



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

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

July 27, 2012



July 27, 2012

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

Subject: Second 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 April 1 through June 30, 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 May 14 through 21, 2012. Monthly sampling of M1-GL and P49-O was performed on April 24 and May 17, 2012. Verification sampling for M26-O took place on June 29, 2012.

During this quarter, the biennial parameters were also analyzed. The biennial parameters listed in Table 1 of Attachment 1, include trace metals, organics, inorganics, and radionuclides. Quarterly and biennial 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 Second Quarter 2012 quarterly and biennial parameters, two wells had reported concentrations of any parameter exceeding an approved Alert Level (AL). The initial iron result for M26-O was 2.5 milligrams per liter (mg/L), exceeding the AL of 2.2 mg/L. No Aquifer Quality Limit (AQL) has been set for iron and there is no established Aquifer Water Quality Standard (AWQS). A verification sample was collected on June 29, 2012. The verification result was below the detection limit and thus the exceedance was not verified.

Due to a verified AL exceedance of sulfate in well M1-GL during the Third Quarter 2011, the monitoring frequency had been increased to monthly. The monthly results for sulfate in M1-GL

exceeded the AL. A report has been submitted demonstrating that the AL exceedance is not related to the permitted mining activities. On May 10, 2012, a six-month summary report of the results for M1-GL was submitted (Attachment 2). 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. Routine quarterly monitoring for the well will resume with the Third Quarter 2012 event..

Due to AL exceedances of magnesium, sulfate, and TDS in well P49-O during the First Quarter 2012, the monitoring frequency had been increased to monthly. APP Permit Section 2.6.2.3.2.6 states that increased monitoring may be reduced to the regular frequency if the results of three consecutive monthly sampling events demonstrate that no parameters exceed the ALs. All results for the February, March and April 2012 quarterly indicator parameters were below the ALs as well as the May 2012 biennial parameters. Accordingly, routine quarterly monitoring for the P49-O will resume with 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.

Ms. Nancy Rumrill  
July 27, 2012  
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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,

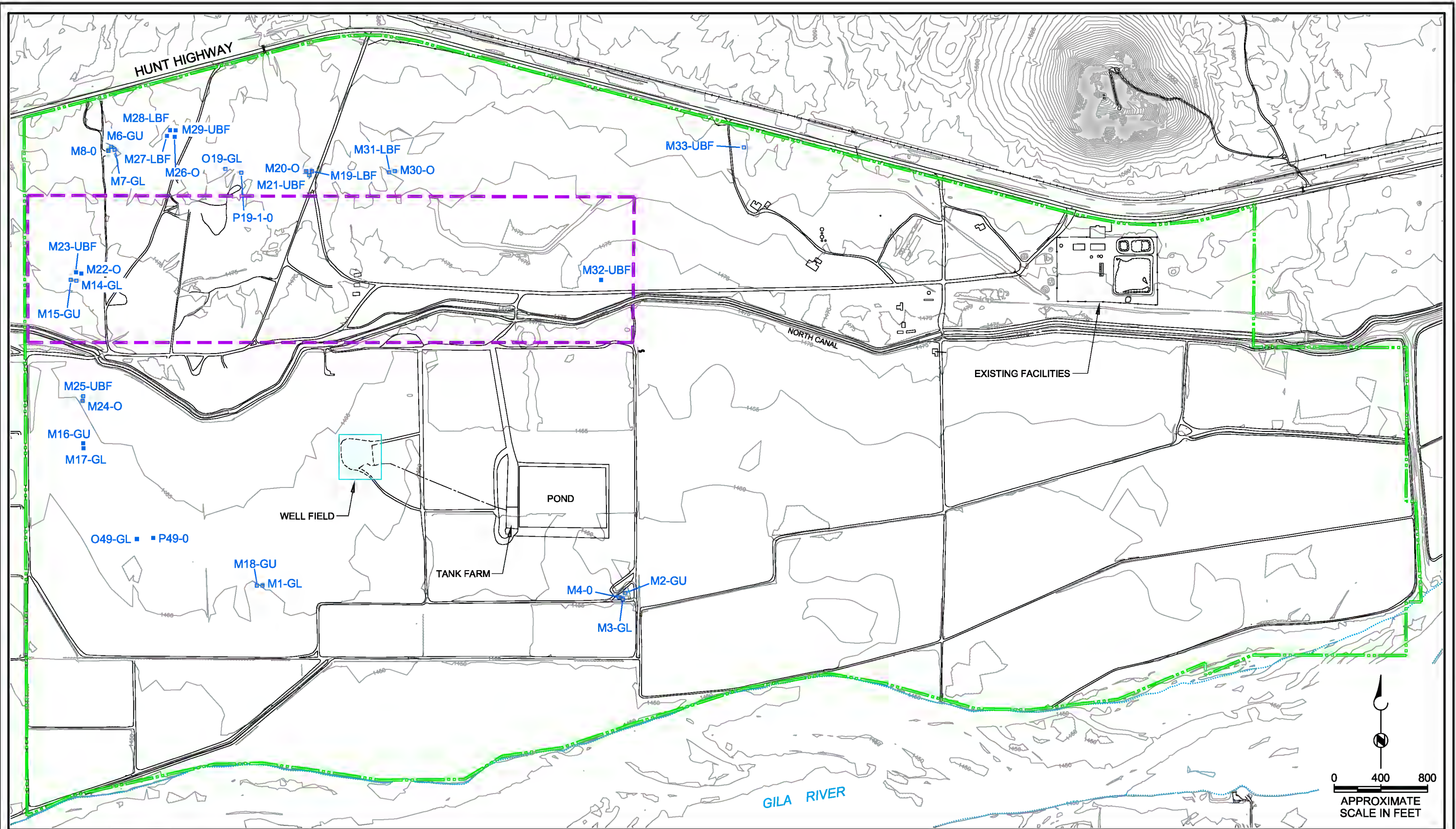
CURIS RESOURCES (ARIZONA) INC.

A handwritten signature in black ink, appearing to read 'Daniel Johnson', with a stylized, flowing script.

Daniel Johnson  
Vice President Environment and Technical Services

BAS:ds  
Attachments  
cc: Florence Copper File



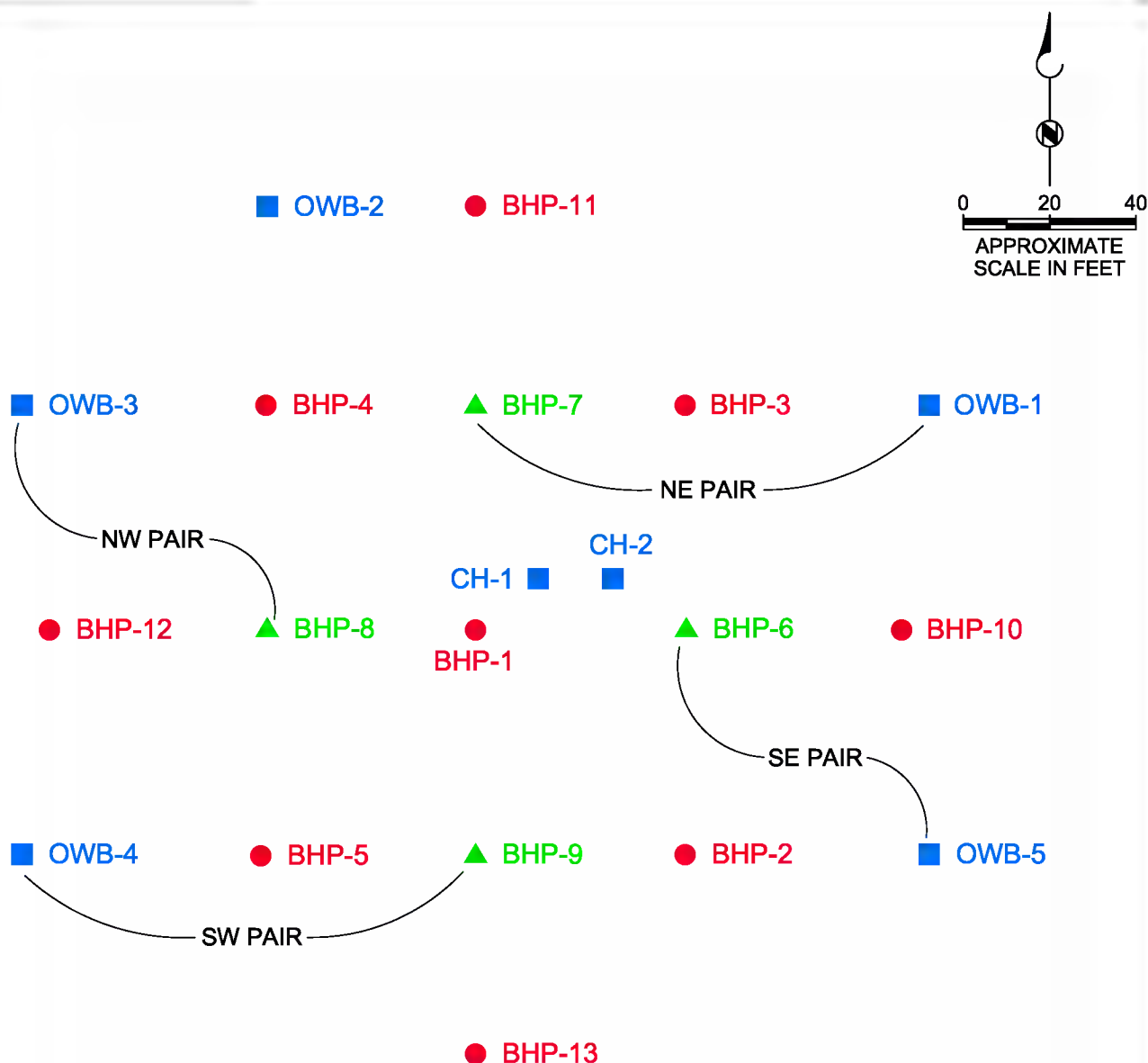


#### EXPLANATION

- APPROXIMATE PROPERTY BOUNDARY
- STATE LEASE LAND BOUNDARY
- M3-GL 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)

## ATTACHMENT 1

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### POC Quarterly Compliance Monitoring Report



FLORENCE COPPER PROJECT  
QUARTERLY COMPLIANCE MONITORING REPORT  
SECOND QUARTER 2012



### Sampling Activities

Groundwater sampling at the Florence Copper Project site took place on May 14 through 21, 2012 (Second Quarter 2012). Monthly sampling of M1-GL and P49-O was performed on April 24 and May 17, 2012. A verification sample of M26-O was collected on June 29, 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 monthly samples were analyzed for the same parameters required by quarterly monitoring. 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 this quarter, biennial parameters were also analyzed which include trace metals, organics, inorganics and radionuclides. The biennial parameters, listed in Section 4.0 Table 4.6 of the APP, are shown in Table 1 of this report. Total uranium is only analyzed if gross alpha exceeds 15.0 picocuries per liter (pCi/L).

During the Second Quarter 2012 sampling event, 29 POC wells were sampled. Two POC wells (M32-UBF and M33-UBF) were dry and could not be sampled. Two POC wells, M1-GL and P49-O were sampled monthly for the first two months of the quarter, and a verification sample of M26-O was collected in June. Analyses of the samples were conducted by TestAmerica Laboratories - Phoenix (TestAmerica). Radiochemical analyses were provided by Radiation Safety Engineering. Analytical results for the quarterly parameters are provided in Table 2 and field parameters measured during sampling are indicated in Table 3. Common ions are presented in Table 4, formation-related radiochemicals are presented in Table 5, process-related organics are presented in Table 6, and trace inorganics (metals) are presented in Table 7.

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 and O49-GL are equipped with stainless-steel electric pumps, and during the Second Quarter 2012, pumps in M24-O and P49-O were

replaced 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 Second Quarter 2012 quarterly and biennial parameters, two wells had reported concentrations of any parameter exceeding an approved Alert Level (AL). The initial iron result for M26-O was 2.5 milligrams per liter (mg/L), exceeding the AL of 2.2 mg/L. No Aquifer Quality Limit (AQL) has been set for iron and there is no established Aquifer Water Quality Standard (AWQS). A verification sample was collected on June 29, 2012. The verification result was below the detection limit and thus the exceedance was not verified.

Due to a verified exceedance of sulfate in the Third Quarter 2011, the monitoring frequency of M1-GL was increased to monthly. The monthly sulfate concentrations in MW-1 were:

- April 2012 – 123 milligrams per liter (mg/L), above the AL of 109 mg/L, and
- May 2012 – 120 mg/L.

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 from 2000 to 2010. 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. Routine quarterly monitoring for the well will resume with the Third Quarter 2012 event.

Exceedances of magnesium, sulfate, and TDS in well P49-O were first detected in December 2011 and verified in January 2012. Under prevailing groundwater flow conditions, P49-O is a cross-gradient, background well in relation to the pilot test area. The increased concentrations followed replacement of the stainless-steel electric pump with a low-flow pump. In response to the exceedances, the monitoring frequency of P49-O was increased to monthly. For the February and March 2012 sampling events, the setting of the low-flow pump was adjusted upwards, resulting in a return of concentrations to historical ranges for

the well, indicating that the previous exceedances were related to the installation of the low-flow pump and not the result of impacts from the pilot test.

In preparation for the April 2012 event, the low-flow pump in P49-O was replaced with a stainless-steel electric pump. Sampling was conducted by purging a minimum of three borehole volumes. All results for the April 2012 quarterly sampling event and the May 2012 biennial sampling event for P49-O were below ALs.

Permit Section 2.6.2.3.2.6 states that increased monitoring may be reduced to the regular frequency if the results of three consecutive monthly sampling events demonstrate that no parameters exceed the ALs. All results for the February, March and April 2012 quarterly indicator parameters were below the ALs as well as the May 2012 biennial parameters. Accordingly, routine quarterly monitoring for the P49-O will resume with the Third Quarter 2012 event.

Due to bottle breakage in transit, samples for M4-O and M6-GU could not be analyzed for total petroleum hydrocarbon diesel (TPH-D). These wells will be sampled for TPH-D during the next quarterly event.

In the POC network, a decreasing trend for magnesium concentrations and an increasing trend for fluoride concentrations were observed in the upper aquifer 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. 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. The changes of concentrations are likely related to the change of sampling methodology.

### Contingency Sampling Plans

As discussed above, monitoring frequency of M1-GL and P49-O will return to quarterly monitoring during the Third Quarter 2012. No other contingency sampling is required.

Table 1. Summary of Sampling Analyses

Analysis	Method	Preservative
<b>Quarterly "Level I" Indicator Parameters</b>		
Fluoride (Level I)	EPA 300.0	None
Sulfate (Level I)	EPA 300.0	None
Total Dissolved Solids (Level I)	SM 2540C	None
Magnesium (Level I)	EPA 200.7	HNO3
<b>Biennial "Level II" Parameters</b>		
<b>Common Ions</b>		
pH	SM 4500H+	None
Bicarbonate Alkalinity	SM 2320B	None
Carbonate Alkalinity	SM 2320B	None
Calcium	EPA 200.7	HNO3
Chloride	EPA 300.0	None
Fluoride (Level I)	EPA 300.0	None
Nitrate as N	EPA 300.0	None
Potassium	EPA 200.7	HNO3
Sodium	EPA 200.7	HNO3
Sulfate (Level I)	EPA 300.0	None
Total Dissolved Solids (Level I)	SM 2540C	None
Cation/Anion Balance	Calculation	-
<b>Formation-Related Radiochemicals</b>		
Gross Alpha	600/00-02	None
Radium 226	903	None
Radium 228	904	None
Total Uranium (if G. Alpha >15.0)	999	None
<b>Process-Related Organics</b>		
Extractable Fuel Hydrocarbons (Diesel Range Organics)	EPA 8015D	None
Benzene	EPA 8260B	HCl
Ethylbenzene	EPA 8260B	HCl
Toluene	EPA 8260B	HCl
Total Xylene	EPA 8260B	HCl
<b>Trace Metals (Dissolved)</b>		
Aluminum	EPA 200.7	HNO3
Antimony	EPA 200.8	HNO3
Arsenic	EPA 200.8	HNO3
Barium	EPA 200.8	HNO3
Beryllium	EPA 200.7	HNO3
Cadmium	EPA 200.7	HNO3
Chromium	EPA 200.8	HNO3
Cobalt	EPA 200.8	HNO3
Copper	EPA 200.8	HNO3
Iron	EPA 200.7	HNO3

Table 1. Summary of Sampling Analyses

Analysis	Method	Preservative
Lead	EPA 200.8	HNO3
Magnesium (Level I)	EPA 200.7	HNO3
Manganese	EPA 200.8	HNO3
Mercury	EPA 245.1	HNO3
Nickel	EPA 200.8	HNO3
Selenium	EPA 200.8	HNO3
Thallium	EPA 200.8	HNO3
Zinc	EPA 200.8	HNO3

Table 2. 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	Apr 24 2012	19.0	31	120	109	0.64	1.3	660	1028
M1-GL	May 17 2012	20.0	31	118	109	0.64	1.3	690	1028
M2-GU	May 18 2012	26.0	39	218	275	0.88	1.4	930	1496
M3-GL	May 21 2012	22.0	36	169	187	0.85	1.3	740	1157
M4-O	May 21 2012	5.2	15	68	405	3.0	5.1	450	1072
M6-GU	May 18 2012	2.6	5.1	59	86	0.69	1.3	370	620
M7-GL	May 18 2012	<0.2	1	32	82	0.94	1.7	280	464
M8-O	May 18 2012	<0.2	1	71	122	2.3	3.6	380	609
M14-GL	May 17 2012	2.4	23	68	144	0.56	1.4	430	874
M15-GU	May 17 2012	23.0	44	86	126	0.46	1.2	720	1359
M16-GU	May 16 2012	27.0	52	199	248	0.49	1.1	920	1635
M17-GL	May 16 2012	5.3	9.3	65	209	0.76	1.6	360	831
M18-GU	May 17 2012	21.0	36	180	288	0.81	1.6	830	1323
M19-LBF	May 16 2012	11.0	21	56	89	<0.4	1	460	794
M20-O	May 15 2012	5.0	14	50	112	0.8	1.7	380	809
M21-UBF	May 15 2012	26.0	87	210	487	0.78	1.1	970	2867
M22-O	May 18 2012	5.9	8.6	58	86	0.78	1.3	420	1094
M23-UBF	May 17 2012	35.0	69	283	411	0.68	1.3	1300	2392
M24-O	May 16 2012	9.9	19	857	1364	1.1	2.5	1300	2363
M24-O (Dup)	May 16 2012	9.6	19	856	1364	1.1	2.5	1300	2363
M25-UBF	May 16 2012	38.0	76	276	387	0.59	1.6	1500	2683
M26-O	May 15 2012	<0.2	1	60	105	1.5	3.4	290	556
M27-LBF	May 14 2012	33.0	51	165	179	0.4	1	1100	1745
M28-LBF	May 15 2012	0.83	2.6	30	81	0.71	1.6	330	610
M29-UBF	May 14 2012	27.0	84	221	465	0.82	1.1	970	2751
M30-O	May 21 2012	11.0	18	64	102	0.8	1.6	490	824
M31-LBF	May 21 2012	21.0	46	173	330	1.1	1.3	810	1665
O19-GL	May 21 2012	11.0	17	62	99	0.68	1.4	470	770
O49-GL	May 14 2012	9.9	18	75	159	0.64	1	520	849
O49-GL (Dup)	May 14 2012	9.8	18	75	159	0.57	1	520	849
P19-1-O	May 21 2012	5.3	12	70	107	1.9	2.8	450	767
P49-O	Apr 24 2012	3.2	6.2	120	181	1.0	2	460	801
P49-O	May 15 2012	3.3	6.2	117	181	1.0	2	460	801
P49-O (Dup)	May 15 2012	3.4	6.2	118	181	1.0	2	440	801
Arizona Aquifer Water Quality Standard									

All Results in Milligrams per Liter (mg/l)

&lt; = Less than the Laboratory Practical Quantitation Limit



Table 3. Summary of Quarterly Field Parameters

Well ID	Sample Date	Temperature (°C)	Temperature (°F)	pH	Conductivity (µmhos/cm)
M1-GL	Apr 24 2012	24.1	75.4	7.24	1041
M1-GL	May 17 2012	23.3	73.9	7.15	1095
M2-GU	May 18 2012	22.8	73.0	6.99	1247
M3-GL	May 21 2012	21.4	70.5	7.08	1055
M4-O	May 21 2012	21.1	70.1	7.56	626
M6-GU	May 18 2012	24.3	75.7	8.16	650
M7-GL	May 18 2012	24.1	75.3	9.30	482
M8-O	Apr 19 2012	26.3	79.3	8.88	650
M8-O	May 18 2012	25.3	77.6	8.98	530
M14-GL	May 17 2012	23.3	74.0	8.30	792
M15-GU	May 17 2012	23.2	73.8	7.30	1200
M16-GU	May 16 2012	23.5	74.3	7.29	1362
M17-GL	May 16 2012	24.1	75.4	8.55	549
M18-GU	May 17 2012	21.6	70.9	6.80	1308
M19-LBF	May 16 2012	24.2	75.6	7.53	884
M20-O	May 15 2012	27.8	82.1	8.37	712
M21-UBF	May 15 2012	26.7	80.0	6.85	1583
M22-O	May 17 2012	28.0	82.4	8.10	706
M23-UBF	May 17 2012	24.0	75.3	6.89	1944
M24-O	May 16 2012	31.1	88.0	7.82	1378
M25-UBF	May 16 2012	23.6	74.5	6.81	1728
M26-O	May 15 2012	24.6	76.2	8.63	517
M26-O	Jun 29 2012	24.6	76.2	8.63	517
M27-LBF	May 14 2012	25.3	77.5	7.36	1580
M28-LBF	May 15 2012	24.6	76.3	8.98	640
M29-UBF	Apr 19 2012	23.5	74.3	6.93	742
M29-UBF	May 14 2012	24.5	76.0	7.05	1454
M30-O	May 21 2012	23.9	75.0	7.08	755
M31-LBF	Apr 20 2012	22.1	71.8	7.21	1276
M31-LBF	May 21 2012	24.0	75.3	6.78	1236
O19-GL	May 21 2012	24.8	76.6	7.55	732
O49-GL	May 14 2012	25.8	78.5	7.61	840
P19-1-O	May 21 2012	23.7	74.6	7.40	674
P49-O	Apr 24 2012	28.4	83.1	7.41	729
P49-O	May 15 2012	27.8	82.0	7.43	800

°C = Degrees Celsius

°F = Degrees Fahrenheit

µmhos/cm = Micromhos per Centimeter



**TABLE 4. SUMMARY OF COMMON INORGANIC ANALYTICAL RESULTS, BIENNIAL PARAMETERS**

Well ID	Sample Date	Bicarbonate Alkalinity	Carbonate Alkalinity	Calcium	Chloride	Nitrate as N	Potassium	Sodium	pH (Lab)	Ion Balance
M1-GL	May 17 2012	150	<6.	89.	210	4.8	4.5	110	7.65	0.12
M2-GU	May 18 2012	220	<6.	110.	210	10.	4.3	150	8.	0.37
M3-GL	May 21 2012	150	<6.	96.	190	4.5	5.	120	7.62	1.73
M4-O	May 21 2012	110	<6.	26.	110	<0.2	3.6	110	7.66	<1.54
M6-GU	May 18 2012	51	<6.	16.	140	0.24	3.1	110	8.01	<1.53
M7-GL	May 18 2012	81	18.	2.6	77	<0.2	<2.	99	9.04	<4.48
M8-O	May 18 2012	150	23.	2.3	48	<0.2	<2.	140	8.87	0.29
M14-GL	May 17 2012	63	<6.	19.	170	1.1	3.	140	8.37	<2.94
M15-GU	May 17 2012	130	<6.	87.	290	4.7	5.2	120	7.78	<3.26
M16-GU	May 16 2012	170	<6.	110.	280	9.2	5.5	140	8.06	<1.26
M17-GL	May 16 2012	70	<6.	12.	120	<0.2	4.3	110	8.37	<0.4
M18-GU	May 17 2012	210	<6.	100.	200	9.5	4.4	150	7.46	1.54
M19-LBF	May 16 2012	120	<6.	51.	160	<0.2	3.8	84	8.13	<1.58
M20-O	May 15 2012	85	<6.	29.	150	<0.2	5.	93	8.37	<3.39
M21-UBF	May 15 2012	200	<6.	120.	270	11.	4.9	170	7.96	<0.35
M22-O	May 18 2012	91	<6.	32.	140	0.56	3.7	100	8.18	<2.51
M23-UBF	May 17 2012	200	<6.	170.	400	11.	5.8	200	7.33	<0.96
M24-O	May 16 2012	75	<6.	130.	64	0.47	4.6	250	8.07	<6.85
M24-O (Dup)	May 16 2012	76	<6.	130.	64	0.47	4.6	250	8.07	<6.89
M25-UBF	May 16 2012	210	<6.	180.	450	19.	5.8	200	7.9	<1.7
M26-O	May 15 2012	110	11.	2.9	42	0.92	<2.	100	8.74	<0.73
M27-LBF	May 14 2012	100	<6.	140.	390	11.	5.8	130	7.64	<2.12
M28-LBF	May 15 2012	70	7.5	8.1	130	<0.2	2.7	110	8.73	<4.03
M29-UBF	May 14 2012	210	<6.	130.	250	9.4	5.1	160	7.44	0.1
M30-O	May 21 2012	130	<6.	53.	140	0.55	4.9	93	7.75	<0.22
M31-LBF	May 21 2012	160	<6.	95.	220	10.	4.6	150	7.66	0.33
O19-GL	May 21 2012	110	<6.	50.	140	0.51	4.2	92	7.86	2.31
O49-GL	May 14 2012	120	<6.	53.	170	2.	4.3	110	7.83	<0.2
O49-GL (Dup)	May 14 2012	120	<6.	53.	170	2.	4.3	110	7.83	<0.24
P19-1-O	May 21 2012	110	<6.	26.	110	0.23	3.8	110	7.61	1.12
P49-O	May 15 2012	100	<6.	28.	110	0.26	3.3	120	8.09	<2.23
P49-O (Dup)	May 15 2012	100	<6.	28.	110	0.25	3.3	120	8.1	<2.21
Alert Level		-	-	-	-	-	-	-	-	-
AWQS		-	-	-	-	10	-	-	-	-

**All results in milligrams per liter (mg/L), except pH in pH units, and Ion Balance, a calculation**

**< = less than detection limit**

**AWQS = Arizona Aquifer Water Quality Standard**

TABLE 5. SUMMARY OF RADIOCHEMICAL ANALYTICAL RESULTS, BIENNIAL PARAMETERS

Well ID	Sample Date	Gross Alpha	Radium 226	Radium 228	Total Radium
M1-GL	May 17 2012	4.4 ± 1.0	<0.3	<0.4	<0.4
M2-GU	May 18 2012	7.1 ± 1.3	<0.3	<0.5	<0.5
M3-GL	May 21 2012	6.5 ± 1.2	<0.3	<0.5	<0.5
M4-O	May 21 2012	1.6 ± 0.6	<0.3	<0.4	<0.4
M6-GU	May 18 2012	0.8 ± 0.4	<0.4	<0.5	<0.5
M7-GL	May 18 2012	0.6 ± 0.4	<0.4	<0.4	<0.4
M8-O	May 18 2012	4.4 ± 1.0	<0.2	<0.4	<0.4
M14-GL	May 17 2012	2.3 ± 0.7	<0.3	<0.4	<0.4
M15-GU	May 17 2012	3.6 ± 0.9	<0.3	<0.4	<0.4
M16-GU	May 16 2012	7.2 ± 1.3	<0.4	<0.5	<0.5
M17-GL	May 16 2012	<0.4	<0.4	<0.4	<0.4
M18-GU	May 17 2012	6.0 ± 1.2	<0.4	<0.5	<0.5
M19-LBF	May 16 2012	2.7 ± 0.8	<0.3	<0.4	<0.4
M20-O	May 15 2012	0.6 ± 0.4	<0.3	<0.4	<0.4
M21-UBF	May 15 2012	4.8 ± 1.0	<0.4	<0.4	<0.4
M22-O	May 18 2012	2.5 ± 0.7	<0.3	<0.4	<0.4
M23-UBF	May 17 2012	8.4 ± 1.4	<0.3	<0.4	<0.4
M24-O	May 16 2012	6.8 ± 1.3	0.7 ± 0.1	<0.4	0.7 ± 0.1
M25-UBF	May 16 2012	8.1 ± 1.4	<0.3	<0.4	<0.4
M26-O	May 15 2012	4.2 ± 1.0	<0.3	<0.4	<0.4
M27-LBF	May 14 2012	6.2 ± 1.2	<0.5	<0.4	<0.5
M28-LBF	May 15 2012	1.0 ± 0.5	<0.3	<0.4	<0.4
M29-UBF	May 14 2012	6.7 ± 1.2	<0.3	<0.4	<0.4
M30-O	May 21 2012	6.9 ± 1.3	<0.3	<0.4	<0.4
M31-LBF	May 21 2012	3.7 ± 0.9	<0.3	<0.4	<0.4
O19-GL	May 21 2012	6.1 ± 1.2	<0.3	<0.4	<0.4
O49-GL	May 14 2012	3.2 ± 0.8	<0.3	<0.4	<0.4
P19-1-O	May 21 2012	2.9 ± 0.8	<0.2	<0.4	<0.4
P49-O	May 15 2012	3.6 ± 0.9	<0.2	<0.4	<0.4
Alert Level		15	-	-	4
Arizona Aquifer Water Quality Standard		-	-	-	5
<p>All results in pico-curies per liter +/- a standard deviation of two (pCu/L +/- 2σ)</p> <p>&lt; = less than detection limit</p> <p>Radium 226 and Radium 228 are analyzed when Gross Alpha exceeds 5.0</p> <p>Total Radium = Radium 226 + Radium 228</p>					

TABLE 6. SUMMARY OF ORGANIC ANALYTICAL RESULTS, BIENNIAL PARAMETERS

Well ID	Sample Date	Benzene	Ethylbenzene	Toluene	Total Xylene	Total Petroleum Hydrocarbons-Diesel
M1-GL	May 17 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M2-GU	May 18 2012	<0.002	<0.002	<0.002	<0.01	0.11
M3-GL	May 21 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M4-O	May 21 2012	<0.002	<0.002	<0.002	<0.01	-
M6-GU	May 18 2012	<0.002	<0.002	<0.002	<0.01	-
M7-GL	May 18 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M8-O	May 18 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M14-GL	May 17 2012	<0.002	<0.002	<0.002	<0.01	0.16
M15-GU	May 17 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M16-GU	May 16 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M17-GL	May 16 2012	<0.002	<0.002	<0.002	<0.01	0.15
M18-GU	May 17 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M19-LBF	May 16 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M20-O	May 15 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M21-UBF	May 15 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M22-O	May 18 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M23-UBF	May 17 2012	<0.002	<0.002	<0.002	<0.01	0.11
M24-O	May 16 2012	<0.002	<0.002	0.0048	<0.01	0.12
M24-O (Dup)	May 16 2012	<0.002	<0.002	0.006	<0.01	0.16
M25-UBF	May 16 2012	<0.002	<0.002	<0.002	<0.01	0.1
M26-O	May 15 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M27-LBF	May 14 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M28-LBF	May 15 2012	<0.002	<0.002	<0.002	<0.01	0.11
M29-UBF	May 14 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M30-O	May 21 2012	<0.002	<0.002	<0.002	<0.01	<0.1
M31-LBF	May 21 2012	<0.002	<0.002	<0.002	<0.01	<0.1
O19-GL	May 21 2012	<0.002	<0.002	<0.002	<0.01	<0.1
O49-GL	May 14 2012	<0.002	<0.002	<0.002	<0.01	0.12
O49-GL (Dup)	May 14 2012	<0.002	<0.002	<0.002	<0.01	<0.1
P19-1-O	May 21 2012	<0.002	<0.002	<0.002	<0.01	<0.1
P49-O	May 15 2012	<0.002	<0.002	<0.002	<0.01	<0.1
P49-O (Dup)	May 15 2012	<0.002	<0.002	<0.002	<0.01	<0.1
<b>Alert Level</b>		<b>0.0025</b>	<b>0.35</b>	<b>0.5</b>	<b>5</b>	<b>R</b>
<b>AWQS</b>		<b>0.005</b>	<b>0.7</b>	<b>1</b>	<b>10</b>	<b>-</b>

All results are in milligrams per liter (mg/L)  
 < = less than detection limit  
 AWQS = Arizona Aquifer Water Quality Standard  
 R = Reserved  
 " - " = Not Analyzed (Bottle Breakage)

TABLE 7. SUMMARY OF TRACE METAL ANALYTICAL RESULTS, BIENNIAL PARAMETERS																		
Well ID	Sample Date	Aluminium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Thallium	Zinc
M1-GL	May 17 2012	<0.2	<0.003	<0.001	0.025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.01
M2-GU	May 18 2012	<0.2	<0.003	0.002	0.048	<0.001	<0.001	<0.001	<0.001	0.001	<0.05	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.05
M3-GL	May 21 2012	<0.2	<0.003	<0.001	0.025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.01
M4-O	May 21 2012	<0.2	<0.003	<0.001	0.012	<0.001	<0.001	<0.001	<0.001	0.0011	<0.05	<0.001	0.017	<0.0002	0.0032	<0.002	<0.001	<0.01
M6-GU	May 18 2012	<0.2	<0.003	0.001	0.0067	<0.001	<0.001	0.0035	<0.001	<0.001	<0.05	<0.001	<0.005	<0.0002	0.0093	<0.002	<0.001	<0.05
M7-GL	May 18 2012	<0.2	<0.003	<0.001	0.0043	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.05
M8-O	May 18 2012	<0.2	<0.003	<0.001	0.0027	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.001	0.0065	<0.0002	<0.001	<0.002	<0.001	<0.05
M14-GL	May 17 2012	<0.2	<0.003	<0.001	0.02	<0.001	<0.001	0.0035	<0.001	0.0014	<0.05	<0.001	<0.005	<0.0002	0.0019	<0.002	<0.001	<0.01
M15-GU	May 17 2012	<0.2	<0.003	<0.001	0.0042	<0.001	<0.001	0.002	<0.001	0.0012	<0.05	<0.001	<0.005	<0.0002	0.0067	<0.002	<0.001	<0.01
M16-GU	May 16 2012	<0.2	<0.003	<0.001	0.0059	<0.001	<0.001	0.0021	<0.001	0.0016	0.41	<0.001	0.0056	<0.0002	0.023	<0.002	<0.001	<0.05
M17-GL	May 16 2012	<0.2	<0.003	<0.001	0.013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.001	0.015	<0.0002	<0.001	<0.002	<0.001	<0.05
M18-GU	May 17 2012	<0.2	<0.003	0.0016	0.047	<0.001	<0.001	<0.001	<0.001	0.0022	<0.05	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.01
M19-LBF	May 16 2012	<0.2	<0.003	<0.001	0.029	<0.001	<0.001	<0.001	<0.001	<0.001	0.63	<0.001	0.029	<0.0002	<0.001	<0.002	<0.001	<0.05
M20-O	May 15 2012	<0.2	<0.003	<0.001	0.006	<0.001	<0.001	<0.001	<0.001	0.0016	0.13	<0.001	0.041	<0.0002	<0.001	<0.002	<0.001	<0.05
M21-UBF	May 15 2012	<0.2	<0.003	0.0022	0.061	<0.001	<0.001	<0.001	<0.001	0.0011	0.06	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.05
M22-O	May 18 2012	<0.2	<0.003	<0.001	0.0034	<0.001	<0.001	<0.001	<0.001	0.0016	0.068	<0.001	0.011	<0.0002	<0.001	<0.002	<0.001	<0.05
M23-UBF	May 17 2012	<0.2	<0.003	0.0015	0.084	<0.001	<0.001	<0.001	<0.001	0.0021	<0.05	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.01
M24-O	May 16 2012	<0.2	<0.003	<0.001	0.0077	<0.001	<0.001	0.0044	<0.001	0.0037	0.17	<0.001	0.0092	<0.0002	0.0012	0.0074	<0.001	<0.05
M24-O (Dup)	May 16 2012	<0.2	<0.003	<0.001	0.0079	<0.001	<0.001	0.0044	<0.001	0.0037	0.18	<0.001	0.0097	<0.0002	0.0011	0.0074	<0.001	<0.05
M25-UBF	May 16 2012	<0.2	<0.003	0.0012	0.09	<0.001	<0.001	0.0012	<0.001	0.0011	<0.05	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.05
M26-O	May 15 2012	<0.2	<0.003	<0.001	0.0016	<0.001	<0.001	0.0052	<0.001	<0.001	2.5	<0.001	<0.005	<0.0002	0.0082	0.002	<0.001	<0.05
M26-O	Jun 29 2012	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-
M27-LBF	May 14 2012	<0.2	<0.003	0.0012	0.031	<0.001	<0.001	0.0016	<0.001	0.0012	<0.05	<0.001	<0.005	<0.0002	0.0025	<0.002	<0.001	<0.05
M28-LBF	May 15 2012	<0.2	<0.003	<0.001	0.0078	<0.001	<0.001	<0.001	<0.001	<0.001	0.5	<0.001	0.0093	<0.0002	<0.001	<0.002	<0.001	0.11
M29-UBF	May 14 2012	<0.2	<0.003	0.0016	0.054	<0.001	<0.001	<0.001	<0.001	0.001	0.053	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.05
M30-O	May 21 2012	<0.2	<0.003	<0.001	0.016	<0.001	<0.001	0.0046	<0.001	<0.001	<0.05	<0.001	<0.005	<0.0002	0.016	<0.002	<0.001	<0.01
M31-LBF	May 21 2012	<0.2	<0.003	0.0016	0.046	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.01
O19-GL	May 21 2012	<0.2	<0.003	<0.001	0.038	<0.001	<0.001	0.0019	<0.001	<0.001	<0.05	<0.001	<0.005	<0.0002	0.0036	<0.002	<0.001	<0.01
O49-GL	May 14 2012	<0.2	<0.003	<0.001	0.0046	<0.001	<0.001	0.0022	<0.001	<0.001	<0.05	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.05
O49-GL (Dup)	May 14 2012	<0.2	<0.003	<0.001	0.0046	<0.001	<0.001	0.002	<0.001	<0.001	<0.05	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.05
P19-1-O	May 21 2012	<0.2	<0.003	<0.001	0.0029	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.001	<0.005	<0.0002	0.0061	<0.002	<0.001	<0.01
P49-O	May 15 2012	<0.2	<0.003	<0.001	0.0036	<0.001	<0.001	0.0026	<0.001	0.0076	<0.05	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.05
P49-O (Dup)	May 15 2012	<0.2	<0.003	<0.001	0.0033	<0.001	<0.001	0.0024	<0.001	0.0069	<0.05	<0.001	<0.005	<0.0002	<0.001	<0.002	<0.001	<0.05
Lowest Alert Level		0.71	0.005	0.026	1	0.0032	-	0.061	0.005	0.51	2.2	0.026	0.22	0.0011	0.08	0.027	-	2.5
Lowest Aquifer Quality Limit		-	0.006	0.05	2	0.004	0.005	0.1	-	-	-	0.05	-	0.002	0.1	0.05	0.002	-
Arizona Aquifer Water Quality Standard		-	0.006	0.05	2	0.004	0.005	0.1	-	-	-	0.05	-	0.002	0.1	0.05	0.002	-

*All results in milligrams per liter (mg/L)*  
*< = less than detection limit*  
*Lowest Alert Level = Lowest alert level set for an individual metal for all wells; a higher value may apply to results from individual wells.*  
*Lowest Aquifer Quality Limit = Lowest Aquifer Quality Limit set for an individual metal for all wells; a higher value may apply to results from individual wells.*  
*R = Reserved*  
*"-" = Not Analyzed*

## ATTACHMENT 2

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M1-GL 6-Month Summary Letter



May 10, 2012

Ms. Kathryn Boland  
ADEQ Water Quality Compliance Section  
Mail Code 5415B-1  
1110 West Washington Street  
Phoenix, Arizona 85007



Subject: 6-Month Monitoring Report for M1-GL;  
Aquifer Protection Permit (APP) No. 101704

Dear Ms. Boland:

In accordance with Aquifer Protection Permit (APP) No. P-101704, Curis Resources (Arizona) Inc. (Curis Arizona) is providing the Arizona Department of Environmental Quality (ADEQ) with this 6-month status report of contingency sampling for alert level (AL) exceedances in a point-of-compliance (POC) monitor well at the Florence Copper Project.

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 APP and Underground Injection Control (UIC) Permit. Curis Arizona submitted an amendment request and assumed the compliance obligations of those permits. The amended APP transferring the permit to Curis Arizona was issued August 12, 2011.

The Florence Copper Project is a proposed in-situ copper mining facility. The facility has been inactive since a pilot test in 1998, which was performed in a very limited portion of the permitted area. The only on-going process at the facility is an water impoundment which contains less than 10% of the liquid capacity. Only minor leakage has ever been recorded in the leak collection and recovery system, and none in the last five years.

The permit requires quarterly monitoring of four indicator parameters, fluoride, magnesium, sulfate and total dissolved solids (TDS). 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 September 2011, sulfate exceeded the AL for sulfate in monitoring well M1-GL, located upgradient of the test site. The exceedance was confirmed in the same month and the ADEQ was notified on September 30, 2011. In accordance with the permit, the monitoring frequency of MW-1 was increased to monthly for the quarterly indicator parameters. Permit condition 2.6.2.3.2.7 requires submittal of a report documenting the results following six sequential monthly sampling events (October 2011 through March 2012).



Ms. Kathryn Boland  
May 10, 2012  
Page 2

A general increase in the sulfate concentrations in M1-GL has been observed from 2000 to 2010. The remaining four indicator parameters are relatively stable and well below the established ALs (Figure M1-GL). Since M1-GL is an upgradient, background well to this pilot test area, the increased concentrations cannot be attributed to permitted mining operations. Therefore we believe no further action is required.

Monthly monitoring for the well was performed in April 2012 and we anticipate performance of the biennial extended sampling event in May 2012. If there are no exceedances of ALs for the well for the biennial Level II parameters, we will return to monitoring MW-1 on a quarterly basis for the indicator suite.

Please contact me at (520) 374-3984 should you have any questions regarding this report.

Sincerely,

CURIS RESOURCES (ARIZONA) INC.

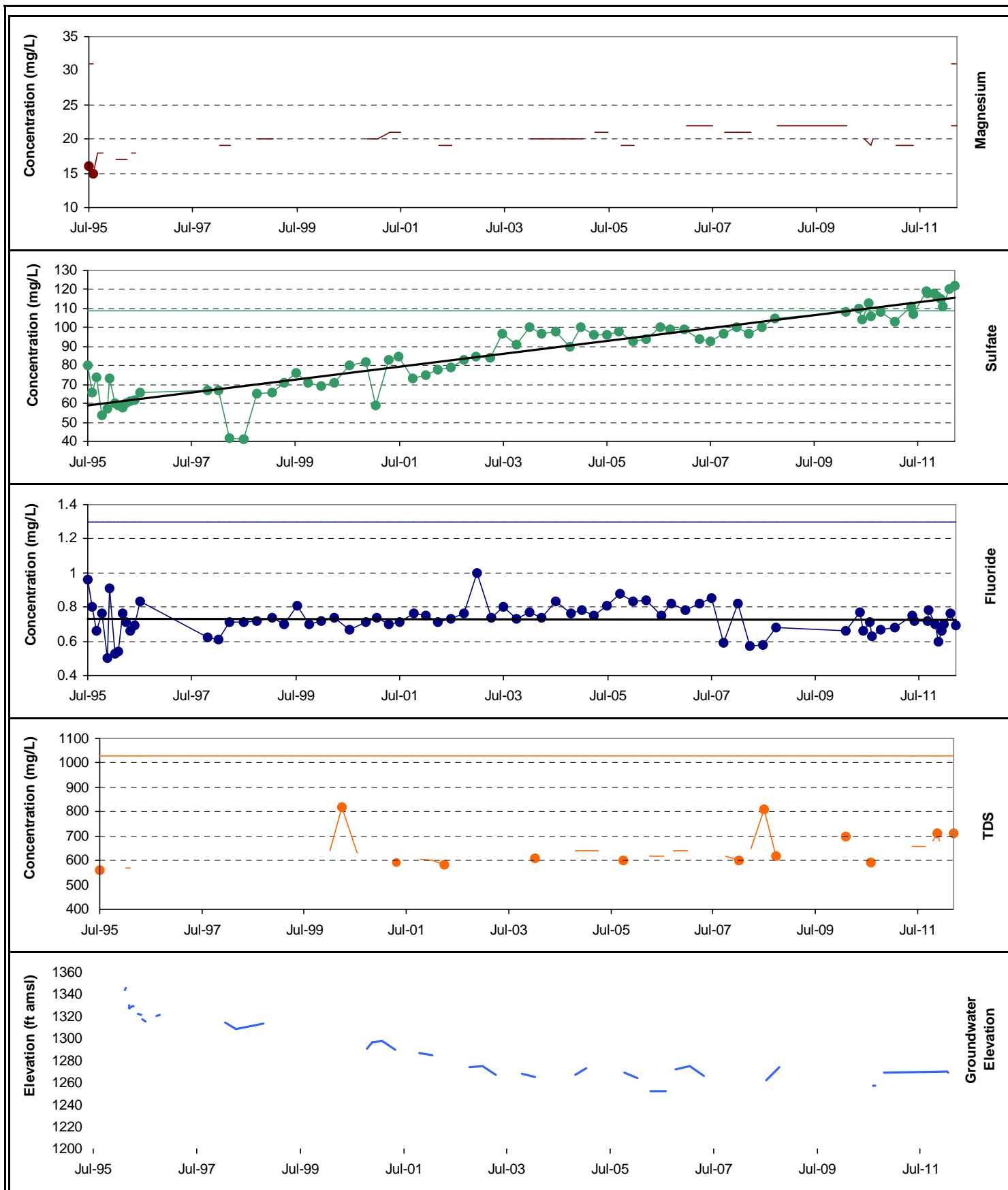
A handwritten signature in blue ink, appearing to read 'Daniel Johnson', is positioned above the printed name and title.

Daniel Johnson  
Environment and Technical Services Manager

BAS:ld  
Attachments

cc: Florence Copper File  
Ms. Nancy Rumrill, U.S. Environmental Protection Agency





M1-GL  
QUARTERLY PARAMETERS  
CURIS RESOURCES (ARIZONA) INC.  
FLORENCE, ARIZONA