U.S. Department of the Interior
U.S. Geological Survey

Water-Quality Data for Streams in the Boulder River Watershed, Jefferson County, Montana

By David A. Nimick and Thomas E. Cleasby

Open-File Report 00-99

In cooperation with the
U.S. Department of Agriculture-Forest Service

U.S. Department of the Interior

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April 2000

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CONVERSION FACTORS, ABBREVIATED UNITS, AND ACRONYMS

Multiply	By	To obtain
cubic foot per second (ft^3/s)	0.028317	cubic meter per second
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer

Temperature can be converted to degrees Celsius (°C) or degrees Fahrenheit (°F) by the following equations:

$$°C = 5/9 (°F - 32)$$

$$°F = 9/5 (°C) + 32$$

Abbreviated water-quality units used in this report:

µg/L	micrograms per liter
µm	micrometer
µS/cm	microsiemens per centimeter at 25 degrees Celsius
mg/L	milligrams per liter
mm	millimeter

Acronyms used in this report:

MBMG	Montana Bureau of Mines and Geology
NWQL	National Water-Quality Laboratory of the U.S. Geological Survey
RPD	relative percent difference
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey

WATER-QUALITY DATA FOR STREAMS IN THE BOULDER RIVER WATERSHED, JEFFERSON COUNTY, MONTANA

By David A. Nimick *and* Thomas E. Cleasby

Abstract

Chemical data were collected in the Boulder River watershed of southwestern Montana during 1996-99 as part of a detailed interdisciplinary study characterizing the effects of historical inactive mines on streams in the watershed. This report presents water-quality data collected by the U.S. Geological Survey for physical properties, major ions, nutrients, and trace elements for 62 sites in and near the watershed. Supplementary historical water-quality data for 83 sites also are presented.

INTRODUCTION

Trace elements from mineralized areas and abandoned mine lands affect water quality and aquatic biota in many watersheds of the United States. As part of a cooperative effort with Federal land-management agencies, the U.S. Geological Survey (USGS) implemented an Abandoned Mine Lands Initiative in 1996. The goal of the initiative is to develop a strategy for gathering and communicating the scientific information needed to formulate effective and cost-efficient characterization and remediation of the effects of historical mining using a watershed approach (Buxton and others, 1997). The watershed approach is intended to identify and characterize those sites that have the most profound effect on water and ecosystem quality within the watershed. The strategy is based on understanding the fundamental geologic, hydrologic, geochemical, and biologic processes that cause the environmental degradation often observed downstream from historical mining districts. With this understanding, remediation efforts can be designed and conducted effectively by land-management agencies in a focused and cost-efficient manner. As part of the Abandoned Mine Lands Initiative, pilot studies are being conducted in two watersheds: the Boulder River watershed near Helena, Montana, and the upper Animas River watershed in southwestern Colorado (fig. 1).

Water is the link connecting toxic trace elements derived from inactive, historical mine sites to aquatic biota and, therefore, is an integral component of the assessment of environmental effects associated with past mining activity. Water quality in the Boulder River Abandoned Mine Lands Initiative study area was characterized by systematic sampling of streams throughout the watershed. Water-quality data from this sampling can be used to characterize current environmental conditions in the watershed and determine the seasonal and spatial distribution of trace element concentrations in streams throughout the watershed. These data also can be used to identify the natural and mining-related source of those trace elements, understand the transport of dissolved and particulate trace elements, evaluate the potential for metal toxicity to biota, and provide baseline data for future evaluation of the success of clean-up activities at historical mine sites (Nimick and others, 1999).

Purpose and Scope

The purpose of this report is to present water-quality data for physical properties, major ions, nutrients, and trace elements for water samples collected during 1996-99 in the Boulder River watershed near the town of Basin in Jefferson County, Montana, to support a variety of abandoned mine land studies conducted by the USGS, U.S. Department of Agriculture (USDA-Forest Service), and the Bureau of Land Management. Analytical results are reported for 323 water samples collected by the USGS from 62 sites (fig. 2). Samples were collected at frequencies ranging from one-time site visits to multiple periodic samples collected to determine water-quality conditions over a range of seasonal and annual hydrologic conditions. Quality-assurance data associated with these water-

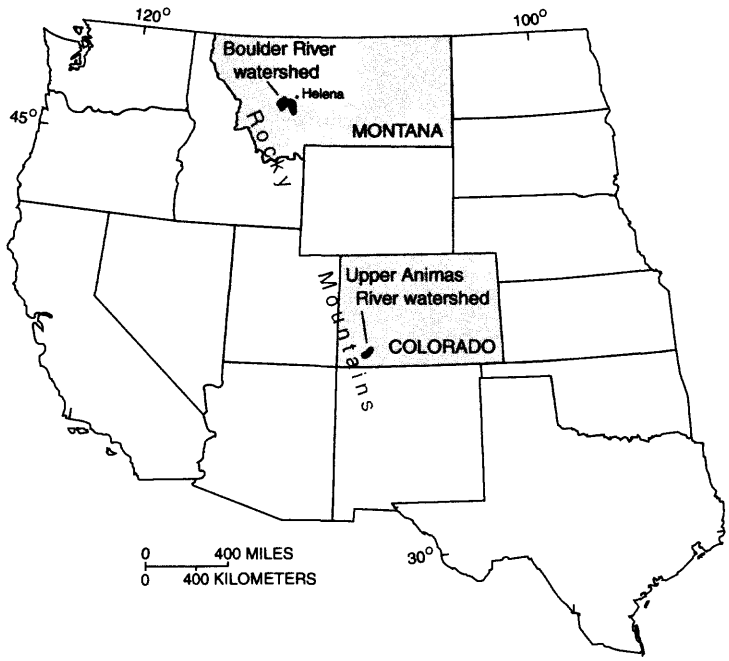

Figure 1. Location of the two watersheds being investigated as pilot studies of the Abandoned Mine Lands Initiative.

quality data are presented. The data-collection efforts were conducted by the USGS in cooperation with the USDA-Forest Service. Historical data from the Montana Bureau of Mines and Geology (MBMG) for selected dissolved trace elements for 83 sites in the watershed (fig. 2) also were compiled and are reported here.

Description of Study Area

The Boulder River watershed study area includes the drainage areas of three large tributaries (Basin, Cataract, and High Ore Creeks) to the Boulder River and the approximately 9-mile reach of the Boulder River that extends from just upstream (site 3) to just downstream (site 58) of these tributaries (fig. 2). The study area does not include the large drainage area of the Boulder River upstream from site 3 or the Boulder River downstream from site 58 to the Jefferson River, even though water quality may be affected by historical mining in this downstream reach. Limited sampling was conducted outside of the study area to document the extent of enriched trace-element concentrations in the Boulder River downstream of the abandoned mine lands and to characterize conditions at locations unaffected by historical mining.

Historical metal-mining activity began in the late 1860s. About 125 inactive mines and prospects are present in the Boulder River watershed. The locations of selected major mines and a smelter are shown on figure 3. Principal metals produced from these mines included silver, gold, lead, zinc, and copper. Mineralization in the Boulder River watershed occurs in quartz veins, and alteration associated with the mineralization is confined to narrow bands around the veins. Ore bodies in the veins, as well as the veins and associated alteration zones, contain sulfide minerals such as pyrite that weather to produce acid and trace elements. The primary effect of mining in the watershed is degraded water quality and aquatic habitat, both of which affect aquatic and fishery resources. Some streams are devoid of fish while others have chronically impaired fisheries (Farag and others, 1999). Inactive mines affect streams through direct discharge of acid drainage from adits, seepage from waste rock and tailings piles, and erosion of mining waste and tailings by storm runoff (Nimick and others, 1999; Farag and others, 1999).

Streamflow in the Boulder River and Basin, Cataract, and High Ore Creeks is typical of mountain

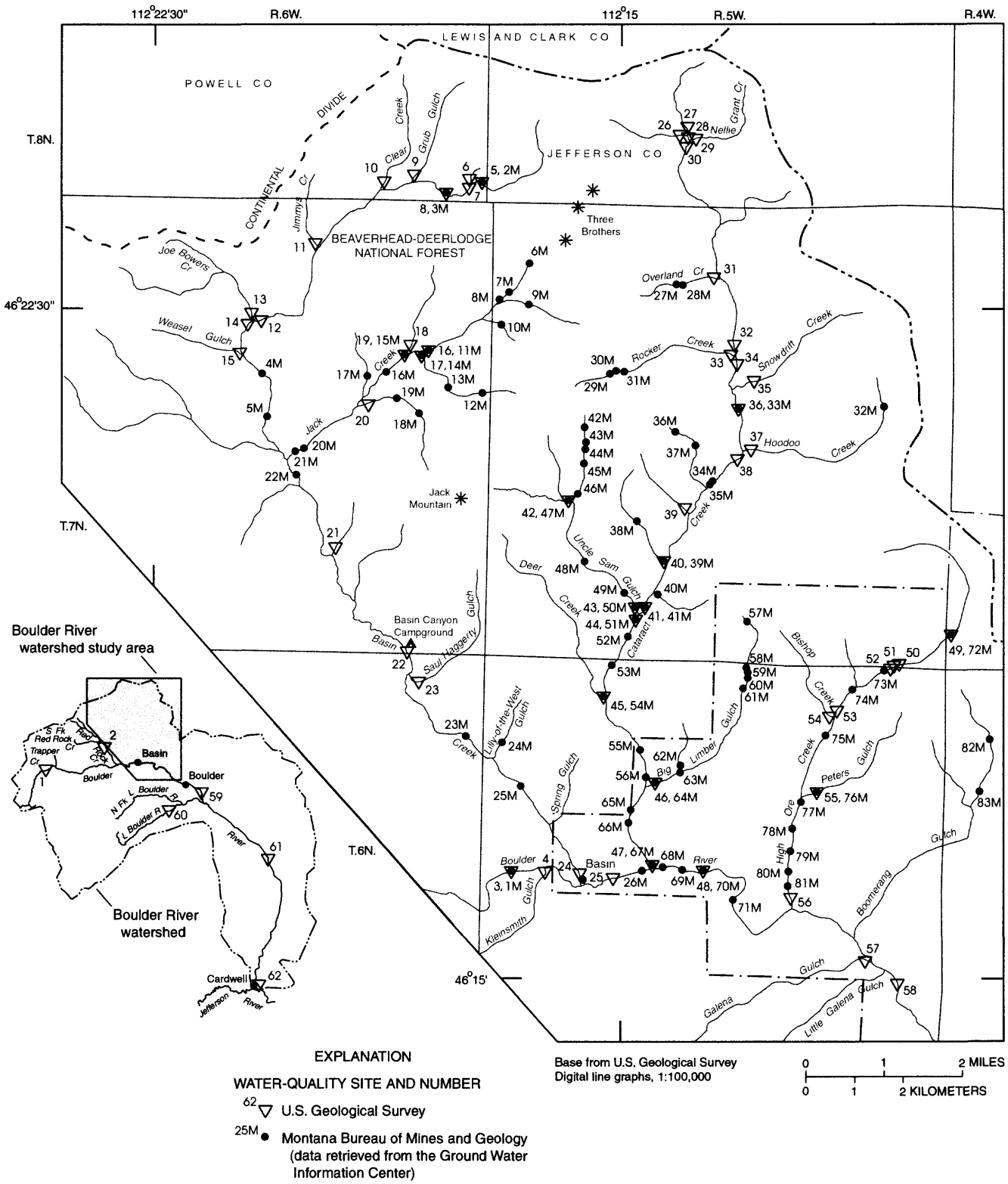

Figure 2. Water-quality sampling sites in the Boulder River watershed, Montana.

streams throughout the northern Rocky Mountains. Streamflow is dominated by snowmelt runoff, which typically occurs sometime between April and June, and is augmented in some years by rain. Streamflow typically peaks in May or June and then decreases as the shallow ground-water system drains. Low streamflow conditions are typical from July to March.

Acknowledgments

The authors acknowledge with appreciation the many individuals who assisted in this study. Particular thanks for assistance are given to Pat Barringer, Robert Wintergerst, and Ray TeSoro with the USDA-Forest Service and Tim M. Bozorth with the Bureau of Land Management. Assisting in the collection of water-quality data were Fred A. Bailey, Michael R. Cannon, Kent A. Dodge, DeAnn M. Dutton, Philip L. Karper, Briant A. Kimball, and Kevin L. Sattler with the USGS. Appreciation is extended to the landowners in the study area for allowing access to their property.

WATER-QUALITY DATA

Water-quality samples were collected for this study by the USGS at 62 sites (table 1) from October 1996 through September 1999. Water-quality data for field parameters, major ions, nutrients, and trace elements are presented in table 2. Water-sampling sites were located throughout the watershed and at locations upstream and downstream from inactive mines (fig. 2). Reference sites located in drainages that had a geologic setting similar to the study area, except without the mineralization, also were sampled to provide a reference for water-quality comparison with mineralized areas. These reference sites (fig. 2) included the Boulder River above Trapper Creek (site 1), Red Rock Creek below South Fork (site 2), and the Little Boulder River above North Fork (site 60). Samples were collected at three sites on the Boulder River (sites 59, 61, and 62) downstream from the study area to determine the extent of trace-element enrichment from the mining district.

Historical data for field parameters and selected dissolved metals for 83 sites (table 3) were compiled and are presented in table 4. Most of these data were collected during inventories of inactive mines in the Boulder River watershed that were conducted by the MBMG (Marvin and others, 1997; Metesh and others, 1994, 1995, 1996). Data were retrieved from the Ground Water Information Center database at the MBMG in Butte, Mont.

Sampling and Processing Methods

Water samples typically were collected from multiple verticals across the stream using depth- and width-integration methods described by Knapton (1985) and Edwards and Glysson (1988). These methods provide a vertically and laterally discharge-weighted sample that is representative of the entire flow through the cross section of a stream. Grab samples were collected when streamflow was too low to allow use of a depth-integrating sampler. Sampling equipment consisted of standard USGS depth-integrating suspended-sediment samplers (DH-81, DH-48, and D-74TM), which are either constructed of plastic or coated with a non-metallic epoxy paint, and equipped with interchangeable nylon nozzles for sampling a wide range of stream depths and velocities.

Field measurements of specific conductance, pH, and water temperature were made during collection of periodic water-quality samples. Samples were processed according to procedures described by Horowitz and others (1994), Ward and Harr (1990), and Knapton (1985). Samples for some constituents were filtered using filters having a pore size of 0.45 µm; analytical data for these samples are considered dissolved. Instantaneous streamflow at the time of sample collection was determined either by direct measurement, estimation, or stage-discharge rating (Rantz and others, 1982).

Laboratory Analysis

Water samples were analyzed by the USGS National Water Quality Laboratory (NWQL) in Arvada and Lakewood, Colo. Initially, samples were analyzed for an extensive suite of trace elements. After reviewing analytical data for high-flow and low-flow samples from many sites throughout the study area, analyses were discontinued for selected trace elements that consistently had concentrations less than the minimum reporting level. Selected samples collected for assessment of aquatic-habitat conditions were analyzed for nutrients. Analytical methods are described by Faires (1993), Fishman and Friedman (1989), Fishman

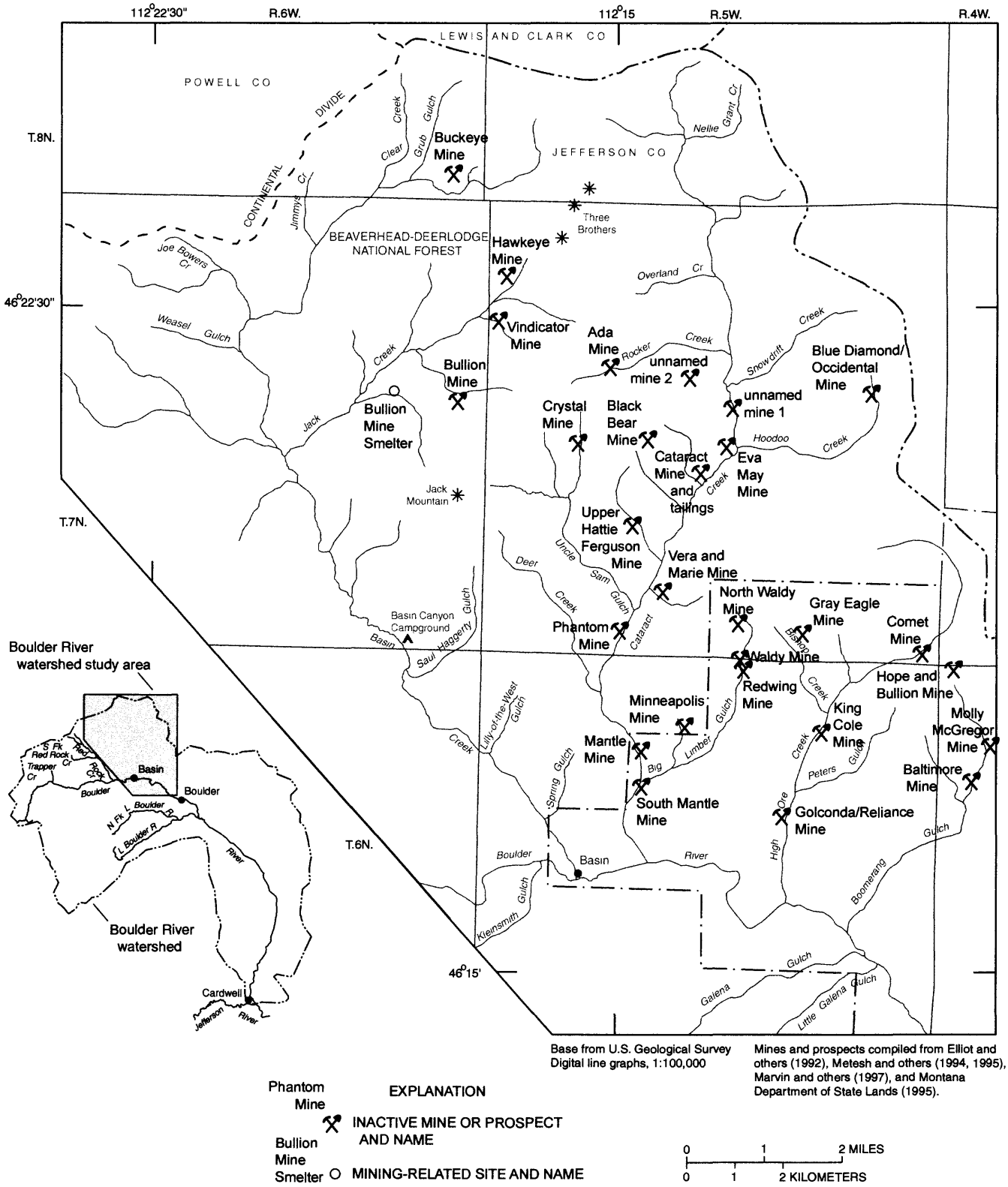

Figure 3. Selected inactive mines, prospects, and mining-related sites in the Boulder River watershed, Montana.

(1993), Garbarino (1999), Garbarino and Struzeski (1998), Hoffman and others (1996), Jones and Garbarino (1999), and Patton and Truitt (1992).

Cross-sectional water samples also were collected for analysis of suspended sediment for most of the water-quality samples (table 2). These samples were analyzed for suspended-sediment concentration and the percentage of suspended sediment finer than 0.062-mm diameter (silt size and smaller) by the USGS Montana District sediment laboratory in Helena, Mont., according to methods described by Guy (1969) and Lambing and Dodge (1993).

Quality-Assurance Data

Data-collection and analytical procedures used in this study incorporated practices designed to control, verify, and assess the quality of sample data. Quality-assurance procedures used for the collection and field processing of water-quality samples are described by Horowitz and others (1994), Ward and Harr (1990), Edwards and Glysson (1988), Knapton and Nimick (1991), and Knapton (1985). Standard procedures used by the NWQL for internal sample handling and quality assurance are described by Friedman and Erdmann (1982), Jones (1987), and Pritt and Raese (1995). Quality-assurance procedures used by the Montana District sediment laboratory are described by Lambing and Dodge (1993).

The quality of analytical results reported for water-quality samples can be evaluated with data from quality-control samples that were submitted from the field and analyzed concurrently in the laboratory with routine samples. These quality-control samples consisted of duplicates and blanks, which provide quantitative information on the precision and bias of the overall field and laboratory process. The total number of quality-control samples represented about 6 percent of the total number of water-quality samples.

In addition to quality-control samples submitted from the field, internal quality-assurance practices at the NWQL are performed systematically to provide quality control of analytical procedures (Pritt and Raese, 1995). These internal practices include analyses of quality-control samples such as calibration standards, standard reference water samples, replicate samples, deionized-water blanks, or spiked samples at a proportion equivalent to at least 10 percent of the sample load.

Duplicate samples are two samples considered to be essentially identical in composition. Precision of analytical results for field duplicates is affected by many sources of variability within the field and laboratory environments, including sample collection, processing, and analysis. For this study, duplicate samples were obtained in the field to provide data on precision (reproducibility) of analytical results for samples exposed to all sources of variability. Duplicate samples were obtained in the field by splitting a single sample into two subsamples, which then were analyzed separately. Analyses of field duplicates are presented in table 5.

Precision of analytical results for any constituent can be determined from the relative percent difference (RPD) of the concentrations of the constituent in duplicate analyses. RPD for each duplicate sample pair is computed from the equation

$$\text{RPD} = \frac{\text{difference between duplicate values}}{\text{mean of duplicate values}} \times 100$$

Analytical data in table 5 generally indicate good precision, with RPD values for most constituents of 10 percent or less. However, the precision of total recoverable analyses for trace elements is less; the RPDs for some analyses are as high as 29 percent for aluminum, arsenic, and copper and almost 50 percent for iron and lead. Although the precision was poor for several samples, the infrequent and random occurrence of affected constituents indicates no systematic analytical problem.

Blank samples of deionized water were routinely analyzed to identify the presence and magnitude of contamination that potentially could bias analytical results. The particular type of blank sample routinely tested was a "field" blank. A field blank is an aliquot of deionized water, which is certified as trace-element free and is processed through the sampling equipment used to collect stream samples. These blanks are then subjected to the same processing (filtration, preservation, transportation, and laboratory handling) as stream samples. Blank samples were analyzed for the same constituents as those of stream samples to identify whether any detectable concentrations exist. Analytical results for field blanks are presented in table 6.

A field blank with constituent concentrations equal to or less than the minimum reporting level for

the analytical method indicates that the entire process of sample collection, field processing, and laboratory analysis is presumably free of significant contamination. If detectable concentrations in field blanks were equal to or greater than twice the minimum reporting level (typical measurement precision at the detection level), the concentrations were noted during data review. Sporadic, infrequent exceedances of twice the minimum reporting level probably represent random contamination or instrument calibration error that is not persistent in the process and which is not likely to cause significant positive bias in a long-term record of analytical results. With the exception noted in the next paragraph, constituent concentrations in field blanks were almost always less than the minimum reporting level. Therefore, the analytical results for field blanks indicate no systematic contamination that would bias the reported water-quality data for stream samples.

At the beginning of this study, all samples were preserved in the field with concentrated nitric acid dispensed from a pre-filled and sealed glass vial. Blank samples collected during this period consistently had dissolved aluminum concentrations of 3 to 4 µg/L. This apparent contamination was attributed to the glass vials. Subsequently, all samples were preserved with concentrated nitric acid either dispensed in the field from pre-filled polytetrafluorethylene vials or in the laboratory within 24 hours of sample collection from the manufacturer's acid container using a pipettor. Blank samples preserved using either of these two latter methods showed no consistent pattern of contamination. On the basis of these quality-assurance results, the dissolved aluminum concentration initially reported by NWQL for each stream sample preserved with acid dispensed from a glass vial was decreased by 3.5 µg/L, which was the average dissolved aluminum concentration in the five blank samples preserved with acid dispensed from a glass vial. These adjusted values are reported in tables 2 and 5.

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DATA

Table 1. Water-quality sampling sites in the Boulder River watershed, Montana, 1996-99

Site number (fig. 2)	Station identification number[1]	Station name
		BOULDER RIVER
1	461541112291001	Boulder River above Trapper Creek, near Basin
2	461753112205001	Red Rock Creek below South Fork, near Basin
3	06031450	Boulder River above Kleinsmith Gulch, near Basin
4	461612112160401	Kleinsmith Gulch at Basin
25	461609112150401	Boulder River below Basin Creek, near Basin
48	06032000	Boulder River near Basin
57	461517112110401	Galena Gulch at mouth, near Boulder
58	06032400	Boulder River below Little Galena Gulch, near Boulder
59	06033000	Boulder River near Boulder
60	461135112085101	Little Boulder River above North Fork, near Boulder
61	460649111550701	Boulder River at County Bridge, near Boulder
62	06033900	Boulder River near Cardwell
		BASIN CREEK
5	462348112172901	Basin Creek above Buckeye Mine, near Basin
6	462349112173101	Buckeye Mine tributary near Basin
7	462345112173601	Basin Creek below Buckeye Mine tributary, near Basin
8	462340112175701	Basin Creek below Buckeye Mine, near Basin
9	462350112182701	Grub Gulch near Basin
10	462341112190401	Clear Creek near Basin
11	462305112200001	Jimmys Creek near Basin
12	462218112203901	Basin Creek above Joe Bowers Creek, near Basin
13	462216112210101	Joe Bowers Creek near Basin
14	462212112210201	Basin Creek at Joe Bowers Creek, near Basin
15	462151112211001	Weasel Gulch near Basin
16	462155112181501	Jack Creek above Bullion Mine tributary, near Basin
17	462153112181701	Bullion Mine tributary at mouth, near Basin
18	462158112182501	Jack Creek tributary near Basin
19	462152112183301	Jack Creek below Bullion Mine tributary, near Basin
20	462122112185901	Bullion Mine Smelter tributary near Basin
21	461944112193501	Basin Creek tributary near Basin
22	461834112182301	Basin Creek at Basin Canyon Campground, near Basin
23	461817112182001	Saul Haggerty Gulch at mouth, near Basin
24	06031600	Basin Creek at Basin
		CATARACT CREEK
26	462422112140601	Cataract Creek above Nellie Grant Creek, near Basin
27	462424112140401	Cataract Creek tributary above Nellie Grant Creek, near Basin
28	462420112140301	Cataract Creek 100 feet above Nellie Grant Creek, near Basin
29	462419112135801	Nellie Grant Creek near Basin
30	462415112140201	Cataract Creek below Nellie Grant Creek, near Basin
31	462250112133201	Overland Creek near Basin
32	462200112131301	Cataract Creek above Rocker Creek, near Basin
33	462157112131601	Rocker Creek at mouth, near Basin
34	462154112131301	Cataract Creek below Rocker Creek, near Basin
35	462137112125601	Snowdrift Creek near Basin
36	462119112130901	Cataract Creek above Hoodoo Creek, near Basin
37	462053112131401	Hoodoo Creek near Basin
38	462045112131901	Cataract Creek below Hoodoo Creek, near Basin

Table 1. Water-quality sampling sites in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Station identification number[1]	Station name
		CATARACT CREEK--Continued
39	462013112140001	Cataract Creek tributary 1.4 mi above Uncle Sam Gulch, near Basin
40	461937112142001	Cataract Creek tributary 0.6 mi above Uncle Sam Gulch, near Basin
41	461905112144201	Cataract Creek above Uncle Sam Gulch, near Basin
42	462056112161201	Unnamed tributary to Uncle Sam Gulch, near Basin
43	461904112144401	Uncle Sam Gulch at mouth, near Basin
44	461902112144501	Cataract Creek below Uncle Sam Gulch, near Basin
45	461807112151901	Deer Creek near Basin
46	461708112143201	Big Limber Gulch near Basin
47	06031960	Cataract Creek at Basin
		HIGH ORE CREEK
49	461852112094201	High Ore Creek above Comet Mine, near Basin
50	461831112103701	High Ore Creek above Comet Mine outflow, near Basin
51	461830112103901	Comet Mine outflow near Basin
52	461829112104301	High Ore Creek below Comet Mine outflow, near Basin
53	461757112113501	High Ore Creek above Bishop Creek, near Basin
54	461755112113701	Bishop Creek near Basin
55	461703112120201	Peters Gulch near Basin
56	06032300	High Ore Creek near Basin

[1]Fifteen-digit station-identification number is a unique identifier that represents the approximate latitude and longitude location of the site (first 13 digits), plus a sequence number (last two digits). Eight-digit station identification number represents the standard USGS streamflow-gaging station numbering system wherein numbers increase in a downstream direction according to geographic location within the drainage basin.

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99

[Samples collected by the U.S. Geological Survey. ANC, acid-neutralizing capacity determined on unfiltered samples, formerly referred to as alkalinity. Abbreviations: ft^3/s, cubic feet per second; °C, degrees Celsius; e, estimated; lab, laboratory; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25°C; mi, mile; mg/L, milligrams per liter; mm, millimeters. Symbols: <, less than minimum reporting level; --, no data]

Site number (fig. 2)	Station name	Date	Time	Discharge, instantaneous (ft^3/s)	Sediment, suspended (mg/L)	Sediment, suspended, diameter (percent finer than 0.062 mm)	Specific conductance, field (µS/cm)	pH, field (standard units)	Temperature, water (°C)	Hardness (mg/L as $CaCO_3$)
				BOULDER RIVER						
1	Boulder River above Trapper Creek, near Basin	07-23-97	1000	15	5	87	100	8.1	12.5	38
		09-22-97	0940	3.8	2	95	132	8.0	6.0	53
		02-12-98	1310	2.3	2	89	134	8.0	0.0	52
		05-06-98	0945	83	24	33	55	7.6	4.0	21
2	Red Rock Creek below South Fork, near Basin	09-25-98	0910	1.3	--	--	130	8.2	7.0	56
3	Boulder River above Kleinsmith Gulch, near Basin	10-18-96	1255	19	3	79	143	7.4	3.0	56
		11-01-96	0930	13	3	60	155	8.1	0.0	57
		12-03-96	1000	12	2	94	145	7.6	0.0	54
		02-11-97	1000	17	4	76	163	7.7	0.0	61
		04-18-97	1000	106	21	85	132	8.0	3.5	50
		05-07-97	1005	276	50	36	101	7.9	4.5	37
		05-14-97	1030	552	57	43	80	7.7	9.5	28
		05-23-97	1000	603	22	44	68	7.6	7.5	22
		06-02-97	0915	725	52	43	65	7.6	9.0	24
		06-18-97	0945	455	38	36	89	7.8	12.5	34
		07-17-97	0915	111	15	87	124	7.9	15.0	49
		09-23-97	0845	25	3	91	154	8.2	6.0	55
		02-10-98	1500	21	6	86	150	7.7	0.0	58
		04-29-98	0900	168	28	57	104	8.2	4.0	41
		05-05-98	0845	300	29	59	74	8.0	4.5	28
		09-23-98	1415	23	3	69	144	--	11.5	57
		05-25-99	1000	318	76	54	63	8.0	8.0	22
		09-14-99	0930	8.6	2	86	152	8.3	6.5	56
4	Kleinsmith Gulch at Basin	10-30-96	1515	.15	--	--	236	--	0.0	--
		05-13-97	1400	.43	--	--	174	--	10.0	--
25	Boulder River below Basin Creek, near Basin	07-24-97	0930	94	6	86	125	7.9	13.5	47
		09-22-97	1200	28	3	79	147	8.2	12.0	59
		02-11-98	1430	25	3	82	146	7.9	0.0	55
		05-05-98	1130	436	29	54	65	7.8	--	24
48	Boulder River near Basin	07-24-97	1140	106	5	80	122	8.0	15.5	47
		09-22-97	1400	33	3	15	148	8.0	13.0	60
		02-09-98	1130	26	2	83	146	7.7	0.0	57
		05-05-98	1415	513	24	64	63	7.7	--	24
57	Galena Gulch at mouth, near Boulder	10-31-96	1230	.40	1	89	281	8.3	0.0	120
		05-13-97	1215	5.4	75	82	113	7.8	10.0	43

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	ANC, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Silica, dissolved (mg/L as SiO_2)	Dissolved solids, calculated (mg/L)
					BOULDER RIVER						
1	07-23-97	12	2.0	4.5	1.3	45	5.5	0.41	<0.10	21	74
	09-22-97	16	3.1	6.7	1.5	60	8.3	.85	<.10	22	95
	02-12-98	16	3.1	6.6	1.5	58	11	.76	<.10	23	97
	05-06-98	6.7	1.1	2.7	.96	22	4.2	.41	<.10	15	44
2	09-25-98	16	3.7	3.6	1.1	60	6.7	.47	<.10	17	85
3	10-18-96	17	3.4	8.2	1.4	59	14	2.3	.10	20	102
	11-01-96	17	3.6	8.8	1.4	60	17	2.2	.10	22	108
	12-03-96	16	3.3	8.1	1.4	56	14	1.6	.10	21	100
	02-11-97	18	3.8	--	--	--	--	--	--	--	--
	04-18-97	15	3.2	6.1	1.9	50	13	2.2	<.10	17	89
	05-07-97	11	2.4	5.0	1.4	35	11	1.3	.10	18	72
	05-14-97	8.3	1.7	4.2	1.1	28	8.2	.79	<.10	18	59
	05-23-97	6.7	1.3	3.5	.97	23	5.6	.64	<.10	18	51
	06-02-97	7.0	1.5	3.5	.99	25	5.8	.60	<.10	16	51
	06-18-97	10	2.1	4.4	1.1	36	5.2	.80	<.10	20	66
	07-17-97	15	2.8	6.5	1.4	50	9.1	1.6	<.10	22	89
	09-23-97	17	3.2	7.7	1.6	63	13	2.2	.12	21	103
	02-10-98	17	3.7	8.0	1.3	57	15	2.6	<.10	22	104
	04-29-98	12	2.5	4.9	1.5	42	8.7	1.4	<.10	16	72
	05-05-98	8.6	1.7	3.9	1.1	30	5.9	.75	.10	15	55
	09-23-98	17	3.4	8.6	1.3	64	11	2.1	.13	21	104
	05-25-99	6.6	1.4	3.4	1.0	25	4.9	.66	--	--	--
	09-14-99	17	3.4	9.8	1.8	62	12	2.4	--	--	--
4	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--
25	07-24-97	14	2.8	5.8	1.5	49	11	1.7	<.10	22	88
	09-22-97	17	3.7	7.5	1.5	57	14	2.1	<.10	21	102
	02-11-98	16	3.6	7.4	1.2	53	16	2.1	<.10	21	100
	05-05-98	7.2	1.5	3.2	1.1	24	5.8	.69	<.10	14	48
48	07-24-97	14	2.8	5.3	1.4	47	11	1.6	.11	20	86
	09-22-97	18	3.8	7.0	1.5	56	15	1.8	.13	20	101
	02-09-98	17	3.6	6.9	1.3	53	17	2.1	.11	20	100
	05-05-98	7.2	1.4	3.0	1.0	23	5.9	.62	<.10	14	47
57	10-31-96	32	8.9	13	3.1	121	25	2.6	.50	22	180
	05-13-97	12	3.2	4.0	1.8	39	13	<.1	.13	17	75

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Nitrite, dissolved (mg/L as N)	Nitrite plus nitrate, dissolved (mg/L as N)	Ammonia, dissolved (mg/L as N)	Ammonia plus organic nitrogen, total (mg/L as N)	Phosphorus, total (mg/L as P)	Phosphorus, orthophosphate, dissolved (mg/L as P)
				BOULDER RIVER			
1	07-23-97	<0.01	<0.05	<0.015	--	--	0.020
	09-22-97	<.01	<.05	<.015	<0.2	<0.010	<.010
	02-12-98	<.01	.12	.028	--	--	.024
	05-06-98	--	--	--	--	--	--
2	09-25-98	--	--	--	.11	<.05	--
3	10-18-96	--	--	--	--	--	--
	11-01-96	--	--	--	--	--	--
	12-03-96	<.01	.08	.030	--	--	.020
	02-11-97	--	--	--	--	--	--
	04-18-97	--	--	--	--	--	--
	05-07-97	--	--	--	--	--	--
	05-14-97	.01	<.05	<.015	--	--	.016
	05-23-97	<.01	<.05	<.015	--	--	.014
	06-02-97	--	--	--	--	--	--
	06-18-97	--	--	--	--	--	--
	07-17-97	<.01	<.05	<.015	--	--	.026
	09-23-97	<.01	<.05	<.015	<.2	.025	.020
	02-10-98	<.01	.13	.052	--	--	.026
	04-29-98	--	--	--	--	--	--
	05-05-98	--	--	--	--	--	--
	09-23-98	--	--	--	--	--	--
	05-25-99	--	--	--	--	--	--
	09-14-99	--	--	--	--	--	--
4	10-30-96	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--
25	07-24-97	<.01	<.05	<.015	--	--	.021
	09-22-97	<.01	<.05	<.015	<.2	.022	.017
	02-11-98	<.01	.13	.030	--	--	.023
	05-05-98	--	--	--	--	--	--
48	07-24-97	<.01	<.05	<.015	--	--	.021
	09-22-97	<.01	<.05	<.015	<.2	.026	.019
	02-09-98	<.01	.13	.038	--	--	.029
	05-05-98	--	--	--	--	--	--
57	10-31-96	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Aluminum, total recoverable (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Antimony, dissolved (µg/L as Sb)	Arsenic, total recoverable (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total recoverable (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)
						BOULDER RIVER						
1	07-23-97	110	6.4	<1	5	4	31	<1	<1	<.1	<1	<1
	09-22-97	30	1.9	<1	3	2	38	<1	<1	<.1	--	<1
	02-12-98	30	3.9	<1	2	2	37	<1	<1	<.3	--	1
	05-06-98	290	26	<1	3	2	17	<1	<1	<.3	--	<1
2	09-25-98	20	2.9	<1	1	1	32	<1	<1	<.3	--	<1
3	10-18-96	--	5.5	<1	2	3	16	<1	<1	<.1	<1	<1
	11-01-96	--	9.5	<1	3	2	17	<1	<1	<.1	--	<1
	12-03-96	--	1.5	<1	3	2	17	<1	<1	<.1	<1	<1
	02-11-97	--	1.5	<1	3	2	20	<1	<1	<.1	--	1
	04-18-97	--	4.2	<1	5	3	17	<1	<1	<.1	--	1
	05-07-97	970	426	<1	6	4	24	<1	<1	<.1	--	<1
	05-14-97	1,190	14	<1	6	3	13	<1	<1	<.1	1	<1
	05-23-97	470	42	<1	4	3	11	<1	<1	<.1	<1	<1
	06-02-97	560	24	<1	6	4	10	<1	<1	<.1	--	<1
	06-18-97	550	12	<1	6	5	15	<1	<1	<.1	--	<1
	07-17-97	--	8.9	<1	5	3	18	<1	<1	<.1	--	1
	09-23-97	70	1.8	<1	4	3	18	<1	<1	<.1	--	<1
	02-10-98	150	2.0	<1	2	2	17	<1	<1	<.3	--	1
	04-29-98	460	9.0	<1	4	3	16	<1	<1	<.3	--	<1
	05-05-98	490	19	<1	3	3	13	<1	<1	<.3	--	<1
	09-23-98	40	2.7	<1	4	4	15	<1	<1	<.3	--	<1
	05-25-99	1,190	23	--	7	4	--	--	<1	<.3	--	--
	09-14-99	49	4.9	--	5	4	--	--	<1	<.3	--	--
4	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--	--
25	07-24-97	130	12	<1	--	5	20	<1	<1	.1	--	2
	09-22-97	60	9.7	<1	5	4	19	<1	<1	.2	--	<1
	02-11-98	40	5.6	<1	3	3	18	<1	<1	<.3	--	1
	05-05-98	610	34	<1	7	4	13	<1	<1	<.3	--	<1
48	07-24-97	120	15	<1	7	5	19	<1	<1	.5	--	1
	09-22-97	60	10	<1	5	4	20	<1	<1	.7	--	<1
	02-09-98	40	5.6	<1	3	3	19	<1	<1	.6	--	<1
	05-05-98	530	35	<1	9	3	12	<1	<1	.3	--	<1
57	10-31-96	--	<1	<1	<1	<1	37	<1	<1	<.1	<1	1
	05-13-97	1,470	4.2	<1	3	1	21	<1	<1	<.1	1	<1

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Cobalt, dissolved (µg/L as Co)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
					BOULDER RIVER						
1	07-23-97	<1	3	1	230	72	<1	<1	5	20	8
	09-22-97	<1	1	1	160	45	<1	<1	--	<10	4
	02-12-98	<1	2	<1	140	36	<1	<1	--	<10	3
	05-06-98	<1	3	2	360	73	<1	<1	--	18	4
2	09-25-98	<1	<1	<1	240	110	<1	<1	--	11	5
3	10-18-96	<1	1	2	230	120	<1	<1	6	10	8
	11-01-96	<1	2	2	230	120	<1	<1	<4	20	12
	12-03-96	<1	<1	<1	280	65	<1	<1	6	20	11
	02-11-97	<1	1	2	430	150	<1	<1	--	20	16
	04-18-97	<1	4	2	990	320	<1	<1	--	90	68
	05-07-97	<1	5	5	970	470	<1	<1	--	43	26
	05-14-97	<1	16	10	1,200	85	3	<1	<4	47	8
	05-23-97	<1	10	4	490	100	<1	<1	<4	20	5
	06-02-97	<1	7	4	1,100	120	1	<1	--	40	7
	06-18-97	<1	4	3	840	150	1	<1	--	42	11
	07-17-97	<1	4	3	710	180	1	<1	--	48	13
	09-23-97	<1	1	2	360	100	<1	<1	--	23	12
	02-10-98	<1	2	<1	470	88	<1	<1	--	29	14
	04-29-98	<1	4	3	850	190	<1	<1	--	45	8
	05-05-98	<1	5	3	820	150	2	<1	--	35	8
	09-23-98	<1	5	2	290	140	<1	<1	--	15	9
	05-25-99	--	7	3	1,600	98	2	<1	--	97	17
	09-14-99	--	1	2	290	90	<1	<1	--	12	8
4	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--
25	07-24-97	<1	10	9	400	120	<1	<1	--	26	14
	09-22-97	<1	11	10	310	130	<1	<1	--	99	14
	02-11-98	<1	8	6	270	64	<1	<1	--	19	14
	05-05-98	<1	9	6	790	140	3	<1	--	45	13
48	07-24-97	<1	15	12	340	140	<1	<1	--	21	14
	09-22-97	<1	14	12	250	120	<1	<1	--	20	17
	02-09-98	<1	9	7	230	66	<1	<1	--	18	14
	05-05-98	<1	16	11	790	140	5	<1	--	49	15
57	10-31-96	<1	<1	<1	60	8	<1	<1	21	10	4
	05-13-97	<1	7	2	3,100	48	4	<1	4	210	11

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Mercury, total recoverable (µg/L as Hg)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Nickel, total recoverable (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, total recoverable (µg/L as Ag)	Silver, dissolved (µg/L as Ag)	Uranium, dissolved (µg/L as U)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)
					BOULDER RIVER						
1	07-23-97	<0.1	--	<1	2	<1	<1	<1	<1	<10	1
	09-22-97	--	--	<1	--	<1	--	<1	<1	<10	<1
	02-12-98	--	--	<1	--	<1	--	<1	<1	<10	<1
	05-06-98	--	--	<1	--	<1	--	<1	<1	<10	1
2	09-25-98	--	--	<1	--	<1	--	<1	<1	<10	<1
3	10-18-96	<.1	<0.1	<1	<1	<1	<1	<1	1	<10	3
	11-01-96	<.1	--	1	--	<1	--	<1	1	<10	4
	12-03-96	<.1	<.1	<1	<1	<1	<1	<1	<1	<10	2
	02-11-97	--	--	<1	--	1	--	<1	1	<10	5
	04-18-97	--	--	<1	--	<1	--	<1	<1	10	7
	05-07-97	--	--	<1	--	<1	--	<1	<1	10	9
	05-14-97	<.1	--	<1	1	<1	<1	<1	<1	10	3
	05-23-97	<.1	--	<1	1	<1	<1	<1	<1	<10	2
	06-02-97	--	--	<1	--	<1	--	<1	<1	10	4
	06-18-97	--	--	<1	--	<1	--	<1	<1	10	4
	07-17-97	--	--	<1	--	<1	--	<1	<1	<10	4
	09-23-97	--	--	<1	--	<1	--	<1	<1	<10	2
	02-10-98	--	--	<1	--	<1	--	<1	1	<10	2
	04-29-98	--	--	<1	--	<1	--	<1	<1	10	2
	05-05-98	--	--	<1	--	<1	--	<1	<1	<10	2
	09-23-98	--	--	<1	--	<1	--	<1	1	<10	1
	05-25-99	--	--	--	--	--	--	--	--	<40	2
	09-14-99	--	--	--	--	--	--	--	--	<31	2
4	10-30-96	--	--	--	--	--	--	--	--	20	--
	05-13-97	--	--	--	--	--	--	--	--	10	--
25	07-24-97	--	--	<1	--	3	--	<1	<1	40	34
	09-22-97	--	--	<1	--	<1	--	<1	<1	40	39
	02-11-98	--	--	<1	--	<1	--	<1	1	40	44
	05-05-98	--	--	<1	--	<1	--	<1	<1	40	23
48	07-24-97	--	--	<1	--	<1	--	<1	<1	70	55
	09-22-97	--	--	<1	--	<1	--	<1	1	90	80
	02-09-98	--	--	<1	--	<1	--	<1	1	80	80
	05-05-98	--	--	<1	--	<1	--	<1	<1	60	40
57	10-31-96	<.1	<.1	5	<1	<1	<1	<1	5	<10	<1
	05-13-97	<.1	--	2	2	<1	<1	<1	<1	20	1

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Station name	Date	Time	Discharge, instantaneous (ft^3/s)	Sediment, suspended (mg/L)	Sediment, suspended, diameter (percent finer than 0.062 mm)	Specific conductance, field (µS/cm)	pH, field (standard units)	Temperature, water (°C)	Hardness (mg/L as $CaCO_3$)
		BOULDER RIVER--Continued								
58	Boulder River below Little Galena Gulch, near Boulder	10-15-96	1115	29	1	81	156	8.2	4.5	65
		11-01-96	1200	29	4	68	170	8.2	0.0	68
		12-04-96	1205	35	5	67	155	8.1	0.0	61
		02-12-97	1145	26	3	77	166	7.7	0.0	65
		04-19-97	0930	187	56	85	102	8.0	3.5	48
		05-07-97	1330	369	24	70	100	7.9	6.5	37
		05-14-97	1330	900	139	21	71	7.7	10.5	25
		05-23-97	1300	960	87	17	58	7.6	9.5	20
		06-02-97	1145	1,050	56	36	59	7.5	10.0	22
		06-18-97	1400	635	33	39	83	8.0	14.0	32
		07-17-97	1115	175	15	65	118	8.1	15.5	47
		09-23-97	1420	36	3	89	161	8.2	12.5	64
		02-09-98	0915	27	3	79	158	7.8	0.0	62
		04-29-98	1400	256	36	47	96	8.2	7.5	38
		05-05-98	1510	547	32	50	66	7.7	10.0	25
		06-18-98	1000	614	43	37	73	7.6	6.5	29
		09-23-98	1245	30	6	45	154	8.5	10.0	64
		05-25-99	1525	602	52	59	58	8.0	11.0	19
		09-14-99	1230	17	2	75	165	8.0	13.0	64
59	Boulder River near Boulder	11-01-96	1240	38	12	58	203	7.6	3.5	76
		05-24-97	0930	1,420	305	29	59	7.7	6.5	21
60	Little Boulder River above North Fork, near Boulder	10-31-96	0945	2.4	2	62	129	8.0	0.0	51
		05-13-97	1000	69	58	45	53	7.2	6.0	19
		05-23-97	1700	94	13	60	52	7.8	8.5	19
		07-17-97	1345	11	3	71	101	8.1	15.0	37
		09-25-97	1515	3.7	5	63	123	8.1	10.0	53
		07-21-98	1545	6.3	2	78	114	8.1	18.0	48
		07-22-98	0900	--	--	--	114	8.0	13.0	--
		07-23-98	0805	--	--	--	114	8.2	13.0	--
		07-24-98	0825	--	--	--	113	8.1	14.0	--
		07-25-98	1415	--	--	--	114	8.2	16.0	--
		09-23-98	0915	3.9	2	71	115	7.6	5.5	51
		08-02-99	1830	2.6	1	87	134	8.1	16.5	56
		08-03-99	--	--	--	--	134	8.1	16.0	--
		08-04-99	1700	--	--	--	--	--	--	--
		08-05-99	1330	--	--	--	105	7.9	15.0	--
61	Boulder River at County Bridge, near Boulder	11-01-96	1415	48	10	89	196	8.0	1.0	73
		05-24-97	1200	1,350	368	44	71	7.7	9.5	25
62	Boulder River near Cardwell	11-02-96	0945	101	11	78	332	8.4	2.5	130
		05-24-97	1530	1,030	121	54	128	8.0	12.0	50

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	ANC, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Silica, dissolved (mg/L as SiO_2)	Dissolved solids, calculated (mg/L)
					BOULDER RIVER--Continued						
58	10-15-96	19	4.3	7.0	1.6	59	21	1.9	.10	18	109
	11-01-96	20	4.3	7.6	1.5	60	24	1.9	.10	21	117
	12-04-96	18	3.9	6.9	1.4	55	21	1.5	.10	20	107
	02-12-97	19	4.2	--	--	--	--	--	--	--	--
	04-19-97	14	3.1	4.9	1.8	44	15	1.8	<.10	15	82
	05-07-97	11	2.5	4.4	1.4	33	12	1.4	<.10	17	70
	05-14-97	7.5	1.5	3.4	1.1	23	8.1	.78	<.10	16	52
	05-23-97	6.0	1.2	2.8	.90	19	5.7	.47	<.10	16	45
	06-02-97	6.4	1.4	2.9	.98	21	6.1	.58	<.10	15	47
	06-18-97	9.7	2.0	4.0	1.1	32	6.1	.76	<.10	18	62
	07-17-97	14	2.7	5.2	1.4	44	12	1.3	<.10	20	83
	09-23-97	19	4.2	7.0	1.5	59	18	2.0	.14	19	107
	02-09-98	18	4.1	6.9	1.4	56	19	2.2	<.10	20	106
	04-29-98	11	2.3	4.1	1.4	37	9.4	1.3	<.10	15	67
	05-05-98	7.4	1.6	3.0	1.0	24	6.3	.74	<.10	14	48
	06-18-98	8.5	1.8	3.4	.85	28	6.0	.59	.11	15	54
	09-23-98	19	4.1	7.2	1.6	60	17	1.9	.12	19	106
	05-25-99	5.7	1.2	2.6	.95	19	5.4	.66	--	--	--
	09-14-99	19	4.1	7.6	1.7	59	20	2.1	--	--	--
59	11-01-96	22	5.2	8.5	1.7	68	27	2.9	.10	21	130
	05-24-97	6.2	1.3	2.8	.96	19	6.7	.61	<.10	14	45
60	10-31-96	15	3.2	5.0	1.3	51	13	.80	<.10	23	92
	05-13-97	5.7	1.2	2.3	.87	18	5.6	<.1	<.10	13	40
	05-23-97	5.7	1.2	2.4	.77	18	5.1	.45	<.10	13	40
	07-17-97	11	2.2	3.6	1.1	42	7.7	.53	<.10	19	71
	09-25-97	16	3.3	4.6	1.2	51	10	.71	<.10	19	86
	07-21-98	14	2.9	4.4	1.2	48	7.9	.76	<.10	14	75
	07-22-98	--	--	--	--	--	--	--	--	--	--
	07-23-98	--	--	--	--	--	--	--	--	--	--
	07-24-98	--	--	--	--	--	--	--	--	--	--
	07-25-98	--	--	--	--	--	--	--	--	--	--
	09-23-98	15	3.2	4.9	1.3	52	9.9	.72	<.10	20	86
	08-02-99	17	3.5	5.1	1.5	57	9.9	.72	--	--	--
	08-03-99	--	--	--	--	--	--	--	--	--	--
	08-04-99	--	--	--	--	--	--	--	--	--	--
	08-05-99	--	--	--	--	--	--	--	--	--	--
61	11-01-96	21	5.0	10	1.6	72	23	3.5	.30	21	129
	05-24-97	7.5	1.6	3.4	1.1	23	8.4	.80	<.10	15	52
62	11-02-96	37	10	14	1.9	136	32	5.3	.40	21	203
	05-24-97	15	3.3	5.5	1.6	47	12	1.5	.13	17	84

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Nitrite, dissolved (mg/L as N)	Nitrite plus nitrate, dissolved (mg/L as N)	Ammonia, dissolved (mg/L as N)	Ammonia plus organic nitrogen, total (mg/L as N)	Phosphorus, total (mg/L as P)	Phosphorus, orthophosphate, dissolved (mg/L as P)
				BOULDER RIVER--Continued			
58	10-15-96	--	--	--	--	--	--
	11-01-96	--	--	--	--	--	--
	12-04-96	<.01	.10	.040	--	--	.020
	02-12-97	--	--	--	--	--	--
	04-19-97	--	--	--	--	--	--
	05-07-97	--	--	--	--	--	--
	05-14-97	.01	<.05	<.015	--	--	.011
	05-23-97	<.01	<.05	<.015	--	--	<.010
	06-02-97	--	--	--	--	--	--
	06-18-97	--	--	--	--	--	--
	07-17-97	<.01	<.05	<.015	--	--	.019
	09-23-97	<.01	<.05	<.015	<.2	.011	.011
	02-09-98	<.01	.15	.029	--	--	.021
	04-29-98	--	--	--	--	--	--
	05-05-98	--	--	--	--	--	--
	06-18-98	--	--	--	--	--	--
	09-23-98	--	--	--	--	--	--
	05-25-99	--	--	--	--	--	--
	09-14-99	--	--	--	--	--	--
59	11-01-96	--	--	--	--	--	--
	05-24-97	--	--	--	--	--	--
60	10-31-96	.03	.06	.020	--	--	<.010
	05-13-97	<.01	.05	<.015	--	--	<.010
	05-23-97	<.01	<.05	<.015	--	--	<.010
	07-17-97	<.01	<.05	<.015	--	--	.017
	09-25-97	<.01	<.05	<.015	<.2	<.010	.010
	07-21-98	<.01	<.05	.030	--	--	.011
	07-22-98	--	--	--	--	--	--
	07-23-98	--	--	--	--	--	--
	07-24-98	--	--	--	--	--	--
	07-25-98	--	--	--	--	--	--
	09-23-98	--	--	--	<.1	<.050	--
	08-02-99	--	--	--	--	--	--
	08-03-99	--	--	--	--	--	--
	08-04-99	--	--	--	--	--	--
	08-05-99	--	--	--	--	--	--
61	11-01-96	--	--	--	--	--	--
	05-24-97	--	--	--	--	--	--
62	11-02-96	--	--	--	--	--	--
	05-24-97	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Aluminum, total recoverable (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Antimony, dissolved (µg/L as Sb)	Arsenic, total recoverable (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total recoverable (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)
						BOULDER RIVER--Continued						
58	10-15-96	--	13	<1	6	5	22	<1	1	1.0	<1	<1
	11-01-96	--	12	<1	7	5	22	<1	1	1.0	--	<1
	12-04-96	--	6.5	<1	6	4	20	<1	<1	.8	<1	<1
	02-12-97	--	6.5	<1	5	4	23	<1	<1	.8	--	<1
	04-19-97	--	7.5	<1	13	4	16	<1	<1	.2	--	<1
	05-07-97	540	87	<1	8	4	17	<1	<1	.2	--	<1
	05-14-97	1,340	27	<1	16	4	12	<1	<1	.3	1	<1
	05-23-97	670	62	<1	12	4	11	<1	<1	.4	<1	<1
	06-02-97	670	87	<1	12	5	11	<1	<1	.3	--	<1
	06-18-97	450	21	<1	12	5	15	<1	<1	.3	--	<1
	07-17-97	--	20	<1	17	5	19	<1	<1	.6	--	<1
	09-23-97	40	8.0	<1	7	5	21	<1	<1	.7	--	<1
	02-09-98	50	4.4	<1	4	3	20	<1	<1	.7	--	<1
	04-29-98	360	16	<1	8	3	16	<1	<1	.3	--	<1
	05-05-98	560	43	<1	12	4	13	<1	<1	.4	--	<1
	06-18-98	--	46	<1	7	3	13	<1	<1	.3	--	<1
	09-23-98	40	5.6	<1	6	6	21	<1	<1	.7	--	<1
	05-25-99	820	51	--	19	5	--	--	<1	<.3	--	--
	09-14-99	40	7.5	--	7	6	--	--	1	.9	--	--
59	11-01-96	--	6.5	<1	11	7	29	<1	<1	.8	--	<1
	05-24-97	2,050	68	<1	97	5	12	<1	2	.5	--	<1
60	10-31-96	--	3.5	<1	2	1	11	<1	<1	<.1	<1	<1
	05-13-97	--	28	<1	7	3	5.9	<1	<1	<.1	1	<1
	05-23-97	--	61	<1	5	3	6.7	<1	<1	<.1	<1	<1
	07-17-97	--	9.4	<1	3	2	10	<1	<1	<.1	--	<1
	09-25-97	40	2.9	<1	2	1	11	<1	<1	<.1	--	<1
	07-21-98	20	7.5	<1	3	3	12	<1	<1	.3	--	<1
	07-22-98	--	--	--	--	--	--	--	--	<.1	--	--
	07-23-98	--	--	--	--	--	--	--	--	<.1	--	--
	07-24-98	--	--	--	--	--	--	--	--	<.1	--	--
	07-25-98	--	--	--	--	--	--	--	--	<.1	--	--
	09-23-98	20	5.6	<1	2	2	11	<1	<1	<.3	--	<1
	08-02-99	e20	4.0	--	2	2	--	--	<1	<1	--	--
	08-03-99	--	--	--	--	--	--	--	--	<1	--	--
	08-04-99	--	--	--	--	--	--	--	--	<1	--	--
	08-05-99	--	--	--	--	--	--	--	--	<1	--	--
61	11-01-96	--	2.5	<1	14	9	27	<1	<1	.5	--	<1
	05-24-97	4,100	29	<1	90	8	13	<1	3	.6	--	<1
62	11-02-96	--	2.5	<1	8	7	40	<1	<1	<.1	--	1
	05-24-97	1,890	19	<1	30	15	19	<1	<1	.2	--	<1

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Cobalt, dissolved (µg/L as Co)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
					BOULDER RIVER--Continued						
58	10-15-96	<1	12	10	120	76	<1	<1	6	40	30
	11-01-96	<1	10	9	220	91	1	<1	4	50	29
	12-04-96	<1	10	7	190	66	<1	<1	6	50	25
	02-12-97	<1	10	9	270	120	1	<1	--	40	29
	04-19-97	<1	16	10	2,400	310	7	<1	--	210	56
	05-07-97	<1	12	8	830	160	3	<1	--	59	14
	05-14-97	<1	25	10	1,500	73	9	<1	<4	99	15
	05-23-97	<1	20	12	810	100	6	<1	<4	56	10
	06-02-97	<1	20	12	910	150	11	<1	--	57	9
	06-18-97	<1	13	11	740	120	4	<1	--	47	13
	07-17-97	<1	26	18	560	120	2	<1	--	42	21
	09-23-97	<1	12	10	220	100	<1	<1	--	36	29
	02-09-98	<1	10	6	220	44	<1	<1	--	35	27
	04-29-98	<1	15	9	760	180	3	<1	--	50	13
	05-05-98	<1	21	11	830	150	6	<1	--	56	15
	06-18-98	<1	23	11	700	150	4	<1	--	48	15
	09-23-98	<1	10	9	160	70	<1	<1	--	25	19
	05-25-99	--	23	11	1,200	89	11	<1	--	94	14
	09-14-99	--	11	9	150	55	<1	<1	--	19	9
59	11-01-96	<1	20	10	360	84	3	<1	<4	50	35
	05-24-97	<1	110	25	6,600	130	72	<1	--	240	17
60	10-31-96	<1	1	1	180	110	<1	<1	4	<10	1
	05-13-97	<1	7	4	1,900	210	4	<1	<4	74	8
	05-23-97	<1	6	6	600	180	2	<1	<4	16	3
	07-17-97	<1	3	3	290	120	<1	<1	--	11	2
	09-25-97	<1	2	2	210	100	<1	<1	--	<10	1
	07-21-98	<1	2	2	240	170	<1	<1	--	<10	2
	07-22-98	--	--	3	--	--	--	--	--	--	--
	07-23-98	--	--	2	--	--	--	--	--	--	--
	07-24-98	--	--	2	--	--	--	--	--	--	--
	07-25-98	--	--	2	--	--	--	--	--	--	--
	09-23-98	<1	1	3	180	110	<1	<1	--	<10	1
	08-02-99	--	2	1	130	69	<1	<1	--	5	2
	08-03-99	--	--	4	--	--	--	--	--	--	--
	08-04-99	--	--	2	--	--	--	--	--	--	--
	08-05-99	--	--	3	--	--	--	--	--	--	--
61	11-01-96	<1	14	6	520	120	4	<1	8	110	51
	05-24-97	<1	190	34	6,600	110	110	1.1	--	280	35
62	11-02-96	<1	6	2	240	27	1	<1	11	40	14
	05-24-97	<1	64	23	2,600	99	23	1.0	--	120	16

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Mercury, total recoverable (µg/L as Hg)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Nickel, total recoverable (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, total recoverable (µg/L as Ag)	Silver, dissolved (µg/L as Ag)	Uranium, dissolved (µg/L as U)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)
					BOULDER RIVER--Continued						
58	10-15-96	<.1	<.1	1	<1	<1	<1	<1	2	210	189
	11-01-96	<.1	--	1	--	<1	--	<1	2	230	208
	12-04-96	<.1	<.1	<1	<1	<1	<1	<1	2	210	179
	02-12-97	--	--	<1	--	1	--	<1	2	210	194
	04-19-97	--	--	<1	--	<1	--	<1	<1	140	65
	05-07-97	--	--	<1	--	<1	--	<1	<1	70	44
	05-14-97	<.1	--	<1	1	<1	<1	<1	<1	100	49
	05-23-97	<.1	--	<1	1	<1	<1	<1	<1	80	47
	06-02-97	--	--	<1	--	<1	--	<1	<1	70	40
	06-18-97	--	--	<1	--	<1	--	<1	<1	60	37
	07-17-97	--	--	<1	--	<1	--	<1	<1	110	73
	09-23-97	--	--	1	--	<1	--	<1	2	140	115
	02-09-98	--	--	<1	--	<1	--	<1	2	150	140
	04-29-98	--	--	<1	--	<1	--	<1	<1	70	46
	05-05-98	--	--	<1	--	<1	--	<1	<1	70	43
	06-18-98	--	--	<1	--	<1	--	<1	<1	70	51
	09-23-98	--	--	1	--	<1	--	<1	2	110	100
	05-25-99	--	--	--	--	--	--	--	--	86	40
	09-14-99	--	--	--	--	--	--	--	--	130	117
59	11-01-96	<.1	--	2	--	<1	--	<1	3	210	189
	05-24-97	<.1	--	<1	--	<1	--	<1	<1	250	89
60	10-31-96	<.1	<.1	3	<1	<1	<1	<1	3	<10	1
	05-13-97	<.1	--	<1	<1	<1	<1	<1	<1	10	3
	05-23-97	<.1	--	<1	<1	<1	<1	<1	<1	<10	4
	07-17-97	--	--	2	--	<1	--	<1	2	<10	2
	09-25-97	--	--	2	--	<1	--	<1	2	<10	2
	07-21-98	--	--	2	--	<1	--	<1	2	<10	2
	07-22-98	--	--	--	--	--	--	--	--	--	<20
	07-23-98	--	--	--	--	--	--	--	--	--	<20
	07-24-98	--	--	--	--	--	--	--	--	--	<20
	07-25-98	--	--	--	--	--	--	--	--	--	<20
	09-23-98	--	--	3	--	<1	--	<1	2	<10	3
	08-02-99	--	--	--	--	--	--	--	--	<40	2
	08-03-99	--	--	--	--	--	--	--	--	--	3
	08-04-99	--	--	--	--	--	--	--	--	--	2
	08-05-99	--	--	--	--	--	--	--	--	--	5
61	11-01-96	<.1	--	3	--	<1	--	<1	3	180	138
	05-24-97	<.1	--	<1	--	<1	--	<1	<1	480	154
62	11-02-96	<.1	--	2	--	<1	--	<1	4	30	14
	05-24-97	<.1	--	1	--	<1	--	<1	2	190	57

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Station name	Date	Time	Discharge, instantaneous (ft^3/s)	Sediment, suspended (mg/L)	Sediment, suspended, diameter (percent finer than 0.062 mm)	Specific conductance, field (µS/cm)	pH, field (standard units)	Temperature, water (°C)	Hardness (mg/L as $CaCO_3$)
				BASIN CREEK						
5	Basin Creek above Buckeye Mine, near Basin	10-16-96	1030	--	--	--	78	--	--	--
		09-25-98	1345	.44	29	99	79	7.6	5.0	32
		10-16-98	1045	.43	1	80	76	7.8	1.0	31
		05-28-99	1010	7.9	--	--	37	8.1	2.0	16
		09-13-99	1115	.34	15	29	79	7.8	5.0	33
6	Buckeye Mine tributary near Basin	10-16-98	1055	.05	1	67	87	8.3	1.0	36
		05-28-99	1030	1.7	--	--	42	7.1	6.0	16
		09-13-99	1030	.009	7	90	104	7.9	4.5	47
7	Basin Creek below Buckeye Mine tributary, near Basin	05-27-97	1130	12	--	--	42	--	4.0	--
		04-30-98	1100	5.0	8	66	55	7.0	0.0	23
		05-07-98	1315	10	48	46	45	7.7	--	18
		10-16-98	1340	.48	1	75	75	7.7	.5	31
		05-28-99	0945	9.2	--	--	39	7.2	2.5	16
		09-13-99	1130	.37	2	64	80	7.8	5.0	33
8	Basin Creek below Buckeye Mine, near Basin	10-16-96	1010	.51	1	62	82	7.3	0.0	34
		05-27-97	1045	15	10	36	44	7.1	5.0	16
		04-30-98	1015	6.3	16	32	57	7.3	3.0	23
		05-07-98	1445	17	74	77	49	7.0	3.0	17
		09-25-98	1215	.49	4	79	80	7.8	8.0	32
		10-16-98	1315	.66	4	82	75	7.6	.5	27
		05-28-99	0840	13	--	--	39	6.7	2.0	16
		09-13-99	1250	.35	1	82	82	7.9	11.0	33
9	Grub Gulch near Basin	10-16-96	1115	--	--	--	73	--	0.0	--
		05-27-97	1300	13	--	--	36	--	5.0	--
10	Clear Creek near Basin	10-30-96	1315	.08	--	--	122	--	0.0	--
		05-27-97	1330	11	--	--	43	--	4.5	--
11	Jimmys Creek near Basin	10-30-96	1330	.02	--	--	41	--	4.5	--
		05-27-97	1345	5.5	--	--	16	--	6.0	--
12	Basin Creek above Joe Bowers Creek, near Basin	10-16-96	1145	--	--	--	90	--	0.0	--
		05-27-97	1505	75	--	--	29	--	6.0	--
13	Joe Bowers Creek near Basin	10-30-96	1250	.32	--	--	44	--	0.0	--
		05-27-97	1430	10	--	--	18	--	6.5	--
14	Basin Creek at Joe Bowers Creek, near Basin	05-27-97	1500	85	--	--	27	--	6.5	--
15	Weasel Gulch near Basin	10-30-96	1400	.10	--	--	39	--	4.0	--
		05-27-97	1545	5.9	--	--	17	--	5.0	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	ANC, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Silica, dissolved (mg/L as SiO_2)	Dissolved solids, calculated (mg/L)
					BASIN CREEK						
5	10-16-96	--	--	--	--	--	--	--	--	--	--
	09-25-98	9.5	2.1	2.2	1.1	32	6.8	.19	<.10	14	55
	10-16-98	9.0	2.1	2.0	1.1	31	6.7	.24	<.10	14	53
	05-28-99	4.8	1.0	1.1	.68	15	2.7	.24	--	--	--
	09-13-99	9.5	2.3	2.1	1.1	33	6.7	<.29	--	--	--
6	10-16-98	10	2.6	2.5	1.0	35	7.1	.26	<.10	11	55
	05-28-99	4.8	1.0	1.3	.64	11	6.6	.84	--	--	--
	09-13-99	13	3.2	2.7	.99	47	5.0	<.29	--	--	--
7	05-27-97	--	--	--	--	--	--	--	--	--	--
	04-30-98	6.7	1.5	1.3	1.0	19	6.5	.23	<.10	8.9	38
	05-07-98	5.4	1.2	1.1	.77	14	5.8	.27	<.10	7.2	31
	10-16-98	9.0	2.1	2.1	.94	31	6.8	.21	<.10	13	53
	05-28-99	4.8	1.0	1.2	.67	14	3.5	.21	--	--	--
	09-13-99	9.5	2.3	2.1	1.1	34	6.7	<.29	--	--	--
8	10-16-96	10	2.3	2.3	1.0	32	8.7	.30	<.10	13	57
	05-27-97	4.8	1.1	1.2	.67	12	7.6	.19	<.10	9.6	33
	04-30-98	6.8	1.5	1.3	1.2	20	7.1	.28	<.10	8.9	40
	05-07-98	5.0	1.1	1.1	.91	10	8.7	.22	<.10	7.8	32
	09-25-98	9.3	2.2	2.2	.99	31	7.8	.19	<.10	14	56
	10-16-98	7.7	1.8	2.0	.83	29	7.5	.22	<.10	13	51
	05-28-99	4.7	1.0	1.2	.68	13	4.7	.22	--	--	--
	09-13-99	9.5	2.3	2.3	1.1	32	8.0	<.29	--	--	--
9	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
10	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
11	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
12	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
13	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
14	05-27-97	--	--	--	--	--	--	--	--	--	--
15	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Nitrite, dissolved (mg/L as N)	Nitrite plus nitrate, dissolved (mg/L as N)	Ammonia, dissolved (mg/L as N)	Ammonia plus organic nitrogen, total (mg/L as N)	Phosphorus, total (mg/L as P)	Phosphorus, orthophosphate, dissolved (mg/L as P)
				BASIN CREEK			
5	10-16-96	--	--	--	--	--	--
	09-25-98	--	--	--	<.1	.011	--
	10-16-98	--	--	--	--	--	--
	05-28-99	--	--	--	--	--	--
	09-13-99	--	--	--	--	--	--
6	10-16-98	--	--	--	--	--	--
	05-28-99	--	--	--	--	--	--
	09-13-99	--	--	--	--	--	--
7	05-27-97	--	--	--	--	--	--
	04-30-98	--	--	--	--	--	--
	05-07-98	--	--	--	--	--	--
	10-16-98	--	--	--	--	--	--
	05-28-99	--	--	--	--	--	--
	09-13-99	--	--	--	--	--	--
8	10-16-96	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--
	04-30-98	--	--	--	--	--	--
	05-07-98	--	--	--	--	--	--
	09-25-98	--	--	--	<.1	<.05	--
	10-16-98	--	--	--	--	--	--
	05-28-99	--	--	--	--	--	--
	09-13-99	--	--	--	--	--	--
9	10-16-96	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--
10	10-30-96	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--
11	10-30-96	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--
12	10-16-96	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--
13	10-30-96	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--
14	05-27-97	--	--	--	--	--	--
15	10-30-96	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Aluminum, total recoverable (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Antimony, dissolved (µg/L as Sb)	Arsenic, total recoverable (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total recoverable (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)
						BASIN CREEK						
5	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	09-25-98	1,300	8.3	<1	4	3	8.1	<1	<1	<.3	--	<1
	10-16-98	17	2.3	<1	2	1	4.7	<1	<1	<.3	--	<1
	05-28-99	185	52	--	4	2	--	--	<1	<.3	--	--
	09-13-99	28	4.7	--	2	3	--	--	<1	<.3	--	--
6	10-16-98	21	3.8	<1	3	<1	5.5	<1	<1	<.3	--	<1
	05-28-99	440	160	--	8	3	--	--	2	1.9	--	--
	09-13-99	16	7.1	--	3	2	--	--	<1	<.3	--	--
7	05-27-97	--	--	--	--	--	--	--	--	--	--	--
	04-30-98	350	149	<1	5	3	6.1	<1	<1	<.3	--	<1
	05-07-98	900	102	<1	10	7	5.5	<1	<1	.5	--	<1
	10-16-98	<10	13	<1	2	2	4.7	<1	<1	<.3	--	<1
	05-28-99	220	66	--	3	2	--	--	<1	.4	--	--
	09-13-99	41	5	--	3	3	--	--	<1	<.3	--	--
8	10-16-96	--	22	3	19	16	5.0	<1	<1	.2	<1	<1
	05-27-97	430	225	2	36	13	6.1	<1	1	1.2	<1	<1
	04-30-98	430	154	3	52	29	7.9	<1	<1	.8	--	<1
	05-07-98	1,300	219	7	500	38	8.3	<1	2	1.4	--	<1
	09-25-98	90	13	4	24	21	5.8	<1	<1	<.3	--	<1
	10-16-98	72	12	2	30	14	4.3	<1	<1	<.3	--	<1
	05-28-99	300	120	--	25	10	--	--	<1	.6	--	--
	09-13-99	39	26	--	36	32	--	--	<1	<.3	--	--
9	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--	--
10	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--	--
11	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--	--
12	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--	--
13	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--	--
14	05-27-97	--	--	--	--	--	--	--	--	--	--	--
15	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Cobalt, dissolved (µg/L as Co)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
					BASIN CREEK						
5	10-16-96	--	--	--	--	--	--	--	--	--	--
	09-25-98	<1	3	<1	1,200	17	7	<1	--	46	13
	10-16-98	<1	<1	<1	71	48	<1	<1	--	<10	8
	05-28-99	--	2	2	240	61	1	<1	--	11	3
	09-13-99	--	<1	<1	470	230	<1	<1	--	230	214
6	10-16-98	<1	<1	<1	190	50	<1	<1	--	73	54
	05-28-99	--	14	11	460	79	1	<1	--	220	178
	09-13-99	--	<1	<1	75	60	<1	<1	--	9	9
7	05-27-97	--	--	--	--	--	--	--	--	--	--
	04-30-98	<1	9	9	600	190	1	<1	--	200	184
	05-07-98	<1	7	5	2,000	160	7	<1	--	330	229
	10-16-98	<1	<1	<1	130	103	<1	<1	--	26	28
	05-28-99	--	3	4	230	54	<1	<1	--	43	39
	09-13-99	--	<1	<1	340	130	<1	<1	--	33	21
8	10-16-96	<1	4	2	170	130	3	<1	<4	70	65
	05-27-97	<1	18	18	530	180	24	10	<4	140	136
	04-30-98	<1	12	11	880	240	28	7.7	--	200	187
	05-07-98	<1	40	18	3,200	240	340	23	--	410	306
	09-25-98	<1	3	2	250	93	2	<1	--	55	48
	10-16-98	<1	3	2	380	88	9	<1	--	74	52
	05-28-99	--	11	9	350	100	17	5.4	--	91	85
	09-13-99	--	3	2	220	160	5	2.0	--	61	55
9	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
10	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
11	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
12	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
13	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
14	05-27-97	--	--	--	--	--	--	--	--	--	--
15	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Mercury, total recoverable (µg/L as Hg)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Nickel, total recoverable (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, total recoverable (µg/L as Ag)	Silver, dissolved (µg/L as Ag)	Uranium, dissolved (µg/L as U)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)
						BASIN CREEK					
5	10-16-96	--	--	--	--	--	--	--	--	<10	--
	09-25-98	--	--	<1	--	<1	--	<1	<1	20	3
	10-16-98	--	--	<1	--	<1	--	<1	<1	10	7
	05-28-99	--	--	--	--	--	--	--	--	<40	6
	09-13-99	--	--	--	--	--	--	--	--	<31	7
6	10-16-98	--	--	<1	--	<1	--	<1	<1	21	15
	05-28-99	--	--	--	--	--	--	--	--	250	234
	09-13-99	--	--	--	--	--	--	--	--	e28	28
7	05-27-97	--	--	--	--	--	--	--	--	100	--
	04-30-98	--	--	<1	--	1	--	<1	<1	130	129
	05-07-98	--	--	<1	--	1	--	<1	<1	140	109
	10-16-98	--	--	<1	--	<1	--	<1	<1	15	12
	05-28-99	--	--	--	--	--	--	--	--	52	49
	09-13-99	--	--	--	--	--	--	--	--	<31	7
8	10-16-96	<.1	<.1	<1	<1	<1	<1	<1	<1	40	39
	05-27-97	<.1	--	<1	<1	<1	<1	<1	<1	180	173
	04-30-98	--	--	<1	--	1	--	<1	<1	150	140
	05-07-98	--	--	<1	--	<1	--	<1	<1	270	218
	09-25-98	--	--	<1	--	<1	--	<1	<1	30	24
	10-16-98	--	--	<1	--	<1	--	<1	<1	42	26
	05-28-99	--	--	--	--	--	--	--	--	95	90
	09-13-99	--	--	--	--	--	--	--	--	37	35
9	10-16-96	--	--	--	--	--	--	--	--	20	--
	05-27-97	--	--	--	--	--	--	--	--	40	--
10	10-30-96	--	--	--	--	--	--	--	--	30	--
	05-27-97	--	--	--	--	--	--	--	--	30	--
11	10-30-96	--	--	--	--	--	--	--	--	<10	--
	05-27-97	--	--	--	--	--	--	--	--	<10	--
12	10-16-96	--	--	--	--	--	--	--	--	<10	--
	05-27-97	--	--	--	--	--	--	--	--	50	--
13	10-30-96	--	--	--	--	--	--	--	--	<10	--
	05-27-97	--	--	--	--	--	--	--	--	<10	--
14	05-27-97	--	--	--	--	--	--	--	--	40	--
15	10-30-96	--	--	--	--	--	--	--	--	<10	--
	05-27-97	--	--	--	--	--	--	--	--	<10	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Station name	Date	Time	Discharge, instantaneous (ft^3/s)	Sediment, suspended (mg/L)	Sediment, suspended, diameter (percent finer than 0.062 mm)	Specific conductance, field (µS/cm)	pH, field (standard units)	Temperature, water (°C)	Hardness (mg/L as $CaCO_3$)
				BASIN CREEK--Continued						
16	Jack Creek above Bullion Mine tributary, near Basin	10-30-96	1200	.75	--	--	95	--	0.0	--
		05-16-97	1130	8.3	--	--	64	--	1.5	--
		09-25-97	1000	.38	1	50	98	7.8	5.0	44
		05-07-98	1715	8.0	16	64	60	7.7	2.0	25
		09-24-98	0935	.42	--	--	98	7.9	5.0	42
		05-24-99	1100	6.6	10	50	65	8.0	2.5	27
		08-02-99	1430	.53	1	83	94	7.7	13.0	39
17	Bullion Mine tributary at mouth, near Basin	10-31-96	1600	.40	11	93	238	5.9	0.0	86
		05-16-97	1100	5.6	28	50	92	6.6	2.0	29
		09-25-97	1110	.64	15	97	228	5.4	6.0	77
		02-11-98	1200	e.19	5	91	210	6.8	0.0	77
		04-30-98	1400	1.0	7	81	110	7.1	0.0	39
		05-07-98	1730	3.9	151	91	102	6.7	2.0	33
		07-21-98	0900	1.0	--	--	120	7.4	8.5	39
		07-22-98	1220	--	--	--	120	7.4	13.0	--
		09-24-98	1005	.15	10	99	266	5.6	4.0	87
		05-24-99	1115	3.4	36	65	90	7.4	3.0	30
		08-02-99	1310	.24	13	96	203	5.5	13.5	66
		08-03-99	1001	--	--	--	175	6.2	9.5	--
		08-03-99	1301	--	--	--	182	6.0	14.0	--
18	Jack Creek tributary near Basin	10-30-96	1140	1.2	--	--	84	--	0.0	--
		05-27-97	1230	16	--	--	31	--	2.0	--
		07-22-98	1240	--	--	--	49	7.7	12.0	--
		07-23-98	1115	--	--	--	51	8.1	10.0	--
		07-24-98	1225	--	--	--	51	8.0	11.0	--
19	Jack Creek below Bullion Mine tributary, near Basin	10-31-96	1530	.87	3	91	132	7.7	0.0	49
		05-16-97	1330	35	99	27	53	7.3	2.0	19
		07-18-97	1500	4.4	4	79	83	7.5	11.5	30
		09-25-97	1240	.86	5	63	130	7.6	9.5	51
		04-30-98	1415	5.0	11	71	94	7.5	0.0	38
		05-07-98	1900	20	31	77	57	7.3	2.0	22
		07-21-98	1024	7.0	6	55	76	7.7	11.0	29
		07-25-98	1245	--	--	--	78	7.8	12.0	--
		09-24-98	1130	.93	3	73	138	7.7	5.5	49
		05-24-99	1245	19	26	51	60	7.5	4.5	21
		08-02-99	1145	1.2	3	86	119	7.8	12.0	44
		08-03-99	1105	--	--	--	--	--	--	--
20	Bullion Smelter tributary near Basin	10-30-96	1100	.43	--	--	67	--	0.0	--
		05-27-97	1645	4.7	--	--	39	--	4.0	--
21	Basin Creek tributary near Basin	10-30-96	1435	.10	--	--	177	--	0.0	--
		05-13-97	1540	2.4	--	--	53	--	3.5	--
22	Basin Creek at Basin Canyon Campground, near Basin	10-16-96	1240	3.0	1	72	96	6.6	2.0	37
		05-21-97	1315	233	31	42	39	7.2	6.5	12

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	ANC, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Silica, dissolved (mg/L as SiO_2)	Dissolved solids, calculated (mg/L)
					BASIN CREEK--Continued						
16	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-16-97	--	--	--	--	--	--	--	--	--	--
	09-25-97	13	2.8	2.6	1.1	39	10	.36	<.10	15	69
	05-07-98	7.6	1.5	1.7	.86	23	5.6	.29	<.10	10	42
	09-24-98	12	2.6	2.7	1.2	39	10	.23	<.10	16	69
	05-24-99	7.9	1.7	1.8	.90	24	6.5	.24	--	--	--
	08-02-99	12	2.5	2.7	1.1	36	8.9	<.29	--	--	--
17	10-31-96	24	6.4	3.2	1.1	1.3	100	.40	.10	21	166
	05-16-97	8.1	2.1	1.8	.69	4.6	30	.28	<.10	13	61
	09-25-97	21	5.8	3.0	1.1	<1	97	.37	.13	21	160
	02-11-98	21	5.8	3.1	1.0	6.2	84	.29	.12	20	146
	04-30-98	11	2.7	2.2	.77	10	36	.37	<.10	14	76
	05-07-98	9.5	2.3	1.8	.74	2.9	37	.22	<.10	12	68
	07-21-98	11	2.8	2.4	.85	3.9	43	.19	<.10	16	82
	07-22-98	--	--	--	--	--	--	--	--	--	--
	09-24-98	24	6.7	3.3	1.2	--	120	.45	.13	23	--
	05-24-99	8.3	2.2	1.9	.70	6.4	29	.28	--	--	--
	08-02-99	18	5.0	3.0	1.2	1.3	84	.29	--	--	--
	08-03-99	--	--	--	--	--	--	--	--	--	--
	08-03-99	--	--	--	--	--	--	--	--	--	--
18	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
	07-22-98	--	--	--	--	--	--	--	--	--	--
	07-23-98	--	--	--	--	--	--	--	--	--	--
	07-24-98	--	--	--	--	--	--	--	--	--	--
19	10-31-96	14	3.5	3.0	1.1	24	36	.40	<.10	18	92
	05-16-97	5.3	1.3	1.6	.78	12	9.8	.27	<.10	12	39
	07-18-97	8.7	2.0	2.2	1.0	21	17	.19	<.10	15	60
	09-25-97	14	3.6	2.9	1.3	23	34	.34	.10	18	90
	04-30-98	11	2.4	2.2	.98	26	17	.33	<.10	12	63
	05-07-98	6.4	1.5	1.6	.84	14	11	.22	<.10	11	41
	07-21-98	8.4	1.9	2.2	.93	22	11	.21	<.10	15	54
	07-25-98	--	--	--	--	--	--	--	--	--	--
	09-24-98	14	3.5	3.1	1.3	22	36	.31	.10	19	92
	05-24-99	6.1	1.5	1.7	.86	15	11	.25	--	--	--
	08-02-99	12	3.1	2.9	.12	22	30	<.29	--	--	--
	08-03-99	--	--	--	--	--	--	--	--	--	--
20	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
21	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--
22	10-16-96	11	2.4	3.4	1.2	27	16	1.1	<.10	17	69
	05-21-97	3.3	.76	1.8	.83	6.4	5.4	2.7	<.10	13	32

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Nitrite, dissolved (mg/L as N)	Nitrite plus nitrate, dissolved (mg/L as N)	Ammonia, dissolved (mg/L as N)	Ammonia plus organic nitrogen, total (mg/L as N)	Phosphorus, total (mg/L as P)	Phosphorus, orthophosphate, dissolved (mg/L as P)
				BASIN CREEK--Continued			
16	10-30-96	--	--	--	--	--	--
	05-16-97	--	--	--	--	--	--
	09-25-97	<.01	<.05	<.015	<.2	<.010	<.010
	05-07-98	--	--	--	--	--	--
	09-24-98	--	--	--	--	--	--
	05-24-99	--	--	--	--	--	--
	08-02-99	--	--	--	--	--	--
17	10-31-96	--	--	--	--	--	--
	05-16-97	--	--	--	--	--	--
	09-25-97	<.01	<.05	<.015	<.2	<.010	<.010
	02-11-98	<.01	.11	.039	--	--	.012
	04-30-98	--	--	--	--	--	--
	05-07-98	--	--	--	--	--	--
	07-21-98	<.01	.05	.038	--	--	<.010
	07-22-98	--	--	--	--	--	--
	09-24-98	--	--	--	--	--	--
	05-24-99	--	--	--	--	--	--
	08-02-99	--	--	--	--	--	--
	08-03-99	--	--	--	--	--	--
	08-03-99	--	--	--	--	--	--
18	10-30-96	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--
	07-22-98	--	--	--	--	--	--
	07-23-98	--	--	--	--	--	--
	07-24-98	--	--	--	--	--	--
19	10-31-96	--	--	--	--	--	--
	05-16-97	--	--	--	--	--	--
	07-18-97	<.01	<.05	<.015	--	--	<.010
	09-25-97	<.01	<.05	<.015	<.2	<.010	<.010
	04-30-98	--	--	--	--	--	--
	05-07-98	--	--	--	--	--	--
	07-21-98	<.01	<.05	.036	--	--	<.010
	07-25-98	--	--	--	--	--	--
	09-22-98	--	--	--	--	--	--
	05-24-99	--	--	--	--	--	--
	08-02-99	--	--	--	--	--	--
	08-03-99	--	--	--	--	--	--
20	10-30-96	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--
21	10-30-96	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--
22	10-16-96	--	--	--	--	--	--
	05-21-97	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Aluminum, total recoverable (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Antimony, dissolved (µg/L as Sb)	Arsenic, total recoverable (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total recoverable (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)
						BASIN CREEK--Continued						
16	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	05-16-97	--	--	--	--	--	--	--	--	--	--	--
	09-25-97	40	3.2	<1	6	5	9.8	<1	<1	.1	--	<1
	05-07-98	390	29	<1	7	3	5.9	<1	<1	<.3	--	<1
	09-24-98	20	3.2	<1	6	6	10	<1	<1	<.3	--	<1
	05-24-99	450	31	--	12	5	--	--	<1	<.3	--	--
	08-02-99	<30	5.3	--	8	8	--	--	<1	<.3	--	--
17	10-31-96	--	249	<1	17	<1	26	<1	52	54	<1	<1
	05-16-97	1,300	59	<1	100	2	11	<1	16	15	<1	<1
	09-25-97	1,500	284	<1	62	<1	23	<1	49	48	--	<1
	02-11-98	860	21	<1	5	<1	18	<1	38	39	--	<1
	04-30-98	870	127	<1	28	3	11	<1	16	16	--	<1
	05-07-98	3,300	47	1	440	3	13	<1	17	17	--	<1
	07-21-98	770	11	1	90	<1	15	<1	20	20	--	<1
	07-22-98	--	--	--	--	--	--	--	--	20	--	--
	09-24-98	1,300	1,140	<1	63	1	28	<1	58	57	--	<1
	05-24-99	1,300	240	--	190	10	--	--	15	13	--	--
	08-02-99	1,300	306	--	97	1	--	--	39	38	--	--
	08-03-99	--	--	--	--	--	--	--	--	33	--	--
	08-03-99	--	--	--	--	--	--	--	--	35	--	--
18	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--	--
	07-22-98	--	--	--	--	--	--	--	--	<.1	--	--
	07-23-98	--	--	--	--	--	--	--	--	<.1	--	--
	07-24-98	--	--	--	--	--	--	--	--	<.1	--	--
19	10-31-96	--	37	<1	6	2	18	<1	11	11	<1	<1
	05-16-97	1,000	63	<1	32	2	13	<1	3	2.5	<1	<1
	07-18-97	--	21	<1	32	3	13	<1	5	4.1	--	<1
	09-25-97	280	44	<1	18	1	17	<1	12	12	--	<1
	04-30-98	310	86	<1	12	4	9.6	<1	5	4.8	--	<1
	05-07-98	750	65	<1	57	3	11	<1	4	3.2	--	<1
	07-21-98	210	31	<1	22	3	14	<1	3	3.2	--	<1
	07-25-98	--	--	--	--	--	--	--	--	3.6	--	--
	09-24-98	310	123	<1	18	2	17	<1	13	12	--	<1
	05-24-99	660	77	--	40	4	--	--	3	2.8	--	--
	08-02-99	280	63	--	23	2	--	--	10	8.6	--	--
	08-03-99	--	--	--	--	--	--	--	--	7.3	--	--
20	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--	--
21	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--	--
22	10-16-96	--	7.5	<1	9	7	24	<1	<1	.6	<1	<1
	05-21-97	570	98	<1	12	4	13	<1	<1	.5	<1	<1

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Cobalt, dissolved (µg/L as Co)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
					BASIN CREEK--Continued						
16	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-16-97	--	--	--	--	--	--	--	--	--	--
	09-25-97	<1	2	3	50	11	<1	<1	--	<10	1
	05-07-98	<1	8	6	640	62	4	<1	--	29	4
	09-24-98	<1	3	3	20	<10	<1	<1	--	<10	1
	05-24-99	--	9	5	800	55	5	<1	--	34	2
	08-02-99	--	3	3	23	<10	<1	<1	--	<3	1
17	10-31-96	17	590	537	2,600	570	12	2.0	8	1,700	1,690
	05-16-97	6	230	81	2,900	180	26	<1	<4	530	546
	09-25-97	18	720	619	5,100	1,700	27	3.8	--	1,800	1,750
	02-11-98	11	360	270	370	11	5	<1	--	1,200	1,250
	04-30-98	6	200	88	880	110	14	<1	--	640	663
	05-07-98	8	350	90	7,000	130	500	1.1	--	870	748
	07-21-98	11	370	116	3,600	280	12	<1	--	780	835
	07-22-98	--	--	110	--	--	--	--	--	--	--
	09-24-98	22	760	756	5,000	1,700	20	8.7	--	2,100	2,060
	05-24-99	--	250	110	2,800	410	44	1.6	--	560	536
	08-02-99	--	600	557	5,100	860	25	3.2	--	1,500	1,560
	08-03-99	--	--	245	--	--	--	--	--	--	--
	08-03-99	--	--	314	--	--	--	--	--	--	--
18	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
	07-22-98	--	--	2	--	--	--	--	--	--	--
	07-23-98	--	--	2	--	--	--	--	--	--	--
	07-24-98	--	--	1	--	--	--	--	--	--	--
19	10-31-96	4	110	73	580	98	3	<1	<4	350	375
	05-16-97	1	46	23	2,000	89	14	<1	<4	160	108
	07-18-97	3	94	34	890	79	6	<1	--	230	220
	09-25-97	5	140	67	1,200	250	6	<1	--	440	447
	04-30-98	2	60	43	410	74	5	<1	--	190	193
	05-07-98	2	65	32	1,400	110	48	<1	--	180	150
	07-21-98	2	58	33	670	81	2	<1	--	140	141
	07-25-98	--	--	32	--	--	--	--	--	--	--
	09-24-98	5	150	71	1,000	200	4	<1	--	460	454
	05-24-99	--	47	31	1,200	110	13	<1	--	150	122
	08-02-99	--	180	51	1,100	110	4	<1	--	360	370
	08-03-99	--	--	51	--	--	--	--	--	--	--
20	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--
21	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--
22	10-16-96	<1	5	4	270	160	<1	<1	<4	60	55
	05-21-97	<1	14	10	570	100	6	<1	<4	44	19

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Mercury, total recoverable (µg/L as Hg)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Nickel, total recoverable (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, total recoverable (µg/L as Ag)	Silver, dissolved (µg/L as Ag)	Uranium, dissolved (µg/L as U)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)
					BASIN CREEK--Continued						
16	10-30-96	--	--	--	--	--	--	--	--	30	--
	05-16-97	--	--	--	--	--	--	--	--	30	--
	09-25-97	--	--	2	--	<1	--	<1	<1	20	17
	05-07-98	--	--	<1	--	1	--	<1	<1	20	15
	09-24-98	--	--	2	--	<1	--	<1	<1	30	33
	05-24-99	--	--	--	--	--	--	--	--	40	16
	08-02-99	--	--	--	--	--	--	--	--	<40	29
17	10-31-96	<.1	<.1	<1	13	12	<1	<1	4	6,000	5,660
	05-16-97	<.1	--	<1	4	3	<1	<1	2	1,700	1,680
	09-25-97	--	--	<1	--	11	--	<1	6	5,200	4,930
	02-11-98	--	--	<1	--	10	--	<1	2	4,600	4,490
	04-30-98	--	--	<1	--	5	--	<1	2	1,800	1,780
	05-07-98	--	--	<1	--	4	--	<1	2	4,200	2,000
	07-21-98	--	--	<1	--	5	--	<1	<1	2,300	2,190
	07-22-98	--	--	<1	--	--	--	<1	--	--	2,130
	09-24-98	--	--	<1	--	13	--	<1	10	6,200	5,820
	05-24-99	--	--	--	--	--	--	--	--	1,600	1,520
	08-02-99	--	--	--	--	--	--	--	--	4,100	4,420
	08-03-99	--	--	--	--	--	--	--	--	--	3,950
	08-03-99	--	--	--	--	--	--	--	--	--	3,830
18	10-30-96	--	--	--	--	--	--	--	--	<10	--
	05-27-97	--	--	--	--	--	--	--	--	<10	--
	07-22-98	--	--	--	--	--	--	--	--	--	<20
	07-23-98	--	--	--	--	--	--	--	--	--	<20
	07-24-98	--	--	--	--	--	--	--	--	--	<20
19	10-31-96	<.1	<.1	<1	3	3	<1	<1	<1	1,300	1,270
	05-16-97	<.1	--	<1	2	<1	<1	<1	<1	360	312
	07-18-97	--	--	<1	--	1	--	<1	<1	590	487
	09-25-97	--	--	<1	--	3	--	<1	1	1,200	1,110
	04-30-98	--	--	<1	--	2	--	<1	1	530	507
	05-07-98	--	--	<1	--	1	--	<1	<1	400	352
	07-21-98	--	--	<1	--	1	--	<1	<1	400	351
	07-25-98	--	--	--	--	--	--	--	--	--	403
	09-24-98	--	--	1	--	3	--	<1	2	1,300	1,280
	05-24-99	--	--	--	--	--	--	--	--	370	330
	08-02-99	--	--	--	--	--	--	--	--	960	870
	08-03-99	--	--	--	--	--	--	--	--	--	770
20	10-30-96	--	--	--	--	--	--	--	--	<10	--
	05-27-97	--	--	--	--	--	--	--	--	<10	--
21	10-30-96	--	--	--	--	--	--	--	--	<10	--
	05-13-97	--	--	--	--	--	--	--	--	<10	--
22	10-16-96	<.1	<.1	<1	<1	<1	<1	<1	<1	90	92
	05-21-97	<.1	--	<1	<1	<1	<1	<1	<1	80	65

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Station name	Date	Time	Discharge, instantaneous (ft^3/s)	Sediment, suspended (mg/L)	Sediment, suspended, diameter (percent finer than 0.062 mm)	Specific conductance, field (µS/cm)	pH, field (standard units)	Temperature, water (°C)	Hardness (mg/L as $CaCO_3$)
		BASIN CREEK--Continued								
23	Saul Haggarty Gulch at mouth, near Basin	10-30-96	1450	.20	--	--	122	--	0.0	--
		05-13-97	1445	8.8	--	--	56	--	7.0	--
24	Basin Creek at Basin	10-15-96	1545	3.9	1	61	104	7.6	5.5	42
		12-03-96	1245	3.9	1	56	--	7.5	0.0	39
		02-11-97	1135	4.0	2	72	108	7.7	0.0	42
		04-18-97	1140	15	13	67	100	7.9	4.5	35
		05-08-97	0945	45	10	75	67	7.6	2.5	25
		05-21-97	1630	251	35	42	38	7.6	10.0	13
		06-03-97	1015	173	26	36	38	7.0	7.5	13
		06-11-97	1030	211	74	38	40	7.4	9.5	14
		06-17-97	1030	106	17	42	50	7.5	11.0	18
		07-18-97	1300	26	2	83	73	7.7	13.5	25
		09-23-97	1050	5.8	1	42	107	7.8	8.0	39
		02-09-98	1400	4.2	1	71	105	7.8	0.0	40
		04-29-98	1045	48	12	85	62	7.9	4.5	23
		05-05-98	1015	136	29	62	41	7.7	3.5	14
		09-23-98	1545	4.4	3	52	100	8.2	11.5	40
		05-25-99	1120	188	45	47	36	7.4	5.5	12
		09-14-99	1030	3.1	2	56	106	7.8	8.5	40
		CATARACT CREEK								
26	Cataract Creek above Nellie Grant Creek, near Basin	10-18-96	1143	.30	--	--	83	--	0.0	--
		09-26-97	1320	.22	--	--	79	--	8.5	--
27	Cataract Creek tributary above Nellie Grant Creek, near Basin	10-18-96	1142	.10	--	--	126	--	.5	--
		09-26-97	1340	.03	--	--	103	--	10.0	--
28	Cataract Creek 100 feet above Nellie Grant Creek, near Basin	05-28-97	1320	20	--	--	25	--	5.5	--
		09-26-97	1325	.22	--	--	82	--	9.5	--
		09-22-98	0955	.35	3	64	74	7.7	2.5	36
29	Nellie Grant Creek near Basin	10-18-96	1145	<.1	--	--	133	--	1.0	--
		05-28-97	1400	7.4	--	--	23	--	13.5	--
		09-22-98	1045	e.01	1	90	102	7.0	4.5	49
30	Cataract Creek below Nellie Grant Creek, near Basin	10-18-96	1135	2.0	--	--	91	--	.5	--
		05-28-97	1430	28	--	--	25	--	8.5	--
		09-26-97	1415	.37	--	--	85	--	10.0	--
31	Overland Creek near Basin	05-28-97	1115	7.3	--	--	27	--	3.5	--
		09-26-97	1240	.08	--	--	76	--	9.0	--
32	Cataract Creek above Rocker Creek, near Basin	10-18-96	0945	.68	--	--	89	--	1.0	--
		05-20-97	1245	57	--	--	33	--	4.0	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	ANC, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Silica, dissolved (mg/L as SiO_2)	Dissolved solids, calculated (mg/L)
					BASIN CREEK--Continued						
23	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--
24	10-15-96	12	2.9	3.7	1.4	31	20	1.0	.10	17	77
	12-03-96	11	2.7	3.6	1.3	29	20	1.0	.10	17	75
	02-11-97	12	2.8	--	--	--	--	--	--	--	--
	04-18-97	10	2.4	3.1	1.3	28	15	1.0	<.10	16	67
	05-08-97	7.1	1.7	2.8	1.0	21	9.0	.81	<.10	16	52
	05-21-97	3.7	.83	1.9	.86	10	5.5	.50	<.10	14	34
	06-03-97	3.8	.90	1.8	.88	12	5.1	.44	.13	13	34
	06-11-97	4.2	.93	1.8	.85	13	4.6	.43	<.10	13	33
	06-17-97	5.2	1.2	2.2	.94	17	5.3	.43	<.10	16	41
	07-18-97	7.3	1.7	2.6	1.2	25	8.9	.69	<.10	17	54
	09-23-97	11	2.8	3.7	1.3	32	17	1.4	.10	17	74
	02-09-98	11	2.9	3.6	1.2	30	18	.83	.12	17	74
	04-29-98	6.7	1.5	2.6	1.1	20	8.2	1.1	<.10	14	47
	05-05-98	4.2	.92	1.9	.12	11	5.4	.59	<.10	12	33
	09-23-98	12	2.7	3.6	1.3	32	17	.74	<.10	18	74
	05-25-99	3.5	.81	1.7	.90	11	4.6	.45	--	--	--
	09-14-99	11	2.8	3.7	1.5	32	18	1.0	--	--	--
					CATARACT CREEK						
26	10-18-96	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--
27	10-18-96	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--
28	05-28-97	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--
	09-22-98	11	2.2	2.4	.87	36	4.7	.20	<.10	11	54
29	10-18-96	--	--	--	--	--	--	--	--	--	--
	05-28-97	--	--	--	--	--	--	--	--	--	--
	09-22-98	15	2.7	2.4	.68	51	4.4	.39	.11	12	69
30	10-18-96	--	--	--	--	--	--	--	--	--	--
	05-28-97	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--
31	05-28-97	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--
32	10-18-96	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Nitrite, dissolved (mg/L as N)	Nitrite plus nitrate, dissolved (mg/L as N)	Ammonia, dissolved (mg/L as N)	Ammonia plus organic nitrogen, total (mg/L as N)	Phosphorus, total (mg/L as P)	Phosphorus, orthophosphate, dissolved (mg/L as P)
			BASIN CREEK–Continued				
23	10-30-96	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--
24	10-15-96	--	--	--	--	--	--
	12-03-96	<.01	.06	.030	--	--	<.010
	02-11-97	--	--	--	--	--	--
	04-18-97	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--
	05-21-97	--	--	--	--	--	--
	06-03-97	--	--	--	--	--	--
	06-11-97	--	--	--	--	--	--
	06-17-97	--	--	--	--	--	--
	07-18-97	<.01	<.05	<.015	--	--	<.010
	09-23-97	<.01	<.05	<.015	<.2	.012	<.010
	02-09-98	<.01	.10	.039	--	--	.016
	04-29-98	--	--	--	--	--	--
	05-05-98	--	--	--	--	--	--
	09-23-98	--	--	--	<.1	<.05	--
	05-25-99	--	--	--	--	--	--
	09-14-99	--	--	--	--	--	--
			CATARACT CREEK				
26	10-18-96	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--
27	10-18-96	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--
28	05-28-97	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--
	09-22-98	--	--	--	<.1	<.05	--
29	10-18-96	--	--	--	--	--	--
	05-28-97	--	--	--	--	--	--
	09-22-98	--	--	--	--	--	--
30	10-18-96	--	--	--	--	--	--
	05-28-97	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--
31	05-28-97	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--
32	10-18-96	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Aluminum, total recoverable (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Antimony, dissolved (µg/L as Sb)	Arsenic, total recoverable (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total recoverable (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)
						BASIN CREEK--Continued						
23	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--	--
24	10-15-96	--	5.5	1	7	7	25	<1	<1	.3	<1	<1
	12-03-96	--	6.5	<1	5	4	23	<1	<1	.4	<1	<1
	02-11-97	--	5.5	<1	5	4	26	<1	<1	.4	--	<1
	04-18-97	--	17	<1	11	4	21	<1	<1	.6	--	<1
	05-08-97	600	379	<1	9	4	20	<1	<1	.7	--	<1
	05-21-97	510	98	<1	13	4	13	<1	<1	.5	<1	<1
	06-03-97	380	77	<1	14	6	14	<1	<1	.4	--	<1
	06-11-97	--	112	1	37	9	14	<1	1	.6	--	<1
	06-17-97	190	44	<1	12	6	16	<1	<1	.5	--	<1
	07-18-97	--	21	1	12	7	20	<1	<1	.5	--	<1
	09-23-97	20	4.4	1	8	4	26	<1	<1	.4	--	<1
	02-09-98	30	5.8	1	4	4	23	<1	<1	.4	--	<1
	04-29-98	350	40	<1	12	5	17	<1	<1	.5	--	<1
	05-05-98	610	72	<1	13	5	13	<1	<1	.4	--	<1
	09-23-98	20	6.8	1	8	8	25	<1	<1	<.3	--	<1
	05-25-99	750	95	--	22	5	--	--	<1	.4	--	--
	09-14-99	15	6.1	--	7	6	--	--	<1	<.3	--	--
						CATARACT CREEK						
26	10-18-96	--	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--	--
27	10-18-96	--	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--	--
28	05-28-97	--	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--	--
	09-22-98	20	3.3	<1	<1	<1	7.1	<1	<1	<.3	--	<1
29	10-18-96	--	--	--	--	--	--	--	--	--	--	--
	05-28-97	--	--	--	--	--	--	--	--	--	--	--
	09-22-98	20	2.2	<1	1	<1	32	<1	<1	<.3	--	<1
30	10-18-96	--	--	--	--	--	--	--	--	--	--	--
	05-28-97	--	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--	--
31	05-28-97	--	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--	--
32	10-18-96	--	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Cobalt, dissolved (µg/L as Co)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
					BASIN CREEK–Continued						
23	10-30-96	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--
24	10-15-96	<1	5	3	80	42	<1	<1	<4	<10	4
	12-03-96	<1	3	3	100	47	<1	<1	<4	10	6
	02-11-97	<1	2	3	30	28	<1	<1	--	<10	6
	04-18-97	<1	12	6	640	40	3	<1	--	75	21
	05-08-97	<1	11	8	600	490	2	<1	--	42	19
	05-21-97	<1	16	10	630	90	7	<1	<4	45	15
	06-03-97	<1	14	11	440	100	5	<1	--	32	12
	06-11-97	<1	25	16	1,600	160	20	1.4	--	94	13
	06-17-97	<1	14	12	340	74	3	<1	--	27	16
	07-18-97	<1	12	10	220	87	2	<1	--	25	14
	09-23-97	<1	5	6	90	36	<1	<1	--	<10	5
	02-09-98	<1	4	3	100	32	<1	<1	--	11	10
	04-29-98	<1	15	9	670	110	5	<1	--	55	21
	05-05-98	<1	15	9	800	110	9	<1	--	72	26
	09-23-98	<1	5	4	80	36	<1	<1	--	<10	3
	05-25-99	--	21	10	1,100	90	17	<1	--	89	15
	09-14-99	--	4	3	60	19	<1	<1	--	3	2
					CATARACT CREEK						
26	10-18-96	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--
27	10-18-96	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--
28	05-28-97	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--
	09-22-98	<1	<1	<1	110	54	<1	<1	--	19	18
29	10-18-96	--	--	--	--	--	--	--	--	--	--
	05-28-97	--	--	--	--	--	--	--	--	--	--
	09-22-98	<1	<1	<1	810	510	<1	<1	--	110	107
30	10-18-96	--	--	--	--	--	--	--	--	--	--
	05-28-97	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--
31	05-28-97	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--
32	10-18-96	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Mercury, total recoverable (µg/L as Hg)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Nickel, total recoverable (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, total recoverable (µg/L as Ag)	Silver, dissolved (µg/L as Ag)	Uranium, dissolved (µg/L as U)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)
					BASIN CREEK--Continued						
23	10-30-96	--	--	--	--	--	--	--	--	<10	--
	05-13-97	--	--	--	--	--	--	--	--	<10	--
24	10-15-96	< .1	< .1	<1	<1	<1	<1	<1	<1	60	51
	12-03-96	< .1	< .1	<1	<1	<1	<1	<1	<1	90	82
	02-11-97	--	--	<1	--	<1	--	<1	<1	90	91
	04-18-97	--	--	<1	--	<1	--	<1	<1	140	111
	05-08-97	--	--	<1	--	<1	--	<1	<1	90	73
	05-21-97	< .1	--	<1	<1	<1	<1	<1	<1	90	61
	06-03-97	--	--	<1	--	<1	--	<1	<1	70	54
	06-11-97	--	--	<1	--	<1	--	<1	<1	110	70
	06-17-97	--	--	<1	--	<1	--	<1	<1	80	66
	07-18-97	--	--	<1	--	<1	--	<1	<1	70	61
	09-23-97	--	--	<1	--	3	--	<1	<1	70	63
	02-09-98	--	--	<1	--	<1	--	<1	<1	80	77
	04-29-98	--	--	<1	--	<1	--	<1	<1	100	71
	05-05-98	--	--	<1	--	<1	--	<1	<1	100	67
	09-23-98	--	--	<1	--	<1	--	<1	<1	40	35
	05-25-99	--	--	--	--	--	--	--	--	110	64
	09-14-99	--	--	--	--	--	--	--	--	58	56
					CATARACT CREEK						
26	10-18-96	--	--	--	--	--	--	--	--	<10	--
	09-26-97	--	--	--	--	--	--	--	--	<10	--
27	10-18-96	--	--	--	--	--	--	--	--	310	--
	09-26-97	--	--	--	--	--	--	--	--	260	--
28	05-28-97	--	--	--	--	--	--	--	--	70	--
	09-26-97	--	--	--	--	--	--	--	--	30	--
	09-22-98	--	--	1	--	<1	--	<1	<1	20	17
29	10-18-96	--	--	--	--	--	--	--	--	30	--
	05-28-97	--	--	--	--	--	--	--	--	<10	--
	09-22-98	--	--	<1	--	<1	--	<1	<1	<10	1
30	10-18-96	--	--	--	--	--	--	--	--	30	--
	05-28-97	--	--	--	--	--	--	--	--	50	--
	09-26-97	--	--	--	--	--	--	--	--	30	--
31	05-28-97	--	--	--	--	--	--	--	--	20	--
	09-26-97	--	--	--	--	--	--	--	--	20	--
32	10-18-96	--	--	--	--	--	--	--	--	<10	--
	05-20-97	--	--	--	--	--	--	--	--	30	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Station name	Date	Time	Discharge, instantaneous (ft^3/s)	Sediment, suspended (mg/L)	Sediment, suspended, diameter (percent finer than 0.062 mm)	Specific conductance, field (µS/cm)	pH, field (standard units)	Temperature, water (°C)	Hardness (mg/L as $CaCO_3$)
		CATARACT CREEK--Continued								
33	Rocker Creek at mouth, near Basin	10-18-96	0940	.15	2	65	93	7.4	.5	41
		05-20-97	1015	9.8	20	24	50	7.6	5.5	18
34	Cataract Creek below Rocker Creek, near Basin	10-18-96	1015	.83	1	75	89	7.7	.5	37
		05-20-97	1130	67	6	58	35	7.5	4.0	14
35	Snowdrift Creek near Basin	10-16-96	1630	2.0	--	--	105	--	0.0	--
		05-20-97	1440	9.9	--	--	46	--	7.0	--
36	Cataract Creek above Hoodoo Creek, near Basin	10-16-96	1620	8.0	--	--	92	--	1.5	--
		05-20-97	1530	100	--	--	37	--	6.0	--
37	Hoodoo Creek near Basin	05-20-97	1445	3.5	--	--	64	--	6.5	--
		09-26-97	1100	.85	--	--	114	--	7.0	--
38	Cataract Creek below Hoodoo Creek, near Basin	10-16-96	1640	12	--	--	105	--	1.5	--
		05-20-97	1545	103	--	--	41	--	6.0	--
39	Cataract Creek tributary 1.4 mi above Uncle Sam	10-16-96	1610	.10	--	--	--	--	1.5	--
	Gulch, near Basin	05-20-97	1630	5.5	--	--	32	--	3.0	--
40	Cataract Creek tributary 0.6 mi above Uncle Sam	10-16-96	1600	--	--	--	131	--	1.0	--
	Gulch, near Basin	05-21-97	0900	2.7	10	41	59	7.8	6.0	22
		09-24-97	0900	.09	1	60	127	7.9	4.5	57
41	Cataract Creek above Uncle Sam Gulch, near Basin	10-16-96	1500	3.2	--	--	123	--	2.0	--
		05-13-97	1630	--	--	--	47	--	3.0	--
		05-21-97	1015	121	14	50	44	7.9	4.0	17
		07-23-97	1310	15	1	93	87	7.8	14.5	37
		09-24-97	1030	3.9	3	52	119	7.9	5.5	49
		02-12-98	1045	3.2	1	67	121	7.8	0.0	52
		04-24-98	0945	30	10	84	81	7.9	2.0	35
		05-06-98	1300	76	15	35	47	7.7	6.0	20
		06-26-98	1000	104	10	35	47	8.0	6.5	21
		09-22-98	1245	2.8	1	77	115	7.8	7.0	52
		05-24-99	1545	111	16	49	44	7.6	7.5	18
		08-05-99	1100	5.0	4	54	105	8.1	12.0	43
42	Unnamed tributary to Uncle Sam Gulch, near Basin	08-28-98	1245	e.07	--	--	69	7.4	15.5	28
43	Uncle Sam Gulch at mouth, near Basin	10-16-96	1430	.60	3	55	176	7.3	1.0	67
		05-15-97	1200	15	90	35	76	7.4	7.0	24
		09-24-97	1130	.68	5	46	173	7.4	6.5	67
		02-12-98	1015	.44	--	--	151	7.3	0.0	58
		04-24-98	1100	4.5	36	82	85	7.7	1.5	31
		05-06-98	1210	7.5	37	52	66	7.2	6.0	24
		06-26-98	1045	18	93	30	57	7.7	6.0	23
		07-21-98	1220	4.9	60	23	112	7.6	11.5	41
		07-22-98	1050	--	--	--	112	7.6	10.0	--
		09-22-98	1330	.78	13	59	169	6.8	8.5	65
		05-24-99	1530	17	174	56	70	7.5	9.0	24
		08-02-99	1630	--	--	--	176	7.3	18.5	--
		08-03-99	1415	--	--	--	166	7.3	17.0	--
		08-04-99	1110	.65	4	29	175	7.5	13.0	63
		08-05-99	1305	--	--	--	146	7.3	15.0	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	ANC, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Silica, dissolved (mg/L as SiO_2)	Dissolved solids, calculated (mg/L)
					CATARACT CREEK--Continued						
33	10-18-96	12	2.6	2.8	.90	35	11	.40	<.10	14	65
	05-20-97	5.4	1.1	1.5	.64	12	8.7	.25	<.10	11	37
34	10-18-96	11	2.4	2.6	.90	36	7.4	1.3	<.10	13	60
	05-20-97	4.3	.81	1.2	.63	12	3.7	.24	<.10	8.9	27
35	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--
36	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--
37	05-20-97	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--
38	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--
39	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--
40	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-21-97	6.6	1.2	2.0	.65	14	11	.43	<.10	13	44
	09-24-97	18	3.2	3.4	1.0	43	19	.50	<.10	18	89
41	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--
	05-21-97	5.0	1.0	1.5	.60	14	5.3	.28	<.10	9.9	32
	07-23-97	11	2.0	2.5	.89	36	7.6	.25	<.10	14	60
	09-24-97	15	2.6	3.1	1.1	47	13	.49	<.10	15	79
	02-12-98	16	3.0	3.2	1.0	44	14	1.5	<.10	15	80
	04-24-98	11	2.0	2.1	1.9	33	7.1	.64	<.10	10	55
	05-06-98	6.1	1.1	1.5	.87	18	4.4	.31	<.10	9.3	35
	06-26-98	6.6	1.2	1.9	.53	19	5.0	.18	<.10	11	38
	09-22-98	16	2.9	3.8	1.0	48	13	.49	<.10	15	81
	05-24-99	5.3	1.0	1.5	.71	15	4.7	.22	--	--	--
	08-05-99	13	2.5	3.1	1.1	41	9.4	.39	--	--	--
42	08-28-98	8.4	1.7	2.6	.72	27	7.4	<.1	<.10	13	43
43	10-16-96	20	4.1	3.3	1.0	29	52	.70	<.10	17	120
	05-15-97	7.2	1.4	1.9	.71	10	18	.28	<.10	12	49
	09-24-97	20	4.2	3.4	1.0	28	51	.46	<.10	17	119
	02-12-98	17	3.7	3.3	.80	28	41	.63	<.10	17	103
	04-24-98	9.5	1.9	2.4	.83	17	20	.36	<.10	13	59
	05-06-98	7.2	1.5	2.0	.70	11	16	.42	<.10	12	48
	06-26-98	7.0	1.3	2.1	.63	14	13	.20	<.10	13	47
	07-21-98	12	2.4	2.8	.79	22	26	.39	<.10	16	76
	07-22-98	--	--	--	--	--	--	--	--	--	--
	09-22-98	19	4.1	3.5	1.0	28	54	.47	<.1	18	122
	05-24-99	7.0	1.5	2.0	.69	10	18	.25	--	--	
	08-02-99	--	--	--	--	--	--	--	--	--	--
	08-03-99	--	--	--	--	--	--	--	--	--	--
	08-04-99	18	4.0	3.3	1.1	21	57	.35	--	--	--
	08-05-99	--	--	--	--	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Nitrite, dissolved (mg/L as N)	Nitrite plus nitrate, dissolved (mg/L as N)	Ammonia, dissolved (mg/L as N)	Ammonia plus organic nitrogen, total (mg/L as N)	Phosphorus, total (mg/L as P)	Phosphorus, orthophosphate, dissolved (mg/L as P)
			CATARACT CREEK--Continued				
33	10-18-96	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--
34	10-18-96	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--
35	10-16-96	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--
36	10-16-96	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--
37	05-20-97	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--
38	10-16-96	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--
39	10-16-96	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--
40	10-16-96	--	--	--	--	--	--
	05-21-97	--	--	--	--	--	--
	09-24-97	<.01	<.05	<.015	<.2	<.010	<.010
41	10-16-96	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--
	05-21-97	--	--	--	--	--	--
	07-23-97	<.01	<.05	<.015	--	--	<.010
	09-24-97	<.01	<.05	<.015	<.2	<.010	<.010
	02-12-98	<.01	.10	.038	--	--	.013
	04-24-98	--	--	--	--	--	--
	05-06-98	--	--	--	--	--	--
	06-26-98	--	--	--	--	--	--
	09-22-98	--	--	--	--	--	--
	05-24-99	--	--	--	--	--	--
	08-05-99	--	--	--	--	--	--
42	08-28-98	--	--	--	--	--	--
43	10-16-96	--	--	--	--	--	--
	05-15-97	--	--	--	--	--	--
	09-24-97	<.01	<.05	<.015	<.2	<.010	<.010
	02-12-98	<.01	.10	.031	--	--	.012
	04-24-98	--	--	--	--	--	--
	05-06-98	--	--	--	--	--	--
	06-26-98	--	--	--	--	--	--
	07-21-98	<.01	<.05	.037	--	--	<.010
	07-22-98	--	--	--	--	--	--
	09-22-98	--	--	--	--	--	--
	05-24-99	--	--	--	--	--	--
	08-02-99	--	--	--	--	--	--
	08-03-99	--	--	--	--	--	--
	08-04-99	--	--	--	--	--	--
	08-05-99	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Aluminum, total recoverable (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Antimony, dissolved (µg/L as Sb)	Arsenic, total recoverable (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total recoverable (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)
						CATARACT CREEK--Continued						
33	10-18-96	--	3.5	<1	3	2	9.0	<1	<1	<.1	<1	<1
	05-20-97	460	92	<1	9	2	7.8	<1	<1	.3	<1	<1
34	10-18-96	--	4.5	<1	1	1	13	<1	<1	<.1	<1	<1
	05-20-97	260	111	<1	3	1	8.9	<1	<1	.1	<1	<1
35	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--	--
36	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--	--
37	05-20-97	--	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--	--
38	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--	--
39	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--	--
40	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	05-21-97	270	47	<1	4	2	11	<1	<1	.7	--	<1
	09-24-97	40	2.9	<1	2	2	26	<1	<1	.6	--	<1
41	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--	--
	05-21-97	310	88	<1	4	2	10	<1	<1	.2	--	<1
	07-23-97	30	15	<1	3	3	16	<1	<1	.4	--	<1
	09-24-97	<10	3.0	<1	3	2	17	<1	<1	.3	--	<1
	02-12-98	<10	9.0	<1	2	2	15	<1	<1	.3	--	<1
	04-24-98	240	22	<1	4	2	15	<1	<1	<.3	--	<1
	05-06-98	290	46	<1	3	2	10	<1	<1	<.3	--	<1
	06-26-98	150	48	<1	2	5	10	<1	<1	<.3	--	<1
	09-22-98	10	3.0	<1	3	3	16	<1	<1	<.3	--	<1
	05-24-99	375	56	--	6	3	--	--	<1	<.3	--	--
	08-05-99	<30	3.9	--	3	3	--	--	<1	<1	--	--
42	08-28-98	--	8.4	4	--	19	7.1	<1	--	<.3	--	<1
43	10-16-96	--	20	1	7	1	26	<1	48	48	<1	<1
	05-15-97	1,200	145	2	220	8	14	<1	14	10	<1	<1
	09-24-97	570	17	1	12	<1	26	<1	52	51	--	<1
	02-12-98	240	12	1	4	2	20	<1	32	32	--	<1
	04-24-98	930	38	1	75	3	13	<1	15	14	--	<1
	05-06-98	660	63	2	110	6	13	<1	11	9.8	--	<1
	06-26-98	880	61	2	170	2	12	<1	11	7.8	--	<1
	07-21-98	410	55	2	48	3	20	<1	23	22	--	<1
	07-22-98	--	--	--	--	--	--	--	--	22	--	--
	09-22-98	560	16	1	7	1	28	<1	52	54	--	<1
	05-24-99	1,890	45	--	760	5	--	--	20	11	--	--
	08-02-99	--	--	--	--	--	--	--	--	75	--	--
	08-03-99	--	--	--	--	--	--	--	--	65	--	--
	08-04-99	390	18	--	12	1	--	--	61	59	--	--
	08-05-99	--	--	--	--	--	--	--	--	39	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Cobalt, dissolved (µg/L as Co)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
					CATARACT CREEK--Continued						
33	10-18-96	<1	7	5	490	300	<1	<1	<4	80	22
	05-20-97	1	44	35	670	130	2	<1	<4	56	47
34	10-18-96	<1	2	2	110	77	<1	<1	<4	<10	4
	05-20-97	<1	8	7	360	180	<1	<1	<4	19	11
35	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--
36	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--
37	05-20-97	--	--	--	--	--	--	--	--	--	--
	09-26-97	--	--	--	--	--	--	--	--	--	--
38	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--
39	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-20-97	--	--	--	--	--	--	--	--	--	--
40	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-21-97	<1	7	6	200	46	1	<1	--	<10	<1
	09-24-97	<1	<1	1	50	15	<1	<1	--	<10	<1
41	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--
	05-21-97	<1	9	9	410	130	4	<1	--	26	8
	07-23-97	<1	6	6	200	110	<1	<1	--	10	6
	09-24-97	<1	5	5	120	74	<1	<1	--	12	6
	02-12-98	<1	6	5	90	49	<1	<1	--	<10	4
	04-24-98	<1	13	9	850	300	5	<1	--	74	16
	05-06-98	<1	8	7	600	200	3	<1	--	38	16
	06-26-98	<1	7	7	210	90	1	<1	--	13	5
	09-22-98	<1	4	4	80	46	<1	<1	--	<10	3
	05-24-99	--	11	7	550	87	4	<1	--	44	6
	08-05-99	--	4	4	29	25	<1	<1	--	e2	3
42	09-28-98	<1	--	7	--	130	--	1.5	--	--	38
43	10-16-96	11	530	226	200	7	10	<1	5	640	597
	05-15-97	3	500	187	3,100	250	56	2	<4	260	147
	09-24-97	13	470	200	350	4	13	<1	--	750	728
	02-12-98	5	190	127	70	<10	4	<1	--	370	376
	04-24-98	2	460	134	2,200	68	50	1	--	250	205
	05-06-98	3	340	166	1,900	120	41	<1	--	240	163
	06-26-98	2	340	136	2,900	99	72	<1	--	320	111
	07-21-98	6	400	84	790	14	9	<1	--	310	323
	07-22-98	--	--	84	--	--	--	--	--	--	--
	09-22-98	13	530	231	230	<10	11	<1	--	740	733
	05-24-99	--	800	150	6,100	83	150	<1	--	490	154
	08-02-99	--	--	377	--	--	--	--	--	--	--
	08-03-99	--	--	274	--	--	--	--	--	--	--
	08-04-99	--	440	206	230	<10	6	<1	--	770	795
	08-05-99	--	--	117	--	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Mercury, total recoverable (µg/L as Hg)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Nickel, total recoverable (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, total recoverable (µg/L as Ag)	Silver, dissolved (µg/L as Ag)	Uranium, dissolved (µg/L as U)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)
					CATARACT CREEK--Continued						
33	10-18-96	<.1	<.1	<1	<1	<1	<1	<1	<1	20	19
	05-20-97	<.1	--	<1	<1	<1	<1	<1	<1	60	46
34	10-18-96	<.1	<.1	<1	<1	<1	<1	<1	<1	<10	10
	05-20-97	<.1	--	<1	<1	<1	<1	<1	<1	30	29
35	10-16-96	--	--	--	--	--	--	--	--	<10	--
	05-20-97	--	--	--	--	--	--	--	--	20	--
36	10-16-96	--	--	--	--	--	--	--	--	<10	--
	05-20-97	--	--	--	--	--	--	--	--	30	--
37	05-20-97	--	--	--	--	--	--	--	--	10	--
	09-26-97	--	--	--	--	--	--	--	--	<10	--
38	10-16-96	--	--	--	--	--	--	--	--	140	--
	05-20-97	--	--	--	--	--	--	--	--	50	--
39	10-16-96	--	--	--	--	--	--	--	--	100	--
	05-20-97	--	--	--	--	--	--	--	--	120	--
40	10-16-96	--	--	--	--	--	--	--	--	210	--
	05-21-97	--	--	<1	--	<1	--	<1	<1	260	258
	09-24-97	--	--	<1	--	<1	--	<1	<1	200	202
41	10-16-96	--	--	--	--	--	--	--	--	70	--
	05-13-97	--	--	--	--	--	--	--	--	90	--
	05-21-97	--	--	<1	--	<1	--	<1	<1	60	50
	07-23-97	--	--	<1	--	<1	--	<1	<1	40	34
	09-24-97	--	--	<1	--	<1	--	<1	<1	60	63
	02-12-98	--	--	<1	--	<1	--	<1	<1	80	75
	04-24-98	--	--	<1	--	<1	--	<1	<1	80	55
	05-06-98	--	--	<1	--	<1	--	<1	<1	50	36
	06-26-98	--	--	<1	--	<1	--	<1	<1	50	45
	09-22-98	--	--	<1	--	<1	--	<1	<1	60	57
	05-24-99	--	--	--	--	--	--	--	--	63	41
	08-05-99	--	--	--	--	--	--	--	--	<40	47
42	09-28-98	--	--	<1	--	<1	--	<1	<1	--	41
43	10-16-96	<.1	<.1	<1	3	3	<1	<1	1	4,300	3,750
	05-15-97	<.1	--	<1	2	<1	<1	<1	1	1,100	928
	09-24-97	--	--	<1	--	4	--	<1	1	4,300	4,030
	02-12-98	--	--	<1	--	3	--	<1	1	3,000	2,790
	04-24-98	--	--	<1	--	2	--	<1	<1	1,400	1,200
	05-06-98	--	--	<1	--	1	--	<1	<1	1,000	885
	06-26-98	--	--	<1	--	1	--	<1	<1	930	685
	07-21-98	--	--	<1	--	2	--	<1	1	2,100	1,750
	07-22-98	--	--	--	--	--	--	--	--	--	1,910
	09-22-98	--	--	<1	--	4	--	<1	1	4,300	4,310
	05-24-99	--	--	--	--	--	--	--	--	1,500	902
	08-02-99	--	--	--	--	--	--	--	--	--	5,730
	08-03-99	--	--	--	--	--	--	--	--	--	4,960
	08-04-99	--	--	--	--	--	--	--	--	4,800	4,940
	08-05-99	--	--	--	--	--	--	--	--	--	3,020

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Station name	Date	Time	Discharge, instantaneous (ft^3/s)	Sediment, suspended (mg/L)	Sediment, suspended, diameter (percent finer than 0.062 mm)	Specific conductance, field (µS/cm)	pH, field (standard units)	Temperature, water (^oC)	Hardness (mg/L as $CaCO_3$)
				CATARACT CREEK--Continued						
44	Cataract Creek below Uncle Sam Gulch, near Basin	10-16-96	1510	3.8	4	88	130	7.6	1.0	55
		05-15-97	1330	186	48	50	52	7.5	5.0	19
		07-23-97	1445	17	4	35	92	7.9	16.5	37
		09-24-97	1220	4.5	5	24	129	8.0	8.0	57
		02-12-98	0940	3.6	3	38	127	7.6	0.0	53
		04-24-98	1230	35	19	70	80	7.8	2.0	34
		05-06-98	1415	82	17	38	49	7.2	7.0	20
		06-26-98	1145	122	18	37	47	7.8	6.5	21
		07-21-98	1310	20	10	32	87	7.9	14.0	36
		07-22-98	1100	--	--	--	89	7.8	11.0	--
		07-23-98	1000	--	--	--	89	8.2	11.0	--
		07-24-98	1015	--	--	--	91	8.1	11.0	--
		09-22-98	1400	3.6	--	--	129	7.8	--	55
		05-24-99	1700	129	52	65	47	7.5	7.5	18
		08-02-99	1610	--	--	--	125	7.9	18.0	--
		08-03-99	1350	--	--	--	112	8.0	15.5	--
		08-04-99	1330	4.6	1	82	118	7.9	14.5	48
		08-05-99	1305	--	--	--	106	7.8	14.0	--
45	Deer Creek near Basin	10-16-96	1712	1.0	--	--	217	--	2.0	--
		05-13-97	1645	8.5	--	--	62	--	4.0	--
46	Big Limber Gulch near Basin	10-16-96	1355	--	--	--	313	--	1.5	--
		05-13-97	1730	.73	--	--	219	--	12.0	--
47	Cataract Creek at Basin	10-15-96	1645	3.5	3	59	158	7.9	4.5	69
		12-04-96	1020	5.4	1	75	140	7.5	0.0	59
		02-11-97	1330	3.8	--	--	147	7.6	0.0	62
		04-18-97	1325	13	10	70	128	7.9	5.5	54
		05-08-97	1200	46	15	70	91	7.7	3.0	36
		05-15-97	0930	158	51	38	50	7.1	4.0	19
		05-22-97	1000	134	18	45	53	6.8	5.5	18
		06-03-97	1200	123	13	51	49	7.4	8.0	19
		06-11-97	1240	168	48	37	46	7.2	10.0	19
		06-17-97	1230	73	5	66	65	7.7	12.5	26
		07-18-97	1045	27	2	79	94	7.9	11.0	36
		09-24-97	1410	4.6	3	31	146	8.0	11.5	69
		02-09-98	1310	3.8	1	75	148	7.5	0.0	63
		04-24-98	1415	32	16	86	90	8.0	4.0	38
		05-05-98	1200	77	14	69	54	7.7	3.5	22
		09-22-98	1530	3.7	4	74	143	7.8	10.0	66
		05-25-99	1250	97	14	51	48	7.5	7.0	18
		09-14-99	1140	2.6	2	31	153	7.8	10.0	67
				HIGH ORE CREEK						
49	High Ore Creek above Comet Mine, near Basin	10-17-96	1400	--	9	75	149	7.6	0.0	67
		05-09-97	0925	1.5	3	90	105	7.9	4.0	44
		09-23-98	1105	.27	4	59	123	8.2	5.5	59
		09-15-99	1000	.13	8	92	129	8.1	6.0	58
50	High Ore Creek above Comet Mine outflow, near Basin	10-17-96	1455	--	--	--	146	--	1.0	--
		05-08-97	1350	2.1	--	--	113	--	8.5	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	ANC, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Silica, dissolved (mg/L as SiO_2)	Dissolved solids, calculated (mg/L)
					CATARACT CREEK--Continued						
44	10-16-96	17	3.1	3.4	1.0	44	21	.70	<.10	15	88
	05-15-97	5.6	1.1	1.6	.83	12	9.5	.44	<.10	10	37
	07-23-97	11	2.1	2.5	.88	1.8	11	.37	<.10	14	44
	09-24-97	17	3.3	3.4	1.0	43	19	.59	<.10	16	88
	02-12-98	16	3.1	3.3	1.0	43	18	.64	<.10	15	84
	04-24-98	10	2.0	2.1	1.7	30	9.0	.56	<.10	11	55
	05-06-98	6.2	1.1	1.6	.83	17	5.6	.34	<.10	9.5	36
	06-26-98	6.5	1.2	1.9	.54	19	5.9	.19	<.10	11	39
	07-21-98	11	2.0	2.6	.88	32	9.0	.35	<.10	17	62
	07-22-98	--	--	--	--	--	--	--	--	--	--
	07-23-98	--	--	--	--	--	--	--	--	--	--
	07-24-98	--	--	--	--	--	--	--	--	--	--
	09-22-98	17	3.2	3.3	.81	44	20	.46	.10	16	88
	05-24-99	5.4	1.1	1.6	.73	14	6.9	.23	--	--	
	08-02-99	--	--	--	--	--	--	--	--	--	--
	08-03-99	--	--	--	--	--	--	--	--	--	--
	08-04-99	15	2.8	3.2	1.1	39	18	.41	--	--	--
	08-05-99	--	--	--	--	--	--	--	--	--	--
45	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--
46	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--
47	10-15-96	21	4.0	3.7	1.2	51	24	1.8	<.10	15	102
	12-04-96	18	3.5	3.7	1.0	49	22	.60	<.10	15	94
	02-11-97	19	3.5	--	--	--	--	--	--	--	--
	04-18-97	17	3.1	3.2	1.2	43	19	.60	<.10	15	84
	05-08-97	11	2.1	2.6	.95	29	13	.80	<.10	13	60
	05-15-97	5.7	1.1	1.6	.75	15	7.1	.49	<.10	9.7	36
	05-22-97	5.6	1.1	1.6	.66	11	6.2	3.0	<.10	11	36
	06-03-97	5.7	1.1	1.7	.61	16	6.2	.28	<.10	11	36
	06-11-97	5.9	1.0	1.6	.62	16	4.5	.21	<.10	9.8	34
	06-17-97	7.8	1.5	2.1	.71	22	6.7	.58	<.10	12	45
	07-18-97	11	2.1	2.4	.88	35	9.8	.38	<.10	14	62
	09-24-97	21	4.0	3.7	1.1	51	21	.67	<.10	16	98
	02-09-98	19	3.8	3.6	1.0	--	20	4.6	<.10	15	--
	04-24-98	11	2.2	2.3	1.6	33	10	.61	<.10	11	60
	05-05-98	6.8	1.3	1.6	.94	19	6.1	.31	<.10	9.4	38
	09-22-98	20	3.8	3.6	1.1	52	21	.58	<.10	16	98
	05-25-99	5.5	1.1	1.6	.69	16	6.1	.28	--	--	--
	09-14-99	20	3.9	3.7	1.2	52	22	.83	--	--	--
					HIGH ORE CREEK						
49	10-17-96	21	3.5	4.5	.90	66	9.6	.90	.10	18	98
	05-09-97	14	2.2	3.2	.75	45	7.7	1.1	<.10	14	70
	09-23-98	18	3.0	3.9	.69	58	7.9	.51	.10	18	87
	09-15-99	18	3.0	4.0	.94	59	7.9	.73	--	--	--
50	10-17-96	--	--	--	--	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Nitrite, dissolved (mg/L as N)	Nitrite plus nitrate, dissolved (mg/L as N)	Ammonia, dissolved (mg/L as N)	Ammonia plus organic nitrogen, total (mg/L as N)	Phosphorus, total (mg/L as P)	Phosphorus, orthophosphate, dissolved (mg/L as P)
			CATARACT CREEK--Continued				
44	10-16-96	--	--	--	--	--	--
	05-15-97	--	--	--	--	--	--
	07-23-97	<.01	<.05	<.015	--	--	<.010
	09-24-97	<.01	<.05	<.015	<.2	<.010	<.010
	02-12-98	<.01	.10	.029	--	--	.015
	04-24-98	--	--	--	--	--	--
	05-06-98	--	--	--	--	--	--
	06-26-98	--	--	--	--	--	--
	07-21-98	.01	<.05	.045	--	--	<.010
	07-22-98	--	--	--	--	--	--
	07-23-98	--	--	--	--	--	--
	07-24-98	--	--	--	--	--	--
	09-22-98	--	--	--	--	--	--
	05-24-99	--	--	--	--	--	--
	08-02-99	--	--	--	--	--	--
	08-03-99	--	--	--	--	--	--
	08-04-99	--	--	--	--	--	--
	08-05-99	--	--	--	--	--	--
45	10-16-96	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--
46	10-16-96	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--
47	10-15-96	--	--	--	--	--	--
	12-04-96	.01	.06	.040	--	--	<.010
	02-11-97	--	--	--	--	--	--
	04-18-97	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--
	05-15-97	<.01	<.05	<.015	--	--	<.010
	05-22-97	<.01	<.05	<.015	--	--	<.010
	06-03-97	--	--	--	--	--	--
	06-11-97	--	--	--	--	--	--
	06-17-97	--	--	--	--	--	--
	07-18-97	<.01	<.05	<.015	--	--	<.010
	09-24-97	<.01	<.05	<.015	<.2	<.010	<.010
	02-09-98	<.01	.09	.050	--	--	.014
	04-24-98	--	--	--	--	--	--
	05-05-98	--	--	--	--	--	--
	09-22-98	--	--	--	.15	<.05	--
	05-25-99	--	--	--	--	--	--
	09-14-99	--	--	--	--	--	--
			HIGH ORE CREEK				
49	10-17-96	--	--	--	--	--	--
	05-09-97	--	--	--	--	--	--
	09-23-98	--	--	--	.10	.084	--
	09-15-99	--	--	--	--	--	--
50	10-17-96	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Aluminum, total recoverable (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Antimony, dissolved (µg/L as Sb)	Arsenic, total recoverable (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total recoverable (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)
						CATARACT CREEK--Continued						
44	10-16-96	--	9.5	<1	3	2	17	<1	8	8.0	<1	<1
	05-15-97	910	81	<1	93	4	11	<1	5	3.4	<1	<1
	07-23-97	100	29	<1	10	3	16	<1	4	3.8	--	1
	09-24-97	140	9.2	<1	5	2	18	<1	9	8.9	--	<1
	02-12-98	30	5.8	<1	3	2	16	<1	5	5.6	--	<1
	04-24-98	330	32	<1	20	2	14	<1	3	2.3	--	<1
	05-06-98	330	57	<1	12	3	11	<1	1	1.1	--	<1
	06-26-98	270	50	<1	15	2	10	<1	2	1.2	--	<1
	07-21-98	110	25	<1	11	3	16	<1	3	3.3	--	<1
	07-22-98	--	--	--	--	--	--	--	--	4.6	--	<1
	07-23-98	--	--	--	--	--	--	--	--	4.2	--	<1
	07-24-98	--	--	--	--	--	--	--	--	4.7	--	<1
	09-22-98	120	7.0	<1	4	2	18	<1	10	9.9	--	<1
	05-24-99	1,110	56	--	180	4	--	--	5	2.0	--	--
	08-02-99	--	--	--	--	--	--	--	--	9.6	--	--
	08-03-99	--	--	--	--	--	--	--	--	7.4	--	--
	08-04-99	70	9.5	--	4	3	--	--	10	9.3	--	--
	08-05-99	--	--	--	--	--	--	--	--	6.7	--	--
45	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--	--
46	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--	--
47	10-15-96	--	13	<1	5	4	21	<1	5	4.9	<1	<1
	12-04-96	--	6.5	<1	5	3	18	<1	3	3.3	<1	<1
	02-11-97	--	6.5	<1	3	3	20	<1	3	3.0	--	<1
	04-18-97	--	11	<1	6	3	17	<1	3	2.5	--	<1
	05-08-97	400	108	<1	10	3	14	<1	2	1.7	--	<1
	05-15-97	950	58	<1	38	3	10	<1	2	1.1	<1	<1
	05-22-97	330	85	<1	19	4	10	<1	1	1.3	<1	<1
	06-03-97	310	79	<1	21	4	10	<1	1	1.2	--	<1
	06-11-97	790	89	<1	35	4	10	<1	2	1.0	--	<1
	06-17-97	150	52	<1	13	4	12	<1	2	1.4	--	<1
	07-18-97	--	29	<1	8	4	16	<1	2	2.4	--	<1
	09-24-97	40	11	<1	5	3	21	<1	5	5.0	--	<1
	02-09-98	10	5.8	<1	3	3	18	<1	3	2.9	--	<1
	04-24-98	310	24	<1	15	3	15	<1	3	2.3	--	<1
	05-05-98	370	47	<1	17	3	11	<1	1	1.3	--	<1
	09-22-98	50	10	<1	3	3	21	<1	6	5.6	--	<1
	05-25-99	410	66	--	21	3	--	--	2	1.2	--	--
	09-14-99	32	11	--	5	4	--	--	6	5.8	--	--
						HIGH ORE CREEK						
49	10-17-96	--	3.5	<1	2	2	21	<1	<1	<.1	<1	<1
	05-09-97	--	55	<1	2	1	19	<1	<1	<.1	<1	<1
	09-23-98	40	1.9	<1	1	1	19	<1	<1	<.3	--	<1
	09-15-99	170	4.9	--	2	2	--	--	<1	<.3	--	--
50	10-17-96	--	--	--	--	--	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Cobalt, dissolved (µg/L as Co)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
					CATARACT CREEK--Continued						
44	10-16-96	2	84	55	100	63	2	<1	<4	110	99
	05-15-97	1	210	82	2,000	140	32	<1	<4	180	58
	07-23-97	<1	62	33	300	82	2	<1	--	68	60
	09-24-97	2	82	53	260	63	4	<1	--	150	134
	02-12-98	<1	36	28	90	38	<1	<1	--	66	65
	04-24-98	<1	92	35	1,000	280	13	<1	--	100	46
	05-06-98	<1	41	27	660	210	5	<1	--	55	31
	06-26-98	<1	52	30	530	96	17	<1	--	44	18
	07-21-98	<1	60	32	270	80	2	<1	--	53	50
	07-22-98	--	--	48	--	--	--	--	--	--	--
	07-23-98	--	--	34	--	--	--	--	--	--	--
	07-24-98	--	--	35	--	--	--	--	--	--	--
	09-22-98	2	100	59	120	39	2	<1	--	140	138
	05-24-99	--	300	48	2,800	87	67	<1	--	170	27
	08-02-99	--	--	48	--	--	--	--	--	--	--
	08-03-99	--	--	49	--	--	--	--	--	--	--
	08-04-99	--	76	48	86	22	1	<1	--	130	131
	08-05-99	--	--	44	--	--	--	--	--	--	--
45	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--
46	10-16-96	--	--	--	--	--	--	--	--	--	--
	05-13-97	--	--	--	--	--	--	--	--	--	--
47	10-15-96	<1	32	23	50	26	1	<1	<4	50	44
	12-04-96	<1	14	13	30	17	<1	<1	<4	20	14
	02-11-97	<1	13	14	20	13	<1	<1	--	20	18
	04-18-97	<1	35	24	340	40	4	<1	--	46	20
	05-08-97	<1	41	24	620	170	6	<1	--	65	20
	05-15-97	<1	74	31	2,000	110	22	<1	<4	160	21
	05-22-97	<1	49	37	510	140	5	<1	<4	36	16
	06-03-97	<1	46	34	540	100	7	<1	--	36	15
	06-11-97	<1	65	33	1,300	130	22	1	--	99	13
	06-17-97	<1	40	33	360	100	4	<1	--	36	18
	07-18-97	<1	40	31	220	86	2	<1	--	35	24
	09-24-97	<1	24	23	90	29	1	<1	--	51	49
	02-09-98	<1	14	12	50	19	<1	<1	--	16	13
	04-24-98	<1	90	41	920	210	11	<1	--	84	30
	05-05-98	<1	47	30	810	220	9	<1	--	77	32
	09-22-98	<1	36	26	60	16	<1	<1	--	73	51
	05-25-99	--	46	33	730	100	9	<1	--	58	16
	09-14-99	--	25	22	35	25	<1	<1	--	43	43
					HIGH ORE CREEK						
49	10-17-96	<1	1	2	380	92	1	<1	<4	90	45
	05-09-97	<1	1	1	270	94	<1	<1	<4	44	11
	09-23-98	<1	1	<1	80	24	<1	<1	--	13	8
	09-15-99	--	<1	<1	210	19	<1	<1	--	32	13
50	10-17-96	--	--	--	--	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Mercury, total recoverable (µg/L as Hg)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Nickel, total recoverable (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, total recoverable (µg/L as Ag)	Silver, dissolved (µg/L as Ag)	Uranium, dissolved (µg/L as U)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)
					CATARACT CREEK--Continued						
44	10-16-96	<.1	<.1	<1	1	<1	<1	<1	1	710	662
	05-15-97	<.1	--	<1	2	<1	<1	<1	<1	450	321
	07-23-97	--	--	<1	--	1	--	<1	<1	370	294
	09-24-97	--	--	<1	--	2	--	<1	<1	770	744
	02-12-98	--	--	<1	--	<1	--	<1	<1	570	528
	04-24-98	--	--	<1	--	<1	--	<1	<1	290	231
	05-06-98	--	--	<1	--	<1	--	<1	<1	140	120
	06-26-98	--	--	<1	--	<1	--	<1	<1	170	135
	07-21-98	--	--	<1	--	<1	--	<1	<1	320	275
	07-22-98	--	--	--	--	--	--	--	--	--	406
	07-23-98	--	--	--	--	--	--	--	--	--	376
	07-24-98	--	--	--	--	--	--	--	--	--	433
	09-22-98	--	--	<1	--	<1	--	<1	<1	860	813
	05-24-99	--	--	--	--	--	--	--	--	380	178
	08-02-99	--	--	--	--	--	--	--	--	--	714
	08-03-99	--	--	--	--	--	--	--	--	--	570
	08-04-99	--	--	--	--	--	--	--	--	770	727
	08-05-99	--	--	--	--	--	--	--	--	--	515
45	10-16-96	--	--	--	--	--	--	--	--	20	--
	05-13-97	--	--	--	--	--	--	--	--	30	--
46	10-16-96	--	--	--	--	--	--	--	--	<10	--
	05-13-97	--	--	--	--	--	--	--	--	20	--
47	10-15-96	<.1	<.1	<1	<1	<1	<1	<1	3	430	406
	12-04-96	<.1	<.1	1	<1	<1	<1	<1	2	350	320
	02-11-97	--	--	1	--	2	--	<1	2	340	324
	04-18-97	--	--	<1	--	1	--	<1	2	290	258
	05-08-97	--	--	<1	--	<1	--	<1	<1	230	181
	05-15-97	<.1	--	<1	1	<1	<1	<1	<1	240	132
	05-22-97	<.1	--	<1	<1	<1	<1	<1	<1	160	139
	06-03-97	--	--	<1	--	<1	--	<1	<1	140	126
	06-11-97	--	--	<1	--	<1	--	<1	<1	160	102
	06-17-97	--	--	<1	--	<1	--	<1	<1	170	143
	07-18-97	--	--	<1	--	<1	--	<1	<1	220	191
	09-24-97	--	--	<1	--	1	--	<1	2	420	397
	02-09-98	--	--	1	--	<1	--	<1	3	290	284
	04-24-98	--	--	<1	--	<1	--	<1	<1	290	207
	05-05-98	--	--	<1	--	<1	--	<1	<1	170	131
	09-22-98	--	--	1	--	<1	--	<1	2	470	467
	05-25-99	--	--	--	--	--	--	--	--	180	132
	09-14-99	--	--	--	--	--	--	--	--	480	488
					HIGH ORE CREEK						
49	10-17-96	<.1	<.1	<1	<1	<1	<1	<1	<1	<10	4
	05-09-97	<.1	<.1	<1	<1	<1	<1	<1	<1	<10	2
	09-23-98	--	--	<1	--	<1	--	<1	<1	<10	<1
	09-15-99	--	--	--	--	--	--	--	--	<31	<1
50	10-17-96	--	--	--	--	--	--	--	--	180	--
	05-08-97	--	--	--	--	--	--	--	--	20	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Station name	Date	Time	Discharge, instantaneous (ft^3/s)	Sediment, suspended (mg/L)	Sediment, suspended, diameter (percent finer than 0.062 mm)	Specific conductance, field (µS/cm)	pH, field (standard units)	Temperature, water (°C)	Hardness (mg/L as $CaCO_3$)
		HIGH ORE CREEK--Continued								
51	Comet Mine outflow near Basin	05-08-97	1530	.33	--	--	1,500	--	9.5	--
		06-03-99	1130	.20	--	--	1,140	7.4	11.0	615
52	High Ore Creek below Comet Mine outflow, near Basin	10-17-96	1502	<1	36	80	430	7.6	1.5	180
		05-09-97	1125	2.5	8	74	234	7.8	9.5	100
		05-22-97	1145	3.9	18	70	192	7.9	11.5	76
		08-03-99	1800	.36	7	77	300	8.2	20.0	140
		08-04-99	1600	--	--	--	--	--	--	--
		08-05-99	1400	--	--	--	--	--	--	--
53	High Ore Creek above Bishop Creek, near Basin	10-17-96	1600	--	37	73	397	7.8	1.0	170
		05-09-97	1305	3.2	16	50	232	8.0	11.5	100
		03-25-99	1445	2.3	86	80	306	8.2	1.5	134
		06-03-99	1330	3.8	21	60	191	8.0	10.5	83
		09-15-99	0900	.34	6	71	328	8.2	6.5	150
54	Bishop Creek near Basin	10-17-96	1600	--	--	--	275	--	1.5	--
		05-08-97	1445	2.7	--	--	184	--	10.0	--
55	Peters Gulch near Basin	10-17-96	1655	.10	--	--	324	--	1.5	--
		05-08-97	1530	.38	--	--	288	--	8.0	--
56	High Ore Creek near Basin	10-15-96	1235	1.2	5	73	368	8.2	5.5	170
		12-03-96	1430	1.0	8	62	340	7.9	0.0	160
		02-12-97	0920	.89	8	81	334	7.6	0.0	150
		04-19-97	1215	3.0	38	63	227	8.2	5.5	110
		05-09-97	1500	5.4	40	54	231	8.4	14.0	96
		05-14-97	1630	--	77	82	217	8.1	15.5	89
		05-22-97	1345	6.2	51	48	189	8.1	12.5	74
		06-03-97	1330	6.8	32	59	182	8.2	14.0	80
		06-11-97	1415	6.3	82	47	216	8.1	11.5	93
		06-17-97	1400	5.7	29	43	210	8.2	16.0	95
		07-18-97	0900	2.6	11	66	324	8.3	11.0	150
		09-23-97	1300	1.3	8	60	336	8.3	10.5	160
		02-09-98	1030	1.1	3	85	335	7.9	0.0	150
		04-24-98	1515	3.5	--	--	225	8.2	7.0	98
		05-05-98	1430	3.3	10	64	220	8.2	--	97
		07-21-98	1430	1.8	3	73	285	8.3	20.5	130
		07-22-98	0950	--	--	--	300	8.1	11.5	--
		07-23-98	0905	--	--	--	302	8.2	12.0	--
		07-24-98	0920	--	--	--	301	8.3	14.0	--
		09-23-98	1200	1.0	5	73	330	8.3	8.0	160
		03-15-99	1435	2.3	81	78	258	8.4	0.0	117
		03-25-99	1620	4.6	308	49	288	8.2	17.0	130
		05-25-99	1410	3.7	34	49	186	8.2	17.5	80
		06-03-99	1500	5.4	56	61	186	8.0	11.0	82
		08-02-99	1701	.52	1	50	298	8.4	21.0	140
		09-14-99	1330	.82	14	58	327	8.2	12.5	150

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	ANC, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Silica, dissolved (mg/L as SiO_2)	Dissolved solids, calculated (mg/L)
					HIGH ORE CREEK--Continued						
51	05-08-97	--	--	--	--	--	--	--	--	--	--
	06-03-99	167	48	6.9	3.2	80	559	1.5	--	--	--
52	10-17-96	50	14	4.7	1.3	66	140	1.3	.10	17	273
	05-09-97	30	7.1	3.8	1.1	50	63	.89	<.10	16	154
	05-22-97	22	5.3	3.3	.83	40	46	.64	<.10	16	120
	08-03-99	38	9.6	5.3	1.8	65	82	1.4	--	--	--
	08-04-99	--	--	--	--	--	--	--	--	--	--
	08-05-99	--	--	--	--	--	--	--	--	--	--
53	10-17-96	46	13	4.7	1.3	68	120	1.1	.10	18	250
	05-09-97	30	7.1	4.3	1.1	53	58	1.1	<.10	17	153
	03-25-99	38	10	3.6	1.5	38	101	.57	<.10	14	198
	06-03-99	24	5.7	3.6	1.0	44	47	.77	--	--	--
	09-15-99	41	11	5.1	1.5	75	86	.40	--	--	--
54	10-17-96	--	--	--	--	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--	--	--	--	--
55	10-17-96	--	--	--	--	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--	--	--	--	--
56	10-15-96	46	13	5.4	1.7	95	92	1.6	.10	19	239
	12-03-96	43	12	5.5	1.6	86	88	1.4	.10	19	226
	02-12-97	41	12	--	--	--	--	--	--	--	--
	04-19-97	30	7.8	4.3	1.5	66	58	1.4	<.10	17	161
	05-09-97	27	6.9	4.5	1.4	60	50	1.4	.12	17	147
	05-14-97	25	6.4	4.2	1.3	50	48	1.1	.13	17	135
	05-22-97	21	5.4	3.8	1.1	49	35	.88	<.10	17	115
	06-03-97	22	5.8	3.9	1.1	51	35	.95	.11	17	118
	06-11-97	26	6.8	4.2	1.1	58	43	.74	.10	17	135
	06-17-97	27	6.8	4.3	1.1	60	40	.77	.11	18	135
	07-18-97	40	11	5.2	1.5	88	73	1.2	.17	19	207
	09-23-97	43	13	5.9	1.6	98	71	1.6	.17	19	217
	02-09-98	42	12	5.4	1.6	90	77	1.6	.12	18	215
	04-24-98	28	6.7	4.3	1.4	61	45	1.5	<.10	15	140
	05-05-98	27	6.9	4.3	1.3	60	44	1.1	.12	16	137
	07-21-98	37	9.7	5.4	1.7	87	55	1.0	.14	20	182
	07-22-98	--	--	--	--	--	--	--	--	--	--
	07-23-98	--	--	--	--	--	--	--	--	--	--
	07-24-98	--	--	--	--	--	--	--	--	--	--
	09-23-98	44	13	5.8	1.7	101	76	1.7	.14	19	224
	03-15-99	32	9.0	4.2	2.3	65	59	1.3	<.10	15	162
	03-25-99	36	9.7	4.5	1.7	60	74	1.2	.11	16	182
	05-25-99	23	5.7	3.9	1.2	56	33	.91	--	--	--
	06-03-99	23	5.9	3.9	1.1	50	39	1.0	--	--	--
	08-02-99	38	11	5.8	2.0	90	59	2.2	--	--	--
	09-14-99	42	12	5.8	1.9	97	68	1.3	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Nitrite, dissolved (mg/L as N)	Nitrite plus nitrate, dissolved (mg/L as N)	Ammonia, dissolved (mg/L as N)	Ammonia plus organic nitrogen, total (mg/L as N)	Phosphorus, total (mg/L as P)	Phosphorus, orthophosphate, dissolved (mg/L as P)
			HIGH ORE CREEK--Continued				
51	05-08-97	--	--	--	--	--	--
	06-03-99	--	--	--	--	--	--
52	10-17-96	--	--	--	--	--	--
	05-09-97	--	--	--	--	--	--
	05-22-97	--	--	--	--	--	--
	08-03-99	--	--	--	--	--	--
	08-04-99	--	--	--	--	--	--
	08-05-99	--	--	--	--	--	--
53	10-17-96	--	--	--	--	--	--
	05-09-97	--	--	--	--	--	--
	03-25-99	--	--	--	--	--	--
	06-03-99	--	--	--	--	--	--
	09-15-99	--	--	--	--	--	--
54	10-17-96	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--
55	10-17-96	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--
56	10-15-96	--	--	--	--	--	--
	12-03-96	<.01	.15	.040	--	--	.020
	02-12-97	--	--	--	--	--	--
	04-19-97	--	--	--	--	--	--
	05-09-97	<.01	.12	<.015	--	--	<.010
	05-14-97	<.01	.06	<.015	--	--	<.010
	05-22-97	<.01	<.05	<.015	--	--	<.010
	06-03-97	--	--	--	--	--	--
	06-11-97	--	--	--	--	--	--
	06-17-97	--	--	--	--	--	--
	07-18-97	<.01	<.05	<.015	--	--	.010
	09-23-97	<.01	<.05	<.015	<.2	<.010	<.010
	02-09-98	<.01	.17	.032	--	--	.016
	04-24-98	--	--	--	--	--	--
	05-05-98	--	--	--	--	--	--
	07-21-98	<.01	<.05	.034	--	--	<.010
	07-22-98	--	--	--	--	--	--
	07-23-98	--	--	--	--	--	--
	07-24-98	--	--	--	--	--	--
	09-23-98	--	--	--	--	--	--
	03-15-99	--	--	--	--	--	--
	03-25-99	--	--	--	--	--	--
	05-25-99	--	--	--	--	--	--
	06-03-99	--	--	--	--	--	--
	08-02-99	--	--	--	--	--	--
	09-14-99	--	--	--	--	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Aluminum, total recoverable (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Antimony, dissolved (µg/L as Sb)	Arsenic, total recoverable (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total recoverable (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)
						HIGH ORE CREEK--Continued						
51	05-08-97	--	--	--	--	--	--	--	--	--	--	--
	06-03-99	e28	6.0	--	43	16	--	--	37	36	--	--
52	10-17-96	--	2.5	<1	110	8	25	<1	6	4.6	<1	<1
	05-09-97	--	39	<1	25	5	24	<1	5	4.6	--	<1
	05-22-97	220	6.3	<1	41	4	20	<1	3	2.4	<1	<1
	08-03-99	200	2.2	--	43	23	--	--	3	1.7	--	--
	08-04-99	--	--	--	--	--	--	--	--	2.7	--	--
	08-05-99	--	--	--	--	--	--	--	--	2.5	--	--
53	10-17-96	--	2.5	1	110	14	27	<1	6	4.9	<1	<1
	05-09-97	--	7.8	1	44	9	27	<1	5	4.6	--	<1
	03-25-99	980	5.8	<1	180	8	26	<1	29	22	--	<1
	06-03-99	300	5.6	--	150	12	--	--	5	3.4	--	--
	09-15-99	90	5.7	--	38	21	--	--	4	3.3	--	--
54	10-17-96	--	--	--	--	--	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--	--	--	--	--	--
55	10-17-96	--	--	--	--	--	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--	--	--	--	--	--
56	10-15-96	--	1.5	2	28	18	35	<1	5	4.4	<1	<1
	12-03-96	--	<1	2	39	14	32	<1	5	4.5	<1	<1
	02-12-97	--	1.5	2	37	13	32	<1	5	4.0	--	<1
	04-19-97	--	7.0	1	75	10	27	<1	7	4.4	--	1
	05-09-97	--	63	1	64	13	31	<1	4	2.5	<1	1
	05-14-97	1,200	4.4	1	200	13	27	<1	7	2.3	1	<1
	05-22-97	650	5.8	1	69	9	25	<1	3	--	<1	<1
	06-03-97	390	5.7	1	44	10	26	<1	3	1.9	--	<1
	06-11-97	950	6.3	1	130	14	31	<1	5	2.4	--	<1
	06-17-97	190	3.6	1	33	12	30	<1	3	2.3	--	<1
	07-18-97	--	1.1	2	31	13	39	<1	5	4.7	--	1
	09-23-97	50	<1.0	2	25	14	35	<1	4	3.8	--	1
	02-09-98	40	<1.0	2	19	15	31	<1	4	4.2	--	1
	04-24-98	370	4.3	1	58	10	26	<1	5	2.8	--	<1
	05-05-98	90	3.6	1	18	12	27	<1	3	2.3	--	<1
	07-21-98	50	2.6	2	24	22	36	<1	2	2.4	--	<1
	07-22-98	--	--	--	--	--	--	--	--	3.7	--	--
	07-23-98	--	--	--	--	--	--	--	--	3.7	--	--
	07-24-98	--	--	--	--	--	--	--	--	3.7	--	--
	09-23-98	40	<1	2	--	--	36	<1	4	3.3	--	<1
	03-15-99	1,440	3.3	1	100	23	25	<1	6	3.4	--	<1
	03-25-99	2,920	2.1	1	350	11	29	<1	23	7.5	--	<1
	05-25-99	460	4.1	--	57	15	--	--	3	1.6	--	--
	06-03-99	34	7	--	100	15	--	--	5	2.0	--	--
	08-02-99	<30	1.5	--	38	33	--	--	2	1.5	--	--
	09-14-99	250	3.9	--	60	26	--	--	4	2.2	--	--

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Cobalt, dissolved (µg/L as Co)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
					HIGH ORE CREEK--Continued						
51	05-08-97	--	--	--	--	--	--	--	--	--	--
	06-03-99	--	11	8	550	19	9	<1	--	14,000	13,700
52	10-17-96	5	10	4	1,600	110	45	<1	<4	3,300	395
	05-09-97	2	10	9	430	81	11	<1	--	1,200	1,220
	05-22-97	2	7	4	570	18	27	<1	<4	1,000	930
	08-03-99	--	6	3	480	15	16	<1	--	740	626
	08-04-99	--	--	4	--	--	--	--	--	--	--
	08-05-99	--	--	4	--	--	--	--	--	--	--
53	10-17-96	3	16	4	1,300	48	60	1	5	2,200	1,800
	05-09-97	2	16	9	540	19	25	<1	--	940	885
	03-25-99	3	49	8	3,400	20	240	<1	--	2,800	1,580
	06-03-99	--	18	6	1,000	33	58	<1	--	960	608
	09-15-99	--	7	3	370	16	21	<1	--	900	743
54	10-17-96	--	--	--	--	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--	--	--	--	--
55	10-17-96	--	--	--	--	--	--	--	--	--	--
	05-08-97	--	--	--	--	--	--	--	--	--	--
56	10-15-96	1	6	3	200	29	8	<1	7	760	725
	12-03-96	1	5	3	300	16	9	<1	6	870	805
	02-12-97	1	5	4	360	<3	14	<1	--	840	714
	04-19-97	<1	20	8	1,200	--	68	<1	--	670	360
	05-09-97	<1	17	8	1,200	62	54	1.6	5	590	329
	05-14-97	<1	38	6	3,200	13	200	<1	4	1,200	375
	05-22-97	<1	15	5	1,400	10	74	<1	<4	570	289
	06-03-97	<1	11	5	790	16	36	<1	--	410	263
	06-11-97	<1	23	7	2,100	23	100	1.1	--	820	335
	06-17-97	<1	9	6	540	21	25	<1	--	420	303
	07-18-97	2	7	4	260	18	12	<1	--	920	915
	09-23-97	1	4	3	180	19	6	<1	--	690	637
	02-09-98	<1	3	2	150	<10	5	<1	--	710	675
	04-24-98	<1	19	7	1,000	31	53	<1	--	930	326
	05-05-98	<1	11	5	310	19	11	<1	--	400	326
	07-21-98	<1	7	4	120	18	5	<1	--	390	348
	07-22-98	--	--	7	--	--	--	--	--	--	--
	07-23-98	--	--	5	--	--	--	--	--	--	--
	07-24-98	--	--	5	--	--	--	--	--	--	--
	09-23-98	<1	4	3	120	14	5	<1	--	410	399
	03-15-99	<1	31	7	3,100	<10	95	<1	--	1,100	353
	03-25-99	<1	88	5	8,100	<10	420	<1	--	3,800	470
	05-25-99	--	16	5	950	<10	45	<1	--	430	103
	06-03-99	--	24	6	540	<10	98	<1	--	980	216
	08-02-99	--	4	4	48	<10	1	<1	--	42	33
	09-14-99	--	11	3	670	<10	34	<1	--	360	60

Table 2. Water-quality data for streams in the Boulder River watershed, Montana, 1996-99 (Continued)

Site number (fig. 2)	Date	Mercury, total recoverable (µg/L as Hg)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Nickel, total recoverable (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, total recoverable (µg/L as Ag)	Silver, dissolved (µg/L as Ag)	Uranium, dissolved (µg/L as U)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)
					HIGH ORE CREEK--Continued						
51	05-08-97	--	--	--	--	--	--	--	--	15,000	--
	06-03-99	--	--	--	--	--	--	--	--	16,000	14,500
52	10-17-96	<.1	<.1	<1	7	7	<1	<1	4	5,100	4,390
	05-09-97	--	--	<1	--	3	--	<1	2	2,200	2,110
	05-22-97	<.1	--	<1	2	2	<1	<1	2	1,600	1,430
	08-03-99	--	--	--	--	--	--	--	--	590	388
	08-04-99	--	--	--	--	--	--	--	--	--	637
	08-05-99	--	--	--	--	--	--	--	--	--	550
53	10-17-96	<.1	<.1	1	6	5	<1	<1	6	4,400	3,380
	05-09-97	--	--	<1	--	2	--	<1	3	1,900	1,680
	03-25-99	--	--	<1	--	3	--	<1	2	5,900	4,930
	06-03-99	--	--	--	--	--	--	--	--	1,300	987
	09-15-99	--	--	--	--	--	--	--	--	1,600	1,400
54	10-17-96	--	--	--	--	--	--	--	--	20	--
	05-08-97	--	--	--	--	--	--	--	--	30	--
55	10-17-96	--	--	--	--	--	--	--	--	<10	--
	05-08-97	--	--	--	--	--	--	--	--	<10	--
56	10-15-96	<.1	<.1	2	3	3	<1	<1	10	2,200	1,950
	12-03-96	<.1	<.1	2	3	2	<1	<1	8	2,700	2,360
	02-12-97	--	--	2	--	4	--	<1	8	2,700	2,320
	04-19-97	--	--	1	--	2	--	<1	6	1,300	1,510
	05-09-97	<.1	--	1	2	1	<1	<1	4	1,100	714
	05-14-97	<.1	--	1	3	<1	2	<1	3	1,600	674
	05-22-97	<.1	--	1	2	1	<1	<1	3	990	642
	06-03-97	--	--	<1	--	<1	--	<1	3	800	573
	06-11-97	--	--	1	--	2	--	<1	4	1,300	730
	06-17-97	--	--	1	--	<1	--	<1	4	820	678
	07-18-97	--	--	2	--	2	--	<1	7	2,000	1,910
	09-23-97	--	--	2	--	3	--	<1	9	2,000	1,730
	02-09-98	--	--	2	--	2	--	<1	9	2,000	1,860
	04-24-98	--	--	1	--	1	--	<1	4	1,500	853
	05-05-98	--	--	1	--	1	--	<1	4	760	608
	07-21-98	--	--	2	--	1	--	<1	7	510	426
	07-22-98	--	--	--	--	--	--	--	--	--	1,020
	07-23-98	--	--	--	--	--	--	--	--	--	995
	07-24-98	--	--	--	--	--	--	--	--	--	979
	09-23-98	--	--	2	--	2	--	<1	9	1,100	1,070
	03-15-99	--	--	1	--	1	--	<1	6	2,000	1,240
	03-25-99	--	--	1	--	2	--	<1	5	5,400	2,080
	05-25-99	--	--	--	--	--	--	--	--	770	382
	06-03-99	--	--	--	--	--	--	--	--	1,320	574
	08-02-99	--	--	--	--	--	--	--	--	270	249
	09-14-99	--	--	--	--	--	--	--	--	950	488

Table 3. Historical water-quality sampling sites in the Boulder River watershed, Montana, with data in the Montana Bureau of Mines and Geology Ground Water Information Center database

[Abbreviations: MBMG, Montana Bureau of Mines and Geology; USGS, U.S. Geological Survey; ft, feet; mi, mile. Symbol: --, no data]

Site number (fig. 2)	Analogous USGS site (fig. 2)	MBMG site number	Latitude	Longitude	Site name
			BOULDER RIVER		
1M	3	M:144336	461611	1121643	Boulder River above Kleinsmith Gulch
26M		M:122779	461614	1121427	Boulder River above Cataract Creek
68M		M:121565	461614	1121424	Boulder River below Cataract Creek
69M		M:122777	461614	1121358	Boulder River at old railroad bridge
70M	48	M:122778	461611	1121338	Boulder River 1 mi below Cataract Creek
71M		M:122775	461552	1121309	Boulder River 2 mi below Cataract Creek
82M		M:137080	--	--	Boomerang Gulch 1 mi below Hope and Bullion Mine
83M		M:137086	--	--	Boomerang Gulch below Molly McGregor and Baltimore Mines
			BASIN CREEK		
2M	5	M:128487	462354	1121732	Basin Creek above Buckeye Mine
3M	8	M:128462	462340	1121756	Basin Creek below Buckeye Mine
4M		M:890860	462139	1122047	Basin Creek below Weasel Gulch
5M		M:128194	462109	1122046	Basin Creek 0.5 mi above Jack Creek
6M		M:128477	462247	1121638	Jack Creek above Hawkeye Mine
7M		M:128478	462233	1121652	Jack Creek below Hawkeye Mine
8M		M:123696	462229	1121703	Jack Creek below Hawkeye Mine
9M		M:123713	462227	1121635	Jack Creek tributary 1.25 mi above Bullion Mine tributary
10M		M:123712	462213	1121700	Vindicator Mine tributary
11M	16	M:128490	--	--	Jack Creek above Bullion Mine tributary
		M:128501	--	--	
12M		M:128468	--	--	Bullion Mine tributary above Bullion Mine
13M		M:128482	462131	1121749	Bullion Mine tributary below Bullion Mine
		M:128494	--	--	
14M	17	M:128504	462153	1121817	Bullion Mine tributary at mouth
		M:128491	--	--	
15M	19	M:128489	462152	1121833	Jack Creek below Bullion Mine tributary
16M		M:123716	462137	1121857	Jack Creek 0.5 mi below Bullion Mine tributary
17M		M:123715	462137	1121908	Jack Creek tributary 0.25 mi above Bullion Mine smelter tributary
18M		M:123702	462113	1121816	Bullion Mine smelter tributary above smelter
		M:128471	--	--	
		M:128496	--	--	
19M		M:128492	--	--	Bullion Mine smelter tributary below smelter
		M:128497	--	--	
20M		M:123717	462049	1122010	Jack Creek 0.25 mi above mouth
21M		M:128196	462046	1122018	Jack Creek 0.125 mi above mouth
22M		M:890861	462033	1122012	Basin Creek below Jack Creek
23M		M:128195	462039	1122022	Basin Creek above Lily-of-the-West Gulch
24M		M:128511	461740	1121645	Lily-of-the-West Gulch
25M		M:128197	461709	1121632	Basin Creek above Spring Gulch
			CATARACT CREEK		
27M		M:134779	462243	1121413	Overland Creek 20 ft above west adit
28M		M:134782	462241	1121408	Overland Creek 100 ft below east shaft
29M		M:132718	462140	1121514	Rocker Creek 10 ft above seep entrance
30M		M:132720	462143	1121510	Rocker Creek 10 ft below west adit discharge
31M		M:132719	462143	1121502	Rocker Creek below Ada Mine site
32M		M:128549	462122	1121050	Hoodoo Creek below Occidental/Blue Diamond Mine
33M	36	M:121539	--	--	Cataract Creek at unnamed mine #1
		M:128538	--	--	
34M		M:128456	462018	1121349	Cataract Creek above Cataract Mine
35M		M:128459	462016	1121351	Cataract Creek below Cataract Mine

Table 3. Historical water-quality sampling sites in the Boulder River watershed, Montana, with data in the Montana Bureau of Mines and Geology Ground Water Information Center database (Continued)

Site number (fig. 2)	Analogous USGS site (fig. 2)	MBMG site number	Latitude	Longitude	Site name
			CATARACT CREEK--Continued		
36M		M:128424	462058	1121441	Unnamed stream above Black Bear Mine
37M		M:128427	--	--	Unnamed stream below Black Bear Mine
38M		M:128452	462002	1121443	Upper Hattie Ferguson Mine tributary above mine
39M	40	M:128448	461937	1121420	Upper Hattie Ferguson Mine tributary at mouth
40M		M:128191	461916	1121427	Unnamed tributary below Vera and Marie Mines
41M	41	M:128543	461905	1121442	Cataract Creek above Uncle Sam Gulch
		M:122781	461904	1121444	
42M		M:122787	462105	1121542	Uncle Sam Gulch above Crystal Mine
43M		M:121572	462054	1121536	Uncle Sam Gulch above Crystal Mine
44M		M:121573	462051	1121537	Uncle Sam Gulch below Crystal Mine
		M:128541	462051	1121537	
45M		M:122785	462042	1121540	Uncle Sam Gulch 0.25 mi below Crystal Mine
46M		M:122783	462021	1121546	Uncle Sam Gulch 0.5 mi below Crystal Mine
47M	42	M:122784	462012	1121553	Uncle Sam Gulch tributary below Crystal Mine
48M		M:122782	461935	1121540	Uncle Sam Gulch 1.5 mi below Crystal Mine
49M		M:122780	461913	1121452	Uncle Sam Gulch 2 mi below Crystal Mine
50M	43	M:128542	461905	1121444	Uncle Sam Gulch at mouth
51M	44	M:128544	461902	1121444	Cataract Creek below Uncle Sam Gulch
		M:121568	461902	1121444	
52M		M:128545	461845	1121500	Cataract Creek 1,000 ft below Phantom Mine
53M		M:122773	461826	1121510	Cataract Creek 0.4 mi above Deer Creek
54M	45	M:122772	461807	1121518	Deer Creek
55M		M:137083	461444	1121739	Cataract Creek 600 ft above Mantle Mine
56M		M:137082	--	--	Cataract Creek 1,600 ft below Mantle Mine
57M		M:137075	--	--	Big Limber Gulch above North Waldy Mine
58M		M:137089	--	--	Big Limber Gulch below North Waldy Mine above Waldy Mine
59M		M:137093	--	--	Big Limber Gulch below Waldy Mine above Redwing Mine
60M		M:137088	--	--	Big Limber Gulch 125 ft below Redwing Mine
61M		M:137097	--	--	Big Limber Gulch 0.25 mile below Redwing Mine
62M		M:137090	--	--	Minneapolis Mine tributary at mouth
63M		M:137076	--	--	Big Limber Gulch below Minneapolis Mine tributary
64M	46	M:890813	461710	1121425	Big Limber Gulch at mouth
		M:137085	--	--	
65M		M:122776	461651	1121449	Cataract Creek below Big Limber Gulch
66M		M:137084	--	--	Cataract Creek 1,600 ft below South Mantle Mine
67M	47	M:121566	461615	1121426	Cataract Creek above Boulder River
			HIGH ORE CREEK		
72M	49	M:137333	--	--	High Ore Creek 0.9 mi above Comet Mine
73M		M:137322	461756	1121136	High Ore Creek 0.3 mi below Comet Mine
74M		M:162780	461818	1121106	High Ore Creek above Bishop Creek
75M		M:137324	461822	1121101	High Ore Creek below tributary at King Cole Mine
76M	55	M:137332	461704	1121159	Peters Gulch
77M		M:137334	461700	1121204	High Ore Creek below Peters Gulch
78M		M:137325	461648	1121219	High Ore Creek above Golconda/Reliance Mine
79M		M:137328	461637	1121209	High Ore Creek 0.3 mi below Golconda/Reliance Mine
80M		M:137331	461212	1121625	High Ore Creek 0.6 mi below Golconda/Reliance Mine
81M	56	M:137330	461214	1121613	High Ore Creek 0.85 mi below Golconda/Reliance Mine

Table 4. Historical water-quality data retrieved from the Montana Bureau of Mines and Geology Ground Water Information Center database for streams in the Boulder River watershed, Montana

[Analyses by MBMG laboratory, Butte, Mont. Abbreviations: ft^3/s, cubic feet per second; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; MBMG, Montana Bureau of Mines and Geology. Symbols: <, less than minimum reporting level; --, no data]

Site number (fig. 2)	Date	Discharge, instantaneous (ft^3/s)	Specific conductance, field (µS/cm)	pH, field (standard units)	Cadmium, dissolved (µg/L as Cd)	Copper, dissolved (µg/L as Cu)	Iron, dissolved (µg/L as Fe)	Lead, dissolved (µg/L as Pb)	Zinc, dissolved (µg/L as Zn)	MBMG laboratory number	MBMG site number
1M	10-25-94	12.6	[1]163	7.9	<2	<2	173	<2	6.0	95Q0300	M:144336
2M	07-07-92	1.0	58.2	6.7	<2	3.7	71	<2	10.7	92Q0345	M:128487
3M	07-08-92	3.4	[1]68.8	7.9	<5	12.9	164	11.2	152.5	92Q0355	M:128462
4M	09-25-89	5.4	55	7.1	6	5	26	<50	24	89Q1308	M:890860
5M	07-15-92	11.8	64.4	7.8	<2	2.9	76	<2	17.1	92Q0461	M:128194
6M	06-26-92	.5	95.3	7.8	<2	5.5	28	<2	31.1	92Q0299	M:128477
7M	06-26-92	.6	91.4	7.8	<2	4.1	25	<3	11.6	92Q0300	M:128478
8M	08-08-91	.1	[1]114	7.5	5	<5	1,008	<100	11	91Q0952	M:123696
9M	08-08-91	.1	--	7.7	<5	<5	64	<100	26	91Q0955	M:123713
10M	08-08-91	.1	--	7.8	5	<5	<3	<100	<5	91Q0953	M:123712
11M	07-06-92	1.9	79.5	8.0	<2	3.6	33	<2	12.3	92Q0338	M:128490
	07-13-92	2.2	87.6	7.6	<2	4.4	24	<2	23.6	92Q0418	M:128501
12M	06-30-92	1.7	66.6	7.1	<2	4.9	60	<2	31.7	92Q0309	M:128468
13M	07-01-92	1.8	181	6.6	21.8	80.2	231	<2	2,750	92Q0316	M:128482
	07-13-92	1.1	149	6.3	52.2	116.8	751	<2	3,220	92Q0413	M:128494
14M	07-06-92	1.1	128	7.0	18.9	38.2	46	<2	2,230	92Q0339	M:128491
	07-13-92	--	134	7.0	19.1	35.5	20	<2	2,290	92Q0421	M:128504
15M	07-06-92	5.2	82.5	7.5	4.0	21.7	59	<2	373.2	92Q0337	M:128489
16M	08-08-91	1.5	[1]120	7.2	12	38	192	105	694	91Q0939	M:123716
17M	08-08-91	.4	--	7.5	<5	<5	--	<100	7	91Q0956	M:123715
18M	08-08-91	1.2	--	7.6	<2	<5	6	<100	14	91Q0947	M:123702
	07-01-92	1.5	66.2	6.9	<2	2.5	33	<2	17.0	92Q0315	M:128471
	07-13-92	1.0	71.4	7.6	<2	<2	9	<2	6.0	92Q0415	M:128496
19M	07-06-92	1.6	75.4	7.7	<5	<2	31	<2	5.5	92Q0340	M:128492
	07-13-92	1.5	71.5	7.6	<2	2.3	16	<2	8.7	92Q0416	M:128497
20M	08-08-91	1.8	--	7.5	<5	11	135	<100	324	91Q0957	M:123717
21M	07-05-92	5.3	87.6	7.8	3.7	16.4	67	<2	206	92Q0463	M:128196
22M	09-25-89	--	81.4	7.2	--	17	86	<50	178	89Q1309	M:890861
23M	07-15-92	18.9	74.6	7.4	<2	<2	73	<2	98.4	92Q0462	M:128195
24M	04-14-92	--	309	8.2	<2	<2	7	<2	29	92Q0437	M:128511
25M	07-15-92	23.0	84.6	7.8	<2	7.8	222	<2	54.7	92Q0464	M:128197
26M	07-25-91	--	[1]82.8	7.8	<6	<6	150	--	25	91Q0323	M:122779
	10-22-91	--	[1]147	8.3	<6	17	124	--	70	91Q1116	M:122779
27M	08-05-92	.042	63.2	7.3	<2	<2	28	<2	5.6	92Q0721	M:134779
28M	08-05-92	.056	65.8	7.5	<2	<2	24	<2	27.1	92Q0720	M:134782
29M	08-04-92	.037	58.1	7.2	<2	2.2	71	<2	4.2	92Q0684	M:132718
30M	08-04-92	.045	81.9	6.8	<2	2.7	180	<2	4.8	92Q0687	M:132720

Table 4. Historical water-quality data retrieved from the Montana Bureau of Mines and Geology Ground Water Information Center database for streams in the Boulder River Abandoned Mine Lands Initiative study area, Montana (Continued)

Site number (fig. 2)	Date	Discharge, instantaneous (ft^3/s)	Specific conductance, field (µS/cm)	pH, field (standard units)	Cadmium, dissolved (µg/L as Cd)	Copper, dissolved (µg/L as Cu)	Iron, dissolved (µg/L as Fe)	Lead, dissolved (µg/L as Pb)	Zinc, dissolved (µg/L as Zn)	MBMG laboratory number	MBMG site number
31M	08-04-92	.045	97.4	5.8	<2	159	65	<2	190	92Q0686	M:132719
32M	07-29-92	.018	81.1	7.1	<2	2.8	65	<2	41	92Q0659	M:128549
33M	07-27-92	4.4	72.3	7.5	<2	3.0	200	<2	14.2	92Q0626	M:128539
	07-27-92	4.4	77.2	7.8	<2	3.1	195	<2	13.3	92Q0625	M:128538
34M	07-22-92	11.5	66.2	7.6	9.5	7.6	120	<2	34.6	92Q0483	M:128456
35M	07-22-92	10.7	70.1	7.7	<2	7.8	130	<2	38.6	92Q0487	M:128459
36M	07-30-92	.04	--	7.0	<2	<2	21	<2	20.2	92Q0668	M:128424
37M	07-30-92	.04	64.2	6.8	7.6	61.3	26	<2	714	92Q0671	M128427
38M	07-23-92	.017	320	7.7	3.6	<2	20	<2	1,350	92Q0505	M:128452
39M	07-23-92	.11	95.3	7.2	<2	8.0	141	<2	400	92Q0501	M:128448
40M	07-20-92	.1	150	7.7	<2	<2	34	<2	7.5	92Q0479	M128191
41M	06-25-91	38.6	[1]60.6	7.7	<6	14	154	--	34	91Q0322	M:122781
	10-22-91	--	[1]124	8.0	<6	<6	91	--	77	91Q1114	M:122781
	07-28-92	6.0	98.6	8.0	<2	6.0	116	<2	42.6	92Q0641	M:128543
42M	06-27-91	.5	[1]27.3	6.5	<6	9	78	--	<6	91Q0311	M:122787
43M	- -91	--	[1]62.8	7.2	6	24	175	--	134	90Q0439	M:121572
44M	07-28-92	.25	434	3.5	215.5	4,850	4,540	78.6	21,000	92Q0639	M:128541
45M	06-26-91	1.3	[1]273	3.7	115	2,850	3,730	--	9,550	91Q0312	M:122785
46M	06-26-91	--	[1]149	4.7	60	1,520	1,160	--	5,250	91Q0328	M:122783
47M	06-26-91	--	[1]98.0	6.6	<6	<6	28	--	54	91Q0327	M:122784
48M	06-26-91	--	--	6.4	22	235	126	--	1,630	91Q0313	M:122782
49M	06-26-91	5.1	[1]78.6	6.9	12	183	84	--	1,450	91Q0314	M:122780
	10-22-91	--	[1]135	6.5	59	312	12	--	5,160	91Q1112	M:122780
50M	07-28-92	1.1	155	7.1	44.6	76	8	<2	3,150	92Q0640	M:128542
51M	06-25-91	43.2	[1]62.8	7.4	<6	43	141	--	185	91Q0315	M:121568
	10-22-91	--	[1]149	7.8	8	61	71	--	802	91Q1110	M:121568
	07-28-92	7.1	119	7.9	3.0	27.2	87	<2	372.9	92Q0642	M:128544
52M	07-28-92	5.7	107	7.7	4.7	35.2	71	<2	477.4	92Q0643	M:128545
53M	06-25-91	43.2	[1]64.1	7.6	<6	25	121	--	178	91Q0316	M:122773
54M	06-25-91	.5	[1]120	7.9	<6	<6	80	--	40	91Q0325	M:122772
55M	10-13-93	13.7	97.2	7.9	3.2	44.9	121	<2	278	94Q0767	M:137083
56M	10-13-93	14.4	90.6	8.2	3.4	39.5	124	<2	277	94Q0765	M:137082
57M	10-12-93	.017	81.9	6.6	<2	<2	24	<2	3.5	94Q0751	M:137075
58M	10-12-93	.015	149	7.3	<2	3.6	28	<2	9.1	94Q0779	M:137089
59M	10-12-93	.049	233	7.6	<2	<2	40	<2	4.8	94Q0743	M:137093
60M	10-12-93	.049	207	7.6	<2	3.2	33	<2	38.8	94Q0777	M:137088
61M	10-12-93	.045	206	7.3	<2	8.7	61	<2	33.5	94Q0747	M:137097
62M	10-14-93	.030	384	7.6	<2	2.6	32	2.5	6.7	94Q0781	M:137090
63M	10-14-93	.11	305	7.7	<2	<2	44	<2	4.9	94Q0753	M:137076

Table 4. Historical water-quality data retrieved from the Montana Bureau of Mines and Geology Ground Water Information Center database for streams in the Boulder River Abandoned Mine Lands Initiative study area, Montana (Continued)

Site number (fig. 2)	Date	Discharge, instantaneous (ft^3/s)	Specific conductance, field (µS/cm)	pH, field (standard units)	Cadmium, dissolved (µg/L as Cd)	Copper, dissolved (µg/L as Cu)	Iron, dissolved (µg/L as Fe)	Lead, dissolved (µg/L as Pb)	Zinc, dissolved (µg/L as Zn)	MBMG laboratory number	MBMG site number
64M	06-25-91	.2	[1]248	8.1	<6	<6	14	--	<6	91Q0324	M:890813
	10-13-93	.1	300	8.0	<2	<2	26	<2	4.9	94Q0771	M:137085
65M	06-25-91	43.8	[1]67.3	7.6	<6	29	111	--	165	91Q0317	M:122776
	11-16-91	--	[1]138	7.8	<6	47	41	--	528	91Q1118	M:122776
66M	10-13-93	11.6	[1]99.2	7.8	3.1	40.7	109	<2	252	94Q0769	M:137084
67M	- -91	--	[1]178	7.8	6	27	167	--	634	90Q0432	M:121566
68M	- -91	--	[1]142	8.2	<5	13	78	--	159	90Q0434	M:121565
69M	06-25-91	--	[1]80.5	7.6	<6	17	154	--	51	91Q0318	M:122777
	10-22-91	--	[1]160	8.1	<6	27	84	--	134	91Q1108	M:122777
70M	06-25-91	--	[1]83.0	7.6	<6	8	148	--	49	91Q0319	M:122778
71M	06-25-91	--	[1]85.5	7.9	<6	17	148	--	48	91Q0320	M:122775
72M	09-28-93	.4	105	7.8	<2	2.0	100	<2	54	94Q0707	M:137333
73M	09-29-93	.7	454	7.1	6.5	3.8	198	<2	4,145	94Q0687	M:137322
74M	08-26-97	1.4	458	8.1	9.4	2.5	14	<2	4,423	98Q0224	M:162780
	08-27-97	1.7	431	8.3	9.0	2.7	32	<2	5,214	98Q0230	M:162780
75M	09-29-93	1.2	443	6.5	6.7	5.2	177	<2	3,736	94Q0691	M:137324
76M	09-28-93	.006	381	8.9	<2	<2	6	<2	63.9	94Q0705	M:137332
77M	09-28-93	1.1	380	8.6	3.9	5.9	103	2.0	1,201	94Q0709	M:137334
78M	09-28-93	1.5	388	8.1	5.0	5.3	108	<2	1,659	94Q0693	M:137325
79M	09-28-93	1.4	396	8.0	4.8	4.4	97	<2	1,776	94Q0697	M:137328
80M	09-28-93	1.6	410	7.7	5.3	4.9	95	3.6	2,000	94Q0703	M:137331
81M	09-28-93	1.3	402	6.9	5.6	5.1	107	<2	1,970	94Q0701	M:137330
82M	10-13-93	.045	382	6.9	<2	4.7	10	<2	19	94Q0761	M:137080
83M	10-13-93	.1	392	6.5	<2	<2	16	<2	7.6	94Q0773	M:137086

[1]Specific-conductance value measured in laboratory.

Table 5. Water-quality data for field duplicates, Boulder River watershed, Montana

[Samples collected by the U.S. Geological Survey. ANC, acid-neutralizing capacity determined on unfiltered samples, formerly referred to as alkalinity. Abbreviations: lab, laboratory; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; mg/L, milligrams per liter. Symbols: <, less than minimum reporting level; --, no data]

Site number (fig. 2)	Date	Time	Specific conductance, lab (µS/cm)	pH, lab (standard units)	Hardness, total (mg/L as $CaCO_3$)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	ANC, lab (mg/l as $CaCO_3$)
24	12-03-96	1245	107	7.3	39	11	2.7	3.6	1.3	29
	12-03-96	1250	108	6.9	41	12	2.7	3.8	1.2	30
56	05-09-97	1500	238	7.7	96	27	6.9	4.5	1.4	60
	05-09-97	1501	237	7.7	99	28	7.1	4.6	1.4	60
58	11-01-96	1200	177	7.2	68	20	4.3	7.6	1.5	60
	11-01-96	1205	178	7.6	65	19	4.3	7.8	1.6	60
59	05-24-97	0930	58	7.5	21	6.2	1.3	2.8	.96	19
	05-24-97	0935	58	7.3	21	6.2	1.4	2.8	.96	19
25	02-11-98	1430	151	7.8	55	16	3.6	7.4	1.2	53
	02-11-98	1431	151	7.7	55	16	3.5	7.4	1.2	51
44	05-06-98	1415	51	7.2	20	6.2	1.1	1.6	.83	17
	05-06-98	1420	51	6.9	20	6.2	1.1	1.6	.85	17
17	10-31-96	1600	247	5.8	86	24	6.4	3.2	1.1	1.3
	10-31-96	1605	249	4.9	83	23	6.3	3.3	1.1	1.4
8	09-13-99	1250	82	7.6	33	9.5	2.3	2.3	1.1	32
	09-13-99	1251	82	7.6	34	9.6	2.4	2.3	1.1	34

Site number (fig. 2)	Date	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Silica, dissolved (mg/L as SiO_2)	Nitrite, dissolved (mg/L as N)	Nitrite plus nitrate, dissolved (mg/L as N)	Ammonia, dissolved (mg/L as N)	Phosphorus, ortho, dissolved (mg/L as P)	Aluminum, total recoverable (µg/L as Al)	Aluminum, dissolved (µg/L as Al)
24	12-03-96	20	1.0	0.10	17	<0.01	0.06	0.030	<0.010	--	6.5
	12-03-96	19	2.3	<.10	17	.01	.05	.030	<.010	--	6.4
56	05-09-97	50	1.4	.12	17	<.01	.12	<.015	<.010	--	63
	05-09-97	50	1.5	.14	17	<.01	.14	<.015	<.010	--	67
58	11-01-96	24	1.9	.10	21	--	--	--	--	--	12
	11-01-96	24	1.9	.10	21	--	--	--	--	--	11
59	05-24-97	6.7	.61	<.10	14	--	--	--	--	2,050	68
	05-24-97	6.7	.59	<.10	14	--	--	--	--	--	72
25	02-11-98	16	2.1	<.10	21	<.01	.13	.030	.023	40	5.6
	02-11-98	16	2.2	<.10	21	<.01	.14	.026	.027	52	5.2
44	05-06-98	5.6	.34	<.10	9.5	--	--	--	--	330	57
	05-06-98	5.7	.36	<.10	9.7	--	--	--	--	300	52
17	10-31-96	100	.40	.10	21	--	--	--	--	--	249
	10-31-96	100	.40	.10	21	--	--	--	--	--	254
8	09-13-99	8.0	<.29	--	--	--	--	--	--	39	26
	09-13-99	8.0	<.29	--	--	--	--	--	--	42	25

Table 5. Water-quality data for field duplicates, Boulder River watershed, Montana (Continued)

Site number (fig. 2)	Date	Antimony, dissolved (µg/L as Sb)	Arsenic, total recoverable (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)	Beryllium, dissolved, (µg/L as Be)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total recoverable (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)	Cobalt, dissolved (µg/L as Co)
24	12-03-96	<1	5	4	23	<1	<1	0.4	<1	<1	<1
	12-03-96	<1	5	4	24	<1	<1	.4	<1	<1	<1
56	05-09-97	1	64	13	31	<1	4	2.5	<1	1	<1
	05-09-97	1	86	13	31	<1	4	2.6	--	1	<1
58	11-01-96	<1	7	5	22	<1	1	1.0	--	<1	<1
	11-01-96	<1	6	5	23	<1	1	.9	--	<1	<1
59	05-24-97	<1	97	5	12	<1	2	.5	--	<1	<1
	05-24-97	<1	86	6	12	<1	2	.5	--	<1	<1
25	02-11-98	<1	3	3	18	<1	<1	<.3	--	1	<1
	02-11-98	<1	3	2	19	<1	<1	<.3	--	<1	<1
44	05-06-98	<1	12	3	11	<1	1	1.1	--	<1	<1
	05-06-98	<1	14	2	10	<1	1	1.2	--	<1	<1
17	10-31-96	<1	17	<1	26	<1	52	54	<1	<1	17
	10-31-96	<1	20	<1	26	<1	53	53	<1	<1	17
8	09-13-99	--	36	32	--	--	<1	<.3	--	--	--
	09-13-99	--	37	32	--	--	<1	<.3	--	--	--

Site number (fig. 2)	Date	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)	Mercury, total recoverable (µg/L as Hg)
24	12-03-96	3	3	100	47	<1	<1	<4	10	6	<0.1
	12-03-96	3	3	90	44	<1	<1	<4	10	6	<.1
56	05-09-97	17	8	1,200	62	54	1.6	5	590	329	<.1
	05-09-97	22	9	1,100	71	88	1.8	--	550	325	--
58	11-01-96	10	9	220	91	1	<1	4	50	29	<.1
	11-01-96	12	9	210	81	1	<1	5	50	30	<.1
59	05-24-97	110	25	6,600	130	72	<1	--	240	17	<.1
	05-24-97	110	24	4,000	140	68	1	--	220	17	<.1
25	02-11-98	8	6	270	64	<1	<1	--	19	14	--
	02-11-98	8	6	270	66	<1	<1	--	19	14	--
44	05-06-98	41	27	660	210	5	<1	--	55	31	--
	05-06-98	40	27	640	200	5	<1	--	55	31	--
17	10-31-96	590	537	2,600	570	12	2.0	8	1,700	1,690	<.1
	10-31-96	560	574	2,600	580	12	2.0	7	1,700	1,730	<.1
8	09-13-99	3	2	220	160	5	2.0	--	61	55	--
	09-13-99	3	2	230	160	6	2.0	--	62	55	--

Table 5. Water-quality data for field duplicates, Boulder River watershed, Montana (Continued)

Site number (fig. 2)	Date	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Nickel, total recoverable (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, total recoverable (µg/L as Ag)	Silver, dissolved (µg/L as Ag)	Uranium, dissolved (µg/L as U)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)
24	12-03-96	<0.1	<1	<1	<1	<1	<1	<1	90	82
	12-03-96	<.1	<1	<1	<1	<1	<1	<1	90	81
56	05-09-97	--	1	2	1	<1	<1	4	1,100	714
	05-09-97	--	1	--	<1	--	<1	4	1,100	750
58	11-01-96	--	1	--	<1	--	<1	2	230	208
	11-01-96	--	<1	--	<1	--	<1	2	230	207
59	05-24-97	--	<1	--	<1	--	<1	<1	250	89
	05-24-97	--	<1	--	<1	--	<1	<1	250	86
25	02-11-98	--	<1	--	<1	--	<1	1	44	44
	02-11-98	--	<1	--	<1	--	<1	1	44	42
44	05-06-98	--	<1	--	<1	--	<1	<1	140	120
	05-06-98	--	<1	--	<1	--	<1	<1	140	120
17	10-31-96	<.1	<1	13	12	<1	<1	4	6,000	5,660
	10-31-96	<.1	<1	13	12	<1	<1	4	5,800	5,690
8	09-13-99	--	--	--	--	--	--	--	37	35
	09-13-99	--	--	--	--	--	--	--	<31	35

Table 6. Water-quality data for field blanks, Boulder River watershed, Montana

[ANC, acid-neutralizing capacity determined on unfiltered samples, formerly referred to as alkalinity. Abbreviations: lab, laboratory; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; mg/L, milligrams per liter. Symbols: <, less than minimum reporting level; --, no data]

Date	Time	Specific conductance, lab (µS/cm)	pH, lab (standard units)	Calcium dissolved, (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	ANC, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L as SO_4)
10-31-96[1]	1350	1	6.1	<0.02	<0.01	<0.2	<0.1	1.5	<0.1
12-04-96[1]	0945	2	7.3	<.02	<.01	<.2	<.1	1.5	<.1
02-12-97[2]	0900	2	7.9	<.02	<.01	--	--	--	--
05-22-97[1]	1245	2	7.1	<.02	<.01	<.2	<.1	1.1	<.1
06-18-97[2]	1430	2	7.9	<.02	<.01	<.2	<.1	1.8	<.1
09-22-97[2]	1500	2	7.0	<.02	<.01	<.2	<.1	1.7	.1
09-22-97[1]	1515	2	7.0	--	--	--	--	--	--
05-05-98[3]	1030	1	7.7	<.02	<.004	<.1	<.1	1.5	<.1
09-25-98[3]	0945	2	7.7	<.02	<.004	<.1	<.1	1.4	<.1
05-28-99[3]	0825	1	7.1	<.02	<.004	<.06	<.1	1.9	<.1
05-28-99[3]	1000	2	7.3	<.02	.008	<.06	<.1	1.7	<.1
08-05-99[3]	1145	2	5.5	<.02	<.12	<.09	<.1	1.8	<.3

Date	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Silica, dissolved (mg/L as SiO_2)	Nitrite, dissolved (mg/L as N)	Nitrite plus nitrate, dissolved (mg/L as N)	Ammonia, dissolved (mg/L as N)	Ammonia plus organic nitrogen, total (mg/L as N)	Phosphorus, total (mg/L as P)	Phosphorus, ortho, dissolved (mg/L as P)	Aluminum, total recoverable (µg/L as Al)
10-31-96	<0.1	<0.1	<0.1	--	--	--	--	--	--	--
12-04-96	<.1	<.1	<.1	<0.01	<0.05	0.03	--	--	<0.01	--
02-12-97	--	--	--	--	--	--	--	--	--	--
05-22-97	.1	<.1	.2	--	--	--	--	--	--	--
06-18-97	<.1	<.1	.1	--	--	--	--	--	--	--
09-22-97	<.1	<.1	.4	<.01	<.05	<.01	<.2	<.01	<.01	<10
09-22-97	--	--	--	--	--	--	--	--	--	--
05-05-98	<.1	<.1	<.1	--	--	--	--	--	--	<10
09-25-98	<.1	<.1	<.1	--	--	--	--	<.05	--	<10
05-28-99	<.1	--	--	--	--	--	--	--	--	<28
05-28-99	<.1	--	--	--	--	--	--	--	--	<28
08-05-99	<.3	--	--	--	--	--	--	--	--	<28

Table 6. Water-quality data for field blanks, Boulder River watershed, Montana (Continued)

Date	Aluminum, dissolved (µg/L as Al)	Antimony, dissolved (µg/L as Sb)	Arsenic, total recoverable (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)	Beryllium, dissolved, (µg/L a Be)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total recoverable (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)
10-31-96	3	<1	<1	<1	<1	<1	<1	<1	<1	<1
12-04-96	4	<1	<1	<1	<1	<1	<1	<1	<1	<1
02-12-97	<1	<1	<1	<1	<1	<1	<1	<.1	--	<1
05-22-97	4	<1	--	<1	<1	<1	<1	<.1	<1	<1
06-18-97	4	<1	--	<1	<1	<1	<1	<.1	--	<1
09-22-97	<1	<1	<1	<1	<1	<1	<1	<.1	--	<1
09-22-97	3	<1	--	--	<1	<1	--	<.1	--	<1
05-05-98	<1	<1	<1	<1	<1	<1	<1	<.3	--	<1
09-25-98	2	<1	<1	<1	<1	<1	<1	<.3	--	<1
05-28-99	<1	--	<1	<1	--	--	<1	<.3	--	--
05-28-99	<1	--	<1	<1	--	--	<1	<.3	--	--
08-05-99	<1	--	<1	<1	--	--	<1	<.3	--	--

Date	Cobalt, dissolved (µg/L as Co)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
10-31-96	<1	<1	<1	<10	<3	<1	<1	<4	<10	<1
12-04-96	<1	<1	<1	<10	<3	<1	<1	<4	<10	<1
02-12-97	<1	<1	<1	<10	<3	<1	<1	--	<10	<1
05-22-97	<1	<1	<1	<10	<3	<1	<1	<4	<10	<1
06-18-97	<1	<1	<1	<10	<3	<1	<1	--	<10	<1
09-22-97	<1	<1	<1	<10	3	<1	<1	--	<10	<1
09-22-97	<1	--	<1	--	--	--	<1	--	--	<1
05-05-98	<1	<1	<1	<10	<10	<1	<1	--	<10	<1
09-25-98	<1	<1	<1	<10	<10	<1	<1	--	<10	<1
05-28-99	--	<1	<1	<14	<10	<1	<1	--	<3	<1
05-28-99	--	<1	<1	<14	<10	<1	<1	--	<3	<1
08-05-99	--	<1	<1	<14	<10	<1	<1	--	<3	<1

Table 6. Water-quality data for field blanks, Boulder River watershed, Montana (Continued)

Date	Mercury, total recoverable (µg/L as Hg)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Nickel, total recoverable (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, total recoverable (µg/L as Ag)	Silver, dissolved (µg/L as Ag)	Uranium, dissolved (µg/L as U)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)
10-31-96	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<10	<1
12-04-96	<.1	<.1	<1	<1	<1	<1	<1	<1	<10	<1
02-12-97	--	--	<1	--	<1	--	<1	<1	<10	<1
05-22-97	<.1	--	<1	<1	<1	<1	<1	<1	<10	<1
06-18-97	--	--	<1	--	<1	--	<1	<1	<10	1
09-22-97	--	--	<1	--	<1	--	<1	<1	<10	<1
09-22-97	--	--	<1	--	<1	--	<1	<1	--	<1
05-05-98	--	--	<1	--	<1	--	<1	<1	<10	<1
09-25-98	--	--	<1	--	<1	--	<1	<1	<10	<1
05-28-99	--	--	--	--	--	--	--	--	<40	<1
05-28-99	--	--	--	--	--	--	--	--	<40	<1
08-05-99	--	--	--	--	--	--	--	--	<40	<1

[1]Blank preserved in the field with concentrated nitric acid from glass vials.

[2]Blank preserved in the field with concentrated nitric acid from polytetrafluorethylene vials.

[3]Blank preserved in the laboratory with concentrated nitric acid from pipettor within 24 hours of sample collection.

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