

# APPENDIX O

## Background Groundwater Data and Calculations



Table O-1  
 Site Background Metals Concentrations  
 Former ASARCO Smelter Site  
 El Paso, Texas

Analyte	Unit	EP-86	EP-95	EP-129
pH (field)	Standard	7.7 - 8.6	7.55 - 8.7	7.28
Total Dissolved Solids (TDS)	mg/L	1,626 - 1,823	966 - 2,610	2,110 - 2,410
Arsenic (As)	mg/L	<0.002 - 0.03	<0.0026 - 0.0256	0.0019 - 0.014
Cadmium (Cd)	mg/L	<0.0003 - 0.002	<0.00085 - 0.002	<0.00085 - 0.002
Chloride	mg/L	234 - 330	224 - 458	300 - 525
Iron (Fe)	mg/L	<0.1 - 0.7	<0.01 - 1.2	<0.101 - 1.87
Lead (Pb)	mg/L	<0.00073 - 0.006	<0.00073 - 0.00543	<0.00326 - 0.00654
Selenium (Se)	mg/L	<0.00508 - 0.04	0.0066 - 0.04	0.0259 - 0.03
Sulfate (SO4)	mg/L	536 - 782	390 - 972	814 - 1,368

Notes:

Water quality data from ASARCO database from 1999 to 2013 for three wells considered to represent background conditions at the Site: EP-86, EP-95, and EP-129.

**Table O-2**  
**Groundwater Background Metals Statistical Summary**  
**Former ASARCO Smelter Site**  
**El Paso, Texas**

	<b>Number</b>	<b>Average Conc. (mg/L)</b>	<b>Standard Deviation (mg/L)</b>	<b>t<sub>0.95</sub>-value</b>	<b>95% UPL (mg/L)</b>
Aluminum	10	0.174	0.15142	1.812	0.462
Arsenic	44	0.009	0.00650	1.684	0.020
Barium	9	0.025	0.00611	1.833	0.037
Chloride	64	327	58	1.671	425
Chromium	22	0.0045	0.00652	1.717	0.016
Copper	24	0.013	0.02699	1.711	0.060
Fluoride	16	3.44	2.69984	1.746	8.295
Iron	38	0.183	0.30583	1.684	0.704
Molybdeum	9	0.040	0.01515	1.833	0.069
Selenium	45	0.020	0.00928	1.684	0.035
Sulfate	63	748	134	1.671	974
Zinc	35	0.023	0.03579	1.684	0.084

Arsenic	Selenium	Chromium	Copper	Fluoride	Iron	Zinc	Aluminum	Barium	Molybdeun
0.01	0.03	0.0007 U	0.0019 U	2.7	0.2	0.022	0.025 U	0.013 UJ	0.0444
0.017	0.029	0.005 U	0.0025 U	2.6	0.16	0.01 U	0.0036 U	0.0295	0.0441
0.0075 U	0.032	0.003	0.002	2.6	0.05 U	0.01 U	0.379	0.0272	0.0455
0.011	0.031	0.006	0.00045 U	2.6	0.1	0.005 U	0.235	0.0274	0.0499
0.014	0.029	J 0.004 J	0.0007 U	2.7	0.18	0.005 U	0.381	0.0265	0.0468
0.018	0.027	0.004 UJ	0.015	2.6	0.11	0.006	0.173	0.0283	0.049
0.013	0.03	0.006	0.001 J	2.8	0.03	0.013	0.146	0.0259	0.0514
0.01	0.023	0.00045 U	0.0019 U	2.8	0.067	0.0036 U	0.04 UJ	0.033	0.013
0.0025 U	0.027	0.00025 U	0.008	2.58	0.069	0.007	0.333	0.0181	0.0138
0.005 U	0.000815 U	0.00025 U	0.0007 U	13.5	0.235	0.014	0.024 J		
0.00215 U	0.02	J 0.001 U	0.00045 U	2.22	0.066	0.012			
0.0013 U	0.023		UJ 0.00045 U	2.78	0.305	0.004 J			
0.0013 U	0.022	J	UJ 0.003	3.62	0.175 UJ	0.024			
0.00425 U	0.0033 U J	0.0003 U	0.015	2.96	0.049	0.01 U			
0.014	0.005 U	0.005 U	0.016	2.96	0.05 U	0.01 U			
0.017	0.016	J 0.0007 U	0.004	2.95	0.12	0.005 U			
0.00224 U	0.014	J 0.0039 J	0.009		0.05 U	0.1			
0.0025 U	0.011	J 0.0306	0.00055 U		0.05 U	0.009			
0.005 U	0.005 U	0.0131	0.0043 J		0.05 U	0.013			
0.00831	0.01 U	0.00381 J	0.133		0.29	0.0036 U			
0.0101	0.0186	0.00358 J	0.0111		0.015 U	0.004			
0.0093	0.0195	0.0007 U	0.0241		0.019	0.004			
0.00848	0.0192	0.004	0.0268		0.141	0.01			
0.0103	0.0202	0.00271 J	0.0261		0.203	0.026			
0.00961	0.0204				0.136	0.025			
0.0099	0.0208				0.084	0.01			
0.0123	0.0172				0.05	0.003 U			
0.0101	0.02					UJ 0.0527			
0.0109	0.0193					UJ 0.194			
0.0256	0.0215				0.000435 U	0.0375			
0.012	0.0276				0.025	0.0464			
0.007	0.029				0.05 U	0.0498			
0.012	0.025	J			0.377	0.0373			
0.0025 U	0.026				0.495	0.015			
0.0025 U	0.029				0.461	0.00355			
0.0025 U	0.03				0.229 J				
0.005 U	0.000815 U				0.201 J				
0.00215 U	0.005 U				0.126 J				
0.0013 U	0.021				1.87				
0.00425 U	0.0033 U J				0.05 U				
0.03	0.023								
0.017	0.021								
0.014	0.0025 U								
0.00109	J 0.03								
	0.0259								
0.0090	0.0196	0.0045	0.0128	3.4356	0.1826	0.0230	0.1740	0.0254	0.0398
44	45	22	24	16	38	35	10	9	9
0.006498	0.009281	0.006524	0.02699	2.699839	0.305828	0.035791	0.151421	0.006111	0.015152
1.684	1.684	1.717	1.711	1.746	1.684	1.684	1.812	1.833	1.833
0.020	0.035	0.016	0.060	8.295	0.704	0.084	0.462	0.037	0.069