

# APPENDIX E

## Heavy Metals

In 1998, LCRA collected dissolved metals in water and water hardness samples from twenty sites throughout the Colorado River basin. The samples are representative of 19 stream segments in the middle and lower Colorado River watersheds.

The samples were collected using the methods described in the Surface Water Quality Monitoring Procedures Manual using a peristaltic pump with clean c-flex tubing and in-line disposable 0.45-micron filters. The samples were collected into, pre-acidified glass amber bottles. Equipment blanks and field duplicates were also collected for quality assurance.

The samples were analyzed for dissolved aluminum, arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc and hardness. Dissolved metals, except for mercury, were analyzed using EPA analytical method 200.8. Mercury was analyzed using EPA method 7470A. Dissolved metal results are expressed as µg/liter. Hardness samples were collected to determine toxicity. They were analyzed using EPA method 130.2.

The metals data were assessed using TCEQ's 2002 305b assessment methodology. Because there is no assessment methodology for dissolved barium, dissolved mercury, dissolved selenium and total cyanide, these constituents were not assessed.

## Metals Results for Dissolved Metals in Water Sampling in August 1998

### Coastal Complex

Site Description	Seg	Site ID	Mercury mg/L	Aluminum mg/L	Arsenic mg/L	Selenium mg/L	Silver mg/L	Barium mg/L	Cadmium mg/L	Chromium mg/L	Copper mg/L	Lead mg/L	Nickel mg/L	Zinc mg/L
Colorado R at Selkirk Is	1401	12281	<0.2	5.1	3.5	80.5	<1.0	103.0	<1.0	19.9	17.6	<1.0	25.0	<4.0
Colorado River at Wharton	1402	12286	<0.2	20.7	2.5	8.6	<1.0	84.7	<1.0	17.4	3.0	<1.0	22.5	<4.0
Tres Palacios R at FM 521	1501	12515	<0.2	7.5	6.3	95.6	<1.0	192.0	<1.0	19.3	20.2	<1.0	26.0	<4.0

### Lower Watershed

Site Description	Seg	Site ID	Mercury mg/L	Aluminum mg/L	Arsenic mg/L	Selenium mg/L	Silver mg/L	Barium mg/L	Cadmium mg/L	Chromium mg/L	Copper mg/L	Lead mg/L	Nickel mg/L	Zinc mg/L
Cummins Cr at FM 109	1400	12249	<0.2	3.2	3.2	31.0	<1.0	733.0	<1.0	11.5	5.9	<1.0	45.0	<4.0
Gilleland Cr at FM 969	1400	12235	<0.2	4.3	6.1	19.8	<1.0	87.2	<1.0	9.8	10.3	<1.0	47.8	4.1
Colorado River at Bastrop	1428	12462	<0.2	9.0	2	7.9	<1.0	67.1	<1.0	16.9	2.4	<1.0	20.6	<4.0

### Austin Watershed

Site Description	Seg	Site ID	Mercury mg/L	Aluminum mg/L	Arsenic mg/L	Selenium mg/L	Silver mg/L	Barium mg/L	Cadmium mg/L	Chromium mg/L	Copper mg/L	Lead mg/L	Nickel mg/L	Zinc mg/L
Lake Austin at Dam	1403	12294	<0.2	5.7	2	4	<1.0	62.6	<1.0	17.0	2	<1.0	4.5	5.4
Town Lake at Dam	1429	12476	<0.2	4	2	4	<1.0	63.5	<1.0	17.2	2	<1.0	4.8	<4.0
Barton Cr at confl. of Town Lake	1430	12487	<0.2	4	2	4	<1.0	58.4	<1.0	17.6	2	<1.0	4.4	<4.0

Lake Travis Watershed

Site Description	Seg	Site ID	Mercury mg/L	Aluminum mg/L	Arsenic mg/L	Selenium mg/L	Silver mg/L	Barium mg/L	Cadmium mg/L	Chromium mg/L	Copper mg/L	Lead mg/L	Nickel mg/L	Zinc mg/L
Lake Travis at Dam	1404	12302	<0.2	4	2	5.8	<1.0	60.9	<1.0	5.0	2	<1.0	14.3	<4.0
Lake Marble Falls at Dam	1405	12319	<0.2	4	2	7.5	<1.0	70.3	<1.0	5.6	2	<1.0	16.5	<4.0
Pedernales R. at FM 962	1414	12369	<0.2	5.9	3.4	10.9	<1.0	41.0	<1.0	17.3	2	<1.0	14.7	<4.0

Lake LBJ Watershed

Site Description	Seg	Site ID	Mercury mg/L	Aluminum mg/L	Arsenic mg/L	Selenium mg/L	Silver mg/L	Barium mg/L	Cadmium mg/L	Chromium mg/L	Copper mg/L	Lead mg/L	Nickel mg/L	Zinc mg/L
Lake LBJ at Dam	1406	12324	<0.2	4	2.1	8.0	<1.0	77.5	<1.0	5.2	2.5	<1.0	15.8	<4.0
Inks Lake at Dam	1407	12336	<0.2	4	2	7.9	<1.0	88.6	<1.0	5.2	2	<1.0	17.1	<4.0
Llano River at Llano	1415	12384	<0.2	7.8	2.9	5.7	<1.0	46.1	<1.0	10.0	2	<1.0	10.4	<4.0

Lake Buchanan Watershed

Site Description	Seg	Site ID	Mercury mg/L	Aluminum mg/L	Arsenic mg/L	Selenium mg/L	Silver mg/L	Barium mg/L	Cadmium mg/L	Chromium mg/L	Copper mg/L	Lead mg/L	Nickel mg/L	Zinc mg/L
Lake Buchanan at Dam	1408	12344	<0.2	4	2	5.5	<1.0	109.0	<1.0	2.1	2	<1.0	8.2	<4.0
Colorado River at US190	1409	12344	<0.2	9.2	2.4	4	<1.0	78.6	<1.0	7.0	2	<1.0	15.1	<4.0
Colorado River at US 377	1410	12358	<0.2	4	3.4	83.7	<1.0	388.0	<1.0	3.6	15.9	<1.0	47.9	<4.0
San Saba River at US 16	1416	12392	<0.2	6.6	2	4	<1.0	67.8	<1.0	7.8	2	<1.0	17.5	<4.0



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