

**FLORENCE COPPER INC.  
FLORENCE COPPER PROJECT  
SECOND QUARTER 2005 MONITORING REPORT  
U.I.C. PERMIT AZ396000001  
AND  
A.P.P. PERMIT 101704**

**July 28, 2005**

**MERRILL MINING, LLC**  
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404-495-9577 Fax: 404-495-9578

**HUGH NOWELL**  
**CORPORATE COUNSEL**

**July 28, 2005**

Mr. Doug Liden  
Ground Water Office WTR-0  
US Environmental Protection Agency Region IX  
Water Management Division (WTR-9)  
75 Hawthorne Street  
San Francisco, California 94105-3901

**RE: MONITORING REPORT FOR UIC PERMIT NUMBER AZ396000001**  
**SECOND QUARTER 2005 REPORT**

Dear Mr. Zeleznik,

This report is submitted in accordance with the reporting requirements of Parts II.G.2.(a) through (j) of the referenced permit. It pertains to monitoring activities conducted at the Florence In-Situ Mine Site from April 1 through June 30, 2005. Copies of records required by Part II.G.1 are maintained at the Mine Site along with other information that is summarized below.

Florence Copper is subject to the requirements of Underground Injection Permit (UIC) Permit No. AZ396000001 issued by the United States Environmental Protection Agency (USEPA) on May 1, 1997, and Aquifer Protection Permit (APP) No. 101704 issued by the Arizona Department of Environmental Quality (ADEQ) on June 9, 1997, and last amended on July 16, 2004.

As you are aware, Florence Copper discontinued hydraulic control on September 1, 2004, in order to conduct groundwater quality tests in accordance with Part II.H.2 of the APP and Part II.I.2 of the UIC Permit. A report of the results has been provided to the ADEQ and USEPA for review. The pumping wells remain off during the evaluation process. As a result, no extraction flows are reported under Section (b) below and the water level measurements that are reported in Section (b) reflect natural conditions, not hydraulic control.

**(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 wellfield. Figure 2 shows the approximate layout of the wellfield and denotes the four well pairs. There are four injection/recovery wells and nine pumping wells. 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.**

Hydraulic control 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.**

Although hydraulic control was not maintained during this reporting period, water level measurements were continued by manual measurements in the four observation wells and their nearest inward neighbors. Figure 1 of Attachment 1 and the supporting data show the groundwater elevations in the four well pairs.

**(d) A table showing POC monitoring wells analytical results and alert levels.**

The attached report *Florence Project Quarterly Compliance Monitoring Report – Second Quarter 2005* by Brown and Caldwell and sealed by Ms. Tekla King, Registered Professional Geologist (Attachment 2), contains the POC monitoring records and results. Brown and Caldwell, along with Project personnel, conducted compliance sampling on April 5, 7, 12, and 14, 2005.

Quarterly and biennial parameters were conducted for 29 of the 31 POC monitoring wells. POC monitoring wells M32-UBF and M33-UBF were dry and could not be sampled. All results were below the Alert Levels (ALs) or Aquifer Quality Limits (AQLs). The results are discussed in the report.

**(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 required.

**(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 Attachment 1, Figure 2. No unusual conditions were noted.

**(i) Well and core hole plugging and abandonment.**

None of the existing wells and 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.

Florence Copper, Inc., believes that you will find this report complete and in compliance with all permit conditions. Please contact me at (404) 495-9577 should you have any questions regarding this report.

Sincerely,



Hugh Nowell  
Corporate Counsel

BAS:lld  
Attachments

cc: Florence Copper File



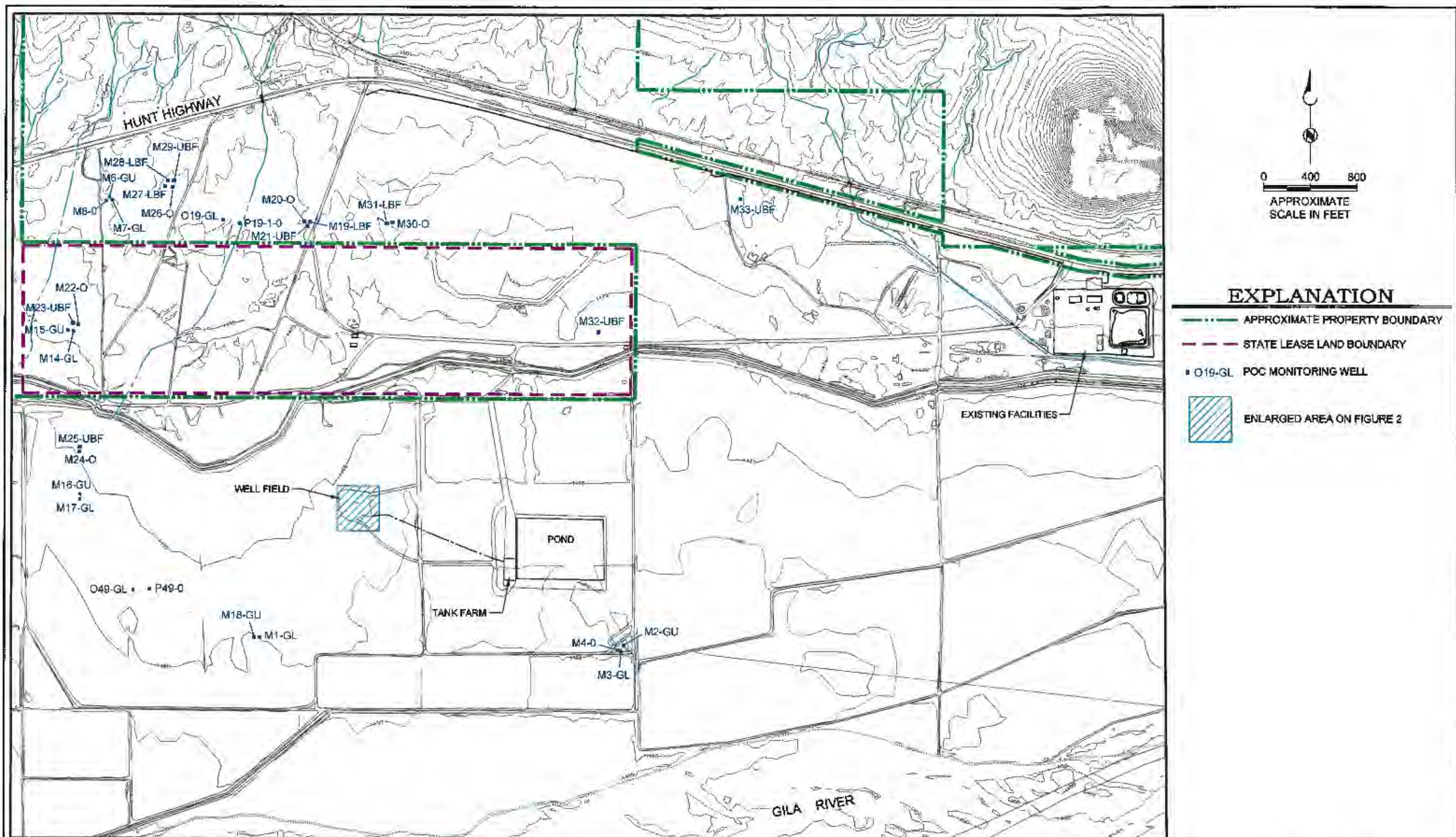
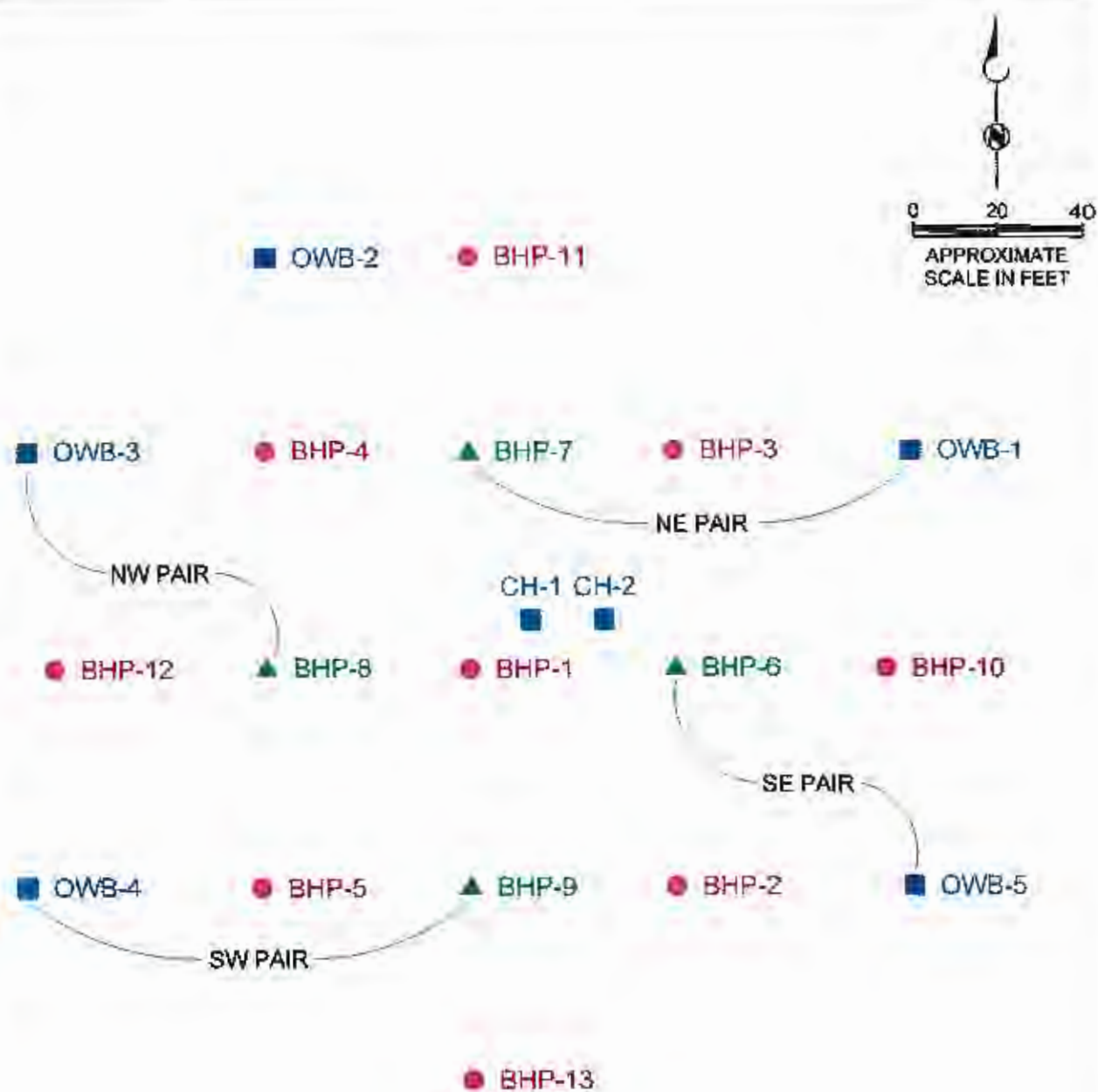


Figure 1  
**MONITORING AREA**  
 MERRILL MINING, L.L.C.  
 FLORENCE, ARIZONA

**BROWN AND  
 CALDWELL**





### EXPLANATION

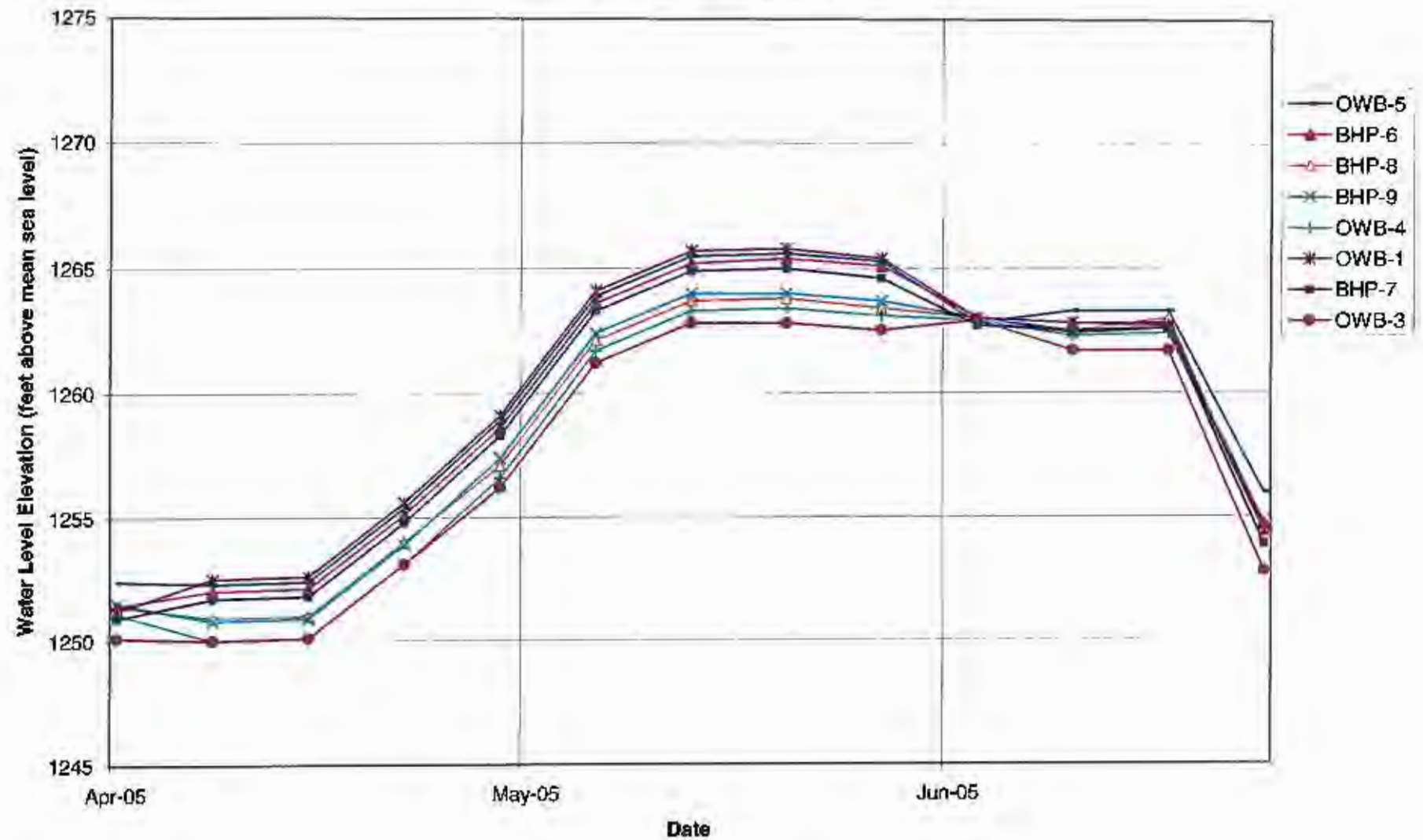
- BHP-10 PUMPING WELL (CURRENTLY INACTIVE)
- OWB-2 OBSERVATION WELL
- ▲ BHP-8 INJECTION / RECOVERY WELL (RECOVERY MODE SINCE 1998)

BROWN AND  
CALDWELL

Figure 2  
**WELLFIELD LAYOUT**  
MERRILL MINING, L.L.C.  
FLORENCE, ARIZONA

**ATTACHMENT 1**  
**MINE OPERATIONS MONITORING**

**Figure 1 - Well Field Water Elevations  
Second Quarter 2005**

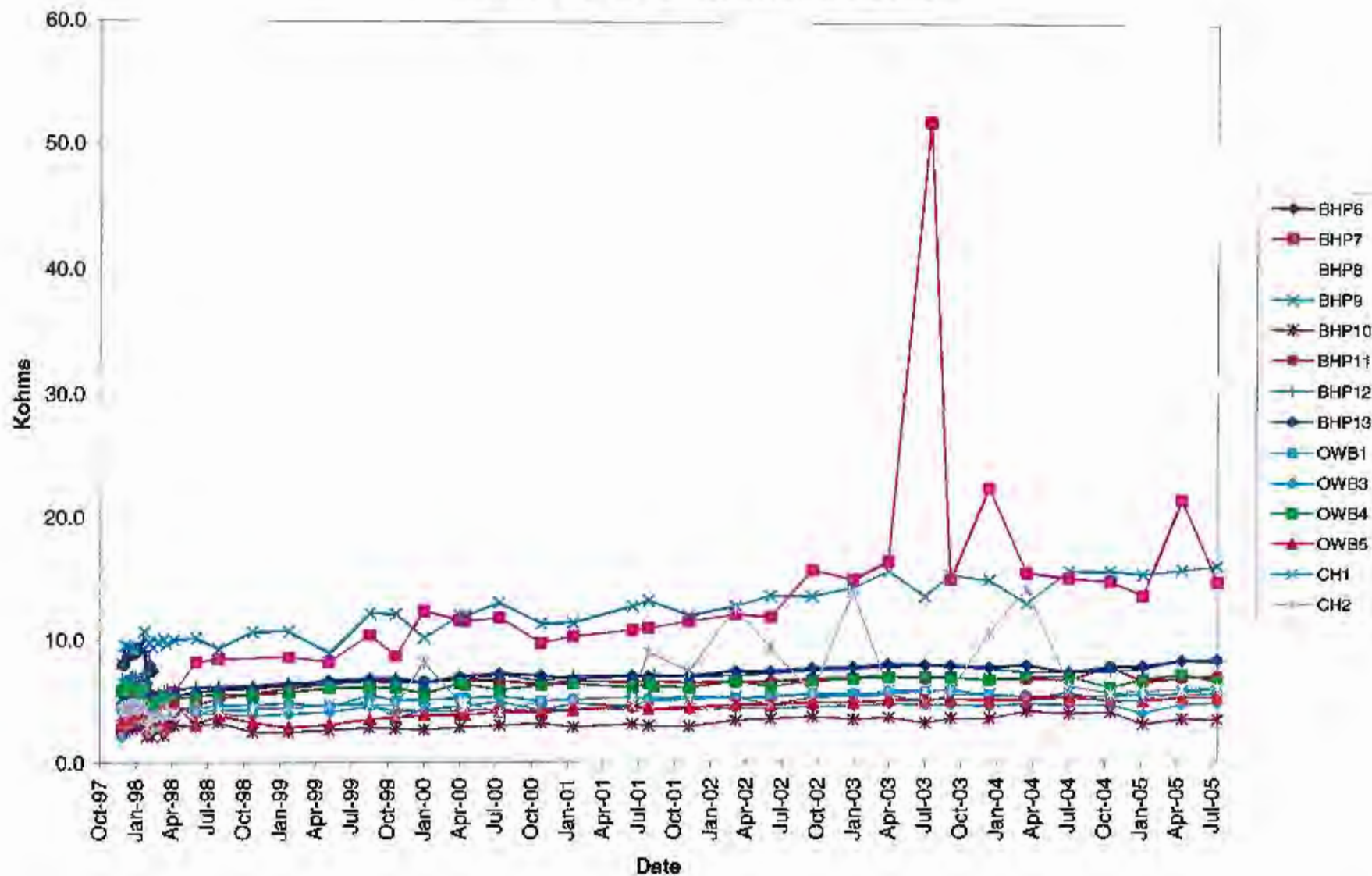




**Well Field Water Elevations  
Second Quarter 2005**

Date	BHP-6	BHP-7	BHP-8	BHP-9	OWB-1	OWB-3	OWB-4	OWB-5
4/6/05	1251.4	1250.9	1251.4	1251.5	1251.3	1250.1	1251.1	1252.4
4/13/05	1252.0	1251.7	1250.9	1250.8	1252.5	1250.0	1250.0	1252.3
4/20/05	1252.1	1251.8	1251.0	1250.9	1252.6	1250.1	1250.1	1252.4
4/27/05	1255.1	1254.8	1254.0	1253.9	1255.6	1253.1	1253.1	1255.4
5/4/05	1258.6	1258.3	1257.1	1257.4	1259.1	1256.2	1256.6	1258.9
5/11/05	1263.6	1263.3	1262.1	1262.4	1264.1	1261.2	1261.7	1263.9
5/18/05	1265.2	1264.9	1263.7	1264.0	1265.7	1262.8	1263.3	1265.5
5/25/05	1265.4	1265.0	1263.8	1264.0	1265.8	1262.8	1263.4	1265.6
6/1/05	1265.1	1264.6	1263.4	1263.7	1265.4	1262.5	1263.1	1265.3
6/8/05	1263.0	1262.7	1263.0	1263.0	1263.0	1262.9	1262.9	1262.8
6/15/05	1263.8	1262.5	1262.5	1262.4	1262.8	1261.7	1262.3	1263.3
6/22/05	1262.8	1262.6	1263.0	1262.6	1262.7	1261.7	1262.4	1263.3
6/29/05	1254.7	1253.9	1254.5	1254.6	1254.4	1252.8	1254.5	1256.0
Water Level Elevations (feet AMSL)								

Figure 2 - Annular Resistivity in Kohms



**ATTACHMENT 2**

**POC QUARTERLY COMPLIANCE MONITORING REPORT**



**FLORENCE COPPER PROJECT  
QUARTERLY COMPLIANCE MONITORING REPORT  
SECOND QUARTER 2005**

***Primary Sampling Activities***

Quarterly compliance monitoring was conducted for the Florence Copper project on April 5, 7, 12, and 14, 2005 (Second Quarter 2005). Groundwater sampling and analysis was conducted in accordance with the requirements of Aquifer Protection Permit (APP) Permit Number 101704, Part IIE.3.d (Compliance Monitoring). Quarterly parameters, as listed in Part IV Table III.B of the APP were analyzed from the designated Point of Compliance (POC) wells. The quarterly parameters are magnesium, sulfate, fluoride, and total dissolved solids (TDS).

During the Second Quarter 2005 sampling event, 29 POC wells were sampled and a total of 116 constituents were analyzed. Two POC wells, M32-UBF and M33-UBF, were dry and could not be sampled. Of the 116 constituents analyzed, none had reported concentrations exceeding the approved alert levels (ALs).

Analyses of the samples were conducted by Aerotech Environmental Laboratories (Aerotech). Analytical results for the POC wells for the quarterly parameters are provided in Table 1 and field parameters measured during sampling are indicated in Table 2.

***AL Exceedances and Verification Sampling***

Part IIF.4 of the APP (AL, Aquifer Quality Limit [AQL], and Discharge Limit [DL] Contingencies) requires verification sampling for an AL exceedance. There were no AL exceedances during this quarterly sampling. No verification sampling was required.

***Contingency Sampling Plan to be Implemented During Third Quarter 2005***

There were no AL exceedances verified during this quarterly sampling. No contingency sampling plan is required during the Third Quarter of 2005.

***Results of Contingency Sampling Plan Implemented from First Quarter 2005***

There were no AL exceedances during the First Quarter 2005. Therefore, no contingency sampling plan was implemented.

***Issues***

There were no other issues to report during the Second Quarter 2005.



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	Apr 12 2005	21.0	31	96	109	0.75	1.3	640	1028
M2-GU	Apr 14 2005	22.0	39	140	275	0.98	1.4	760	1496
M3-CL	Apr 12 2005	19.0	36	110	187	0.74	1.3	620	1157
M4-O	Apr 12 2005	4.4	15	54	405	2.4	5.1	420	1072
M4-O (Dup)	Apr 12 2005	4.5	15	54	405	2.4	5.1	420	1072
M6-GU	Apr 07 2005	3.0	5.1	48	86	0.71	1.3	380	620
M7-GL	Apr 07 2005	<0.25	1	35	82	0.94	1.7	280	464
M8-O	Apr 07 2005	<0.25	1	71	122	1.9	3.6	260	609
M8-O (Dup)	Apr 07 2005	<0.25	1	71	122	2.0	3.6	250	609
M14-GL	Apr 07 2005	2.2	23	58	144	0.69	1.4	380	874
M15-GU	Apr 07 2005	25.0	44	75	126	0.64	1.2	670	1359
M16-GU	Apr 12 2005	31.0	52	180	248	0.75	1.1	880	1635
M17-GL	Apr 12 2005	5.7	9.3	120	209	0.8	1.6	420	831
M18-GU	Apr 12 2005	18.0	36	150	288	1.1	1.6	690	1323
M19-LBF	Apr 05 2005	12.0	21	52	89	0.61	1	460	794
M20-O	Apr 05 2005	8.7	14	65	112	0.87	1.7	370	809
M21-UBF	Apr 05 2005	32.0	87	240	487	0.74	1.1	1000	2867
M22-O	Apr 07 2005	6.0	8.6	50	86	0.8	1.3	340	1094
M23-UBF	Apr 07 2005	40.0	69	250	411	0.74	1.3	1300	2392
M24-O	Apr 12 2005	10.0	19	670	1364	1.2	2.5	1200	2363
M25-UBF	Apr 12 2005	35.0	76	230	387	0.78	1.6	1200	2683
M26-O	Apr 05 2005	<0.25	1	62	105	1.6	3.4	270	556
M27-LBF	Apr 05 2005	31.0	51	120	179	0.46	1	820	1745
M27-LBF (Dup)	Apr 05 2005	31.0	51	130	179	0.5	1	890	1745
M28-LBF	Apr 05 2005	1.6	2.6	47	81	0.82	1.6	360	610
M29-UBF	Apr 05 2005	45.0	84	290	465	0.79	1.1	1400	2751
M30-O	Apr 05 2005	11.0	18	57	102	0.79	1.6	480	824
M31-LBF	Apr 05 2005	21.0	46	180	330	0.86	1.3	700	1665
O19-GL	Apr 07 2005	10.0	17	54	99	0.67	1.4	330	770
O49-GL	Apr 05 2005	10.0	18	73	159	0.71	1	480	849
P19-L-O	Apr 07 2005	6.0	12	62	107	1.5	2.8	420	767
P49-O	Apr 05 2005	3.4	6.2	99	181	1.1	2	390	801
Laboratory Detection Limit		0.25		2		0.4		10	
Arizona Aquifer Water Quality Standard		-		-		4		-	
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	Apr 12 2005	21.7	71.1	7.57	1047
M2-GU	Apr 14 2005	19.4	66.9	7.46	1131
M3-GL	Apr 12 2005	21.6	70.9	7.62	993
M4-O	Apr 12 2005	23.4	74.1	7.46	642
M6-GU	Apr 07 2005	24.9	76.8	8.64	675
M7-GL	Apr 07 2005	24.6	76.3	9.46	491
M8-O	Apr 07 2005	29.2	84.6	8.90	665
M14-GL	Apr 07 2005	27.0	80.6	8.66	813
M15-GU	Apr 07 2005	24.8	76.6	7.62	1311
M16-GU	Apr 12 2005	24.0	75.2	7.49	1544
M17-GL	Apr 12 2005	28.5	83.3	8.44	841
M18-GU	Apr 12 2005	19.7	67.5	7.58	996
M19-LBF	Apr 05 2005	22.7	72.9	7.78	753
M20-O	Apr 05 2005	23.4	74.1	7.66	745
M21-UBF	Apr 05 2005	22.2	72.0	7.33	1570
M22-O	Apr 07 2005	28.6	83.5	8.25	771
M23-UBF	Apr 07 2005	22.0	71.6	7.33	2065
M24-O	Apr 12 2005	30.4	86.7	7.95	1952
M25-UBF	Apr 12 2005	21.0	69.8	7.25	1742
M26-O	Apr 05 2005	29.0	84.2	8.66	585
M27-LBF	Apr 05 2005	23.1	73.6	7.67	1533
M28-LBF	Apr 05 2005	26.1	79.0	8.49	657
M29-UBF	Apr 05 2005	22.3	72.1	7.20	2128
M30-O	Apr 05 2005	23.9	75.0	7.60	765
M31-LBF	Apr 05 2005	22.1	71.8	7.50	1125
O19-GL	Apr 07 2005	23.5	74.3	7.86	742
O49-GL	Apr 05 2005	25.7	78.3	7.87	927
P19-1-O	Apr 07 2005	24.6	76.3	7.74	727
P49-O	Apr 05 2005	27.6	81.7	7.88	768