

**Attachment 5. Summary of water quality data**

**5.1 Data collected by the USGS from 1968-1998 for the Gunnison River at the Whitewater gage (from Butler 2000)**

Parameter	Number of samples	Period collected	Median	Maximum	Minimum	90 <sup>th</sup> percentile concentration
Oxygen, mg/L	244	70-98	9.2	13.7	6.4	11.6
pH	335	68-98	8.1	8.9	6.7	8.4
Fecal coliform, counts/100 ml	108	76-95	58	1,100	1	360
Unionized ammonia, mg/L	142	80-98	.001	.022	0	.004
Unionized ammonia, total mg/L	83	78-92	.001	.011	0	.005
Nitrite mg/L	100	81-98	.01	.06	<.01	.02
Nitrite + nitrate, mg/L	200	70-98	.78	2.9	.1	1.6
Chloride, mg/L	337	68-98	8.2	58	1.9	16
Sulfate, mg/L	337	68-98	310	950	60	670
Boron microgram/L	33	68-71 91-92	50	300	0	140
Hardness, mg/L	337	68-98	360	875	107	608
Arsenic, total Microgram/L	66	75-91	1	7	<1	3
Arsenic Microgram/L	66	75-91	1	7	<1	3
Cadmium Microgram/L	65	75-91	<1	10	<1	2
Chromium Microgram/L	65	75-91	<1	10	<1	2
Copper Microgram/L	65	75-91	2	23	<2	7

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Iron, total Microgram/L	28	75-82	955	8,800	190	3,100
Iron, Microgram/L	170	71-98	13	1,500	<3	60
Lead Microgram/L	66	75-91	1	71	<1	9
Manganese total, Microgram/L	28	75-82	60	260	30	190
Manganese Microgram/L	170	71-98	14	140	<10	40
Mercury, dissolved Microgram/L	64	75-91	<.1	.3	<.1	.1
Nickel, Microgram/L	62	75-91	1	28	<1	4
Selenium, Microgram/L	132	75-98	5	25	<1	10
Selenium, total Microgram/L	28	75-82	10	21	4	19
Silver, Microgram/L	70	75-91	<1	1	<1	<1
Zinc, Microgram/L	66	75-91	7	82	<3	21

Table 5.2. Parameters exceeding the 85<sup>th</sup> percentile or had occasional exceedances of State Standards.

[Chemical constituents are dissolved unless otherwise noted; ammonia for USGS data at station 09144250 is combined dissolved and total data; \*, geometric mean concentration for fecal coliform data; number of exceedances, number of samples that were equal to or greater than the numeric standard; col/100 mL, colonies per 100 milliliters; mg/L, milligrams per liter; µg/L, micrograms per liter; <, less than; --, no data]

Parameter	State standard	USGS Data			STORET Data		
		Number of samples	85th percentile	Number of exceedances	Number of samples	85th percentile	Number of exceedances
<b>Gunnison River at Delta (USGS station 09144250, STORET station 000056)</b>							
Fecal coliform (col/100 mL)	200	11	*51	2	146	*37	31
Un-ionized ammonia (mg/L)	.02	13	.002	0	127	.007	2
Sulfate (mg/L)	250	20	300	8	144	240	20
Iron, total (µg/L)	1,000	11	4,200	5	0	--	--
Selenium (µg/L)	5	20	5.5	7	156	3	4
<b>Gunnison River near Grand Junction (USGS station 09152500, STORET station 000054)</b>							
Fecal coliform (col/100 mL)	200	108	*34	24	176	*76	71
Un-ionized ammonia (mg/L)	.02	142	.003	1	144	.014	15
Sulfate (mg/L)	480	337	598	84	62	650	18
Cadmium (µg/L)	3.1	65	2	3	0	--	--
Iron, total (µg/L)	2,300	28	1,900	4	0	--	--
Lead (µg/L)	24	65	6	2	0	--	--
Manganese (µg/L)	50	170	33	9	0	--	--
Selenium (µg/L)	28	132	9	35	158	12	21
<b>Colorado River near Fruita (STORET station 000049)</b>							
Fecal coliform (col/100 mL)	200	0	--	--	68	*632	54
Un-ionized ammonia (mg/L)	.06	0	--	--	46	.017	1
Selenium, total (µg/L)	17	0	--	--	48	9	0
<b>Colorado River at Loma (STORET station 000050)</b>							
Fecal coliform (col/100 mL)	200	0	--	--	413	*178	228
Un-ionized ammonia (mg/L)	.06	0	--	--	421	.011	4
Cadmium (µg/L)	2.9	0	--	--	91	<0.3	0
Iron, total (µg/L)	2,600	0	--	--	6	6,700	2
Selenium, dissolved (µg/L)	17	0	--	--	37	6.9	0
Selenium, total (µg/L)	17	0	--	--	120	11	7
<b>Colorado River near Colorado-Utah State line (USGS station 09163500)</b>							
Fecal coliform (col/100 mL)	200	121	*70	40	0	--	--
Un-ionized ammonia (mg/L)	.06	151	.003	0	0	--	--
Cadmium (µg/L)	2.9	68	3	11	0	--	--
Iron, total (µg/L)	2,600	27	5,900	11	0	--	--
Mercury (µg/L)	.01	67	.1	<sup>3</sup> 13	0	--	--
Selenium (µg/L)	17	145	8	1	0	--	--

<sup>1</sup> Data are for total selenium.

<sup>2</sup> Standard is a temporary modification, which expires in August 2002. Eighty-one USGS samples and 32 STORET samples were equal to or greater than 5 µg/L.

<sup>3</sup> Number of samples with mercury concentrations equal to or greater than the 0.1-µg/L minimum reporting level.

**10 Evaluation of Water-Quality Data, Lower Gunnison River Basin and Colorado River Downstream from the Aspinall Unit, Colorado**