



FOURTH QUARTER 2012 MONITORING REPORT -
UIC PERMIT AZ396000001 AND APP PERMIT 101704 -
FLORENCE COPPER PROJECT, FLORENCE, ARIZONA -

Curis Resources (Arizona) Inc. -
1575 W. Hunt Highway -
Florence, AZ 85132 -

January 25, 2013



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Ms. Nancy Rumrill
U.S. Environmental Protection Agency
Region 9, Ground Water Office, WTR-9
75 Hawthorne Street
San Francisco, California 94105-3901

Subject: - Fourth Quarter 2012 Monitoring Report
Underground Injection Control (UIC) Permit Number AZ396000001

Dear Ms. Rumrill:

As you are aware, in February 2010, Curis Resources (Arizona) Inc. (Curis Arizona) purchased all of the assets of Florence Copper and the right to apply for the transfer of its permits to Curis Arizona, including the Aquifer Protection Permit (APP) and the UIC Permit. Curis Arizona submitted a UIC Permit application in March 2011 and, although the permit transfer is not complete, Curis Arizona is assuming the compliance obligations of those permits and is submitting this report in accordance with the reporting requirements of Parts II.G.2.(a) through (j) of the UIC Permit No. AZ396000001 issued by the United States Environmental Protection Agency (USEPA) on May 1, 1997. The Florence Copper Project is also subject to the requirements of APP No. 101704 issued by the Arizona Department of Environmental Quality (ADEQ) on June 9, 1997, and last amended on August 12, 2011.

This report pertains to monitoring activities conducted at the Florence Copper Project from October 1 through December 31, 2012. Copies of records required by Part II.G.1 are maintained at the mine site along with other information that is summarized below.

As you are aware, Florence Copper discontinued hydraulic control of the original pilot test facility on September 1, 2004 in order to conduct groundwater quality tests in accordance with the APP and Part II.I.2 of the UIC Permit. A report of the results has been provided to ADEQ and USEPA for review. The recovery wells have remained off until a plan for further activity can be approved. As a result, no extraction flows or water levels are reported under Sections (b) and (c) below.

(a) A map showing the current status of the mine.

Figure 1 shows the current monitoring area, including the Point of Compliance (POC) wells and the well field. Figure 2 shows the approximate layout of the well field and denotes the four well observation well/recovery well pairs.



There are four injection/recovery wells and nine original recovery wells. The four injection wells were later used as recovery wells during the rising of the mine block. Five observation wells were installed to demonstrate net inward hydraulic gradient for the 90 days required by the permit. Solution injection began on October 31, 1997 and ceased on February 8, 1998.

(b) A table and graph showing daily cumulative injection flows and extraction flows in each active mine block over the reporting period.

There are currently no active mine blocks. Hydraulic control for the test block was discontinued on September 1, 2004 for purposes of collecting groundwater samples following a 90-day period of no hydraulic control, and remains discontinued for evaluation of results. Accordingly, there are no injection or extraction flows to report.

(c) A table and graph comparing average daily head in the four observation wells surrounding each active mine block with that of the four adjacent extraction wells.

There are currently no active mine blocks. Hydraulic control was not required during this reporting period for the test block and water level measurements are not required.

(d) A table showing POC monitoring wells analytical results and Alert Levels.

The POC Quarterly Compliance Monitoring Report is included as Attachment 1. The report summarizes the results of groundwater monitoring activities and includes tables of the field parameters and analytical results for the quarterly monitoring parameters. Brown and Caldwell, along with Project personnel, conducted quarterly compliance sampling on October 22, November 5 through 13, and December 26, 2012.

Quarterly parameters were analyzed for 29 of the 31 POC monitoring wells. POC monitoring wells M32-UBF and M33-UBF were dry and could not be sampled.

For the Fourth Quarter 2012, one result exceeded an approved Alert Level (AL). Sulfate in upgradient well M1-GL was 114 milligrams per liter (mg/L), above the AL of 109 mg/L.

Sulfate has exceeded the AL for sulfate in M1-GL since the Third Quarter of 2011. No Aquifer Quality Limit (AQL) has been set for sulfate and there is no established Aquifer Water Quality Standard (AWQS). A report has been submitted demonstrating that the AL exceedance is not related to the permitted mining activities. On May 10, 2012, as part of a six-month summary report of the results for M1-GL, it was stipulated that if there were no AL exceedances of the biennial monitoring parameters for the well, the monitoring frequency of M1-GL would be reduced to quarterly for the indicator suite. All biennial results for M1-GL were below the ALs. Thus, routine quarterly monitoring for the well resumed during the Third Quarter 2012 event.

(e) Results of the monthly analyses of organic in the injectate

Organic analyses are not required because no solution was injected during the reporting period.

(f) Results of monitoring required by 40 CFR 146.33 (b)(1)

No solution was injected.

(g) Results of the mechanical integrity tests

No mechanical integrity test was conducted.

(h) Results of the annular conductivity monitoring

Although injection ceased in early 1998, annular conductivity measurements have continued to the present time. A graph showing measurement results for this reporting period is presented in Figure 3. No unusual conditions were noted.

(i) Well and core hole plugging and abandonment.

None of the existing wells or core holes were abandoned during the report period.

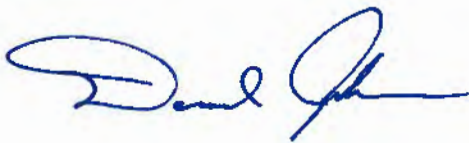
(j) A summary of closure operations during the reporting period.

There were no closure operations during the reporting period.

Curis Arizona believes that you will find this report complete and in compliance with all permit conditions. Please contact me at (520) 374-3984 should you have any questions regarding this report.

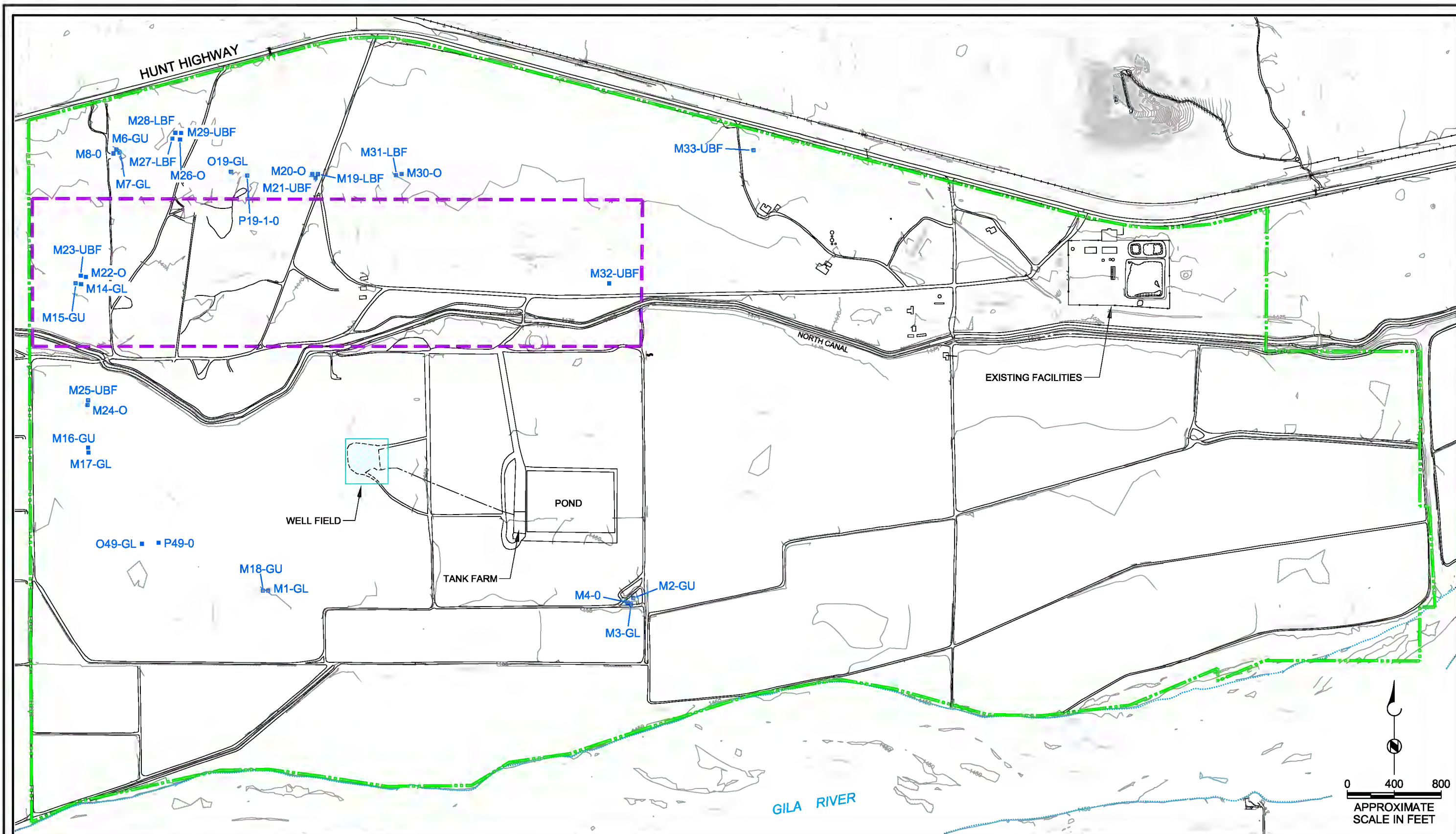
Sincerely,

CURIS RESOURCES (ARIZONA) INC.



Daniel Johnson
Vice President Environment and Technical Services

BAS:cr
Attachments
cc: Florence Copper File

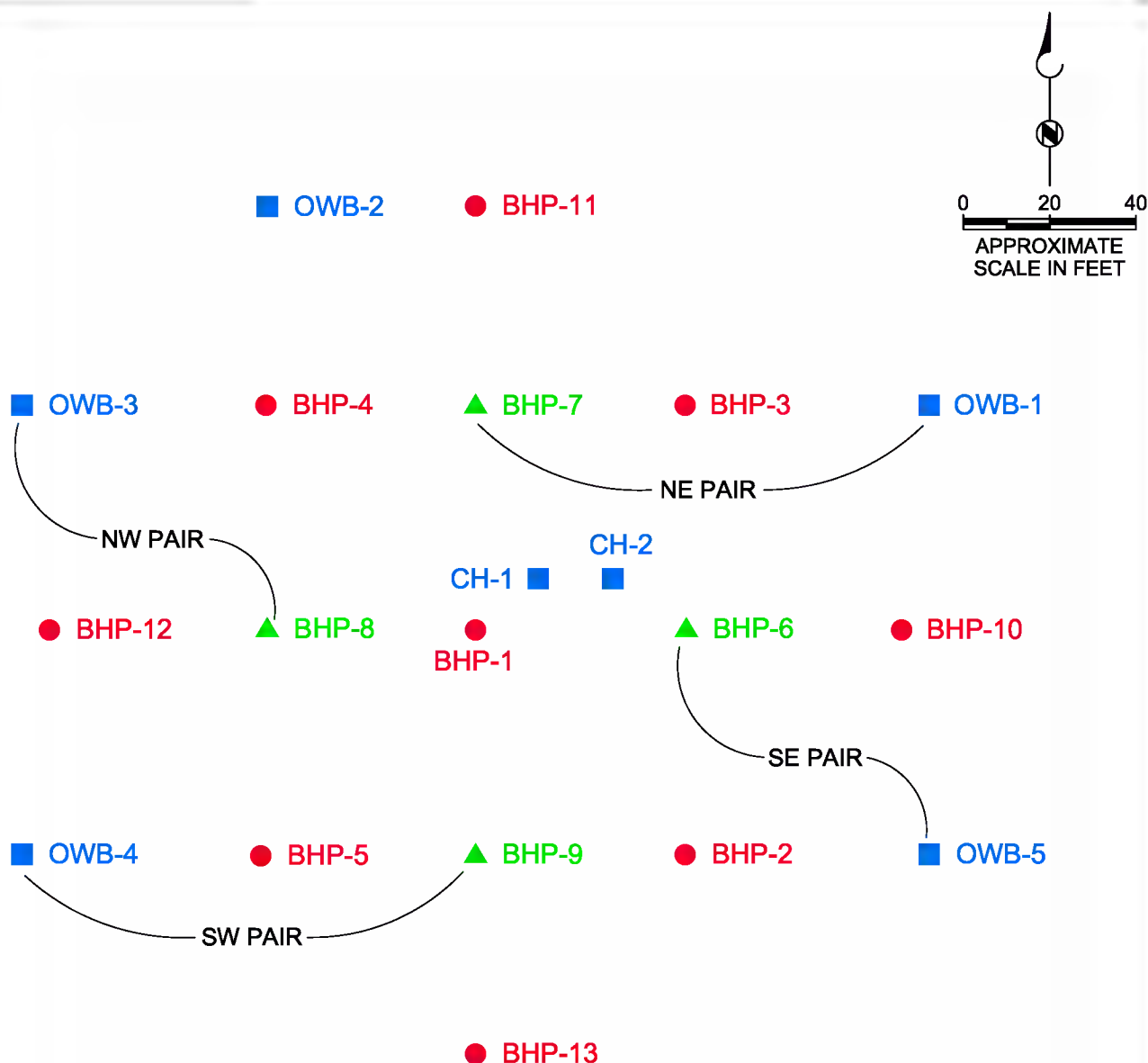


EXPLANATION

- APPROXIMATE PROPERTY BOUNDARY
- STATE LEASE LAND BOUNDARY
- M3-GU POC MONITORING WELL
- WELL FIELD DETAIL, FIGURE 2

**Brown AND
Caldwell**

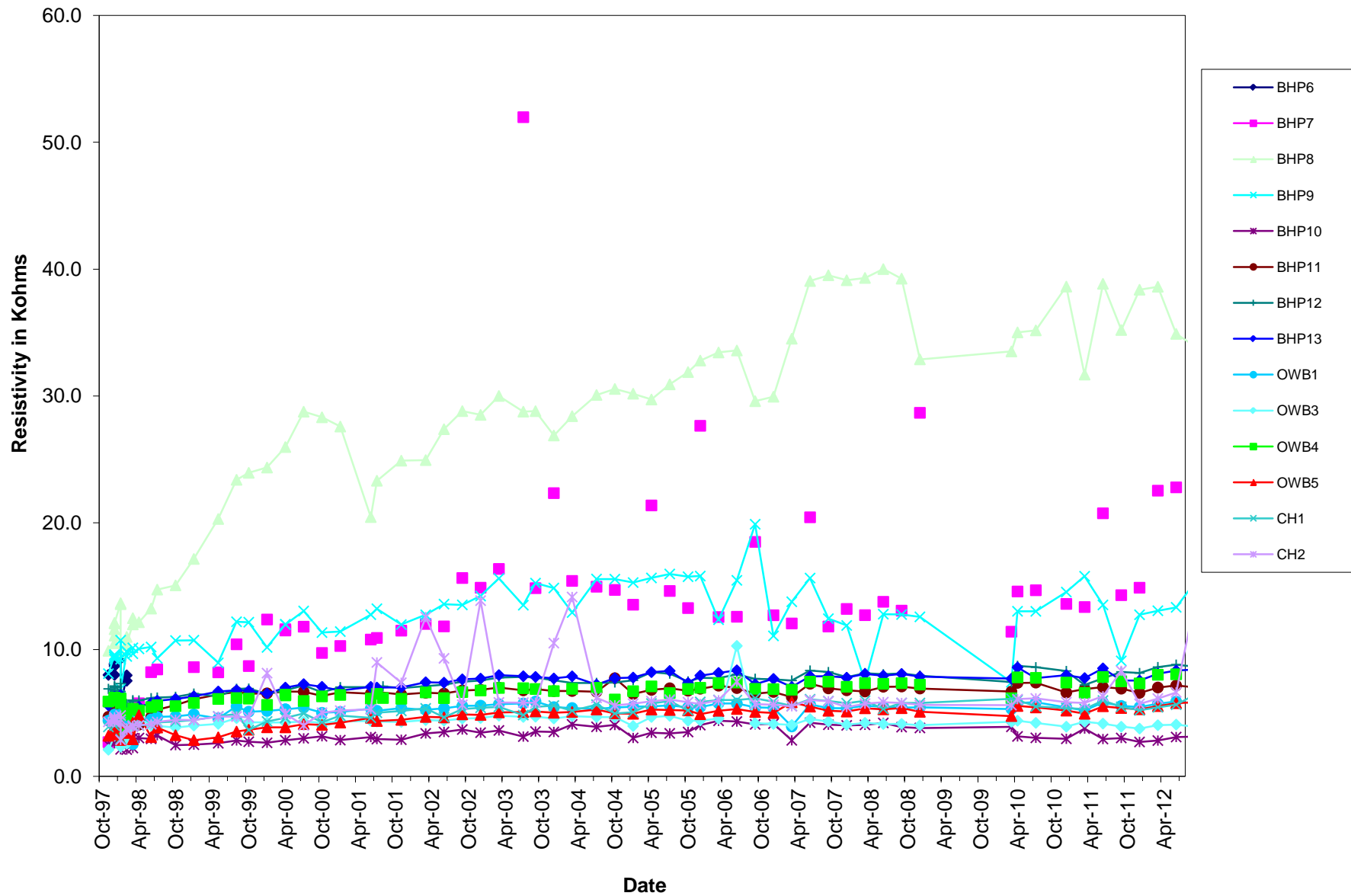
Figure 1
MONITORING AREA
FLORENCE COPPER PROJECT
FLORENCE, ARIZONA



EXPLANATION

- BHP-10 RECOVERY WELL (CURRENTLY INACTIVE)
- OWB-2 OBSERVATION WELL
- ▲ BHP-8 INJECTION / RECOVERY WELL
(RECOVERY MODE SINCE 1998)

Figure 3 - Well Field Annular Resistivity



ATTACHMENT 1

POC Quarterly Compliance Monitoring Report

FLORENCE COPPER PROJECT
QUARTERLY COMPLIANCE MONITORING REPORT
FOURTH QUARTER 2012



Sampling Activities

Groundwater sampling at the Florence Copper Project site took place on October 22, November 5 through 13, and December 26, 2012 (Fourth Quarter 2012). Groundwater sampling and analysis was conducted in accordance with the requirements of Aquifer Protection Permit (APP) No. 101704, Section 2.5.3 (Groundwater Monitoring and Sampling Protocols) and Underground Injection Control (UIC) Permit No. AZ396000001 Part II.F.

Quarterly parameters, as listed in Section 4.0 Table 4.5 of the APP, were analyzed from the designated Point of Compliance (POC) wells. The quarterly analytical parameters are magnesium, sulfate, fluoride, and total dissolved solids (TDS) in addition to field pH, temperature, and specific conductance. The field parameters of dissolved oxygen (DO) and turbidity are also monitored to determine stabilization of wells sampled using low-flow purging methods, but are not reported.

During the Fourth Quarter 2012 sampling event, 29 POC wells were sampled. Two POC wells (M32-UBF and M33-UBF) were dry and could not be sampled. Analyses of the samples were conducted by TestAmerica Laboratories - Phoenix (TestAmerica). Analytical results for the quarterly parameters are provided in Table 1 and field parameters measured during sampling are indicated in Table 2.

The majority of the monitoring well network is equipped with low-flow bladder pumps. Low-flow sampling was conducted in accordance with Section 2.5.3 (Groundwater Monitoring and Sampling Protocols). Wells M22-O, M24-O, O49-GL and P49-O are equipped with stainless-steel electric pumps. The four wells were sampled by purging a minimum of three borehole volumes. No reduced pumping volumes occurred and there were no modified sampling procedures noted.

For the Fourth Quarter 2012, one result exceeded an approved Alert Level (AL). Sulfate in upgradient well M1-GL was 114 milligrams per liter (mg/L), above the AL of 109 mg/L.

Sulfate has exceeded the AL for sulfate in M1-GL since the Third Quarter of 2011. No Aquifer Quality Limit (AQL) has been set for sulfate and there is no established Aquifer Water Quality Standard (AWQS). The quarterly parameters were selected on the basis of theoretical impact by the in-situ process. All four parameters would be expected to increase significantly in the event of groundwater impact by a facility discharge. A general increase in the sulfate concentrations in M1-GL has been observed since 2000. The remaining three indicator parameters are relatively stable and well below the established ALs. The facility

has been inactive since the pilot test in 1998, which was performed in a very limited portion of the permitted area. Since M1-GL is an upgradient, background well to this pilot test area, the increased sulfate concentrations cannot be attributed to permitted facility operations.

On May 10, 2012, Curis Resources (Arizona) Inc. (Curis Arizona) submitted a six-month summary report of the results for M1-GL in accordance with Permit Section 2.6.2.3.2.7. A copy of the report was also supplied to the U.S. Environmental Protection Agency (USEPA). In the report it was stipulated that if there were no AL exceedances of the biennial monitoring parameters for the well, the monitoring frequency of M1-GL would be reduced to quarterly for the indicator suite. All biennial results for M1-GL were below the ALs. Thus routine quarterly monitoring for the well resumed during the Third Quarter 2012 event.

As described above, a general increase sulfate concentrations in M1-GL has been observed since 2000. A similar general increase has been observed in sulfate concentrations in M27-LBF since 2000; however there is no sulfate increase in nearby wells M28-LBF which is screened below M27-LBF, or M29-UBF which is screened above M27-LBF. Recently concentrations of magnesium, sulfate, and TDS appear to be increasing in upgradient wells M2-GU, M3-GL, and M4-O. In the upper aquifer, a decreasing trend for magnesium concentrations and an increasing trend for fluoride concentrations were observed from 2000 to 2008, and stabilizing since 2008. Rising concentrations were also observed in upgradient wells M2-GU and M18-GU for magnesium, sulfate, and TDS from 2005 to 2007, and declining somewhat since 2008. Site-wide water levels have declined more than 50 feet in all three aquifer zones since the start of monitoring in 1996, and have been relatively stable or have recovered slightly since 2004.

Of the 25 wells with low-flow pumps, some changes in water quality have been observed, since these pumps were installed. Concentrations of the indicator parameters in M20-O, M26-O, and M28-LFB have decreased on an average basis from 5 percent to 35 percent. Concentrations in M4-O have increased on an average basis from 5 percent to 75 percent. The changes of concentrations are likely related to the change of sampling methodology.

Contingency Sampling Plans

No contingency sampling plan was required during the Fourth Quarter 2012. No contingency sampling plan is required for the First Quarter of 2013.

Table 1. Summary of Analytical Results, Quarterly Parameters

Well ID	Sample Date	Magnesium		Sulfate		Fluoride		Total Dissolved Solids	
		Concentration	Alert Level	Concentration	Alert Level	Concentration	Alert Level	Concentration	Alert Level
M1-GL	Nov 08 2012	21.0	31	114	109	0.64	1.3	690	1028
M2-GU	Nov 08 2012	26.0	39	140	275	0.74	1.4	910	1496
M3-GL	Nov 08 2012	24.0	36	155	187	0.64	1.3	750	1157
M4-O	Nov 08 2012	9.6	15	90	405	2.0	5.1	560	1072
M6-GU	Nov 06 2012	2.4	5.1	54	86	0.61	1.3	330	620
M7-GL	Nov 06 2012	<0.2	1	29	82	0.82	1.7	230	464
M8-O	Nov 06 2012	<0.2	1	52	122	2.1	3.6	320	609
M14-GL	Nov 07 2012	2.4	23	64	144	0.54	1.4	480	874
M15-GU	Nov 07 2012	22.0	44	76	126	0.42	1.2	710	1359
M16-GU	Nov 07 2012	28.0	52	182	248	0.45	1.1	910	1635
M17-GL	Nov 07 2012	4.7	9.3	69	209	0.6	1.6	400	831
M18-GU	Nov 08 2012	22.0	36	163	288	0.79	1.6	870	1323
M19-LBF	Nov 12 2012	12.0	21	48	89	<0.4	1	440	794
M20-O	Nov 12 2012	3.9	14	35	112	0.68	1.7	350	809
M20-O (Dup)	Nov 12 2012	3.8	14	35	112	0.68	1.7	350	809
M21-UBF	Nov 12 2012	21.0	87	156	487	0.79	1.1	800	2867
M22-O	Nov 06 2012	5.7	8.6	55	86	0.6	1.3	390	1094
M22-O (Dup)	Nov 06 2012	5.4	8.6	55	86	0.62	1.3	400	1094
M23-UBF	Nov 07 2012	32.0	69	248	411	0.6	1.3	1200	2392
M24-O	Dec 26 2012	10.0	19	776	1364	0.97	2.5	1300	2363
M25-UBF	Nov 08 2012	42.0	76	257	387	0.52	1.6	1300	2683
M26-O	Nov 05 2012	<0.2	1	54	105	1.3	3.4	300	556
M27-LBF	Nov 05 2012	32.0	51	147	179	<0.4	1	1100	1745
M28-LBF	Nov 05 2012	1.0	2.6	25	81	0.65	1.6	340	610
M29-UBF	Nov 05 2012	25.0	84	196	465	0.64	1.1	930	2751
M30-O	Nov 13 2012	11.0	18	61	102	0.6	1.6	490	824
M31-LBF	Nov 13 2012	21.0	46	166	330	0.82	1.3	800	1665
O19-GL	Nov 12 2012	11.0	17	59	99	0.51	1.4	460	770
O49-GL	Oct 22 2012	8.8	18	72	159	0.46	1	520	849
P19-1-O	Nov 12 2012	5.1	12	67	107	1.6	2.8	440	767
P49-O	Nov 07 2012	3.5	6.2	109	181	0.87	2	500	801
P49-O (Dup)	Nov 07 2012	3.5	6.2	104	181	0.88	2	500	801
Arizona Aquifer Water Quality Standard									

All Results in Milligrams per Liter (mg/l)

< = Less than the Laboratory Practical Quantitation Limit

Table 2. Summary of Quarterly Field Parameters

Well ID	Sample Date	Temperature (°C)	Temperature (°F)	pH	Conductivity (µmhos/cm)
M1-GL	Nov 08 2012	22.5	72.5	7.36	1295
M2-GU	Nov 08 2012	20.9	69.6	7.18	1626
M3-GL	Nov 08 2012	21.0	69.8	7.30	1334
M4-O	Nov 08 2012	22.0	71.6	7.42	950
M6-GU	Nov 06 2012	25.0	77.0	8.08	660
M7-GL	Nov 06 2012	24.0	75.2	9.15	476
M8-O	Nov 06 2012	23.3	73.9	9.01	576
M14-GL	Nov 07 2012	23.4	74.1	8.38	744
M15-GU	Nov 07 2012	24.0	75.2	7.45	1094
M16-GU	Nov 07 2012	23.9	75.0	7.43	1368
M17-GL	Nov 07 2012	23.7	74.7	8.83	637
M18-GU	Nov 08 2012	21.2	70.2	7.20	1488
M19-LBF	Nov 12 2012	21.7	71.1	7.52	886
M20-O	Nov 12 2012	20.6	69.1	8.58	716
M21-UBF	Nov 12 2012	22.5	72.5	7.29	1545
M22-O	Nov 06 2012	28.4	83.1	8.00	792
M23-UBF	Nov 07 2012	22.3	72.1	7.11	1684
M24-O	Dec 26 2012	29.9	85.8	7.70	3032
M25-UBF	Nov 08 2012	22.1	71.8	7.00	2530
M26-O	Nov 05 2012	24.9	76.8	8.77	466
M27-LBF	Nov 05 2012	23.8	74.8	7.42	1581
M28-LBF	Nov 05 2012	24.5	76.1	8.97	590
M29-UBF	Nov 05 2012	24.3	75.7	7.17	1560
M30-O	Nov 13 2012	21.9	71.4	7.15	934
M31-LBF	Nov 13 2012	21.5	70.7	7.35	1508
O19-GL	Nov 12 2012	22.9	73.2	7.53	905
O49-GL	Oct 22 2012	26.0	78.8	7.61	893
P19-1-O	Nov 12 2012	22.7	72.9	7.22	825
P49-O	Nov 07 2012	27.5	81.5	7.76	741

°C = Degrees Celcius

°F = Degrees Fahrenheit

µmhos/cm = Micromhos per Centimeter