

June 4, 2013

Mr. Scott Settemeyer, P.G.
Texas Commission on Environmental Quality
P.O. Box 13087 - Mail: MC-221
Austin, Texas 78711-3087

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

**Subject: Transmittal of 2012 Groundwater and Surface Water Sampling Results
Summary**

Dear Mr. Settemeyer:

This letter transmits and summarizes the analytical results associated with semiannual groundwater and surface water sampling activities performed by Malcolm Pirnie at the Former ASARCO LLC (ASARCO) El Paso smelter site (Site) in El Paso, Texas during 2012.

Remedial actions and monitoring at the Former ASARCO 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 (USEPA). 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 (I-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 2012 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 2012 consists of semiannual sampling of groundwater monitoring wells (43 monitoring wells during the first sampling event and 42 monitoring wells during the second sampling 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 semiannual Interim Site monitoring events for 2012 were performed during February/March (spring) and August/September (fall) timeframes. Locations of monitoring wells included in the Interim Site monitoring for the spring and fall sampling events are shown in





Figure 1. Well EP-85 was part of the monitoring wells sampled during the spring sampling event, but was not included during the fall sampling event since the well was plugged and abandoned in between the two events. Monitoring wells MW-9D, MW-9S, MW-10D, MW-10S, MW-11D, and MW-11S were installed on March 19 through March 21, 2012 and sampled on March 27, 2012. These wells were included in both, spring and fall monitoring sampling events. Samples collected during the 2012 monitoring events were analyzed for site constituents of concerns (COCs), analytes of interest (AOIs), and water quality parameters to support the conceptual site model (CSM) and the detailed evaluation of final groundwater remedies. Table 1 summarizes the results of the wells sampled for both sampling events. The laboratory analytical reports are included in Attachment A.

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 COCs being arsenic and selenium. The COCs detected at concentration 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. An expanded analysis of the sampling results will be reported to TCEQ as part of the Supplemental Remedial Investigation Report currently being prepared.

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. The analytical results from the surface water monitoring events are presented in Table 2 and the laboratory analytical reports are included in Attachment A.

Surface Water Results Summary

Surface water level fluctuates seasonally throughout the year. The low flow period time takes place during the spring sampling event while the surface water levels are higher during the fall sampling event. The surface water analytical results collected from the American Canal and the Rio Grande during the spring monitoring event had concentrations above drinking water standards for arsenic of 0.01 mg/L on all the sampled locations with the exception of SEP-1 and SEP-9. The maximum arsenic concentration detected was at sample location SEP-10 (0.239 mg/L) for the spring event. 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 historical 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 Site 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 semiannual 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, increased or decreasing the number of sampling points may be necessary to accommodate remedy implementation activities.

If you have any questions regarding this submittal, please call me at (512) 527-6101.

Very truly yours,

MALCOLM PIRNIE, INC.

Alicia D. Fogg, P.E.
Project Engineer

Project 6835001

cc: Roberto Puga, Project Navigator
Mark Landress, Project Navigator
Maria Lebron, TCEQ
Lorinda Gardner, TCEQ Region 6
Former ASARCO Smelter Project Team

Attachments



Table 1
2012 Groundwater Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameters	GW ^{GW_{ing}} Commercial- Industrial	EP-4 2/29/2012		EP-4 8/22/2012		EP-6 2/29/2012		EP-6 8/22/2012		EP-7 2/29/2012		EP-7 8/22/2012		EP-12 2/24/2012		EP-12 9/5/2012	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)																	
Antimony	0.0060	<0.00161	<0.00161	0.00202 J	0.00182 J	0.00873	0.00819	0.0039 J	0.00368 J	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161
Arsenic	0.010	0.267	0.286	0.357	0.362	0.0167	0.0162	0.0225	0.0238	0.0253	0.0429	0.0483	0.0476	0.409	0.376	0.369	0.362
Barium	2.0	0.127	0.126	0.108	0.105	0.0219	0.0197	0.0502	0.0517	0.0543	0.0636	0.0555	0.0534	0.0654	0.0581	0.0679	0.0656
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	<0.000854	<0.000854	<0.000854
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	0.0105	0.00647	0.0136	0.0116
Cobalt	0.022	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	0.00289 J	0.00341 J	0.0019 J	0.00194 J	<0.00136	<0.00136	<0.00136	0.00189 J	<0.00136	0.00171 J
Copper	1.3	0.0053 J	<0.002	0.013	0.00413 J	<0.002	<0.002	<0.002	<0.002	0.00249 J	0.00556 J	<0.002	<0.002	0.00807 J	<0.002	0.00715 J	<0.002
Iron	--	<0.101	<0.101	0.481	0.406	<0.101	<0.101	<0.101	<0.101	1.01	2.44	1.19	1.14	1.92	0.487	1.08	0.103 J
Lead	0.015	0.00208 J	<0.000733	0.00283 J	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	0.00232 J	<0.000733	<0.000733	0.00307 J	<0.000733	0.0027 J	<0.000733
Mercury	0.0020	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.0316	0.0318	0.0385	<0.0414 UJ	0.126	0.124	0.192	0.206	0.106	0.105	0.126	0.13	0.00854	0.00601	0.00841	0.00488 J
Nickel	1.5	<0.00217	<0.00217	0.00271 J	0.00226 J	0.003 J	0.00247 J	0.0043 J	0.00457 J	0.00363 J	0.00368 J	0.00378 J	0.00356 J	0.0169	0.0148	0.0147	0.0144
Selenium	0.050	<0.00108	<0.00108	0.0013 J	0.00129 J	0.00155 J	0.00132 J	<0.00108	0.00172 J	0.00114 J	0.00126 J	0.00234 J	0.00163 J	0.0731	0.0488	0.118	0.0992
Thallium	0.0020	<0.000693	<0.000693	0.0013 J	0.0023	<0.000693	<0.000693	0.00446	0.00417	<0.000693	<0.000693	0.00934	0.000815 J	0.000855 J	0.00251	0.00183 J	<0.000693
Zinc	22	0.00998 J	0.00606 J	0.0053 J	<0.00355	0.00439 J	<0.00355	<0.00355	<0.00355	0.0142 J	0.0184 J	<0.00355	<0.00355	0.00835 J	0.00438 J	<0.00355	<0.00355
Water Quality Parameters (mg/L)																	
Aluminum	73	0.0337 J		0.0421 J		0.0289 J		<0.0225		<0.0225		<0.0225		0.0484 J		0.0964	
Calcium	--	140		149		95.5		126		204		204		123		101	
Magnesium	--	38		49.1		33.8		46.5		53		60.7		58.8		43.2	
Manganese	10	1.43		1.62		0.577		1.81		1.75		2.22		0.183		0.137	
Potassium	--	27.4		28.9		12.7		19		13.7		13.7		9.69		8.79	
Sodium	--	399		732		832		1020		1350		1490		609		594	
Chloride	--	440		457		413		436		920		891		243		197	
Fluoride	4.0	1.46		0.154		1.89		0.334		2.09		0.279		0.854		1.16	
Nitrate	10	--		--		--		--		--		--		--		<0.103	
Nitrate + Nitrite	10	<0.8		1.38 J		<0.8		<0.8		<0.8		<0.8		<1		<0.2	
Nitrite	1.0	--		--		--		--		--		--		--		<0.2	
Sulfate	--	686		854		823		1310		1560		1610		477		170	
Sulfide	--	0.018 J		0.05		0.023 J		0.319		0.024 J		0.131		20.7		4.16	
Total Alkalinity	--	263		315		303		348		365		335		1290		1450	
Total Dissolved Solids	--	2050		2310		2390		3170		4300		4270		2370		2310	
Total Organic Carbon	--	1.99		6.11		1.78		4.95		3.28		<4.35 UJ		22.4		39	
Total Suspended Solids	--	<3		7.6		<3		3.8		3.6		6.6		14		12	

Notes:

Bolded value = Result exceeded TRRP Protective Concentration Limit

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
2012 Groundwater Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameters	GW ^{GW_{ing}} Commercial- Industrial	EP-13 2/24/2012		EP-13 9/5/2012		EP-14 2/24/2012		EP-14 9/5/2012		EP-20 3/2/2012		EP-20 9/6/2012		EP-35 3/2/2012		EP-35 9/6/2012	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)																	
Antimony	0.0060	0.00286 J	0.00227 J	0.00323 J	0.00222 J	0.00391 J	0.00352 J	0.00328 J	0.00311 J	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161
Arsenic	0.010	33.9	31.8	29.4	28.7	4.38	3.76	3.41	3.29	0.954	1.03	1.09	1.1	0.278	0.28	0.305	0.282
Barium	2.0	0.0233	0.0198	0.024	0.0197	0.0156	0.0158	0.0159	0.0158	0.0224	0.0213	0.0203	0.0182	0.0264	0.0285	0.028	0.0265
Cadmium	0.0050	0.818	0.758	0.846	0.824	0.00173 J	0.00154 J	<0.000854	<0.000854	0.137	0.135	0.0804	0.0805	<0.000854	<0.000854	<0.000854	<0.000854
Chromium	0.10	0.00332 J	<0.0014	0.00194 J	<0.0014	0.0133	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	0.00284 J	<0.0014	0.0164	<0.0014
Cobalt	0.022	<0.00136	0.00192 J	<0.00136	0.0016 J	<0.00136	0.00236 J	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	0.00711	0.00787	0.00645	0.00713
Copper	1.3	0.0978	0.0898	0.0174	0.00359 J	0.0771	0.075	<0.002	<0.002	0.00751 J	0.00419 J	0.0128	<0.002	0.00342 J	0.00348 J	0.0024 J	<0.002
Iron	--	0.152 J	<0.101	0.316	<0.101	0.148 J	<0.101	<0.101	<0.101	<0.101	<0.101	<0.175 UJ	<0.101	<0.101	<0.101	<0.275 UJ	<0.101
Lead	0.015	0.0288	0.00375 J	0.0486	0.00425 J	0.00385 J	0.00125 J	<0.000733	0.0011 J	0.00412 J	0.00203 J	0.00786	0.000954 J	0.00185 J	0.00148 J	0.00164 J	<0.000733
Mercury	0.0020	0.000143 J	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.557	0.502	0.642	0.627	0.209	0.195	0.222	0.226	0.0862	0.0871	0.112	0.11	0.05	0.0523	0.0532	0.0548
Nickel	1.5	0.00802	0.00759	0.00518	0.00441 J	0.0199	0.0121	0.00886	0.00881	0.0116	0.0119	0.0104	0.0112	0.0562	0.0588	0.0628	0.0639
Selenium	0.050	6.54	6.64	5.63	5.71	0.319	0.3	0.308	0.287	0.304	0.309	0.395	0.367	0.76	0.745	0.592	0.607
Thallium	0.0020	0.000985 J	0.00106	0.0136	0.0125	1.16	1.32	1.03	1.04	0.00772	0.00777	0.00774	0.00766	0.00072 J	<0.000693	<0.000693	<0.000693
Zinc	22	0.147	0.149	0.0174 J	0.00426 J	0.0964	0.109	<0.00355	<0.00355	0.0437	0.0472	0.034	0.0282	<0.00355	<0.00355	<0.00355	<0.00355
Water Quality Parameters (mg/L)																	
Aluminum	73	0.193		0.266		0.0464 J		<0.0225		<0.0225		0.101		<0.0225		<0.0225	
Calcium	--	299		342		168		204		294		268		327		295	
Magnesium	--	55.1		52.1		69		62.1		113		123		108		115	
Manganese	10	0.0687		0.08		0.0331 J		0.0133 J		1.1		0.234		0.37		0.381	
Potassium	--	89.3		92.7		30.7		33.2		38.2		40.1		15.7		15.4	
Sodium	--	1980		1910		695		765		990		810		1080		877	
Chloride	--	579		371		291		301		353		372		430		361	
Fluoride	4.0	2.02		1.21		2.2		2.42		1.77		1.98		0.514		1.21	
Nitrate	10	--		--		--		--		--		--		--		--	
Nitrate + Nitrite	10	164 J		145		12.1		12.7		64.1		65.5		39.4		41.1	
Nitrite	1.0	--		--		--		--		--		--		--		--	
Sulfate	--	4500		2250		1730		1680		1700		2080		1530		1980	
Sulfide	--	<0.0131		0.023 J		<0.0131		<0.0131		0.023 J		<0.02 UJ		0.018 J		<0.02 UJ	
Total Alkalinity	--	361		363		411		386		261		283		552		545	
Total Dissolved Solids	--	8230		8230		3410		3460		4480		4350		4570		4400	
Total Organic Carbon	--	2.32		2.25		2.07		2.82		3.06		<2.63 UJ		2.39		<2.99 UJ	
Total Suspended Solids	--	5.8		12.2		3.2		3.6		<3		8.2		<3		3.2	

Notes:

Bolded value = Result exceeded TRRP Protective Concentration Limit

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

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Table 1
2012 Groundwater Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameters	GW ^{GW_{ing}} Commercial- Industrial	EP-49 2/23/2012		EP-49 9/5/2012		EP-51 2/23/2012		EP-51 9/5/2012		EP-52 2/23/2012		EP-52 9/5/2012		EP-54 2/23/2012		EP-54 8/28/2012	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)																	
Antimony	0.0060	1.49	1.44	1.25	1.26	0.00504	0.00508	0.00423 J	0.00397 J	0.0864	0.0715	0.0626	0.0754	0.0657	0.0574	0.0665	0.0651
Arsenic	0.010	16.3	18.4	15.2	21	0.0462 J	0.0236 J	0.0368	0.0189	0.439	0.16	0.193	0.458	7.98	7.67	8.44	7.93
Barium	2.0	0.00684	0.00712	0.00382 J	0.00622	0.0172	0.0168	0.0196	0.02	0.026	0.0181	0.0152	0.0225	0.0209	0.0182	0.0189	0.0191
Cadmium	0.0050	0.0576	0.0575	0.0656	0.072	0.0191	0.0205	0.0319	0.0315	0.353	0.327	0.331	0.353	0.448	0.401	0.383	0.373
Chromium	0.10	<0.0014	0.00403 J	<0.0014	0.00369 J	0.458	0.257	0.599	0.255	0.0641	0.0154	0.00321 J	0.0473	0.01	0.00144 J	0.0187	0.00166 J
Cobalt	0.022	0.00604	0.00422 J	0.00447 J	0.0036 J	0.0225	0.0218	0.0295	0.0291	0.097	0.0969	0.0867	0.0857	0.0213	0.0211	0.0193	0.0198
Copper	1.3	0.198	0.245	0.0858	0.153	0.114	0.0843	0.0787	0.0702	0.828	0.409	0.267	0.588	0.296	0.266	0.238	0.211
Iron	--	0.124 J	2.17	<0.101	4.24	7.19	6.17	8.24	7.95	2.01	0.442	<0.101	1.67	0.467	<0.101	0.304	<0.101
Lead	0.015	<0.000733	0.00132 J	<0.000733	0.00201 J	0.00896	0.00286 J	0.00171 J	<0.000733	0.558	0.0817	0.0702	0.673	0.00131 J	<0.000733	0.00139 J	<0.000733
Mercury	0.0020	0.000728 J	0.000726 J	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	0.00714	0.00107 J	0.00527	0.000458 J	0.000504 J	0.000378 J	0.000222 J	0.0002 J
Molybdenum	0.37	1.71	1.6	1.79	1.79	0.0133	0.0125	0.0173	0.013	0.0676	0.0566	0.0576	0.0752	1.74	1.59	2.04	2.02
Nickel	1.5	0.0177	0.0188	0.0181	0.0168	1.52	1.84	2.2	2.17	5.05	6.12	4.53	4.44	0.149	0.136	0.125	0.113
Selenium	0.050	0.743	0.705	0.716	0.725	0.241	0.254	0.201	0.203	0.37	0.333	0.319	0.325	0.0827	0.0772	0.0737	0.0806
Thallium	0.0020	0.0124	0.0134	0.0138	0.0155	0.0023	0.00244	0.00545	0.00518	0.0209	0.0205	0.0187	0.0205	0.122	0.118	0.118	0.121
Zinc	22	9.28	10.1	8.38	9.94	0.233	0.23	0.201	0.192	2.44	2.27	1.74	1.82	8.89	8.55	6.29	6.28
Water Quality Parameters (mg/L)																	
Aluminum	73	<0.225		<0.0225		<0.225		<0.0225		0.318 J		<0.0225		<0.225		0.0274 J	
Calcium	--	409		506		596		886		441		536		410		510	
Magnesium	--	128		131		505		628		317		344		163		192	
Manganese	10	1.85		1.77		0.94		1.25		6.88		7.02		3.12		2.73	
Potassium	--	175		208		40.5		49.2		19.6		21		242		300	
Sodium	--	1250		1180		1260		1420		1950		2010		1480		1640	
Chloride	--	393		249		3150		2060		1150		583		704		407	
Fluoride	4.0	4.44		5.5		0.569		0.712		4.88		5.8		8.64		9.9	
Nitrate	10	--		16.3				106				120					
Nitrate + Nitrite	10	6.69		16.3		97.8		106		112		120		19.7		35.4	
Nitrite	1.0	--		<0.2				<20				<0.2					
Sulfate	--	3850		2190		2450		1210		4730 J		2300		4770		2630	
Sulfide	--	<0.0131		0.044 J		<0.0131		0.015 J		<0.0131		0.014 J		<0.0131		0.022 J	
Total Alkalinity	--	661		683		171		188		600		604		684		680	
Total Dissolved Solids	--	7390		6880		9930		11400		10400		10600		8130		8050	
Total Organic Carbon	--	6.26		6.34		1.17		1.46		5.6		5.64		10.2		9.69	
Total Suspended Solids	--	15.2		30.8		22.3		35		29		24.4		3		4	

Notes:

Bolded value = Result exceeded TRRP Protective Concentration Limit

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
2012 Groundwater Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameters	GW _{ing} Commercial- Industrial	EP-58 2/28/2012		EP-58 8/27/2012		EP-62 2/28/2012		EP-62 8/27/2012		EP-68 2/27/2012		EP-68 8/29/2012		EP-71 2/24/2012		EP-71 8/29/2012	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)																	
Antimony	0.0060	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161
Arsenic	0.010	1.87	1.92	13.8	17.3	1.31	1.4	1.41	1.41	<0.0109	0.214	<0.0115 UJ	0.00228 J	0.154	0.139	0.144	0.153
Barium	2.0	0.0396	0.0381	0.0344	0.031	0.021	0.0216	0.0233	0.0225	0.0114	0.0118	0.013	0.0111	0.0141	0.0128	0.0145	0.0138
Cadmium	0.0050	<0.000854	0.00117 J	<0.000854	<0.000854	<0.000854	0.00251	<0.000854	<0.000854	<0.000854	0.00586	<0.000854	<0.000854	0.00101 J	<0.000854	<0.000854	<0.000854
Chromium	0.10	0.0409	0.0287	0.0221	0.00877	<0.0014	<0.0014	<0.0014	<0.0014	<0.014	0.01	0.00284 J	<0.0014	0.00759	0.0082	<0.0014	<0.0014
Cobalt	0.022	0.00244 J	0.00331 J	0.00394 J	0.00823	<0.00136	<0.00136	<0.00136	<0.00136	<0.0136	0.00265 J	<0.00136	<0.00136	0.00174 J	0.00197 J	<0.00136	0.00162 J
Copper	1.3	<0.002	0.00932 J	<0.002	<0.002	0.00265 J	<0.002	<0.002	<0.002	<0.02	0.0401	0.00507 J	0.00278 J	0.0745	0.0634	0.00298 J	<0.002
Iron	--	20.3	20.2	13.3	10.8	<0.101	<0.101	<0.101	<0.101	<1.01	0.113 J	0.16 J	<0.101	0.157 J	0.334	<0.101	<0.101
Lead	0.015	0.00103 J	0.00323 J	<0.000733	<0.000733	0.00132 J	<0.000733	<0.000733	<0.000733	0.00177 J	0.00134 J	<0.000733	<0.000733	0.00186 J	0.000935 J	<0.000733	<0.000733
Mercury	0.0020	0.000171 J	0.00016 J	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	0.000219 J	<0.00013	<0.00013 UJ	<0.00013 UJ
Molybdenum	0.37	0.264	0.237	0.667	0.708	0.574	0.595	0.597	0.574	0.19	0.297	0.242	0.214 J	0.162	0.138	0.175	0.171 J
Nickel	1.5	0.234	0.233	0.0963	0.0962	0.00328 J	0.00339 J	0.00364 J	0.00382 J	0.0219 J	0.0175	0.00509	0.00441 J	0.0171	0.0128	0.00962	0.011
Selenium	0.050	0.00824	0.00765	0.0106	0.0106	0.169	0.165	0.164	0.172	0.321	2.75	0.344	0.331	0.234	0.232	0.24	0.253
Thallium	0.0020	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	0.00287	0.00188 J	<0.000693	<0.000693	<0.000693	<0.000693
Zinc	22	0.00475 J	0.0104 J	<0.00355	<0.00355	<0.00355	<0.00355	<0.0121 UJ	<0.00355	0.0426 J	0.114	<0.0149 UJ	0.0144 J	0.128	0.119	<0.00839 UJ	0.00594 J
Water Quality Parameters (mg/L)																	
Aluminum	73	<0.0225		0.0289 J		<0.0225		<0.0225		0.0945		0.181		0.1		0.0771 J	
Calcium	--	541		95.5		148		152		345		405		361		392	
Magnesium	--	224		33.8		57.8		68.5		144		165		186		185	
Manganese	10	11.8		0.577		<0.0116		<0.0116		<0.0116		<0.0116		0.0232 J		0.019 J	
Potassium	--	196 J		12.7		60.7		52.4 J		15.5		16.5		19		18.7	
Sodium	--	1300		832		761		600		1280		897		1020		984	
Chloride	--	558		413		331		276		735		481		499		374 J	
Fluoride	4.0	5.85		1.89		3.07		3.63		0.661		0.803		1.03		1.04 J	
Nitrate	10			--		--		--		--		--		--		--	
Nitrate + Nitrite	10	<2		<0.8		3.58		1.67		14.8		15		79.6		73.2	
Nitrite	1.0			--		--		--		--		--		--		--	
Sulfate	--	3030		823		1120		948		2380		1570		2340		1850 J	
Sulfide	--	0.036 J		0.023 J		<0.025 UJ		0.022 J		<0.0131		0.029 J		<0.0131		0.029 J	
Total Alkalinity	--	900		303		363		371		213		217		272		268	
Total Dissolved Solids	--	7590		2390		2650		2560		4730		4720		5530		5310	
Total Organic Carbon	--	13.9		1.78		2.75		2.86		1.55		1.7		1.55		1.77	
Total Suspended Solids	--	25		<3		<3		<3		10.8		7.2		7.2		5	

Notes:

Bolded value = Result exceeded TRRP Protective Concentration Limit

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
2012 Groundwater Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameters	GW _{ing} Commercial-Industrial	EP-72 2/27/2012		EP-72 8/29/2012		EP-75 2/23/2012		EP-75 8/28/2012		EP-77 2/22/2012		EP-77 9/6/2012		EP-78 2/22/2012		EP-78 8/28/2012	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)																	
Antimony	0.0060	<0.00161	0.0161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	0.00445 J	0.00442 J	0.0039 J	0.00361 J	0.0214	0.0214	0.0185	0.0182
Arsenic	0.010	0.29 J	0.0116	0.19	0.209	57	51.2	53.3	51.2	2.4	2.09	2.22	2.23	1.96	1.82	1.87	1.85
Barium	2.0	0.0108	0.392	0.0127	0.0126	0.0441	0.045	0.051	0.0473	0.033	0.0314	0.0354	0.0283	0.0375	0.0373	0.037	0.036
Cadmium	0.0050	0.00573	0.00665	0.00356	0.00381	0.0165	0.0152	0.00394	0.00396	<0.000854	0.000875 J	<0.000854	<0.000854	0.00086 J	<0.000854	<0.000854	<0.000854
Chromium	0.10	<0.14	0.00186 J	<0.0014	<0.0014	0.00845	0.00161 J	<0.0014	<0.0014	0.0137	0.00259 J	0.00255 J	<0.0014	0.00807	0.0023 J	<0.0014	<0.0014
Cobalt	0.022	<0.136	0.00564	0.00236 J	<0.00136	0.00555	0.00702	0.00511	0.00566	<0.00136	0.00164 J	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136
Copper	1.3	<0.2	0.0504	0.00536 J	0.00376 J	0.115	0.106	0.0123	0.00984 J	0.0336	0.0237	0.00689 J	<0.002	0.0143	0.00835 J	0.0028 J	<0.002
Iron	--	<10.1	<0.101	<0.101	<0.101	0.115 J	<0.101	<0.101	<0.101	0.182 J	<0.101	<0.27 UJ	<0.101	0.11 J	<0.101	<0.101	<0.101
Lead	0.015	0.000831 J	0.953	0.000857 J	<0.000733	0.00187 J	0.000972 J	0.00216 J	0.00134 J	0.00119 J	0.000801 J	0.00252 J	<0.000733	0.000982 J	<0.000733	0.000953 J	<0.000733
Mercury	0.0020	<0.00013	<0.00013	<0.00013	<0.00013	0.000218 J	0.000144 J	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.28	0.00402 J	0.322	0.334 J	7.3	7.07	8.85	8.6	0.22	0.215	0.222	0.202	0.317	0.318	0.308	0.313
Nickel	1.5	<0.217	0.0226	0.00514	0.00563	0.0208	0.0185	0.0161	0.016	0.0104	0.00473 J	0.00258 J	<0.00217	0.00558	0.00276 J	<0.00217	<0.00217
Selenium	0.050	2.67	<0.00108	1.63	1.69	5.91	6.01	5.05	5	0.108	0.108	0.136	0.137	0.132	0.127	0.128	0.127
Thallium	0.0020	<0.000693	<0.000693	0.00122 J	0.000778 J	0.942	0.983	0.941	0.893	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693
Zinc	22	0.485 J	0.507	<0.0234 UJ	0.0272	0.128	0.135	<0.0286 UJ	<0.0278 UJ	0.0644	0.0574	0.00554 J	0.00383 J	0.039	0.0311	<0.00931 UJ	<0.00596 UJ
Water Quality Parameters (mg/L)																	
Aluminum	73	<0.0225	<0.0225	<0.0225	<0.45	0.104	0.104	0.107	0.107	0.107	0.107	0.242	0.242	0.0593	0.0593	0.0814	0.0814
Calcium	--	253	253	294	308	417	417	117	117	117	117	118	118	79.8	79.8	86.8	86.8
Magnesium	--	184	184	178	157	154	154	25.1	25.1	25.1	25.1	30	30	43.3	43.3	50.1	50.1
Manganese	10	0.218	0.218	0.232	1.11	1.06	1.06	0.0466 J	0.0466 J	0.0466 J	0.0466 J	0.0337 J	0.0337 J	<0.0116	<0.0116	<0.0116	<0.0116
Potassium	--	14.3	14.3	15.3	853	1010	1010	22.8	22.8	22.8	22.8	23.8	23.8	39.4	39.4	41.9	41.9
Sodium	--	1840	1840	941	2800	2640	2640	649	649	649	649	705	705	572	572	689	689
Chloride	--	534	534	333	222	158	158	377	377	377	377	390	390	326	326	341	341
Fluoride	4.0	1.13	1.13	1.3	12.3	13.3	13.3	3.66	3.66	3.66	3.66	4.07	4.07	3.22	3.22	3.69	3.69
Nitrate	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate + Nitrite	10	74.8	74.8	44.7	67	69.1	69.1	2.92	2.92	2.92	2.92	2.99	2.99	8.48	8.48	8.78	8.78
Nitrite	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	--	3570	3570	1850	7820	4600	4600	1110	1110	1110	1110	1210	1210	956	956	1030	1030
Sulfide	--	<0.0131	<0.0131	0.027 J	0.014 J	0.031 J	0.031 J	<0.0131	<0.0131	<0.0131	<0.0131	<0.019 UJ	<0.019 UJ	0.014 J	0.014 J	0.024 J	0.024 J
Total Alkalinity	--	329	329	309	488	466	466	338	338	338	338	366	366	381	381	378	378
Total Dissolved Solids	--	5990	5990	4820	12700	12500	12500	2630	2630	2630	2630	2680	2680	2400	2400	2340	2340
Total Organic Carbon	--	2.25	2.25	2.06	7.47	6.94	6.94	2.91	2.91	2.91	2.91	<3 UJ	<3 UJ	2.22	2.22	2.18	2.18
Total Suspended Solids	--	5.4	5.4	<3	4.4	7.6	7.6	4.6	4.6	4.6	4.6	8	8	3.8	3.8	6.8	6.8

Notes:

Bolded value = Result exceeded TRRP Protective Concentration Limit

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
2012 Groundwater Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameters	GW ^{GW_{ing}} Commercial- Industrial	EP-81 3/1/2012		EP-81 9/6/2012		EP-84 2/22/2012		EP-84 2/28/2012		EP-85 3/1/2012		EP-95 2/22/2012		EP-95 8/28/2012		EP-114 3/1/2012	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)																	
Antimony	0.0060	0.00342 J	0.00335 J	0.00176 J	0.00177 J	0.00282 J	0.0031 J	0.00682	0.00623	0.0422	0.0394	<0.00161	<0.00161	<0.00161	<0.00161	0.007	0.00725
Arsenic	0.010	0.749	0.743	0.393	0.435	0.0241	0.0261	0.0339	0.0389	1.25	1.3	0.00961	0.0103	<0.0099 UJ	<0.0123 UJ	50.5	45.2
Barium	2.0	0.0442	0.04	0.0454	0.0439	0.0457	0.0467	0.0432	0.0393	0.0352	0.0315	0.0272	0.0256	0.0274	0.0243	0.0231	0.0207
Cadmium	0.0050	0.00116 J	<0.000854	<0.000854	<0.000854	0.00309	0.00335	0.00213	0.00203	0.00168 J	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	0.0443	0.0427
Chromium	0.10	<0.0014	<0.0014	0.00601	0.00471 J	<0.0014	<0.0014	<0.0014	<0.0014	0.00239 J	0.00302 J	0.0306	0.00275 J	0.0131	0.0019 J	<0.0014	<0.0014
Cobalt	0.022	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	0.0016 J	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	0.0541	0.0513
Copper	1.3	0.00466 J	0.00391 J	0.162	0.187	0.0497	0.0434	0.0324	0.029	<0.002	<0.002	0.133	0.129	0.0111	0.00981 J	0.00867 J	<0.002
Iron	--	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	0.495	<0.101	0.461	<0.101	13.6	12.9
Lead	0.015	<0.000733	<0.000733	0.00099 J	<0.000733	0.0231	0.0219	0.0333	0.0168	<0.000733	<0.000733	0.0013 J	<0.000733	0.00152 J	<0.000733	0.00208 J	<0.000733
Mercury	0.0020	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	0.000189 J	0.000206 J
Molybdenum	0.37	0.32	0.295	0.171	0.176	0.0105	0.011	<0.022 UJ	0.0463	0.572	0.537	0.0455	0.0454	0.0499	0.0561	0.412	0.39
Nickel	1.5	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217	<0.00217	0.0184	0.0032 J	0.00687	<0.00217	0.178	0.179
Selenium	0.050	0.131	0.127	0.116	0.118	0.018	0.0174	0.0184	0.0182	0.132	0.13	0.0208	0.0204	0.0172	0.02	0.0203	0.0187
Thallium	0.0020	0.000752 J	0.000937 J	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	0.00303	0.00974	0.01	<0.000693	<0.000693	<0.000693	0.000818 J	0.00301	0.00319
Zinc	22	0.00831 J	0.00847 J	0.152	0.172	0.0661	0.061	<0.026 UJ	<0.028 UJ	<0.00355	<0.00355	0.194	0.21	<0.0375 UJ	<0.0366 UJ	8.04	7.92
Water Quality Parameters (mg/L)																	
Aluminum	73	0.0317 J		0.0268 J		<0.0225		<0.0225		<0.0225		0.235		0.381		0.0376 J	
Calcium	--	131		107		146		148		98.9		39.7		43.8		560	
Magnesium	--	51		49.6		79.9		78.5		47.9		62.2		78		216	
Manganese	10	<0.0116		<0.0116		<0.0116		0.0179 J		<0.0116		<0.0116		<0.0116		6.34	
Potassium	--	30.1		14.6		7.17		7.31		27.3		1.88		1.75		185	
Sodium	--	293		170		316		229		783		543		603		774	
Chloride	--	159		67.9		327		205		314		376		356		347	
Fluoride	4.0	3.22		2.4		0.736		1.06		3.3		2.78		3.62		7.42	
Nitrate	10	--		--		--		--		--		--		--		--	
Nitrate + Nitrite	10	4.92		5.35		7.9		7.4		9.37		6.95		6.53		<0.8	
Nitrite	1.0	--		--		--		--		--		--		--		--	
Sulfate	--	678		383		867		569		632 J		830		863		2820	
Sulfide	--	0.02 J		<0.014 UJ		<0.0131		0.021 J		<0.0131		<0.0131		0.024 J		0.019 J	
Total Alkalinity	--	313		367		296		252		396		339		353		614	
Total Dissolved Solids	--	1740		1100		2130		1550		2640		2110		2100		5520	
Total Organic Carbon	--	1.33		<1.22 UJ		1.53		2.61		2.37		2		1.97		12.4	
Total Suspended Solids	--	<3		<3		<3		<3		<3		9		11.2		30	

Notes:

Bolded value = Result exceeded TRRP Protective Concentration Limit

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
2012 Groundwater Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameters	GW _{ing} Commercial-Industrial	EP-114 8/22/2012		EP-116 3/1/2012		EP-116 9/6/2012		EP-117 3/1/2012		EP-117 8/22/2012		EP-119 2/28/2012		EP-119 8/27/2012		EP-120 2/22/2012	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)																	
Antimony	0.0060	0.00611	0.00574	0.0451	0.0146	0.0558	0.0426	0.0161	0.0159	0.0137	0.0135	0.00914	0.0093	0.00782	0.00806	0.12	0.126
Arsenic	0.010	48.1	47	2.19	1.68	0.243	0.168	3.32	3.35	2.93	2.97	1.66	1.6	1.62	1.63	0.304	0.283
Barium	2.0	0.0227	0.0213	0.0315	0.0203	0.0751	0.0714	0.0206	0.021	0.0201	0.0197	0.0329	0.0316	0.0293	0.0303	0.0378	0.0371
Cadmium	0.0050	0.0479	0.0441	0.292	0.256	1.01	1.02	0.0494	0.0491	0.0549	0.0543	<0.000854	0.00176 J	<0.000854	<0.000854	<0.000854	<0.000854
Chromium	0.10	<0.0014	<0.0014	0.00204 J	<0.0014	<0.0014	<0.0014	0.00406 J	0.004 J	0.00358 J	0.00343 J	<0.0014	<0.0014	<0.0014	<0.0014	0.00603	0.00433 J
Cobalt	0.022	0.0578	0.0557	0.011	0.0104	0.037	0.0381	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136
Copper	1.3	0.00534 J	<0.002	2.67	1.21	5.08	4.58	0.00716 J	0.00457 J	0.00391 J	0.00271 J	0.0257 J	0.0126	<0.002	<0.002	0.0533	0.0481
Iron	--	13.4	12.6	3.42	<0.101	<0.538 UJ	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	0.301	<0.101
Lead	0.015	0.0016 J	<0.000733	0.299	0.00933	0.49	0.226	0.00896	0.00434 J	0.0109	0.00183 J	0.000812 J	<0.000733	<0.000733	<0.000733	0.00387 J	<0.000733
Mercury	0.0020	0.000345 J	0.000258 J	0.0032	<0.00013	0.00274	0.00203	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.529	0.555	0.233	0.216	0.0496	0.0518	0.248	0.248	0.271	0.28	0.528	0.499	0.532	0.54	0.0927	0.0929
Nickel	1.5	0.183	0.172	0.0329	0.0299	0.0475	0.047	0.0118	0.0124	0.0124	0.0123	0.00272 J	0.00251 J	<0.00217	0.00224 J	<0.00217	<0.00217
Selenium	0.050	0.0167	0.017	0.488	0.441	0.157	0.158	2.08	2.12	1.74	1.97	0.166	0.149	0.158	0.158	0.0366	0.0367
Thallium	0.0020	0.00335	0.00354	0.335	0.291	0.427	0.436	0.00244	0.00175	0.0011 J	0.00111 J	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693
Zinc	22	7.5	7.21	1.05	0.836	4.36	4.39	0.066	0.0675	0.0687	0.0648	0.0536 J	0.0295	<0.00355	<0.00355	0.0903	0.0884
Water Quality Parameters (mg/L)																	
Aluminum	73	0.0448 J		0.532		0.155		<0.0225		0.0383 J		<0.0225		0.0484 J		0.329	
Calcium	--	693		249		224		200		207		155		123		72.9	
Magnesium	--	258		15.2		22		37.7		42.6		70.2		58.8		47.1	
Manganese	10	5.59		0.503		1.15		0.0175 J		0.0161 J		0.343		0.183		0.0158 J	
Potassium	--	202		27.2		10.4		78.3		81.2		58.7 J		9.69		13.9	
Sodium	--	962		140		222		843		930		700		609		558	
Chloride	--	391		323		115		376		319		269		243		295	
Fluoride	4.0	1.23		3.68		2.76		2.94		0.398		4.12		0.854		2.98	
Nitrate	10	--		--		--		--		--		--		--		--	
Nitrate + Nitrite	10	<4		19.7		7.17		27.2		24.9		5.38		<1		7.05	
Nitrite	1.0	--		--		--		--		--		--		--		--	
Sulfate	--	2020		1970		864		1580		1390		920		477		881	
Sulfide	--	<0.0131		0.022 J		<0.022 UJ		<0.0131		<0.0131		0.032 J		20.7		0.014 J	
Total Alkalinity	--	700		416		149		290		301		369		1290		449	
Total Dissolved Solids	--	5790		3910		1560		3260		3230		2660		2370		2330	
Total Organic Carbon	--	12.1		3.4		6.87		2.11		<3.21 UJ		2.73		22.4		2.52	
Total Suspended Solids	--	42		28.8		6.4		<3		5.8		<3		14		9.6	

Notes:

Bolded value = Result exceeded TRRP Protective Concentration Limit

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

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Table 1
2012 Groundwater Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameters	GW ^{GW_{ing}} Commercial- Industrial	EP-120 8/28/2012		EP-122 2/27/2012		EP-122 8/24/2012		EP-132 2/28/2012		EP-132 8/28/2012		EP-133 2/29/2012		EP-133 8/22/2012		EP-135 2/28/2012	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)																	
Antimony	0.0060	0.108	0.107	0.0371	0.0377	0.0329	0.0328	0.00542	0.00572	0.00449 J	0.00468 J	0.00283 J	0.00274 J	<0.00161	0.00161 J	<0.00161	<0.00161
Arsenic	0.010	0.319	0.302	1.53	1.56	1.42	1.42	1.63	1.72	1.53	1.57	2.16	2.3	2.73	2.68	2.49	2.56
Barium	2.0	0.0389	0.0347	0.0249	0.0254	0.0227	0.0226	0.0224	0.022	0.0235	0.0222	0.0344	0.0335	0.0338	0.0331	0.0175	0.0129
Cadmium	0.0050	<0.000854	<0.000854	0.00138 J	0.00138 J	<0.000854	<0.000854	<0.000854	0.00152 J	<0.000854	<0.000854	0.00127 J	0.00148 J	<0.000854	<0.000854	<0.000854	0.00136 J
Chromium	0.10	0.00489 J	0.00321 J	<0.014	0.00182 J	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	0.0017 J	<0.0014
Cobalt	0.022	<0.00136	<0.00136	<0.0136	0.00186 J	<0.00136	<0.00136	<0.00136	0.00193 J	<0.00136	<0.00136	<0.00136	0.00184 J	0.00136 J	0.00176 J	<0.00136	0.00137 J
Copper	1.3	0.0181	0.00985 J	0.0403 J	0.048	<0.002	<0.002	0.0287	0.026	0.00266 J	0.00279 J	0.00214 J	<0.002	<0.002	<0.002	0.00748 J	0.00514 J
Iron	--	0.258	<0.101	<1.01	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	0.15 J	<0.101	<0.101	0.716	0.536	<0.101
Lead	0.015	0.00564	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	0.00202 J	0.000881 J	0.00199 J	<0.000733	0.00143 J	<0.000733	0.000865 J	0.000736 J	0.00184 J	<0.000733
Mercury	0.0020	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.105	0.107	0.422	0.429	0.506	0.481	0.266	0.268	0.272	0.273	0.321	0.319	0.304	0.301	0.309	0.29
Nickel	1.5	<0.00217	<0.00217	<0.0217	<0.00217	<0.00217	<0.00217	0.0249	0.0266	0.0262	0.0269	0.0314	0.0303	0.0327	0.0298	0.0129	0.0126
Selenium	0.050	0.0308	0.0317	0.149	0.136	0.155	0.152	0.365	0.348	0.428	0.421	0.0585	0.0599	0.0126	0.0119	0.199	0.186
Thallium	0.0020	<0.000693	<0.000693	<0.00558 UJ	<0.00497 UJ	0.00358	0.00394	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	0.000851 J	0.00178 J	<0.000693	<0.000693
Zinc	22	<0.0234 UJ	<0.0126 UJ	0.0625 J	0.0653	<0.00355	<0.00355	0.0656	0.067	<0.00577 UJ	<0.00355	0.00809 J	0.0118 J	0.00584 J	0.00592 J	0.0199 J	0.0182 J
Water Quality Parameters (mg/L)																	
Aluminum	73	0.333		<0.0225		<0.0225		<0.0225		<0.0225		0.0574		<0.0225		0.681	
Calcium	--	72.2		141		151		187		209		154		156		479	
Magnesium	--	54.4		55.1		62.3		41.3		47.2		39.5		49.2		139	
Manganese	10	0.0188 J		0.0141 J		0.0536		0.0131 J		0.057		0.209		0.512		0.0582	
Potassium	--	13.3		56.4		67.6		45.8		38.9 J		34.2		38.6		20.7	
Sodium	--	644		594		747		836		684		873		923		1190	
Chloride	--	318		332		316		320		304		341		348		945	
Fluoride	4.0	4.06		3.57		3.35		3.35		3.76		3.2		0.344		2.08	
Nitrate	10	--		--		--		--		--		--		--		--	
Nitrate + Nitrite	10	7.67		7.18		7.35		8.83		8.54		2		<0.8		57.6	
Nitrite	1.0	--		--		--		--		--		--		--		--	
Sulfate	--	924		1020		1070		1320		1410		1240		1310		2940	
Sulfide	--	0.026 J		<0.0131		<0.0131		<0.02 UJ		0.048 J		0.02 J		<0.0131		<0.029 UJ	
Total Alkalinity	--	386		385		381		368		368		388		386		304	
Total Dissolved Solids	--	2260		2720		2680		2860		3100		2940		3070		6490	
Total Organic Carbon	--	2.19		2.75		2.45		2.88		2.73		2.85		<3.93 UJ		2.77	
Total Suspended Solids	--	11.2		<3		<3		<3		<3		4.8		<3		18.2	

Notes:

Bolded value = Result exceeded TRRP Protective Concentration Limit

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

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Table 1
2012 Groundwater Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameters	GW ^{GW_{ing}} Commercial- Industrial	EP-135 8/27/2012		EM-2 2/24/2012		EM-2 8/29/2012		MW-1 2/29/2012		MW-1 2/23/2012		MW-2 2/29/2012		MW-2 8/23/2012		MW-9D 3/27/2012	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)																	
Antimony	0.0060	<0.00161	<0.00161	0.00424 J	<0.00161	0.00373 J	0.00345 J	0.00871	0.00868	0.00528	0.00524	<0.00161	<0.00161	<0.00161	<0.00161	0.00216 J	0.00216 J
Arsenic	0.010	2.01	2.01	0.361	0.361	0.341	0.365	1.17	1.25	1.15	1.12	1.11	1.12	0.796	0.803	0.672	0.682
Barium	2.0	0.0149	0.0141	0.0288	0.0274	0.0249	0.0238	0.0406	0.0404	0.0409	0.0405	0.0751	0.0719	0.0595	0.0608	0.0285	0.0276
Cadmium	0.0050	<0.000854	<0.000854	0.00262	0.00156 J	0.00104 J	<0.000854	0.00139 J	0.00135 J	<0.000854	<0.000854	0.00227	0.0019 J	<0.000854	<0.000854	<0.000854	<0.000854
Chromium	0.10	<0.0014	<0.0014	0.00772	0.00347 J	0.00212 J	0.00159 J	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.00140	<0.00140
Cobalt	0.022	<0.00136	<0.00136	<0.00136	0.00209 J	<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	<0.002	<0.002	0.125	0.0605	0.04	0.0138	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00200	<0.00200
Iron	--	<0.101	<0.101	0.647	<0.101	0.385	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101
Lead	0.015	<0.000733	<0.000733	0.0747	0.00618	0.0327	0.00327 J	<0.000733	<0.000733	<0.000733	<0.000733	0.000954 J	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733
Mercury	0.0020	<0.00013	<0.00013	0.000854 J	<0.00013	0.00031 J	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.000130	<0.000130
Molybdenum	0.37	0.329	0.337	0.258	0.255	0.264	0.275 J	0.454	0.458	0.474	0.445	0.665	0.652	0.708	0.732	0.503	0.475
Nickel	1.5	0.0134	0.0135	0.013	0.0112	0.00713	0.00734	0.00313 J	0.00292 J	0.00363 J	0.00366 J	0.00528	0.00507	0.00459 J	0.00437 J	<0.00217	0.00228 J
Selenium	0.050	0.149	0.148	0.149	0.144	0.119	0.124	0.0844	0.0879	0.0994	0.0925	0.0112	0.0112	0.00546	0.00506	0.154	0.153
Thallium	0.0020	<0.000693	<0.000693	<0.000693	0.00117	<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	0.131	0.126	<0.021 UJ	0.00693 J	<0.00355	<0.00355	<0.00355	<0.00355	<0.00355	0.00368 J	<0.00355	<0.00355	<0.00355	0.00441 J
Water Quality Parameters (mg/L)																	
Aluminum	73	<0.0225		0.362		0.337		<0.0225		<0.0225		0.0314 J		<0.0225		<0.0225	
Calcium	--	527		136		138		130		139		132		128		160	
Magnesium	--	161		82.4		64.9		47.1		61		45.2		55.7		62.3	
Manganese	10	0.296		0.0128 J		0.0125 J		0.0626		0.183		0.0794		0.0859		0.078	
Potassium	--	15.3 J		14.6		14.1		41.9		49.4		58.7		68.6		40.2	
Sodium	--	1210		720		671		423		394		761		508		669	
Chloride	--	696		211		342		260		269		285		236		335	
Fluoride	4.0	2.53		2.18		2.26		3.84		3.22		3.38		3.42		3.3	
Nitrate	10	--		--		--		--		--		--		--		--	
Nitrate + Nitrite	10	<0.2		16.9		16.8		3.4		3.27		1.78 J		<0.8		4.28	
Nitrite	1.0	--		--		--		--		--		--		--		--	
Sulfate	--	1890		741		1280		820		852		1100		1150		1120	
Sulfide	--	0.059		<0.0131		0.027 J		0.024 J		<0.0131		0.022 J		<0.0131		<0.0131	
Total Alkalinity	--	263		374		335		316		328		364		379		355	
Total Dissolved Solids	--	6120		3460		2670		2170		2240		2560		2630		2460	
Total Organic Carbon	--	2.79		2.29		3.06		1.69		1.98		2.58		2.76		<3.33 UJ	
Total Suspended Solids	--	<3		23.6		9.4		<3		<3		3.8		<3		<3	

Notes:

Bolded value = Result exceeded TRRP Protective Concentration Limit

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
2012 Groundwater Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameters	GW ^{GW_{ing}} Commercial- Industrial	MW-9D 8/24/2012		MW-9S 3/27/2012		MW-9S 8/24/2012		MW-10D 3/27/2012		MW-10D 8/24/2012		MW-10S 3/27/2012		MW-10S 8/24/2012		MW-11D 3/27/2012	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)																	
Antimony	0.0060	<0.00161	<0.00161	0.0058	0.00611	0.0034 J	0.00334 J	0.00225 J	0.00218 J	<0.00161	<0.00161	0.00205 J	0.00235 J	<0.00161	<0.00161	0.00260 J	0.00286 J
Arsenic	0.010	0.688	0.666	1.07	1.04	0.809	0.787	1.31	1.3	1.13	1.1	0.235	0.242	0.344	0.381	0.234	0.246
Barium	2.0	0.0299	0.0303	0.0309	0.0295	0.026	0.0248	0.0239	0.0238	0.0232	0.0229	0.0345	0.0329	0.0322	0.0359	0.0263	0.0262
Cadmium	0.0050	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	0.000863 J	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854
Chromium	0.10	<0.0014	<0.0014	<0.00140	<0.00140	<0.0014	<0.0014	<0.00140	<0.00140	<0.0014	<0.0014	<0.00140	<0.00140	<0.0014	<0.0014	<0.00140	<0.00140
Cobalt	0.022	<0.00136	<0.00136	<0.00136	0.00155 J	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	<0.00136	0.00148 J	<0.00136	<0.00136	<0.00136	<0.00136
Copper	1.3	<0.002	<0.002	<0.00200	<0.00200	<0.002	<0.002	0.00327 J	0.00362 J	<0.002	<0.002	<0.00200	<0.00200	<0.002	<0.002	<0.00200	<0.00200
Iron	--	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	0.125 J	<0.101	<0.101	0.378	0.339
Lead	0.015	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	0.00101 J	0.000811 J	0.00102 J	<0.000733	0.000981 J	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733
Mercury	0.0020	<0.00013	<0.00013	0.000205 J	<0.000130	<0.00013	<0.00013	<0.000130	<0.000130	<0.00013	<0.00013	<0.000130	<0.000130	<0.00013	<0.00013	<0.000130	<0.000130
Molybdenum	0.37	0.513	0.512	0.408	0.407	0.481	0.468	0.495	0.49	0.553	0.547	0.498	0.492	0.537	0.561	0.547	0.551
Nickel	1.5	<0.00217	0.00242 J	0.00346 J	0.00364 J	0.00349 J	0.00348 J	0.00238 J	0.00239 J	<0.00217	<0.00217	<0.00217	0.00223 J	0.00237 J	0.00246 J	<0.00217	<0.00217
Selenium	0.050	0.146	0.15	0.00216 J	0.00208 J	0.0719	0.0719	0.151	0.148	0.136	0.134	0.15	0.152	0.151	0.163	0.0772	0.0774
Thallium	0.0020	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	0.000954 J	<0.000693	<0.000693	<0.000693	0.00209	<0.000693	<0.000693
Zinc	22	<0.00355	<0.00355	0.00357 J	0.00768 J	<0.00355	<0.00355	0.00554 J	0.00561 J	<0.00355	<0.00355	0.00713 J	0.00475 J	<0.00355	<0.0173 UJ	<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		0.0251 J	
Calcium	--	202	145			141	137			150	135			151	120		
Magnesium	--	89.3	51.7			63.8	54.3			70.4	45.3			65	38.5		
Manganese	10	0.0324 J	0.517			0.337	0.0198 J			0.0198 J	0.159			0.0694	0.155		
Potassium	--	52.7	42.8			41.8	42.4			45.4 J	40.2			46.4 J	44.8		
Sodium	--	806	482			485	583			627	495			795	560		
Chloride	--	257	342			287	319			305	308			294	315		
Fluoride	4.0	3.02	3.08			2.95	3.56			3.68	3.24			4.01	3.66		
Nitrate	10	--	--			--	--			--	--			--	--		
Nitrate + Nitrite	10	3.43	<1			2.12	4.53			2.84	3.78			1.63	2.44 J		
Nitrite	1.0	--	--			--	--			--	--			--	--		
Sulfate	--	801	1100			988	1100			906	1070			998	1130		
Sulfide	--	<0.0131	<0.0131			<0.0131	<0.0131			0.037 J	0.014 J			0.032 J	<0.0131		
Total Alkalinity	--	354	329			318	360			369	359			356	364		
Total Dissolved Solids	--	2990	2120			2270	2380			2610	2270			2530	2330		
Total Organic Carbon	--	2.58	<2.43 UJ			2.02	<2.63 UJ			2.86	<2.53 UJ			2.84	<2.83 UJ		
Total Suspended Solids	--	3.6	<3			<3	<3			<3	<3			<3	<3		

Notes:

Bolded value = Result exceeded TRRP Protective Concentration Limit

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
2012 Groundwater Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameters	GW _{Ing} Commercial-Industrial	MW-11D 8/24/2012		MW-11S 3/27/2012		MW-11S 3/1/2012		OBS-1 3/1/2012		OBS-1 8/22/2012	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)											
Antimony	0.0060	<0.00161	<0.00161	0.00251 J	0.00263 J	<0.00161	<0.00161	0.0435	0.0388	0.0358	0.0349
Arsenic	0.010	0.296	0.296	0.0388	0.0369	0.0599	0.0574	1.78	1.77	1.66	1.65
Barium	2.0	0.023	0.0234	0.0325	0.0299	0.0282	0.0275	0.0268	0.0245	0.0257	0.023
Cadmium	0.0050	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	0.00209	0.00122 J	0.000944 J	0.000942 J
Chromium	0.10	<0.0014	<0.0014	<0.00140	<0.00140	<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
Copper	1.3	<0.002	<0.002	<0.00200	<0.00200	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Iron	--	0.168 J	0.17 J	0.133 J	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101
Lead	0.015	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733	<0.000733
Mercury	0.0020	<0.00013	<0.00013	<0.000130	<0.000130	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.624	0.619	0.659	0.643	0.684	0.66	0.449	0.42	0.455	0.437
Nickel	1.5	<0.00217	<0.00217	0.00260 J	0.00264 J	0.00234 J	<0.00217	0.00462 J	0.00388 J	0.00289 J	0.00279 J
Selenium	0.050	0.0509	0.0498	0.0214	0.0198	0.0432	0.0414	0.222	0.205	0.182	0.197
Thallium	0.0020	<0.000693	<0.000693	<0.000693	0.00101	<0.000693	<0.000693	0.0163	0.0167	0.0158	0.0151
Zinc	22	<0.00355	<0.00355	<0.00355	<0.00355	<0.00355	<0.00355	0.0392	0.0357	0.0271	0.0258
Water Quality Parameters (mg/L)											
Aluminum	73	<0.0225		0.0613		<0.0225		<0.0225		<0.0225	
Calcium	--	132		129		136		149		134	
Magnesium	--	58.7		41.6		62.3		68.7		70.8	
Manganese	10	0.143		0.0898		0.113		<0.0116		<0.0116	
Potassium	--	52.1		32.5		37.9		54.8		50.7	
Sodium	--	711		567		705		844		849	
Chloride	--	313		291		340		373		352	
Fluoride	4.0	3.44		3.36		3.18		2.9		0.481	
Nitrate	10	--		--		--		--		--	
Nitrate + Nitrite	10	0.455 J		<1		0.335 J		10.2		8.76	
Nitrite	1.0	--		--		--		--		--	
Sulfate	--	1110		1060		1220		1310		1200	
Sulfide	--	<0.0131		<0.0131		<0.0131		0.026 J		<0.0131	
Total Alkalinity	--	356		350		359		416		397	
Total Dissolved Solids	--	2400		2240		2440		3050		2770	
Total Organic Carbon	--	2.75		<2.72 UJ		2.7		2.69		<3.84 UJ	
Total Suspended Solids	--	<3		4		<3		<3		4.4	

Notes:

Bolded value = Result exceeded TRRP Protective Concentration Limit

TRRP Protective Concentration Limit = ^{GW}GW_{ino} 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

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Table 2
2012 Surface Water Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameter	TRRP Screening Level	SEP-1 3/5/2012		SEP-1 8/23/2012		SEP-2 3/5/2012		SEP-2 8/23/2012		SEP-3 3/5/2012		SEP-3 8/23/2012	
		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	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161
Arsenic	0.010	<0.0103 UJ	<0.00938 UJ	0.00978	0.00677	0.167	0.129	0.0096	0.00717	0.0168	0.0137	0.00929	0.00674
Barium	2.0	0.0337	0.0321	0.225	0.0944	0.0591	0.0553	0.233	0.0979	0.037	0.0311	0.215	0.0909
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	0.0103	<0.0014	<0.0014	<0.0014	0.00987	<0.0014	<0.0014	<0.0014	0.00919	<0.0014
Cobalt	0.022	<0.00136	0.00251 J	0.00486 J	0.00434 J	<0.00136	<0.00136	0.00465 J	0.00332 J	<0.00136	0.0026 J	0.00413 J	<0.00136
Copper	1.3	<0.002	<0.00206 UJ	0.015	<0.002	<0.00488 UJ	<0.002	0.0116	<0.002	<0.00401 UJ	<0.00215 UJ	0.011	<0.002
Iron	--	0.168 J	<0.101	8.93	<0.101	0.548	<0.101	8.33	<0.101	0.298	<0.101	7.83	<0.101
Lead	0.015	<0.000733	<0.000733	0.00899	<0.000733	0.00673	0.000753 J	0.00828	<0.000733	0.00236 J	<0.000733	0.00764	0.00109 J
Mercury	0.0020	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.0166	0.0166	0.0116	<0.0101 UJ	0.205	0.198	0.0103	<0.00988 UJ	0.0187	0.0184	0.00965	<0.00854 UJ
Nickel	1.5	<0.00217	<0.00217	0.0123	<0.00217	0.00383 J	0.00328 J	0.0124	<0.00217	<0.00217	<0.00217	0.0111	<0.00217
Selenium	0.050	0.00108 J	<0.00108	<0.00108	<0.00108	0.0174	0.00875 J	<0.00108	<0.00108	0.00338 J	0.00271 J	<0.00108	<0.00108
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	0.0257	0.0257	0.0335	<0.00355	0.00546 J	<0.00355	0.0362	<0.00355	0.0292	0.0248 J	0.03	<0.00355
Water Quality Parameters (mg/L)													
Aluminum	73	0.154		13.8		0.49 J		13.1		0.3		12.1	
Calcium	--	90.8		102		125		105		90.5		98.6	
Magnesium	--	22.1		20		75.7		21.2		22.4		19.8	
Manganese	10	0.228		0.361		0.372		0.351		0.238		0.315	
Potassium	--	12.9		10		27.9		10.1		13.1		9.95	
Sodium	--	468		90.4		883		96.8		461		96.8	
Chloride	--	502		98.5		749		109		494		100	
Fluoride	4.0	1.16		1.06		2.16		1.17		1.23		1.13	
Nitrate	10	--		--		--		--		--		--	
Nitrate + Nitrite	10	9.61		1.09		2.48 J		1.09		9.8		1.24	
Nitrite	1.0	--		--		--		--		--		--	
Sulfate	--	558		155 J		1250		155 J		566		155 J	
Sulfide	--	<0.021 UJ		<0.0131		<0.023 UJ		<0.0131		<0.019 UJ		<0.0131	
Total Alkalinity	--	174		150		251		143		178		141	
Total Dissolved Solids	--	1920		568		3360		572		1880		544	
Total Organic Carbon	--	5.5		3.7		6.55		3.75		6.11		3.29	
Total Suspended Solids	--	9.6		562		27.2		536		22.4		404	

Notes:

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- mg/L = milligrams per liter; "--" = Not applicable or not analyzed
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- J = Estimated value; UJ = Estimated reporting limit

Table 2
2012 Surface Water Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameter	TRRP Screening Level	SEP-4 3/5/2012		SEP-4 8/23/2012		SEP-6 3/5/2012		SEP-6 8/23/2012		SEP-7 3/5/2012		SEP-7 8/23/2012	
		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	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161
Arsenic	0.010	0.0898	0.0746	0.00948	0.00691	0.0146	0.0139	0.00864	0.00589	0.0168	0.0151	0.00826	0.00603
Barium	2.0	0.0594	0.0606	0.232	0.0986	0.0366	0.0333	0.224	0.0911	0.0316	0.0305	0.228	0.0931
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	0.011	<0.0014	<0.0014	<0.0014	0.00958	<0.0014	<0.0014	<0.0014	0.0102	<0.0014
Cobalt	0.022	<0.00136	0.0027 J	0.00499 J	0.00419 J	<0.00136	0.00257 J	0.00415 J	0.00302 J	<0.00136	0.00212 J	0.00468 J	0.00389 J
Copper	1.3	<0.00425 UJ	<0.002	0.0117	<0.002	<0.00297 UJ	<0.00311 UJ	0.0118	<0.002	<0.00737 UJ	<0.002	0.0158	<0.002
Iron	--	0.343	<0.101	9.22	<0.101	0.249 J	<0.101	8.04	<0.101	0.217 J	<0.101	8.73	<0.101
Lead	0.015	0.0035 J	<0.000733	0.0084	<0.000733	0.00187 J	<0.000733	0.00749	<0.000733	0.00578	<0.000733	0.00921	<0.000733
Mercury	0.0020	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.0918	0.0905	0.00827	<0.00888 UJ	0.0191	0.0197	0.00862	<0.00837 UJ	0.0179	0.0183	0.00882	<0.00862 UJ
Nickel	1.5	0.00275 J	0.0026 J	0.013	<0.00217	<0.00217	<0.00217	0.0115	<0.00217	<0.00217	<0.00217	0.0125	<0.00217
Selenium	0.050	0.00887	0.00789	<0.00108	<0.00108	0.00251 J	0.00233 J	<0.00108	<0.00108	0.00184 J	0.00144 J	<0.00108	<0.00108
Thallium	0.0020	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	0.000801 J	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693
Zinc	22	0.00571 J	0.00647 J	0.0351	<0.00355	0.0248 J	0.0224 J	0.0309	<0.00355	0.0271	0.0251	0.0323	<0.00355
Water Quality Parameters (mg/L)													
Aluminum	73	0.235		14.3		0.248		12.4		0.202		13.2	
Calcium	--	121		107		93.9		100		84.4		104	
Magnesium	--	68.4		21.3		21.9		21.6		20		20.1	
Manganese	10	0.677		0.361		0.249		0.332		0.204		0.314	
Potassium	--	18.6		10.3		12.8		9.95		12		11.7	
Sodium	--	848		90.1		423		96.6		435		91.9	
Chloride	--	616		94.6		512		100		497		96.7	
Fluoride	4.0	1.84		1.19		1.23		0.823		1.21		0.851	
Nitrate	10	--		--		--		--		--		--	
Nitrate + Nitrite	10	2.8		1.06		9.19		1.24		9.45		1.08	
Nitrite	1.0	--		--		--		--		--		--	
Sulfate	--	1090		149 J		588		157 J		565		153 J	
Sulfide	--	<0.03 UJ		<0.0131		<0.019 UJ		<0.0131		<0.021 UJ		<0.0131	
Total Alkalinity	--	269		141		188		142		176		150	
Total Dissolved Solids	--	2910		534		1560		572		1870		555	
Total Organic Carbon	--	6.56		3.29		5.57		3.17		5.48		3.19	
Total Suspended Solids	--	16		554		23.6		492		39.2		510	

Notes:

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- J = Estimated value; UJ = Estimated reporting limit

Table 2
2012 Surface Water Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameter	TRRP Screening Level	SEP-9 3/5/2012		SEP-9 8/23/2012		SEP-10 3/5/2012		SEP-10 8/23/2012		SEP-11 3/5/2012		SEP-11 8/23/2012	
		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	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161
Arsenic	0.010	<0.00886 UJ	<0.00887 UJ	0.00865	0.00548	0.239	0.165	0.00776	0.00631	0.183	0.133	0.00774	0.0058
Barium	2.0	0.0321	0.0288	0.233	0.0884	0.0583	0.0543	0.221	0.0946	0.0616	0.0609	0.214	0.0976
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	0.0113	<0.0014	0.00281 J	<0.0014	0.0088	<0.0014	<0.0014	<0.0014	0.0101	<0.0014
Cobalt	0.022	<0.00136	0.00222 J	0.00506	0.00381 J	<0.00136	<0.00136	0.00417 J	0.00333 J	<0.00136	0.00213 J	0.0045 J	0.00442 J
Copper	1.3	<0.00259 UJ	<0.00343 UJ	0.0144	<0.002	<0.00248 UJ	<0.002	0.0103	<0.002	<0.00254 UJ	<0.002	0.0106	<0.002
Iron	--	0.15 J	<0.101	9.51	<0.101	0.628	<0.101	7.62	<0.101	0.774	0.184 J	8.65	<0.101
Lead	0.015	<0.000733	<0.000733	0.00975	<0.000733	0.0025 J	<0.000733	0.00702	<0.000733	0.00266 J	<0.000733	0.00752	<0.000733
Mercury	0.0020	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.0153	0.0146	0.00855	<0.00815 UJ	0.214	0.193	0.00779	<0.00855 UJ	0.182	0.188	0.00785	<0.00835 UJ
Nickel	1.5	<0.00217	<0.00217	0.0134	<0.00217	0.00273 J	0.00237 J	0.0109	<0.00217	0.003 J	0.00287 J	0.0118	<0.00217
Selenium	0.050	0.00117 J	<0.00108	<0.00108	<0.00108	0.0108	0.00697	<0.00108	<0.00108	0.00669	0.00581	<0.00108	<0.00108
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	0.0267	0.0323	0.0376	<0.00355	0.0052 J	0.00394 J	0.0286	<0.00355	0.00481 J	<0.00355	0.0317	<0.00355
Water Quality Parameters (mg/L)													
Aluminum	73	0.136		14.9		0.287		11.7		0.463		13.5	
Calcium	--	81.8		111		133		97.5		136		98.6	
Magnesium	--	19.2		22.1		60.4		18.9		70.4		20.3	
Manganese	10	0.18		0.33		0.394		0.282		0.556		0.288	
Potassium	--	12.4		11.8		24.2		11.5		25		12.1	
Sodium	--	426		94.1		768		88.9		949		89.9	
Chloride	--	480		97.4		601		96.1		723		98.9	
Fluoride	4.0	1.11		0.872		2.22		0.845		2.08		0.833	
Nitrate	10	--		--		--		--		--		--	
Nitrate + Nitrite	10	10		1.07		<1		1.09		<1		1.09	
Nitrite	1.0	--		--		--		--		--		--	
Sulfate	--	538		153 J		1000		151 J		1140		153 J	
Sulfide	--	<0.023 UJ		<0.0131		<0.036 UJ		0.02 J		<0.031 UJ		<0.0131	
Total Alkalinity	--	164		146		309		147		308		150	
Total Dissolved Solids	--	1830		550		2700		555		3130		543	
Total Organic Carbon	--	5.21		3.21		4.19		3.1		5.23		3.08	
Total Suspended Solids	--	12		554		94.4		524		39.2		420	

Notes:

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- mg/L = milligrams per liter; "--" = Not applicable or not analyzed
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- J = Estimated value; UJ = Estimated reporting limit

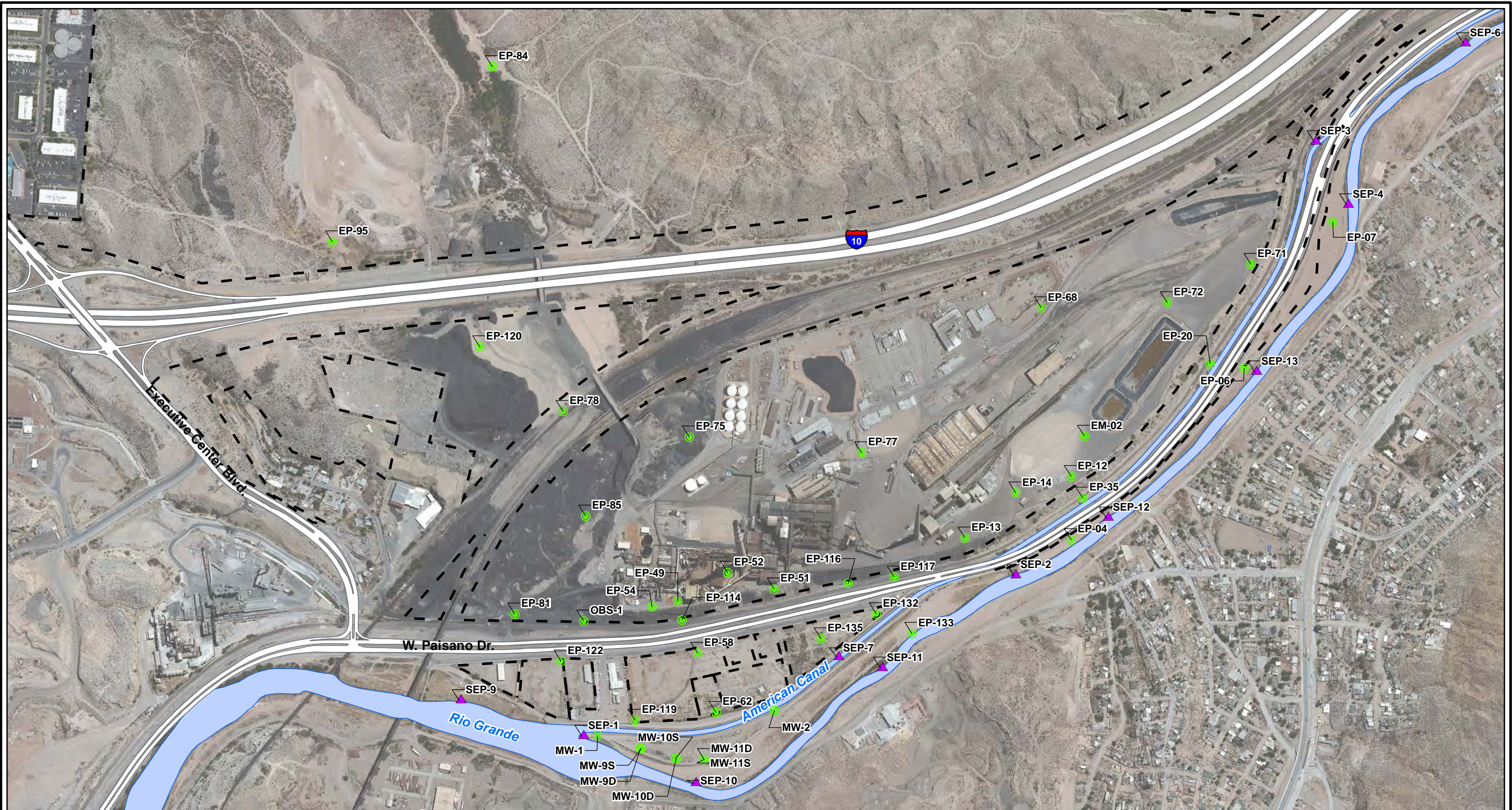
Table 2
2012 Surface Water Results with Qualifiers
Former ASARCO Smelter Site
El Paso, Texas

Parameter	TRRP Screening Level	SEP-12 3/5/2012		SEP-12 8/23/2012		SEP-13 3/5/2012		SEP-13 8/23/2012	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (mg/L)									
Antimony	0.006	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161	<0.00161
Arsenic	0.010	0.124	0.107	0.00823	0.0059	0.122	0.111	0.00626	0.00524
Barium	2.0	0.0779	0.0706	0.218	0.0974	0.0821	0.0653	0.209	0.0946
Cadmium	0.0050	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854	<0.000854
Chromium	0.1	<0.0014	<0.0014	0.0101	<0.0014	<0.0014	<0.0014	0.00175 J	<0.0014
Cobalt	0.022	<0.00136	0.00323 J	0.0046 J	0.00453 J	<0.00136	<0.00136	0.0023 J	0.00448 J
Copper	1.3	<0.00396 UJ	<0.00298 UJ	0.0122	<0.002	<0.00376 UJ	<0.00403 UJ	0.00613 J	<0.002
Iron	--	0.733	<0.101	8.74	<0.101	0.873	<0.101	1.14	<0.101
Lead	0.015	0.00561	<0.000733	0.00786	<0.000733	0.00492 J	<0.000733	0.00649	<0.000733
Mercury	0.0020	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013	<0.00013
Molybdenum	0.37	0.137	0.136	0.00741	<0.00858 UJ	0.121	0.116	<0.00612 UJ	<0.00809 UJ
Nickel	1.5	0.0034 J	0.00277 J	0.0126	<0.00217	0.00345 J	0.0026 J	0.00429 J	<0.00217
Selenium	0.050	0.013	0.013	<0.00108	<0.00108	0.00994	0.0101	<0.00108	<0.00108
Thallium	0.0020	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693	<0.000693
Zinc	22	0.00586 J	0.00381 J	0.0339	<0.00355	0.00766 J	0.00435 J	0.0136 J	<0.00355
Water Quality Parameters (mg/L)									
Aluminum	73	0.751		13.4		0.853		2.52	
Calcium	--	110		102		123		101	
Magnesium	--	64.3		19.8		66.4		16.5	
Manganese	10	0.605		0.307		0.74		0.287	
Potassium	--	21.6		12.3		21.4		8.99	
Sodium	--	767 J		90.8		807		110	
Chloride	--	644		99.1		614		94.6	
Fluoride	4.0	1.91		0.805		1.85		0.811	
Nitrate	10	--		--		--		--	
Nitrate + Nitrite	10	2.46 J		1.1		2.37 J		1.09	
Nitrite	1.0	--		--		--		--	
Sulfate	--	1120		153 J		1090		149 J	
Sulfide	--	<0.023 J		<0.0131		<0.038 UJ		<0.0131	
Total Alkalinity	--	256		159		261		146	
Total Dissolved Solids	--	2880		572		2860		571	
Total Organic Carbon	--	5.27		3.05		6.59		3.13	
Total Suspended Solids	--	39.6		460		23.6		514	

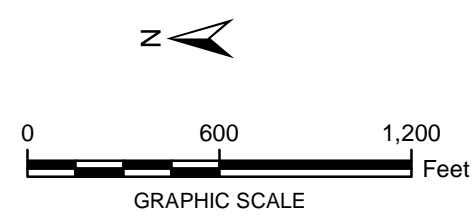
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CITY: Highlands Ranch DIV/GROUP: GIS DB: BG
 Project: (S) (rct #)
 Path: I:\SARCO_ElPaso\GIS\MXD\WaterLevels\Fig_1_Spring2012_Fall2012_GW(SW.mxd) Date: 4/1/2013 Time: 3:34:38 PM



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



FORMER EL PASO SMELTER SITE EL PASO, TEXAS	
SPRING AND FALL 2012 GROUNDWATER AND SURFACE WATER LOCATIONS	
	FIGURE 1

ATTACHMENT A

GROUNDWATER AND SURFACE WATER LABORATORY ANALYTICAL REPORTS

- **Spring 2012 Sampling Event (February/March)**
- **Fall 2012 Sampling Event (August/September)**
(Provided on CD)