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March 12, 2014

Ms. Eleanor Wehner, P.G.
Texas Commission on Environmental Quality
Remediation Division
VCP-CA Section, Mail Code MC-127
Post Office Box 13087
Austin, Texas 78753

**Re: Texas Custodial Trust
Former ASARCO Smelter Site, El Paso, Texas**

**Subject: Transmittal of 2013 Groundwater and Surface Water Sampling
Results Summary**

Dear Ms. Wehner,

This letter transmits and summarizes the analytical results associated with semi-annual groundwater and surface water sampling activities performed by Malcolm Pirnie at the Former ASARCO Smelter Site (Site) in El Paso, Texas in 2013.

Remedial actions at the Site are being conducted by the Texas Custodial Trust (Trust), the property Trustee, on behalf of the Trust's beneficiaries, the State of Texas, represented by the Texas Commission on Environmental Quality (TCEQ), and the United States of America, represented by the United States Environmental Protection Agency. Environmental impacts from historical smelting operations are present within the plant site, the adjacent arroyos, the floodplain of the Rio Grande west of the plant site, and the East Property located east of Interstate 10 (see Figure 1).

Regular groundwater and surface water monitoring activities at the Site began in 1997. Until 2003, the monitoring activities were performed on a quarterly basis. Starting in 2004, the monitoring activities were reduced to two sampling events per year. The 2013 groundwater and surface water sampling collection and analytical activities were performed in accordance with the Remedial Action Work Plan (RAWP). As described in the RAWP, continued monitoring of groundwater is warranted to evaluate Site conditions and support the design of final groundwater remedies. The Interim Site monitoring program for 2013 consists of semi-annual sampling of groundwater monitoring wells (40 monitoring wells during the Spring event and 42 monitoring wells during the Fall event) and 11 surface water locations from the surrounding water bodies near the Site, the American Canal, and the Rio Grande (see Figure 1).

Groundwater Sampling

The two semi-annual Interim Site monitoring events for 2013 were performed during February (spring) and September/October (fall) timeframes. Locations of monitoring wells included in the Interim Site monitoring for the Spring and Fall sampling events are shown in Figure 1. Samples collected during the 2013 monitoring events were analyzed for site constituents of concerns (COCs), analytes of interest (AOIs), and water quality





parameters to support the conceptual site model and the detailed evaluation of final groundwater remedies. Table 1 summarizes the results of the wells sampled for both sampling events. Wells EP-13 and EP-52 were only sampled during the Fall 2013 event because there was not enough water in the wells to submit a sample during the Spring 2013 event. The laboratory analytical reports are included in Appendix A (provided on CD with hardcopy submittal).

Groundwater Results Summary

The COCs detected at concentrations above TCEQ Tier 1 Groundwater Protective Concentration Limits (PCLs) for Commercial/Industrial use are: antimony, arsenic, cadmium, chromium, cobalt, copper, lead, nickel, mercury, molybdenum, selenium, and thallium with the primary COC being arsenic. The COCs detected at concentrations above the groundwater PCLs for both Spring and Fall sampling events are bolded and highlighted in Table 1 and are consistent with concentrations previously detected at the site.

Surface Water Sampling

Surface water monitoring is performed at eleven surface water stations (SEP-1 through SEP-4, SEP-6, SEP-7 and SEP-9 through SEP-13); four on the American Canal and seven on the Rio Grande (see Figure 1). Samples collected during the spring and fall events were analyzed for Site COCs, AOIs, and water quality parameters. Analytical results from the surface water monitoring events are presented in Table 2 and laboratory analytical reports are included in Appendix A.

Surface Water Results Summary

Surface water levels fluctuate seasonally throughout the year. The low flow period takes place during the spring sampling event while the surface water levels are higher during the fall sampling event. Surface water analytical results collected from the American Canal and the Rio Grande during the Spring and Fall monitoring events had concentrations above drinking water standards for arsenic (0.01 milligrams per liter [mg/L]) for all the sampled locations with the exception of SEP-9. The maximum arsenic concentration detected was at location SEP-11 (0.756 mg/L) for the spring event. During the spring event, surface water analytical results for location SEP-2 indicated selenium concentrations were 0.0522 mg/L, which is above the drinking water standard of 0.050 mg/L. During the fall event, surface water analytical results for sample SEP-13 indicated cadmium concentrations were 0.00978 mg/L, which is above the drinking water standard of 0.0050 mg/L. The rest of the COCs from the surface water sample locations were either not detected or detected below the drinking water standards during both spring and fall monitoring events.

Conclusions and Observations

Groundwater at the Site is impacted by historic smelter operations. The primary groundwater and surface water COC at the Site is arsenic due to its elevated concentrations, areal extent, and impacts to surface water, and thus will drive remediation efforts at the Site. Elevated concentrations of COCs are observed across the Site and distribution is driven by the former arroyo and floodplain hydrogeology, location of source areas, and to a lesser extent, the groundwater geochemistry.





Interim Site monitoring of groundwater and surface water will continue on a semi-annual basis until the final groundwater remedy is implemented at which point the groundwater monitoring program will be transitioned to a performance monitoring program. Additional modifications to the Interim Site monitoring program may be necessary to accommodate remedy implementation activities.

If you have any questions concerning the information submitted, please call Scott Brown at 602-797-4536 or Kelli Jo Preston at 303-471-3403.

Very truly yours,

MALCOLM PIRNIE, INC.

Project Manager
Scott M. Brown, P.E.

Kelli Jo Preston
Senior Hydrogeologist

cc: Charles Fischer, USEPA Region 6
Roberto Puga, Project Navigator
Mark Landress, Project Navigator
Former ASARCO Smelter Project Team

Attachments:

- Table 1 - 2013 Groundwater Results with Qualifiers
- Table 2 - 2013 Surface Water Results with Qualifiers
- Figure 1 – Spring and Fall 2013 Groundwater and Surface Water Locations
- Appendix A - Groundwater and Surface Water Laboratory Analytical Reports
(provided on CD with hardcopy submittal)



Table 1

2013 Groundwater Results with Qualifiers
Former ASARCO Smelter Site - El Paso, Texas

Parameters	^{GW} GW _{ing} Commercial- Industrial (mg/L)	EP-4 2/21/2013	EP-4 10/9/2013	EP-6 2/21/2013	EP-6 10/9/2013	EP-7 2/21/2013	EP-7 10/9/2013	EP-12 2/18/2013	EP-12 10/2/2013	EP-13 10/2/2013	EP-14 2/14/2013	EP-14 10/2/2013	EP-20 2/21/2013	EP-20 10/10/2013
Total Metals (mg/L)														
Antimony	0.0060	<0.00161	0.00482 J	0.00784	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	0.00161 J	0.00362 J	0.0035 J	<0.00161	0.00429 J
Arsenic	0.010	0.258	0.0227	0.0227	0.0357	0.02	0.00321 J	0.381	0.34	27.5	3.37	2.87	1.09	1.16
Barium	2.0	0.119	0.051	<0.0284 UJ	0.041	0.0478	0.0147	0.0806	0.0834	0.0197	0.0176	0.0111	<0.0279 UJ	0.0558
Cadmium	0.0050	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	0.736	<0.000854	<0.000854	0.0836	0.103
Chromium	0.10	0.00208 J	<0.0014	0.00183 J	<0.0014	0.00163 J	<0.0014	0.0151	0.00754	<0.0014	<0.0014	<0.0014	0.00192 J	0.00175 J
Cobalt	0.022	<0.00136	0.00212 J	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	0.00114 J
Copper	1.3	0.00251 J	0.0135	0.0035 J	<0.002	<0.002	<0.002	0.0134	0.00335 J	0.00721 J	0.109	<0.002	0.00908 J	0.103 J
Iron	--	<0.138 UJ	<0.101	<0.116 UJ	1.95	<0.572 UJ	<0.101	0.54	1.17	<0.101	<0.101	<0.101	<0.228 UJ	0.921
Lead	0.015	<0.0113 UJ	<0.000733	<0.00318 UJ	<0.000733	<0.00566 UJ	<0.000733	0.00183 J	0.00238 J	0.0178	0.00669	<0.000733	<0.00594 UJ	0.0671 J
Mercury	0.0020	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.000327 UJ	<0.00013	0.000227 J	0.000285
Molybdenum	0.37	0.0146	0.0832	0.0721	0.096	0.103	0.00236 J	<0.00874 UJ	0.00898	0.452	0.259	0.224	0.11	0.133
Nickel	1.5	<0.00217	<0.00217	<0.00217	<0.00217	0.00425 J	0.00419 J	0.0151	0.0108	0.00353 J	0.0188	0.00587	0.00927	0.00852
Selenium	0.050	<0.00108	0.00556	<0.00108	0.00148 J	0.00159 J	0.00131 J	0.172	0.212	5.65	0.307	0.264	0.391	0.33
Thallium	0.0020	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	0.00748	1.17	1.42	0.00747	0.0093
Zinc	22	<0.00775 UJ	<0.00355	<0.00916 UJ	<0.00355	<0.011 UJ	0.00507 J	0.0165 J	<0.00355	0.00377 J	0.166	<0.00355	<0.0392 UJ	0.128 J
Water Quality Parameters (mg/L)														
Aluminum	73	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	0.0307 J	<0.0225	<0.0225	0.0781	<0.0225	<0.0225	<0.0225	0.689
Calcium	--	127	85.9	68.6	227	188	13.5	92.2	104	299	178	136	260	196
Magnesium	--	51.4	28.1	25.3	65.5	75.2	0.477 J	60.6	44.5	42.7	50	41	141	86.3
Manganese	10	1.33	0.794	0.503	1.31	1.53	0.0141 J	0.15	0.155	0.0626	0.0776	0.0128 J	0.389	0.3
Potassium	--	29.9	11.9	10.2	14.5	12.6	0.597 J	9.69	8.54	108	31.2	26.7	46	38.2
Sodium	--	303	354	477	658	886	1540	860	704	2270	679	803	733	689
Chloride	--	373	316	299	306	735	1040	176 J	140	444	194	253	312	326
Fluoride	4.0	1.27	1.14	1.73	1.54	1.85	2.02	1.14	1.03	1.83	2.24	2.18	1.91	1.69
Nitrate	10	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate + Nitrite	10	<2	<1	<2	<2	<4	<4	<5	<2	121	9.96	7.45	51.2	56.8 J
Nitrite	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	--	745	645	860	951	1470	2120	144 J	403	2300	1040	1050	1590	1610
Sulfide	--	<0.0131	<0.0131	<0.0131	<0.0131	<0.0131	0.176	12.1	10.9	0.016 J	<0.0131	<0.0131	<0.0131	<0.5
Total Alkalinity	--	272	244	350	282	211	435	1230	1800	368	409	390	439	272
Total Dissolved Solids	--	1630	1610	1930	2130	3930	5460	2160	2350	8150	2970	2920	4220	3440
Total Organic Carbon	--	2.22	<5.11 UJ	<2.35 UJ	<2.6 UJ	<2.96 UJ	<4.57 UJ	28.8	55.1	2.47	2.04	2.09	<2.94 UJ	<3.76 UJ
Total Suspended Solids	--	<3	9.75	<3	3.2	3.6	15.2	3	15	8.8	5.5	3	<3	9.75 J

Notes:

Bolded value

TRRP Protective Concentration Limit = ^{GW}GW_{ing} based on TRRP Table 3 for commercial/industrial sources, Class 1 groundwater source

mg/L = Milligrams per liter

-- = Not applicable

< = Analyte not detected above listed sample detection limit

J = Estimated value

UJ = Estimated reporting limit

Table 1

2013 Groundwater Results with Qualifiers
Former ASARCO Smelter Site - El Paso, Texas

Parameters	GW _{ing} Commercial-Industrial (mg/L)	EP-35	EP-35	EP-49	EP-49	EP-51	EP-51	EP-52	EP-54	EP-54	EP-58	EP-58	EP-62	EP-62
		2/21/2013	10/10/2013	2/18/2013	10/7/2013	2/14/2013	10/4/2013	10/7/2013	2/18/2013	10/3/2013	2/19/2013	10/8/2013	2/19/2013	10/8/2013
Total Metals (mg/L)														
Antimony	0.0060	<0.00161	0.00322 J	1.8	1.43	0.00399 J	0.00394 J	0.0697	0.0632	0.0821	<0.00161	<0.00161	<0.00161	<0.00161
Arsenic	0.010	0.289	0.318	21.1	16.9	0.0448	0.0273	0.516	7.49	8.15	3.98	2.09	1.49	1.12
Barium	2.0	<0.032 UJ	0.0417	0.0201	0.00731	0.0225	0.0189	0.0141	0.02	0.0212	<0.0427 UJ	0.0397	<0.025 UJ	0.0181
Cadmium	0.0050	<0.000854	0.00617	0.0641	0.0586	0.0285	0.0311	0.29	0.406	0.453	<0.000854	<0.000854	<0.000854	0.000998 J
Chromium	0.10	0.00772	0.0272	0.00529	<0.0014	0.185	0.167	0.137	0.00571	0.00203 J	0.0678	0.0521	0.00373 J	<0.0014
Cobalt	0.022	0.00614	0.00608	0.00404 J	0.00324 J	0.0239	0.0167	0.067	0.0188	0.0175	0.00228 J	<0.00136	<0.00136	<0.00136
Copper	1.3	0.00666 J	0.123	0.217	0.12	0.169	0.0323	0.289	0.36	0.281	<0.002	<0.002	<0.002	<0.002
Iron	--	2.66	0.817	2.9	0.882	2.73	1.66	2.77	0.191 J	0.368	19.3	20	<0.188 UJ	<0.101
Lead	0.015	<0.0216 UJ	0.132	0.00328 J	0.00114 J	0.00274 J	<0.000733	0.377	<0.000733	<0.000733	<0.00431 UJ	<0.000733	0.0441	<0.000733
Mercury	0.0020	<0.00013	0.000171 J	<0.00013	<0.00013	<0.000303 UJ	0.000135 J	0.00208	<0.00013	0.000197 J	<0.00013	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.0474	0.0431	1.47	1.27	0.0108	0.0509	0.0601	1.91	1.88	0.226	0.0695	0.55	0.596
Nickel	1.5	0.0502	0.0442	0.018	0.0155	2.1	1.3	3.65	0.123	0.109	0.324	0.208	0.00306 J	0.00403 J
Selenium	0.050	0.904	1.11	0.833	0.953	0.253	0.251	0.379	0.0642	0.0754	0.0115	0.0116	0.156	0.195
Thallium	0.0020	<0.000693	<0.000693	0.0132	0.012	0.00566	0.00183 J	0.0165	0.118	0.122	<0.000693	<0.000693	<0.000693	<0.000693
Zinc	22	<0.0169 UJ	0.0599	9.99	8.83	0.323	0.142	1.35	7.88	9.52	<0.0128 UJ	<0.00355	<0.0122 UJ	<0.00355
Water Quality Parameters (mg/L)														
Aluminum	73	<0.0225	0.463	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	0.0417 J	<0.0225	<0.0225	<0.0225	<0.0225
Calcium	--	255	265	485	485	1030	822	525	469	493	511	501	141	113
Magnesium	--	124	107	168	119	1010	475	321	218	145	253	205	75.1	65.6
Manganese	10	0.37	0.392	1.97	1.57	0.96	0.89	6.07	3.49	2.95	12	8.96	<0.0116	<0.0116
Potassium	--	14.1	14.1	266	190	48.9	42.6	19.9	362	217	163	131	54.3	81.5
Sodium	--	672	785	1650	1210	2240	1460	2120	1930	1640	1180	1140	557	617
Chloride	--	385	317	238 J	338	3160	2220	1130	382 J	540	493	465	309	323
Fluoride	4.0	1.24	0.816	3.74	3.98	0.625	0.742	4.34	8.1	7.1	4.43	3.64	3.34	2.74
Nitrate	10	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate + Nitrite	10	36.2	30.4	18.3	14.1 J	159	93.3	195 J	29.8	34.6 J	<10	<2	4.64 J	3.34 J
Nitrite	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	--	1670	1610	2290 J	3610	2080	1800	4830	2410 J	3180	2540	2480	1120	884
Sulfide	--	<0.0131	<0.0131	<0.0131	<0.0131	0.026 J	<0.0131	0.027 J	<0.0131	<0.0131	0.023 J	0.067	0.028 J	<0.0131
Total Alkalinity	--	269	563	698	695	164	178	540	734	624	730	581	365	371
Total Dissolved Solids	--	4120	4020	6870	6850	9690	11200	10600	7480	8580	6760	7240	2560	2910
Total Organic Carbon	--		<2.64 UJ	6.18	6.31	0.783 J	2.19	5.21	8.84	9.24	15.8	19.2	<2.98 UJ	<3.9 UJ
Total Suspended Solids	--	<3	133	26.8	12.8	15.5	11.2	25	6.4	9	19	45	<3	4.5

Notes:

Bolded valueTRRP Protective Concentration Limit = ^{GW}GW_{ing} based on TRRP Table 3 for commercial/industrial sources, Class 1 groundwater source

mg/L = Milligrams per liter

-- = Not applicable

< = Analyte not detected above listed sample detection limit

J = Estimated value

UJ = Estimated reporting limit

Table 1

2013 Groundwater Results with Qualifiers
Former ASARCO Smelter Site - El Paso, Texas

Parameters	GW _{ing} Commercial-Industrial (mg/L)	EP-68	EP-68	EP-71	EP-71	EP-72	EP-72	EP-75	EP-75	EP-77	EP-77	EP-78	EP-78	EP-81
		2/14/2013	10/2/2013	2/13/2013	10/1/2013	2/13/2013	10/1/2013	2/15/2013	10/3/2013	2/13/2013	10/4/2013	2/15/2013	10/1/2013	2/14/2013
Total Metals (mg/L)														
Antimony	0.0060	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	0.00138 J	0.00427 J	0.0036 J	0.0177	0.0164	0.00266 J
Arsenic	0.010	0.0013 J	0.0371	0.142	0.131	0.156	0.164	38.6	43.7	2.54	2.56	1.74	1.68	0.745
Barium	2.0	0.0128	0.0112	0.0129	0.0126	0.012	0.0122	0.0544	0.0538	0.0287	0.0227	0.0434	0.0523	0.0459
Cadmium	0.0050	<0.000854	0.00205	<0.000854	<0.000854	0.00365	0.00409	0.00278	0.0122	<0.000854	<0.000964 UJ	<0.000854	<0.000854	<0.000854
Chromium	0.10	<0.0014	<0.0014	0.00254 J	<0.0014	<0.0014	<0.0014	0.00899	0.00419 J	0.005	0.00145 J	<0.0014	<0.0014	0.00476 J
Cobalt	0.022	<0.00136	<0.00136	<0.00136	<0.00136	0.00216 J	0.00315 J	0.0046 J	0.00417 J	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136
Copper	1.3	0.0145	<0.002	0.0536	0.0027 J	0.0488	0.00469 J	0.153	0.00885	0.0225	<0.002	0.0377	0.0031 J	0.0136
Iron	--	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	0.341	<0.206 UJ	0.129 J	<0.101	<0.101	<0.101	<0.101
Lead	0.015	0.00148 J	<0.000733	<0.000733	<0.000733	0.000855 J	<0.000733	0.00748	0.00144 J	0.000775 J	0.000785 J	0.0023 J	<0.000733	0.00136 J
Mercury	0.0020	<0.000371 UJ	<0.00013	<0.000532 UJ	<0.00013	<0.000281 UJ	<0.00013	<0.00034 UJ	0.000199 J	<0.00014 UJ	0.000166 J	<0.000412 UJ	<0.00013	<0.000245 UJ
Molybdenum	0.37	0.172	0.194	0.145	0.14	0.272	0.265	7.03	4.59	0.212	0.194	0.301	0.279	0.311
Nickel	1.5	0.00535	0.00382 J	0.0108	0.00778	0.00568	0.0049 J	0.021	0.0130 J	0.00623	0.00261 J	<0.00217	<0.00217	0.00266 J
Selenium	0.050	0.323	0.291	0.251	0.227	1.52	1.7	4.33	3.87	0.175	0.28	0.126	0.705	0.134
Thallium	0.0020	<0.000693	0.00214	<0.000693	<0.000693	<0.000693	<0.000693	0.901	0.59	0.00135 J	0.00115 J	<0.000693	<0.000693	0.00112 J
Zinc	22	0.0516	<0.00355	0.0711	<0.00355	0.0772	0.0174 J	0.144	0.0161 J	0.0402	0.0132 J	0.0593	<0.00355	<0.0275 UJ
Water Quality Parameters (mg/L)														
Aluminum	73	<0.0347 UJ	0.136	0.0698	0.0235 J	<0.0225	<0.0225	0.284	0.179 J	0.14	0.074	0.0403 J	<0.0225	<0.0225
Calcium	--	378	336	333	310	259	255	331	269	108	81.8	77.1	58.5	139
Magnesium	--	171	161	168	186	150	173	131	91.8	24	19	49.8	37.9	58.8
Manganese	10	<0.0116	<0.0116	0.0139 J	<0.0116	0.371	0.327	0.828	0.625	0.0234 J	0.0139 J	<0.0116	<0.0116	<0.0116
Potassium	--	15.4	14.1	16.3	15.8	13.2	14.1	771	675 J	23.3	19.7	38.2	28.5	28.6
Sodium	--	933	903	1100	1080	953	1030	2320	2030	637	465	706	396	368
Chloride	--	449	430	468	411	347	366	179	279	366	202	312	93.5	145
Fluoride	4.0	0.68	0.673	1.08	0.82	1.3	1.07	11.5	9.95	3.94	3.74	3.26	2.66	2.98
Nitrate	10	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate + Nitrite	10	16.4	10	70.3	61.3	31.4	40.6	44.7 J	34.7 J	3.77	12	8.15 J	9.5	4.95
Nitrite	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	--	1430	1950	1840	1400	1810	1580	3820	4340	1140	821	917	533	653
Sulfide	--	<0.0131	0.035 J	0.023 J	<0.0131	0.017 J	<0.0131	<0.0131	0.046 J	0.016 J	0.026 J	<0.0131	0.026 J	<0.0131
Total Alkalinity	--	222	220	266	269	317	316	482	504	362	376	385	419	335
Total Dissolved Solids	--	4200	4590	4940	4890	4370	4410	10500	9250	2580	2300	2350	1500	1680
Total Organic Carbon	--	1.61	1.59	1.57	1.61	1.82	2.04	6.43	5.71	2.36	2.14	2.28	2.75	1.7
Total Suspended Solids	--	13.3	19	6.8	5	3	8	17	5.30 J	8.8	8	5.2	3.2	<3

Notes:

Bolded value

TRRP Protective Concentration Limit = ^{GW}GW_{ing} based on TRRP Table 3 for commercial/industrial sources, Class 1 groundwater source

mg/L = Milligrams per liter

-- = Not applicable

< = Analyte not detected above listed sample detection limit

J = Estimated value

UJ = Estimated reporting limit

Table 1

2013 Groundwater Results with Qualifiers
Former ASARCO Smelter Site - El Paso, Texas

Parameters	GW _{ing} Commercial-Industrial (mg/L)	EP-81	EP-84	EP-84	EP-95	EP-95	EP-114	EP-114	EP-116	EP-116	EP-117	EP-117	EP-119	EP-119
		9/23/2013	2/15/2013	9/30/2013	2/15/2013	10/7/2013	2/20/2013	9/23/2013	2/20/2013	10/10/2013	2/20/2013	10/10/2013	2/19/2013	10/8/2013
Total Metals (mg/L)														
Antimony	0.0060	0.00179 J	0.00199 J	0.00742	<0.00161	<0.00161	0.00629	0.00619	0.0621	0.0292	0.0166	0.0161	0.00998	0.00867
Arsenic	0.010	0.593	0.0244	0.0283	0.0109	0.0256	35.2	27.2	1.33	0.0685	3.19	3.95	1.7	1.59
Barium	2.0	0.0404	0.0441	0.054	0.0283	0.0259	<0.0287 UJ	0.0199	0.0642	0.0332	<0.0293 UJ	0.021	0.0441	0.0239
Cadmium	0.0050	0.000872 J	0.00324	0.00317	<0.000854	<0.000854	0.0449	0.0321	0.629	1.54	0.0591	0.0909	<0.000854	<0.000854
Chromium	0.10	0.00294 J	0.00174 J	<0.0014	0.00381 J	<0.0014	0.00236 J	<0.0014	0.00349 J	<0.0014	0.0138	0.00217 J	0.00893	<0.0014
Cobalt	0.022	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	0.058	0.0541	0.0217	0.072	<0.00136	<0.00136	<0.00136	<0.00136
Copper	1.3	0.022	0.0337	0.00614 J	0.0268	0.0261	0.0129	0.0114	4.08	14.5	0.0183	0.0037 J	<0.002	<0.002
Iron	--	<0.101	<0.101	<0.101	0.229 J	0.126 J	15.3	12.9	1.19	<0.101	<1.03 UJ	<0.101	1.36	<0.101
Lead	0.015	0.00219 J	0.0296	0.0284	0.00141 J	<0.000733	<0.0132 UJ	0.0014 J	0.704	0.432	0.0596	0.0104	<0.0109 UJ	<0.000733
Mercury	0.0020	<0.00013	<0.000231 UJ	0.000206 J	<0.000446 UJ	<0.00013	<0.00013	<0.00013	0.00143 J	0.000323 J	0.000622 J	<0.00013	<0.00013	0.000188 J
Molybdenum	0.37	0.237	0.0138	0.0187	0.049	0.0514	0.342	0.286	0.174	<0.00703 UJ	0.241	0.218	0.479	0.473
Nickel	1.5	0.00424 J	<0.00217	<0.00217	<0.00217	<0.00217	0.203	0.192	0.0342	0.0894	0.0121	0.00996	<0.00217	<0.00217
Selenium	0.050	0.121	0.0198	0.0209	0.0215	0.0276	0.0198	0.0224	0.307	0.145	2.02	1.95	0.161	0.141
Thallium	0.0020	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	0.00216	0.00245	0.45	0.476	0.00215	0.00152 J	<0.000693	<0.000693
Zinc	22	0.0458	0.0596	0.015 J	0.0498	0.0373	7.52	7.9	2.13	9.34	<0.0918 UJ	0.0986	<0.034 UJ	<0.00355
Water Quality Parameters (mg/L)														
Aluminum	73	<0.0225	<0.0225	<0.0225	0.173	<0.0789 UJ	0.0563	<0.0225	0.235	<0.257 UJ	0.28	<0.0225	<0.0225	<0.0225
Calcium	--	108	197	179	43.3	14.4	556	496	248	244	203	220	145	126
Magnesium	--	43	113	88.7	93.1	25.2	280	204	63.8	11.7	48.8	38.7	77.2	51.3
Manganese	10	<0.0116	0.0305 J	<0.0116	<0.0116	<0.0116	4.67	4.1	0.856	1.54	0.0299 J	0.0805	0.0762	0.2
Potassium	--	20.9	7.53	7.26	2	0.965 J	228	185	21.2	8.61	95.8	85.1	62.1	51.6
Sodium	--	221	391	305	719	275	617	617	527	142	619	653	592	533
Chloride	--	104	304	241	389	303	308	399	250	83.7	286	283	308	285
Fluoride	4.0	2.6	0.742	0.557	2.96	2.95	7.3	7.08	3.21	1.74	3.1	2.54	3.67	3.18
Nitrate	10	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate + Nitrite	10	6.37	7.02 J	6.62	7.24 J	<0.105 UJ	<10	<10	17.2	6.06	26.1	32.3	7.18 J	3.44
Nitrite	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	--	531	809	643	937	1400	1860	2030	1470	671	1190	1090	1070	727 J
Sulfide	--	0.033 J	<0.0131	<0.0131	0.014 J	<0.0131	<0.0131	0.016 J	<0.0131	<0.0131	<0.0131	<0.0131	0.023 J	<0.0131
Total Alkalinity	--	338	297	291	324	447	724	749	352	59.2	298	262	384	368
Total Dissolved Solids	--	1360	2100	1970	2260	966	5800	5790	2890	1480	3540	3480	2620	2600
Total Organic Carbon	--	0.96 J	1.67	1.83	2.18	3.99	10.7	11.4	<4.75 UJ	<3.38 UJ	<2.65 UJ	<2.67 UJ	<2.77 UJ	2.47
Total Suspended Solids	--	<3	<3	<3	8.5 J	8	35	33	32.8	4.75	27.8	5.25	<3	3.75

Notes:

Bolded value

TRRP Protective Concentration Limit = ^{GW}GW_{ing} based on TRRP Table 3 for commercial/industrial sources, Class 1 groundwater source

mg/L = Milligrams per liter

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Table 1

2013 Groundwater Results with Qualifiers
Former ASARCO Smelter Site - El Paso, Texas

Parameters	GW _{ing} Commercial-Industrial (mg/L)	EP-120	EP-120	EP-122	EP-122	EP-132	EP-132	EP-133	EP-133	EP-135	EP-135	EM-2	EM-2	MW-1
		2/15/2013	10/1/2013	2/18/2013	10/8/2013	2/19/2013	10/8/2013	2/21/2013	10/9/2013	2/20/2013	10/8/2013	2/13/2013	10/1/2013	2/25/2013
Total Metals (mg/L)														
Antimony	0.0060	0.105	0.0858	0.0373	0.0422	0.00468 J	0.00708	<0.00161	0.00635	<0.00161	<0.00161	<0.00161	<0.00161	0.00643
Arsenic	0.010	0.335	0.163	1.64	1.46	1.7	1.89	1.63	0.288	2.98	2.53	0.307	0.272	1.21
Barium	2.0	0.0369	0.0472	0.0283	0.0201	<0.0256 UJ	0.0204	<0.0406 UJ	0.153	<0.019 UJ	0.0115	0.0218	0.0209	0.041
Cadmium	0.0050	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854
Chromium	0.10	0.00465 J	0.00151 J	0.01	<0.0014	0.00216 J	<0.0014	0.00377 J	<0.0014	0.00284 J	<0.0014	0.00275 J	0.0025 J	<0.0014
Cobalt	0.022	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136
Copper	1.3	0.0376	0.00562 J	0.00321 J	<0.002	0.00278 J	<0.002	0.004 J	<0.002	<0.002	<0.002	0.068	0.0188	<0.002
Iron	--	0.223 J	<0.101	4.97	<0.101	<0.121 UJ	<0.101	<0.289 UJ	0.409	<0.164 UJ	<0.101	0.147 J	<0.101	<0.101
Lead	0.015	0.00455 J	0.0015 J	0.00988	<0.000733	<0.00523 UJ	<0.000733	0.00848	0.00601	<0.00692 UJ	<0.000733	0.0192	0.0129	<0.000733
Mercury	0.0020	<0.00038 UJ	<0.00013	<0.00013	0.000169 J	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.000533 UJ	<0.00013	<0.00013
Molybdenum	0.37	0.0996	0.32	0.473	0.454	0.233	0.197	0.451	0.0264	0.314	0.262	0.236	0.219	0.405
Nickel	1.5	<0.00217	<0.00217	<0.00217	<0.00217	0.0298	0.024	0.0342	<0.00217	0.013	0.0104	0.00575	0.00451 J	0.00505
Selenium	0.050	0.0309	0.263	0.141	0.114	0.393	0.411	0.0445	0.00415 J	0.196	0.202	0.112	0.0987	0.103
Thallium	0.0020	<0.000693	<0.000693	0.00346	0.00456	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693
Zinc	22	0.0627	<0.00355	<0.0583 UJ	<0.00355	<0.00724 UJ	<0.00355	<0.0134 UJ	0.00814 J	<0.00475 UJ	<0.00355	0.0818	0.00829 J	<0.0038 UJ
Water Quality Parameters (mg/L)														
Aluminum	73	0.268	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	0.0783	<0.0225	<0.0225	0.0959	0.0511	<0.0225
Calcium	--	64.4	73.6	120	117	185	200	174	148	465	455	130	120	143
Magnesium	--	53.1	41.8	59.9	44.4	54.1	41.4	60.3	29.9	169	128	63.8	57.4	55.7
Manganese	10	0.0129 J	<0.0116	0.111	0.0612	0.0338 J	<0.0116	0.654	0.606	0.0475 J	0.135	<0.0116	<0.0116	0.116
Potassium	--	12	16.9	62.7	53.3	40.5	39.1	41.9	22.7	13.1	13.8	12.9	12.7	39.5
Sodium	--	676	285	459	515	622	593	697	1250	1030	1050	844	763	461
Chloride	--	307	34.4	231	229	266	205	358	521	818	545	374	272	320
Fluoride	4.0	3.12	2.62	3.7	3.15	3.36	3.02	3.05	3.75	2.3	2.07	2.32	1.91	3.55
Nitrate	10	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate + Nitrite	10	6.9 J	4.06	8.88 J	4.13	10.6	10.8	<4	<4	51.8	41.9	13.6	12.4	2.93
Nitrite	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	--	859	559	756	714	1220	971	1340	2090	2670	1770	1250	884	1020 J
Sulfide	--	<0.0131	<0.0131	<0.0131	<0.0131	0.019 J	<0.0131	0.021 J	1.03	0.017 J	<0.0131	0.023 J	<0.0131	0.025 J
Total Alkalinity	--	413	337	380	343	385	338	437 J	659	298	318	378	372	321
Total Dissolved Solids	--	1950	1260	2320	2340	2860	2870	3500	4480	5930	6210	2880	2820	2480
Total Organic Carbon	--	2.47	2.55	2.56	2.32	<2.86 UJ	2.27	<3.56 UJ	5.49	<3 UJ	2.65	2.1	2.11	<2.36 UJ
Total Suspended Solids	--	9.5	<3	3.6	3.5	<3	5.75	<3	22	9.8	23.5	11.6	25.6	<3

Notes:

Bolded value

TRRP Protective Concentration Limit = ^{GW}GW_{ing} based on TRRP Table 3 for commercial/industrial sources, Class 1 groundwater source

mg/L = Milligrams per liter

-- = Not applicable

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J = Estimated value

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Table 1

2013 Groundwater Results with Qualifiers
Former ASARCO Smelter Site - El Paso, Texas

Parameters	GW _{ing} Commercial-Industrial (mg/L)	MW-1	MW-2	MW-2	MW-9D	MW-9D	MW-9S	MW-9S	MW-10D	MW-10D	MW-10S	MW-10S	MW-11D	MW-11D
		10/7/2013	2/25/2013	10/7/2013	2/25/2013	9/27/2013	2/25/2013	9/27/2013	2/25/2013	9/30/2013	2/25/2013	9/27/2013	2/26/2013	9/27/2013
Total Metals (mg/L)														
Antimony	0.0060	0.00551	<0.00161	<0.00161	<0.00161	0.00217 J	0.00317 J	0.00294 J	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161
Arsenic	0.010	1.16	0.559	0.426	0.822	0.669	0.635	0.522	1.19	0.98	0.68	0.763	0.336	0.359
Barium	2.0	0.0412	0.0504	0.0454	0.0284	0.0236	0.0258	0.0211	0.0231	0.0234	0.0335	0.0348	0.0233	0.0228
Cadmium	0.0050	<0.000854	<0.000854	0.000979 J	<0.000854	0.000897 J	<0.000854	<0.000854	<0.000854	0.000863 J	<0.000854	0.000931 J	<0.000854	0.0011 J
Chromium	0.10	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
Cobalt	0.022	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136
Copper	1.3	0.00253 J	<0.002	0.00218 J	0.00335 J	<0.002	<0.002	<0.002	0.00288 J	<0.002	0.00212 J	<0.002	<0.0021 UJ	<0.002
Iron	--	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	0.407	0.546
Lead	0.015	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	0.00126 J	<0.000733	<0.000733	<0.000733	0.000963 J	<0.000733
Mercury	0.0020	<0.00013	<0.00013	<0.00013	<0.00017 UJ	<0.00013	<0.000184 UJ	<0.00013	<0.000162 UJ	<0.00013	<0.00013 UJ	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.385	0.71	0.718	0.458	0.41	0.347	0.323	0.484	0.455	0.498	0.446	0.529	0.511
Nickel	1.5	0.00603	0.00534	0.00426 J	0.00357 J	<0.00217	0.00488 J	0.00282 J	0.00256 J	<0.00217	0.0028 J	<0.00217	0.00219 J	<0.00217
Selenium	0.050	0.0755	0.00412 J	<0.00403 UJ	0.155	0.127	0.00629	<0.0057 UJ	0.156	0.145	0.183	0.165	0.0723	0.0332
Thallium	0.0020	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693
Zinc	22	<0.00355	<0.00355	<0.00355	<0.00355	<0.00355	<0.00382 UJ	<0.00355	<0.00355	<0.00355	<0.00355	<0.00355	<0.00355	<0.00355
Water Quality Parameters (mg/L)														
Aluminum	73	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225	<0.0225
Calcium	--	151	125	125	201	187	132	119	150	168	158	182	132	139
Magnesium	--	60.1	47.3	52.3	86.7	78.7	52.9	49.3	67.7	72.8	67.2	76	61.2	59
Manganese	10	0.269	0.0902	0.121	0.019 J	<0.0116	0.344	0.308	<0.0116	<0.0116	<0.0116	<0.0116	0.166	0.149
Potassium	--	46	52.8	53.2	49.8	42.3	33.3	30.7	46.1	44.5	45.9	44.7	49	45.4
Sodium	--	469	609	635	735	602	489	439	710	614	660	622	724	581
Chloride	--	311	299	56.1	444	401	340	344	306	368	337	373	341	267
Fluoride	4.0	2.67	3.72	3.25	2.94	2.8	2.72	2.58	3.21	2.8	3.2	2.74	3.45	2.86
Nitrate	10	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate + Nitrite	10	0.738	1.09 J	3.72	3.93	3.18	<1	<0.4	3.33	3.41 J	2.38 J	2.38 J	1.32 J	<1
Nitrite	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	--	998	1130 J	262	1350 J	1260	862 J	786	988 J	893	1090 J	1190	1190	943
Sulfide	--	<0.0131	0.029 J	<0.0131	0.025 J	<0.0131	0.029 J	<0.0131	0.023 J	<0.0131	0.029 J	<0.0131	<0.043 UJ	<0.0131
Total Alkalinity	--	331	383	389	345	351	318	304	370	377	360	206	382	386
Total Dissolved Solids	--	2320	2860	2730	3330	3140	2400	2020	2840	2840	2800	2970	2570	2550
Total Organic Carbon	--	2.01	<3.18 UJ	2.75	<2.89 UJ	2.31	2.57	2.02	<3 UJ	2.38	<3.02 UJ	2.43	<3.3 UJ	2.58
Total Suspended Solids	--	8.25	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3

Notes:

Bolded value

TRRP Protective Concentration Limit = ^{GW}GW_{ing} based on TRRP Table 3 for commercial/industrial sources, Class 1 groundwater source

mg/L = Milligrams per liter

-- = Not applicable

< = Analyte not detected above listed sample detection limit

J = Estimated value

UJ = Estimated reporting limit

Table 1

**2013 Groundwater Results with Qualifiers
Former ASARCO Smelter Site - El Paso, Texas**

Parameters	^{GW} GW _{ing} Commercial- Industrial (mg/L)	MW-11S 2/26/2013	MW-11S 9/27/2013	OBS-1 2/18/2013	OBS-1 9/23/2013
Total Metals (mg/L)					
Antimony	0.0060	<0.00161	<0.00161	0.0402	0.0431
Arsenic	0.010	<0.0513 UJ	0.0343	1.67	1.82
Barium	2.0	0.0282	0.0302	0.0181	0.0152
Cadmium	0.0050	<0.000854	0.000931 J	<0.000854	0.0015 J
Chromium	0.10	<0.0014	<0.0014	<0.0014	<0.0014
Cobalt	0.022	<0.00136	<0.00136	<0.00136	<0.00136
Copper	1.3	<0.00262 UJ	<0.002	0.00333 J	<0.002
Iron	--	<0.101	<0.101	<0.101	<0.101
Lead	0.015	0.000737 J	<0.000733	<0.000733	<0.000733
Mercury	0.0020	<0.00013	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.554	0.478	0.393	0.439
Nickel	1.5	0.00323 J	<0.00217	0.00229 J	0.00283 J
Selenium	0.050	0.131	0.0376	0.168	0.211
Thallium	0.0020	<0.000693	<0.000693	0.0128	0.0108
Zinc	22	<0.00355	<0.00355	<0.0214 UJ	0.0204 J
Water Quality Parameters (mg/L)					
Aluminum	73	<0.0225	<0.0225	<0.0225	<0.0225
Calcium	--	137	147	113	84.7
Magnesium	--	62.5	64	79.1	37.4
Manganese	10	0.146	0.129	<0.0116	<0.0116
Potassium	--	36.4	35.1	64	35.9
Sodium	--	673	570	795	456
Chloride	--	325	335	340 J	258
Fluoride	4.0	3.17	2.9	3.38	3.78
Nitrate	10	--	--	--	--
Nitrate + Nitrite	10	1.05 J	<1	8.83 J	8.78 J
Nitrite	1.0	--	--	--	--
Sulfate	--	1110	1110	1040 J	879
Sulfide	--	<0.0131	<0.0131	<0.0131	0.017 J
Total Alkalinity	--	361	361	337	341
Total Dissolved Solids	--	2470	2700	2590	2110
Total Organic Carbon	--	<3.06 UJ	2.17	3.22	2.18
Total Suspended Solids	--	<3	<3	<3	<3

Notes:

Bolded value

TRRP Protective Concentration Limit = ^{GW}GW_{ing} based on TRRP Table 3 for commercial/industrial sources, Class 1 groundwater source

mg/L = Milligrams per liter

-- = Not applicable

< = Analyte not detected above listed sample detection limit

J = Estimated value

UJ = Estimated reporting limit

Table 2

**2013 Surface Water Results with Qualifiers
Former ASARCO Smelter Site - El Paso, Texas**

Parameter	TRRP Screening Level	SEP-1 2/22/2013		SEP-1 10/11/2013		SEP-2 2/22/2013		SEP-2 10/11/2013		SEP-3 2/22/2013		SEP-3 10/11/2013	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)													
Antimony	0.006	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00241 UJ	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161
Arsenic	0.010	0.0112	0.0107	0.0123	0.0107	0.0717	0.0666	0.0215	0.0205	0.0187	0.0174	0.0297	0.0263
Barium	2.0	0.0469	0.0433	0.0716	0.0644	0.076	0.06	0.0919	0.0928	0.0402	0.0316	0.0747	0.0611
Cadmium	0.0050	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854
Chromium	0.1	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
Cobalt	0.022	<0.00136	0.00233 J	<0.00136	0.00171 J	<0.00136	0.00406 J	<0.00136	0.00336 J	<0.00136	0.00385 J	<0.00136	0.00146 J
Copper	1.3	0.00454 J	0.00435 J	<0.002	<0.002	0.00993 J	0.00222 J	0.00268 J	<0.002	0.0113	0.00371 J	<0.002	<0.002
Iron	--	0.316	<0.101	0.255	<0.101	0.835	<0.101	0.307	<0.101	0.512	<0.101	0.331	<0.101
Lead	0.015	0.000878 J	<0.000733	0.00179 J	<0.000733	0.012	<0.000733	0.00609	<0.000733	0.0102	<0.000733	0.00229 J	<0.000733
Mercury	0.0020	<0.00013	<0.000143 UJ	<0.00013	<0.00013	0.000188 J	<0.000185 UJ	<0.00013	<0.00013	<0.00013	<0.000155 UJ	<0.00013	<0.00013
Molybdenum	0.37	0.0228	0.0201	0.0208	0.0251	0.183	0.164	0.0364	0.0429	0.0222	0.0216	0.0314	0.0334
Nickel	1.5	<0.00217	<0.00217	<0.00217	<0.00217	0.00385 J	0.00367 J	0.00229 J	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217
Selenium	0.050	0.0018 J	0.00133 J	0.00194 J	0.00165 J	0.0522	0.0557	0.0138	0.00382 J	0.00398 J	0.00371 J	0.00639	0.00346 J
Thallium	0.0020	<0.000693	<0.000693	<0.000693	0.000881 J	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693
Zinc	22	<0.022 UJ	<0.0219 UJ	0.00608 J	0.00444 J	<0.013 UJ	<0.00438 UJ	0.0116 J	0.00463 J	<0.0341 UJ	<0.0257 UJ	0.00725 J	0.00355 J
Water Quality Parameters (mg/L)													
Aluminum	73	0.2		0.3		0.7		0.4		0.3		0.4	
Calcium	--	110.0		121.0		126.0		122.0		86.7		129.0	
Magnesium	--	27 J		31.6		72 J		47.7		20.2 J		35.7	
Manganese	10	0.2		0.3		0.3		0.2		0.2		0.3	
Potassium	--	13.4 J		10.7		25.6 J		14.0		13.3 J		11.9	
Sodium	--	573.0		547.0		930.0		661.0		445.0		566.0	
Chloride	--	434 J		617.0		695 J		629.0		394.0		591.0	
Fluoride	4.0	1.1		0.8		1.7		1.0		1.9		0.8	
Nitrate	10	--		--		--		--		--		--	
Nitrate + Nitrite	10	8.4		6.5		3.47 J		3.33 J		11.3		6.4	
Nitrite	1.0	--		--		--		--		--		--	
Sulfate	--	620.0		678.0		1150 J		740.0		494.0		680.0	
Sulfide	--	0.025 J		<0.0131		0.019 J		0.034 J		0.026 J		0.038 J	
Total Alkalinity	--	235.0		288.0		248.0		280.0		176.0		297.0	
Total Dissolved Solids	--	2050.0		2390.0		3100.0		2530.0		1680.0		2460.0	
Total Organic Carbon	--			<4.59 UJ				6.2				<4.45 UJ	
Total Suspended Solids	--	16.0		47.3		86.4		160 J		41.6		70.5	

Notes:

Bolded value = Result TRRP Screening Level

mg/L = milligrams per liter

-- = Not applicable or not analyzed

< = Analyte not detected above listed sample detection limit

J = Estimated value

UJ = Estimated reporting limit

Table 2

**2013 Surface Water Results with Qualifiers
Former ASARCO Smelter Site - El Paso, Texas**

Parameter	TRRP Screening Level	SEP-4 2/22/2013		SEP-4 10/11/2013		SEP-6 2/22/2013		SEP-6 10/11/2013		SEP-7 2/22/2013		SEP-7 10/11/2013	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)													
Antimony	0.006	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00238 UJ	<0.00161	<0.00161	<0.00205 UJ	<0.00166 UJ	<0.00161	<0.00161
Arsenic	0.010	0.0357	0.0338	0.0331	0.034	0.0209	0.0212	0.0265	0.0301	0.0172	0.0171	0.0277	0.0233
Barium	2.0	0.057	0.0503	0.095	0.0955	0.0499	0.0396	0.0688	0.0725	0.0429	0.0376	0.0745	0.0751
Cadmium	0.0050	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854
Chromium	0.1	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
Cobalt	0.022	<0.00136	0.0028 J	<0.00136	0.0031 J	<0.00136	0.00368 J	<0.00136	0.00235 J	<0.00136	0.00442 J	<0.00136	0.00156 J
Copper	1.3	0.0039 J	<0.002	0.00402 J	<0.002	0.00923 J	0.00431 J	0.0034 J	<0.002	0.00583 J	0.00491 J	0.00498 J	<0.002
Iron	--	0.463	<0.101	0.334	<0.101	0.525	<0.101	0.232 J	<0.101	0.308	<0.101	0.313	<0.101
Lead	0.015	0.00283 J	<0.000733	0.00598	<0.000733	0.00745	<0.000733	0.0033 J	<0.000733	0.00176 J	<0.000733	0.00569	<0.000733
Mercury	0.0020	0.000131 J	<0.000146 UJ	<0.00013	<0.00013	<0.00013	<0.000148 UJ	<0.00013	<0.00013	<0.00013	<0.000135 UJ	<0.00013	<0.00013
Molybdenum	0.37	0.0455	0.0459	0.0306	0.032	0.0248	0.026	0.029	0.0315	0.0238	0.0245	0.0294	0.0319
Nickel	1.5	<0.00217	0.00223 J	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217
Selenium	0.050	0.00478 J	0.00508	0.00478 J	0.00149 J	0.00396 J	0.00713	0.00633	0.00602	0.00293 J	0.00179 J	0.00233 J	0.00392 J
Thallium	0.0020	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693
Zinc	22	<0.0129 UJ	<0.0105 UJ	0.00689 J	<0.00355	<0.0363 UJ	<0.0231 UJ	0.0193 J	<0.00994 UJ	<0.0304 UJ	<0.023 UJ	0.0128 J	<0.0136 UJ
Water Quality Parameters (mg/L)													
Aluminum	73	0.2		0.2		0.4		0.2		0.2		0.3	
Calcium	--	150.0		147.0		110.0		121.0		101.0		125.0	
Magnesium	--	44.2 J		54.7		26.9 J		33.2		24.4 J		33.6	
Manganese	10	0.5		0.4		0.3		0.2		0.2		0.3	
Potassium	--	15.3 J		14.8		14.1 J		11.4		13.7		11.6	
Sodium	--	560.0		587.0		648.0		545.0		461.0		574.0	
Chloride	--	455.0		536.0		487.0		528.0		465.0		563.0	
Fluoride	4.0	1.3		1.0		1.0		0.9		1.1		0.9	
Nitrate	10	--		--		--		--		--		--	
Nitrate + Nitrite	10	2.47 J		2.13 J		10.0		4.3 J		10.3		6.5	
Nitrite	1.0	--		--		--		--		--		--	
Sulfate	--	858.0		781.0		617.0		696.0		581.0		641.0	
Sulfide	--	0.041 J		0.026 J		0.017 J		0.1		0.016 J		0.047 J	
Total Alkalinity	--	244.0		305.0		216.0		284.0		205.0		292.0	
Total Dissolved Solids	--	2320.0		2600.0		1860.0		2350.0		1810.0		2400.0	
Total Organic Carbon	--			9.1				<4.5 UJ				<4.3 UJ	
Total Suspended Solids	--	21.6		74.5		39.2		51.0		18.0		64.0	

Notes:

Bolded value = Result TRRP Screening Level

mg/L = milligrams per liter

-- = Not applicable or not analyzed

< = Analyte not detected above listed sample detection limit

J = Estimated value

UJ = Estimated reporting limit

Table 2

**2013 Surface Water Results with Qualifiers
Former ASARCO Smelter Site - El Paso, Texas**

Parameter	TRRP Screening Level	SEP-9 2/22/2013		SEP-9 10/11/2013		SEP-10 2/22/2013		SEP-10 10/11/2013		SEP-11 2/22/2013		SEP-11 10/11/2013	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)													
Antimony	0.006	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00271 UJ	<0.00161	<0.00161	<0.00204 UJ	0.00167 J	<0.00161	<0.00161
Arsenic	0.010	0.00997	0.0105	0.0118	0.0111	0.0676	0.0575	0.0128	0.0126	0.0756	0.05	0.0175	0.0165
Barium	2.0	0.0421	0.0396	0.0729	0.0694	0.0779	0.073	0.0915	0.09	0.0635	0.0559	0.0874	0.0858
Cadmium	0.0050	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854
Chromium	0.1	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
Cobalt	0.022	<0.00136	0.00269 J	<0.00136	<0.00136	<0.00136	0.00274 J	<0.00136	0.00234 J	<0.00136	0.00428 J	<0.00136	0.00321 J
Copper	1.3	0.00458 J	0.00495 J	<0.002	<0.002	0.0085 J	<0.002	<0.002	<0.002	0.00602 J	0.00219 J	<0.002	<0.002
Iron	--	0.244 J	<0.101	0.279	<0.101	1.24	<0.101	0.348	<0.101	1.26	<0.101	0.293	<0.101
Lead	0.015	0.000872 J	<0.000733	0.00185 J	<0.000733	0.00879	<0.000733	0.00376 J	<0.000733	0.00404 J	<0.000733	0.00366 J	<0.000733
Mercury	0.0020	<0.00013	<0.000152 UJ	<0.00013	<0.00013	<0.00013	<0.000154 UJ	<0.00013	<0.00013	<0.00013	<0.000157 UJ	<0.00013	<0.00013
Molybdenum	0.37	0.0178	0.0187	0.0196	0.0223	0.112	0.113	0.0174	0.021	0.148	0.152	0.0314	0.0356
Nickel	1.5	<0.00217	<0.00217	<0.00217	<0.00217	0.00324 J	0.00328 J	<0.00217	<0.00217	0.00299 J	0.00273 J	<0.00217	<0.00217
Selenium	0.050	0.00117 J	0.00112 J	0.00172 J	0.00317 J	0.0206	0.00512	0.00244 J	<0.00108	0.00258 J	0.00112 J	0.00185 J	<0.00108
Thallium	0.0020	<0.000693	<0.000693	<0.000693	<0.000693	0.000873 J	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693
Zinc	22	<0.0246 UJ	<0.0238 UJ	0.0067 J	<0.00998 UJ	<0.0225 UJ	<0.00415 UJ	0.00957 J	<0.0092 UJ	0.00868 J	0.00398 J	0.00687 J	<0.00742 UJ
Water Quality Parameters (mg/L)													
Aluminum	73	0.1		0.3		0.8		0.6		0.5		0.4	
Calcium	--	98.6		122.0		107.0		121.0		137.0		119.0	
Magnesium	--	23.2 J		32.9		44.4 J		32.8		66.5		42.6	
Manganese	10	0.2		0.3		0.6		0.2		0.5		0.2	
Potassium	--	13.4 J		10.4		16.2 J		11.0		22.9		13.2	
Sodium	--	453.0		580.0		398.0		554.0		716.0		582.0	
Chloride	--	474.0		594.0		437.0		510.0		587.0		554.0	
Fluoride	4.0	1.0		0.8		1.5		0.8		1.8		0.9	
Nitrate	10	--		--		--		--		--		--	
Nitrate + Nitrite	10	10.3		3.45 J		<2		4.08 J		<2		3.5 J	
Nitrite	1.0	--		--		--		--		--		--	
Sulfate	--	585.0		634.0		657.0		658.0		853.0		713.0	
Sulfide	--	0.014 J		0.031 J		0.016 J		0.1		0.019 J		0.029 J	
Total Alkalinity	--	209.0		296.0		298.0		288.0		253.0		284.0	
Total Dissolved Solids	--	1790.0		2440.0		1820.0		2260.0		2910.0		2450.0	
Total Organic Carbon	--			<4.47 UJ				<5.03 UJ				5.7	
Total Suspended Solids	--	12.0		64.5		44.8		107.0		40.8		71.5	

Notes:

Bolded value = Result TRRP Screening Level

mg/L = milligrams per liter

-- = Not applicable or not analyzed

< = Analyte not detected above listed sample detection limit

J = Estimated value

UJ = Estimated reporting limit

Table 2

**2013 Surface Water Results with Qualifiers
Former ASARCO Smelter Site - El Paso, Texas**

Parameter	TRRP Screening Level	SEP-12 2/22/2013		SEP-12 10/11/2013		SEP-13 2/22/2013		SEP-13 10/11/2013	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)									
Antimony	0.006	0.00165 J	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161
Arsenic	0.010	0.0646	0.0567	0.0323	0.0334	0.046	0.0437	0.0379	0.0382
Barium	2.0	0.0772	0.0709	0.101	0.0978	0.0579	0.0529	0.0946	0.102
Cadmium	0.0050	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	0.00978
Chromium	0.1	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
Cobalt	0.022	<0.00136	0.00217 J	<0.00136	0.00226 J	<0.00136	0.00323 J	<0.00136	0.00241 J
Copper	1.3	0.00448 J	<0.002	0.0033 J	<0.002	0.00387 J	<0.002	0.00628 J	0.004 J
Iron	--	0.842	<0.101	0.663	<0.101	0.672	<0.101	1.09	0.567
Lead	0.015	0.0046 J	<0.000733	0.00701	<0.000733	0.00306 J	<0.000733	0.00726	0.0106
Mercury	0.0020	0.000184 J	<0.000158 J	<0.00013	<0.00013	<0.00013	<0.000141 UJ	<0.00013	<0.00013
Molybdenum	0.37	0.0812	0.0803	0.0332	0.0368	0.0506	0.0522	0.03	0.035
Nickel	1.5	0.00244 J	<0.00217	0.00257 J	<0.00217	<0.00217	<0.00217	0.0029 J	<0.00217
Selenium	0.050	0.0112	0.0106	0.00597	0.00585	0.00595	0.00513	0.00383 J	0.00492 J
Thallium	0.0020	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693
Zinc	22	0.00698 J	<0.00355	0.0127 J	<0.0121 UJ	0.0102 J	0.0045 J	0.0162 J	<0.065 UJ
Water Quality Parameters (mg/L)									
Aluminum	73	0.5		0.9		0.4		1.3	
Calcium	--	113.0		122.0		148.0		123.0	
Magnesium	--	62.1 J		51.3		43.8 J		56.0	
Manganese	10	0.6		0.4		0.5		0.4	
Potassium	--	16.9 J		13.7		14.4 J		13.9	
Sodium	--	556.0		607.0		472.0		628.0	
Chloride	--	426 J		571.0		404.0		613.0	
Fluoride	4.0	1.5		0.9		2.4		0.9	
Nitrate	10	--		--		--		--	
Nitrate + Nitrite	10	2.4 J		2.87 J		2.21 J		2.72 J	
Nitrite	1.0	--		--		--		--	
Sulfate	--	895.0		721.0		790.0		807.0	
Sulfide	--	0.019 J		0.1		0.1		0.1	
Total Alkalinity	--	241.0		298.0		217.0		281.0	
Total Dissolved Solids	--	2470.0		2530.0		2240.0		2600.0	
Total Organic Carbon	--			5.7				6.3	
Total Suspended Solids	--	32.4		106.0		29.6		50.5	

Notes:

Bolded value = Result TRRP Screening Level

mg/L = milligrams per liter

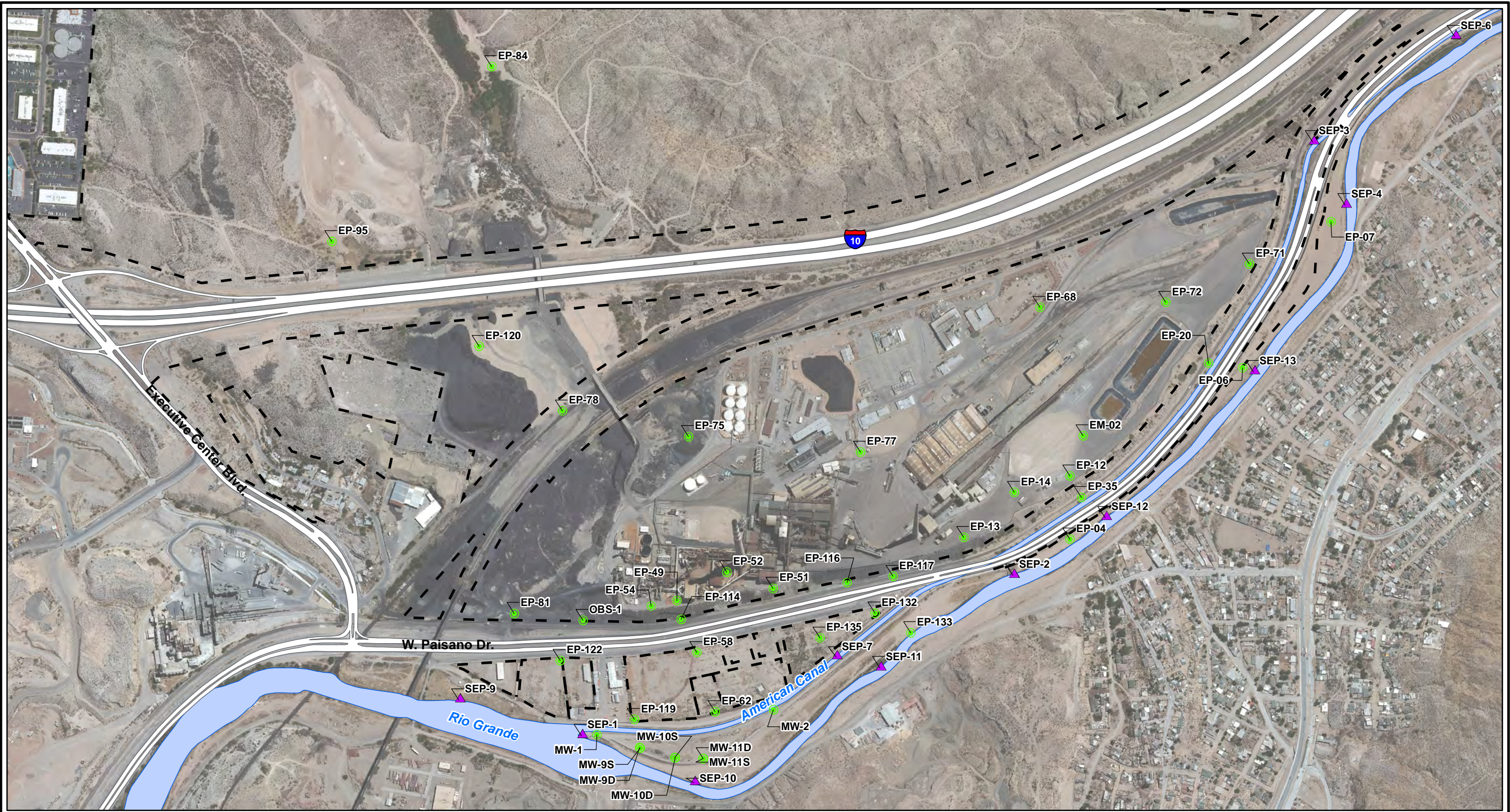
-- = Not applicable or not analyzed

< = Analyte not detected above listed sample detection limit

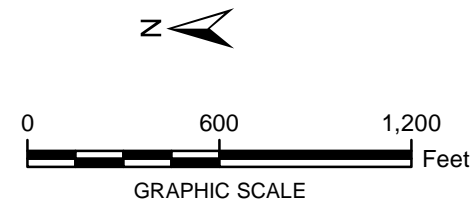
J = Estimated value

UJ = Estimated reporting limit

CITY: Highlands Ranch DIV/GROUP: GIS DB: BG
Project: (S) (R) (P)
Path: I:\ASARCO_ElPaso\GIS\MXD\WaterLevels\Fig_1_Spring2013_Fall2013_GWSM.mxd Date: 2/5/2014 Time: 12:06:02 PM



- LEGEND:**
- Monitoring Wells
 - Surface Water Stations
 - Property Boundary



FORMER EL PASO SMELTER SITE
EL PASO, TEXAS

**SPRING AND FALL 2013 GROUNDWATER
AND SURFACE WATER LOCATIONS**

**MALCOLM
PIRNIE**

FIGURE
1

APPENDIX A

**GROUNDWATER AND SURFACE WATER LABATORY ANALYTICAL REPORTS
(PROVIDED ON CD WITH HARDCOPY SUBMITTAL)**