

Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: UGW-623103-051407

ACZ Sample ID: **L62584-14**
Date Sampled: 05/14/07 15:05
Date Received: 05/15/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	28.4			mg/L	0.5	3	05/19/07 2:39	nps

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: FGW-623104-051407

ACZ Sample ID: **L62584-15**
Date Sampled: 05/14/07 15:40
Date Received: 05/15/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	NDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	36.6			mg/L	0.5	3	05/19/07 2:57	nps

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: UGW-623104-051407

ACZ Sample ID: **L62584-16**
Date Sampled: 05/14/07 15:40
Date Received: 05/15/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	36.7			mg/L	0.5	3	05/19/07 3:15	nps

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: TB051407A

ACZ Sample ID: **L62584-17**
Date Sampled: 05/14/07 10:00
Date Received: 05/15/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	KC	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography		U		mg/L	0.5	3	05/19/07 3:33	nps

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: EQ051407A

ACZ Sample ID: **L62584-18**
Date Sampled: 05/14/07 15:20
Date Received: 05/15/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography		U		mg/L	0.5	3	05/19/07 3:51	nps

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: DUP051407A

ACZ Sample ID: **L62584-19**
Date Sampled: 05/14/07 00:00
Date Received: 05/15/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XC	Units	MDL	PGL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	36.8			mg/L	0.5	3	05/19/07 4:10	nps

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: DUP051407B

ACZ Sample ID: **L62584-20**
Date Sampled: 05/14/07 00:00
Date Received: 05/15/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	36.6			mg/L	0.5	3	05/19/07 4:28	nps

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Method References

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

Comments

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

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L62584**

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PNINSON	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG223789													
WG223789ICV	ICV	04/24/07 13:03	IC070405-1	50.15		52.3	mg/L	104.3	90	110			
WG223789ICB	ICB	04/24/07 13:21				U	mg/L		-1.5	1.5			
WG223789ICV1	ICV	04/27/07 16:10	IC070405-1	50.15		52.21	mg/L	104.1	90	110			
WG223789ICB1	ICB	04/27/07 16:28				U	mg/L		-1.5	1.5			
WG224985													
WG224985ICV	ICV	04/24/07 13:03	IC070405-1	50.15		52.3	mg/L	104.3	90	110			
WG224985ICB	ICB	04/24/07 13:21				U	mg/L		-1.5	1.5			
WG224985ICV1	ICV	05/18/07 14:53	IC070507-1	50.15		51.64	mg/L	103	90	110			
WG224985ICB1	ICB	05/18/07 15:11				U	mg/L		-1.5	1.5			
WG224985LFB1	LFB	05/18/07 15:29	IC070205-3	30		31.37	mg/L	104.6	90	110			
L62584-01DUP	DUP	05/18/07 20:19			68.7	68.76	mg/L				0.1	20	
L62584-02AS	AS	05/18/07 20:55	IC070205-3	30	69.3	96.54	mg/L	90.8	90	110			
WG224985LFB2	LFB	05/19/07 0:14	IC070205-3	30		31.1	mg/L	103.7	90	110			
L62584-11DUP	DUP	05/21/07 23:22			113	113.3	mg/L				0.3	20	
L62584-12AS	AS	05/21/07 23:58	IC070205-3	60	112	167.9	mg/L	93.2	90	110			

Phelps Dodge Sierrita

ACZ Project ID: L62584

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

helps Dodge Sierrita

ACZ Project ID: **L62584**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L62584
Date Received: 5/15/2007
Received By:
Date Printed: 5/15/2007

Receipt Verification

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

YES	NO	NA
		X
X		
		X
X		
X		
X		
X		
X		
		X
		X
		X
		X

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
NA3562	2.2	16

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L62584
Date Received: 5/15/2007
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L62584-01	FGW-627485-051407									X		
L62584-02	UGW-627485-051407									X		
L62584-03	FGW-502546-051407									X		
L62584-04	UGW-502546-051407									X		
L62584-05	FGW-543600-051407									X		
L62584-06	UGW-543600-051407									X		
L62584-07	FGW-588121-051407									X		
L62584-08	UGW-588121-051407									X		
L62584-09	FGW-207982-051407									X		
L62584-10	UGW-207982-051407									X		
L62584-11	FGW-623102-051407									X		
L62584-12	UGW-623102-051407									X		
L62584-13	FGW-623103-051407									X		
L62584-14	UGW-623103-051407									X		
L62584-15	FGW-623104-051407									X		
L62584-16	UGW-623104-051407									X		
L62584-17	TB051407A									X		
L62584-18	EQ051407A									X		
L62584-19	DUP051407A									X		
L62584-20	DUP051407B									X		

Sample Container Preservation Legend

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

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

L 0 2 0 0 4

ACZ Laboratories, Inc.

glog & sga

CHAIN of CUSTODY

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

Report to:

Name: Kim Garcia
 Company: Hydro Geo Chem, Inc.
 E-mail: kim.g@HGCInc.com

Address: 51 W. Wetmore Rd.
TUCSON, AZ 85705 - 1678
 Telephone: 520-293-1500x.123

Copy of Report to:

Name: Ned Hall / B. Norris / J. Norris
 Company: PDSE & HGC

E-mail: JimN@HGCINC.com / Billy-Norris@FMI.com
 Telephone: 520-293-1500 x112 / 520-448-8873

Invoice to:

Name: Ned Hall
 Company: PDSE
 E-mail: Ned.Hall@FMI.com

Address: 6200 W. Dural Mtn Rd.
PO Box 527 Green Valley, AZ 85622
 Telephone: 520-648-8851

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?
 If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

YES
 NO

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: Sierrita Sulfate
 Project/PO #: 050375
 Reporting state for compliance testing: AZ
 Sampler's Name: JS/KG
 Are any samples NRC licensable material? NO

# of Containers	SO4	Field Parameters		
		pH	EC	Temp
1	X	7.58	507	26.1
1	X	7.58	507	26.1
1	X	7.40	1860	27.4
1	X	7.40	1860	27.4
1	X	7.69	1379	29.4
1	X	7.69	1379	29.4
1	X	7.74	444	27.5
1	X	7.74	444	27.5
1	X	7.81	382	31.3
1	X	7.81	382	31.3

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SO4	pH	EC	Temp
FGW-027485-051407	5.14.07 1330	GW	1	X	7.58	507	26.1
UGW-027485-051407	5.14.07 1330	GW	1	X	7.58	507	26.1
FGW-5025418-051407	5.14.07 1007	GW	1	X	7.40	1860	27.4
UGW-5025418-051407	5.14.07 1007	GW	1	X	7.40	1860	27.4
FGW-543600-051407	5.14.07 1111	GW	1	X	7.69	1379	29.4
UGW-543600-051407	5.14.07 1111	GW	1	X	7.69	1379	29.4
FGW-588121-051407	5.14.07 1200	GW	1	X	7.74	444	27.5
UGW-588121-051407	5.14.07 1200	GW	1	X	7.74	444	27.5
FGW-207982-051407	5.14.07 1245	GW	1	X	7.81	382	31.3
UGW-207982-051407	5.14.07 1245	GW	1	X	7.81	382	31.3

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

REMARKS

FGW* = Filtered Groundwater Sample
 UGW* = Unfiltered Groundwater Sample

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<u>[Signature]</u>	<u>5/14/07 1755</u>	<u>JMC</u>	<u>5/15/07</u>

ACZ Laboratories, Inc.

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

L02087

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CHAIN of CUSTODY

Report to:

Name: Kim Garcia
 Company: HGC Inc
 E-mail: kim@HGCINC.COM

Address: _____
 Telephone: Same as on page 1

Copy of Report to:

Name: Ned Hall / Billy Dorris / J. Morris
 Company: PDST / HGC

E-mail: _____
 Telephone: Same as on page 1

Invoice to:

Name: Ned Hall
 Company: PDST
 E-mail: Ned-Hall@FM1.COM

Address: _____
 Telephone: Same as on page 1

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

YES
 NO

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

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: Sierrita Sulfate
 Project/PO #: 030375
 Reporting state for compliance testing: AZ
 Sampler's Name: JS/KG
 Are any samples NRC licensable material? NO

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Field Parameters		
				pH	EC	Temp
FGW-008518-051407	5-14-07	GW	1	X	not sampled	
UGW-008518-051407	5-14-07	GW	1	X	not sampled	
FGW-023102-051407	5-14-07 1420	GW	1	X	7.70	592 28.7
UGW-023102-051407	5-14-07 1420	GW	1	X	7.70	592 28.7
FGW-023103-051407	5-14-07 1505	GW	1	X	7.85	868 27.8
UGW-023103-051407	5-14-07 1505	GW	1	X	7.85	868 27.8
FGW-023104-051407	5-14-07 1540	GW	1	X	7.78	874 28.8
UGW-023104-051407	5-14-07 1540	GW	1	X	7.78	874 28.8
TB05407A	5-14-07 1000	GW	1	X	NA	NA NA
EQ05407A	5-14-07 1520	GW	1	X	NA	NA NA

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

REMARKS

FGW* = Filtered GW Sample
 UGW* = Unfiltered GW Sample

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<u>[Signature]</u>	<u>5/14/07 1750</u>	<u>JMC</u>	<u>5/15/07</u>

June 19, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Bill Dorris, Jim Norris, Kim Garcia

Project ID: OJ03Z5

ACZ Project ID: L63026

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 05, 2007. This project has been assigned to ACZ's project number, L63026. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63026. 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 July 19, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

19/Jun/07

Scott Habermehl, Project Manager, has reviewed and approved this report in its entirety.



Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: UF-605898-060407ACZ Sample ID: **L63026-01**
Date Sampled: 06/04/07 14:55
Date Received: 06/05/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	41.3		*	mg/L	0.5	3	06/12/07 3:09	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5
 Sample ID: FGW-605898-060407

ACZ Sample ID: **L63026-02**
 Date Sampled: 06/04/07 14:55
 Date Received: 06/05/07
 Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	50.3			mg/L	0.2	1	06/15/07 20:11	djt
Magnesium, dissolved	M200.7 ICP	10.9			mg/L	0.2	1	06/15/07 20:11	djt
Potassium, dissolved	M200.7 ICP	3.9			mg/L	0.3	2	06/15/07 20:11	djt
Sodium, dissolved	M200.7 ICP	31.7			mg/L	0.3	2	06/15/07 20:11	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		169			mg/L	2	20	06/14/07 0:00	cas
Carbonate as CaCO3			U		mg/L	2	20	06/14/07 0:00	cas
Hydroxide as CaCO3			U		mg/L	2	20	06/14/07 0:00	cas
Total Alkalinity		169			mg/L	2	20	06/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		4.3			%			06/19/07 0:00	calc
Sum of Anions		4.5			meq/L	0.1	0.5	06/19/07 0:00	calc
Sum of Cations		4.9			meq/L	0.1	0.5	06/19/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	9.1		*	mg/L	0.5	3	06/12/07 3:27	jlf
Fluoride	M300.0 - Ion Chromatography	0.2	B	*	mg/L	0.1	0.5	06/12/07 3:27	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.34			mg/L	0.02	0.1	06/19/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.34		*	mg/L	0.02	0.1	06/05/07 18:59	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	06/05/07 18:59	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	280			mg/L	10	20	06/11/07 13:44	aeH
Sulfate	300.0 - Ion Chromatography	41.2		*	mg/L	0.5	3	06/12/07 3:27	jlf
TDS (calculated)	Calculation	250			mg/L	10	50	06/19/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.12						06/19/07 0:00	calc

Arizona license number: AZ0102



Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Method References

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

Comments

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

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63026**

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226491													
WG226491PBW1	PBW	06/14/07 13:05				U	mg/L		-20	20			
WG226491LCSW2	LCSW	06/14/07 13:16	WC070601-1	820		795.7	mg/L	97	90	110			
L63038-02DUP	DUP	06/14/07 16:25			378	375.9	mg/L				0.6	20	
WG226491PBW2	PBW	06/14/07 16:31				U	mg/L		-20	20			
WG226491LCSW5	LCSW	06/14/07 16:44	WC070601-1	820		816.8	mg/L	99.6	90	110			
WG226491PBW3	PBW	06/14/07 21:05				U	mg/L		-20	20			
WG226491LCSW8	LCSW	06/14/07 21:16	WC070601-1	820		821.3	mg/L	100.2	90	110			
WG226491PBW4	PBW	06/15/07 0:31				U	mg/L		-20	20			
WG226491LCSW11	LCSW	06/15/07 0:44	WC070601-1	820		820.5	mg/L	100.1	90	110			
WG226491LCSW14	LCSW	06/15/07 3:13	WC070601-1	820		821.3	mg/L	100.2	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226498													
WG226498ICV	ICV	06/15/07 18:28	II070612-3	100		102.28	mg/L	102.3	95	105			
WG226498ICB	ICB	06/15/07 18:31				U	mg/L		-0.6	0.6			
WG226498LFB	LFB	06/15/07 18:44	II070601-2	67.99189		74.02	mg/L	108.9	85	115			
L63006-05AS	AS	06/15/07 19:34	II070601-2	67.99189	125	186.34	mg/L	90.2	85	115			
L63006-05ASD	ASD	06/15/07 19:37	II070601-2	67.99189	125	190.11	mg/L	95.8	85	115	2	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250LFB1	LFB	06/11/07 14:28	IC070205-3	30		30.76	mg/L	102.5	90	110			
WG226250LFB2	LFB	06/11/07 23:13	IC070205-3	30		30.82	mg/L	102.7	90	110			
L62993-03DUP	DUP	06/11/07 23:50			8	8.05	mg/L				0.6	20	
L62993-04AS	AS	06/12/07 0:26	IC070205-3	30	10.8	33.52	mg/L	75.7	90	110			M2
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250LFB1	LFB	06/11/07 14:28	IC070205-3	1.5		1.58	mg/L	105.3	90	110			
WG226250LFB2	LFB	06/11/07 23:13	IC070205-3	1.5		1.57	mg/L	104.7	90	110			
L62993-03DUP	DUP	06/11/07 23:50			.2	.11	mg/L				58.1	20	RA
L62993-04AS	AS	06/12/07 0:26	IC070205-3	1.5	.2	1.36	mg/L	77.3	90	110			M2
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L63026**

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226498													
WG226498ICV	ICV	06/15/07 18:28	II070612-3	100		104.21	mg/L	104.2	95	105			
WG226498ICB	ICB	06/15/07 18:31				U	mg/L		-0.6	0.6			
WG226498LFB	LFB	06/15/07 18:44	II070601-2	54.96149		60.39	mg/L	109.9	85	115			
L63006-05AS	AS	06/15/07 19:34	II070601-2	54.96149	129	178.88	mg/L	90.8	85	115			
L63006-05ASD	ASD	06/15/07 19:37	II070601-2	54.96149	129	183.06	mg/L	98.4	85	115	2.31	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG225946													
WG225946ICV	ICV	06/05/07 18:01	WI070308-3	2.416		2.346	mg/L	97.1	90	110			
WG225946ICB	ICB	06/05/07 18:02				U	mg/L		-0.06	0.06			
WG225946LFB1	LFB	06/05/07 18:07	WI070307-9	2		1.989	mg/L	99.5	90	110			
WG225946LFB2	LFB	06/05/07 18:45	WI070307-9	2		1.942	mg/L	97.1	90	110			
L63006-07AS	AS	06/05/07 18:51	WI070307-9	2	.5	2.477	mg/L	98.9	90	110			
L63006-08DUP	DUP	06/05/07 18:53			.11	.108	mg/L				1.8	20	RA

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG225946													
WG225946ICV	ICV	06/05/07 18:01	WI070308-3	.609		.616	mg/L	101.1	90	110			
WG225946ICB	ICB	06/05/07 18:02				U	mg/L		-0.03	0.03			
WG225946LFB1	LFB	06/05/07 18:07	WI070307-9	1		1.021	mg/L	102.1	90	110			
WG225946LFB2	LFB	06/05/07 18:45	WI070307-9	1		1.002	mg/L	100.2	90	110			
L63006-07AS	AS	06/05/07 18:51	WI070307-9	1	U	1.032	mg/L	103.2	90	110			
L63006-08DUP	DUP	06/05/07 18:53			.02	.023	mg/L				14	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226498													
WG226498ICV	ICV	06/15/07 18:28	II070612-3	20		20.01	mg/L	100.1	95	105			
WG226498ICB	ICB	06/15/07 18:31				U	mg/L		-0.9	0.9			
WG226498LFB	LFB	06/15/07 18:44	II070601-2	99.69893		104.95	mg/L	105.3	85	115			
L63006-05AS	AS	06/15/07 19:34	II070601-2	99.69893	1.9	108.67	mg/L	107.1	85	115			
L63006-05ASD	ASD	06/15/07 19:37	II070601-2	99.69893	1.9	115.95	mg/L	114.4	85	115	6.48	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226260													
WG226260PBW	PBW	06/11/07 13:20				U	mg/L		-20	20			
WG226260LCSW	LCSW	06/11/07 13:21	PCN27107	261		278	mg/L	106.5	80	120			
L63045-02DUP	DUP	06/11/07 13:54			3650	3648	mg/L				0.1	20	

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: L63026

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226498													
WG226498ICV	ICV	06/15/07 18:28	II070612-3	100		100.99	mg/L	101	95	105			
WG226498ICB	ICB	06/15/07 18:31				U	mg/L		-0.9	0.9			
WG226498LFB	LFB	06/15/07 18:44	II070601-2	98.01954		103.97	mg/L	106.1	85	115			
L63006-05AS	AS	06/15/07 19:34	II070601-2	98.01954	84.6	180.7	mg/L	98	85	115			
L63006-05ASD	ASD	06/15/07 19:37	II070601-2	98.01954	84.6	187.73	mg/L	105.2	85	115	3.82	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250LFB1	LFB	06/11/07 14:28	IC070205-3	30		30.86	mg/L	102.9	90	110			
WG226250LFB2	LFB	06/11/07 23:13	IC070205-3	30		30.57	mg/L	101.9	90	110			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
L62993-03DUP	DUP	06/12/07 17:42			390	388	mg/L				0.5	20	
L62993-04AS	AS	06/12/07 18:18	IC070205-3	600	1120	1606	mg/L	81	90	110			M2

helps Dodge Sierrita

ACZ Project ID: **L63026**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63026-01	WG226250	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
L63026-02	WG226250	Chloride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
		Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			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).
	WG225946	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG226250	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.

helps Dodge Sierrita

ACZ Project ID: **L63026**

No certification qualifiers associated with this analysis

Yehelps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L63026
 Date Received: 6/5/2007
 Received By:
 Date Printed: 6/5/2007

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
NA3706	4.2	15

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

Notes

Phelps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L63026
 Date Received: 6/5/2007
 Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L63026-01	UF-605898-060407									X		<input type="checkbox"/>
L63026-02	FGW-605898-060407		Y									<input type="checkbox"/>

Sample Container Preservation Legend

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

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

ACZ Laboratories, Inc.

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

L63026

CHAIN of CUSTODY

Report to:

Name: Kim Gracela
 Company: Hydro Gea Chem Inc
 E-mail: kimg@hgcinc.com

Address: 51 W Wetmore Rd
Tucson, AZ 85705-1678
 Telephone: 520) 293-1500 x123

Copy of Report to:

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

E-mail: Jimn@hgcinc.com, billydorris@fmi.com
 Telephone: 293-1500 x123 648-6873

Invoice to:

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

Address: 6200 W Duval Mine Rd
P.O. Box 527 Green Valley, AZ 85622
 Telephone: 648-8857

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

YES
 NO

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

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

PROJECT INFORMATION

Quote #: Sierrita Short
 Project/PO #: OJQ375
 Reporting state for compliance testing: AZ
 Sampler's Name: Mark Arneson
 Are any samples NRC licensable material? No

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	ANALYSES REQUESTED					PH	EC	Temp
				SO ₄ ⁻	CaMgNaK	ALK, TDS, SO ₄ ⁻	LI ⁻ , F ⁻ , NO ₃ ⁻				
UF-605898-060407	6/4/07: 1455	GW	1	X					7.20	411	25.9
FGW-605898-060407	6/4/07: 1455	GW	2		X	X			7.20	411	25.9

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

REMARKS

UF = unFiltered
 FGW = Filtered Groundwater sample

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<u>[Signature]</u>	<u>6/4/07: 1715</u>	<u>[Signature]</u>	<u>6-5-07 11:40</u>

June 19, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Kim Garcia, Jim Norris, Bill Dorris

Project ID: OJ03Z5

ACZ Project ID: L63094

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 07, 2007. This project has been assigned to ACZ's project number, L63094. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63094. 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 July 19, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

19/Jun/07

Scott Habermehl, Project Manager, has reviewed and approved this report in its entirety.



Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: UGW-627483-060607ACZ Sample ID: **L63094-01**
Date Sampled: 06/06/07 07:50
Date Received: 06/07/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	NDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	58.7			mg/L	0.5	3	06/14/07 18:02	jlf

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5
 Sample ID: FGW-627483-060607

ACZ Sample ID: **L63094-02**
 Date Sampled: 06/06/07 07:50
 Date Received: 06/07/07
 Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	56.1			mg/L	0.2	1	06/15/07 2:26	djt
Magnesium, dissolved	M200.7 ICP	10.9		*	mg/L	0.2	1	06/15/07 2:26	djt
Potassium, dissolved	M200.7 ICP	3.0			mg/L	0.3	2	06/15/07 2:26	djt
Sodium, dissolved	M200.7 ICP	30.5			mg/L	0.3	2	06/15/07 2:26	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		140			mg/L	2	20	06/14/07 0:00	cas
Carbonate as CaCO3			U		mg/L	2	20	06/14/07 0:00	cas
Hydroxide as CaCO3			U		mg/L	2	20	06/14/07 0:00	cas
Total Alkalinity		140			mg/L	2	20	06/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		4.1			%			06/19/07 11:04	calc
Sum of Anions		4.7			meq/L	0.1	0.5	06/19/07 11:04	calc
Sum of Cations		5.1			meq/L	0.1	0.5	06/19/07 11:04	calc
Chloride	M300.0 - Ion Chromatography	17.7			mg/L	0.5	3	06/14/07 18:38	jlf
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	06/14/07 18:38	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	2.92			mg/L	0.02	0.1	06/19/07 11:04	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	2.92		*	mg/L	0.02	0.1	06/07/07 22:06	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	06/07/07 22:06	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	300		*	mg/L	10	20	06/13/07 11:35	aeH
Sulfate	300.0 - Ion Chromatography	57.9			mg/L	0.5	3	06/14/07 18:38	jlf
TDS (calculated)	Calculation	273			mg/L	10	50	06/19/07 11:04	calc
TDS (ratio - measured/calculated)	Calculation	1.10						06/19/07 11:04	calc

Arizona license number: AZ0102



Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Method References

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

Comments

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

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: L63094

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226491													
WG226491PBW1	PBW	06/14/07 13:05				U	mg/L		-20	20			
WG226491LCSW2	LCSW	06/14/07 13:16	WC070601-1	820		795.7	mg/L	97	90	110			
WG226491PBW2	PBW	06/14/07 16:31				U	mg/L		-20	20			
WG226491LCSW5	LCSW	06/14/07 16:44	WC070601-1	820		816.8	mg/L	99.6	90	110			
WG226491PBW3	PBW	06/14/07 21:05				U	mg/L		-20	20			
WG226491LCSW8	LCSW	06/14/07 21:16	WC070601-1	820		821.3	mg/L	100.2	90	110			
L63094-02DUP	DUP	06/14/07 22:47			140	138.9	mg/L				0.8	20	
WG226491PBW4	PBW	06/15/07 0:31				U	mg/L		-20	20			
WG226491LCSW11	LCSW	06/15/07 0:44	WC070601-1	820		820.5	mg/L	100.1	90	110			
WG226491LCSW14	LCSW	06/15/07 3:13	WC070601-1	820		821.3	mg/L	100.2	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226522													
WG226522ICV	ICV	06/15/07 1:15	II070612-3	100		98.57	mg/L	98.6	95	105			
WG226522ICB	ICB	06/15/07 1:19				U	mg/L		-0.6	0.6			
WG226522LFB	LFB	06/15/07 1:36	II070601-2	67.99189		68.69	mg/L	101	85	115			
L63071-02AS	AS	06/15/07 1:44	II070601-2	67.99189	135	198.46	mg/L	93.3	85	115			
L63071-02ASD	ASD	06/15/07 1:48	II070601-2	67.99189	135	196.18	mg/L	90	85	115	1.16	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG226534													
WG226534ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226534ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226534ICV1	ICV	06/14/07 16:31	IC070606-1	20		20.3	mg/L	101.5	90	110			
WG226534ICB1	ICB	06/14/07 16:49				U	mg/L		-1.5	1.5			
WG226534LFB	LFB	06/14/07 17:07	IC070205-3	30		30	mg/L	100	90	110			
L63014-01DUP	DUP	06/14/07 17:43			49.3	49.1	mg/L				0.4	20	
L63094-01AS	AS	06/14/07 18:20	IC070205-3	30	18	46.28	mg/L	94.3	90	110			
WG226534ICV2	ICV	06/18/07 11:10	IC070606-1	20		20.25	mg/L	101.3	90	110			
WG226534ICB2	ICB	06/18/07 11:28				U	mg/L		-1.5	1.5			

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Project ID: OJ03Z5

ACZ Project ID: L63094

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG226534													
WG226534ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226534ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226534ICV1	ICV	06/14/07 16:31	IC070606-1	3.984		4.12	mg/L	103.4	90	110			
WG226534ICB1	ICB	06/14/07 16:49				U	mg/L		-0.3	0.3			
WG226534LFB	LFB	06/14/07 17:07	IC070205-3	1.5		1.55	mg/L	103.3	90	110			
L63014-01DUP	DUP	06/14/07 17:43			.3	.29	mg/L				3.4	20	RA
L63094-01AS	AS	06/14/07 18:20	IC070205-3	1.5	.2	1.77	mg/L	104.7	90	110			
WG226534ICV2	ICV	06/18/07 11:10	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226534ICB2	ICB	06/18/07 11:28				.11	mg/L		-0.3	0.3			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226522													
WG226522ICV	ICV	06/15/07 1:15	II070612-3	100		99.9	mg/L	99.9	95	105			
WG226522ICB	ICB	06/15/07 1:19				U	mg/L		-0.6	0.6			
WG226522LFB	LFB	06/15/07 1:36	II070601-2	54.96149		54.94	mg/L	100	85	115			
L63071-02AS	AS	06/15/07 1:44	II070601-2	54.96149	11.9	71.91	mg/L	109.2	85	115			
L63071-02ASD	ASD	06/15/07 1:48	II070601-2	54.96149	11.9	76.64	mg/L	117.8	85	115	6.37	20	MA

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226127													
WG226127ICV	ICV	06/07/07 21:06	WI070308-3	2.416		2.331	mg/L	96.5	90	110			
WG226127ICB	ICB	06/07/07 21:07				U	mg/L		-0.06	0.06			
WG226127LFB1	LFB	06/07/07 21:12	WI070307-9	2		2.008	mg/L	100.4	90	110			
WG226127LFB2	LFB	06/07/07 21:50	WI070307-9	2		1.938	mg/L	96.9	90	110			
L63089-08AS	AS	06/07/07 21:56	WI070307-9	2	U	1.981	mg/L	99.1	90	110			
L63089-09DUP	DUP	06/07/07 21:59			U	U	mg/L				0	20	RA

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226127													
WG226127ICV	ICV	06/07/07 21:06	WI070308-3	.609		.61	mg/L	100.2	90	110			
WG226127ICB	ICB	06/07/07 21:07				U	mg/L		-0.03	0.03			
WG226127LFB1	LFB	06/07/07 21:12	WI070307-9	1		1.017	mg/L	101.7	90	110			
WG226127LFB2	LFB	06/07/07 21:50	WI070307-9	1		.992	mg/L	99.2	90	110			
L63089-08AS	AS	06/07/07 21:56	WI070307-9	1	U	1.026	mg/L	102.6	90	110			
L63089-09DUP	DUP	06/07/07 21:59			U	U	mg/L				0	20	RA

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 Project ID: OJ03Z5

ACZ Project ID: L63094

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226522													
WG226522ICV	ICV	06/15/07 1:15	II070612-3	20		20.56	mg/L	102.8	95	105			
WG226522ICB	ICB	06/15/07 1:19				U	mg/L		-0.9	0.9			
WG226522LFB	LFB	06/15/07 1:36	II070601-2	99.69893		102.15	mg/L	102.5	85	115			
L63071-02AS	AS	06/15/07 1:44	II070601-2	99.69893	28.5	135.22	mg/L	107	85	115			
L63071-02ASD	ASD	06/15/07 1:48	II070601-2	99.69893	28.5	132.62	mg/L	104.4	85	115	1.94	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226419													
WG226419PBW	PBW	06/13/07 11:20				U	mg/L		-20	20			
WG226419LCSW	LCSW	06/13/07 11:21	PCN27107	261		296	mg/L	113.4	80	120			
L63119-03DUP	DUP	06/13/07 11:38			60	70	mg/L				15.4	20	RA

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226522													
WG226522ICV	ICV	06/15/07 1:15	II070612-3	100		101.88	mg/L	101.9	95	105			
WG226522ICB	ICB	06/15/07 1:19				U	mg/L		-0.9	0.9			
WG226522LFB	LFB	06/15/07 1:36	II070601-2	98.01954		100.11	mg/L	102.1	85	115			
L63071-02AS	AS	06/15/07 1:44	II070601-2	98.01954	91.3	189.06	mg/L	99.7	85	115			
L63071-02ASD	ASD	06/15/07 1:48	II070601-2	98.01954	91.3	188.61	mg/L	99.3	85	115	0.24	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG226534													
WG226534ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226534ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226534ICV1	ICV	06/14/07 16:31	IC070606-1	50.15		51.2	mg/L	102.1	90	110			
WG226534ICB1	ICB	06/14/07 16:49				U	mg/L		-1.5	1.5			
WG226534LFB	LFB	06/14/07 17:07	IC070205-3	30		30.14	mg/L	100.5	90	110			
L63094-01AS	AS	06/14/07 18:20	IC070205-3	30	58.7	85.95	mg/L	90.8	90	110			
WG226534ICV2	ICV	06/18/07 11:10	IC070606-1	50.15		50.97	mg/L	101.6	90	110			
WG226534ICB2	ICB	06/18/07 11:28				U	mg/L		-1.5	1.5			
L63014-01DUP	DUP	06/18/07 12:05			385	385.9	mg/L				0.2	20	

helps Dodge Sierrita

ACZ Project ID: **L63094**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63094-02	WG226522	Magnesium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG226534	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG226127	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG226419	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

helps Dodge Sierrita

ACZ Project ID: **L63094**

No certification qualifiers associated with this analysis

Sample Receipt

Helms Dodge Sierrita
 OJ03Z5

ACZ Project ID: L63094
 Date Received: 6/7/2007
 Received By:
 Date Printed: 6/8/2007

Receipt Verification

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

YES	NO	NA
		X
X		
		X
X		
X		
X		
X		
X		
		X
		X
		X
		X

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
NA3729	2.5	14

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

Notes

Phelps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L63094
 Date Received: 6/7/2007
 Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y < 2	YG < 2	B < 2	O < 2	T > 12	N/A	RAD	ID
L63094-01	UGW-627483-060607									X		<input type="checkbox"/>
L63094-02	FGW-627483-060607		Y									<input type="checkbox"/>

Sample Container Preservation Legend

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

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

ACZ Laboratories, Inc.

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

L63094

CHAIN of CUSTODY

Report to:

Name: Kim Garcia
 Company: Hydro Gen Chem Inc.
 E-mail: king@hgcinc.com

Address: 51 W. Wetmore Rd
Tucson, AZ 85705
 Telephone: 520) 293-1500 x123

Copy of Report to:

Name: Ned Hall, Bill Darris, Jim Morris
 Company: PDSE/HGL

E-mail: Jimn@hgcinc.com billdarris@fmi.com
 Telephone: 293-1500 x123 648-9873

Invoice to:

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

Address: 6200 W. Duval/Mcne Rd
PO Box 527 Green Valley, AZ 85602
 Telephone: 520) 648-8857

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

YES
 NO

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

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: Sierra short
 Project/PO #: OJ0325
 Reporting state for compliance testing: AZ
 Sampler's Name: Mark Ajaeson
 Are any samples NRC licensable material? No

# of Containers	SO ₄ ⁻	Ca Mg Na K	Al, TDS, SO ₄ ⁻	Cl ⁻ , F ⁻ , NO ₃ ⁻ , NO ₂ ⁻						
1	X									
2		X	X							

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SO ₄ ⁻	Ca Mg Na K	Al, TDS, SO ₄ ⁻	Cl ⁻ , F ⁻ , NO ₃ ⁻ , NO ₂ ⁻							
UGW-627493-060607	6/6/07: 0750	GW	1	X										
FGW-627493-060607	6/6/07: 0750	GW	2		X	X								

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

REMARKS

Please Rush Results
 UGW = Unfiltered Groundwater Sample
 FGW = Filtered Groundwater Sample
 Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<u>[Signature]</u>	6/6/07: 1558	<u>[Signature]</u>	6/7/07: 1217

June 19, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Kim Garcia, Jim Norris, Bill Dorris

Project ID: OJ03Z5

ACZ Project ID: L63094

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 07, 2007. This project has been assigned to ACZ's project number, L63094. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63094. 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 July 19, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

19/Jun/07

Scott Habermehl, Project Manager, has reviewed and approved this report in its entirety.



Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: UGW-627483-060607

ACZ Sample ID: **L63094-01**
Date Sampled: 06/06/07 07:50
Date Received: 06/07/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	RQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	58.7			mg/L	0.5	3	06/14/07 18:02	jff

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5
 Sample ID: FGW-627483-060607

ACZ Sample ID: **L63094-02**
 Date Sampled: 06/06/07 07:50
 Date Received: 06/07/07
 Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	56.1			mg/L	0.2	1	06/15/07 2:26	djt
Magnesium, dissolved	M200.7 ICP	10.9		*	mg/L	0.2	1	06/15/07 2:26	djt
Potassium, dissolved	M200.7 ICP	3.0			mg/L	0.3	2	06/15/07 2:26	djt
Sodium, dissolved	M200.7 ICP	30.5			mg/L	0.3	2	06/15/07 2:26	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		140			mg/L	2	20	06/14/07 0:00	cas
Carbonate as CaCO3			U		mg/L	2	20	06/14/07 0:00	cas
Hydroxide as CaCO3			U		mg/L	2	20	06/14/07 0:00	cas
Total Alkalinity		140			mg/L	2	20	06/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		4.1			%			06/19/07 11:04	calc
Sum of Anions		4.7			meq/L	0.1	0.5	06/19/07 11:04	calc
Sum of Cations		5.1			meq/L	0.1	0.5	06/19/07 11:04	calc
Chloride	M300.0 - Ion Chromatography	17.7			mg/L	0.5	3	06/14/07 18:38	jif
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	06/14/07 18:38	jif
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	2.92			mg/L	0.02	0.1	06/19/07 11:04	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	2.92		*	mg/L	0.02	0.1	06/07/07 22:06	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	06/07/07 22:06	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	300		*	mg/L	10	20	06/13/07 11:35	aeh
Sulfate	300.0 - Ion Chromatography	57.9			mg/L	0.5	3	06/14/07 18:38	jif
TDS (calculated)	Calculation	273			mg/L	10	50	06/19/07 11:04	calc
TDS (ratio - measured/calculated)	Calculation	1.10						06/19/07 11:04	calc

Arizona license number: AZ0102



Report Header Explanations

Table with 2 columns: Term and Definition. Includes terms like Batch, Found, Limit, Lower, MDL, PCN/SCN, PQL, QC, Rec, RPD, Upper, and Sample.

QC Sample Types

Table with 4 columns: Code, Description, Code, Description. Lists various QC sample types such as AS, ASD, CCB, etc.

QC Sample Type Explanations

Table with 2 columns: Sample Type and Explanation. Explains terms like Blanks, Control Samples, Duplicates, etc.

ACZ Qualifiers (Qual)

Table with 2 columns: Qualifier and Description. Lists B, H, and U with their respective meanings.

Method References

- List of method references including EPA 600/4-83-020, EPA 600/R-93-100, EPA 600/R-94-111, EPA SW-846, and Standard Methods for the Examination of Water and Wastewater.

Comments

- Comments regarding QC results, matrix reporting (dry weight vs as received), and animal matrices.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: L63094

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226491													
WG226491PBW1	PBW	06/14/07 13:05				U	mg/L		-20	20			
WG226491LCSW2	LCSW	06/14/07 13:16	WC070601-1	820		795.7	mg/L	97	90	110			
WG226491PBW2	PBW	06/14/07 16:31				U	mg/L		-20	20			
WG226491LCSW5	LCSW	06/14/07 16:44	WC070601-1	820		816.8	mg/L	99.6	90	110			
WG226491PBW3	PBW	06/14/07 21:05				U	mg/L		-20	20			
WG226491LCSW8	LCSW	06/14/07 21:16	WC070601-1	820		821.3	mg/L	100.2	90	110			
L63094-02DUP	DUP	06/14/07 22:47			140	138.9	mg/L				0.8	20	
WG226491PBW4	PBW	06/15/07 0:31				U	mg/L		-20	20			
WG226491LCSW11	LCSW	06/15/07 0:44	WC070601-1	820		820.5	mg/L	100.1	90	110			
WG226491LCSW14	LCSW	06/15/07 3:13	WC070601-1	820		821.3	mg/L	100.2	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226522													
WG226522ICV	ICV	06/15/07 1:15	II070612-3	100		98.57	mg/L	98.6	95	105			
WG226522ICB	ICB	06/15/07 1:19				U	mg/L		-0.6	0.6			
WG226522LFB	LFB	06/15/07 1:36	II070601-2	67.99189		68.69	mg/L	101	85	115			
L63071-02AS	AS	06/15/07 1:44	II070601-2	67.99189	135	198.46	mg/L	93.3	85	115			
L63071-02ASD	ASD	06/15/07 1:48	II070601-2	67.99189	135	196.18	mg/L	90	85	115	1.16	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG226534													
WG226534ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226534ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226534ICV1	ICV	06/14/07 16:31	IC070606-1	20		20.3	mg/L	101.5	90	110			
WG226534ICB1	ICB	06/14/07 16:49				U	mg/L		-1.5	1.5			
WG226534LFB	LFB	06/14/07 17:07	IC070205-3	30		30	mg/L	100	90	110			
L63014-01DUP	DUP	06/14/07 17:43			49.3	49.1	mg/L				0.4	20	
L63094-01AS	AS	06/14/07 18:20	IC070205-3	30	18	46.28	mg/L	94.3	90	110			
WG226534ICV2	ICV	06/18/07 11:10	IC070606-1	20		20.25	mg/L	101.3	90	110			
WG226534ICB2	ICB	06/18/07 11:28				U	mg/L		-1.5	1.5			

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: L63094

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG226534													
WG226534ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226534ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226534ICV1	ICV	06/14/07 16:31	IC070606-1	3.984		4.12	mg/L	103.4	90	110			
WG226534ICB1	ICB	06/14/07 16:49				U	mg/L		-0.3	0.3			
WG226534LFB	LFB	06/14/07 17:07	IC070205-3	1.5		1.55	mg/L	103.3	90	110			
L63014-01DUP	DUP	06/14/07 17:43			.3	.29	mg/L				3.4	20	RA
L63094-01AS	AS	06/14/07 18:20	IC070205-3	1.5	.2	1.77	mg/L	104.7	90	110			
WG226534ICV2	ICV	06/18/07 11:10	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226534ICB2	ICB	06/18/07 11:28				.11	mg/L		-0.3	0.3			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226522													
WG226522ICV	ICV	06/15/07 1:15	II070612-3	100		99.9	mg/L	99.9	95	105			
WG226522ICB	ICB	06/15/07 1:19				U	mg/L		-0.6	0.6			
WG226522LFB	LFB	06/15/07 1:36	II070601-2	54.96149		54.94	mg/L	100	85	115			
L63071-02AS	AS	06/15/07 1:44	II070601-2	54.96149	11.9	71.91	mg/L	109.2	85	115			
L63071-02ASD	ASD	06/15/07 1:48	II070601-2	54.96149	11.9	76.64	mg/L	117.8	85	115	6.37	20	MA

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226127													
WG226127ICV	ICV	06/07/07 21:06	WI070308-3	2.416		2.331	mg/L	96.5	90	110			
WG226127ICB	ICB	06/07/07 21:07				U	mg/L		-0.06	0.06			
WG226127LFB1	LFB	06/07/07 21:12	WI070307-9	2		2.008	mg/L	100.4	90	110			
WG226127LFB2	LFB	06/07/07 21:50	WI070307-9	2		1.938	mg/L	96.9	90	110			
L63089-08AS	AS	06/07/07 21:56	WI070307-9	2	U	1.981	mg/L	99.1	90	110			
L63089-09DUP	DUP	06/07/07 21:59			U	U	mg/L				0	20	RA

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226127													
WG226127ICV	ICV	06/07/07 21:06	WI070308-3	.609		.61	mg/L	100.2	90	110			
WG226127ICB	ICB	06/07/07 21:07				U	mg/L		-0.03	0.03			
WG226127LFB1	LFB	06/07/07 21:12	WI070307-9	1		1.017	mg/L	101.7	90	110			
WG226127LFB2	LFB	06/07/07 21:50	WI070307-9	1		.992	mg/L	99.2	90	110			
L63089-08AS	AS	06/07/07 21:56	WI070307-9	1	U	1.026	mg/L	102.6	90	110			
L63089-09DUP	DUP	06/07/07 21:59			U	U	mg/L				0	20	RA

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: L63094

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226522													
WG226522ICV	ICV	06/15/07 1:15	II070612-3	20		20.56	mg/L	102.8	95	105			
WG226522ICB	ICB	06/15/07 1:19				U	mg/L		-0.9	0.9			
WG226522LFB	LFB	06/15/07 1:36	II070601-2	99.69893		102.15	mg/L	102.5	85	115			
L63071-02AS	AS	06/15/07 1:44	II070601-2	99.69893	28.5	135.22	mg/L	107	85	115			
L63071-02ASD	ASD	06/15/07 1:48	II070601-2	99.69893	28.5	132.62	mg/L	104.4	85	115	1.94	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226419													
WG226419PBW	PBW	06/13/07 11:20				U	mg/L		-20	20			
WG226419LCSW	LCSW	06/13/07 11:21	PCN27107	261		296	mg/L	113.4	80	120			
L63119-03DUP	DUP	06/13/07 11:38			60	70	mg/L				15.4	20	RA

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226522													
WG226522ICV	ICV	06/15/07 1:15	II070612-3	100		101.88	mg/L	101.9	95	105			
WG226522ICB	ICB	06/15/07 1:19				U	mg/L		-0.9	0.9			
WG226522LFB	LFB	06/15/07 1:36	II070601-2	98.01954		100.11	mg/L	102.1	85	115			
L63071-02AS	AS	06/15/07 1:44	II070601-2	98.01954	91.3	189.06	mg/L	99.7	85	115			
L63071-02ASD	ASD	06/15/07 1:48	II070601-2	98.01954	91.3	188.61	mg/L	99.3	85	115	0.24	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG226534													
WG226534ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226534ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226534ICV1	ICV	06/14/07 16:31	IC070606-1	50.15		51.2	mg/L	102.1	90	110			
WG226534ICB1	ICB	06/14/07 16:49				U	mg/L		-1.5	1.5			
WG226534LFB	LFB	06/14/07 17:07	IC070205-3	30		30.14	mg/L	100.5	90	110			
L63094-01AS	AS	06/14/07 18:20	IC070205-3	30	58.7	85.95	mg/L	90.8	90	110			
WG226534ICV2	ICV	06/18/07 11:10	IC070606-1	50.15		50.97	mg/L	101.6	90	110			
WG226534ICB2	ICB	06/18/07 11:28				U	mg/L		-1.5	1.5			
L63014-01DUP	DUP	06/18/07 12:05			385	385.9	mg/L				0.2	20	

helps Dodge Sierrita

ACZ Project ID: **L63094**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63094-02	WG226522	Magnesium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG226534	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG226127	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG226419	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

helps Dodge Sierrita

ACZ Project ID: **L63094**

No certification qualifiers associated with this analysis

Sample Receipt

Helps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L63094
 Date Received: 6/7/2007
 Received By:
 Date Printed: 6/8/2007

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
NA3729	2.5	14

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

Notes