



June 20, 2003

Aaron Yue  
Project Coordinator  
Department of Toxic Substances Control, Region 4  
Geology and Corrective Action Branch  
5796 Corporate Avenue  
Cypress, California 90630

Subject: Groundwater and Surface Water Sampling Results - First Quarter 2003  
Corrective Action Consent Agreement for Bat Cave Wash Area  
PG&E Topock Compressor Station, Needles, California  
EPA ID No. CAT080011729

Dear Mr. Yue:

This letter transmits the results of the First Quarter (March 2003) groundwater and surface water monitoring event for the Topock project. During this monitoring event, 32 wells and six locations along the Colorado River were sampled for the site constituents of concern. The wells sampled during this monitoring event include the five new monitoring wells installed at the site in March 2003 as part of the RCRA Facility Investigation. The results of the groundwater and surface water sampling are presented in Tables 1 and 2, respectively. The sampling locations are shown on the attached Figure 1. We have completed our data review of the sampling results and have determined that the results are usable for monitoring water quality conditions at the site.

If you have any questions, please call me at (925) 974-4081.

Sincerely,

*Paul Britton for /*

Linda Gonsalves  
Senior Project Manager  
Environmental Services

Attachments

Mr. Aaron Yue  
June 20, 2003  
Page 2

cc: Alfredo Zanoria  
Department of Toxic Substances Control  
5796 Corporate Avenue  
Cypress, California 90630

Michael Schum, PhD  
Department of Toxic Substances Control/HERD  
2878 Camino Del Rio South, Suite 402  
San Diego, California 92108

Richard Sherwood  
Office of Legal Counsel  
Department of Toxic Substances Control  
P.O. Box 806  
Sacramento, California 95812

Neal Krull  
Colorado River Basin  
Regional Water Quality Control Board  
73-720 Fred Waring Drive, Suite 100  
Palm Desert, California 92260

Anthony Velasco  
U.S. Fish and Wildlife Service  
2321 Royal Palm Road, Suite 103  
Phoenix, Arizona 85021-4951

Gregory Wolf  
Havasu National Wildlife Refuge  
U.S. Fish and Wildlife Service  
P.O. Box 3009  
Needles, California 92363

Jeff Smith  
U.S. Department of Interior  
Bureau of Reclamation  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Mr. Aaron Yue  
June 20, 2003  
Page 3

Thayer Broili  
U.S. Department of the Interior  
Bureau of Reclamation - Yuma Area Office  
7301 Calle Agua Salada  
Yuma, Arizona 85364

Paul Meyer  
U.S. Department of Interior  
Bureau of Land Management  
Denver Federal Center, Bldg. 50  
P.O. Box 25047 (D-5100)  
Denver, Colorado 80225-0007

Byard Kershaw  
U.S. Department of Interior  
Bureau of Land Management  
222 N. Central Avenue  
Phoenix, Arizona 85014

Ken Stollenwerk  
U.S. Geological Survey  
Mail Stop 413  
Box 25046, Federal Center  
Denver, Colorado 80225

**Table 1**  
**Groundwater Sampling Results - December 2002 and March 2003**  
**Topock Compressor Station**

Well Number	Sample Date	Hexavalent Chromium mg/L	Total Chromium mg/L	Copper mg/L	Nickel mg/L	Zinc mg/L	Electrical Conductivity µS/cm	pH
<b>MW-9</b>	10-Dec-2002	0.402	0.428	ND <0.02	ND <0.0278	0.255	2,620	7.36
	18-Mar-2003	0.368	0.357	0.0146	ND <0.0278	0.363	3,780	7.49
<b>MW-10</b>	10-Dec-2002	1.97	2.15	ND <0.02	ND <0.0278	0.2 J	3,940	7.48
	18-Mar-2003	1.64	1.47	ND <0.011	ND <0.0278	0.637	3,800	7.72
<b>MW-11</b>	10-Dec-2002	0.584	0.696	ND <0.02	ND <0.0278	0.176	2,700	7.39
	18-Mar-2003	0.463	0.452	ND <0.011	ND <0.0278	0.329	2,670	7.51
<b>MW-12</b>	11-Dec-2002	1.25	1.61	ND <0.02	ND <0.0278	0.0694	5,310	8.34
	20-Mar-2003	1.28	1.10	ND <0.011	ND <0.0278	0.540 J	4,240	8.37
	duplicate 20-Mar-2003	1.26	1.19	ND <0.011	ND <0.0278	0.284 J	4,320	8.31
<b>MW-13</b>	10-Dec-2002	0.0229	0.029	ND <0.02	ND <0.0278	0.172	1,700	7.54
	21-Mar-2003	0.0231	0.023	ND <0.011	ND <0.0278	0.345	2,330	7.49
<b>MW-14</b>	10-Dec-2002	0.049	0.0484	ND <0.02	0.0285	0.498	1,430	7.69
	21-Mar-2003	0.0473	0.0365	ND <0.011	ND <0.0278	0.300 J	1,750	7.69
	duplicate 21-Mar-2003	0.0484	0.0367	ND <0.011	ND <0.0278	0.105 J	1,750	7.74
<b>MW-15</b>	10-Dec-2002	0.0229	0.0194	ND <0.02	ND <0.0278	0.419	1,640	7.71
	18-Mar-2003	0.0294	0.0209	ND <0.011	ND <0.0278	0.276	2,000	7.73
<b>MW-16</b>	10-Dec-2002	0.0198	0.0234	ND <0.02	ND <0.0278	0.191	1,470	7.87
	18-Mar-2003	0.0188	0.0248	ND <0.011	ND <0.0278	0.368	1,313	7.95
<b>MW-18</b>	10-Dec-2002	0.0354	0.0418	ND <0.02	ND <0.0278	0.188	1,440	7.60
	18-Mar-2003	0.0336	0.0432	ND <0.011	ND <0.0278	0.137	1,334	7.64
<b>MW-19</b>	10-Dec-2002	0.761	0.75	ND <0.02	0.0101 J	0.356	2,260	7.52
	21-Mar-2003	0.748	0.631	ND <0.011	ND <0.0278	0.176	2,690	7.58
<b>MW-20-70</b>	11-Dec-2002	8.76	13.8	ND <0.02	ND <0.0278	0.123	4,320	7.58
	20-Mar-2003	11.6	10.2	ND <0.011	ND <0.0278	0.217	3,950	7.65
<b>MW-20-100</b>	11-Dec-2002	3.08	3.87	ND <0.02	ND <0.0278	0.0847	6,900	7.69
	20-Mar-2003	2.91	2.64	ND <0.011	ND <0.0278	0.153	5,890	7.78

**Table 1**  
**Groundwater Sampling Results - December 2002 and March 2003**  
**Topock Compressor Station**

Well Number	Sample Date	Hexavalent Chromium mg/L	Total Chromium mg/L	Copper mg/L	Nickel mg/L	Zinc mg/L	Electrical Conductivity μS/cm	pH
<b>MW-20-130</b>	11-Dec-2002	6.1	9.89	ND <0.02	0.0112 J	0.132	20,900	7.68
	20-Mar-2003	6.3	5.16	ND <0.011	ND <0.0278	0.176	17,020	7.76
<b>MW-21</b>	11-Dec-2002	ND <0.01	0.0074	ND <0.02	0.0172 J	0.337	13,690	7.02
	21-Mar-2003	ND <0.01	0.0106	ND <0.011	0.0264 J	0.364	15,060	7.07
<b>MW-22</b>	12-Dec-2002	ND <0.01	0.0035	ND <0.02	0.0175 J	0.118	32,800	6.75
	19-Mar-2003	ND <0.01	0.0169	ND <0.011	ND <0.0278	0.160	29,300	6.96
<b>MW-23</b>	11-Dec-2002	ND <0.01	0.0095	ND <0.02	0.032	0.817	22,900	6.90
	21-Mar-2003	ND <0.01	0.0119	ND <0.011	0.0297	0.531	19,300	7.11
<b>MW-24A</b>	11-Dec-2002	3.43	4.16	ND <0.02	ND <0.0278	0.122 J	4,270	7.66
	18-Mar-2003	2.77	2.61	ND <0.011	ND <0.0278	0.620	3,690	7.75
<b>MW-24B</b>	10-Dec-2002	4.62	5.38	ND <0.02	ND <0.0278	0.300	13,980	7.91
	18-Mar-2003	4.90	4.65	ND <0.011	ND <0.0278	0.468	13,530	7.97
<b>MW-24BR</b>	12-Dec-2002	ND <0.01	0.0034	ND <0.02	ND <0.0278	0.0662	16,160	8.15
	19-Mar-2003	ND <0.01	0.016	ND <0.011	ND <0.0278	0.111	14,780	8.38
<b>MW-25</b>	10-Dec-2002	2.43	3.22	ND <0.02	ND <0.0111	0.167	1,840	7.56
	21-Mar-2003	2.53	2.13	ND <0.011	ND <0.0278	0.325	2,000	7.60
<b>MW-26</b>	11-Dec-2002	3.86	5.02	ND <0.02	ND <0.0278	0.144	4,500	7.60
	20-Mar-2003	3.28	2.75	ND <0.011	ND <0.0278	0.514	3,580	7.69
	duplicate 20-Mar-2003	3.28	2.79	ND <0.011	ND <0.0278	0.356	3,600	7.57
<b>MW-27</b>	12-Dec-2002	ND <0.01	0.0065	ND <0.02	ND <0.0278	0.213	1,220	7.61
	19-Mar-2003	ND <0.01	0.0115	ND <0.011	ND <0.0278	0.105	1,064	7.70
<b>MW-28</b>	12-Dec-2002	ND <0.01	0.0039	ND <0.02	ND <0.0278	0.124	1,640	7.46
	20-Mar-2003	ND <0.01	0.0121	ND <0.011	ND <0.0278	0.286	2,670	7.50
<b>MW-29</b>	11-Dec-2002	ND <0.01	0.0125	ND <0.02	0.0128 J	0.145	10,520	7.19
	20-Mar-2003	ND <0.01	0.0193	ND <0.011	ND <0.0278	0.356	13,150	7.18
<b>MW-30-30</b>	12-Dec-2002	ND <0.01	0.0035	ND <0.02	0.035	0.0963	58,900	6.70
	20-Mar-2003	ND <0.01	0.0264	ND <0.011	0.0235 J	0.597	40,300	6.94

**Table 1  
Groundwater Sampling Results - December 2002 and March 2003  
Topock Compressor Station**

Well Number	Sample Date	Hexavalent Chromium mg/L	Total Chromium mg/L	Copper mg/L	Nickel mg/L	Zinc mg/L	Electrical Conductivity μS/cm	pH
<b>MW-30-50</b>	19-Mar-2003	3.40	3.14	ND <0.011	ND <0.0278	0.0917	10,860	7.70
	20-Mar-2003	3.76	3.34	---	---	---	---	---
<b>MW-31</b>	11-Dec-2002	3.88	5.62	ND <0.02	ND <0.0278	0.274	3,840	7.56
	21-Mar-2003	4.00	3.45	ND <0.011	ND <0.0278	0.211	3,350	7.57
<b>MW-32-20</b>	19-Mar-2003	ND <0.01	0.013	ND <0.011	ND <0.0278	0.0659	6,930	6.89
	20-Mar-2003	ND <0.01	0.0115	---	---	---	---	---
<b>MW-32-35</b>	19-Mar-2003	ND <0.01	0.0135	ND <0.011	ND <0.0278	0.297	7,020	7.40
	20-Mar-2003	ND <0.01	0.0131	---	---	---	---	---
<b>MW-33-40</b>	19-Mar-2003	ND <0.01	0.0155	ND <0.011	ND <0.0278	0.0895	4,200	8.70
	20-Mar-2003	ND <0.01	0.0147	---	---	---	---	---
<b>MW-33-90</b>	19-Mar-2003	ND <0.01	0.0165	ND <0.011	ND <0.0278	0.150	7,920	8.11
	20-Mar-2003	ND <0.01	0.0154	---	---	---	---	---
<b>Park Moabi</b>	18-Mar-2003	ND <0.01	0.0114	ND <0.011	ND <0.0278	0.303	1,242	7.89

**NOTES:**

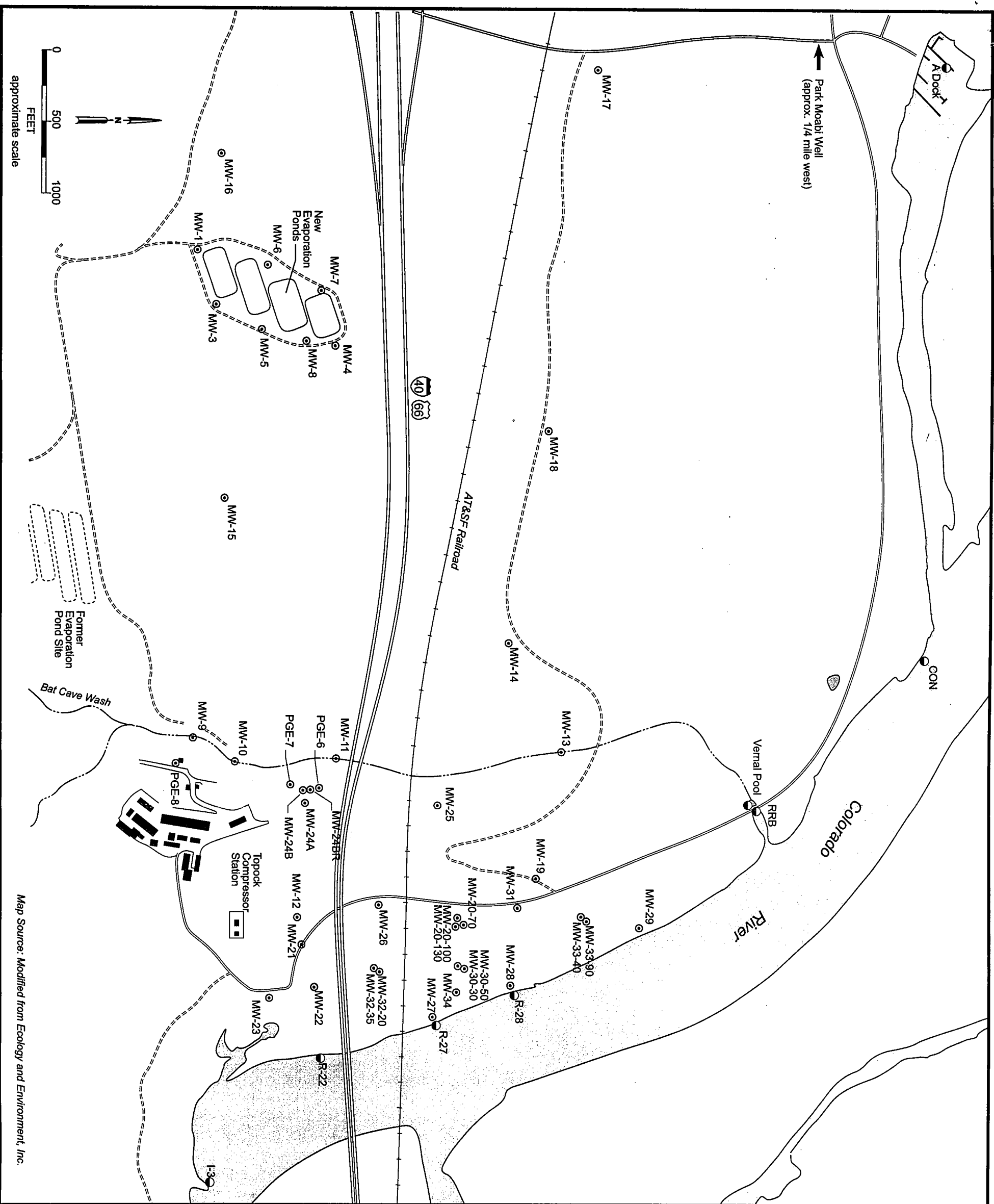
1. Table lists validated analytical results from 4th Quarter 2002 and 1st Quarter 2003 monitoring. Concentrations in milligrams per liter (mg/L)
2. ND = not detected at listed reporting limit, J = estimated concentration (result below reporting limit or qualified result from data validation), (---) = not tested
3. Analysis methods: hexavalent chromium (SW 7196A), total chromium, copper, nickel, zinc (dissolved concentrations, SW 6020A) electrical conductivity (SW 9050), pH (SW 9040)
4. The 3/20/03 hexavalent chromium sample from well MW-32-20 was analyzed several minutes beyond the analytical method 24-hour holding time. Based on validation criteria, this result is qualified as nondetect at the listed reporting limit (estimated).
5. Table 1 lists the results of initial sampling of the five monitoring wells installed in March 2003 (MW-30-50, MW-32-20, MW-32-35, MW-33-40, MW-33-90). Refer to PG&E letter to DTSC dated April 8, 2003 for additional chromium results for split samples collected in March 2003 at these wells.
6. Park Moabi well and well MW-17 are sampled annually during 1st Quarter and 3rd Quarter, respectively.

**Table 2**  
**Surface Water Sampling Results - December 2002 and March 2003**  
**Topock Compressor Station**

Sample Location	Sample Date	Hexavalent Chromium mg/L	Total Chromium mg/L	Copper mg/L	Nickel mg/L	Zinc mg/L	Electrical Conductivity µS/cm	pH
CON	12-Dec-2002	ND <0.01	0.0073	ND <0.02	ND <0.0278	0.174	1,160	8.27
	20-Mar-2003	ND <0.01	0.0133	ND <0.011	ND <0.0278	0.245	1,039	8.32
Vernal Pool (RR Bridge)	12-Dec-2002	ND <0.01	0.0141	ND <0.02	ND <0.0278	0.172	5,680	7.39
	20-Mar-2003	ND <0.01	0.013	ND <0.011	ND <0.0278	0.334	1,025	8.02
I-3	12-Dec-2002	ND <0.01	0.0057	ND <0.02	ND <0.0278	0.0847	1,130	8.32
	19-Mar-2003	ND <0.01	0.0135	ND <0.011	ND <0.0278	0.063	1,010	8.28
R-22	12-Dec-2002	ND <0.01	0.0067	ND <0.02	ND <0.0278	0.0761	1,060	8.31
	19-Mar-2003	ND <0.01	0.0125	ND <0.011	ND <0.0278	0.159	1,001	8.38
R-27	12-Dec-2002	ND <0.01	0.007	ND <0.02	ND <0.0278	0.135	1,090	8.30
	19-Mar-2003	ND <0.01	0.0103	ND <0.011	ND <0.0278	0.114	929	8.39
R-28	12-Dec-2002	ND <0.01	0.0072	ND <0.02	ND <0.0278	0.11	1,060	8.31
	20-Mar-2003	ND <0.01	0.0146	ND <0.011	ND <0.0278	0.324	1,007	8.31

**NOTES:**

1. Table lists validated analytical results from 4th Quarter 2002 and 1st Quarter 2003 monitoring. Concentrations in milligrams per liter (mg/L)
2. ND = not detected at listed analytical reporting limit
3. Analysis methods: hexavalent chromium (SW 7196A), total chromium, copper, nickel, zinc (dissolved concentrations, SW 6020A) electrical conductivity (SW 9050), pH (SW 9040)



Map Source: Modified from Ecology and Environment, Inc.

**LEGEND**

- Groundwater Monitoring Well
- Surface Water Monitoring Station

Station ID	Monitored Zone	Well Depth (feet bgs)	Sampling Frequency
MW-9	Upper UA	87	Q
MW-10	Upper UA	94	Q
MW-11	Upper UA	83	Q
MW-12	Upper UA	48	Q
MW-13	Upper UA	49	Q
MW-14	Upper UA	131	Q
MW-15	Upper UA	201	Q
MW-16	Upper UA	218	Q
MW-17	Upper UA	150	Annual (Q3)
MW-18	Upper UA	105	Q
MW-19	Upper UA	66	Q
MW-20-70	Upper UA	70	Q
MW-20-100	Middle UA	99	Q
MW-20-130	Lower UA	131	Q
MW-21	Upper UA	60	Q
MW-22	Shoreline sediments	11	Q
MW-23	Fanglomerate	80	Q
MW-24A	Upper UA	124	Q
MW-24B	Lower UA	214	Q
MW-24BR	Bedrock	438	Q
MW-25	Upper UA	104	Q
MW-26	Upper UA	71	Q
MW-27	Dredge / shoreline	17	Q
MW-28	Dredge / shoreline	23	Q
MW-29	Dredge / shoreline	39	Q
MW-30-30	Dredge / dunes	32	Q
MW-30-50	Middle UA	50	Q
MW-31	Upper UA	62	Q
MW-32-20	Shoreline sediments	20	Q
MW-32-35	Middle UA	35	Q
MW-33-40	Dredge / dunes	39	Q
MW-33-90	Middle UA	89	Q
PGE-6	UA	163	every 2 years (Q4)
PGE-7	Fangl / Bedrock	338	every 2 years (Q4)
PGE-8	Bedrock	575	every 2 years (Q4)
Park Moabi	UA	—	Annual (Q1)
<b>River Stations</b>			
A-Dock	slough		water level only
CON	upstream		Q
Vernal Pool / RRB	Bat Cave Wash		Q
R-28	dune area		Q
R-27	dune area		Q
R-22	dune area		Q
I-3	downstream		Q

Abbreviations  
 UA = Unconsolidated Alluvial Aquifer  
 Q = Quarterly monitoring

**Figure 1**  
**Groundwater and Surface Water**  
**Monitoring Locations**  
**Bat Cave Wash Project**  
**PG&E Topock Compressor Station**