0.0007		mg/L	0.0001	0.0005	11/30/11 10:25	pmc
Magnesium, dissolved	M200.7 ICP	12.8		mg/L	0.2	1	11/29/11 11:28	mfm
Molybdenum, dissolve	d M200.7 ICP	0.02	В	mg/L	0.01	0.05	11/29/11 11:28	mfm
Nickel, dissolved	M200.7 ICP		U	mg/L	0.01	0.05	11/29/11 11:28	mfm
Selenium, dissolved	M200.8 ICP-MS	0.0030		mg/L	0.0001	0.0003	11/30/11 10:25	pmc
Thallium, dissolved	M200.8 ICP-MS		U	mg/L	0.0001	0.0005	11/30/11 10:25	pmc
Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Fluoride	SM4500F-C	0.3	В *	mg/L	0.1	0.5	11/29/11 12:55	las
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.89		mg/L	0.02	0.1	11/30/11 21:10	pjb
Residue, Filterable (TDS) @180C	SM2540C	360		mg/L	10	20	11/21/11 12:50	cra
Sulfate	D516-02 - Turbidimetric	99	*	mg/L	5	30	11/30/11 18:53	mpb



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

Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (A

(800) 334-5493

Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS0000012F

Antimony, disso	olved		M200.8 IC	P-MS									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314382													
WG314382ICV	ICV	11/30/11 8:53	MS111007-2	.02		.02036	mg/L	101.8	90	110			
WG314382ICB	ICB	11/30/11 8:56				U	mg/L		-0.0012	0.0012			
WG314382LFB	LFB	11/30/11 8:59	MS111006-3	.01		.01011	mg/L	101.1	85	115			
L91974-08AS	AS	11/30/11 9:48	MS111006-3	.01	U	.01079	mg/L	107.9	70	130			
L91974-08ASD	ASD	11/30/11 9:51	MS111006-3	.01	U	.01119	mg/L	111.9	70	130	3.64	20	
Arsenic, dissolv	ved		M200.8 IC	P-MS									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314382													
WG314382ICV	ICV	11/30/11 8:53	MS111007-2	.05		.04989	mg/L	99.8	90	110			
WG314382ICB	ICB	11/30/11 8:56				U	mg/L		-0.0015	0.0015			
WG314382LFB	LFB	11/30/11 8:59	MS111006-3	.05005		.04803	mg/L	96	85	115			
L91974-08AS	AS	11/30/11 9:48	MS111006-3	.05005	U	.05763	mg/L	115.1	70	130			
L91974-08ASD	ASD	11/30/11 9:51	MS111006-3	.05005	U	.05934	mg/L	118.6	70	130	2.92	20	
Beryllium, disso	olved		M200.8 IC	P-MS									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314382													
WG314382ICV	ICV	11/30/11 8:53	MS111007-2	.05		.04511	mg/L	90.2	90	110			
WG314382ICB	ICB	11/30/11 8:56				U	mg/L		-0.0003	0.0003			
WG314382LFB	LFB	11/30/11 8:59	MS111006-3	.05005		.04677	mg/L	93.4	85	115			
L91974-08AS	AS	11/30/11 9:48	MS111006-3	.05005	U	.05357	mg/L	107	70	130			
L91974-08ASD	ASD	11/30/11 9:51	MS111006-3	.05005	U	.05507	mg/L	110	70	130	2.76	20	
Cadmium, disso	olved		M200.8 IC	P-MS									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314382													
WG314382ICV	ICV	11/30/11 8:53	MS111007-2	.05		.04792	mg/L	95.8	90	110			
WG314382ICB	ICB	11/30/11 8:56				U	mg/L		-0.0003	0.0003			
WG314382LFB	LFB	11/30/11 8:59	MS111006-3	.0501		.04915	mg/L	98.1	85	115			
L91974-08AS	AS	11/30/11 9:48	MS111006-3	.0501	U	.05481	mg/L	109.4	70	130			
L91974-08ASD	ASD	11/30/11 9:51	MS111006-3	.0501	U	.0579	mg/L	115.6	70	130	5.48	20	
Chromium, diss	olved		M200.7 IC	P									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314307													
WG314307ICV	ICV	11/29/11 10:28	II111025-1	2		2.001	mg/L	100.1	95	105			
WG314307ICB	ICB	11/29/11 10:32				U	mg/L		-0.03	0.03			
WG314307LFB	LFB	11/29/11 10:45	II111122-2	.5		.503	mg/L	100.6	85	115			
L91944-03AS	AS	11/29/11 10:57	II111122-2	1	U	1.024	mg/L	102.4	85	115			
L91944-03ASD	ASD	11/29/11 11:00	II11122-2	1	U	1.032	mg/L	103.2	85	115	0.78	20	
							5						

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (A

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Inorganic QC Summary

FMI Gold & Copper - Sierrita

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Cobalt, dissolve	ed		M200.7 IC	CP									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314307													
WG314307ICV	ICV	11/29/11 10:28	II111025-1	2		1.926	mg/L	96.3	95	105			
WG314307ICB	ICB	11/29/11 10:32				U	mg/L		-0.03	0.03			
WG314307LFB	LFB	11/29/11 10:45	ll111122-2	.5		.487	mg/L	97.4	85	115			
L91944-03AS	AS	11/29/11 10:57	ll111122-2	1	U	1.035	mg/L	103.5	85	115			
L91944-03ASD	ASD	11/29/11 11:00	ll111122-2	1	U	1.048	mg/L	104.8	85	115	1.25	20	
Copper, dissolv	ed		M200.7 I	CP									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314307													
WG314307ICV	ICV	11/29/11 10:28	II111025-1	2		1.917	mg/L	95.9	95	105			
WG314307ICB	ICB	11/29/11 10:32	-			U	mg/L		-0.03	0.03			
WG314307LFB	LFB	11/29/11 10:45	II11122-2	.5		.485	mg/L	97	85	115			
L91944-03AS	AS	11/29/11 10:57	II111122-2	1	U	.974	mg/L	97.4	85	115			
L91944-03ASD	ASD	11/29/11 11:00	II111122-2	1	U	.984	mg/L	98.4	85	115	1.02	20	
Fluoride			SM4500F	-C									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314328													
WG314328ICV	ICV	11/29/11 12:27	WC111122-1	2		1.94	mg/L	97	95	105			
WG314328ICB	ICB	11/29/11 12:33	WOTT1122-1	2		U	mg/L	51	-0.3	0.3			
WG314328LFB	LFB	11/29/11 12:40	WC110818-4	5.005		4.93	mg/L	98.5	90	110			
L91978-01AS	AS	11/29/11 12:48	WC110818-4	5.005	.7	5.52	mg/L	96.3	90	110			
L91978-01DUP	DUP	11/29/11 12:51		0.000	.7	.64	mg/L	0010			9	20	RA
Lead, dissolved	1		M200.8 I	P-MS									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314382	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,												
	101/												
WG314382ICV	ICV	11/30/11 8:53	MS111007-2	.05		.04845	mg/L	96.9	90	110			
WG314382ICB	ICB	11/30/11 8:56	M0444000 0	05005		U	mg/L	00 5	-0.0003	0.0003			
WG314382LFB L91974-08AS	LFB AS	11/30/11 8:59 11/30/11 9:48	MS111006-3 MS111006-3	.05005 .05005	U	.04931 .05459	mg/L	98.5 109.1	85 70	115 130			
L91974-08ASD	AS	11/30/11 9:48	MS111006-3 MS111006-3	.05005	U	.05459	mg/L mg/L	109.1	70 70	130	5.07	20	
Magnesium, dis			M200.7 IC								0.01	20	
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314307													
WG314307ICV	ICV	11/29/11 10:28	II111025-1	100		104.04	mg/L	104	95	105			
WG314307ICB	ICB	11/29/11 10:32				U	mg/L		-0.6	0.6			
WG314307LFB	LFB	11/29/11 10:45	II111122-2	50.0051	_	49.68	mg/L	99.3	85	115			
L91944-03AS	AS	11/29/11 10:57	II111122-2	100.0102	8.5	115.2	mg/L	106.7	85	115			
L91944-03ASD	ASD	11/29/11 11:00	II111122-2	100.0102	8.5	116.58	mg/L	108.1	85	115	1.19	20	

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Inorganic QC Summary

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ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314307L0V ICV 11/22/1111022 III1022-1 2 2.031 mgL 10.0 .055 mgL 0.003 0.03	Molybdenum, di	ssolved		M200.7 IC	P									
WG314307/CV ICV 11/22/11 10.28 II11025-1 2 2.031 mpL 0.10.5 9.05 10.5 10.5 10.5 10.5 0.051	ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG3143071C8 IC8 11/28/11 10.32	WG314307													
WG314307LFB L9194403AS LFB AS 11/28/1110.05 11/1122.2 5 .491 .0142 mgL mgL 101.2 85 115 L9194403AS L9144043AS ASD 11/28/1110.05 11/1122.2 1 .03 1.042 mgL 101.2 85 115 1.06 20 Nickel, dissolvet M200.7 ICP M200.7 ICP M200.7 ICP M201.2 98.9 95 105 M201.2	WG314307ICV	ICV	11/29/11 10:28	II111025-1	2		2.031	mg/L	101.6	95	105			
Le1944-03AS AS 11/22/11 10:057 III11122:2 1 .03 1.021 mgL 101.2 85 115 .0.6 20 Nickel, dissolve/ M200.7 ICP M200.7 ICP Keel Rec Low Upper RPD Linit Qual WG314307CV ICV 11/22/11 10:28 III11025-1 2.002 1.979 mgL 98.9 95 105 Keel Main Qual WG314307CV ICV 11/29/11 10:28 III11022-1 2.002 1.979 mgL 98.9 95 105 Keel Main Main Main L91944/03ASD AS 11/29/11 10:52 III11122-2 1 U 1.057 mgL 105.7 85 115 1.69 20 L91944/03ASD AS 11/29/11 10:07 III11122-2 1 U 1.057 mgL 105.7 85 115 1.69 20 L9194403ASD AS 11/29/11 10:07 III11122-2 <td>WG314307ICB</td> <td>ICB</td> <td>11/29/11 10:32</td> <td></td> <td></td> <td></td> <td>.015</td> <td>mg/L</td> <td></td> <td>-0.03</td> <td>0.03</td> <td></td> <td></td> <td></td>	WG314307ICB	ICB	11/29/11 10:32				.015	mg/L		-0.03	0.03			
L11944403ASD ASD 1128/111100 III111222 1 .0.3 1.0.31 mgL 10.01 85 115 1.0.8 20 Nickel, dissolver M200.7 ICP M200.7 ICP Rec Lower Upper RPD Lmit Qual WG314307CV ICV 11/28/11 10:28 III110251 2.002 1.979 mgL 98.9 95.5 105 . </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								-						
Nickel, dissolved M200.7 ICP AC2 ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314307CV ICV 11/29/11 10.28 II11025-1 2.002 1.979 mg/L 98.9 95 106								-						
Act JD Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314307/CV ICV 11/29/11 10:28 II11025-1 2.002 1.979 mg/L 98.9 95 105			11/29/11 11:00			.03	1.031	mg/L	100.1	85	115	1.06	20	
WG314307/CV ICV 11/29/11 10:28 II111025:1 2.002 1.979 mg/L 98.9 95 105 WG314307/CB ICB 11/29/11 10:32 U mg/L -0.03 0.03 WG314307/CB ICB 11/29/11 10:57 II111122:2 5 .496 mg/L 99.2 85 115 L91944-03AS AS 11/29/11 10:57 II111122:2 1 U 1.057 mg/L 107.5 85 115 1.69 20 Nitrate/Nitrite as N M353.2 - H2SO4 preserved AC2 ID 1.007 mg/L 107.5 85 115 1.69 20 NG314451C ICV 11/30/11 20:02 WI11001-2 2.416 2.393 mg/L 9.9 9.0 110 1.007 100			Amelian		-	Comula	Farmel	11	Dee	1	l les en	880	1 :	0
WG314307ICV ICV 11/29/11 10.28 II1102-1 2.002 1.979 mg/L 98.9 95 105 WG314307ICB ICB 11/29/11 10.35 II111122-2 5 .496 mg/L 90.2 85 115 L9194-03AS AS 11/29/11 10.57 II11122-2 1 U 1.057 mg/L 105.7 85 115 . L9194-03AS ASD 11/29/11 10.50 II111122-2 1 U 1.057 mg/L 107.5 85 115 1.69 20 Nitrate/Nitrite as M353.2 - H2SO4 preserved M353.2 - H2SO4 Sample Found Units Rec Lower Upper RPD Linit Qual WG314307ICV ICV 11/30/11 20.02 WI11001-2 2.416 2.393 mg/L 99 90 110	ACZ ID	Гуре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG3143071CB ICB 11/29/11 10:32 U ngL -0.03 0.03 WG314307LFB LFB 11/29/11 10:45 1111122:2 5 .496 ngL 105.7 85 115 L914403ASD ASD 11/29/11 10:57 1111122:2 1 U 1.075 mgL 107.7 85 115 1.69 20 Nitrate/Nitrite as M353.2 - H2SO4 preserved M353.2 - H2SO4 CompL 107.5 Ref Lower Upper RPD Linit Qual WG3144511CV ICV 11/30/11 20:02 WI11001-2 2.416 2.393 mgL 99 90 110 UmgL -0.06 0.06 WG3144511CV ICV 11/30/11 21:05 WI110813:3 2 2.084 mgL 104.2 90 110 UmgL 104.2 90 110 104.3 104.3 104.3 104.3 104.4 90 110 104.3 104.3 104.3 104.3 104.3 104.3 104.3 104.3 104.3 104.3 104.3 104.4 105 100 105	WG314307													
WG314307LFB L91944-03AS LFB AS 11/29/11 10:45 III 11122:2 III 11122:2 1 U 1.057 mg/L mg/L 105.7 99.2 85 115 115 115 115 1.15 115 115 L91944-03AS AS 11/29/11 11:00 III 11122:2 1 U 1.067 mg/L 105.7 85 115 1.69 20 Nitrate/Nitrite as N M353.2 : H2SO4 preserved V M353.2 : H2SO4 preserved V V M353.2 : H2SO4 preserved WG3144511 UC 11/30/11 20:02 WI11001-2 2.416 Sample Found Units Rec Lower Upper RPD Limit Qual WG3144511CV UC V 11/30/11 20:03 WI11001-2 2.416 Jung Jung -0.06 0.06 0.07 20 V WG314379LFB LFB 11/30/11 21:03 WI110813-3 2 Jung Jung 99 90 110 Jung	WG314307ICV	ICV	11/29/11 10:28	ll111025-1	2.002		1.979	mg/L	98.9	95	105			
L91944-03AS AS 11/29/11 10:57 III 11122-2 1 U 1.057 mgL 105.7 85 115 L L91944-03ASD ASD 11/29/11 11:00 III11122-2 1 U 1.075 mgL 107.5 85 115 1.69 20 Nitrate/Nitrite as N M353.2 - H2SO4 preserved Common Units Rec Lower Uppe RPD Limit Qual WG314451 WG314451C ICV 11/30/11 20:02 WI11001-2 2.416 2.393 mgL 99 90 110 . . . WG314451CV ICV 11/30/11 20:03 WI11001-3 2 2.084 mgL 104.2 90 110 .	WG314307ICB	ICB	11/29/11 10:32				U	mg/L		-0.03	0.03			
L91944-03ASD ASD 11/29/11 11:00 II1112-2 1 U 1.075 mg/L 107.5 85 115 1.69 20 Nitrate/Nitrite as N M353.2 - H2SO4 preserved M353.2 - H2SO4 preserved AZ2 ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Uppe RPD Limit Qual WG314451 U 1/30/11 20:02 WI11001-2 2.416 2.393 mg/L 99 90 110 - 1130/11 20:03 WI10813-3 2 2.084 mg/L 104.2 90 110 - - - - 1130/11 21:07 . 1.78 3.763 mg/L 104.2 90 110 - - 20 20 20 20 20 20								°.						
Nitrate/Nitrite as N M353.2 - H2SO4 preserved AC2 ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314451ICV ICV 11/30/11 20:02 WI111001-2 2.416 2.393 mg/L 99 90 110 VG314371 WG314451ICV ICV 11/30/11 20:03 WI110813-3 2 2.084 mg/L 104.2 90 110 US314379 WG3144379 WG314379 WI1121:05 WI110813-3 2 2.084 mg/L 104.2 90 110 US314379 WG314379 WG314379 WI1121:05 WI110813-3 2 1.78 3.763 mg/L 99.2 90 110 US314002 US31402 0.7 20 Residue, Filterable (TDS) @180C SM2540C VG314312 0.7 20 VG314302 U mg/L -20 20 US314009 US314009 U mg/L -20 20 U														
AC2 ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314451 WG314451ICV ICV 11/30/11 20:02 WI111001-2 2.416 2.393 mg/L 99 90 110	L91944-03ASD	ASD	11/29/11 11:00	II111122-2	1	U	1.075	mg/L	107.5	85	115	1.69	20	
WG314451 WG314370 WG314370 WG314379 WG314320 U mg/L 99.2 90 110 U Mg/L 99.2 90 110 U Mg/L 90.2 90 110 WG314379 WG31409 WG31409 WG31409 WG314309 WG314309 WG314302 U mg/L -20 20 20 20 20 120 <t< td=""><td>Nitrate/Nitrite as</td><td>Ν</td><td></td><td>M353.2 - I</td><td>H2SO4 pr</td><td>eserved</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Nitrate/Nitrite as	Ν		M353.2 - I	H2SO4 pr	eserved								
WG314451ICV ICV 11/30/11 20:02 WI11001-2 2.416 2.333 mg/L 99 90 110 WG314451ICB ICB 11/30/11 20:03 WI11001-2 2.416 U mg/L 99 90 110 WG314379LFB LFB 11/30/11 21:03 WI11081-3 2 2.084 mg/L 104.2 90 110 L91976-01AS AS 11/30/11 21:05 WI11081-3 2 1.78 3.763 mg/L 99.2 90 110 L91976-02DUP DUP 11/30/11 21:05 WI11081-3 2 1.78 3.763 mg/L 99.2 90 110 L91976-02DUP DUP 11/30/11 21:07 VI11081-3 2 1.78 3.763 mg/L 99.2 90 110 L91976-02DUP DUP 11/30/11 21:07 SM2540C S S Mg/L 0.7 20 KG314009 WG314009LCSW LCSW 11/21/11 12:46 PCN/SCN QC SampL 102.3	ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314451ICB ICB 11/30/11 20:03 U mg/L -0.06 0.06 WG314379 WG314379LFB LFB 11/30/11 21:03 WI110813-3 2 2.084 mg/L 104.2 90 110 L91976-01AS AS 11/30/11 21:05 WI110813-3 2 1.78 3.763 mg/L 99.2 90 110 L91976-02DUP DUP 11/30/11 21:07 .54 .536 mg/L 99.2 90 110 L91976-02DUP DUP 11/30/11 21:07 .54 .536 mg/L 99.2 90 110 L91976-02DUP DUP 11/30/11 21:07 .54 .536 mg/L 99.2 90 110 L91976-02DUP DUP 11/20/11 21:07 .54 .536 mg/L 90.2 20 .7 20 KG314009 KG314009 V Analyzed PCN/SCN QC Sample Found Units Rec Lower Up 1.4 20 .4 20 .4 20 .4 20 .4 20 .4	WG314451													
WG314379 WG314379LFB LFB 11/30/11 21:03 WI110813-3 2 2.084 mg/L 104.2 90 110 L91976-01AS AS 11/30/11 21:05 WI110813-3 2 1.78 3.763 mg/L 99.2 90 110 L91976-02DUP DUP 11/30/11 21:07 .54 .536 mg/L 99.2 90 110 Residue, Filterable TDS @180C SM2540C .536 mg/L 99.2 90 110 Residue, Filterable TDS @180C SM2540C .536 mg/L 98.2 90 110 KC2 ID Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314009 MG314009PBW PBW 11/21/11 12:46 PCN37655 260 266 mg/L 102.3 80 120 1.4 20 Selenium, dissolute M200.8 ICP-MS M200.8 ICP-MS M2 Imit	WG314451ICV	ICV	11/30/11 20:02	WI111001-2	2.416		2.393	mg/L	99	90	110			
WG314379LFB LFB 11/30/11 21:03 WI110813-3 2 2.084 mg/L 104.2 90 110 L91976-01AS AS 11/30/11 21:07 WI110813-3 2 1.78 3.763 mg/L 99.2 90 110 L91976-01AS DUP 11/30/11 21:07 WI110813-3 2 1.78 3.763 mg/L 99.2 90 110 Residue, Filterable (TDS) @180C SM2540C SM2540C SM2540C Maine Maine Maine Qual WG314009 Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314009 PBW 11/21/11 12:46 PCN37655 260 266 mg/L 102.3 80 120 1.4 20 Selenium, dissol-CSW LGSW 11/21/11 12:46 PCN37655 260 290 291 mg/L 102.3 80 120 1.4 20 Selenium, dissol-CSW LGSW 11/21/11 12:46 PCN37655 260 Sample<	WG314451ICB	ICB	11/30/11 20:03				U	mg/L		-0.06	0.06			
L91976-01AS L91976-02DUP AS DUP 11/30/11 21:05 WI110813-3 VI11021:07 2 1.78 .54 3.763 .564 mg/L .564 99.2 90 .90.2 110 Residue, Filterable (TDS) @180C SM2540C V V 0.7 20 Residue, Filterable (TDS) @180C SM2540C V V No.7 QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314009 PBW VG314009LCSW 11/21/11 12:46 DUP PCN37655 260 266 mg/L 290 102.3 80 120 1.4 20 Selenium, dissolved LCSW 11/21/11 12:46 PCN37655 260 290 294 mg/L 102.3 80 120 1.4 20 Selenium, dissolved Dup 11/21/11 12:46 PCN37655 260 290 294 mg/L 102.3 80 120 1.4 20 Selenium, dissolved M200.8 ICP-MS M200.8 ICP-MS Rec Lower Upper RPD Limit Qual	WG314379													
L91976-02DUP DUP 11/30/11 21:07 .54 .536 mg/L 0.7 20 Residue, Filterable (TDS) @180C SM2540C ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314009 PBW 11/21/11 12:46 PCN37655 260 266 mg/L 102.3 80 120 1.4 20 VG314009LSW LGSW 11/21/11 12:46 PCN37655 260 290 294 mg/L 102.3 80 120 J985-01DUP DUP 11/21/11 12:46 PCN37655 260 290 294 mg/L 102.3 80 120 Selenium, dissovet M200.8 ICP-MS M200.8 ICP-MS M200.8 ICP-MS M200 Imit Qual WG314382ICV Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314382ICV ICV 11/30/11 8:53 MS111007-2 .05	WG314379LFB	LFB	11/30/11 21:03	WI110813-3	2		2.084	mg/L	104.2	90	110			
Residue, Filterable (TDS) @180C SM2540C ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314009 WG314009PBW PBW 11/21/11 12:46 PCN/SCS 260 266 mg/L 102.3 80 120 1.4 20 20 24 mg/L 290 294 mg/L 102.3 80 120 1.4 20 20 24 mg/L 20 20 24 mg/L 20 1.4 20	L91976-01AS	AS	11/30/11 21:05	WI110813-3	2	1.78	3.763	mg/L	99.2	90	110			
ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314009 WG314009PBWV PBW 11/21/11 12:46 PCN37655 260 266 mg/L 102.3 80 120 1.4 20 L91985-01DUP DUP 11/21/11 12:51 PCN37655 260 290 294 mg/L 102.3 80 120 1.4 20 Selenium, dissolved M200.8 ICP-MS M200.8 ICP-MS N 1.4 20 20 290 294 mg/L 102.3 80 120 1.4 20 20 20 290 294 mg/L 102.3 80 120 1.4 20 20 24 mg/L 1.4 20 1.4 20 20 24 mg/L 102.3 80 120 1.4 20 20 24 1.4 20 20 24 20 20 1.4	L91976-02DUP	DUP	11/30/11 21:07			.54	.536	mg/L				0.7	20	
WG314009 U mg/L -20 20 WG314009PBW PBW 11/21/11 12:46 PCN37655 260 266 mg/L 102.3 80 120 L91985-01DUP DUP 11/21/11 12:51 PCN37655 260 290 294 mg/L 102.3 80 120 Selenium, dissolved M200.8 ICP-MS ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314382ICV ICV 11/30/11 8:53 MS111007-2 .05 .0516 mg/L 103.2 90 110 VG314382ICV VG314382ICB ICB 11/30/11 8:53 MS111007-2 .05 .0516 mg/L 103.2 90 110 VG314382ICB VG314382ICB U mg/L -0.0003 0.0003 .00003 .00003 .00003 .00003 .00003 .00003 .00003 .00003 .00003 .00003 .00003	Residue, Filteral	ble (TDS	5) @180C	SM2540C										
WG314009PBW WG314009LCSW LOSW PBW LCSW 11/21/11 12:46 11/21/11 12:51 PCN37655 260 266 200 mg/L 290 102.3 80 120 J91985-01DUP DUP 11/21/11 12:51 PCN37655 260 290 294 mg/L 102.3 80 120 Selenium, dissolved M200.8 ICP-MS ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314382ICV ICV 11/30/11 8:53 MS111007-2 .05 .0516 mg/L 103.2 90 110 .	ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314009LCSW L91985-01DUP LCSW DUP 11/21/11 12:46 11/21/11 12:51 PCN37655 PCN37655 260 266 mg/L mg/L 102.3 80 120 Selenium, dissolved M200.8 ICP-MS M200.8 ICP-MS V V V V V PD Linit Qual MG314382 MG314382ICV Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Linit Qual WG314382ICV ICV 11/30/11 8:53 11/30/11 8:56 MS111007-2 .05 .0516 mg/L 103.2 90 110 V V V V V V V V V V V N V N	WG314009													
WG314009LCSW L91985-01DUP LCSW DUP 11/21/11 12:46 11/21/11 12:51 PCN37655 PCN37655 260 266 mg/L mg/L 102.3 80 120 Selenium, dissolved M200.8 ICP-MS M200.8 ICP-MS V V V V V PD Linit Qual MG314382 MG314382ICV Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Linit Qual WG314382ICV ICV 11/30/11 8:53 11/30/11 8:56 MS111007-2 .05 .0516 mg/L 103.2 90 110 V V V V V V V V V V V N V N	WG314009PBW	PBW	11/21/11 12:46				U	mg/L		-20	20			
Verticity M200.8 ICP-MS ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314382ICV ICV 11/30/11 8:53 MS111007-2 .05 .0516 mg/L 103.2 90 110 VG314382ICB U mg/L -0.0003 0.0003 VG314382ICB ICB 11/30/11 8:56 U mg/L -0.0003 0.0003 VG314382LFB LFB 11/30/11 8:59 MS111006-3 .05005 .0002 .06016 mg/L 119.8 70 130		LCSW		PCN37655	260			-	102.3					
ACZ ID Type Analyzed PCN/SCN QC Sample Found Units Rec Lower Upper RPD Limit Qual WG314382 WG314382ICV ICV 11/30/11 8:53 MS111007-2 .05 .0516 mg/L 103.2 90 110 - - - WG314382ICB ICB 11/30/11 8:56 U mg/L -0.0003 0.0003 - 0.0003 - - - - - - 0.0003 - - - - 0.0003 11/3 - - - - 0.0013 - - - - - - - - - - - - - - -	L91985-01DUP	DUP	11/21/11 12:51			290	294	mg/L				1.4	20	
WG314382 WG314382ICV ICV 11/30/11 8:53 MS111007-2 .05 .0516 mg/L 103.2 90 110 WG314382ICB ICB 11/30/11 8:56 U mg/L -0.0003 0.0003 WG314382LFB LFB 11/30/11 8:59 MS111006-3 .05005 .04929 mg/L 98.5 85 115 L91974-08AS AS 11/30/11 9:48 MS111006-3 .05005 .0002 .06016 mg/L 119.8 70 130	Selenium, disso	lved		M200.8 IC	P-MS									
WG314382ICV ICV 11/30/11 8:53 MS111007-2 .05 .0516 mg/L 103.2 90 110 WG314382ICB ICB 11/30/11 8:56 U mg/L -0.0003 0.0003 WG314382ICB LFB 11/30/11 8:59 MS111006-3 .05005 .04929 mg/L 98.5 85 115 L91974-08AS AS 11/30/11 9:48 MS111006-3 .05005 .0002 .06016 mg/L 119.8 70 130	ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314382ICV ICV 11/30/11 8:53 MS111007-2 .05 .0516 mg/L 103.2 90 110 WG314382ICB ICB 11/30/11 8:56 U mg/L -0.0003 0.0003 WG314382ICB LFB 11/30/11 8:59 MS111006-3 .05005 .04929 mg/L 98.5 85 115 L91974-08AS AS 11/30/11 9:48 MS111006-3 .05005 .0002 .06016 mg/L 119.8 70 130	WG314382													
WG314382ICB ICB 11/30/11 8:56 U mg/L -0.0003 0.0003 WG314382LFB LFB 11/30/11 8:59 MS111006-3 .05005 .04929 mg/L 98.5 85 115 L91974-08AS AS 11/30/11 9:48 MS111006-3 .05005 .0002 .06016 mg/L 119.8 70 130		ICV	11/30/11 8:53	MS111007-2	.05		.0516	ma/l	103 2	90	110			
WG314382LFB LFB 11/30/11 8:59 MS111006-3 .05005 .04929 mg/L 98.5 85 115 L91974-08AS AS 11/30/11 9:48 MS111006-3 .05005 .0002 .06016 mg/L 119.8 70 130								°.	100.2					
L91974-08AS AS 11/30/11 9:48 MS111006-3 .05005 .0002 .06016 mg/L 119.8 70 130				MS111006-3	.05005			-	98.5					
						.0002		-						
			11/30/11 9:51					-				4.45	20	

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (A

(800) 334-5493

Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS0000012F

Sulfate			D516-02 -	Turbidim	etric								
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314450													
WG314450ICB	ICB	11/30/11 16:05				U	mg/L		-3	3			
WG314450ICV	ICV	11/30/11 16:05	WI111128-7	20		18.9	mg/L	94.5	90	110			
WG314450LFB	LFB	11/30/11 18:47	WI111111-3	10.03		9.5	mg/L	94.7	90	110			
L91976-02AS	AS	11/30/11 18:47	WI111111-3	10.03	15	22.9	mg/L	78.8	90	110			M2
L91976-01DUP	DUP	11/30/11 19:06			900	880	mg/L				2.2	20	RA
Thallium, disso	lved		M200.8 IC	P-MS									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314382													
WG314382ICV	ICV	11/30/11 8:53	MS111007-2	.05		.05175	mg/L	103.5	90	110			
WG314382ICB	ICB	11/30/11 8:56				U	mg/L		-0.0003	0.0003			
WG314382LFB	LFB	11/30/11 8:59	MS111006-3	.0501		.05269	mg/L	105.2	85	115			
L91974-08AS	AS	11/30/11 9:48	MS111006-3	.0501	U	.05929	mg/L	118.3	70	130			
L91974-08ASD	ASD	11/30/11 9:51	MS111006-3	.0501	U	.06207	mg/L	123.9	70	130	4.58	20	



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

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L91978-01	WG314328	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).
	WG314450	Sulfate	D516-02 - Turbidimetric	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D516-02 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L91978-02	WG314328	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).
	WG314450	Sulfate	D516-02 - Turbidimetric	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D516-02 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).



ACZ Project ID: L91978

No certification qualifiers associated with this analysis

AGE Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

FMI Gold & Copper - Sierrita ZS0000012F	ACZ Proje Date Rece		L91978 11/18/2011 10:00	
	Receive	d By:		ksj
	Date Pri	inted:	11/	21/2011
Receipt Verification				
		YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?				Х
2) Are the custody seals on the cooler intact?		Х		
3) Are the custody seals on the sample containers intact?				Х
4) Is there a Chain of Custody or other directive shipping papers present?		Х		
5) Is the Chain of Custody complete?		Х		
6) Is the Chain of Custody in agreement with the samples received?		Х		
7) Is there enough sample for all requested analyses?		Х		
8) Are all samples within holding times for requested analyses?		Х		
9) Were all sample containers received intact?		Х		
10) Are the temperature blanks present?				Х
11) Are the trip blanks (VOA and/or Cyanide) present?				Х
12) Are samples requiring no headspace, headspace free?				Х
13) Do the samples that require a Foreign Soils Permit have one?				Х

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 (℃)	Rad (µR/hr)
3043	2.1	18

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

Notes

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita

ZS0000012F

Sample Receipt

ACZ Project ID: L91978 Date Received: 11/18/2011 10:06 Received By: ksj Date Printed: 11/21/2011

Sample Container Preservation

SAMPLE	CLIENT ID		R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	0 < 2	T >12	N/A	RAD	ID		
L91978-01	M-10			Y		Y			1						
L91978-02	M-9			Y		Y									
Sample Container Preservation Legend															
Abbreviation Description Container Type					eservativ	/e/Limi	ts								
R	Raw/Nitric	RED		p⊢	l must be	< 2									
В	Filtered/Sulfuric	furic BLUE			pH must be < 2										
BK	Filtered/Nitric	/Nitric BLACK			l must be	< 2									
G	Filtered/Nitric	GREE	N	p⊢	l must be	< 2									
0	Raw/Sulfuric	ORAN	GE	p⊢	l must be	< 2									
Р	Raw/NaOH	PURPL	.E	p⊢	l must be	> 12 *									
Т	Raw/NaOH Zinc Acetate	TAN		p⊢	l must be	> 12									
Υ	Raw/Sulfuric	YELLO	W	p⊢	l must be	< 2									
YG	Raw/Sulfuric	YELLO	W GLA	SS p⊢	l must be	< 2									
N/A	No preservative needed	Not app	olicable												
RAD	Gamma/Beta dose rate	Not app	olicable	m	ust be < 2	250 µR/	hr								

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

	Labora	tories, Inc.		710	7-	18	C	CHAI	N of	CUS	STODY
Report to.	ve Steamboat Spring	s, CO 80487 (800) 33	4-5493		•						
Name: Aaron H	lilshorst			Addre	ss [.] 62(00 W. Duva	al Mine F	Road			
	port-McMoRan Sie	errita Inc.	-	/ laure		een Valley,					
	ilshorst@fmi.com		-	Telep		520-393-26					
Copy of Report	::0										
Name: Ben Dat				E-mai	il: bdaij	gneau@cle	arcreeka	ssociat	es.com		
	r Creek Associates				hone:						
Invece to:											
Name:				Addre	SS:						
Company:			1								
E-mail:	E-mail:										
		ne (HT), or if insufficie				lete			YES		
		proceed with request or further instruction.				IO "			NO		l
		e requested analyses					be quali	fied.			
	CO DW Compliance	-			-				YES		
If yes, please inc PROJECT INFO		esults will be reported	to PQL.		ANALS	YSES REQU	ISHD D	ttach le	NO storius	K e gante	nantus
Quote #:				1							
Quole #: Project/PO #: Z	\$0000012E		-	ers							
		ina:	-	of Containers	1 Te						
Sampler's Name	Reporting state for compliance testing:										
	s NRC licensable m	aterial? Yes No	-	t of	Quarterly						
SAMPLE IDE		DATE: HMF	Mairix	-+=	Ō						
M-10	. 1	1/16/2011 ; 09:52	GW	3	×						
M-9	11	1/16/2011 ; 1446	GW	3	×						
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							00 (8+10)		1) Other	(Casaifu)	<u> </u>
Matrix SW (S	Surface water) · GW (Gro	ound Water) · WW (Waste	water) · D	vv (Urinki	nığ vvatel	n sı (sinage) · 30 (301)		in Other	(opacity)	
RIMARKS											
Matrix SW (S RI MARKS Copy of report	to Ben Daigneau o	contains only "SO4"	results v	with Q	C Sumi	mary.					
UPS Tracking	# 1Z 867 7E4 23 1	000 7796									
CI S Hacking											
	Disas	ofor to ACT's to and the	الالدمم 9	ne lec	ated	the rever	o oido of	this CC)C		
	NQUISHED BY:	efer to ACZ's terms & DATE:		UNS 10C		the reverse RECEIVED		uns CC		DA LI	L: FIME
		11/17/201				, UPS					
1 cm			1,1400	 		TITS				frt	11
						VVD-					
				-							

FRMAD050.01.15.09

White - Return with sample. Yellow - Retain for your records.

Deade 13 of 13

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December 12, 2011

Report to: Aaron Hilshorst FMI Gold & Copper - Sierrita 6200 West Duval Mine Rd. Green Valley, AZ 85614

cc: Ben Daigneau

Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS0000012F ACZ Project ID: L92157

Aaron Hilshorst:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 02, 2011. This project has been assigned to ACZ's project number, L92157. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L92157. 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 January 12, 2012. 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.

S. Habermehl

Scott Habermehl has reviewed and approved this report.







Project ID:	ZS0000012F
Sample ID:	MO-2007-5B

ACZ Sample ID: L92157-01 Date Sampled: 11/21/11 12:08 Date Received: 12/02/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XC	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	494.3	*	mg/L	5	25	12/06/11 18:51	1 сср



Project ID:	ZS0000012F
Sample ID:	MO-2007-5C

ACZ Sample ID: L92157-02 Date Sampled: 11/21/11 17:03 Date Received: 12/02/11 Sample Matrix: Ground Water

Wet Chemistry									
Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	235.98		*	mg/L	1.5	7.5	12/06/11 19:12	сср

ACZ	Laboratorie	s, Inc.
	Steamboat Springs, CO	•

Project ID:	ZS0000012F
Sample ID:	ESP-2

ACZ Sample ID: **L92157-03** Date Sampled: 11/22/11 09:40 Date Received: 12/02/11 Sample Matrix: Ground Water

Wet Chemistry									
Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	26.65		*	mg/L	0.5	2.5	12/06/11 19:33	в сср

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copp	er - Sierrita	ACZ Sample ID:	L92157-04
Project ID:	ZS0000012F	Date Sampled:	11/22/11 12:52
Sample ID:	ESP-3	Date Received:	12/02/11
		Sample Matrix:	Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	34.18		mg/L	0.5	2.5	12/08/11 12:13	в сср

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS0000012F
Sample ID:	MO-2007-3B

ACZ Sample ID: L92157-05 Date Sampled: 11/22/11 15:18 Date Received: 12/02/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	36.70		mg/L	0.5	2.5	12/06/11 20:36	в сср

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS0000012F
Sample ID:	MO-2009-1

ACZ Sample ID: L92157-06 Date Sampled: 12/01/11 12:30 Date Received: 12/02/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	91.82		mg/L	1	5	12/06/11 21:18	в сср



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

Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS0000012F

Sulfate	Sulfate M300.0 - Ion Chromatography												
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG314564													
WG314564ICV	ICV	12/02/11 12:06	WI111003-1	49.95		49.82	mg/L	99.7	90	110			
WG314564ICB	ICB	12/02/11 12:27				U	mg/L		-1.5	1.5			
WG314685													
WG314685LFB	LFB	12/06/11 14:37	WI111109-1	30		29.48	mg/L	98.3	90	110			
L92065-04DUP	DUP	12/06/11 15:19			U	U	mg/L				0	20	RA
L92065-05AS	AS	12/06/11 16:02	WI111109-1	300	U	285.4	mg/L	95.1	90	110			
L92157-05AS	AS	12/06/11 20:57	WI111109-1	30	36.7	65.34	mg/L	95.5	90	110			
L92157-04DUP	DUP	12/08/11 12:34			34.18	34.13	mg/L				0.1	20	



(800) 334-5493

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L92157-01	WG314685	Sulfate	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).
L92157-02	WG314685	Sulfate	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).
L92157-03	WG314685	Sulfate	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).



ACZ Project ID: L92157

No certification qualifiers associated with this analysis

AGE Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

FMI Gold & Copper - Sierrita ZS0000012F	ACZ Proje Date Rece		L92157 12/02/2011 10:10	
	Receive	ed By:		ksj
	Date Pr	inted:	12	/2/2011
Receipt Verification				
		YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?				Х
2) Are the custody seals on the cooler intact?		Х		
3) Are the custody seals on the sample containers intact?				Х
4) Is there a Chain of Custody or other directive shipping papers present?		Х		
5) Is the Chain of Custody complete?		Х		
6) Is the Chain of Custody in agreement with the samples received?		Х		
7) Is there enough sample for all requested analyses?		Х		
8) Are all samples within holding times for requested analyses?		Х		
9) Were all sample containers received intact?		Х		
10) Are the temperature blanks present?				Х
11) Are the trip blanks (VOA and/or Cyanide) present?				Х
12) Are samples requiring no headspace, headspace free?				Х
13) Do the samples that require a Foreign Soils Permit have one?				Х

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

Temp (℃)	Rad (µR/hr)
2.4	17

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

Notes

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita

ZS0000012F

Sample Receipt

ACZ Project ID:	L92157
Date Received:	12/02/2011 10:10
Received By:	ksj
Date Printed:	12/2/2011

Sample Container Preservation

L92157-01 MO-2007-5B Image: Constraint of the second	X X X	
L92157-03 ESP-2	^	
	Х	
L92157-04 ESP-3		
	Х	
L92157-05 MO-2007-3B	Х	
L92157-06 MO-2009-1	Х	

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
В	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
0	Raw/Sulfuric	ORANGE	pH must be < 2
Р	Raw/NaOH	PURPLE	pH must be > 12 *
Т	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Υ	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 μ R/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

Report for	boat Springs, CO 80487 (800) 3										
Name: Aaron Hilshorst			Addre	ss: 6200	W. Du	al Mine	e Road				
Company: Freeport-McMoRan Sierrita Inc.		-	Green Valley, AZ 85614								
E-mail: aaron_hilshorst@			Telepi	hone: 52							
Copy of Report for											
Name: Ben Daigneau			E-mai	I: bdaign	tes.com						
Company: Clear Creek Associates			Telephone: 520-622-3222								
Invoice to:											
Name:			Addre	SS:							
Company:											
E-mail:			Telep								
	holding time (HT), or if insuffici , shall ACZ proceed with reques				te			YES NO			
If "NO" then ACZ will cont	act client for further instruction	. If neithe	r "YES"	nor "NO							
	ceed with the requested analyse	s, even if l	HT is ex	pired, an	d data w	ill be qu	alified.	YES			
Are samples for CO DW C	ompliance monitoring? e forms. Results will be reporte	d to PQL.						NO	x		
PROJECT INFORMATIO				ANALYS	FS REO	JESTED	(attach l	list or as	e quote	aumhee)	
Quote #:				375							
Project/PO #: #ZS0000012F			of Containers	EPA				1			
Reporting state for compliance testing:			ntai	300 or							
Sampler's Name:		_	ို	EPA 300				·			
	censable material? Yes No		**	SO4 by							
SAMPLE IDENTIFICA	· · ·	Matisx						+	┟──┤		
MO-2007-5B	11/21/11;1208	GW	1	×		_			┨──┤		
MO-2007-5C ESP-2	<u>11/21/11 ; 1703</u> <u>11/22/11 ; 0940</u>	GW GW	1	$\frac{2}{x}$				+			
ESP-3	11/22/11;1252	GW		×							
MO-2007-3B	11/22/11; 1518	GW	1	×							
MO-2009-1	12/01/11;1230	GW	1	×							
S											
ā											
ں ح 1		_		$ \longrightarrow $							

FRMAD050.01.15.09

White - Return with sample. Yellow - Retain for your records.



December 22, 2011

Report to: Jon Anderson FMI Gold & Copper - Sierrita 6200 West Duval Mine Rd. Green Valley, AZ 85614

cc: Ben Daigneau

Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS0000012F ACZ Project ID: L92273

Jon Anderson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 09, 2011. This project has been assigned to ACZ's project number, L92273. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L92273. 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 January 22, 2012. 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.

S. Habermehl

Scott Habermehl has reviewed and approved this report.





ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS0000012F
Sample ID:	CW-3

ACZ Sample ID: L92273-01 Date Sampled: 12/05/11 12:48 Date Received: 12/09/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	55.18		mg/L	0.5	2.5	12/20/11 17:21	сср

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS0000012F
Sample ID:	NP-2

ACZ Sample ID: L92273-02 Date Sampled: 12/05/11 15:13 Date Received: 12/09/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	58.63		mg/L	0.5	2.5	12/20/11 17:42	ccp

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS0000012F
Sample ID:	GV-1

ACZ Sample ID: L92273-03 Date Sampled: 12/07/11 11:49 Date Received: 12/09/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XC) Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	39.31		mg/L	0.5	2.5	12/20/11 18:45	б сср

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS0000012F
Sample ID:	GV-2

ACZ Sample ID: L92273-04 Date Sampled: 12/07/11 12:25 Date Received: 12/09/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	77.88		mg/L	0.5	2.5	12/20/11 19:06	в сср



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

Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (A (800) 334-5493

Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS0000012F

ACZ Project ID: L92273

Sulfate	Sulfate M300.0 - Ion Chromatography												
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG315531													
WG315531ICV	ICV	12/20/11 0:41	WI111003-14	49.95		50.92	mg/L	101.9	90	110			
WG315531ICB	ICB	12/20/11 1:02				U	mg/L		-1.5	1.5			
WG315590													
WG315590LFB1	LFB	12/20/11 14:32	WI111109-1	30		30.13	mg/L	100.4	90	110			
L92262-01AS	AS	12/20/11 15:56	WI111109-1	30	10.53	40.63	mg/L	100.3	90	110			
WG315590LFB2	LFB	12/21/11 0:44	WI111109-1	30		29.73	mg/L	99.1	90	110			
L92236-03DUP	DUP	12/21/11 15:51			109.7	108.33	mg/L				1.3	20	



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

ACZ Project ID: L92273

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM PARAMETER	METHOD	QUAL DESCRIPTION	

No extended qualifiers associated with this analysis



ACZ Project ID: L92273

No certification qualifiers associated with this analysis

AGE Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

FMI Gold & Copper - Sierrita	ACZ Project II	D:		L92273
ZS000012F	Date Receive	d: 12/	12/09/2011 12	
	Received B	y:		ksj
	Date Printe	d:	12	2/9/2011
Receipt Verification				
	Y	ΈS	NO	NA
1) Does this project require special handling procedures such as CLP protocol?				Х
2) Are the custody seals on the cooler intact?		Х		
3) Are the custody seals on the sample containers intact?				Х
4) Is there a Chain of Custody or other directive shipping papers present?		Х		
5) Is the Chain of Custody complete?		Х		
6) Is the Chain of Custody in agreement with the samples received?		Х		
7) Is there enough sample for all requested analyses?		Х		
8) Are all samples within holding times for requested analyses?		Х		
9) Were all sample containers received intact?		Х		
10) Are the temperature blanks present?				Х
11) Are the trip blanks (VOA and/or Cyanide) present?				Х
12) Are samples requiring no headspace, headspace free?				Х
13) Do the samples that require a Foreign Soils Permit have one?				Х

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 (℃)	Rad (µR/hr)
1326	1.6	15

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

Notes

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita

ZS0000012F

Sample Receipt

ACZ Project ID:	L92273
Date Received:	12/09/2011 12:01
Received By:	ksj
Date Printed:	12/9/2011

Sample Container Preservation

SAMPLE	CLIENT ID		R < 2	G < 2	BK < 2	Ye 2	YGe 2	Bc 2	0 < 2	T >12	N/A	RAD	ID
-	CW-3		11 1 2	0 < 2	DIX < 2	1 < 2	1012	D< 2	0 < 2	1 212	-	RAD	
L92273-02	NP-2				BK < 2								
L92273-03	GV-1												
L92273-04	GV-2										Х		
Sample C	ontainer Preservation Leg	end											
Abbreviatio	n Description	Contair	ner Typ	e Pr	eservativ	ve/Limi	ts						
R	Raw/Nitric	RED		рH	l must be	< 2							
В	Filtered/Sulfuric	BLUE		pН	l must be	e < 2							
BK	Filtered/Nitric	BLACK		рH	l must be	< 2							
G	Filtered/Nitric	GREEN	l	pН	l must be	< 2							
0	Raw/Sulfuric	ORANG	θE	рH	l must be	< 2							
Р	Raw/NaOH	PURPL	E	рH	l must be	e > 12 *							
Т	Raw/NaOH Zinc Acetate	TAN		pН	l must be	> 12							
Υ	Raw/Sulfuric	YELLO	W	pН	l must be	e < 2							
YG	Raw/Sulfuric	YELLO	W GLAS	SS pH	l must be	e < 2							
N/A	No preservative needed	Not app	licable										
RAD	Gamma/Beta dose rate	Not app	licable	mu	ust be < 2	250 µR/I	hr						

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

	amboat Springs, CO_80487_(800)33	A-0480								
Report to: Name: Aaron Hilsho			Addro	ee: 620	0 W. Duva	al Mine I	Soad			
	AcMoRan Sierrita Inc.	-	Addie		en Valley,					
E-mail: aaron_hilshor		-	Teleni		20-393-26		17			
			Текері		20 395 20					
Copy of Report to:						.1 .				
Name: Ben Daigneau					neau@cle		ssociate	es.com		
Company: Clear Cree	ek Associates		Telep	hone: 3	20-622-32					
Invoice to:			, <u> </u>							
Name:			Addre	SS:						
Company:										
E-mail:			Telep							
	ast holding time (HT), or if insuffici				ete			YES NO		I
	ion, shall ACZ proceed with reques ontact client for further instruction							NO		
	roceed with the requested analyse					l be quali	fied.			
	V Compliance Monitoring?							YES		
	tate forms. Results will be reporte	d to PQL.				COLLA		NO	×	
PROJECT INFORMA	TION	-			SES REQU	ESTED (4	1	st of also	r quittit	name
Quote #:		_	s S	SO4 by EPA 300 or EPA 375						
Project/PO #: ZS0000	0012F	4	of Containers	or EP						
Reporting state for co	mpliance testing:	_	onta	300						Ĺ
Sampler's Name:	<u> </u>	_	Ŭ	EPA						
	Clicensable material? Yes No		#	D4 p2						
SAMPLE IDENTIF		Matrix		· · · · · · · · · · · · · · · · · · ·				<u> </u>		
CW-3	12/05/2011 ; 12:48	GW	1	×						
<u>NP-2</u>	12/05/2011 ; 15:13	GW	1	×						
GV-1	12/07/2011 ; 11:49	GW	1	×				<u> </u>		
GV-2	12/07/2011 ; 12:25	GW	1	×				<u> </u>		
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	Water) · GW (Ground Water) · WW (Waster	Notor) - Di	M /Drinki	ing Water		N - SO (Soi		i) · Other	(Specify	۱ ۲
ç	water) Gw (Ground water) www (wast	e water) · D		ing water) 3E (88898	,) 00 (00	, OE (O	i) Othor	(opoon)	
REMARKS										
UPS Tracking #1Z 8	867 7E4 23 1000 7821									
۲										
$ \cap \cap$	Please refer to ACZ's terms	& conditi	ons loc	ated on	the revers	e side of	this CO	DC.		
RELINOU				ŀ	RECEIVED	BY:			DAT	e: Timi
	12/8/11		1		1			1		

FRMAD050.01.15.09

White - Return with sample. Yellow - Retain for your records.



December 30, 2011

Report to: Jon Anderson FMI Gold & Copper - Sierrita 6200 West Duval Mine Rd. Green Valley, AZ 85614

cc: Ben Daigneau

Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS0000012F ACZ Project ID: L92406

Jon Anderson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 17, 2011. This project has been assigned to ACZ's project number, L92406. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L92406. 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 January 30, 2012. 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.

Tony Antalek has reviewed and approved this report.







Project ID:	ZS0000012F
Sample ID:	ESP-1

ACZ Sample ID: L92406-01 Date Sampled: 12/13/11 10:56 Date Received: 12/17/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	387.52		mg/L	2.5	12.5	12/27/11 11:24	сср

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS0000012F
Sample ID:	CW-10

ACZ Sample ID: L92406-02 Date Sampled: 12/14/11 09:02 Date Received: 12/17/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	49.24		mg/L	0.5	2.5	12/22/11 19:41	сср

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS0000012F
Sample ID:	CW-6

ACZ Sample ID: L92406-03 Date Sampled: 12/14/11 09:55 Date Received: 12/17/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	54.50		mg/L	0.5	2.5	12/22/11 20:45	сср

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS0000012F
Sample ID:	CW-9

ACZ Sample ID: L92406-04 Date Sampled: 12/14/11 10:52 Date Received: 12/17/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	43.80		mg/L	0.5	2.5	12/22/11 21:06	сср

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS0000012F
Sample ID:	DUP20111214A

ACZ Sample ID: L92406-05 Date Sampled: 12/14/11 00:00 Date Received: 12/17/11 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	54.42		mg/L	0.5	2.5	12/22/11 21:27	сср



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Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
Н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic QC Summary

ZS0000012F

FMI Gold & Copper - Sierrita

Project ID:

ACZ Project ID: L92406

Sulfate	M300.0 - Ion Chromatography												
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG315531													
WG315531ICV	ICV	12/20/11 0:41	WI111003-14	49.95		50.92	mg/L	101.9	90	110			
WG315531ICB	ICB	12/20/11 1:02				U	mg/L		-1.5	1.5			
WG315755													
WG315755LFB	LFB	12/22/11 16:31	WI111109-1	30		31.09	mg/L	103.6	90	110			
L92402-07DUP	DUP	12/22/11 17:14			5.42	5.4	mg/L				0.4	20	
L92402-08AS	AS	12/22/11 17:56	WI111109-1	30	6.49	36.77	mg/L	100.9	90	110			



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ACZ Project ID: L92406

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM PARAMETER	METHOD	QUAL DESCRIPTION	

No extended qualifiers associated with this analysis



ACZ Project ID: L92406

No certification qualifiers associated with this analysis

AGE Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

FMI Gold & Copper - Sierrita ZS0000012F	ACZ Proje Date Rece		2/17/201	L92406 1 10:54
	Receive	ed By:		ksj
	Date Pr	inted:	12/	19/2011
Receipt Verification				
		YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?				Х
2) Are the custody seals on the cooler intact?		Х		
3) Are the custody seals on the sample containers intact?				Х
4) Is there a Chain of Custody or other directive shipping papers present?		Х		
5) Is the Chain of Custody complete?		Х		
6) Is the Chain of Custody in agreement with the samples received?		Х		
7) Is there enough sample for all requested analyses?		Х		
8) Are all samples within holding times for requested analyses?		Х		
9) Were all sample containers received intact?		Х		
10) Are the temperature blanks present?				Х
11) Are the trip blanks (VOA and/or Cyanide) present?				Х
12) Are samples requiring no headspace, headspace free?				Х
13) Do the samples that require a Foreign Soils Permit have one?				Х

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 (℃)	Rad (µR/hr)
3427	4.3	15

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

Notes

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita

ZS0000012F

Sample Receipt

ACZ Project ID:	L92406
Date Received:	12/17/2011 10:54
Received By:	ksj
Date Printed:	12/19/2011

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	0 < 2	T >12	N/A	RAD	ID
L92406-01	ESP-1									Х		
L92406-02	CW-10									Х		
L92406-03	CW-6									Х		
L92406-04	CW-9									Х		
L92406-05	DUP20111214A									Х		

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
В	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
0	Raw/Sulfuric	ORANGE	pH must be < 2
Р	Raw/NaOH	PURPLE	pH must be > 12 *
Т	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: ksj

Name: Aaron Hilshorst Address: 6200 W. Duval Mine Road Company: Freeport-McMoRan Sierrita Inc. Green Valley, AZ 35614 E-mail: aaron_hilshorst@fmi.com Telephone: 520-393-2601 Company: Clear Creek Associates Telephone: 520-393-2601 Company: Clear Creek Associates Telephone: 520-393-2601 Company: Clear Creek Associates Telephone: 520-622-3222 Mame: Address: Company: Company: Clear Creek Associates Company: Telephone: If sample(s) received past holding time (HT), or If Insufficient HT remains to complete YES analysis before expiration, shall ACZ proceed with requested short HT analyses? NO If 'NO' then ACZ will concat client for further instruction. If neither 'YES' nor 'NO' NO If is indicated, ACZ will proceed with the requested to PQL. YES Project/PO 4: ZS0000012F YeS NO Reporting state for compliance testing: Sampler's Name: Sampler's Name: Sampler's Name: PATE-TINIL FATE Project/PO 4: ZS0000012F YeS YeS Reporting state for compliance testing: Sampler's Name: Sampler's Name: Sampler's Name: PATE-TINIL FATE	Company: Freeport-McMoRan Sierrita E-mail: aaron_hilshorst@fmi.com Copy of Report to Name: Ben Daigneau Company: Clear Creek Associates mvo de to Name: Company: E-mail: If sample(s) received past holding time (H analysis before expiration, shall ACZ prod If "NO" then ACZ will contact client for ful is indicated, ACZ will proceed with the rea Are samples for CO DW Compliance Mon If yes, please include state forms. Result PROJECT INFORMATION Quote #:	IT), or if insufficier ceed with requester ther instruction. quested analyses, itoring?	ed short If neithe even if I	E-mail Telepl Addre Telepl nains to HT ana r "YES"	Green none: 520 : bdaigne: none: 520 ss: none: 520 complete lyses? nor "NO"	Valley, A -393-2601 au@clearc -622-3222	Z 85614	ociates.			
E-mail: aaron_hilshorst@fmi.com Telephone: 520-393-2601 Orgev of Representation E-mail: bdaigneau@clearcreekassociates.com Company: Clear Creek Associates E-mail: bdaigneau@clearcreekassociates.com Telephone: 520-622-3222 Telephone: 520-622-3222 anyos clear Address: Company: E-mail: bdaigneau@clearcreekassociates.com Telephone: 520-622-3222 anyos clear Address: Company: E-mail: E-mail: Address: Company: E-mail: bdaigneau@clearcreekassociates.com If 'NO' then AC2 will contact cleint for further instruction. If neither 'YES' nor 'NO'' Is indicated, ACZ will proceed with the requested short HT analyses? If yes, please include state forms. Results will be reported to PQL. YES X Project/PO #: ZS0000012F YES YES X Reporting state for compliance lesting: Sample's Name: YES No X YES Are any samples NRC licensable material? Yes No YE YE YE YE Sample's Name: YE YE YE YE YE Are any samples NRC licensable material? Yes No YE YE YE	E-mail: aaron_hilshorst@fmi.com Copy of Report to Name: Ben Daigneau Company: Clear Creek Associates mvo ee to Name: Company: E-mail: If sample(s) received past holding time (H analysis before expiration, shall ACZ prod If "NO" then ACZ will contact client for ful is indicated, ACZ will proceed with the red Are samples for CO DW Compliance Mon If yes, please include state forms. Result PROJECT INFORMATION Quote #:	IT), or if insufficier ceed with requester ther instruction. quested analyses, itoring?	ed short If neithe even if I	E-mail Telepl Addre Telepl nains to HT ana r "YES"	hone: 520 bdaigne: hone: 520 ss: hone: b complete lyses? nor "NO"	-393-2601 au@clearc -622-3222	reekasse	ociates.			
Copy of Report to Name: Ben Daigneau E-mail: bdaigneau@clearcreekassociates.com Company: Clear Creek Associates Telephone: 520-622-3222 atvactor is Address: Company: Address: Company: E-mail: bdaigneau@clearcreekassociates.com E-mail: Address: Company: E-mail: E-mail: Address: Company: Telephone: E-mail: Address: Mame: NO E-mail: Address: Company: Telephone: E-mail: Address: NO NO If 'NO' then ACZ will contact client for further instruction. If neither "YES" nor "NO" Is indicated, AC2 will proceed with the requested analyses, even if HT is expired, and data will be qualified. Are samples for CO DW Compliance thonkoring? If yes, please include state forms. Results will be reported to PQL. Project/PO #: ZS0000012F Reporting state for compliance testing: Sampler's Name: Are any samples NRC licensable material? Yes No Sampler's Name: CW-10 12/	Copy of Report to Name: Ben Daigneau Company: Clear Creek Associates mvo ce to Name: Company: E-mail: If sample(s) received past holding time (H analysis before expiration, shall ACZ prod If "NO" then ACZ will contact client for fur is indicated, ACZ will proceed with the rec Are samples for CO DW Compliance Mon If yes, please include state forms. Result PROJECT INFORMATION Quote #:	ceed with requeste rther instruction. quested analyses, itoring?	ed short If neithe even if I	E-mail Telepl Addre Telepl nains to HT ana r "YES"	: bdaigne: hone: 520 ss: hone: complete lyses? nor "NO"	au@clearc	creekass				
Name: Ben Daigneau E-mail: E-mail: E-mail: Mare: Address:	Name: Ben Daigneau Company: Clear Creek Associates invo ce to Name: Company: E-mail: If sample(s) received past holding time (H analysis before expiration, shall ACZ prod If "NO" then ACZ will contact client for ful is indicated, ACZ will proceed with the rec Are samples for CO DW Compliance Mon If yes, please include state forms. Result PROJECT INFORMATION Quote #:	ceed with requeste rther instruction. quested analyses, itoring?	ed short If neithe even if I	Teleph Addre Teleph nains to HT anar r "YES"	none: 520 ss: none: o complete lyses? nor "NO"	-622-3222					
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Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)	Matrix SW (Surface Water) · GW (Ground										

7

White - Return with sample. Yellow - Retain for your records.



January 05, 2012

Report to: Jon Anderson FMI Gold & Copper - Sierrita 6200 West Duval Mine Rd. Green Valley, AZ 85614

cc: Ben Daigneau

Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS0000012F ACZ Project ID: L92480

Jon Anderson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 22, 2011. This project has been assigned to ACZ's project number, L92480. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L92480. 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 February 05, 2012. 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.

S. Habermehl

Scott Habermehl has reviewed and approved this report.







Project ID:	ZS0000012F
Sample ID:	TMM-1

ACZ Sample ID: L92480-01 Date Sampled: 12/21/11 14:19 Date Received: 12/22/11 Sample Matrix: Ground Water

Wet Chemistry									
Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography		U	*	mg/L	0.5	2.5	12/30/11 13:22	ccp



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

Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS0000012F

ACZ Project ID: L92480

Sulfate	M300.0 - Ion Chromatography												
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG315531													
WG315531ICV	ICV	12/20/11 0:41	WI111003-14	49.95		50.92	mg/L	101.9	90	110			
WG315531ICB	ICB	12/20/11 1:02				U	mg/L		-1.5	1.5			
WG316002													
WG316002LFB	LFB	12/30/11 13:01	WI111109-1	30		30.7	mg/L	102.3	90	110			
L92480-01DUP	DUP	12/30/11 13:43			U	U	mg/L				0	20	F
L92506-01AS	AS	12/30/11 14:25	WI111109-1	30	27.88	57.19	mg/L	97.7	90	110			



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

ACZ Project ID: L92480

accurate evaluation (< 10x MDL).

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L92480-01	WG316002	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for



ACZ Project ID: L92480

No certification qualifiers associated with this analysis

AGE Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

FMI Gold & Copper - Sierrita ZS0000012F	ACZ Proje Date Rec		L924	
	Received By:			ksj
	Date Pr	inted:	12/27/201	
Receipt Verification				
		YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?				Х
2) Are the custody seals on the cooler intact?		Х		
3) Are the custody seals on the sample containers intact?				Х
4) Is there a Chain of Custody or other directive shipping papers present?		Х		
5) Is the Chain of Custody complete?		Х		
6) Is the Chain of Custody in agreement with the samples received?		Х		
7) Is there enough sample for all requested analyses?		Х		
8) Are all samples within holding times for requested analyses?		Х		
9) Were all sample containers received intact?		Х		
10) Are the temperature blanks present?				Х
11) Are the trip blanks (VOA and/or Cyanide) present?				Х
12) Are samples requiring no headspace, headspace free?				Х
13) Do the samples that require a Foreign Soils Permit have one?				Х

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 (℃)	Rad (µR/hr)
Na14553	1.9	16

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

Notes

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita

ZS0000012F

Sample Receipt

ACZ Project ID: L92480 Date Received: 12/22/2011 15:09 Received By: ksj Date Printed: 12/27/2011

Sample Container Preservation

SAMPLE	CLIENT ID		R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	0 < 2	T >12	N/A	RAD	ID
L92480-01	TMM-1									Х			
Sample Co	ontainer Preservation Leg	end											
Abbreviatio	n Description	Contai	ner Type	e Pro	eservativ	/e/Limit	s						
R	Raw/Nitric	RED		pН	must be	< 2							
В	Filtered/Sulfuric	BLUE		pН	must be	< 2							
BK	Filtered/Nitric	BLACK		pН	must be	< 2							
G	Filtered/Nitric	GREEN	1	pН	must be	< 2							
0	Raw/Sulfuric	ORANO	θE	pН	must be	< 2							
Р	Raw/NaOH	PURPL	E	pН	must be	> 12 *							
Т	Raw/NaOH Zinc Acetate	TAN		pН	must be	> 12							
Y	Raw/Sulfuric	YELLO	W	pН	pH must be < 2								
YG	Raw/Sulfuric	YELLO	W GLAS	SS pH	S pH must be < 2								
N/A	No preservative needed	Not app	licable										
RAD	Gamma/Beta dose rate	Not app	licable	mu	ist be < 2	250 µR/ł	٦r						

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

	ACZ Labo	ratories, Inc. prings, CO 80487 (800) 33	4-5493	76	348	30	C	HAIN o	f CUS	STODY			
	Report to:			1									
	Name: Jon Anderson		4	Address: 6200 W. Duval Mine Road									
		Company: Freeport-McMoRan Sierrita Inc.			Green Valley, AZ 85614								
	E-mail:jonathan_anderson@fmi.com				Telephone: 520-393-2714								
	Copy of Report to:												
	Name: Ben Daigneau			E-ma	il: bdaig	gneau@cl	earcreekass	ociates.cor	n				
	Company: Clear Creek Assoc	iates		Telep	hone:	520-622-3	3222						
	Invoice to:												
	Name:			Address:									
	Company:												
	E-mail:		7	Telep	hone:								
	If sample(s) received past holdir	ng time (HT), or if insufficie	ent HT rer	mains to	o compl	lete		YES					
	analysis before expiration, shall					0		NO					
	If "NO" then ACZ will contact cli is indicated, ACZ will proceed w						ill be qualifie	ed.					
	Are samples for CO DW Complia						·	YES					
	If yes, please include state form	s. Results will be reported	to PQL.					NO	×				
	PROJECT INFORMATION			_		SES REQU	JESTED <i>(atta</i>	ach list or u	se quote	number)			
	Quote #:		_	ം	EPA 375								
	Project/PO #: ZS0000012F		4	Containers	or EP,								
	Reporting state for compliance	testing:	_	ntai	300 0								
	Sampler's Name:		_	ů j	by EPA 300								
	Are any samples NRC licensat			to#	4 by								
	SAMPLE IDENTIFICATION	DATE:TIME	Matrix	ļ	\$04								
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FRMAD050.01.15.09

White - Return with sample. Ye

Yellow Retain for your records.

 $\langle U_{i}\rangle$



January 23, 2012

Report to: Jon Anderson FMI Gold & Copper - Sierrita 6200 West Duval Mine Rd. Green Valley, AZ 85614

cc: Ben Daigneau

Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS000001JL ACZ Project ID: L92736

Jon Anderson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on January 13, 2012. This project has been assigned to ACZ's project number, L92736. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L92736. 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 February 23, 2012. 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.

S. Habermehl

Scott Habermehl has reviewed and approved this report.





ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Cop	oer - Sierrita	ACZ Sample ID:	L92736-01
Project ID:	ZS000001JL	Date Sampled:	01/11/12 09:59
Sample ID:	MO-2007-6A	Date Received:	01/13/12
		Sample Matrix:	Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	43.51		mg/L	0.5	2.5	01/17/12 14:32	сср

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita		ACZ Sample ID:	L92736-02
Project ID:	ZS000001JL	Date Sampled:	01/11/12 10:48
Sample ID:	MO-2007-6B	Date Received:	01/13/12
		Sample Matrix:	Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	57.78		mg/L	0.5	2.5	01/17/12 15:14	сср

ACZ	Laboratories, Inc.
	Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita		ACZ Sample ID:	L92736-03
Project ID:	ZS000001JL	Date Sampled:	01/11/12 12:57
Sample ID:	MO-2009-1	Date Received:	01/13/12
		Sample Matrix:	Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	93.84		mg/L	1	5	01/17/12 15:57	сср

ACZ	Laboratories	s, Inc.
2773 Downhill Drive	Steamboat Springs, CO 8	80487 (800) 334-5493

Project ID:	ZS000001JL
Sample ID:	MO-2007-3B

ACZ Sample ID: L92736-04 Date Sampled: 01/11/12 15:38 Date Received: 01/13/12 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	39.00		mg/L	0.5	2.5	01/17/12 16:18	в сср

ACZ	Laboratories, Inc.
	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS000001JL
Sample ID:	MO-2007-3C

ACZ Sample ID: L92736-05 Date Sampled: 01/11/12 16:39 Date Received: 01/13/12 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	104.03		mg/L	2.5	12.5	01/17/12 16:39	сср

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS000001JL
Sample ID:	DUP20120111A

ACZ Sample ID: L92736-06 Date Sampled: 01/11/12 00:00 Date Received: 01/13/12 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	42.97		mg/L	0.5	2.5	01/17/12 17:00	сср

ACZ	Laboratories, Inc.
	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS000001JL
Sample ID:	MO-2007-4C

ACZ Sample ID: L92736-07 Date Sampled: 01/12/12 10:24 Date Received: 01/13/12 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	92.92		mg/L	0.5	2.5	01/17/12 17:21	сср



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

Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS000001JL

ACZ Project ID: L92736

Sulfate	Ifate M300.0 - Ion Chromatography												
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG316581													
WG316581ICV	ICV	01/12/12 14:08	WI120105-1	50.15		50.32	mg/L	100.3	90	110			
WG316581ICB	ICB	01/12/12 14:29				U	mg/L		-1.5	1.5			
WG316854													
WG316854LFB	LFB	01/17/12 14:11	WI111109-1	30		30.99	mg/L	103.3	90	110			
L92736-01DUP	DUP	01/17/12 14:53			43.51	43.56	mg/L				0.1	20	
L92736-02AS	AS	01/17/12 15:35	WI111109-1	30	57.78	87.16	mg/L	97.9	90	110			



(800) 334-5493

ACZ Project ID: L92736

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM PARAMETER	METHOD	QUAL DESCRIPTION	

No extended qualifiers associated with this analysis



ACZ Project ID: L92736

No certification qualifiers associated with this analysis

AGE Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

FMI Gold & Copper - Sierrita ZS000001JL	ACZ Proje Date Rece		L92736 1/13/2012 10:16	
	Receive	ed By:		ksj
	Date Pr	inted:	1/	16/2012
Receipt Verification				
		YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?				Х
2) Are the custody seals on the cooler intact?		Х		
3) Are the custody seals on the sample containers intact?				Х
4) Is there a Chain of Custody or other directive shipping papers present?		Х		
5) Is the Chain of Custody complete?		Х		
6) Is the Chain of Custody in agreement with the samples received?		Х		
7) Is there enough sample for all requested analyses?		Х		
8) Are all samples within holding times for requested analyses?		Х		
9) Were all sample containers received intact?		Х		
10) Are the temperature blanks present?				Х
11) Are the trip blanks (VOA and/or Cyanide) present?				Х
12) Are samples requiring no headspace, headspace free?				Х
13) Do the samples that require a Foreign Soils Permit have one?				Х

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 (℃)	Rad (µR/hr)
2290	0.6	15

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

Notes

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita

ZS000001JL

Sample Receipt

ACZ Project ID:	L92736
Date Received:	01/13/2012 10:16
Received By:	ksj
Date Printed:	1/16/2012

Sample Container Preservation

SAMPLE CI	LIENT ID	R <	2 G <	2 BK < 2	Y< 2	YG< 2	B< 2	0 < 2	T >12	N/A	RAD	ID
L92736-01 M	O-2007-6A									Х		
L92736-02 M	O-2007-6B									Х		
L92736-03 M	O-2009-1									Х		
L92736-04 M	O-2007-3B									Х		
L92736-05 M	O-2007-3C									Х		
L92736-06 D	UP20120111A									Х		
L92736-07 M	O-2007-4C									Х		
Sample Cor	ntainer Preservation Leg	end										
Abbreviation	Description	Container T	ype I	Preservativ	ve/Limi	ts						
R	Raw/Nitric	RED	I	oH must be	e < 2							
В	Filtered/Sulfuric	BLUE	1	oH must be	e < 2							
BK	Filtered/Nitric	BLACK	I	oH must be	e < 2							
G	Filtered/Nitric	GREEN	I	oH must be	e < 2							
0	Raw/Sulfuric	ORANGE	I	oH must be	e < 2							
Р	Raw/NaOH	PURPLE	I	oH must be	e > 12 *							
Т	Raw/NaOH Zinc Acetate	TAN	I	oH must be	e > 12							
Υ	Raw/Sulfuric	YELLOW	I	oH must be	e < 2							
YG	Raw/Sulfuric	YELLOW GL	ASS	oH must be	e < 2							
N/A	No preservative needed	Not applicab	е									
RAD	Gamma/Beta dose rate	Not applicabl	e i	must be < 2	250 uR/	hr						

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

Report to:										
Name: Jonathan Anderso			Addres	s: 620	0 W. D	ıval Min	e Road			
Company: Freeport-McN		_				ey, AZ 8	5614			
E-mail: jonathan_anderso		Teleph	ione: 5	20-393	-2714					
Copy of Report to:										
Name: Ben Daigneau			E-mail:	bdaig	neau@	learcree	kassocia	tes.com	<u>i</u>	
Company: Clear Creek A	Associates		Teleph	one: 5	20-622	-3222				
Invoice to:										
Name:	A 10 100		Addres	SS:						
Company:										
E-mail:			Teleph	one:						
	holding time (HT), or if insuffic			-	ete			YES		
	shall ACZ proceed with reque act client for further instruction		-		3"			NO		
	eed with the requested analys					will be qu	alified.			
Are samples for CO DW Co	•							YES		
	forms. Results will be reported	ed to PQL.						NO	X	
PROJECTINFORMATIC	IN		, 		SES REC		jattaon i	ist or us	o quote na	impis E
Quote #:			۶	A 375						
Project/PO #: ZS000001			aine	or EPA						
Reporting state for compl	iance testing:		of Containers	EPA 300 or						
Sampler's Name:			Ŭ V	EP/						
Are any samples NRC lic SAMPLE IDENTIFICAT	ION DATE: HML	Matrix	#	SO4 by						
MO-2007-6A	01/11/12 : 0959	GW	1	×					+	
MO-2007-6B	01/11/12 : 1048	GW	1	×						
MO-2009-1	01/11/12 : 1043	GW	1	×						
MO-2007-3B	01/11/12 : 1538	GW	1	×						
MO-2007-3C	01/11/12 : 1639	GW	1	×						
DUP20120111A	01/11/12	GW	1	×						
MO-2007-4C	01/12/12 : 1024	GW	1	×						
										_
										· · · · ·
Matrix SW (Surface Wate	r) · GW (Ground Water) · WW (Was	te Water) · DV	V (Drinking	g Water)	· SL (Slud	ge) · SO (S	oil) · OL (C)il) · Other	(Specify)	
REMARKS										
UPS Tracking # 1Z 867	7F4 23 1000 8151									
010 Hucking # 12 007	101 25 1000 0151									
	Please refer to ACZ's terms	& conditio	ns locai	ted on f	lhe reve	rse side i	of this C	00		
RELINQUISHE		TIME			CEIVE				DATE:T	IMI.
		1400				/				
					/			1		

Ø



January 30, 2012

Report to: Jon Anderson FMI Gold & Copper - Sierrita 6200 West Duval Mine Rd. Green Valley, AZ 85614

cc: Ben Daigneau

Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS000001JL ACZ Project ID: L92839

Jon Anderson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on January 20, 2012. This project has been assigned to ACZ's project number, L92839. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L92839. 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 February 29, 2012. 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.

S. Habermehl

Scott Habermehl has reviewed and approved this report.





ACZ	Laboratories	s, Inc.
	Steamboat Springs, CO 8	-

FMI Gold & Cop	per - Sierrita	ACZ Sample ID:	L92839-01
Project ID:	ZS000001JL	Date Sampled:	01/17/12 10:55
Sample ID:	MO-2007-4B	Date Received:	01/20/12
		Sample Matrix:	Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	33.14		mg/L	0.5	2.5	01/24/12 19:58	сср

ACZ	Laboratories, Inc.
	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS000001JL
Sample ID:	MO-2007-4A

ACZ Sample ID: L92839-02 Date Sampled: 01/17/12 11:53 Date Received: 01/20/12 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	37.55		mg/L	0.5	2.5	01/26/12 14:34	сср



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

Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS000001JL

ACZ Project ID: L92839

Sulfate M300.0 - Ion Chromatography													
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG316581													
WG316581ICV	ICV	01/12/12 14:08	WI120105-1	50.15		50.32	mg/L	100.3	90	110			
WG316581ICB	ICB	01/12/12 14:29				U	mg/L		-1.5	1.5			
WG317203													
WG317203LFB	LFB	01/24/12 12:35	WI111109-1	30		30.66	mg/L	102.2	90	110			
L92815-05DUP	DUP	01/24/12 18:13			8.54	8.49	mg/L				0.6	20	
L92815-06AS	AS	01/24/12 18:55	WI111109-1	30	8.67	36.39	mg/L	92.4	90	110			



(800) 334-5493

ACZ Project ID: L92839

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM PARAMETER	METHOD	QUAL DESCRIPTION	

No extended qualifiers associated with this analysis



ACZ Project ID: L92839

No certification qualifiers associated with this analysis

AGE Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

FMI Gold & Copper - Sierrita	ACZ Project ID: L92 Date Received: 01/20/2012 09				
ZS00001JL			1/20/201		
	Receive	ed By:		ksj	
	Date Pi	rinted:	1/2	20/2012	
Receipt Verification					
		YES	NO	NA	
1) Does this project require special handling procedures such as CLP protocol?				Х	
2) Are the custody seals on the cooler intact?		Х			
3) Are the custody seals on the sample containers intact?				Х	
4) Is there a Chain of Custody or other directive shipping papers present?		Х			
5) Is the Chain of Custody complete?		Х			
6) Is the Chain of Custody in agreement with the samples received?		Х			
7) Is there enough sample for all requested analyses?		Х			
8) Are all samples within holding times for requested analyses?		Х			
9) Were all sample containers received intact?		Х			
10) Are the temperature blanks present?				Х	
11) Are the trip blanks (VOA and/or Cyanide) present?				Х	
12) Are samples requiring no headspace, headspace free?				Х	
13) Do the samples that require a Foreign Soils Permit have one?				Х	

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 (℃)	Rad (µR/hr)			
Na14706	2.1	14			

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

Notes

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita

ZS000001JL

Sample Receipt

ACZ Project ID: L92839 Date Received: 01/20/2012 09:44 Received By: ksj Date Printed: 1/20/2012

Sample Container Preservation

SAMPLE C	LIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	0<2	T >12	N/A	RAD	ID		
L92839-01 N	/IO-2007-4B										Х			
L92839-02 N	/IO-2007-4A										Х			
Sample Co	ontainer Preservation Leg	end												
Abbreviation	Description	Contai	ner Typ	e Pr	eservativ	/e/Limi	ts							
R	Raw/Nitric	RED		p⊢	l must be	< 2								
В	Filtered/Sulfuric	BLUE		p⊢	l must be	< 2								
BK	Filtered/Nitric	BLACK	ζ.	p⊢	pH must be < 2									
G	Filtered/Nitric	GREEM	N	p⊢	pH must be < 2									
0	Raw/Sulfuric	ORANO	GE	p⊢	l must be	e < 2								
Р	Raw/NaOH	PURPL	.E	p⊢	l must be	e > 12 *								
Т	Raw/NaOH Zinc Acetate	TAN		p⊢	l must be	e > 12								
Υ	Raw/Sulfuric	YELLO	W	p⊢	pH must be < 2									
YG	Raw/Sulfuric	YELLO	W GLAS	SS p⊢	l must be	e < 2								
N/A	No preservative needed	Not app	olicable											
RAD	Gamma/Beta dose rate	Not app	olicable	mu	ust be < 2	250 µR/I	nr							

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

Name: Jon Anderson			Addre	ss: 620	00 W. D	uval N	fine Road			
Company: Freeport-McMo	oRan Sierrita Inc.			Gr	een Vall	ley, AZ	2 85614			
E-mail:jonathan_anderson	@fmi.com		Telepi	hone:	520-393	-2714				
Jopy of Report to:							·			
Name: Ben Daigneau				I; bdai;	gneau@	clearci	eekassoci	ates.com	1	
Company: Clear Creek As	sociates		Telepi	none:	520-622	-3222				·
invoice for										
Name:			Addre	SS:						·
Company:						•			<u></u> · · ·	
E-mail:		-1	Telepi	none:						
	lding time (HT), or if insuffic				lete			YES		
	hall ACZ proceed with reque t client for further instructior				ا ت			NO		
	d with the requested analyse					will be	qualified.			
are samples for CO DW Com	pliance Monitoring?							YES		
· · · · · · · · · · · · · · · · · · ·	orms. Results will be reported	ed to PQL.		2.5141.3	() () () () () () () () () ()	0. P. O. I		NO	×	
PROJECT INFORMATION					i SES Kr	OUEST	ED (attach	list or us	equete n	unner)
Quote #:			Ls I	EPA 375						
Project/PO #: ZS000001JL			Containers	১				1		
Reporting state for complia Sampler's Name:	nce testing:	_	ont	by EPA 300						
Are any samples NRC licer	eable material? Ves No	-	50	y EP,						
SAMPEE IDENTIFICATIO		Matrix	*	so4 b						
MO-2007-4B	01/17/12; 10:55	GW	1	×				-		
MO-2007-4A	01/17/12;11:53	GW	1	×						
	,									
	· GW (Ground Water) · WW (Waste	e Water) · D\	N (Drinkin	ig Water) · SL (Slu	dge) · SC) (Soil) · OL ((Dil) · Other	(Specify)	
EMARKS										
JPS Tracking # 1Z 867 7	E4 23 1000 8160									
Δ										
	lease refer to ACZ's terms		ons loca				le of this C	OC.		
RELINQUISHED	BY: DATE:			R	RECUIVE	DBY:			DA EL:	LIM1
	r [///a//?	7 6130			1			l I		

FRMAD050.01.15.09

White - Return with sample. Yellow - Retain for your records.



February 07, 2012

Report to: Jon Anderson FMI Gold & Copper - Sierrita 6200 West Duval Mine Rd. Green Valley, AZ 85614 Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS000001JL ACZ Project ID: L92953

Jon Anderson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on January 27, 2012. This project has been assigned to ACZ's project number, L92953. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L92953. 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 March 07, 2012. 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.

S. Habermehl

Scott Habermehl has reviewed and approved this report.





ACZ	Laboratories	s, Inc.
	Steamboat Springs, CO 8	-

FMI Gold & Copper - Sierrita		ACZ Sample ID:	L92953-01
Project ID:	ZS000001JL	Date Sampled:	01/24/12 09:35
Sample ID:	CW-10	Date Received:	01/27/12
		Sample Matrix:	Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	52.32		mg/L	0.5	2.5	02/02/12 16:35	сср

ACZ	Laboratories, Inc.
	Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Cop	per - Sierrita	ACZ Sample ID:	L92953-02
Project ID:	ZS000001JL	Date Sampled:	01/24/12 10:29
Sample ID:	CW-6	Date Received:	01/27/12
		Sample Matrix:	Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	60.17		mg/L	0.5	2.5	02/02/12 17:17	сср

ACZ	Laboratories, Inc.
	Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Cop	per - Sierrita	ACZ Sample ID:	L92953-03
Project ID:	ZS000001JL	Date Sampled:	01/24/12 11:28
Sample ID:	CW-9	Date Received:	01/27/12
		Sample Matrix:	Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	45.60		mg/L	0.5	2.5	02/02/12 18:00	сср



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

Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS000001JL

ACZ Project ID: L92953

Sulfate			M300.0 - I	on Chrom	natography	,							
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG316581													
WG316581ICV	ICV	01/12/12 14:08	WI120105-1	50.15		50.32	mg/L	100.3	90	110			
WG316581ICB	ICB	01/12/12 14:29				U	mg/L		-1.5	1.5			
WG317711													
WG317711LFB	LFB	02/02/12 16:14	WI111109-1	30		31.38	mg/L	104.6	90	110			
L92953-01DUP	DUP	02/02/12 16:56			52.32	52.19	mg/L				0.2	20	
L92953-02AS	AS	02/02/12 17:38	WI111109-1	30	60.17	89.53	mg/L	97.9	90	110			



(800) 334-5493

ACZ Project ID: L92953

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM PARAMETER	METHOD	QUAL DESCRIPTION	

No extended qualifiers associated with this analysis



ACZ Project ID: L92953

No certification qualifiers associated with this analysis

AGE Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

FMI Gold & Copper - Sierrita	ACZ Proje	ct ID:		L92953
ZS00001JL	Date Rece	eived: 0 ⁻	1/27/201	2 09:57
	Receive	ed By:		ksj
	Date Pr	inted:	1/:	27/2012
Receipt Verification				
		YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?				Х
2) Are the custody seals on the cooler intact?		Х		
3) Are the custody seals on the sample containers intact?				Х
4) Is there a Chain of Custody or other directive shipping papers present?		Х		
5) Is the Chain of Custody complete?		Х		
6) Is the Chain of Custody in agreement with the samples received?		Х		
7) Is there enough sample for all requested analyses?		Х		
8) Are all samples within holding times for requested analyses?		Х		
9) Were all sample containers received intact?		Х		
10) Are the temperature blanks present?				Х
11) Are the trip blanks (VOA and/or Cyanide) present?				Х
12) Are samples requiring no headspace, headspace free?				Х
13) Do the samples that require a Foreign Soils Permit have one?				Х

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 (℃)	Rad (µR/hr)
3035	1.3	17

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

Notes

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita

ZS000001JL

Sample Receipt

ACZ Project ID:	L92953
Date Received:	01/27/2012 09:57
Received By:	ksj
Date Printed:	1/27/2012

Sample Container Preservation

SAMPLE C	LIENT ID	I	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	0 < 2	T >12	N/A	RAD	ID
L92953-01 C	W-10										Х		
L92953-02 C	W-6										Х		
L92953-03 C	W-9										Х		
Sample Co	ntainer Preservation Leg	end											
Abbreviation	Description	Containe	er Type	e Pro	eservativ	/e/Limi	ts						
R	Raw/Nitric	RED		pН	must be	< 2							
В	Filtered/Sulfuric	BLUE		pН	pH must be < 2								
BK	Filtered/Nitric	BLACK		pН	pH must be < 2								
G	Filtered/Nitric	GREEN		pН	must be	< 2							
0	Raw/Sulfuric	ORANGE	Ξ	pН	must be	< 2							
Р	Raw/NaOH	PURPLE		pН	must be	> 12 *							
Т	Raw/NaOH Zinc Acetate	TAN		pН	must be	> 12							
Υ	Raw/Sulfuric	YELLOW	/	pН	must be	< 2							
YG	Raw/Sulfuric	YELLOW	/ GLAS	S pH	must be	< 2							
N/A	No preservative needed	Not appli	cable										
RAD	Gamma/Beta dose rate	Not appli	cable	mu	ist be < 2	250 µR/I	hr						

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

	on -McMoRan Sierrita Inc.		Address: 6200 W. Duval Mine Road Green Valley, AZ 85614								
E-mail:jonathon_an	derson@fmi.com		Telep	hone:	520-39	3-2714	l				
Copy of Report to:											
Name: Ben Daigne	au	_	E-mai	I: bdai	gneau(a)clearc	reekas	sociate	s.com		
Company: Clear Cro	eek Associates		Telep	hone:	520-62	2-3222	2				
Privatice to:											
Name:			Addre	ss:							
Company:											
E-mail:			Telep	hone:							
	past holding time (HT), or if insuffi				lete				YES		
	ation, shall ACZ proceed with reque				0"				NO		
	proceed with the requested analys					a will b	e qualif	ied.			
Are samples for CO [DW Compliance Monitoring?								YES		
	state forms. Results will be report	ted to PQL.							NQ	×	
PROJECTINFORM	ATION		1		rses r 1	LOULS T	160 (a 1	(lach le I	st or usi	e quote	number
Quote #:			υ	A 37!							
Project/PO #: ZS00	0001JL		of Containers	or EPA 375							
Reporting state for c	compliance testing:		onta	300				Į			
Sampler's Name:	, ,		Ŭ	EPA 300							
Are any samples NF SAMPLE IDEN III	RC licensable material? Yes No ICATION DATE TIME	Matrix	*	SO4 by							
CW-10 ⁻	1/24/12;0935	GW	1	×							
CW-6	1/24/12 ; 1029	GW	1	×					<u> </u>		
CW79	1/24/12 ; 1128	GW	1	×							
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FRMAD050.01.15.09

Yellow - Retain for your records. White - Return with sample.



Analytical Report

March 27, 2012

Report to: Jon Anderson FMI Gold & Copper - Sierrita 6200 West Duval Mine Rd. Green Valley, AZ 85614

cc: Ben Daigneau

Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS000001JL ACZ Project ID: L93580

Jon Anderson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 15, 2012. This project has been assigned to ACZ's project number, L93580. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L93580. 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 April 27, 2012. 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.

S. Habermehl

Scott Habermehl has reviewed and approved this report.





ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

Project ID:	ZS000001JL
Sample ID:	GV-1

ACZ Sample ID: **L93580-01** Date Sampled: 03/14/12 09:35 Date Received: 03/15/12 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XC) Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	35.56		mg/L	0.5	2.5	03/19/12 19:42	ccp

ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita

Project ID:	ZS000001JL
Sample ID:	GV-2

ACZ Sample ID: L93580-02 Date Sampled: 03/14/12 10:22 Date Received: 03/15/12 Sample Matrix: Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	77.35		mg/L	0.5	2.5	03/19/12 20:03	в сср

Arizona license number: AZ0102



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

Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic QC Summary

FMI Gold & Copper - Sierrita

Project ID:

ZS000001JL

ACZ Project ID: L93580

Sulfate M300.0 - Ion Chromatography													
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG319577													
WG319577ICV	ICV	03/14/12 11:40	WI120105-1	50.15		50.67	mg/L	101	90	110			
WG319577ICB	ICB	03/14/12 12:01				U	mg/L		-1.5	1.5			
WG319701													
WG319701LFB	LFB	03/19/12 17:56	WI120312-2	30		29.55	mg/L	98.5	90	110			
L93566-01DUP	DUP	03/19/12 18:39			54.34	54.24	mg/L				0.2	20	
L93566-03AS	AS	03/19/12 19:21	WI120312-2	30	43.11	72.17	mg/L	96.9	90	110			



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

ACZ Project ID: L93580

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM PARAMETER	METHOD	QUAL DESCRIPTION	

No extended qualifiers associated with this analysis



FMI Gold & Copper - Sierrita

ACZ Project ID: L93580

No certification qualifiers associated with this analysis

AGE Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

FMI Gold & Copper - Sierrita ZS000001JL	ACZ Proje Date Rec			L93580 2 10:04
	Receive	ed By:		ksj
	Date Pr	inted:	3/	15/2012
Receipt Verification				
		YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?				Х
2) Are the custody seals on the cooler intact?		Х		
3) Are the custody seals on the sample containers intact?				Х
4) Is there a Chain of Custody or other directive shipping papers present?		Х		
5) Is the Chain of Custody complete?		Х		
6) Is the Chain of Custody in agreement with the samples received?		Х		
7) Is there enough sample for all requested analyses?		Х		
8) Are all samples within holding times for requested analyses?		Х		
9) Were all sample containers received intact?		Х		
10) Are the temperature blanks present?				Х
11) Are the trip blanks (VOA and/or Cyanide) present?				Х
12) Are samples requiring no headspace, headspace free?				Х
13) Do the samples that require a Foreign Soils Permit have one?				Х

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 (℃)	Rad (µR/hr)
2440	0.2	8

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

Notes

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita

ZS000001JL

Sample Receipt

ACZ Project ID: L93580 Date Received: 03/15/2012 10:04 Received By: ksj Date Printed: 3/15/2012

Sample Container Preservation

SAMPLE	CLIENT ID		R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	0<2	T >12	N/A	RAD	ID	
L93580-01	GV-1								Х					
L93580-02	GV-2										Х			
Sample C	ontainer Preservation Leg	end												
Abbreviatio	n Description	Contai	ner Typ	e Pr	eservativ	/e/Limi	ts							
R	Raw/Nitric	RED		рH	l must be	< 2								
В	Filtered/Sulfuric	BLUE		рH	l must be	< 2								
BK	Filtered/Nitric	BLACK		pН	pH must be < 2									
G	Filtered/Nitric	GREEN	1	pН	pH must be < 2									
0	Raw/Sulfuric	ORANO	ЭE	pН	l must be	< 2								
Р	Raw/NaOH	PURPL	E	pН	l must be	> 12 *								
Т	Raw/NaOH Zinc Acetate	TAN		рH	l must be	> 12								
Y	Raw/Sulfuric	YELLO	W	pН	l must be	< 2								
YG	Raw/Sulfuric	YELLO	W GLA	SS pH	pH must be < 2									
N/A	No preservative needed	Not app	licable											
RAD	Gamma/Beta dose rate	Not app	licable	mu	must be < 250 μ R/hr									

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

Name: Jon Anderson Company: Freeport-Mc E-mail: jonothan_anders Cop.: of Report to:			1				-				
E-mail: jonothan_anders			Address: 6200 W. Duval Mine Road								
		┨			en Valle		85614	1			
Copy of Report to:	son@fm1.com		Teleph	none: 5	20-393-	2714					
Name: Ben Daigneau				: bdaigi			ekass	ociates	s.com		
Company: Clear Creek	Associates		Teleph	hone: 5	20-622-	-3222					
In zorde to:											
Name:			Addres	ss:			-				
Company:											
E-mail:			Telept			<u></u>				- T	
	t holding time (HT), or if insufficien				ste				YES NO		
	n, shall ACZ proceed with request ntact client for further instruction.				יינ					I	
	ceed with the requested analyses,					will be a	qualifie	əd.			
Are samples for CO DW (Compliance Monitoring?								YES		
	te forms. Results will be reported	to PQL.		ANIA M	ecoli	анцел		a da lo f	NO	×	aanto -
PROJECTINFORMATI	ION				OLO DIP		Pillen and a	1800 1000	1.11.11.11		
Quote #:	<u></u>	-		PA 37							
Project/PO #: ZS00000		-	of Containers	ы Б							
Reporting state for com	pliance testing:	-	ont	l 🕺	1						
Sampler's Name:		-	of C	Ĕ I					1		
Are any samples NRC I SAMPLE IDENTIFIC	licensable material? Yes No	Matrix	*	SO4 by EPA 300 or EPA 375							I
	03/14/12:09.35	GW	1	×	\rightarrow			†			·
<u>GV-1</u> GV-2	03/14/12:1022	GW	1	×							
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Matrix SW (Surface W REMARKS UPS Tracking # 1Z 86		1	┼──								

FRMAD050.01.15.09

White - Return with sample. Yellow - Retain for your records.



March 30, 2012

Report to: Jon Anderson FMI Gold & Copper - Sierrita 6200 West Duval Mine Rd. Green Valley, AZ 85614

cc: Ben Daigneau

Bill to: Accounts Payable FMI Gold & Copper - Sierrita P.O. Box 2671 Phoenix, AZ 85002-2671

Project ID: ZS000001JL ACZ Project ID: L93745

Jon Anderson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 26, 2012. This project has been assigned to ACZ's project number, L93745. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L93745. 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 April 30, 2012. 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.

S. Habermehl

Scott Habermehl has reviewed and approved this report.





ACZ	Laboratories, Inc.
2773 Downhill Drive	Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper- SierritaProject ID:ZS000001JL

NP-2

ACZ Sample ID:	L93745-01
Date Sampled:	03/21/12 10:12
Date Received:	03/26/12
Sample Matrix:	Ground Water

Wet Chemistry								
Parameter	EPA Method	Result	Qual X	Q Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	64.11		mg/L	0.5	2.5	03/29/12 14:46	б сср

Arizona license number: AZ0102

Sample ID:



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

Report Header Explanations

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

QC Sample Types

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

В	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
н	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

Method Refere	ences
(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.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).
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.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier
	associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

FMI Gold & Copper - Sierrita

Project ID:

ZS000001JL

ACZ Project ID: L93745

Sulfate			M300.0 - I	on Chrom	atography	/							
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG319577													
WG319577ICV	ICV	03/14/12 11:40	WI120105-1	50.15		50.67	mg/L	101	90	110			
WG319577ICB	ICB	03/14/12 12:01				U	mg/L		-1.5	1.5			
WG320291													
WG320291LFB	LFB	03/29/12 12:18	WI120312-2	30		29.15	mg/L	97.2	90	110			
L93586-04AS	AS	03/29/12 14:25	WI120312-2	30	U	29	mg/L	96.7	90	110			
L93745-01DUP	DUP	03/29/12 15:07			64.11	64.12	mg/L				0	20	



(800) 334-5493

ACZ Project ID: L93745

FMI Gold & Copper - Sierrita

ACZ ID	WORKNUM PARAMETER	METHOD	QUAL DESCRIPTION	

No extended qualifiers associated with this analysis



FMI Gold & Copper - Sierrita

ACZ Project ID: L93745

No certification qualifiers associated with this analysis

AGE Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

FMI Gold & Copper - Sierrita	ACZ Proje	ect ID:		L93745
ZS000001JL	ng procedures such as CLP protocol? ct? ntainers intact? ective shipping papers present? ith the samples received? d analyses? requested analyses?	eived: 03	3/26/201	2 09:31
	Receive	ed By:		ksj
	Date P	rinted:	3/2	26/2012
Receipt Verification				
		YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?				Х
2) Are the custody seals on the cooler intact?		Х		
3) Are the custody seals on the sample containers intact?				Х
4) Is there a Chain of Custody or other directive shipping papers present?		Х		
5) Is the Chain of Custody complete?		Х		
6) Is the Chain of Custody in agreement with the samples received?		Х		
7) Is there enough sample for all requested analyses?		Х		
8) Are all samples within holding times for requested analyses?		Х		
9) Were all sample containers received intact?		Х		
10) Are the temperature blanks present?				Х
11) Are the trip blanks (VOA and/or Cyanide) present?				Х
12) Are samples requiring no headspace, headspace free?				Х
13) Do the samples that require a Foreign Soils Permit have one?				Х

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 (℃)	Rad (µR/hr)
2546	8.9	14

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

Notes

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

FMI Gold & Copper - Sierrita

ZS000001JL

Sample Receipt

ACZ Project ID: L93745 Date Received: 03/26/2012 09:31 Received By: ksj Date Printed: 3/26/2012

Sample Container Preservation

SAMPLE CL	LIENT ID	R <	2 G < 2	2 BK < 2	Y< 2	YG< 2	B< 2	0 < 2	T >12	N/A	RAD	ID						
L93745-01 NI	P-2									Х								
Sample Container Preservation Legend																		
Abbreviation	Description	ype F	e Preservative/Limits															
R	Raw/Nitric	RED	р	pH must be < 2														
В	Filtered/Sulfuric	ulfuric BLUE				pH must be < 2												
BK	Filtered/Nitric	BLACK	р	pH must be < 2														
G	Filtered/Nitric	р	pH must be < 2															
0	Raw/Sulfuric	ORANGE	p	pH must be < 2														
Р	Raw/NaOH	aw/NaOH PURPLE					pH must be > 12 *											
Т	Raw/NaOH Zinc Acetate	TAN	p	pH must be > 12														
Y	Raw/Sulfuric	YELLOW	р	pH must be < 2														
YG	Raw/Sulfuric	YELLOW GL	ASS p	S pH must be < 2														
N/A	No preservative needed	Not applicab	е															
RAD	Gamma/Beta dose rate	Not applicab	e n	nust be < 2	250 µR/ł	٦r												

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

Report to Name: Jon Anderson Company: Freeport-Mo			Address: 6200 W. Duval Mine Road Green Valley, AZ 85614										
E-mail: jonothan_anders	son@fmi.com		Telephone: 520-393-2714										
Copy of Report to													
Name: Ben Daigneau							ciates.com	l					
Company: Clear Creek	Associates		Telephon	e: 520-62	22-3222								
Invoice to:			~										
Name:			Address:										
Company:													
E-mail:			Telephon					<u>т т</u>					
	st holding time (HT), or if i n, shall ACZ proceed with						YES NO						
If "NO" then ACZ will cor	ntact client for further inst	truction. If neither	"YES" no	"NO"									
	ceed with the requested	analyses, even if l	IT is expire	ed, and da	ta will be	qualified	YES						
Are samples for CO DW (If yes, please include sta	te forms. Results will be	reported to PQL.					NO	×					
PROJECT INFORMATI			AN	ALYSES F	REQUEST	TD (attac	sh list or us	n quote n	$antio \phi$				
Quote #:				010			_						
Project/PO #: ZS00000	1几		uers	01 EFA 3/3									
Reporting state for com	pliance testing:		of Containers	8									
Sampler's Name:			ပိ	× ×									
	licensable material? Yes		то #	504 by EFA 300									
SAMPLE IDENTIFIC/													
<u>NP-2</u>	3/21/2012 : 10	012 GW	1 3	<u> </u>	$\left \right $								
								+ +	<u></u>				
								╂┉──╂─					
Matrix SW (Surface W EMARKS UPS Tracking # 1Z 86 **PLEASE RUSH TI		W (Waste Water) · D\	V (Drinking V	Vater) · SL (:	Sludge) - S	O (Soil) · O	L (Oil) · Othei	r (Specify)					
	Please refer to ACZ's	s terms & condition	ons located		everse s VED BY		s COC.	DATE:	TIME				

FRMAD050.01.15.09

White - Return with sample. Yellow - Retain for your records.

APPENDIX C

TIME SERIES GRAPHS OF SULFATE CONCENTRATION

TABLE C.1 Sulfate Concentration Over Time

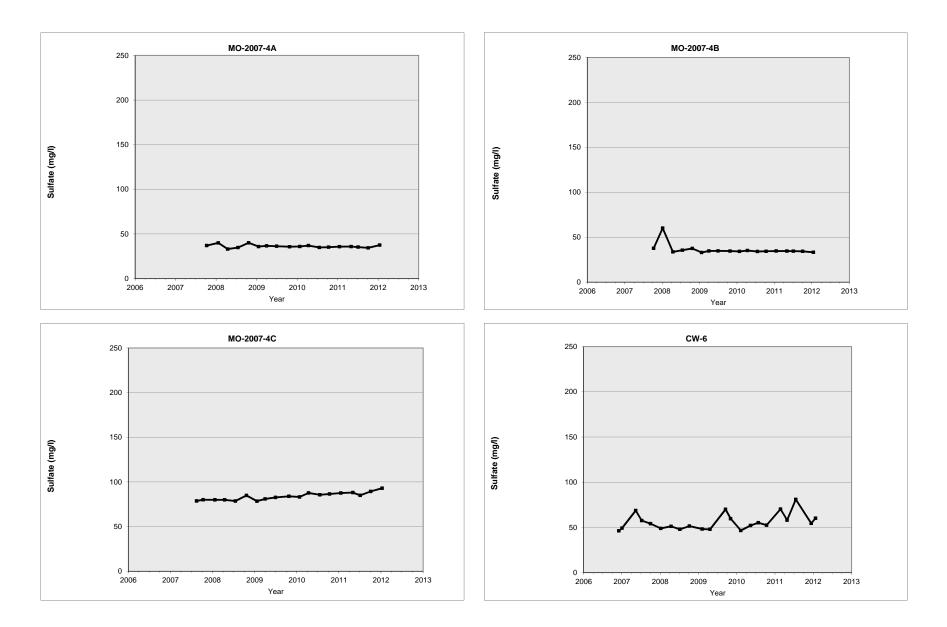
	Date and dissolved sulfate concentration reported in milligrams per liter (mg/l)																					
Well ID	Q4 2006	Q1 2007	Q2 2007	Q3 2007	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1201
CW-6	12/04/06	01/03/07	05/14/07	07/10/07	10/02/07	01/08/08	04/15/08	07/08/08	10/07/08	02/06/09	04/22/09	09/17/09	11/05/09	02/10/10	05/14/10	07/27/10	10/14/10	02/24/11	04/28/11	07/20/11	12/14/11	1/24/12
	46.2	49.2	68.7	57.6	54.2	48.9	51.2	47.9	51.5	48.2	47.9	70	59.7	46.6	52.1	55.2	52.5	70.3	58.1	81	54.5	60.17
CW-9	12/04/06	01/03/07	05/14/07	07/10/07	10/02/07	01/08/08	04/15/08	07/08/08	10/07/08	02/06/09	04/22/09	07/30/09	11/05/09	02/10/10	05/14/10	07/27/10	10/14/10	02/24/11	04/28/11	07/20/11	12/14/11	1/24/12
	44.5	44.9	47.8	46.7	46.4	47.3	43.7	44.1	43.5	45.1	44.3	43.8	44.7	43.4	44.2	44.1	44.2	42.7	44.4	43.9	43.8	43.8
CW-10	12/04/06	01/24/07	05/14/07	07/10/07	10/02/07	01/08/08	04/15/08	07/08/08	10/07/08	02/06/09	04/22/09	07/30/09	11/20/09	02/10/10	05/14/10	07/27/10	10/14/10	02/24/11	04/28/11	07/20/11	12/14/11	1/24/1
	37.2	48.6	52.8	51.7	47.7	45.3	50.8	50.5	48.3	51.3	47.9	49.2	49.9	44.9	49.1	48.9	48.5	50.2	49.6	50.7	49.24	52.32
ESP-1	12/04/06	01/03/07	05/14/07	07/10/07	10/12/07	01/23/08	04/18/08	07/25/08	10/30/08	01/29/09	04/16/09	NS	11/10/09	NS	4/28/10	NS	10/15/10	NS	05/03/11	NS	12/13/11	NS
	262	242	113	94	110	100	102	104	121	113	130		173		204		291		359		387.52	
ESP-2	12/04/06	01/03/07	05/14/07	07/10/07	10/12/07	01/23/08	04/18/08	07/25/08	10/30/08	01/29/09	04/16/09	NS	11/10/09	NS	4/28/10	NS	10/15/10	NS	05/03/11	NS	11/22/11	NS
	29.6	31.3	28.4	28.6	30	30	27.6	26.8	30.1	27.8	28.2	110	28.9		28.7		27.9		28.1	110	26.65	110
ESP-3	12/04/06	01/03/07	05/14/07	07/10/07	10/12/07	01/23/08	04/18/08	07/25/08	10/30/08	01/29/09	04/16/09	NS	11/12/09	NS	4/28/10	NS	10/15/10	NS	05/03/11	NS	11/22/11	NS
GV-01-GVDWID	36.2	37.5 01/09/07	36.6 04/10/07	36.6 07/11/07	40 10/03/07	30 01/07/08	35.7 04/16/08	34 07/07/08	36.8 11/25/08	35.2 03/03/09	35.3 04/22/09	07/29/09	39.5 11/04/09	01/27/10	35.8 04/01/10	07/28/10	35.2 10/14/10	01/20/11	35.1 04/28/11	07/20/11	34.18 12/7/11	3/14/12
GV-01-GVDWID		40.9	43.2	41.5		45.7	44.1	45.2	39	42.3	40.6	44.3	45.1	47.0	48.5	39.4	38.4		42.9	39.6	39.31	3/14/12
GV-02-GVDWID		40.9	43.2	41.5	43.8 10/03/07	45.7	44.1 04/16/08	45.2 07/07/08	39 11/25/08	42.3	40.6	44.3	45.1	47.0	48.5	39.4 07/28/10	38.4	40.0 01/20/11	42.9	39.6 07/20/11	12/7/11	35.56
GV-02-GVDWID		103	106	98	10/03/07	98	97	93.2	93.5	98.8	79.5	91.6	93.2	94.9	99.5	83	90.7	92.7	87.3	87.2	77.88	77.35
MO-2007-1A		103	100	98/08/07	10/09/07	90	97	93.2	93.5	98.8	04/01/09	07/01/09	93.2	94.9 NS	99.5	NS	10/13/10	92.7 NS	05/05/11	07.2 NS	10/6/11	NS
10-2007-1A				19.2	20	20	21	16.6	17.9	18.1	18.2	16.3	16.6	NO	18.5	NO	16/15/10	NO	17.9	NO	16.143	140
MO-2007-1B				08/02/07	10/09/07	01/24/08	04/09/08	07/14/08	10/17/08	01/16/09	04/01/09	07/01/09	10/22/09	NS	04/16/10	NS	10/13/10	NS	05/05/11	NS	10/6/11	NS
				18.9	30	30	35	39.8	54.3	69.7	84.1	99	143		230		340		479		604.67	
MO-2007-1C				07/31/07	10/09/07	01/24/08	04/09/08	07/14/08	10/21/08	01/16/09	04/01/09	07/01/09	10/22/09	NS	04/16/10	NS	10/13/10	NS	04/20/11	NS	10/6/11	NS
				112	90	140	149	165	146	233	229	236	301		320		376		381		393.94	
MO-2007-3B				09/10/07	10/09/07	01/21/08	04/16/08	07/14/08	10/22/08	01/19/09	04/01/09	07/27/09	10/22/09	01/20/10	04/22/10	07/21/10	10/26/10	01/18/11	05/04/11	07/06/11	10/5/11	1/11/12
				38	40	40	37	37.8	42.4	36.9	38.2	37.2	39.1	37.9	41.9	38.7	39.1	38.2	38.1	38.3	37.822	39
MO-2007-3C				07/05/07	10/10/07	01/21/08	04/15/08	07/14/08	10/21/08	01/19/09	04/01/09	07/22/09	10/22/09	01/20/10	04/14/10	07/21/10	10/26/10	01/18/11	05/04/11	07/06/11	10/5/11	1/11/12
				136	110	130	127	126	103	113	115	107	108	103	110	101	104	106	107	101	96.818	104.03
MO-2007-4A					10/09/07	01/22/08	04/16/08	07/17/08	10/22/08	01/19/09	04/02/09	07/01/09	10/26/09	01/26/10	04/14/10	07/21/10	10/13/10	01/19/11	05/04/11	07/06/11	10/5/11	1/17/12
					37	40	33.1	34.8	40.1	35.9	36.7	36.3	35.7	36.0	37.0	34.9	35.2	35.8	35.9	35.3	34.47	37.55
MO-2007-4B					10/11/07	01/07/08	04/16/08	07/18/08	10/22/08	01/21/09	04/02/09	07/01/09	10/26/09	01/26/10	04/14/10	07/21/10	10/13/10	01/19/11	05/04/11	07/06/11	10/5/11	1/17/12
					37.6	60	33.6	35.5	37.4	32.9	34.6	34.7	34.5	34.1	35.1	34	34.2	34.6	34.5	34.4	34.194	33.14
MO-2007-4C				08/16/07	10/12/07	01/22/08	04/16/08	07/18/08	10/22/08	01/21/09	04/02/09	07/01/09	10/26/09	01/26/10	04/14/10	07/21/10	10/13/10	01/19/11	05/04/11	07/06/11	10/5/11	1/12/12
				78.7	80.1	80	80	78.6	84.9	78.5	81	82.7	83.9	83.2	87.7	85.6	86.5	87.6	88.1	85	89.355	92.92
MO-2007-6A					10/02/07	01/22/08	04/18/08	07/24/08	10/23/08	01/22/09	04/02/09	07/22/09	10/26/09	01/20/10	04/21/10	08/10/10	10/26/10	01/18/11	05/05/11	07/07/11	10/6/11	1/11/12
					26.5	30	20.5	16.9	18.6	26.9	23.7	19.8	23.5	24.6	34.7	26.8	33.9	30.2	29.2	36.6	34.109	43.51
MO-2007-6B					10/04/07	01/22/08	04/17/08	07/24/08	10/23/08	01/22/09	04/02/09	07/22/09	10/26/09	01/20/10	04/21/10	08/10/10	10/26/11	01/18/11	05/05/11	07/07/11	10/6/11	1/11/12
					93.6	80	90.4	81.5	63.2	84.5	75.7	63.5	62.1	69.7	57.9	68.8	57.7	58.5	57.2	57.5	55.342	57.78
MO-2009-1											04/24/09	07/29/09	11/03/09	01/25/10	04/20/10	08/10/10	12/15/10	02/02/11	06/16/11	08/31/11	12/1/11	1/11/12
NBA			00/01/57	00/40/67	11/00/5-	0.111.15-	0.4/47/67	07/11/57	10/00/57	00/00/57	62.1	97.7	109	82.1	99	109	94	92	102	108	91.82	93.84
NP-2			06/04/07	08/13/07	11/06/07	01/11/08	04/17/08	07/11/08	10/09/08	02/09/09	04/24/09 32.1	09/17/09	NS	NS	04/22/10 41.9	08/05/10 41.2	10/25/10	01/19/11 41.9	05/03/11 43.5	07/18/11 44.8	12/5/11 58.63	3/21/12

NS = No sample

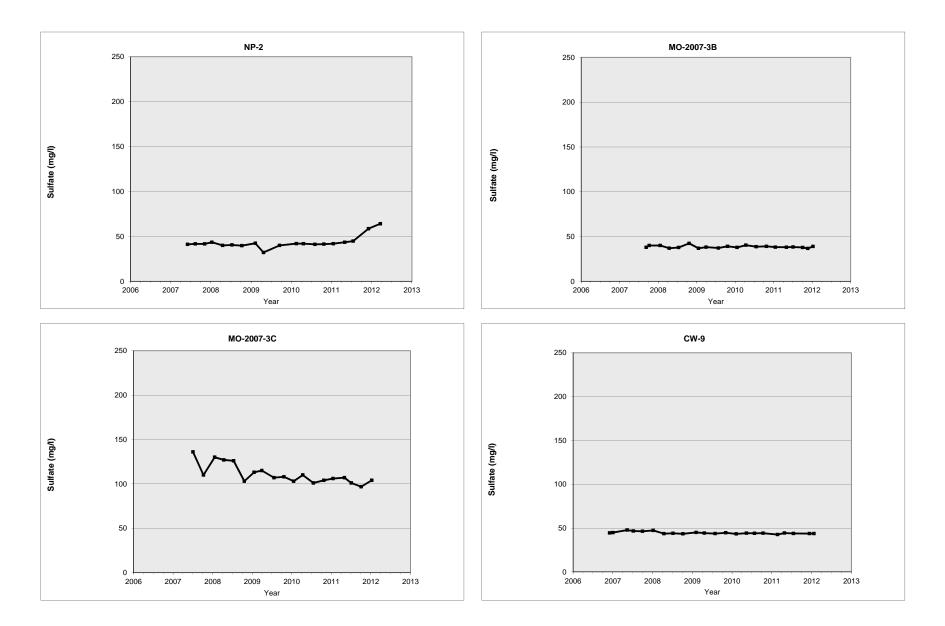
Q1 = First Quarter

Q2 = Second Quarter

Q3 = Third Quarter Q4 = Fourth Quarter FIGURE C.1 SULFATE CONCENTRATION OVER TIME FOR WELLS MO-2007-4A, MO-2007-4B, MO-2007-4C, AND CW-6



CLEAR CREEK CREEK ASSOCIATES V:Projects/G & K\055039_Sierrita Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2011 Q4 and 2012 Q1 Semiannual Report\SA Sierrita Appendix C FIGURE C.2 SULFATE CONCENTRATION OVER TIME FOR WELLS NP-2, MO-2007-3B, MO-2007-3C, AND CW-9



CLEAR CREEK CREEK ASSOCIATES V:Projects/G & K\055039_Sierrita Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2011 Q4 and 2012 Q1 Semiannual Report\SA Sierrita Appendix C FIGURE C.3 SULFATE CONCENTRATION OVER TIME FOR WELLS MO-2009-1 AND CW-10

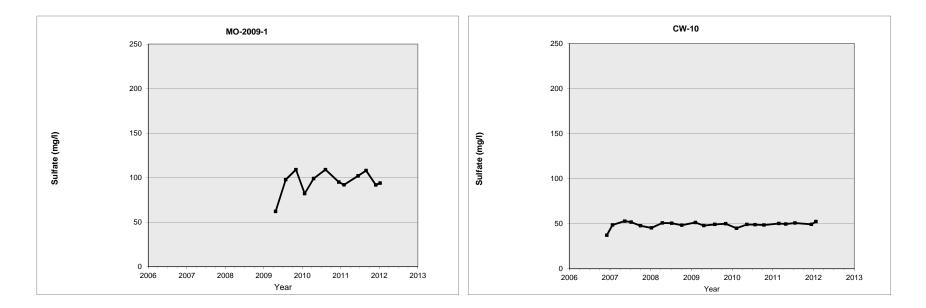
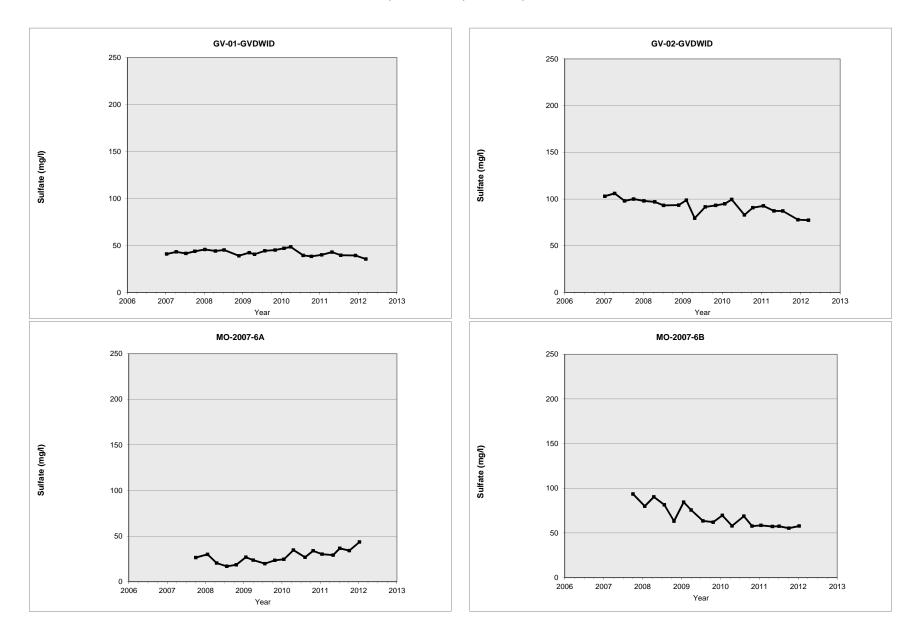
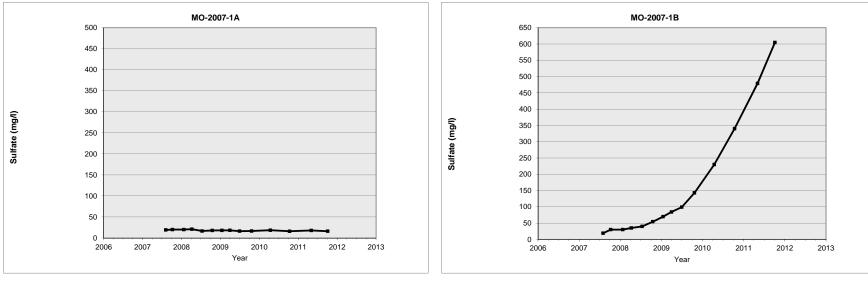


FIGURE C.4 SULFATE CONCENTRATION OVER TIME FOR WELLS GV-01-GVDWID, GV-02-GVDWID, MO-2007-6A, AND MO-2007-6B



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FIGURE C.5 SULFATE CONCENTRATION OVER TIME FOR WELLS MO-2007-1A, MO-2007-1B, AND MO-2007-1C



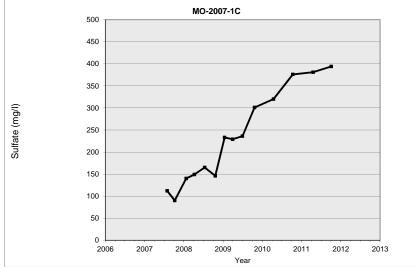
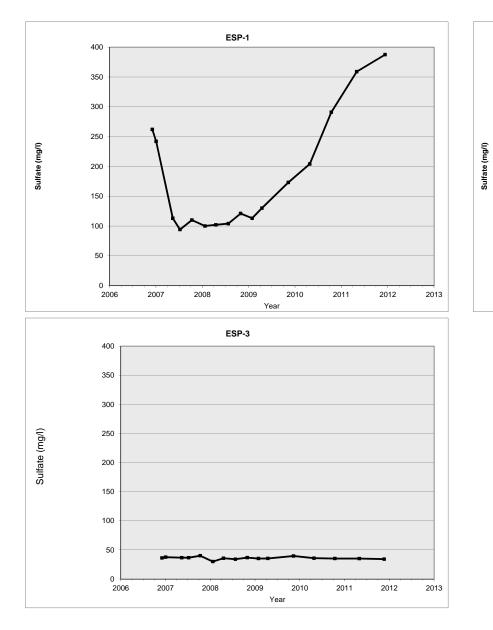
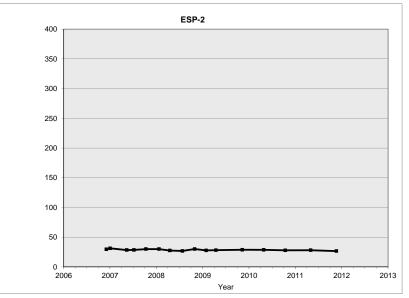




FIGURE C.6 SULFATE CONCENTRATION OVER TIME FOR WELLS ESP-1, ESP-2, AND ESP-3

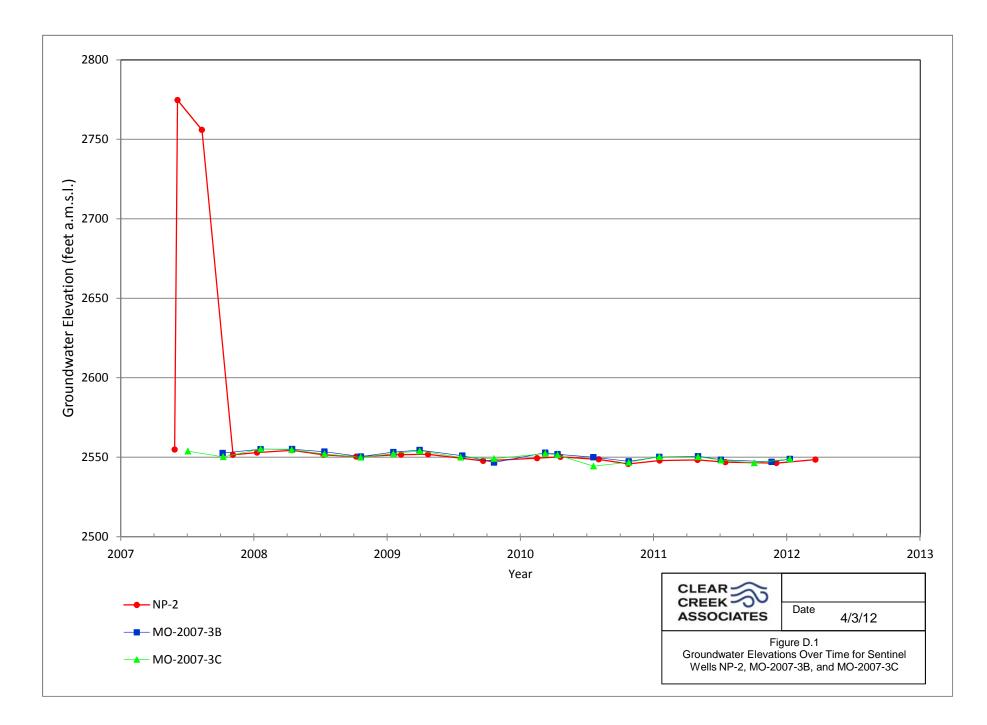


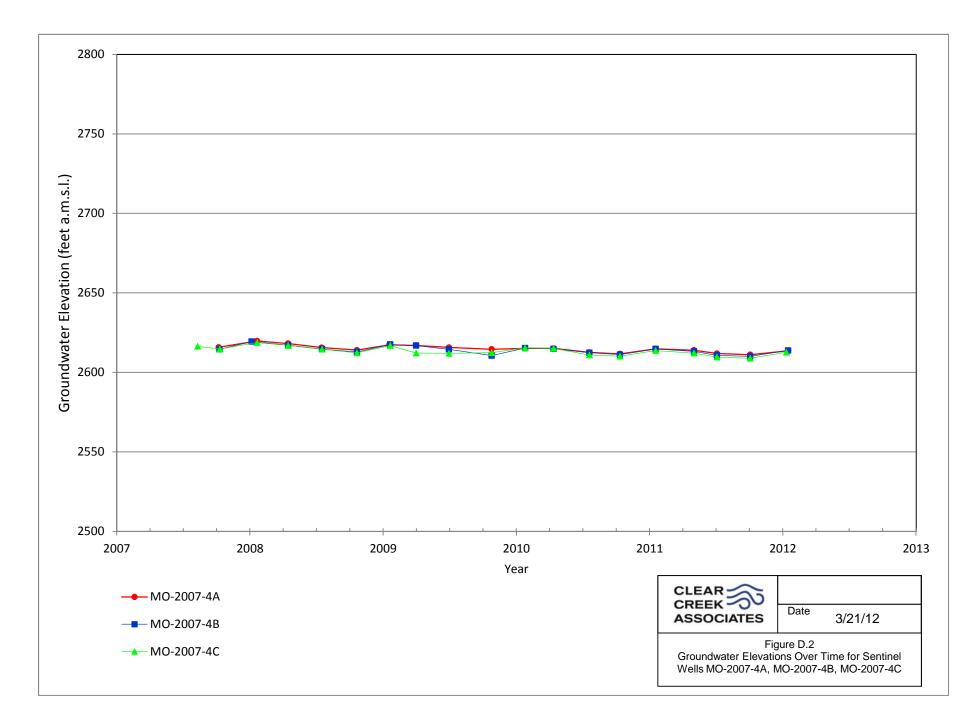


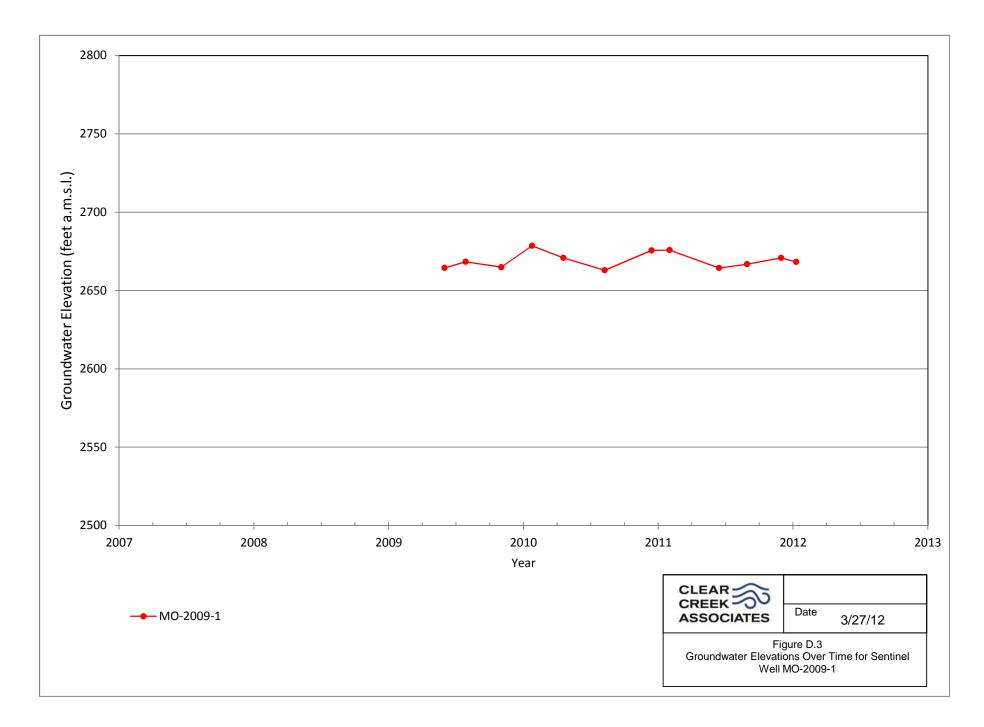
CLEAR CREEK CREEK

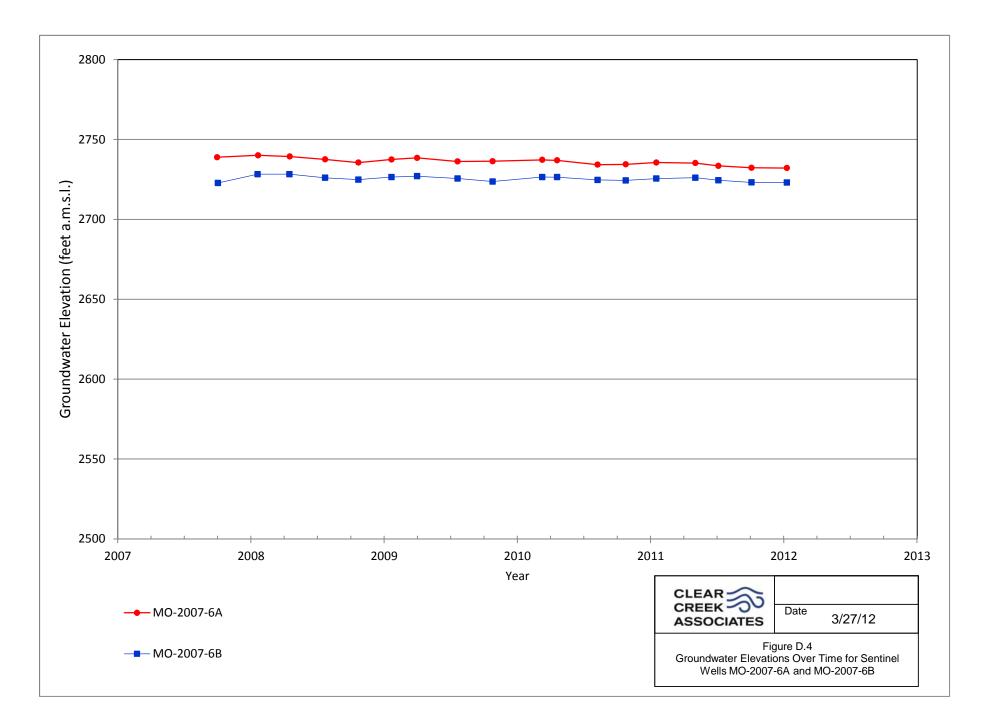
APPENDIX D

TIME SERIES GRAPHS OF GROUNDWATER ELEVATION









V:\Projects\G & K\055039_Sierrita Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2011 Q4 and 2012 Q1 Semiannual Report\GW Elevation Time Series for Sentinel Wells