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

Water-Quality Data (July 1994 through September 1996) and Statistical Summaries of Data for Surface Water in the Sand Coulee Coal Area, Montana

By Philip L. Karper

Open-File Report 98-94

In cooperation with the
MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

U.S. Department of the Interior

BRUCE BABBITT, Secretary

U.S. Geological Survey

Thomas J. Casadevall, Acting Director

Helena, Montana
May 1998

For additional information write to:

District Chief
U.S. Geological Survey
Federal Building, Drawer 10076
Helena, MT 59626-0076

Copies of this report may be purchased from:

U.S. Geological Survey
Branch of Information Services
Box 25286
Denver, CO 80225-0286

CONTENTS

ILLUSTRATIONS

TABLES

CONVERSION FACTORS AND ABBREVIATED WATER-QUALITY UNITS

Multiply	By	To obtain
cubic foot per second (ft^3/s)	0.028317	cubic meter per second
gallon (gal)	3.785	liter (L)
mile (mi)	1.609	kilometer
acre-foot (acre-ft)	1,233	cubic meter (m^3)
ton per day (ton/d)	907.2	kilogram per day

Temperature can be converted from degrees Celsius (°C) to degrees Fahrenheit (°F) by the equation:

$$°F = 9/5\ (°C) + 32$$

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

Water-year definition:

A water year is the 12-month period from October 1 through September 30. It is designated by the calendar year in which it ends.

Chemical concentration in water is reported in milligrams per liter (mg/L) or micrograms per liter (µg/L). Milligrams per liter is a unit expressing the solute mass (milligram) per unit volume (liter) of water and is about the same as parts per million unless concentrations are more than 7,000 milligrams per liter (Hem, 1989, p. 55). One thousand micrograms per liter is equivalent to 1 milligram per liter.

WATER-QUALITY DATA (JULY 1994 THROUGH SEPTEMBER 1996) AND STATISTICAL SUMMARIES OF DATA FOR SURFACE WATER IN THE SAND COULEE COAL AREA, MONTANA

By Philip L. Karper

Abstract

Water was sampled from sites in abandoned coal-mine areas in the drainages of Sand Coulee Creek and Belt Creek, southeast of Great Falls, to obtain baseline data for the evaluation of the effects of ongoing and future remedial activities. Water-quality and stream-flow data were collected periodically at 27 sites during July 1994 through September 1996. Water-quality data include laboratory concentrations of major ions and trace elements, and field measurements of pH and specific conductance. Quality-assurance data and statistical summaries are reported for the analytical results.

INTRODUCTION

The Sand Coulee Coal Area of the Great Falls Coal Field lies southeast of Great Falls in Cascade County, Montana (fig. 1). Sand Coulee Creek and Belt Creek are two major drainages in this area. The study area lies within the Sand Coulee Coal Area in drainages of the heavily mined zones in the vicinity of Belt, Sand Coulee, Tracy, Centerville, and Stockett, Montana. Coal beds in the upper part of the Morrison Formation (Jurassic age) were first mined in 1876 (Fisher, 1909). Coal was extensively mined from about 1889 to 1930 and most mines were abandoned by 1950. Acidic water containing high concentrations of metals has discharged from much of the mined area since abandonment of the underground coal mines.

The Mine Waste Cleanup Bureau of the Montana Department of Environmental Quality (formerly the Abandoned Mines Reclamation Bureau of the Montana Department of State Lands) has been active in reclamation of the study area since 1979. Considerable progress has been made in reclamation of mine dumps and documentation of sources of acid-mine drainage. Some progress also has been made on treatment of mine drainage. However, acid mine drainage into local streams continues to be a major water-quality problem in the area.

The Montana Department of Environmental Quality initiated a sampling program to develop a long-term database that can be used to detect trends over time in order to evaluate the effectiveness of remediation projects. As part of that program, water-quality data were collected by the U.S. Geological Survey (USGS) in cooperation with the Montana Department of Environmental Quality at selected sites.

Purpose and Scope

The purpose of this report is to present water-quality data for 27 sites in the abandoned coal-mine areas in the drainages of Sand Coulee Creek and Belt Creek collected from July 1994 through September 1996. Quality-assurance data and statistical summaries for the data also are presented.

SAMPLING LOCATIONS AND TYPES OF DATA

Most of the sampling stations in the basins of Sand Coulee Creek (fig. 2) and Belt Creek (fig. 3) are outflows from mine adits where ground water discharges to the surface. At several sites the discharging ground water mixes with surface water only during periods of precipitation runoff. Several sites are located on streams, only one of which flows perennially. Others flow intermittently. Nine sites were sampled upstream and downstream of constructed wetlands which were developed as a remediation effort. Outflow was absent at several of the wetlands because of small inflows and evaporation of the ponded water. A list of stations and type and period of data collection are given in table 1.

Quality assurance of data was maintained through the use of documented procedures designed to provide environmentally representative data. Acceptable performance of the procedures was verified with quality-control samples that were collected systematically to provide a measure of the accuracy, precision, and bias of the environmental data and to identify problems associated with sampling, processing, or analysis.

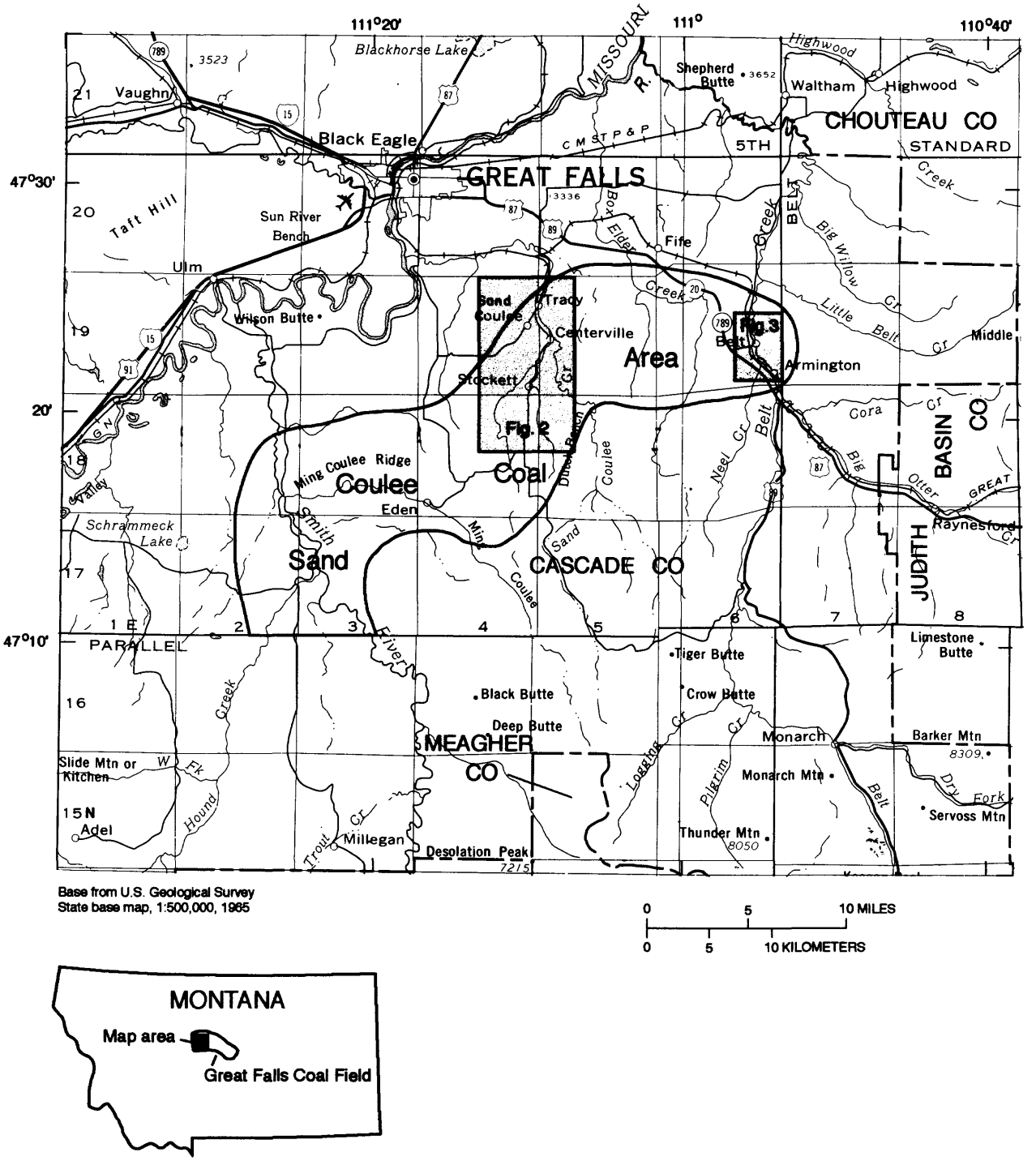

Figure 1. Location of study area.

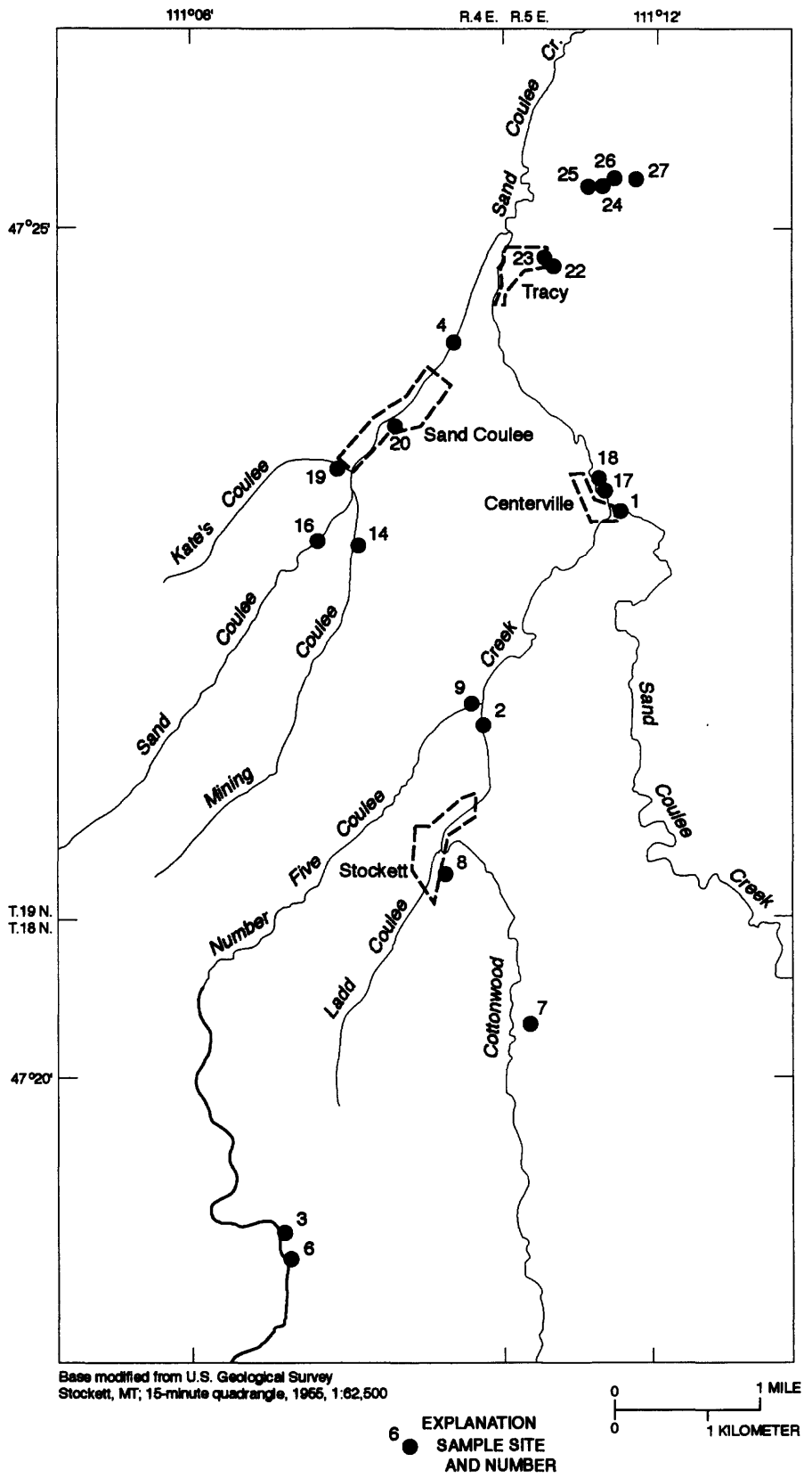

Figure 2. Location of sampling sites in the Sand Coulee Creek basin, Montana.

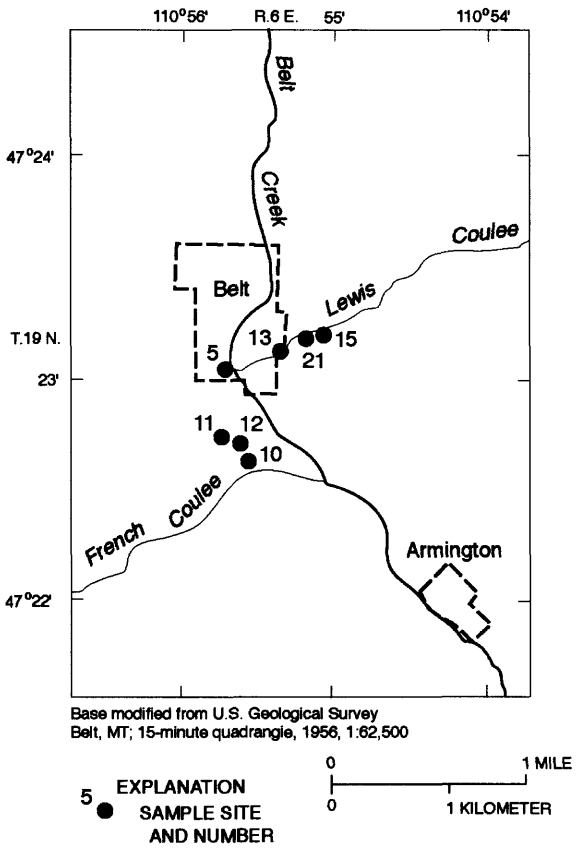

Figure 3. Location of sampling sites in the Belt Creek basin, Montana.

CONTINUOUS STREAMFLOW DATA

Continuous streamflow records are available for five of the sampling sites for this project. Stream gages were located on four of the major drainages in the Sand Coulee Creek basin (sites 1-4) and on Anaconda drain in the Belt Creek basin (site 5). Flow was intermittent for the 2-year period that the stream gages were operated on Sand Coulee Creek, Cottonwood Creek, and Sand Coulee. Water flowed perennially at the gages on Number Five Coulee below Giffen Spring, near Stockett and Anaconda drain at Belt.

Discharge measurements were made periodically to develop stage-discharge relation ratings. These ratings were applied to the continuous stage records to compute daily mean discharges for each of the gaging stations according to methods described by Rantz and others (1982). Hydrographs for each of the five continuous streamflow-gaging stations are presented in figures 4-8.

WATER-QUALITY DATA

Water-quality data consist of measurements of physical properties and concentrations of chemical constituents analyzed in water samples. Samples were collected 25 times (approximately once-monthly) during the July 1994 through September 1996 period, except where sites were dry during the times of sampling visits. Site 7, Cottonwood Mine No. 6 drain to Cottonwood Creek near Stockett, was added in February 1995. Flow through the French Coulee wetland ponds was shut off and diverted in March 1996, after which samples were collected from French Coulee wetlands inflow No. 2 at Belt (site 12).

Methods

Because of the small flows and shallow depths at the sites, grab samples were collected using 2-liter acid-rinsed polyethylene bottles. Onsite measurements of specific conductance, water temperature, and pH were made during collection of periodic water-quality samples. Onsite sample filtration for dissolved

Table 1. Type and period of data collection at sampling sites in the Sand Coulee Coal Area, Montana

[Station number: Eight-digit numbers represent standard USGS numbering system for streamflow-gaging stations in downstream order. Fifteen-digit numbers represent approximate latitude and longitude of the site, plus a sequence number. Symbol: --, no data]

Site no. (fig. 2, 3)	Station number	Station name	Continuous record streamflow	Periodic water quality
1	06078230	Sand Coulee Creek above Cottonwood Creek, at Centerville	10/94-09/96	07/94-09/96
2	06078250	Cottonwood Creek near Stockett	10/94-09/96	07/94-09/96
3	06078260	Number Five Coulee below Giffen Spring, near Stockett	10/94-09/96	07/94-09/96
4	06078270	Sand Coulee at Sand Coulee	10/94-09/96	07/94-09/96
5	06090590	Anaconda drain at Belt	10/94-09/96	07/94-09/96
6	471851111111101	Giffen Spring near Stockett	--	07/94-09/96
7	472016111085701	Cottonwood Mine No. 6 drain to Cottonwood Creek near Stockett	--	02/95-09/96
8	472114111095001	Cottonwood Mine No. 2 drain to Ladd Coulee at Stockett	--	07/94-09/96
9	472212111093301	Number Five Coulee near Stockett	--	07/94-09/96
10	472233110552601	French Coulee wetlands outflow at Belt	--	07/94-04/96
11	472235110553201	French Coulee wetlands inflow at Belt	--	07/94-02/96
12	472235110553202	French Coulee wetlands inflow No. 2 at Belt	--	04/96-09/96
13	472305110551701	Lewis Coulee above Castner Park, at Belt	--	07/94-09/96
14	472306111103601	Mine drain to Mining Coulee near Sand Coulee	--	07/94-09/96
15	472310110550801	Lewis Coulee above mine adit, at Belt	--	07/94-09/96
16	472313111104901	Mine drain to Sand Coulee near Sand Coulee	--	07/94-09/96
17	472330111082801	Centerville wetlands inflow at Centerville	--	07/94-09/96
18	472331111083001	Centerville wetlands outflow at Centerville	--	07/94-09/96
19	472334111104401	Mount Oregon Mine drain to Kate's Coulee at Sand Coulee	--	07/94-09/96
20	472346111102401	Nelson Mine drain to Sand Coulee at Sand Coulee	--	07/94-09/96
21	472309110551201	Lewis Coulee below mine adit, at Belt	--	07/94-09/96
22	472446111085101	Pipe spring at Tracy	--	07/94-09/96
23	472447111085301	Stock tank spring at Tracy	--	07/94-09/96
24	472513111082501	Johnson Badwater Mine small wetlands inflow near Tracy	--	07/94-09/96
25	472513111082901	Johnson Badwater Mine large wetlands inflow near Tracy	--	07/94-09/96
26	472514111082301	Johnson Badwater Mine small wetlands outflow near Tracy	--	07/94-09/96
27	472517111081001	Johnson Goodwater Mine small wetlands inflow near Tracy	--	07/94-09/96

constituents was performed using a peristaltic pump, silicone tubing, and 0.45-µm pore-size cartridge filters. Cross contamination of the filtered samples was prevented by rinsing the silicone tubing with 5-percent hydrochloric acid solution and deionized water and using a new cartridge filter for each sample. Nitric acid preservative was added onsite to the filtered samples. Vinyl gloves were worn during all sample-handling procedures. All field meters were calibrated onsite with standards and results were documented on standard USGS water-quality field forms. Instantaneous streamflow at the time of water sampling was determined at all stations, except for several instances when the discharge could not be determined because reservoir outlets were not accessible. Flow values were determined either by direct measurement or from stage-discharge rating tables (Rantz and others, 1982).

Water samples were analyzed for the dissolved constituents listed in table 2 by the USGS National Water Quality Laboratory (NWQL) in Arvada, Colo. Analytical methods are described by Fishman and Friedman (1989) and Fishman (1993).

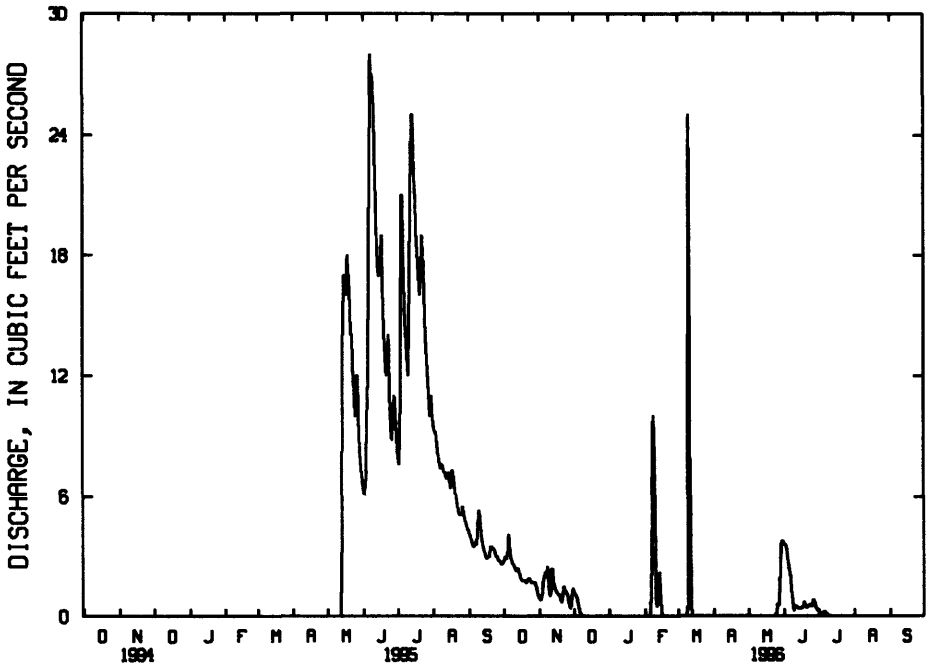

Figure 4. Daily mean discharge for Sand Coulee Creek above Cottonwood Creek, at Centerville, Montana (site 1), water years 1995-96. No flow occurred during several periods between October 1994 and September 1996.

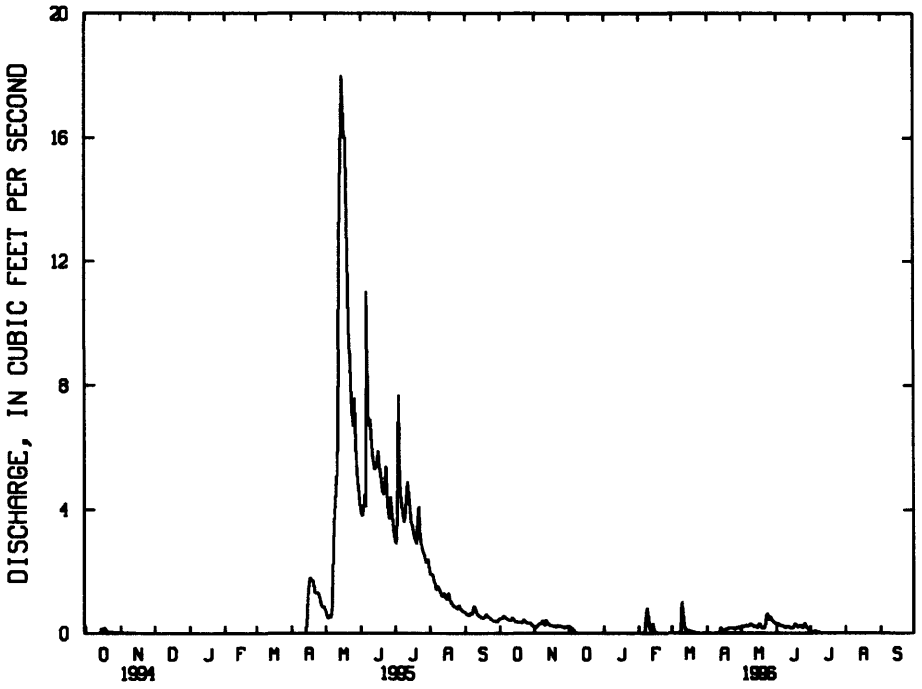

Figure 5. Daily mean discharge for Cottonwood Creek near Stockett, Montana (site 2), water years 1995-96. No flow occurred during several periods between October 1994 and September 1996.

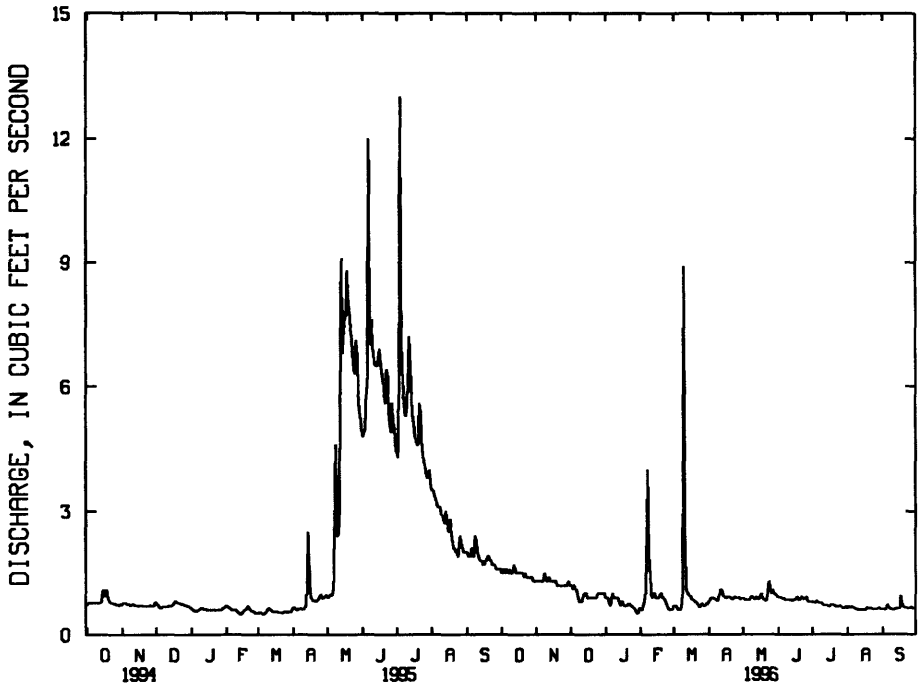

Figure 6. Daily mean discharge for Number Five Coulee below Giffen Spring, near Stockett, Montana (site 3), water years 1995-96.

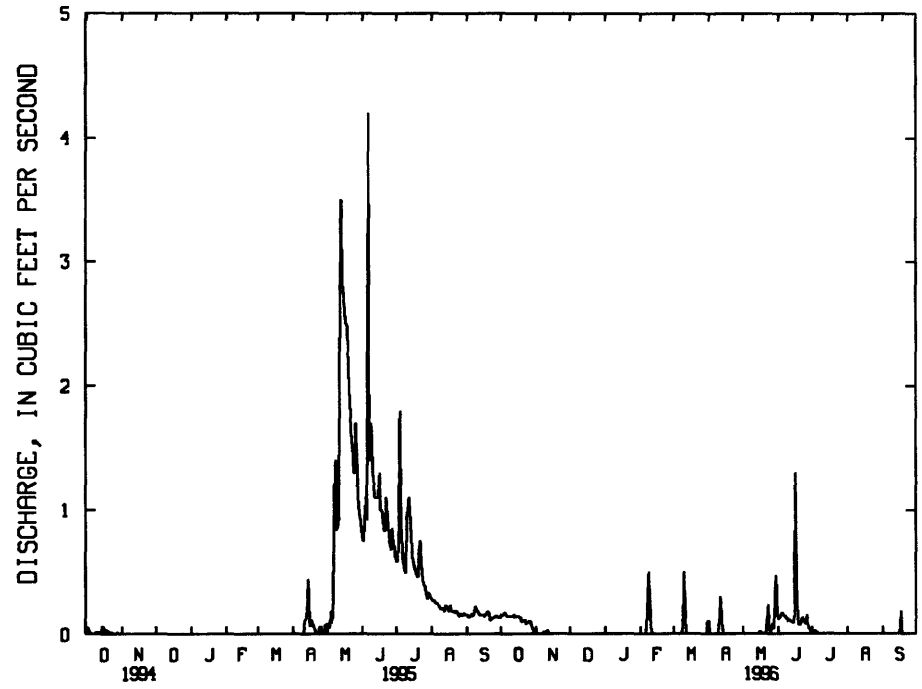

Figure 7. Daily mean discharge for Sand Coulee at Sand Coulee, Montana (site 4), water years 1995-96. No flow occurred during several periods between October 1994 and September 1996.

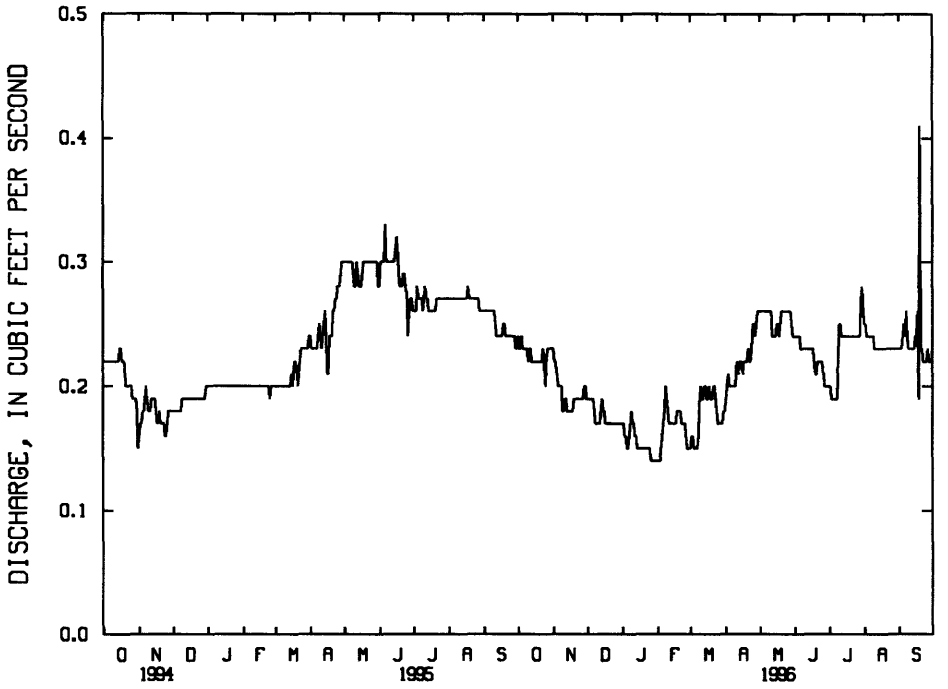

Figure 8. Daily mean discharge for Anaconda drain at Belt, Montana (site 5), water years 1995-96.

Results

Water-quality data for samples collected periodically during July 1994 through September 1996 are presented in table 3 (at the back of the report). The types of data include instantaneous streamflow, onsite measurements of water-quality properties, and analytical results for dissolved chemical constituents. Selenium analyses were discontinued in July 1995.

The field-determined pH for many samples was less than 4.5 units, below which alkalinity is negligible or absent. Because of the instability of acid-mine drain water, commonly having high concentrations of ferrous iron which can oxidize over time in the sample bottles, the pH measured weeks later by the NWQL would decrease and often be less than 4.5. Alkalinity for those samples was not reported by the NWQL. A value for alkalinity as well as uncensored (above detection limit) concentrations for common ions is required in the computer algorithm to calculate a value for dissolved-solids concentration. A value of 0.1 mg/L was substituted for alkalinity, chloride, and potassium for each sample which did not have a reported or uncensored value to perform the dissolved-solids concentration calculation. Alkalinity values for these samples are stored in the database as an estimated value of less than one (e<1). The dissolved-solids concentrations for these samples are also qualified with an "e" (estimated).

Quality Assurance

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 (1992).

The quality of analytical results reported for water-quality samples was evaluated by quality-control samples that were submitted from the field and analyzed concurrently in the laboratory with routine samples. These quality-control samples consisted of field replicates and blanks, which provide quantitative information on the precision and bias of the overall field and laboratory process. Each type of quality-control sample was submitted at a proportion equivalent to about 5 percent of the total number of water-quality samples. Therefore, the total number of quality-control samples submitted from the field represented about 10 percent of the total number of water-quality samples.

Table 2. Properties and dissolved constituents analyzed in water samples from sites in the Sand Coulee Coal Area, Montana

[Analytical methods are listed in parentheses to the right of property or constituent]

Physical or chemical property (analytical method)	Dissolved constituent[1]	
	Major ions (analytical method)	Trace elements (analytical method)
Streamflow	Calcium ([2]ICP)	Aluminum ([4]DCP)
Specific conductance (meter)	Magnesium ([2]ICP)	Arsenic ([5]AA)
pH (meter)	Sodium ([2]ICP)	Barium ([2]ICP)
Temperature	Potassium ([2]ICP)	Beryllium ([2]ICP)
Acidity ([1]ET)	Sulfate ([3]IC)	Boron ([4]DCP)
Alkalinity ([1]ET)	Chloride ([3]IC)	Cadmium ([2]ICP/[6]GFAA)
Dissolved solids (calculated)	Fluoride (Colorimetry)	Chromium ([2]ICP)
Hardness (calculated)	Silica ([2]ICP)	Cobalt ([2]ICP/[6]GFAA)
		Copper ([2]ICP)
		Iron ([2]ICP)
		Lead ([2]ICP/[6]GFAA)
		Lithium ([2]ICP)
		Manganese ([2]ICP)
		Molybdenum ([2]ICP/[6]GFAA)
		Nickel ([2]ICP)
		Selenium ([5]AA)
		Silver ([2]ICP)
		Strontium ([2]ICP)
		Vanadium ([2]ICP)
		Zinc ([2]ICP)

All laboratory analytical methods are referenced from Fishman and Friedman, (1989).
[1]Electrometric titration.
[2]Inductively-coupled argon radiofrequency plasma atomic emission spectrometry.
[3]Ion-exchange chromatography.
[4]Direct-current argon radiofrequency plasma atomic emission spectrometry.
[5]Atomic absorption spectrometry, hydride generation.
[6]Atomic absorption spectrometry, graphite furnace. Analyses for the concentrations of cadmium, cobalt, lead, and molybdenum in samples for all sites collected from July to October 1994 were made by the ICP method. For samples from sites where high iron and aluminum concentrations caused matrix interference, the GFAA method was used for these constituents from November 1994 to September 1996.

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, 1992). 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. The NWQL participates in a blind-sample program in which standard reference water samples prepared by the USGS Branch of Technical Development and Quality Systems are routinely inserted into the sample line for each analytical method at a frequency proportional to the sample load. The laboratory also participates in external evaluation studies twice-yearly with the U.S. Environmental Protection Agency, the Canadian Center for Inland Water, and the Branch of Technical Development and Quality Systems to assess analytical performance.

Replicate samples are two or more samples considered to be essentially identical in composition. Analyses of replicate samples indicate the precision (reproducibility) of results. Precision is affected by numerous sources of variability within the field and laboratory environments, including sample collection, sample processing, and sample analysis. To provide data on precision for samples exposed to all sources of variability combined, replicate samples were obtained in the field by splitting a composite water sample. Analyses of these field replicates indicate the reproducibility of environmental data that are affected by both field and laboratory processes (sample splitting, filtration, preservation, transportation, and laboratory handling). Water-quality data for field replicates are listed in table 4 (at the back of the report).

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. Field blanks are aliquots of deionized water that are certified as trace-element free and are processed through the sampling equipment used to collect water samples. These blanks are then subjected to the same processing and handling as stream samples. Blank samples are analyzed for the same constituents as those of water samples to identify whether any detectable concentrations were introduced from non-environmental sources. Water-quality data for field blanks are listed in table 5 (at the back of the report).

Most analytical results for blanks were below minimum reporting levels. Of the few detectable concentrations, occurrences were random and values generally were low, indicating no systematic contamination persistent in the process that would bias the results, with two possible exceptions. Occurrences of detectable concentrations of sulfate and silica were common enough and of sufficient magnitude to indicate possible low-level bias at sites where these constituents occur in low concentrations. Although not confirmed, a possible cause for detectable sulfate is carry-over contamination from samples having very high sulfate concentrations. The source of silica is uncertain, but may be partly attributed to borosilicate glass of the ampules containing the nitric acid preservative.

Most of the samples were representative of an acid-mine drainage matrix that contained very high concentrations of dissolved aluminum, iron, and sulfate. High concentrations of these constituents cause analytical interference that limits the ability to accurately quantify concentrations of other, less concentrated, constituents. To compensate for matrix interference, most samples were diluted prior to analysis to decrease the concentration of the interfering constituents and thus allow other constituents to be quantified. Dilution of samples, however, decreases the accuracy of analytical results, especially for less-concentrated constituents. As concentrations of some of the less-concentrated constituents in the diluted sample aliquots recede to near the detection limit of the analysis, readings are apt to be less accurate and precise. These less-reliable readings are multiplied by the dilution factor, yielding potentially unreliable results for those constituents. Dilution of some sample aliquots also caused the concentration of some constituents to recede below the detection limit, yielding results reported as "less than minimum reporting level." Because the detection limit of the analysis increases proportionally with the dilution factor, the resulting censoring of the value may be at a considerably higher level than for an undiluted sample. For example, a two-fold dilution results in a doubling of the minimum reporting level. Greater dilutions result in a correspondingly greater increase in the minimum reporting level. This loss of resolution for low-level concentrations (most notably for chloride, fluoride, and several trace elements) may impair the ability to track changes over time or to assess concentrations relative to water-quality standards.

Lack of analytical accuracy and precision from matrix interference was suspected as the cause of large changes in some trace-metal concentrations in samples for several sites collected during the first few sampling trips. A decision was made to switch from the ICP (inductively-coupled argon radiofrequency plasma atomic emission spectrometry) method of analysis to the graphite furnace (atomic absorption spectrometry) method for cadmium, cobalt, lead, and molybdenum analyses for samples from sites where high iron and aluminum concentrations were present. More consistent values for these constituents appear to have resulted from this change. As a result, some of the values determined by the ICP method from July to October 1994 were considered unreliable.

Where matrix interference resulted in unreliable analytical results, questionable data were deleted if reruns and verification checks could not resolve the uncertainty. For three sites, chloride values were deleted entirely. More expensive custom sample preparation and analysis may be required to provide reliable quantification of low-level concentrations for selected constituents when matrix interference is extensive.

STATISTICAL SUMMARIES OF DATA

Statistical summaries of water-quality data are provided in table 6 for the period of record since 1994. Statistical summaries were computed for stations with five or more samples collected during the period of record. For one station, Site 15, Lewis Coulee above mine adit, at Belt, less than five samples were collected and no statistical summaries are computed. The summaries include the period of record; number of samples; and maximum, minimum, mean, and median concentrations.

SELECTED REFERENCES

Edwards, T.K., and Glysson, G.D., eds., 1988, Field methods for measurement of fluvial sediment: U.S. Geological Survey Open-File Report 86-531, 118 p.

Fisher, Cassius A., 1909, Geology of the Great Falls Coal Field, Montana: U.S. Geological Survey Bulletin 356, 85 p.

Fishman, M.J., 1993, Methods of analysis by the U.S. Geological Survey National Water Quality Laboratory--Determination of inorganic and organic constituents in water and fluvial sediments: U.S. Geological Survey Open-File Report 93-125, 217 p.

Fishman, M.J., and Friedman, L.C., 1989, Methods for determination of inorganic substances in water and fluvial sediments: U.S. Geological Survey Techniques of Water-Resources Investigations, book 5, chap. A1, 709 p.

Friedman, L.C., and Erdman, D.E., 1982, Quality assurance practices for the chemical and biological analyses of water and fluvial sediments: U.S. Geological Survey Techniques of Water-Resources Investigations, book 5, chap. A6, 181 p.

Helsel, D.R., and Cohn, T.A., 1988, Estimation of descriptive statistics for multiply censored water quality data: Water Resources Research, v. 24, no. 12, p. 1997-2004.

Hem, J.D., 1989, Study and interpretation of the chemical characteristics of natural water (3d ed.): U.S. Geological Survey Water-Supply Paper 2254, 263 p.

Horowitz, A.J., Demas, C.R., Fitzgerald, K.K., Miller, T.L., and Rickert, D.A., 1994, U.S. Geological Survey protocol for the collection and processing of surface-water samples for the subsequent determination of inorganic constituents in filtered water: U.S. Geological Survey Open-File Report 94-539, 57 p.

Jones, B.E., 1987, Quality control manual of the U.S. Geological Survey's National Water Quality Laboratory: U.S. Geological Survey Open-File Report 87-457, 17 p.

Knapton, J.R., 1985, Field guidelines for collection, treatment, and analysis of water samples, Montana District: U.S. Geological Survey Open-File Report 85-409, 86 p.

Knapton, J.R., and Nimick, D.A., 1991, Quality assurance for water-quality activities of the U.S. Geological Survey in Montana: U.S. Geological Survey Open-File Report 91-216, 41 p.

Pritt, J.W., and Raese, J.W., eds., 1992, Quality assurance/ quality control manual--National Water Quality Laboratory: U.S. Geological Survey Open-File Report 92-495, 33 p.

Rantz, S.E., and others, 1982, Computation of discharge: U.S. Geological Survey Water-Supply Paper 2175, 2 v., 631 p.

Ward, J.R., and Harr, C.A., eds., 1990, Methods for collection and processing of surface-water and bed-material samples for physical and chemical analyses: U.S. Geological Survey Open-File Report 90-140, 71 p.

DATA

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996

[Site number shown in figure 2 or 3. 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; mg/L, milligrams per liter; ton/acre-ft, tons per acre-foot, ton/d, tons per day. Symbols: <, less than minimum reporting level; --, no data]

SITE 1, 06078230--SAND COULEE CREEK ABOVE COTTONWOOD CREEK, AT CENTERVILLE, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
19...	1845	0.39	399	27.0	25.0	8.3	190	39	23	5.9	0.2
May 1995											
16...	1455	15	322	19.0	17.5	8.0	160	44	12	3.3	.1
Jun											
12...	1500	20	377	28.0	22.0	8.2	190	52	15	4.0	.1
Jul											
12...	1050	24	336	17.0	14.5	8.3	170	45	14	3.7	.1
Aug											
16...	0845	6.3	485	16.0	15.5	8.5	250	63	23	5.2	.1
Sep											
13...	1420	3.4	469	23.0	20.5	8.7	240	56	24	5.5	.2
Oct											
10...	1530	2.4	442	17.0	10.5	8.8	230	50	25	5.4	.2
Nov											
27...	1030	.47	475	-8.0	0.0	8.4	250	59	25	5.9	.2
Jun 1996											
03...	1445	3.4	378	25.0	21.0	8.4	200	55	16	3.7	.1
Jul											
01...	1330	.21	409	29.0	30.5	8.5	200	42	22	5.6	.2

Date	Potas-sium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of consti-tuents, dissolved (mg/L)	Solids, dissolved (ton/ acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
19...	3.5	<0.1	128	83	2.3	0.3	3.2	238	0.32	0.25
May 1995										
16...	2.4	<.1	140	24	2.0	.3	11	184	.25	7.54
Jun										
12...	2.0	<.1	169	28	1.5	.2	10	215	.29	11.6
Jul										
12...	3.2	<.1	153	39	2.0	.2	11	210	.29	13.6
Aug										
16...	2.1	<.1	208	52	2.1	.3	11	284	.39	4.84
Sep										
13...	2.4	<.1	187	59	2.2	.6	6.6	270	.37	2.47
Oct										
10...	2.3	<.1	164	62	2.4	.3	3.8	251	.34	1.62
Nov										
27...	2.6	<.1	196	64	2.3	.5	3.7	282	.38	.36
Jun 1996										
03...	2.0	<.1	157	41	1.5	.5	8.8	223	.30	1.81
Jul										
01...	4.2	<.1	120	88	2.1	.4	3.3	241	.33	.14

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 1, 06078230--SAND COULEE CREEK ABOVE COTTONWOOD CREEK, AT CENTERVILLE, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
19...	400	2	150	<0.5	40	<1	<5	<3	<10	240
May 1995										
16...	130	<1	150	<.5	30	<1	<5	<3	<10	81
Jun										
12...	100	1	180	.5	20	1	<5	<3	<10	69
Jul										
12...	50	1	150	<.5	20	<1	<5	<3	<10	57
Aug										
16...	40	1	210	<.5	30	2	<5	<3	<10	31
Sep										
13...	60	1	190	<.5	50	<1	<5	<3	<10	23
Oct										
10...	90	<1	160	<.5	40	<1	<5	<3	<10	71
Nov										
27...	140	<1	170	<.5	30	<1	<5	<3	<10	58
Jun 1996										
03...	20	1	150	<.5	20	<1	<5	<3	<10	6
Jul										
01...	430	2	160	<.5	40	<1	<5	<3	<10	57

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
19...	<10	8	9	<10	<10	<1	<1	640	<6	<3
May 1995										
16...	<10	5	6	10	<10	<1	<1	300	<6	8
Jun										
12...	<10	8	8	<10	<10	<1	<1	400	<6	<3
Jul										
12...	<10	6	13	<10	<10	--	<1	330	6	<3
Aug										
16...	<10	5	3	<10	20	--	<1	690	<6	3
Sep										
13...	10	8	23	<10	10	--	1	720	<6	4
Oct										
10...	<10	10	10	<10	<10	--	<1	680	<6	4
Nov										
27...	<10	12	10	<10	<10	--	<1	630	<6	5
Jun 1996										
03...	<10	4	4	<10	<10	--	<1	490	<6	4
Jul										
01...	<10	12	3	<10	<10	--	<1	690	<6	<3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996-Continued

SITE 2, 06078250--COTTONWOOD CREEK NEAR STOCKETT, MT

Date	Time	Stream-flow, inatan-taneoua (ft^3/a)	Specific conduc-tance, onaite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard unita)	Hard-neas, total (mg/L aa $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dia-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	1725	0.09	874	25.0	21.0	8.0	440	90	53	13	0.3
May 1995											
16...	1800	17	656	19.0	16.5	7.5	320	71	34	10	.2
Jun											
13...	1640	5.2	825	25.0	20.0	6.9	410	88	45	13	.3
Jul											
12...	1550	5.5	887	20.0	16.0	7.0	450	100	48	12	.2
Aug											
15...	1340	1.0	1,210	24.0	15.0	4.2	490	100	57	13	.3
Sep											
12...	1245	.71	1,360	22.0	14.0	4.0	520	110	60	13	.2
Oct											
11...	1200	.48	1,330	18.0	9.5	4.2	570	120	65	13	.2
Nov											
27...	1310	.15	924	-5.0	0.0	7.7	510	110	57	12	.2
May 1996											
06...	1300	.22	1,240	17.0	13.0	7.6	700	160	73	11	.2
Jun											
03...	1650	.23	1,080	25.0	18.5	8.2	570	120	66	12	.2
Jul											
01...	1450	.10	1,020	31.0	28.0	8.3	560	120	64	11	.2

Date	Potas-sium, dissolved (mg/L)	Acidity (mg/L aa H^+)	Alkalinity, lab (mg/L aa $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L aa SiO_2)	Soilds, sum of conati-tuents, diasolved (mg/L)	Solids, dissolved (ton/ acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
20...	4.0	<0.1	142	330	4.4	0.7	3.0	585	0.80	0.14
May 1995										
16...	4.2	<.1	229	97	4.7	.5	6.4	366	.50	16.8
Jun										
13...	3.4	.2	80	320	4.0	.4	6.7	530	.72	7.44
Jul										
12...	4.1	<.1	56	390	4.6	.3	8.3	604	.82	8.97
Aug										
15...	3.5	5.7	e<1	780	5.2	.3	16	e1,030	e1.40	e2.77
Sep										
12...	3.7	7.4	e<1	950	4.4	1.7	17	e1,180	e1.60	e2.26
Oct										
11...	4.0	7.7	e<1	860	4.6	1.5	17	e1,150	e1.57	e1.50
Nov										
27...	3.8	1.2	185	340	4.3	.6	6.2	646	.88	.26
May 1996										
06...	4.4	<.1	153	550	5.6	.8	3.5	901	1.23	.54
Jun										
03...	4.7	.1	205	370	5.0	.7	2.6	705	.96	.44
Jul										
01...	5.0	<.1	206	350	4.0	.8	2.9	683	.93	.18

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 2, 06078250--COTTONWOOD CREEK NEAR STOCKETT, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	460	<1	110	<0.5	120	<1	<5	40	<10	6
May 1995										
16...	90	<1	130	<.5	50	<1	<5	6	<10	4
Jun										
13...	60	<1	220	<.5	60	5	<5	140	<10	130
Jul										
12...	20	3	180	<.5	60	2	<5	190	<10	830
Aug										
15...	41,000	<1	210	10	100	11	<5	--	50	5,300
Sep										
12...	6,100	<1	190	12	110	8	<5	560	50	2,900
Oct										
11...	54,000	<1	180	11	90	5	<5	--	30	7,400
Nov										
27...	70	<1	55	<.5	60	<1	<5	50	<10	5
May 1996										
06...	210	<1	24	<.5	80	<1	<5	60	<10	<3
Jun										
03...	<10	<1	48	<.5	80	<1	<5	30	<10	<3
Jul										
01...	1,200	<1	49	<.5	100	2	<5	20	<10	<3

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	<10	43	100	<10	70	<1	<1	360	<6	8
May 1995										
16...	<10	16	25	<10	20	<1	1	300	<6	12
Jun										
13...	<10	46	200	<10	230	<1	<1	380	<6	210
Jul										
12...	<10	58	380	<10	310	<1	<1	380	<6	530
Aug										
15...	<10	96	380	<10	810	--	<1	440	<6	3,700
Sep										
12...	<10	110	430	<10	1,000	--	1	450	<6	4,400
Oct										
11...	<10	110	420	<10	1,000	--	<1	480	<6	4,800
Nov										
27...	<10	30	69	<10	80	--	<1	370	<6	68
May 1996										
06...	<10	46	150	<10	120	--	<1	450	<6	22
Jun										
03...	<10	38	89	<10	50	--	<1	440	<6	12
Jul										
01...	<10	33	50	<10	30	--	<1	440	<6	7

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 3, 06078260--NUMBER FIVE COULEE BELOW GIFFEN SPRING, NEAR STOCKETT, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
21...	0825	0.88	1,080	17.0	10.0	6.4	510	130	46	18	0.3
Aug											
17...	0840	.77	1,200	17.0	9.5	6.5	540	140	46	17	.3
Sep											
06...	1445	.87	1,180	29.5	13.0	6.0	540	140	46	16	.3
Oct											
13...	1620	.76	1,180	14.0	9.5	6.7	530	140	44	16	.3
Nov											
14...	1320	.72	1,210	6.0	7.5	6.3	560	150	45	16	.3
Dec											
15...	1135	.70	1,180	4.0	6.5	6.2	550	150	43	14	.3
Jan 1995											
11...	0955	.60	1,190	7.0	7.5	6.4	530	140	44	15	.3
Feb											
21...	1505	.64	1,170	18.0	9.5	6.4	530	140	43	15	.3
Mar											
16...	1305	.62	1,160	9.0	10.0	6.7	530	140	43	16	.3
Apr											
11...	1500	.67	1,170	12.0	10.5	6.6	550	150	43	15	.3
May											
16...	1835	7.5	727	15.0	16.5	7.3	330	74	36	20	.5
Jun											
12...	1845	6.4	737	24.0	18.0	7.9	360	83	37	18	.4
Jul											
12...	1730	8.3	727	18.0	14.5	7.5	360	80	38	19	.4
Aug											
15...	1030	2.8	919	17.0	11.0	7.0	440	110	41	16	.3
Sep											
12...	1020	1.9	1,040	15.0	10.0	6.5	510	130	44	16	.3
Oct											
11...	1000	1.5	1,140	11.0	8.5	6.5	520	130	48	17	.3
Nov											
28...	0840	1.2	1,190	-1.0	5.5	6.5	570	150	48	16	.3
Jan 1996											
10...	1300	.88	1,250	6.0	6.5	6.0	600	160	49	15	.3
Feb											
20...	1230	.70	1,250	9.0	7.5	6.2	600	160	49	15	.3
Apr											
02...	1300	.86	1,230	8.0	9.0	6.1	590	160	46	15	.3
May											
06...	1020	.83	1,170	8.0	8.5	6.5	560	150	45	15	.3
Jun											
04...	1430	.88	1,040	21.0	15.0	6.6	510	130	46	19	.4
Jul											
01...	1600	.78	1,100	31.0	16.0	6.3	510	130	45	16	.3
Aug											
06...	1110	.69	1,110	18.0	11.0	6.2	550	140	48	15	.3
Sep											
03...	1000	.61	1,150	15.0	9.5	6.5	530	140	44	15	.3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 3, 06078260--NUMBER FIVE COULEE BELOW GIFFEN SPRING, NEAR STOCKETT, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
21...	5.2	0.4	7.9	570	3.9	0.6	14	842	1.14	2.00
Aug										
17...	5.5	3.2	e<1	670	3.8	.2	14	e956	e1.30	e1.99
Sep										
06...	6.1	1.7	e<1	720	3.4	.3	15	e1,010	e,1.37	e2.37
Oct										
13...	6.2	0.9	e<1	650	3.8	.5	14	e928	e1.26	e1.91
Nov										
14...	5.9	1.5	e<1	670	3.4	--	14	e965	e1.31	e1.88
Dec										
15...	5.9	1.5	e<1	630	3.3	<.5	15	e919	e1.25	e1.74
Jan 1995										
11...	5.8	1.3	e<1	610	3.4	.7	14	e885	e1.20	e1.43
Feb										
21...	4.9	.8	e<1	680	4.5	.2	14	e950	e1.29	e1.64
Mar										
16...	5.1	1.5	e<1	590	3.8	.3	14	e860	e1.17	e1.44
Apr										
11...	5.8	.6	4.4	660	4.6	.3	13	935	1.27	1.69
May										
16...	5.3	<.1	257	110	5.0	.6	9.2	415	.56	8.41
Jun										
12...	4.1	<.1	252	130	4.0	.6	8.3	437	.59	7.56
Jul										
12...	4.4	<.1	252	140	4.5	.5	11	450	.61	10.1
Aug										
15...	4.1	<.1	148	380	3.6	.6	10	661	.90	5.00
Sep										
12...	5.7	<.1	67	500	4.3	.3	11	771	1.05	3.96
Oct										
11...	5.7	.5	27	560	4.7	.4	13	833	1.13	3.33
Nov										
28...	5.3	1.1	e<1	700	3.8	1.2	14	e944	e1.35	e3.22
Jan 1996										
10...	7.0	2.1	e<1	790	5.6	1.3	17	e1,110	e1.51	e2.65
Feb										
20...	5.9	1.6	e<1	680	3.9	.2	15	e987	e1.34	e1.87
Apr										
02...	5.5	1.1	e<1	700	4.5	.8	15	e1,000	e1.36	e2.33
May										
06...	6.1	.3	2.3	680	5.6	.8	13	958	1.30	2.15
Jun										
04...	5.7	<.1	5.6	570	7.3	.9	11	844	1.15	2.01
Jul										
01...	5.9	.6	5.6	680	4.3	.8	13	934	1.27	1.97
Aug										
06...	6.5	.6	4.0	630	5.3	.7	13	898	1.22	1.67
Sep										
03...	5.7	.5	e<1	600	5.2	.8	14	e868	e1.18	e1.43

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 3, 06078260--NUMBER FIVE COULEE BELOW GIFFEN SPRING, NEAR STOCKETT, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
21...	60	<1	48	<0.5	80	6	<5	330	<10	46,000
Aug										
17...	190	<1	40	<.5	90	13	<5	150	<10	55,000
Sep										
06...	160	<1	35	1	100	14	<5	270	<10	57,000
Oct										
13...	170	<1	32	.5	90	5	<5	260	<10	50,000
Nov										
14...	310	<1	26	1	100	9	<5	270	<10	56,000
Dec										
15...	290	<1	22	1	90	3	<5	410	<10	53,000
Jan 1995										
11...	220	<1	22	1	90	9	<5	300	<10	48,000
Feb										
21...	150	<1	22	1	80	2	<5	170	<10	45,000
Mar										
16...	130	<1	22	1	80	2	<5	180	<10	44,000
Apr										
11...	60	<1	22	.7	80	2	<5	150	<10	38,000
May										
16...	60	<1	140	<.5	50	<1	<5	10	<10	430
Jun										
12...	70	<1	210	<.5	50	<1	<5	20	<10	340
Jul										
12...	30	<1	170	<.5	60	<1	<5	20	<10	390
Aug										
15...	30	<1	120	<.5	60	1	<5	100	<10	5,600
Sep										
12...	50	<2	87	<.5	80	3	<5	140	<10	17,000
Oct										
11...	70	<1	70	<.5	80	3	<5	190	<10	35,000
Nov										
28...	140	<1	50	<.5	80	4	<5	230	<10	51,000
Jan 1996										
10...	400	<2	39	.9	80	5	<5	250	<10	63,000
Feb										
20...	220	<1	35	.9	90	4	<5	290	<10	53,000
Apr										
02...	100	<1	34	.6	90	3	<5	220	<10	50,000
May										
06...	50	<1	32	1	80	2	<5	200	<10	38,000
Jun										
04...	30	<1	46	<.5	60	1	<5	160	<10	18,000
Jul										
01...	30	<1	35	<.5	60	2	<5	170	<10	33,000
Aug										
06...	20	<1	28	1	70	2	<5	160	<10	34,000
Sep										
03...	40	<1	25	.9	60	2	<5	190	<10	40,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 3, 06078260--NUMBER FIVE COULEE BELOW GIFFEN SPRING, NEAR STOCKETT, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
21...	<10	59	740	<10	320	<1	<1	370	<6	1,100
Aug										
17...	<10	66	850	<10	340	--	<1	390	12	1,300
Sep										
06...	<10	69	800	<10	360	<1	<1	380	10	1,400
Oct										
13...	<10	65	830	<10	310	<1	<1	360	9	1,200
Nov										
14...	<10	68	930	<10	340	<1	<1	380	9	1,400
Dec										
15...	<10	67	920	<10	330	<1	<1	370	9	1,300
Jan 1995										
11...	<10	68	870	<10	320	<1	<1	390	8	1,200
Feb										
21...	<1	62	820	<1	290	<1	<1	380	<6	1,000
Mar										
16...	<1	68	780	<1	280	<1	<1	380	<6	1,000
Apr										
11...	<1	63	860	<1	260	<1	<1	380	<6	900
May										
16...	<1	26	130	1	30	1	<1	290	<6	30
Jun										
12...	<1	24	170	<1	30	<1	<1	320	<6	50
Jul										
12...	<1	11	180	<1	30	--	<1	300	<6	60
Aug										
15...	<1	36	490	<1	150	--	<1	330	<6	380
Sep										
12...	<1	47	740	<1	250	--	1	340	<6	750
Oct										
11...	<1	54	890	<1	310	--	<1	370	<6	1,100
Nov										
28...	<1	61	990	<1	380	--	<1	390	<6	1,500
Jan 1996										
10...	<1	69	1,300	<1	470	--	<1	430	<6	1,900
Feb										
20...	<1	62	1,300	<1	430	--	2	390	<6	1,700
Apr										
02...	<1	66	1,200	<1	400	--	<1	400	<6	1,500
May										
06...	<1	59	930	<1	330	--	<1	380	<6	1,200
Jun										
04...	<1	55	730	<1	260	--	<1	380	<6	750
Jul										
01...	<1	58	730	1	290	--	<1	360	<6	1,000
Aug										
06...	<1	67	870	<1	290	--	<1	360	<6	1,100
Sep										
03...	<1	67	830	<1	320	--	<1	370	<6	1,100

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 4, 06078270--SAND COULEE AT SAND COULEE, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	1200	0.03	4,770	25.0	30.0	2.6	1,300	240	160	25	0.3
Aug											
17...	1010	.02	4,660	21.0	17.0	2.6	1,200	220	160	24	.3
Sep											
06...	1700	.008	5,460	31.0	20.5	2.2	1,400	250	180	26	.3
Oct											
13...	1035	.005	4,770	6.0	3.0	2.8	1,200	230	160	22	.3
Apr 1995											
12...	1150	.05	3,930	15.0	11.5	2.6	1,200	240	140	23	.3
May											
16...	1220	2.5	1,020	17.0	19.0	6.1	480	86	65	16	.3
Jun											
13...	1150	1.1	1,730	25.0	24.0	4.2	630	110	85	20	.3
Jul											
11...	1430	.62	2,470	18.0	17.0	3.9	720	130	96	20	.3
Aug											
16...	1010	.18	4,880	19.0	19.0	2.7	1,200	220	160	23	.3
Sep											
13...	1000	.17	4,750	15.0	11.5	2.7	1,200	220	160	24	.3
Oct											
10...	1650	.15	4,650	18.0	13.0	2.7	1,200	220	160	24	.3
Jun 1996											
04...	1550	.14	2,750	24.0	23.0	2.7	890	160	120	23	.3
Jul											
02...	0820	.03	3,270	18.0	14.5	2.8	940	180	120	22	.3

Date	Potas-sium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of consti-tuents, dissolved (mg/L)	Solids, dissolved (ton/ acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
20...	2.7	31	e<1	4,500	7.7	0.2	78	e5,810	e7.90	e0.47
Aug										
17...	3.0	77	e<1	4,800	6.3	<.1	77	e6,190	e8.42	e.33
Sep										
06...	3.0	84	e<1	6,800	3.8	.2	86	e8,290	e11.3	e.18
Oct										
13...	2.6	78	e<1	5,900	3.1	2.4	79	e7,370	e10.0	e.10
Apr 1995										
12...	2.5	38	e<1	4,200	8.6	1.8	50	e5,030	e6.85	e.68
May										
16...	7.1	<.1	13	470	11	.2	9.9	683	.93	4.61
Jun										
13...	3.5	11	e<1	1,700	8.5	1.7	26	e2,120	e2.88	e6.30
Jul										
11...	3.4	26	e<1	2,400	7.1	1.2	39	e3,080	e4.18	e5.15
Aug										
16...	2.9	77	e<1	5,800	21	--	81	e7,370	e10.0	e3.58
Sep										
13...	2.2	84	e<1	5,800	8.2	.2	84	e7,410	e10.1	e3.40
Oct										
10...	2.8	79	e<1	5,100	4.3	1.9	81	e6,530	e8.88	e2.64
Jun 1996										
04...	3.8	22	e<1	2,100	9.6	1.0	42	e2,660	e3.62	e1.01
Jul										
02...	2.6	33	e<1	2,700	7.1	.7	57	e3,440	e4.68	e.28

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 4, 06078270--SAND COULEE AT SAND COULEE, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	410,000	4	9	49	430	--	110	2,600	110	360,000
Aug										
17...	410,000	6	7	49	420	34	120	3,000	110	470,000
Sep										
06...	490,000	4	6	57	490	19	130	2,000	130	430,000
Oct										
13...	470,000	7	6	52	440	--	120	2,900	130	480,000
Apr 1995										
12...	230,000	<1	8	30	250	27	50	1,000	70	120,000
May										
16...	30	<1	120	<.5	80	2	<5	110	<10	7,700
Jun										
13...	73,000	<1	120	11	140	9	<5	270	20	86,000
Jul										
11...	170,000	3	88	19	190	15	20	520	<30	200,000
Aug										
16...	440,000	7	<10	56	460	47	150	1,400	130	600,000
Sep										
13...	480,000	11	13	60	440	49	160	1,600	160	600,000
Oct										
10...	420,000	6	40	52	440	48	130	1,500	130	490,000
Jun 1996										
04...	130,000	<1	69	19	210	16	40	600	--	64,000
Jul										
02...	190,000	2	11	26	200	21	60	790	<80	150,000

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	<10	630	4,000	<10	2,800	<2	<1	1,300	70	11,000
Aug										
17...	<10	630	4,100	<10	2,800	<5	<3	1,300	130	11,000
Sep										
06...	<10	700	4,900	<10	3,200	<5	<3	1,400	97	12,000
Oct										
13...	<10	610	4,700	<10	2,900	<2	<5	1,200	120	12,000
Apr 1995										
12...	<1	430	4,100	<1	2,100	<1	<3	1,100	<6	8,600
May										
16...	<1	85	450	2	240	1	<1	530	<6	420
Jun										
13...	<1	190	1,100	<1	750	<1	<1	730	<6	3,000
Jul										
11...	<1	260	2,000	<1	1,200	--	<3	780	<18	4,800
Aug										
16...	<1	630	4,400	<1	3,000	--	<10	1,300	100	12,000
Sep										
13...	<1	640	4,100	<1	3,400	--	<6	1,300	60	14,000
Oct										
10...	<1	650	3,700	1	3,300	--	<5	1,300	57	13,000
Jun 1996										
04...	2	280	2,000	<1	1,100	--	<4	930	<24	4,800
Jul										
02...	1	380	2,600	<1	1,600	--	<10	950	<48	6,800

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana July 1994 through September 1996 (Continued)

SITE 5, 06090590--ANACONDA DRAIN AT BELT, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
19...	1535	0.17	2,460	24.0	16.5	2.9	680	160	68	9.7	0.2
Aug											
17...	1510	.18	2,420	30.0	18.5	3.0	670	160	66	9.8	.2
Sep											
06...	1030	.21	2,380	22.0	14.0	2.9	670	160	66	10	.2
Oct											
14...	0955	.22	2,400	7.0	9.5	2.9	680	160	67	9.5	.2
Nov											
14...	1110	.20	2,420	6.0	9.0	3.0	710	170	68	10	.2
Dec											
15...	1525	.20	2,440	3.5	6.5	3.0	690	170	64	9.4	.2
Jan 1995											
12...	1010	.22	2,390	2.0	8.0	3.0	720	170	71	10	.2
Feb											
22...	0820	.21	2,400	7.0	8.0	3.0	670	160	65	9.6	.2
Mar											
16...	0935	.22	2,370	6.0	10.0	2.9	680	160	67	10	.2
Apr											
12...	1745	.24	2,380	12.0	12.0	2.9	640	150	63	9.6	.2
May											
17...	0825	.28	2,300	16.0	12.0	2.8	640	150	64	9.8	.2
Jun											
13...	0940	.29	2,290	22.5	15.0	2.9	640	150	65	10	.2
Jul											
13...	0920	.28	2,310	17.0	14.0	3.0	640	150	63	10	.2
Aug											
17...	1100	.28	2,330	20.0	15.5	3.0	610	140	63	9.7	.2
Sep											
14...	1100	.26	2,390	20.0	14.0	3.0	640	150	65	10	.2
Oct											
12...	1145	.22	2,420	6.5	10.0	2.9	650	150	67	9.7	.2
Nov											
29...	1200	.19	2,430	9.0	8.5	3.0	660	150	68	9.8	.2
Jan 1996											
12...	1010	.16	2,340	9.0	7.5	2.9	690	160	69	10	.2
Feb											
21...	1100	.15	2,380	10.0	11.0	3.0	680	160	67	10	.2
Apr											
04...	1330	.20	2,440	9.0	14.0	2.8	680	160	68	11	.2
May											
07...	1610	.24	2,350	14.0	14.5	2.9	650	150	66	10	.2
Jun											
05...	1230	.23	2,280	18.0	17.5	2.8	660	150	68	10	.2
Jul											
03...	0840	.19	2,340	21.0	14.0	2.8	720	170	72	11	.2
Aug											
08...	1050	.24	2,440	21.0	16.0	2.9	660	150	68	10	.2
Sep											
04...	1010	.23	2,460	11.0	13.0	3.0	690	160	69	10	.2

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana July 1994 through September 1996 (Continued)

SITE 5, 06090590--ANACONDA DRAIN AT BELT, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
19...	3.2	22	e<1	1,800	2.6	--	57	e2,400	e3.26	e1.10
Aug										
17...	3.7	22	e<1	1,900	6.0	--	56	e2,490	e3.39	e1.21
Sep										
06...	3.4	21	e<1	1,800	5.6	0.8	57	e2,400	e3.26	e1.36
Oct										
14...	3.2	20	e<1	1,900	7.4	1.3	60	e2,480	e3.37	e1.47
Nov										
14...	3.1	22	e<1	1,900	3.2	2.0	57	e2,510	e3.41	e1.36
Dec										
15...	3.3	22	e<1	1,900	2.3	.6	59	e2,500	e3.40	e1.35
Jan 1995										
12...	3.0	23	e<1	1,800	2.4	2.1	58	e2,400	e3.27	e1.43
Feb										
22...	2.9	21	e<1	2,700	6.3	2.7	56	e3,290	e4.47	e1.87
Mar										
16...	3.0	21	e<1	1,800	6.4	2.2	56	e2,390	e3.25	e1.42
Apr										
12...	3.2	19	e<1	2,000	5.4	1.7	51	e2,540	e3.46	e1.65
May										
17...	2.6	19	e<1	1,900	7.9	2.4	53	e2,440	e3.32	e1.85
Jun										
13...	2.5	18	e<1	1,700	3.9	.9	54	e2,240	e3.04	e1.75
Jul										
13...	2.6	18	e<1	2,000	2.3	.6	56	e2,530	e3.45	e1.92
Aug										
17...	2.7	20	e<1	2,100	7.6	1.4	56	e2,650	e3.60	e2.00
Sep										
14...	2.7	20	e<1	1,700	2.7	1.7	57	e2,280	e3.10	e1.60
Oct										
12...	2.7	23	e<1	1,900	2.5	1.5	58	e2,490	e3.39	e1.48
Nov										
29...	2.6	22	e<1	1,900	2.2	1.6	57	e2,490	e3.39	e1.28
Jan 1996										
12...	3.1	21	e<1	2,000	7.1	1.3	60	e2,620	e3.56	e1.13
Feb										
21...	3.1	23	e<1	2,000	2.5	1.9	59	e2,600	e3.54	e1.05
Apr										
04...	2.8	24	e<1	2,400	4.8	2.1	59	e3,030	e4.11	e1.63
May										
07...	2.9	22	e<1	2,000	4.8	1.9	56	e2,580	e3.51	e1.67
Jun										
05...	2.8	21	e<1	2,400	4.5	1.9	53	e2,970	e4.04	e1.84
Jul										
03...	3.1	21	e<1	1,700	2.7	.9	59	e2,300	e3.13	e1.18
Aug										
08...	3.5	25	e<1	1,900	4.5	2.2	54	e2,470	e3.36	e1.60
Sep										
04...	3.1	23	e<1	1,900	4.9	2.0	55	e2,490	e3.39	e1.55

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana July 1994 through September 1996 (Continued)

SITE 5, 06090590--ANACONDA DRAIN AT BELT, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
19...	110,000	1	<3	20	170	--	50	--	40	180,000
Aug										
17...	110,000	1	3	17	180	--	50	--	<30	170,000
Sep										
06...	110,000	2	<3	18	170	13	40	390	<30	180,000
Oct										
14...	100,000	1	<3	18	170	--	40	--	<30	160,000
Nov										
14...	110,000	1	<3	17	160	--	50	470	<30	180,000
Dec										
15...	110,000	1	4	17	170	--	40	--	<30	170,000
Jan 1995										
12...	100,000	1	4	19	150	11	50	500	<30	180,000
Feb										
22...	110,000	<1	<3	17	150	7	40	310	<30	170,000
Mar										
16...	110,000	1	<3	17	160	8	40	350	30	170,000
Apr										
12...	100,000	1	<3	16	160	8	40	330	30	150,000
May										
17...	95,000	1	10	17	130	8	40	310	40	150,000
Jun										
13...	94,000	<1	3	15	140	8	30	280	40	150,000
Jul										
13...	92,000	3	<3	15	140	8	40	290	<30	150,000
Aug										
17...	100,000	1	<2	17	150	9	40	370	30	160,000
Sep										
14...	110,000	<2	2	18	160	9	40	350	30	170,000
Oct										
12...	110,000	1	11	16	180	10	50	360	40	180,000
Nov										
29...	110,000	<1	11	17	150	9	40	310	30	180,000
Jan 1996										
12...	120,000	<2	12	18	150	9	50	310	<30	180,000
Feb										
21...	110,000	2	10	17	150	9	50	310	30	180,000
Apr										
04...	120,000	3	11	18	140	8	50	360	20	190,000
May										
07...	110,000	3	9	20	150	9	50	310	<30	170,000
Jun										
05...	100,000	<1	10	16	320	8	40	330	<30	150,000
Jul										
03...	110,000	2	3	19	80	10	40	330	30	170,000
Aug										
08...	100,000	2	11	23	110	8	50	360	<30	170,000
Sep										
04...	110,000	2	11	18	60	8	40	350	<30	170,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana July 1994 through September 1996 (Continued)

SITE 5, 06090590--ANACONDA DRAIN AT BELT, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
19...	<30	200	430	<30	850	<1	<3	1,600	<60	3,800
Aug										
17...	<30	200	430	<30	810	<5	<3	1,600	<60	3,500
Sep										
06...	<30	200	430	<30	790	<1	<3	1,600	<60	3,500
Oct										
14...	<30	180	420	<30	770	<1	<3	1,600	<60	3,600
Nov										
14...	<30	210	450	<30	810	<1	4	1,600	<60	3,600
Dec										
15...	<30	190	440	<30	770	<1	<3	1,500	<60	3,500
Jan 1995										
12...	<30	210	440	<30	850	<1	<3	1,700	<60	3,600
Feb										
22...	1	210	420	<1	760	<1	5	1,500	25	3,400
Mar										
16...	1	200	420	<1	790	<1	<3	1,600	22	3,400
Apr										
12...	<1	180	390	<1	700	<1	5	1,400	20	3,100
May										
17...	<1	190	380	<1	780	<1	<3	1,400	19	3,300
Jun										
13...	<1	180	380	<1	740	<2	<3	1,500	<18	3,200
Jul										
13...	<1	180	400	<1	700	--	<3	1,400	22	3,300
Aug										
17...	1	170	390	<1	810	--	<2	1,400	23	3,300
Sep										
14...	<1	180	420	<1	820	--	<2	1,400	23	3,500
Oct										
12...	<1	190	410	<1	820	--	<3	1,500	<18	3,600
Nov										
29...	1	200	430	<1	820	--	<3	1,600	22	3,600
Jan 1996										
12...	<1	190	440	<1	840	--	<3	1,600	<18	3,700
Feb										
21...	2	200	410	<1	810	--	<2	1,600	23	3,500
Apr										
04...	1	210	440	<1	770	--	<2	1,500	22	3,500
May										
07...	1	200	390	1	730	--	<3	1,500	24	3,100
Jun										
05...	1	180	410	<1	740	--	<3	1,500	24	3,300
Jul										
03...	<1	190	440	<1	850	--	<3	1,600	<18	3,700
Aug										
08...	1	200	420	<1	770	--	<3	1,600	<18	3,400
Sep										
04...	<2	210	430	1	730	--	<3	1,600	<18	3,300

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 6, 471851111111101--GIFFEN SPRING NEAR STOCKETT, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
21...	0845	0.46	1,250	20.5	9.0	4.6	450	110	42	14	0.3
Aug											
17...	0800	.49	1,210	15.0	9.0	4.8	470	120	42	14	.3
Sep											
06...	1445	.54	1,190	29.5	10.0	4.5	440	110	41	14	.3
Oct											
13...	1600	.53	1,130	14.0	9.0	5.1	450	110	42	15	.3
Nov											
14...	1400	.50	1,140	6.0	9.5	5.0	470	120	42	15	.3
Dec											
15...	1120	.48	1,100	4.0	10.0	5.2	460	120	39	14	.3
Jan 1995											
11...	1020	.49	1,100	7.0	10.0	5.4	470	120	42	15	.3
Feb											
21...	1525	.43	1,090	18.0	9.0	5.6	470	120	42	16	.3
Mar											
16...	1250	.42	1,070	9.0	11.0	5.6	440	110	40	15	.3
Apr											
11...	1445	.40	1,060	10.5	9.0	5.6	470	120	41	15	.3
May											
16...	1820	.38	1,130	15.0	9.0	5.8	470	120	42	17	.3
Jun											
12...	1835	.40	982	24.0	8.5	5.8	440	110	39	15	.3
Jul											
12...	1745	.54	1,200	18.0	9.0	4.6	450	110	42	13	.3
Aug											
15...	1110	.55	1,260	18.0	9.0	4.2	440	110	40	11	.2
Sep											
12...	0845	.50	1,400	15.0	9.0	3.7	480	120	43	12	.2
Oct											
11...	1040	.53	1,380	12.0	9.0	4.0	460	110	44	12	.2
Nov											
28...	0915	.54	1,320	-1.0	9.0	4.5	450	110	43	12	.2
Jan 1996											
10...	1340	.55	1,270	6.0	9.0	4.6	480	120	44	13	.3
Feb											
20...	1310	.43	1,220	9.0	9.0	4.7	470	120	42	13	.3
Apr											
02...	1330	.50	1,170	9.0	9.0	4.6	470	120	42	15	.3
May											
06...	1110	.41	1,120	10.0	9.0	5.0	450	110	42	15	.3
Jun											
04...	1520	.55	1,070	21.0	9.0	5.1	450	110	42	15	.3
Jul											
01...	1700	.50	1,120	29.5	9.0	4.8	480	120	44	14	.3
Aug											
06...	1145	.53	1,040	19.0	9.0	5.3	440	110	41	14	.3
Sep											
03...	1015	.51	1,040	16.0	9.0	5.5	450	110	43	15	.3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 6, 471851111111101--GIFFEN SPRING NEAR STOCKETT, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
21...	5.4	4.5	e<1	740	3.1	0.4	21	e1,040	e1.41	e1.29
Aug										
17...	6.3	5.2	e<1	750	3.3	.2	20	e1,060	e1.44	e1.40
Sep										
06...	5.7	4.8	e<1	790	3.4	1.0	20	e1,080	e1.47	e1.58
Oct										
13...	6.0	3.9	e<1	700	3.1	1.0	19	e982	e1.33	e1.40
Nov										
14...	5.7	4.6	e<1	700	3.3	--	18	e985	e1.34	e1.33
Dec										
15...	5.6	3.1	e<1	610	3.2	.6	18	e883	e1.20	e1.14
Jan 1995										
11...	5.4	4.9	e<1	610	3.2	.6	17	e883	e1.20	e1.17
Feb										
21...	5.6	1.9	e<1	740	4.4	.6	18	e1,020	e1.38	e1.18
Mar										
16...	5.6	1.5	e<1	540	3.4	.5	17	e790	e1.07	e.90
Apr										
11...	5.6	1.3	e<1	530	3.7	.9	18	e797	e1.08	e.86
May										
16...	5.9	.6	e<1	630	4.5	1.0	16	e895	e1.22	e.92
Jun										
12...	5.3	1.6	e<1	480	4.7	.2	17	e715	e.97	e.77
Jul										
12...	4.7	5.3	e<1	760	4.7	.8	23	e1,070	e1.45	e1.56
Aug										
15...	4.8	5.8	e<1	1,000	4.7	.4	21	e1,300	e1.77	e1.93
Sep										
12...	4.5	8.3	e<1	900	2.9	1.3	24	e1,260	e1.71	e1.70
Oct										
11...	4.6	9.5	e<1	920	3.0	1.2	23	e1,260	e1.71	e1.80
Nov										
28...	4.4	8.1	e<1	930	2.7	1.4	23	e1,260	e1.71	e1.84
Jan 1996										
10...	5.0	7.3	e<1	900	5.0	1.5	25	e1,240	e1.69	e1.84
Feb										
20...	5.4	5.4	e<1	820	3.1	1.4	22	e1,130	e1.54	e1.31
Apr										
02...	4.9	4.8	e<1	790	4.7	1.3	22	e1,090	e1.48	e1.47
May										
06...	5.5	3.5	e<1	750	4.7	1.2	19	e1,020	e1.38	e1.13
Jun										
04...	5.1	3.8	e<1	670	4.3	1.1	18	e932	e1.27	e1.38
Jul										
01...	5.5	3.8	e<1	780	4.0	1.0	21	e1,070	e1.46	e1.44
Aug										
06...	5.9	2.1	e<1	630	6.1	.9	17	e883	e1.20	e1.26
Sep										
03...	5.3	1.5	e<1	550	4.0	.8	18	e805	e1.09	e1.11

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 6, 471851111111101--GIFFEN SPRING NEAR STOCKETT, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
21...	15,000	<1	24	6	90	8	<5	380	20	81,000
Aug										
17...	14,000	<1	25	6	90	18	6	480	20	83,000
Sep										
06...	12,000	<1	24	6	110	18	<5	260	10	80,000
Oct										
13...	8,200	1	24	4	--	6	<5	260	<10	73,000
Nov										
14...	6,500	1	24	4	110	9	<5	250	<10	71,000
Dec										
15...	4,600	<1	23	4	100	9	<5	510	<10	64,000
Jan 1995										
11...	3,400	1	25	3	90	12	<5	240	<10	63,000
Feb										
21...	2,500	<1	24	2	70	2	<5	280	<10	63,000
Mar										
16...	2,000	<1	23	2	80	3	<5	150	<10	54,000
Apr										
11...	1,900	<1	25	2	80	2	<5	140	<10	58,000
May										
16...	1,100	<1	24	2	80	<1	5	110	<10	55,000
Jun										
12...	1,500	<1	27	2	70	2	<5	120	<10	40,000
Jul										
12...	19,000	<1	35	7	90	6	<5	200	40	86,000
Aug										
15...	23,000	<1	40	9	90	8	<5	240	60	81,000
Sep										
12...	33,000	<2	37	11	120	10	<10	300	80	110,000
Oct										
11...	35,000	<1	39	10	120	8	<5	310	60	100,000
Nov										
28...	30,000	<1	36	9	110	10	7	350	40	99,000
Jan 1996										
10...	30,000	<2	35	8	80	10	7	290	30	93,000
Feb										
20...	19,000	<1	32	7	80	11	<5	260	10	81,000
Apr										
02...	13,000	1	30	6	90	10	<5	280	<10	73,000
May										
06...	6,100	<1	27	5	80	5	5	200	<10	61,000
Jun										
04...	3,600	<1	29	4	70	4	<5	160	<10	60,000
Jul										
01...	6,900	<1	26	5	60	4	<5	200	<10	70,000
Aug										
06...	1,900	<1	26	3	60	3	<5	150	<10	53,000
Sep										
03...	2,000	<1	25	3	50	3	<5	130	<10	54,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 6, 471851111111101--GIFFEN SPRING NEAR STOCKETT, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
21...	<10	68	370	<10	390	<1	2	350	<20	1,600
Aug										
17...	<10	79	390	<10	400	<5	<1	370	<20	1,600
Sep										
06...	<10	76	380	<10	390	<1	<1	370	<20	1,600
Oct										
13...	<10	86	350	<10	340	<1	<1	360	<20	1,300
Nov										
14...	<10	69	370	<10	330	<1	<1	350	<20	1,300
Dec										
15...	<10	69	340	<10	310	<1	<1	330	<20	1,200
Jan 1995										
11...	<10	74	350	<10	310	<1	<1	370	<20	1,200
Feb										
21...	<1	73	350	<1	270	<1	<1	370	<6	1,000
Mar										
16...	<1	70	330	<1	250	<1	<1	350	<6	920
Apr										
11...	<1	69	350	<1	260	<1	<1	360	<6	1,000
May										
16...	<1	68	490	2	270	<1	<1	320	<6	870
Jun										
12...	<1	60	320	<1	230	<1	<1	310	<6	830
Jul										
12...	<1	73	370	<1	400	--	<1	340	<6	1,700
Aug										
15...	<1	69	430	<1	450	--	<1	320	<6	1,800
Sep										
12...	<1	77	510	<1	570	--	<2	340	<12	2,500
Oct										
11...	<1	80	480	<1	540	--	<1	350	8	2,300
Nov										
28...	<1	81	440	1	550	--	<1	370	<6	2,300
Jan 1996										
10...	<1	80	430	<1	540	--	<1	380	<6	2,200
Feb										
20...	<1	81	390	<1	450	--	<1	370	<6	1,900
Apr										
02...	<1	78	390	<1	400	--	<1	360	7	1,600
May										
06...	<1	73	370	<1	350	--	<1	350	<6	1,400
Jun										
04...	<1	71	350	<1	340	--	<1	350	<6	1,300
Jul										
01...	<1	70	380	<1	340	--	<1	380	<6	1,500
Aug										
06...	<1	71	340	<1	270	--	<1	330	<6	1,100
Sep										
03...	<1	67	340	<1	270	--	<1	340	<6	1,100

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 7, 472016111085701--COTTONWOOD MINE NO. 6 DRAIN TO COTTONWOOD CREEK NEAR STOCKETT, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Feb 1995											
21...	1720	0.02	6,020	10.5	9.0	2.6	1,300	330	120	13	0.2
Mar											
16...	1215	.02	5,940	11.0	9.5	2.6	1,400	350	130	14	.2
Apr											
11...	1400	.02	5,960	8.0	9.5	2.6	1,300	340	120	13	.2
May											
17...	1345	.05	5,620	21.0	11.5	2.5	1,400	340	130	13	.2
Jun											
12...	1750	.15	5,610	26.0	10.0	2.7	1,400	350	130	15	.2
Jul											
12...	1610	.12	5,580	20.0	10.0	2.8	1,500	360	140	15	.2
Aug											
15...	1150	.09	5,730	21.0	11.0	2.7	1,500	350	140	14	.2
Sep											
12...	1100	.06	5,770	19.0	10.5	2.6	1,500	370	140	14	.2
Oct											
11...	1130	.05	5,790	16.0	10.0	2.6	1,400	340	140	14	.2
Nov											
28...	1000	.04	5,880	-1.0	6.0	2.6	1,400	340	140	14	.2
Jan 1996											
10...	1450	.03	5,870	7.0	8.0	2.6	1,500	380	140	13	.1
Feb											
20...	1400	.02	5,980	9.0	8.0	2.6	1,500	350	140	14	.2
Apr											
02...	1410	.02	5,890	10.0	8.0	2.6	1,400	360	130	14	.2
May											
06...	1145	.02	5,820	15.0	9.0	2.7	1,400	350	130	13	.2
Jun											
03...	1710	.03	5,790	25.0	10.0	2.7	1,500	350	140	14	.2
Jul											
01...	1510	.02	5,570	31.0	11.0	2.7	1,400	340	130	13	.2
Aug											
06...	1220	.02	5,680	21.0	11.0	2.5	1,400	330	130	14	.2
Sep											
03	1110	.02	5,680	18.0	10.5	2.7	1,400	340	130	13	.2

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 7, 472016111085701--COTTONWOOD MINE NO. 6 DRAIN TO COTTONWOOD CREEK NEAR STOCKETT, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Feb 1995										
21...	2.1	81	e<1	7,200	14	3.7	93	e8,950	e12.2	e0.60
Mar										
16...	2.1	77	e<1	5,900	15	2.8	100	e7,750	e10.5	e.50
Apr										
11...	2.3	81	e<1	6,800	20	4.0	96	e8,580	e11.7	e.53
May										
17...	1.7	77	e<1	5,500	1.3	5.6	97	e6,530	e8.89	e.92
Jun										
12...	3.9	74	e<1	5,600	3.8	<1	83	e6,600	e8.98	e2.67
Jul										
12...	5.7	75	e<1	5,800	3.3	<1	83	e7,650	e10.4	e2.48
Aug										
15...	3.7	83	e<1	6,600	18	--	87	e8,490	e11.5	e2.15
Sep										
12...	.5	84	e<1	5,600	1.5	--	87	e7,560	e10.3	e1.22
Oct										
11...	2.1	83	e<1	5,800	1.3	1.6	86	e7,640	e10.4	e1.03
Nov										
28...	2.1	83	e<1	5,600	12	1.5	86	e7,470	e10.2	e.73
Jan 1996										
10...	2.4	87	e<1	6,200	<1	--	99	e8,170	11.1	e.66
Feb										
20...	2.6	86	e<1	5,900	<1	1.3	97	e7,830	11.7	e.53
Apr										
02...	2.7	84	e<1	6,000	4.8	2.9	99	e7,920	e10.8	e.43
May										
06...	.6	85	e<1	6,500	2.0	2.8	98	e8,350	e11.4	e.56
Jun										
03...	3.0	85	e<1	7,200	3.8	<1	98	e9,140	e12.4	e.69
Jul										
01...	3.6	82	e<1	5,800	13	<1	97	e7,640	e10.4	e.52
Aug										
06...	4.0	86	e<1	5,400	2.3	4.1	94	e7,210	e9.80	e.49
Sep										
	3.6	85	e<1	5,400	3.4	3.9	92	e7,180	e9.76	e.39

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 7, 472016111085701--COTTONWOOD MINE NO. 6 DRAIN TO COTTONWOOD CREEK NEAR STOCKETT, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Feb 1995										
21...	410,000	<10	--	120	480	82	40	6,000	80	690,000
Mar										
16...	410,000	<5	--	120	500	79	40	6,000	80	750,000
Apr										
11...	410,000	<10	--	120	520	79	40	6,000	80	700,000
May										
17...	380,000	<1	100	94	470	73	<50	5,700	<100	660,000
Jun										
12...	350,000	<1	--	110	490	110	50	3,900	210	740,000
Jul										
12...	350,000	<5	--	100	480	80	<50	5,100	140	830,000
Aug										
15...	390,000	<5	--	110	570	100	60	6,600	180	810,000
Sep										
12...	430,000	<25	--	120	500	100	<50	6,900	170	840,000
Oct										
11...	380,000	<5	110	110	520	81	<50	6,000	130	800,000
Nov										
28...	410,000	<1	110	110	520	82	60	6,300	110	790,000
Jan 1996										
10...	450,000	<2	130	120	530	72	60	--	<100	810,000
Feb										
20...	440,000	<5	120	120	490	79	60	9,700	140	810,000
Apr										
02...	420,000	<1	120	120	520	75	<50	6,500	100	810,000
May										
06...	400,000	<5	120	130	540	98	<50	6,600	<100	780,000
Jun										
03...	420,000	<10	120	130	--	84	<80	6,200	110	840,000
Jul										
01...	390,000	<5	120	110	--	83	80	6,300	110	770,000
Aug										
06...	390,000	<5	110	120	--	78	<50	5,800	<100	770,000
Sep										
03...	380,000	<5	120	120	510	77	<50	6,200	<100	740,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 7, 472016111085701--COTTONWOOD MINE NO. 6 DRAIN TO COTTONWOOD CREEK NEAR STOCKETT, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Feb 1995										
21...	<1	660	2,100	2	10,000	<2	<3	1,100	110	51,000
Mar										
16...	<1	690	2,300	<2	11,000	1	<3	1,200	110	51,000
Apr										
11...	<1	730	2,200	<2	10,000	<2	<3	1,100	240	51,000
May										
17...	<1	670	2,200	2	10,000	<1	<10	1,200	140	45,000
Jun										
12...	<1	570	2,300	5	10,000	4	<10	1,300	140	46,000
Jul										
12...	<1	550	2,500	3	9,700	--	<10	1,500	120	44,000
Aug										
15...	<1	620	2,400	<1	11,000	--	<10	1,300	150	49,000
Sep										
12...	<1	580	2,500	2	11,000	--	<10	1,300	140	53,000
Oct										
11...	<1	630	2,400	1	10,000	--	<10	1,300	180	48,000
Nov										
28...	<1	660	2,400	<1	11,000	--	<10	1,300	98	48,000
Jan 1996										
10...	<1	670	2,500	2	12,000	--	<10	1,300	130	56,000
Feb										
20...	<1	710	2,300	2	11,000	--	<10	1,300	150	52,000
Apr										
02...	<1	700	2,500	<1	12,000	--	<10	1,200	140	54,000
May										
06...	<1	680	2,400	2	12,000	--	<10	1,200	170	53,000
Jun										
03...	<1	700	2,400	<1	11,000	--	<10	1,200	150	55,000
Jul										
01...	<1	550	2,300	1	11,000	--	<10	1,200	150	53,000
Aug										
06...	<1	710	2,300	<2	11,000	--	<10	1,200	<60	50,000
Sep										
03...	<4	650	2,300	2	11,000	--	11	1,200	<60	50,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 8, 472114111095001--COTTONWOOD MINE NO. 2 DRAIN TO LADD COULEE AT STOCKETT, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
21...	0720	0.01	9,610	12.5	11.0	2.7	2,700	470	360	10	0.1
Aug											
17...	0720	.01	9,780	13.0	12.0	2.6	2,600	480	350	12	.1
Sep											
06...	1420	.005	9,860	29.5	19.0	2.4	2,900	450	430	11	.1
Oct											
13...	1525	.009	9,120	14.0	11.0	2.5	2,400	430	320	8.9	.1
Nov											
14...	1450	.02	9,430	6.0	0.0	2.6	2,400	400	330	4.7	<.1
Dec											
15...	1100	--	10,100	3.5	0.0	2.6	2,700	450	370	9.8	.1
Jan 1995											
11...	1105	.01	8,650	8.0	1.0	2.8	2,200	360	310	7.3	.1
Feb											
21...	1710	.007	7,770	12.0	3.0	2.6	2,100	390	270	6.9	.1
Mar											
16...	1230	.006	8,680	9.0	4.5	2.5	2,300	410	320	8.8	.1
Apr											
11...	1430	.05	6,470	10.5	10.5	2.6	1,700	370	200	5.9	.1
May											
17...	1315	.02	7,270	21.0	22.0	2.3	2,300	460	270	9.0	.1
Jun											
12...	1815	.07	8,390	26.0	25.5	2.4	2,000	460	210	9.5	.1
Jul											
12...	1630	.10	8,170	21.0	25.5	2.4	1,800	390	200	9.1	.1
Aug											
15...	1130	.06	8,530	21.0	20.5	2.4	1,800	390	210	9.2	.1
Sep											
12...	1040	.04	8,530	18.0	15.0	2.4	2,000	430	230	9.8	.1
Oct											
11...	1100	.03	8,800	13.0	11.5	2.4	2,000	390	240	8.9	.1
Nov											
28...	0930	.03	8,750	-1.0	.5	2.5	1,900	370	240	8.4	.1
Jan 1996											
10...	1420	.001	8,620	7.0	0.0	2.6	2,000	370	260	8.5	.1
Feb											
20...	1330	.02	8,490	10.0	2.5	2.5	2,000	370	250	7.4	.1
Apr											
02...	1345	.04	7,040	10.0	7.5	2.5	1,600	320	200	6.4	.1
May											
06...	1130	.008	9,200	12.0	11.0	2.5	2,400	430	310	8.6	.1
Jun											
03...	1750	.006	9,820	25.0	17.0	2.5	2,700	490	360	8.9	.1
Jul											
01...	1540	.003	10,400	31.0	26.0	2.2	3,000	520	410	9.4	.1
Aug											
06...	1200	.005	10,800	21.0	20.0	2.2	3,000	510	420	10	.1
Sep											
03...	1045	.007	10,600	17.0	15.0	2.5	3,100	520	430	11	.1

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 8, 472114111095001--COTTONWOOD MINE NO. 2 DRAIN TO LADD COULEE AT STOCKETT, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994									
21...	5.7	230	e<1	14,000	<1	60	e18,000	e24.5	e0.54
Aug									
17...	5.0	230	e<1	13,000	<1	41	e17,000	e23.1	e.46
Sep									
06...	4.4	240	e<1	15,000	<1	39	e18,900	e25.8	e.26
Oct									
13...	4.8	210	e<1	13,000	<1	110	e16,600	e22.6	e.40
Nov									
14...	2.7	220	e<1	14,000	--	66	e17,800	e24.2	e.72
Dec									
15...	1.2	240	e<1	16,000	<1	56	e20,700	e28.2	--
Jan 1995									
11...	1.9	190	e<1	11,000	8.5	38	e13,900	e18.9	e.45
Feb									
21...	.3	100	e<1	11,000	3.2	73	e12,800	e17.5	e.24
Mar									
16...	--	190	e<1	15,000	6.6	92	e18,200	e24.8	e.29
Apr									
11...	.8	120	e<1	8,600	3.4	68	e10,800	e14.7	e1.45
May									
17...	1.7	130	e<1	9,700	3.7	91	e12,200	e16.6	e.63
Jun									
12...	2.2	180	e<1	15,000	2.1	130	e18,100	e24.6	e3.61
Jul									
12...	1.9	170	e<1	12,000	<1	130	e15,000	e20.4	e3.97
Aug									
15...	1.6	200	e<1	14,000	--	140	e17,400	e23.6	e2.72
Sep									
12...	1.7	200	e<1	12,000	--	140	e15,600	e21.2	e1.60
Oct									
11...	1.9	210	e<1	13,000	4.9	130	e16,600	e22.5	e1.34
Nov									
28...	1.8	210	e<1	14,000	<1	120	e17,600	e23.9	e1.28
Jan 1996									
10...	2.1	190	e<1	11,000	--	100	e14,500	e19.8	e.04
Feb									
20...	.3	190	e<1	10,000	--	90	e13,200	e18.0	e.82
Apr									
02...	.7	150	e<1	10,000	5.0	79	e12,500	e17.0	e1.28
May									
06...	1.2	210	e<1	15,000	1.1	110	e18,600	e25.2	e.40
Jun									
03...	.3	210	e<1	15,000	2.0	120	e18,900	e25.7	e.31
Jul									
01...	1.1	250	e<1	16,000	<1	130	e20,000	e27.2	e.16
Aug									
06...	4.4	270	e<1	16,000	6.2	130	e20,600	e28.0	e.28
Sep									
03...	4.2	260	e<1	15,000	6.6	130	e19,600	e26.6	e.37

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 8, 472114111095001--COTTONWOOD MINE NO. 2 DRAIN TO LADD COULEE AT STOCKETT, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
21...	1,300,000	<2	<200	110	930	290	130	9,100	420	1,700,000
Aug										
17...	1,400,000	<1	<200	140	960	300	120	9,000	420	1,600,000
Sep										
06...	1,300,000	<1	<200	130	1,000	310	170	9,300	430	1,600,000
Oct										
13...	1,200,000	<2	<200	190	900	--	<100	8,400	360	1,410,000
Nov										
14...	1,300,000	<1	<200	170	850	240	160	6,600	310	1,600,000
Dec										
15...	1,600,000	<1	<200	160	730	320	110	9,500	320	2,000,000
Jan 1995										
11...	910,000	<1	<200	140	630	240	90	7,800	270	1,000,000
Feb										
21...	980,000	<10	<200	160	500	190	60	6,600	300	840,000
Mar										
16...	1,300,000	<10	<200	200	630	230	90	8,200	330	1,000,000
Apr										
11...	740,000	<10	<200	130	390	160	70	4,900	210	720,000
May										
17...	830,000	<1	<200	150	500	200	70	5,400	200	720,000
Jun										
12...	990,000	8	<200	170	790	290	170	8,400	600	1,200,000
Jul										
12...	980,000	9	<200	150	760	310	140	6,200	660	1,200,000
Aug										
15...	1,100,000	<25	<200	170	950	350	270	7,300	820	1,400,000
Sep										
12...	1,200,000	<25	<200	180	910	370	170	7,400	780	1,500,000
Oct										
11...	1,200,000	11	140	180	950	320	160	7,400	660	1,500,000
Nov										
28...	1,200,000	5	130	160	760	310	180	7,600	510	1,500,000
Jan 1996										
10...	1,200,000	<2	140	170	750	510	150	7,000	470	1,500,000
Feb										
20...	1,100,000	2	130	160	630	360	100	--	410	1,300,000
Apr										
02...	830,000	<2	110	140	470	510	100	6,700	300	980,000
May										
06...	1,300,000	<5	150	200	770	310	150	8,700	350	1,300,000
Jun										
03...	1,220,000	<10	170	220	530	290	<200	8,600	570	1,600,000
Jul										
01...	1,370,000	<5	190	250	--	310	<200	11,000	570	1,600,000
Aug										
06...	1,520,000	<10	200	270	420	320	<200	11,000	570	1,900,000
Sep										
03...	1,460,000	<5	180	300	--	310	<200	11,000	<400	1,900,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 8, 472114111095001--COTTONWOOD MINE NO. 2 DRAIN TO LADD COULEE AT STOCKETT, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
21...	<1	1,700	8,300	<5	--	<10	<1	2,100	--	70,000
Aug										
17...	<1	1,700	8,100	<1	15,000	<10	<1	2,100	--	70,000
Sep										
06...	<1	1,900	7,700	<1	--	4	<1	2,200	--	77,000
Oct										
13...	--	1,800	7,300	--	13,000	<10	<20	2,000	230	62,000
Nov										
14...	<1	1,700	--	<1	13,000	<10	<1	2,000	--	67,000
Dec										
15...	<1	2,000	17,000	1	15,000	<5	<1	2,200	--	78,000
Jan 1995										
11...	<1	1,400	11,000	<2	13,000	<2	<1	1,900	--	62,000
Feb										
21...	<1	1,300	12,000	<2	10,000	<2	<10	1,600	<6	51,000
Mar										
16...	<1	1,600	12,000	2	13,000	<2	<5	1,900	<120	67,000
Apr										
11...	1	1,100	5,900	<2	8,500	<1	<4	1,500	<6	42,000
May										
17...	<1	1,200	7,900	2	9,400	<1	<10	1,800	<60	44,000
Jun										
12...	<1	1,500	7,200	<2	11,000	<5	<20	1,400	<120	52,000
Jul										
12...	<1	1,200	6,700	1	10,000	--	<20	1,200	<120	48,000
Aug										
15...	<1	1,400	5,600	6	12,000	--	<20	1,300	<120	53,000
Sep										
12...	<1	1,400	5,600	2	13,000	--	<20	1,400	<120	62,000
Oct										
11...	<1	1,500	5,400	4	12,000	--	<10	1,500	130	59,000
Nov										
28...	<1	1,500	5,600	<1	12,000	--	<10	1,500	99	58,000
Jan 1996										
10...	<1	1,300	7,600	<1	12,000	--	<15	1,600	<90	59,000
Feb										
20...	<1	1,300	7,900	3	11,000	--	<10	1,600	<60	57,000
Apr										
02...	<1	1,100	6,300	<1	9,000	--	<10	1,300	<60	47,000
May										
06...	<1	1,500	8,500	1	13,000	--	<10	1,900	89	65,000
Jun										
03...	<1	1,600	9,100	<2	14,000	--	<30	2,000	<240	75,000
Jul										
01...	<1	1,800	10,000	<1	16,000	--	<40	2,100	<240	83,000
Aug										
06...	<1	2,000	11,000	<2	17,000	--	<30	2,500	<240	87,000
Sep										
03...	<4	2,000	9,900	3	17,000	--	<40	2,400	<240	86,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 9, 472212111093301--NUMBER FIVE COULEE NEAR STOCKETT, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	1745	0.02	1,010	27.0	29.0	8.4	490	120	45	19	0.4
Jan 1995											
11...	1155	.12	964	4.0	.5	6.8	500	140	37	14	.3
Apr											
11...	1800	.40	845	5.0	11.0	7.6	390	98	35	24	.5
May											
17...	1405	9.5	645	21.0	17.0	8.2	300	62	34	25	.6
Jun											
13...	1600	5.2	660	25.0	22.5	8.4	310	61	38	22	.5
Jul											
12...	1510	7.1	698	20.0	16.5	8.2	340	72	38	23	.5
Aug											
15...	1430	1.5	899	25.0	19.0	7.8	430	99	44	21	.4
Sep											
12...	1315	.80	1,000	24.0	18.0	6.9	470	110	47	20	.4
Oct											
11...	1250	.81	1,080	20.0	13.0	6.5	530	130	50	20	.4
Nov											
27...	1145	.72	998	-7.0	0.0	6.8	580	150	50	19	.3
Jan 1996											
10...	1100	.52	1,160	5.0	0.0	5.3	590	160	46	14	.3
Feb											
20...	1120	.02	1,040	9.0	0.0	5.1	530	140	43	14	.3
Apr											
02...	1500	.20	924	10.0	3.0	6.1	470	130	35	11	.2
May											
06...	1330	.01	1,130	18.0	22.0	7.5	620	170	48	19	.3

Date	Potas-sium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of consti-tuents, dissolved (mg/L)	Solids, dissolved (ton/ acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
20...	5.7	<0.1	49	500	4.3	0.7	1.4	726	0.99	0.03
Jan 1995										
11...	6.2	.1	27	500	3.9	.4	7.7	727	.99	.24
Apr										
11...	5.4	<.1	33	380	4.4	.4	6.2	574	.78	.62
May										
17...	4.6	<.1	259	77	4.7	.6	7.4	371	.50	9.52
Jun										
13...	4.1	<.1	230	100	4.2	.4	5.6	374	.51	5.25
Jul										
12...	4.1	<.1	238	120	4.7	.6	8.2	414	.56	7.94
Aug										
15...	4.7	<.1	126	330	4.4	.8	4.6	585	.80	2.37
Sep										
12...	5.4	<.1	32	490	4.8	.5	4.3	704	.96	1.52
Oct										
11...	5.8	.4	13	550	5.0	.5	5.1	782	1.06	1.71
Nov										
27...	5.4	.2	5.4	650	4.2	.4	6.9	896	1.22	1.74
Jan 1996										
10...	6.9	1.5	e<1	750	5.7	.7	12	e1,030	e1.40	e1.44
Feb										
20...	5.4	.5	2.0	550	3.6	.6	8.2	772	1.05	.04
Apr										
02...	4.8	.3	1.5	470	3.1	.6	9.2	674	.92	.36
May										
06...	6.9	<.1	21	590	5.3	1.0	6.6	861	1.17	.02

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 9, 472212111093301--NUMBER FIVE COULEE NEAR STOCKETT, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	300	<1	68	<0.5	80	<1	<5	7	<10	9
Jan 1995										
11...	40	<1	71	<.5	60	<1	<5	80	<10	7
Apr										
11...	70	<1	120	<.5	60	<1	<5	20	<10	6
May										
17...	80	<1	130	<.5	50	<1	<5	<3	<10	43
Jun										
13...	130	<1	160	<.5	40	<1	<5	<3	<10	54
Jul										
12...	310	<1	140	<.5	50	<1	<5	7	<10	8
Aug										
15...	240	<1	100	<.5	80	<1	<5	30	<10	6
Sep										
12...	50	<1	98	<.5	80	1	<5	100	<10	1,200
Oct										
11...	40	<1	79	<.5	80	1	<5	--	<10	5,800
Nov										
27...	60	<1	59	<.5	100	3	<5	210	<10	4,100
Jan 1996										
10...	500	<2	43	<.5	80	9	<5	170	<10	27,000
Feb										
20...	1,700	<1	41	.9	70	3	<5	200	<10	1,200
Apr										
02...	150	<1	32	<.5	60	3	<5	--	<10	6,100
May										
06...	30	<1	37	<.5	80	<1	7	60	<10	<3

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	10	62	33	<10	10	<1	1	350	<6	<3
Jan 1995										
11...	<10	51	730	<10	130	<1	<1	340	<6	250
Apr										
11...	<1	49	270	<1	40	<1	<1	260	<6	20
May										
17...	<10	23	25	<10	20	1	<1	250	<6	7
Jun										
13...	<10	24	9	<10	<10	<1	<1	290	<6	4
Jul										
12...	<10	16	61	<10	20	--	<1	280	<6	3
Aug										
15...	<10	41	220	<10	60	--	1	330	<6	13
Sep										
12...	<10	49	500	<10	170	--	<1	350	<6	170
Oct										
11...	<10	58	660	<10	240	--	<1	370	<6	380
Nov										
27...	<10	60	960	<10	350	--	<1	400	<6	970
Jan 1996										
10...	<10	63	1,500	<10	450	--	<1	400	<6	1,900
Feb										
20...	<10	52	1,200	<10	350	--	1	350	<6	1,200
Apr										
02...	<10	56	1,000	<10	290	--	<1	300	<6	1,200
May										
06...	10	66	340	<10	140	--	2	410	<6	66

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 10, 472233110552601--FRENCH COULEE WETLANDS OUTFLOW AT BELT, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite ($\mu S/cm$)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hsrd-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
19...	1145	0.02	5,780	28.0	17.0	2.8	2,000	490	190	38	0.4
Aug											
17...	1630	.01	6,090	31.0	20.0	2.8	2,000	470	210	44	.6
Sep											
06...	1010	.02	6,180	22.0	10.0	2.8	2,000	450	210	37	.4
Oct											
14...	0940	.03	5,610	7.0	5.5	3.0	1,700	410	170	26	.3
Nov											
14...	1040	.02	5,450	5.5	1.0	3.2	1,600	390	150	23	.3
Dec											
15...	1505	.03	5,570	3.5	.5	3.6	1,700	410	160	25	.3
Jan 1995											
12...	0950	.02	5,140	1.0	.5	3.9	1,500	370	150	24	.3
Feb											
22...	0800	.02	4,140	6.0	1.0	3.5	1,200	300	100	16	.2
Mar											
16...	0910	.02	4,730	8.0	6.0	3.5	1,500	350	140	26	.3
Apr											
12...	1710	.03	4,580	16.0	8.5	3.0	1,300	320	110	18	.2
May											
17...	0750	.05	4,220	11.0	11.5	2.5	1,300	330	110	19	.2
Jun											
13...	0910	.06	3,570	20.0	15.5	2.7	1,100	270	92	19	.3
Jul											
13...	0820	.10	2,880	17.0	16.0	2.7	810	200	75	18	.3
Aug											
17...	1250	.07	3,270	18.0	18.5	2.7	880	210	86	19	.3
Sep											
14...	0930	.04	3,610	15.0	12.5	2.8	1,000	250	92	18	.2
Oct											
12...	1100	.05	3,580	6.0	8.5	2.7	990	240	95	18	.2
Nov											
29...	0950	.01	4,210	9.0	2.5	2.7	1,000	250	100	17	.2
Jan 1996											
12...	0800	.003	4,690	9.0	0.0	2.8	1,100	250	110	14	.2
Feb											
21...	1200	<.001	4,040	12.0	0.0	2.8	860	200	87	12	.2
Apr											
04...	1100	.01	4,680	8.0	4.0	2.6	1,300	310	120	23	.3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 10, 472233110552601--FRENCH COULEE WETLANDS OUTFLOW AT BELT, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
19...	33	71	e<1	5,700	22	<1	110	e7,660	e10.4	e0.33
Aug										
17...	29	89	e<1	6,400	24	<1	55	e8,490	e11.6	e.23
Sep										
06...	27	90	e<1	6,800	29	<1	88	e8,950	e12.2	e.56
Oct										
14...	18	84	e<1	6,400	19	<1	130	e8,250	e11.2	e.62
Nov										
14...	15	79	e<1	6,000	.6	1.6	110	e7,760	e10.6	e.52
Dec										
15...	17	89	e<1	6,700	14	<1	120	e8,040	e10.9	e.56
Jan 1995										
12...	13	84	e<1	5,700	10	2.9	110	e6,860	e9.34	e.44
Feb										
22...	9.6	58	e<1	6,000	17	3.5	82	e7,370	e10.0	e.42
Mar										
16...	17	66	e<1	5,700	13	3.3	91	e6,730	e9.15	e.40
Apr										
12...	12	59	e<1	5,800	22	3.7	89	e7,180	e9.77	e.62
May										
17...	7.2	53	e<1	4,900	26	3.9	100	e5,800	e7.89	e.77
Jun										
13...	5.8	37	e<1	3,200	19	<1	87	e4,130	e5.62	e.65
Jul										
13...	4.7	23	e<1	2,200	24	<1	65	e2,870	e3.90	e.74
Aug										
17...	4.8	31	e<1	2,900	26	--	71	e3,650	e4.97	e.66
Sep										
14...	3.8	38	e<1	2,900	17	1.8	86	e3,780	e5.15	e.45
Oct										
12...	3.8	43	e<1	3,400	16	1.7	87	e4,300	e5.84	e.57
Nov										
29...	3.0	64	e<1	4,600	10	<1	98	e5,840	e7.94	e.17
Jan 1996										
12...	5.6	79	e<1	5,100	13	--	94	e6,810	e9.26	e.05
Feb										
21...	5.5	65	e<1	4,500	7.8	1.8	78	e5,860	e7.97	e.01
Apr										
04...	6.7	69	e<1	5,200	13	4.5	97	e6,780	e9.23	e.18

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 10, 472233110552601--FRENCH COULEE WETLANDS OUTFLOW AT BELT, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
19...	410,000	<1	19	62	440	<10	<50	--	<100	650,000
Aug										
17...	460,000	<1	<100	40	510	<5	20	410	<50	770,000
Sep										
06...	530,000	<1	<100	40	490	<5	40	420	<50	770,000
Oct										
14...	560,000	<1	15	62	370	<5	50	--	<50	500,000
Nov										
14...	540,000	<1	14	49	310	<5	80	--	<100	500,000
Dec										
15...	570,000	<1	19	50	410	<5	60	--	<50	--
Jan 1995										
12...	470,000	<1	21	50	310	<5	60	--	<50	710,000
Feb										
22...	340,000	<1	12	37	200	3	40	260	<50	490,000
Mar										
16...	380,000	<1	14	45	270	3	40	300	<100	540,000
Apr										
12...	370,000	<1	12	44	250	3	40	280	50	430,000
May										
17...	300,000	<1	14	39	230	4	80	280	70	280,000
Jun										
13...	190,000	<1	10	27	210	2	50	160	<40	240,000
Jul										
13...	100,000	<1	8	15	150	2	20	90	<30	180,000
Aug										
17...	160,000	<1	8	21	180	3	40	150	30	170,000
Sep										
14...	240,000	<2	4	26	170	3	50	180	30	170,000
Oct										
12...	250,000	<1	9	29	190	5	80	190	70	180,000
Nov										
29...	370,000	<1	11	37	210	9	110	240	140	380,000
Jan 1996										
12...	440,000	<2	14	38	290	9	110	360	<100	770,000
Feb										
21...	350,000	<1	13	39	210	6	100	250	70	610,000
Apr										
04...	390,000	<2	<10	45	260	3	80	350	<100	610,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 10, 472233110552601--FRENCH COULEE WETLANDS OUTFLOW AT BELT, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
19...	<10	660	5,600	<10	750	<10	<10	2,900	<100	--
Aug										
17...	<10	740	6,400	<10	760	<5	<1	2,900	--	--
Sep										
06...	<10	750	5,600	<10	720	<5	<1	2,900	--	--
Oct										
14...	<10	630	4,500	<10	820	<1	<5	2,600	<100	3,100
Nov										
14...	<10	600	3,900	<10	840	<1	18	2,300	<100	7,400
Dec										
15...	<10	590	3,900	<10	1,100	<2	<5	2,500	<100	6,800
Jan 1995										
12...	<10	560	3,300	<10	1,000	<1	<5	2,600	<100	4,600
Feb										
22...	<1	420	2,000	<1	680	<1	4	1,900	<30	2,500
Mar										
16...	<1	470	3,800	<1	690	<1	<3	2,200	<100	2,400
Apr										
12...	<1	460	2,400	<1	670	<1	<3	2,000	<30	2,300
May										
17...	2	430	1,700	<1	680	<1	3	1,900	12	1,900
Jun										
13...	2	350	1,200	<1	410	<5	7	1,500	<24	1,000
Jul										
13...	<1	200	790	<1	230	--	<3	1,100	<18	810
Aug										
17...	1	260	870	<1	270	--	<2	1,200	<12	1,100
Sep										
14...	<1	280	1,100	<1	350	--	<2	1,300	<12	1,300
Oct										
12...	1	310	1,000	<1	410	--	<3	1,400	<18	1,900
Nov										
29...	3	440	1,200	<1	670	--	<5	1,800	<30	3,700
Jan 1996										
12...	4	450	1,600	<1	890	--	<10	1,600	<60	5,100
Feb										
21...	6	410	1,400	<1	780	--	<5	1,600	40	3,100
Apr										
04...	<1	510	3,100	<1	700	--	<10	2,000	<60	2,300

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 11, 472235110553201--FRENCH COULEE WETLANDS INFLOW AT BELT, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
19...	1315	0.04	5,970	28.0	11.5	2.7	1,100	240	110	13	0.2
Aug											
17...	1600	.04	5,750	31.0	12.5	2.7	1,000	230	110	13	.2
Sep											
06...	1000	.04	5,640	22.0	12.5	2.5	1,000	220	110	12	.2
Oct											
14...	0930	.04	5,630	7.0	11.0	2.6	1,100	250	120	12	.2
Nov											
14...	1035	.04	5,630	5.5	10.0	2.7	1,100	240	110	12	.2
Dec											
15...	1500	.04	5,530	3.5	9.5	2.6	1,000	240	100	11	.2
Jan 1995											
12...	0945	.05	5,620	1.0	9.0	2.6	1,100	250	110	12	.2
Feb											
22...	0755	.04	5,680	6.0	8.0	2.6	1,100	240	110	11	.1
Mar											
16...	0905	.02	5,690	8.0	7.5	2.7	1,100	250	110	12	.2
Apr											
12...	1700	.03	3,230	16.0	9.0	2.7	690	150	77	17	.3
May											
17...	0745	.08	2,440	14.0	10.0	2.6	580	120	67	17	.3
Jun											
13...	0905	.12	2,300	27.0	10.5	2.9	550	110	66	17	.3
Jul											
13...	0800	.11	2,730	17.0	10.0	2.8	620	130	71	17	.3
Aug											
17...	1230	.09	3,350	26.0	11.0	2.7	660	140	76	15	.3
Sep											
14...	1000	.06	3,560	17.0	11.0	2.7	720	160	78	15	.2
Oct											
12...	1030	.05	3,830	6.0	10.5	2.7	750	160	84	14	.2
Nov											
29...	1015	.06	5,040	8.5	9.5	2.6	860	190	94	13	.2
Jan 1996											
12...	0830	.04	6,550	8.0	8.5	2.5	1,100	230	120	12	.2
Feb											
21...	1130	.04	5,760	12.0	--	2.6	990	230	100	12	.2

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 11, 472235110553201--FRENCH COULEE WETLANDS INFLOW AT BELT, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
19...	5.6	99	e<1	6,000	7.9	<1	100	e7,990	e10.9	e0.91
Aug										
17...	5.6	98	e<1	6,000	8.3	<1	100	e7,840	e10.7	e.74
Sep										
06...	5.6	98	e<1	6,100	4.5	<1	99	e7,950	e10.8	e.84
Oct										
14...	5.1	94	e<1	6,100	9.1	<1	110	e8,100	e11.0	e.85
Nov										
14...	5.2	91	e<1	6,000	9.7	--	100	e7,810	e10.6	e.89
Dec										
15...	5.9	93	e<1	6,300	5.7	<1	100	e7,260	e9.87	e.76
Jan 1995										
12...	5.4	97	e<1	5,900	4.9	1.4	110	e6,860	e9.33	e.93
Feb										
22...	5.8	91	e<1	7,100	20	3.6	100	e8,980	e12.2	e.90
Mar										
16...	5.8	92	e<1	6,700	38	2.2	110	e8,680	e11.8	e.59
Apr										
12...	3.8	32	e<1	2,800	24	1.7	64	e3,620	e4.93	e.29
May										
17...	3.5	23	e<1	2,100	31	2.4	45	e2,690	e3.66	e.54
Jun										
13...	3.6	22	e<1	2,000	23	<1	41	e2,530	e3.45	e.82
Jul										
13...	3.4	27	e<1	2,300	23	<1	50	e2,960	e4.02	e.88
Aug										
17...	3.3	40	e<1	3,100	22	<1	64	e3,980	e5.41	e.97
Sep										
14...	3.1	46	e<1	2,900	13	1.6	70	e3,940	e5.35	e.64
Oct										
12...	2.8	54	e<1	3,700	12	1.6	75	e4,830	e6.56	e.65
Nov										
29...	3.0	78	e<1	5,000	8.2	1.1	90	e6,560	e8.92	e1.06
Jan 1996										
12...	5.7	120	e<1	7,400	18	--	120	e9,860	e13.4	e1.06
Feb										
21...	5.2	95	e<1	6,500	7.3	1.1	110	e8,470	e11.5	e.91

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 11, 472235110553201--FRENCH COULEE WETLANDS INFLOW AT BELT, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
19...	500,000	23	<10	58	420	<10	210	--	<100	1,000,000
Aug										
17...	460,000	16	<3	52	430	--	180	--	60	900,000
Sep										
06...	490,000	18	<3	50	430	--	160	--	60	900,000
Oct										
14...	480,000	32	<10	49	430	<10	170	--	<100	1,000,000
Nov										
14...	420,000	17	<10	50	440	--	210	--	<100	900,000
Dec										
15...	480,000	18	<5	49	470	<5	170	--	60	--
Jan 1995										
12...	450,000	39	<10	55	370	--	190	--	<100	920,000
Feb										
22...	470,000	32	<4	52	350	11	170	420	<100	910,000
Mar										
16...	480,000	39	4	52	380	11	180	440	40	960,000
Apr										
12...	180,000	8	<3	20	170	<1	60	150	40	300,000
May										
17...	110,000	5	9	14	110	4	40	110	<30	190,000
Jun										
13...	100,000	4	9	12	90	4	30	100	<30	170,000
Jul										
13...	140,000	3	7	16	130	5	50	120	<30	220,000
Aug										
17...	190,000	11	<4	23	210	6	80	180	40	360,000
Sep										
14...	230,000	16	7	26	200	7	90	210	<50	460,000
Oct										
12...	250,000	14	<10	31	260	6	100	240	<100	520,000
Nov										
29...	390,000	2	11	34	330	8	140	300	<100	760,000
Jan 1996										
12...	640,000	37	17	64	470	10	200	420	<150	1,300,000
Feb										
21...	490,000	32	14	51	360	11	160	350	<100	1,000,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 11, 472235110553201--FRENCH COULEE WETLANDS INFLOW AT BELT, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
19...	<10	560	910	<10	1,100	<10	<10	2,200	250	5,100
Aug										
17...	<10	590	870	<10	1,000	<5	<3	2,300	290	4,800
Sep										
06...	<10	560	830	<10	1,000	<5	<3	2,200	250	4,600
Oct										
14...	<10	650	890	<10	980	<2	<10	2,300	220	5,000
Nov										
14...	<10	570	880	<10	1,100	<10	<10	2,200	220	4,800
Dec										
15...	<10	540	830	<10	1,000	<2	<5	2,100	220	4,600
Jan 1995										
12...	<10	590	880	<10	1,100	<1	<10	2,400	270	5,000
Feb										
22...	<1	580	860	<1	1,000	<1	<4	2,300	68	4,800
Mar										
16...	2	580	900	<2	950	<1	<4	2,400	60	4,800
Apr										
12...	<1	260	340	<1	370	<2	<3	1,200	20	1,800
May										
17...	1	180	210	<1	260	2	<3	930	<18	1,300
Jun										
13...	<1	170	200	<1	230	2	<3	890	<18	1,200
Jul										
13...	<1	200	280	<1	320	--	<3	1,000	<18	1,600
Aug										
17...	2	260	370	<1	450	--	<4	1,200	32	2,000
Sep										
14...	2	270	430	<1	530	--	7	1,200	48	2,400
Oct										
12...	2	340	470	<1	540	--	<10	1,400	130	2,700
Nov										
29...	2	460	670	<1	760	--	<10	1,800	68	3,700
Jan 1996										
12...	2	670	1,100	<1	1,300	--	<15	2,300	120	5,800
Feb										
21...	3	600	870	<1	1,000	--	<10	2,200	93	4,800

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 12, 472235110553202--FRENCH COULEE WETLANDS INFLOW NO. 2 AT BELT, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Apr 1996											
04...	1130	0.04	5,050	9.0	8.5	2.6	860	190	94	13	0.2
May											
07...	1630	.03	3,640	17.0	10.5	2.8	690	150	76	13	.2
Jun											
05...	1250	.03	3,660	18.0	11.0	2.8	660	140	75	13	.2
Jul											
03...	0900	.03	4,160	22.0	12.0	2 7	860	190	92	12	.2
Aug											
08...	1100	.03	4,540	22.0	13.0	2.8	890	200	94	12	.2
Sep											
04...	1040	.03	5,550	12.0	12.0	2.8	1,000	230	110	12	.2

Date	Potas-sium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of consti-tuents, dissolved (mg/L)	Solids, dissolved (ton/ acre-ft)	Solids, dissolved (ton/d)
Apr 1996										
04...	5.3	79	e<1	5,300	9.6	3.9	100	e7,030	e9.55	e0.76
May										
07...	.8	48	e<1	3,300	13	2.2	79	e4,310	e5.86	e.35
Jun										
05...	3.9	45	e<1	3,800	13	1.6	70	e4,790	e6.51	e.41
Jul										
03...	4.2	64	e<1	4,300	9.1	<1	84	e6,230	e8.47	e.54
Aug										
08...	5.6	79	e<1	4,600	10	3.5	95	e6,150	e8.36	e.50
Sep										
04...	5.8	98	e<1	6,000	11	3.7	100	e7,960	e10.8	e.60

Date	Alum-inum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryl-lium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cad-mium, dissolved (µg/L)	Chro-mium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Apr 1996										
04...	430,000	<2	13	48	330	7	140	350	<100	870,000
May										
07...	230,000	5	8	33	230	7	100	220	<50	440,000
Jun										
05...	210,000	5	11	26	--	5	120	220	<100	450,000
Jul										
03...	310,000	14	11	38	240	8	100	320	<100	640,000
Aug										
08...	360,000	22	13	46	--	8	130	350	<100	760,000
Sep										
04...	480,000	8	19	56	390	10	190	480	<120	1,000,000

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manga-nese, dissolved (µg/L)	Molyb-denum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)	Stron-tium, dissolved (µg/L)	Vana-dium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Apr 1996									
04...	2	520	750	<1	870	<10	1,800	72	4,000
May									
07...	2	340	450	<1	560	<5.0	1,400	69	2,500
Jun									
05...	2	320	430	<1	490	29	1,200	87	2,300
Jul									
03...	2	410	620	<1	850	<10	1,700	62	3,400
Aug									
08...	1	510	720	<1	830	<10	1,900	<60	4,000
Sep									
04...	<4	650	930	2	1,100	28	2,300	<72	5,100

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 13, 472305110551701--LEWIS COULEE ABOVE CASTNER PARK, AT BELT, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium edsorp-tion ratio
Jul 1994											
19...	1500	0.02	3,890	23.0	12.5	2.8	880	170	110	25	0.4
Sep											
06...	1100	.01	3,940	22.0	12.0	2.7	850	160	110	26	.4
Oct											
14...	0910	.009	4,100	7.0	9.0	2.8	920	170	120	25	.4
Nov											
14...	1145	.004	4,170	5.5	7.5	2.8	950	180	120	26	.4
Dec											
15...	1545	.002	4,130	2.5	6.5	2.8	900	180	110	25	.4
Jan 1995											
12...	1020	.008	4,250	3.0	7.0	2.8	950	180	120	26	.4
Feb											
22...	0900	.008	4,360	7.0	7.5	2.8	950	180	120	25	.4
Mar											
16...	1000	.006	4,340	9.0	7.5	2.7	970	190	120	26	.4
Apr											
12...	1810	.009	4,660	10.0	9.0	2.6	900	180	110	24	.3
May											
17...	0845	.01	4,750	16.0	10.5	2.4	1,000	190	130	26	.4
Jun											
13...	1015	.02	4,850	23.0	13.0	2.6	970	190	120	26	.4
Jul											
13...	0950	.01	4,820	17.0	14.0	2.6	970	190	120	27	.4
Aug											
17...	1000	.01	4,550	17.0	11.5	2.6	950	180	120	26	.4
Sep											
14...	1120	.02	4,550	21.0	12.5	2.6	1,000	200	130	27	.4
Oct											
12...	1010	.01	4,500	5.5	10.0	2.6	920	170	120	26	.4
Nov											
29...	1120	.01	4,500	9.0	8.0	2.6	920	170	120	26	.4
Jan 1996											
12...	0945	.01	4,240	9.0	7.0	2.6	920	170	120	26	.4
Feb											
21...	0925	.01	4,190	8.0	6.5	2.7	950	180	120	26	.4
Apr											
04...	1200	.02	4,090	9.0	7.5	2.7	920	170	120	27	.4
May											
07...	1500	.02	4,210	9.0	10.5	2.7	920	170	120	27	.4
Jun											
05...	1310	.01	4,180	19.0	9.0	2.5	920	170	120	26	.4
Jul											
03...	0920	.01	4,050	23.0	11.0	2.7	920	170	120	26	.4
Aug											
08...	1130	.009	4,040	24.0	13.0	2.7	900	160	120	26	.4
Sep											
04...	0920	.01	4,070	10.0	10.0	2.8	960	170	130	26	.4

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 13, 472305110551701--LEWIS COULEE ABOVE CASTNER PARK, AT BELT, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
19...	2.3	48	e<1	3,600	6.4	<1	76	e4,700	e6.39	e0.28
Sep										
06...	2.7	51	e<1	3,500	14	<1	79	e4,640	e6.30	e.15
Oct										
14...	--	54	e<1	3,700	7.1	<1	87	e4,890	e6.66	e.12
Nov										
14...	2.5	56	e<1	4,000	7.5	--	83	e5,250	e7.15	e.06
Dec										
15...	2.7	57	e<1	4,000	5.7	<1	85	e5,180	e7.04	e.03
Jan 1995										
12...	2.5	55	e<1	4,100	5.1	<1	86	e4,790	e6.51	e.10
Feb										
22...	2.8	57	e<1	5,700	16	2.1	84	e6,960	e9.47	e.15
Mar										
16...	2.4	58	e<1	4,700	26	1.6	86	e6,010	e8.17	e.10
Apr										
12...	1.1	60	e<1	5,600	13	1.2	83	e6,850	e9.31	e.17
May										
17...	1.1	62	e<1	5,100	14	1.6	85	e5,880	e8.00	e.17
Jun										
13...	.9	63	e<1	5,000	4.6	1.0	88	e5,790	e7.87	e.39
Jul										
13...	1.1	63	e<1	4,800	5.2	<1	87	e6,130	e8.33	e.23
Aug										
17...	.8	61	e<1	5,100	15	<1	84	e6,390	e8.69	e.19
Sep										
14...	1.2	59	e<1	4,000	4.7	<1	87	e5,350	e7.27	e.22
Oct										
12...	1.1	60	e<1	4,200	4.5	--	80	e5,440	e7.39	e.21
Nov										
29...	1.7	60	e<1	4,200	4.3	<1	80	e5,670	e7.71	e.18
Jan 1996										
12...	2.2	57	e<1	3,800	9.0	--	83	e5,060	e6.87	e.14
Feb										
21...	2.3	58	e<1	4,200	5.8	<1	84	e5,450	e7.42	e.15
Apr										
04...	2.1	53	e<1	4,200	7.5	1.2	83	e5,400	e7.34	e.25
May										
07...	1.5	55	e<1	4,300	6.3	1.2	82	e5,460	e7.43	e.22
Jun										
05...	1.7	35	e<1	4,300	5.6	<1	74	e5,440	e7.40	e.21
Jul										
03...	2.5	52	e<1	3,800	5.2	<1	77	e4,940	e6.72	e.13
Aug										
08...	2.8	57	e<1	3,500	7.3	1.6	74	e4,630	e6.29	e.11
Sep										
04...	2.6	52	e<1	3,600	8.5	1.6	82	e4,800	e6.53	e.14

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 13, 472305110551701--LEWIS COULEE ABOVE CASTNER PARK, AT BELT, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
19...	250,000	<1	<5	21	220	29	110	2,200	80	450,000
Sep										
06...	270,000	2	<3	20	270	50	100	1,100	50	460,000
Oct										
14...	280,000	2	<5	21	270	<11	110	5,900	60	470,000
Nov										
14...	290,000	2	<10	21	290	50	150	1,300	<100	530,000
Dec										
15...	260,000	1	<3	21	310	9	130	4,400	60	490,000
Jan 1995										
12...	250,000	2	<4	23	250	58	130	1,700	60	520,000
Feb										
22...	310,000	1	<3	22	250	38	120	980	60	510,000
Mar										
16...	310,000	1	<3	22	250	38	120	1,000	40	530,000
Apr										
12...	330,000	<1	<3	24	270	44	130	1,000	90	490,000
May										
17...	320,000	<1	17	31	260	50	120	1,000	120	500,000
Jun										
13...	340,000	<1	<10	28	290	62	180	1,100	200	550,000
Jul										
13...	320,000	<5	<10	21	270	63	170	950	150	560,000
Aug										
17...	320,000	<5	<10	26	320	64	190	1,000	180	530,000
Sep										
14...	320,000	<25	<10	24	270	65	150	950	150	560,000
Oct										
12...	290,000	<5	13	23	290	48	130	950	100	530,000
Nov										
29...	530,000	<1	17	22	270	46	120	770	100	520,000
Jan 1996										
12...	310,000	<2	20	22	260	33	130	910	70	520,000
Feb										
21...	310,000	<1	17	20	250	37	120	2,400	70	510,000
Apr										
04...	280,000	<1	18	21	250	39	100	750	60	490,000
May										
07...	280,000	<1	15	24	260	44	130	1,000	70	460,000
Jun										
05...	260,000	<1	16	22	--	42	140	900	70	480,000
Jul										
03...	260,000	<1	17	21	--	39	110	900	80	470,000
Aug										
08...	250,000	<5	16	22	--	38	110	910	80	470,000
Sep										
04...	270,000	<1	14	24	230	45	100	790	<80	500,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 13, 472305110551701--LEWIS COULEE ABOVE CASTNER PARK, AT BELT, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
19...	<10	390	840	<10	1,800	<5	<5	1,300	110	6,500
Sep										
06...	<10	420	880	<10	1,800	<5	<3	1,400	130	6,500
Oct										
14...	<10	430	900	<10	2,000	<1	<5	1,400	130	7,300
Nov										
14...	<10	520	960	<10	2,100	<10	<10	1,400	140	7,600
Dec										
15...	<10	470	920	<10	2,100	<1	<3	1,400	130	7,300
Jan 1995										
12...	<10	480	960	<10	2,200	<1	<4	1,600	150	7,700
Feb										
22...	3	470	930	<1	2,100	<1	<3	1,500	<60	8,000
Mar										
16...	2	450	960	<1	2,100	<1	<3	1,600	<60	8,100
Apr										
12...	<1	500	920	<1	2,000	<1	<3	1,400	38	8,000
May										
17...	<1	480	950	<1	2,200	<1	<10	1,600	<60	7,600
Jun										
13...	1	470	1,000	1	2,200	<5	11	1,500	<60	8,000
Jul										
13...	<1	470	1,000	<1	2,100	--	10	1,500	<60	7,700
Aug										
17...	<1	430	980	<1	2,200	--	<10	1,600	92	7,500
Sep										
14...	<1	450	1,000	<1	2,200	--	<10	1,500	72	8,300
Oct										
12...	<1	440	920	<1	2,100	--	<10	1,500	100	7,400
Nov										
29...	<1	460	920	<1	2,100	--	<5	1,600	42	7,400
Jan 1996										
12...	<1	440	910	<1	2,200	--	<5	1,500	40	7,700
Feb										
21...	2	460	880	<1	2,100	--	<5	1,500	38	7,600
Apr										
04...	<1	450	900	<1	2,100	--	<5	1,500	41	7,400
May										
07...	<1	470	880	<1	2,100	--	<5	1,500	31	7,000
Jun										
05...	<1	430	870	<1	1,900	--	<8	1,500	<48	7,000
Jul										
03...	<1	430	880	<1	2,000	--	<8	1,500	43	7,100
Aug										
08...	<1	410	850	<1	2,000	--	<8	1,500	47	6,800
Sep										
04...	1	420	940	<1	2,100	--	8	1,500	<48	7,200

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 14, 472306111103601--MINE DRAIN TO MINING COULEE NEAR SAND COULEE, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	1455	0.02	6,680	28.0	10.5	2.6	1,400	230	210	19	0.2
Aug											
17...	1300	.02	7,520	28.0	11.0	2.6	1,600	280	210	19	.2
Sep											
06...	1750	.02	7,410	25.0	11.0	2.4	1,500	270	210	20	.2
Oct											
13...	1150	.01	7,400	11.5	10.0	3.0	1,500	280	200	19	.2
Nov											
14...	1620	.01	7,620	3.5	9.0	2.6	1,600	290	220	20	.2
Dec											
15...	1255	.01	7,250	3.0	7.5	2.6	1,500	270	200	20	.2
Jan 1995											
11...	1540	.01	7,250	5.5	8.0	2.6	1,500	280	200	17	.2
Feb											
21...	1410	.01	7,280	18.0	8.0	2.6	1,500	270	190	19	.2
Mar											
15...	1530	.01	7,310	13.0	9.0	2.6	1,600	300	200	20	.2
Apr											
12...	1350	.009	7,260	16.0	8.0	2.6	1,600	300	200	20	.2
May											
16...	1050	.010	7,290	16.0	14.5	2.6	1,500	290	200	19	.2
Jun											
13...	1520	.009	7,210	25.5	9.0	2.7	1,600	310	200	22	.2
Jul											
11...	1730	.009	7,390	16.0	9.5	2.7	1,500	290	190	20	.2
Aug											
16...	1550	.02	7,290	23.0	10.5	2.6	1,500	290	200	21	.2
Sep											
13...	0830	.03	7,300	9.0	11.0	2.6	1,300	210	190	23	.3
Oct											
11...	1630	.04	7,430	14.0	11.0	2.5	1,500	270	200	20	.2
Nov											
28...	1430	.03	7,240	-2.0	9.0	2.5	1,500	270	200	21	.2
Jan 1996											
11...	0800	.02	7,280	5.0	9.0	2.6	1,600	310	210	21	.2
Feb											
22...	0900	.02	7,320	1.0	8.0	2.5	1,600	290	210	21	.2
Apr											
03...	1310	.02	7,240	2.0	7.5	2.5	1,500	290	200	21	.2
May											
07...	0850	.02	7,300	2.5	8.5	2.6	1,600	310	200	20	.2
Jun											
04...	1620	.02	7,340	24.0	9.5	2.6	1,600	300	210	21	.2
Jul											
02...	0910	.01	7,230	20.0	10.0	2.6	1,600	280	210	22	.2
Aug											
06...	1715	.01	7,500	23.0	10.5	2.5	1,500	270	200	19	.2
Sep											
03...	1510	.01	7,350	24.0	10.0	2.7	1,500	280	200	21	.2

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 14, 472306111103601--MINE DRAIN TO MINING COULEE NEAR SAND COULEE, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994									
20...	0.2	150	e<1	9,200	<1	71	e11,800	e16.0	e0.54
Aug									
17...	.2	160	e<1	8,900	<1	55	e11,600	e15.8	e.57
Sep									
06...	.1	150	e<1	9,800	<1	72	e12,500	e17.1	e.61
Oct									
13...	.2	150	e<1	9,800	1.4	130	e12,400	e16.8	e.37
Nov									
14...	<.1	150	e<1	9,400	--	98	e12,100	e16.4	e.42
Dec									
15...	.2	150	e<1	9,800	--	93	e12,500	e17.0	e.41
Jan 1995									
11...	.4	150	e<1	9,600	8.4	57	e12,300	e16.7	e.32
Feb									
21...	.2	150	e<1	11,000	2.6	120	e13,500	e18.3	e.47
Mar									
15...	.3	150	e<1	12,000	<1	130	e14,600	e19.8	e.43
Apr									
12...	.2	150	e<1	12,000	3.7	130	e14,600	e19.8	e.35
May									
16...	.3	150	e<1	11,000	2.6	130	e13,600	e18.5	e.38
Jun									
13...	.3	150	e<1	9,600	<1	130	e12,300	e16.8	e.30
Jul									
11...	.2	150	e<1	9,500	<1	140	e12,100	16.4	e.29
Aug									
16...	.4	150	e<1	9,700	1.7	140	e12,300	16.7	e.73
Sep									
13...	.4	140	e<1	9,800	--	--	e12,300	e16.7	e.93
Oct									
11...	.2	150	e<1	9,400	5.0	130	e11,900	e16.2	e1.16
Nov									
28...	.2	150	e<1	8,900	<1	130	e11,500	e15.6	e.93
Jan 1996									
11...	.1	160	e<1	9,300	--	140	e12,100	e16.5	e.79
Feb									
22...	.2	150	e<1	10,000	--	140	e12,800	e17.3	e.79
Apr									
03...	<.1	150	e<1	10,000	4.1	140	e12,700	e17.3	e.65
May									
07...	.2	150	e<1	10,000	1.8	140	e12,600	e17.1	e.61
Jun									
04...	.1	150	e<1	11,000	<1	140	e13,700	e18.7	e.59
Jul									
02...	.2	150	e<1	9,200	<1	130	e11,800	e16.0	e.45
Aug									
06...	.2	150	e<1	8,900	3.8	120	e11,400	e15.5	e.40
Sep									
03...	.2	150	e<1	8,700	3.7	130	e11,200	e15.3	e.36

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 14, 472306111103601--MINE DRAIN TO MINING COULEE NEAR SAND COULEE, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	900,000	2	<100	50	770	83	300	3,500	120	1,100,000
Aug										
17...	910,000	2	<100	60	760	87	280	3,600	110	1,200,000
Sep										
06...	920,000	2	<100	60	850	86	340	3,400	100	1,200,000
Oct										
13...	880,000	1	<100	92	710	--	280	4,800	110	1,000,000
Nov										
14...	890,000	1	<100	80	800	75	390	2,900	81	1,100,000
Dec										
15...	890,000	<1	<100	70	890	74	370	3,000	75	1,200,000
Jan 1995										
11...	910,000	3	<100	80	860	98	320	3,500	79	1,100,000
Feb										
21...	860,000	<10	<100	95	720	83	310	3,300	100	950,000
Mar										
15...	890,000	<10	<100	94	730	88	320	3,200	<100	1,000,000
Apr										
12...	880,000	<10	<100	92	740	84	320	3,200	<100	1,000,000
May										
16...	870,000	<5	74	97	730	87	340	3,100	<100	970,000
Jun										
13...	910,000	5	<100	99	730	85	360	4,500	<200	1,100,000
Jul										
11...	860,000	<5	<100	71	710	86	340	3,700	<200	980,000
Aug										
16...	880,000	10	<100	100	830	83	370	3,700	<200	990,000
Sep										
13...	890,000	12	<100	40	730	85	310	3,800	<200	1,100,000
Oct										
11...	870,000	<5	72	95	730	77	330	3,400	120	940,000
Nov										
28...	900,000	4	74	85	660	86	320	3,700	<100	990,000
Jan 1996										
11...	990,000	<2	85	97	740	73	350	7,600	<100	1,100,000
Feb										
22...	930,000	3	<100	100	680	88	400	9,500	<200	1,100,000
Apr										
03...	920,000	<2	80	99	760	71	320	5,400	<100	1,100,000
May										
07...	880,000	<5	78	97	840	90	310	3,800	<100	990,000
Jun										
04...	880,000	<10	74	100	450	90	300	3,600	<250	1,100,000
Jul										
02...	890,000	<5	73	93	370	90	180	3,600	<250	1,100,000
Aug										
06...	860,000	4	77	97	320	87	<130	3,900	<250	1,000,000
Sep										
03...	860,000	1	75	97	220	83	290	3,900	<200	1,000,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 14, 472306111103601--MINE DRAIN TO MINING COULEE NEAR SAND COULEE, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganesa, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	<1	1,200	3,400	<5	7,700	<10	<1	1,100	--	32,000
Aug.										
17...	<1	1,200	--	<1	8,100	<5	<1	1,200	--	32,000
Sep										
06...	<1	1,200	3,000	<1	7,800	<10	<1	1,200	--	34,000
Oct										
13...	<10	1,200	3,400	<10	7,500	<2	<10	1,200	490	33,000
Nov										
14...	<1	1,300	3,300	<1	7,200	<2	<1	1,300	--	35,000
Dec										
15...	<1	1,200	2,900	2	8,100	<1	<1	1,200	--	34,000
Jan 1995										
11...	<1	1,200	3,400	1	8,700	<2	<1	1,300	--	36,000
Feb										
21...	<1	1,200	3,200	<2	7,300	<2	<4	1,200	320	33,000
Mar										
15...	<1	1,200	3,400	2	7,600	<1	<10	1,200	320	32,000
Apr										
12...	<1	1,200	3,400	<2	7,300	<1	<10	1,200	320	32,000
May										
16...	<1	1,200	3,400	3	7,900	<2	<10	1,200	--	32,000
Jun										
13...	<1	1,300	3,500	<2	8,000	<2	<20	1,300	400	35,000
Jul										
11...	<1	1,200	3,300	2	7,300	--	<20	1,200	350	32,000
Aug										
16...	<1	1,100	3,500	1	7,800	--	<20	1,200	370	33,000
Sep										
13...	<1	1,500	2,900	1	7,600	--	<20	1,200	--	33,000
Oct										
11...	<1	1,100	3,300	2	7,400	--	<10	1,200	240	32,000
Nov										
28...	<1	1,200	3,400	2	7,600	--	<10	1,200	230	32,000
Jan 1996										
11...	<1	1,200	3,900	2	8,700	--	12	1,300	340	38,000
Feb										
22...	<1	1,100	3,600	3	8,200	--	54	1,200	450	35,000
Apr										
03...	<1	1,200	3,600	<1	8,000	--	<10	1,300	340	34,000
May										
07...	<1	1,200	3,700	2	8,300	--	<10	1,200	330	35,000
Jun										
04...	<1	1,200	3,600	<1	8,100	--	<25	1,300	390	36,000
Jul										
02...	<1	1,200	3,400	2	8,000	--	<25	1,200	370	35,000
Aug										
06...	<1	1,200	3,400	3	7,600	--	<25	1,200	380	35,000
Sep										
03...	<8	1,300	3,400	1	7,900	--	<20	1,200	<120	33,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 15, 472310110550801--LEWIS COULEE ABOVE MINE ADIT, AT BELT, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Apr 1995											
12...	1840	0.22	735	10.0	8.5	8.1	350	53	52	18	0.4
May											
17...	0920	.22	818	18.0	9.5	8.3	400	59	61	18	.4
Jun											
13...	1040	.11	905	18.5	14.5	8.6	450	65	70	25	.5
Jul											
13...	1030	.28	1300	17.0	14.0	8.6	600	100	85	62	1

Date	Potas-sium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of consti-tuents, dissolved (mg/L)	Solids, dissolved (ton/ acre-ft)	Solids, dissolved (ton/d)
Apr 1995										
12...	6.2	<0.1	271	100	12	0.4	8.5	413	0.56	0.25
May										
17...	4.3	<.1	313	100	14	.5	7.6	453	.62	.27
Jun										
13...	4.9	<.1	325	130	17	.5	8.1	516	.70	.15
Jul										
13...	7.9	<.1	335	390	17	.3	12	877	1.19	.66

Date	Alum-inum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryl-lium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cad-mium, dissolved (µg/L)	Chro-mium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Apr 1995										
12...	20	1	93	<0.5	40	<1	<5	<1	<10	18
May										
17...	20	<1	110	<.5	50	<1	<5	<3	<10	5
Jun										
13...	<10	<1	110	<.5	50	2	<5	3	<10	130
Jul										
13...	20	1	170	<.5	110	<1	<5	<3	<10	48

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manga-nese, dissolved (µg/L)	Molyb-denum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Sele-nium, dissolved (µg/L)	Silver, dissolved (µg/L)	Stron-tium, dissolved (µg/L)	Vana-dium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
12...	<1	35	4	2	<10	2	2	380	<6	<3
May										
17...	10	43	2	<10	<10	3	<1	460	<6	6
Jun										
13...	<10	54	<1	<10	<10	2	<1	540	<6	10
Jul										
13...	<10	110	5	<10	<10	--	<1	1,000	<6	<3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 16, 472313111104901--MINE DRAIN TO SAND COULEE NEAR SAND COULEE, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	1430	0.03	3,340	20.0	12.5	3.1	950	180	120	19	0.3
Aug											
17...	1220	.02	3,390	28.0	13.0	3.0	880	170	110	18	.3
Sep											
06...	1730	.01	3,220	28.0	11.5	2.9	810	160	100	18	.3
Oct											
13...	1130	.006	3,110	10.0	9.5	3.3	810	160	100	18	.3
May 1995											
16...	1115	.06	3,100	12.0	11.0	3.0	790	160	95	18	.3
Jun											
13...	1500	.11	3,420	22.0	11.5	3.2	860	180	100	20	.3
Jul											
11...	1700	.11	3,480	15.5	10.0	3.4	900	180	110	21	.3
Aug											
16...	1520	.08	3,410	22.0	10.5	3.3	900	180	110	20	.3
Sep											
13...	0850	.06	3,400	10.0	10.0	3.2	880	170	110	20	.3
Oct											
11...	1615	.05	3,410	16.0	10.0	3.2	850	160	110	20	.3
Nov											
28...	1450	.03	3,290	-4.0	9.0	3.2	850	160	110	19	.3
Jan 1996											
11...	0830	.02	3,240	5.0	9.0	3.1	810	160	100	19	.3
Feb											
22...	0815	.02	3,160	1.0	7.5	3.1	810	160	100	19	.3
Apr											
03...	1330	.008	3,140	3.0	12.5	3.0	840	170	100	19	.3
May											
07...	0920	.01	3,160	3.5	8.5	3.2	810	160	100	19	.3
Jun											
04...	1645	.05	3,340	25.0	11.0	3.1	840	170	100	19	.3
Jul											
02...	0850	.036	3,360	20.0	9.5	3.2	880	170	110	18	.3
Aug											
06...	1650	.017	3,280	23.0	11.5	3.2	850	160	110	19	.3
Sep											
03...	1445	.009	3,180	15.5	23.0	3.1	810	160	100	19	.3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 16, 472313111104901--MINE DRAIN TO SAND COULEE NEAR SAND COULEE, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
20...	1.6	42	e<1	3,000	3.9	<1	53	e3,990	e5.42	e0.32
Aug										
17...	1.8	43	e<1	3,000	4.4	<1	70	e3,970	e5.40	e.19
Sep										
06...	1.7	42	e<1	3,200	15	<1	66	e4,120	e5.60	e.13
Oct										
13...	1.7	37	e<1	3,000	9.6	2.2	65	e3,570	e4.86	e.06
May 1995										
16...	1.8	35	e<1	3,000	12	3.1	63	e3,840	e5.22	e.63
Jun										
13...	2.0	44	e<1	3,500	13	2.8	71	e4,550	e6.18	e1.35
Jul										
11...	1.9	43	e<1	3,400	4.2	<1	70	e4,490	e6.10	e1.33
Aug										
16...	2.0	43	e<1	3,600	13	<1	69	e4,650	e6.33	e1.01
Sep										
13...	1.7	43	e<1	3,100	4.8	<1	66	e4,130	e5.62	e.69
Oct										
11...	1.6	44	e<1	3,000	4.4	1.6	64	e3,980	e5.41	e.51
Nov										
28...	1.6	43	e<1	2,900	4.7	<1	61	e3,880	e5.28	e.31
Jan 1996										
11...	1.7	40	e<1	2,900	8.8	1.3	64	e3,880	e5.28	e.21
Feb										
22...	1.8	39	e<1	2,700	5.2	1.8	64	e3,610	e4.91	e.19
Apr										
03...	1.8	38	e<1	2,800	5.5	2.1	65	e3,710	e5.05	e.08
May										
07...	2.0	37	e<1	2,900	5.7	1.8	63	e3,800	e5.16	e.10
Jun										
04...	1.7	41	e<1	2,900	4.9	1.1	63	e3,840	e5.23	e.52
Jul										
02...	2.0	43	e<1	3,000	4.6	1.0	69	e4,020	e5.47	e.39
Aug										
06...	1.9	44	e<1	2,800	5.2	2.4	60	e3,740	e5.08	e.17
Sep										
03...	1.9	37	e<1	2,700	12	2.2	59	e3,590	e4.88	e.09

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 16, 472313111104901--MINE DRAIN TO SAND COULEE NEAR SAND COULEE, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	250,000	4	<4	34	310	18	100	2,000	<40	340,000
Aug										
17...	240,000	5	3	30	270	50	90	2,300	<30	340,000
Sep										
06...	220,000	4	4	28	320	39	80	1,500	<30	320,000
Oct										
13...	200,000	4	3	27	250	--	70	1,400	<30	290,000
May 1995										
16...	180,000	<1	25	26	250	25	60	800	<30	290,000
Jun										
13...	250,000	11	8	34	300	33	80	1,100	<40	390,000
Jul										
11...	270,000	4	11	33	300	30	90	1,100	<50	410,000
Aug										
16...	250,000	<5	8	34	360	31	100	1,200	<50	390,000
Sep										
13...	250,000	8	8	34	300	31	90	1,200	<40	390,000
Oct										
11...	230,000	4	29	31	310	29	90	1,100	<50	370,000
Nov										
28...	250,000	2	28	29	290	30	80	1,100	<50	360,000
Jan 1996										
11...	250,000	8	28	28	260	30	80	1,700	<50	360,000
Feb										
22...	210,000	4	25	29	270	25	70	1,900	<50	330,000
Apr										
03...	210,000	5	26	28	270	24	70	1,600	<30	320,000
May										
07...	210,000	8	23	31	330	27	60	1,000	<30	320,000
Jun										
04...	220,000	1	27	29	230	30	90	1,000	<60	360,000
Jul										
02...	240,000	8	30	34	--	31	90	1,100	<60	390,000
Aug										
06...	210,000	1	27	32	170	27	70	1,000	<60	350,000
Sep										
03...	210,000	3	26	29	130	27	60	1,000	<60	310,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 16, 472313111104901--MINE DRAIN TO SAND COULEE NEAR SAND COULEE, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	<10	390	1,300	<10	2,600	<2	<4	1,100	160	12,000
Aug										
17...	<10	370	1,300	<10	2,400	<5	3	1,000	160	11,000
Sep										
06...	<10	360	1,200	<10	2,300	<5	<3	990	150	10,000
Oct										
13...	<10	330	1,100	<10	2,200	<2	<3	940	130	9,500
May 1995										
16...	<1	330	1,100	<1	2,100	<1	<3	950	72	9,200
Jun										
13...	<1	400	1,400	<1	2,500	<2	<4	1,100	120	11,000
Jul										
11...	<1	380	1,400	<1	2,600	--	<5	1,100	97	11,000
Aug										
16...	<1	400	1,400	<1	2,600	--	<5	1,100	110	11,000
Sep										
13...	<1	380	1,400	<1	2,500	--	<4	1,100	110	11,000
Oct										
11...	<1	370	1,300	1	2,500	--	<5	1,100	110	11,000
Nov										
28...	<1	370	1,300	<1	2,300	--	<5	1,100	110	10,000
Jan 1996										
11...	<1	350	1,300	<1	2,400	--	<5	1,000	92	10,000
Feb										
22...	<1	310	1,200	<1	2,300	--	<5	970	94	10,000
Apr										
03...	<1	350	1,200	<1	2,200	--	<3	1,000	68	9,800
May										
07...	<1	360	1,200	2	2,200	--	<3	1,000	80	9,200
Jun										
04...	<1	380	1,300	<1	2,300	--	<6	1,000	95	11,000
Jul										
02...	<1	360	1,400	<1	2,500	--	<6	1,000	98	11,000
Aug										
06...	<1	370	1,300	<1	2,300	--	--	1,000	<36	9,700
Sep										
03...	<2	360	1,200	1	2,200	--	<6	1,000	<36	9,600

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 17, 472330111082801--CENTERVILLE WETLANDS INFLOW AT CENTERVILLE, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	1550	0.01	3,220	29.0	11.5	2.7	790	180	83	14	0.2
Aug											
16...	1735	.02	3,330	28.0	12.5	2.6	760	170	82	15	.2
Sep											
06...	1340	.01	3,170	29.5	12.0	2.5	760	170	80	15	.2
Oct											
13...	1455	.01	3,300	14.0	11.0	2.6	790	180	83	14	.2
Nov											
14...	1530	.01	3,380	6.0	9.0	2.6	810	190	82	15	.2
Dec											
15...	1005	.01	3,290	1.0	8.5	2.6	740	170	76	14	.2
Jan 1995											
11...	1220	.01	3,390	7.0	8.0	2.8	760	170	82	14	.2
Feb											
22...	1055	.01	3,270	11.5	7.5	2.6	790	180	82	15	.2
Mar											
15...	1700	.01	3,360	11.0	7.5	2.6	780	180	81	14	.2
Apr											
12...	1230	.01	3,690	15.0	8.0	2.6	920	220	90	14	.2
May											
16...	1430	.02	3,650	18.0	11.0	2.6	1,100	260	100	13	.2
Jun											
12...	1645	.02	3,530	28.0	12.0	2.7	970	230	95	15	.2
Jul											
12...	0950	.02	3,100	17.0	10.5	2.7	680	150	73	15	.3
Aug											
16...	0900	.02	2,970	18.0	10.5	2.7	710	160	75	15	.2
Sep											
13...	1500	.02	2,990	25.0	11.5	2.7	610	130	70	15	.3
Oct											
10...	1550	.02	3,140	17.0	10.5	2.6	680	150	75	15	.2
Nov											
27...	1045	.02	3,270	-8.0	9.0	2.6	690	150	76	15	.2
Jan 1996											
10...	0945	.02	3,350	4.0	8.0	2.6	710	160	75	15	.2
Feb											
20...	1045	.02	3,360	9.0	7.5	2.6	720	160	77	15	.2
Apr											
02...	1630	.02	3,560	11.0	7.5	2.5	770	180	78	14	.2
May											
07...	0750	.02	3,410	2.0	8.0	2.6	730	170	73	13	.2
Jun											
03...	1530	.02	3,440	25.0	9.5	2.6	800	180	84	14	.2
Jul											
01...	1420	.01	3,240	30.0	10.0	2.5	710	160	76	14	.2
Aug											
06...	1350	.01	3,160	22.0	11.0	2.5	650	140	73	15	.3
Sep											
03...	1200	.01	3,160	19.0	11.5	2.6	670	140	78	16	.3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, July 1994 through September 1996 (Continued)

SITE 17, 472330111082801--CENTERVILLE WETLANDS INFLOW AT CENTERVILLE, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
20...	1.0	42	e<1	2,800	2.2	<1	86	e3,650	e4.96	e0.13
Aug										
16...	1.1	41	e<1	2,900	7.5	<1	87	e3,740	e5.08	e.17
Sep										
06...	1.0	40	e<1	3,100	8.1	<1	86	e3,920	e5.33	e.14
Oct										
13...	1.0	40	e<1	3,000	3.5	1.5	89	e3,810	e5.19	e.13
Nov										
14...	1.1	42	e<1	2,900	3.2	1.3	86	e3,750	e5.10	e.13
Dec										
15...	1.0	42	e<1	2,900	2.2	<1	85	e3,730	e5.07	e.12
Jan 1995										
11...	1.0	42	e<1	2,900	1.8	1.5	83	e3,720	e5.06	e.13
Feb										
22...	.8	43	e<1	3,600	9.1	1.4	86	e4,470	e6.08	e.14
Mar										
15...	1.0	42	e<1	3,700	3.2	<1	87	e4,540	e6.18	e.15
Apr										
12...	1.2	45	e<1	4,000	5.4	1.6	88	e4,900	e6.66	e.24
May										
16...	1.9	44	e<1	4,400	9.7	2.4	93	e5,330	e7.25	e.33
Jun										
12...	1.7	44	e<1	3,300	2.4	1.0	94	e4,230	e5.75	e.21
Jul										
12...	1.1	34	e<1	2,500	2.4	<1	75	e3,200	e4.36	e.16
Aug										
16...	1.3	33	e<1	2,500	9.4	<1	74	e3,200	e4.35	e.17
Sep										
13...	1.4	35	e<1	2,400	2.8	1.3	67	e3,070	e4.18	e.16
Oct										
10...	1.0	37	e<1	2,500	2.1	1.0	72	e3,210	e4.37	e.17
Nov										
27...	.9	42	e<1	2,700	2.5	<1	74	e3,480	e4.73	e.18
Jan 1996										
10...	.9	44	e<1	2,900	7.2	--	79	e3,750	e5.11	e.17
Feb										
20...	.9	43	e<1	2,700	2.8	<1	79	e3,520	e4.79	e.17
Apr										
02...	.8	77	e<1	3,200	3.3	1.0	85	e4,120	e5.60	e.20
May										
07...	1.1	44	e<1	3,100	2.1	1.0	80	e3,940	e5.35	e.16
Jun										
03...	.9	44	e<1	2,900	2.6	<1	82	e3,760	e5.11	e.16
Jul										
01...	.2	46	e<1	2,800	1.4	<1	84	e3,630	e4.94	e.14
Aug										
06...	1.2	39	e<1	2,700	4.0	1.3	76	e3,460	e4.70	e.13
Sep										
03...	1.0	38	e<1	2,500	2.9	1.0	78	e3,260	e4.44	e.12

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 17, 472330111082801--CENTERVILLE WETLANDS INFLOW AT CENTERVILLE, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	230,000	<1	6	33	200	--	20	--	110	240,000
Aug										
16...	220,000	<1	7	31	210	11	20	--	110	250,000
Sep										
06...	220,000	<1	6	30	210	14	20	--	100	230,000
Oct										
13...	210,000	<1	7	31	180	--	20	510	100	230,000
Nov										
14...	230,000	<1	6	31	210	14	30	--	110	230,000
Dec										
15...	220,000	<1	6	30	220	--	20	--	110	250,000
Jan 1995										
11...	230,000	<1	5	30	220	13	<20	--	110	230,000
Feb										
22...	230,000	<1	6	31	170	29	<20	440	100	260,000
Mar										
15...	220,000	<1	5	31	180	32	<20	470	110	250,000
Apr										
12...	250,000	<1	7	34	200	32	20	520	100	220,000
May										
16...	250,000	<1	12	36	190	31	20	480	110	190,000
Jun										
12...	250,000	<1	7	37	190	32	<20	490	110	230,000
Jul										
12...	190,000	3	5	25	140	23	<20	310	80	190,000
Aug										
16...	190,000	<1	7	27	170	23	10	350	90	170,000
Sep										
13...	200,000	<1	7	24	180	23	20	360	80	180,000
Oct										
10...	190,000	<1	11	26	180	25	30	360	100	200,000
Nov										
27...	230,000	<1	11	28	190	27	<20	440	110	220,000
Jan 1996										
10...	250,000	<2	12	29	190	30	30	460	120	260,000
Feb										
20...	220,000	<1	9	31	180	27	40	450	120	260,000
Apr										
02...	260,000	<1	12	34	200	25	20	430	130	290,000
May										
07...	240,000	<1	11	30	210	31	20	440	110	250,000
Jun										
03...	230,000	<1	11	33	130	32	<25	470	110	250,000
Jul										
01...	230,000	<2	<10	34	--	31	<36	450	110	260,000
Aug										
06...	200,000	<1	11	30	--	28	<30	360	110	240,000
Sep										
03...	190,000	<1	8	30	--	27	<30	350	100	250,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 17, 472330111082801--CENTERVILLE WETLANDS INFLOW AT CENTERVILLE, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	<10	340	1,400	<10	820	<5	<3	900	47	2,400
Aug										
16...	<10	340	1,400	<10	810	<5	3	930	71	2,400
Sep										
06...	<10	340	1,400	<10	790	<2	<3	900	56	2,300
Oct										
13...	<10	320	1,400	<10	750	<2	<3	880	53	2,300
Nov										
14...	<10	370	1,500	<10	790	2	<3	890	59	2,400
Dec										
15...	<10	320	1,300	<10	780	2	<3	850	57	2,300
Jan 1995										
11...	<10	350	1,400	<10	810	2	<3	940	51	2,200
Feb										
22...	2	350	1,500	<1	760	2	<3	940	12	2,300
Mar										
15...	3	340	1,500	<1	800	2	<3	910	17	2,400
Apr										
12...	2	430	1,900	<1	850	2	<3	1,000	11	2,300
May										
16...	<1	590	2,200	<1	950	2	<3	1,100	<18	2,500
Jun										
12...	4	550	2,000	<1	870	1	<4	1,100	<24	2,500
Jul										
12...	3	310	1,200	<1	650	--	<3	810	<18	1,900
Aug										
16...	2	340	1,200	<1	650	--	<2	840	<12	1,800
Sep										
13...	2	270	1,100	<1	640	--	<2	760	13	1,700
Oct										
10...	2	300	1,200	<1	630	--	<3	810	<18	2,000
Nov										
27...	1	320	1,300	<1	740	--	<3	860	<18	2,100
Jan 1996										
10...	1	310	1,300	<1	810	--	<3	860	<18	2,300
Feb										
20...	3	300	1,300	<1	810	--	<5	820	35	2,300
Apr										
02...	1	350	1,500	<1	930	--	<3	910	<18	2,500
May										
07...	3	320	1,400	<1	800	--	<3	820	20	2,300
Jun										
03...	2	380	1,600	<1	790	--	<5	890	30	2,400
Jul										
01...	2	290	1,400	<1	800	--	<5	880	<30	2,300
Aug										
06...	4	310	1,200	<1	680	--	<5	810	<30	2,100
Sep										
03...	3	290	1,200	1	770	--	<5	830	<30	2,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 18, 472331111083001--CENTERVILLE WETLANDS OUTFLOW AT CENTERVILLE, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	1605	0.004	4,530	29.0	20.0	3.1	2,100	550	180	37	0.4
Aug											
16...	1745	.002	4,600	28.0	22.0	3.1	2,200	550	190	45	.4
Sep											
06...	1345	--	4,360	29.5	15.0	2.8	1,800	470	160	35	.4
Oct											
13...	1500	.01	3,650	14.0	8.5	2.7	1,300	320	110	23	.3
Nov											
14...	1535	.01	3,400	6.0	1.5	2.8	1,100	280	97	20	.3
Jan 1995											
11...	1230	.02	3,590	7.0	0.5	4.3	1,600	380	150	41	.5
Feb											
22...	1100	.005	2,390	11.5	1.5	3.3	980	280	69	16	.2
Mar											
15...	1715	.01	2,820	10.5	7.0	2.9	870	230	71	16	.2
Apr											
12...	1240	--	2,710	15.0	8.0	2.7	680	170	61	12	.2
May											
16...	1435	.02	3,430	18.0	20.0	2.5	1,100	280	96	18	.2
Jun											
12...	1700	--	3,380	28.0	22.5	2.7	1,000	260	92	17	.2
Jul											
12...	1000	--	3,320	17.0	14.0	2.7	930	230	87	18	.3
Aug											
16...	0915	.01	3,680	19.0	15.0	2.8	1,300	320	110	24	.3
Sep											
13...	1510	.02	3,420	25.0	17.0	2.9	1,000	260	96	21	.3
Oct											
10...	1610	.02	3,360	17.0	11.0	2.7	910	220	88	19	.3
Nov											
27...	1100	.02	3,330	-7.5	0.0	2.6	910	220	87	18	.3
Jan 1996											
10...	1000	--	3,320	4.0	0.0	2.6	810	190	82	18	.3
Feb											
20...	1100	--	1,760	9.0	0.0	2.9	370	90	34	7.0	.2
Apr											
02...	1645	--	3,400	11.0	4.0	2.6	830	200	80	17	.3
May											
07...	0810	.01	3,720	2.0	7.5	2.6	1,100	280	99	19	.2
Jun											
03...	1500	.01	3,620	25.0	20.5	2.6	970	230	95	19	.3
Jul											
01...	1400	.008	4,070	30.0	27.5	2.5	1,400	340	130	24	.3
Aug											
06...	1400	--	5,080	22.0	22.0	2.4	1,900	460	170	35	.4
Sep											
03...	1220	--	5,370	20.0	18.0	2.5	1,900	480	180	39	.4

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 18, 472331111083001--CENTERVILLE WETLANDS OUTFLOW AT CENTERVILLE, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
20...	140	24	e<1	3,600	40	<1	65	e4,840	e6.59	e0.05
Aug										
16...	120	28	e<1	3,700	42	<1	56	e4,960	e6.74	e.03
Sep										
06...	99	37	e<1	3,900	36	<1	48	e5,120	e6.96	--
Oct										
13...	45	32	e<1	3,100	16	1.4	64	e4,000	e5.44	e.15
Nov										
14...	36	32	e<1	2,900	12	1.2	73	e3,760	e5.11	e.12
Jan 1995										
11...	140	23	e<1	2,800	44	1.2	70	e3,900	e5.30	e.23
Feb										
22...	46	14	e<1	2,600	17	<1	38	e3,220	e4.38	e.05
Mar										
15...	37	27	e<1	3,300	26	<1	51	e3,950	5.37	e.12
Apr										
12...	13	24	e<1	3,500	21	1.2	49	e4,070	e5.54	--
May										
16...	36	30	e<1	3,000	20	1.4	70	e3,810	e5.18	e.20
Jun										
12...	22	32	e<1	3,000	8.9	<1	60	e3,770	e5.12	--
Jul										
12...	27	29	e<1	2,600	11	<1	46	e3,330	e4.52	--
Aug										
16...	36	31	e<1	3,100	20	<1	34	e3,960	e5.38	e.13
Sep										
13...	25	31	e<1	2,800	10	1.3	42	e3,560	e4.84	e.16
Oct										
10...	17	32	e<1	2,600	9.3	1.0	61	e3,320	e4.52	e.14
Nov										
27...	13	35	e<1	2,800	6.2	<1	65	e3,580	e4.87	e.16
Jan 1996										
10...	21	39	e<1	2,800	9.9	--	72	e3,650	e4.96	--
Feb										
20...	4.2	16	e<1	1,100	2.4	<1	28	e1,440	e1.95	--
Apr										
02...	7.2	39	e<1	2,900	5.8	1.0	70	e3,720	e5.06	--
May										
07...	13	42	e<1	3,200	8.9	1.1	75	e4,120	e5.61	e.11
Jun										
03...	9.9	38	e<1	3,100	7.9	<1	65	e3,940	e5.35	e.11
Jul										
01...	22	44	e<1	3,500	12	<1	63	e4,550	e6.19	e.01
Aug										
06...	34	55	e<1	4,600	22	1.5	26	e5,870	e7.99	--
Sep										
03...	30	52	e<1	4,600	25	<1	--	e5,860	e7.97	--

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 18, 472331111083001--CENTERVILLE WETLANDS OUTFLOW AT CENTERVILLE, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	170,000	<1	35	30	360	--	<20	480	<30	51,000
Aug										
16...	180,000	<1	32	32	410	--	<20	640	<30	63,000
Sep										
06...	260,000	<1	15	38	350	--	20	540	60	100,000
Oct										
13...	210,000	<1	11	32	220	--	<20	440	100	100,000
Nov										
14...	200,000	<1	7	27	200	19	20	610	110	130,000
Jan 1995										
11...	150,000	<1	39	23	210	--	<20	590	50	110,000
Feb										
22...	94,000	<1	16	13	110	12	<20	190	40	50,000
Mar										
15...	140,000	<1	14	19	140	19	<20	310	70	73,000
Apr										
12...	140,000	<1	4	19	130	17	<20	260	70	98,000
May										
16...	180,000	<5	15	28	180	21	20	340	90	100,000
Jun										
12...	180,000	<1	4	29	180	20	<20	370	80	120,000
Jul										
12...	170,000	3	<3	25	190	17	<20	370	40	130,000
Aug										
16...	220,000	<1	9	32	230	18	<20	400	40	86,000
Sep										
13...	230,000	<1	9	28	230	19	20	390	50	64,000
Oct										
10...	200,000	<1	10	27	190	30	20	360	130	100,000
Nov										
27...	200,000	<1	7	27	190	26	<20	380	110	160,000
Jan 1996										
10...	230,000	<2	9	26	180	25	<20	340	110	220,000
Feb										
20...	84,000	<1	3	11	60	14	8	190	40	83,000
Apr										
02...	220,000	<1	6	29	180	26	20	400	110	210,000
May										
07...	230,000	<1	8	32	210	28	30	460	120	190,000
Jun										
03...	210,000	<1	8	31	140	27	36	420	110	190,000
Jul										
01...	240,000	2	8	37	130	28	<40	520	70	210,000
Aug										
06...	270,000	<1	8	34	250	26	30	550	70	240,000
Sep										
03...	280,000	<2	<8	44	210	24	<40	570	<80	220,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 18, 472331111083001--CENTERVILLE WETLANDS OUTFLOW AT CENTERVILLE, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	<10	550	6,000	<10	680	<1	<3	2,100	<18	820
Aug										
16...	<10	590	6,100	<10	710	<5	<3	2,200	24	840
Sep										
06...	<10	530	4,800	<10	870	<1	<3	1,900	19	1,600
Oct										
13...	<10	370	3,200	<10	690	<2	<3	1,200	<18	2,000
Nov										
14...	<10	380	3,000	<10	730	<1	<3	1,100	30	2,400
Jan 1995										
11...	<10	430	5,300	<10	650	<2	<3	1,900	<18	1,700
Feb										
22...	<1	220	3,200	<1	360	<1	<3	1,100	<18	970
Mar										
15...	<1	260	2,000	1	480	<1	<3	890	8	1,400
Apr										
12...	<1	250	1,600	<1	490	1	<3	730	<18	1,300
May										
16...	1	400	2,600	1	730	<2	<3	1,100	<18	1,700
Jun										
12...	<1	450	2,300	<1	650	<2	<4	1,100	<24	1,700
Jul										
12...	<1	350	2,100	<1	600	--	<3	980	<18	1,500
Aug										
16...	<1	440	2,500	<1	650	--	<3	1,300	<18	1,600
Sep										
13...	<1	370	2,000	<1	620	--	<3	1,100	<18	1,500
Oct										
10...	<1	330	1,800	<1	650	--	<3	960	<18	2,100
Nov										
27...	<1	340	2,100	<1	700	--	<3	1,000	<18	2,100
Jan 1996										
10...	<1	310	1,700	<1	740	--	<3	950	<18	2,500
Feb										
20...	<1	120	740	<1	300	--	2	390	<6	880
Apr										
02...	<1	320	1,700	<1	800	--	<2	920	<12	2,200
May										
07...	<1	390	2,500	<1	870	--	<3	1,100	<18	2,300
Jun										
03...	<1	380	2,200	<1	850	--	<8	1,000	<48	2,100
Jul										
01...	<1	410	3,500	<1	930	--	<8	1,400	<48	2,300
Aug										
06...	<1	640	4,700	<2	1,000	--	<8	1,800	<48	2,300
Sep										
03...	<4	650	4,900	<1	930	--	<8	2,000	<48	2,100

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 19, 472334111104401--MOUNT OREGON MINE DRAIN TO KATE'S COULEE AT SAND COULEE, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	1350	0.08	2,920	25.0	12.0	4.0	960	170	130	24	0.3
Aug											
17...	1115	.03	3,010	27.0	12.0	4.1	960	170	130	24	.3
Sep											
07...	0710	.08	2,940	13.0	11.0	4.0	960	170	130	24	.3
Oct											
13...	1250	.02	2,880	12.0	11.0	4.7	960	170	130	23	.3
Nov											
15...	0810	.02	2,900	2.0	11.5	4.1	960	170	130	24	.3
Dec											
15...	1320	.05	2,790	3.5	12.0	4.2	920	170	120	23	.3
Jan 1995											
11...	1645	.07	2,780	5.0	12.0	4.2	940	160	130	24	.3
Feb											
21...	1330	.06	2,870	17.5	11.5	4.1	900	160	120	24	.3
Mar											
15...	1550	.04	2,870	14.0	10.0	4.2	900	160	120	24	.3
Apr											
12...	1410	.18	2,860	16.0	11.5	4.1	920	170	120	25	.4
May											
16...	1135	.10	2,860	11.5	15.0	4.0	920	170	120	23	.3
Jun											
13...	1435	.11	2,950	22.0	11.0	4.0	960	170	130	25	.4
Jul											
12...	0800	.09	2,970	16.0	11.0	4.2	960	170	130	25	.4
Aug											
16...	1440	.08	2,890	22.0	11.5	4.1	960	170	130	24	.3
Sep											
13...	0800	.05	2,880	8.0	11.0	4.1	940	160	130	25	.4
Oct											
11...	1530	.09	2,850	17.0	10.0	4.2	940	160	130	23	.3
Nov											
28...	1100	.07	2,770	-1.0	11.0	4.3	940	160	130	24	.3
Jan 1996											
11...	0900	.07	2,750	5.0	11.0	4.3	960	170	130	24	.3
Feb											
22...	0800	.07	2,700	1.0	11.0	4.3	940	160	130	24	.3
Apr											
03...	1400	.06	2,690	4.0	11.0	4.2	900	160	120	24	.3
May											
07...	0940	.07	2,700	4.0	11.0	4.3	920	170	120	24	.3
Jun											
04...	1710	.10	2,730	25.0	11.0	4.1	940	160	130	24	.3
Jul											
02...	0945	.08	2,740	20.0	11.5	4.0	960	170	130	25	.4
Aug											
07...	0810	.04	2,720	17.0	11.5	4.0	900	160	120	22	.3
Sep											
03...	1530	.07	2,770	23.0	11.0	4.2	960	170	130	24	.3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 19, 472334111104401--MOUNT OREGON MINE DRAIN TO KATE'S COULEE AT SAND COULEE, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
20...	4.7	31	e<1	2,500	4.4	<1	40	e3,390	e4.61	e0.73
Aug										
17...	5.2	33	e<1	2,700	4.3	<1	39	e3,580	e4.87	e.29
Sep										
07...	4.9	32	e<1	2,900	8.3	<1	37	e3,780	e5.14	e.82
Oct										
13...	4.7	31	e<1	2,900	8.5	2.3	39	e3,760	e5.11	e.16
Nov										
15...	4.3	32	e<1	2,700	4.6	1.8	37	e3,550	e4.83	e.18
Dec										
15...	4.8	31	e<1	2,500	3.7	1.5	36	e3,300	e4.49	e.45
Jan 1995										
11...	4.6	28	e<1	2,400	3.0	2.4	34	e3,170	e4.31	e.60
Feb										
21...	4.8	29	e<1	3,300	9.4	2.3	35	e4,120	e5.60	e.63
Mar										
15...	4.1	29	e<1	3,700	6.3	2.3	35	e4,500	e6.12	e.49
Apr										
12...	4.7	30	e<1	3,100	17	2.2	36	e3,940	e5.35	e1.91
May										
16...	4.5	28	e<1	2,800	10	3.4	37	e3,620	e4.92	e.98
Jun										
13...	4.8	31	e<1	3,500	4.4	2.7	39	e4,390	e5.97	1.30
Jul										
12...	4.5	32	e<1	2,700	3.5	<1	41	e3,600	e4.89	e.87
Aug										
16...	--	30	e<1	2,800	10	1.4	40	e3,670	e4.99	e.79
Sep										
13...	4.8	29	e<1	2,500	4.0	2.5	39	e3,370	e4.58	e.49
Oct										
11...	4.5	32	e<1	2,400	3.5	1.7	38	e3,220	e4.38	e.79
Nov										
28...	4.2	30	e<1	2,400	3.7	1.4	37	e3,240	e4.41	e.61
Jan 1996										
11...	4.6	29	e<1	2,500	8.0	--	40	e3,380	e4.60	e.62
Feb										
22...	4.4	28	e<1	2,300	4.0	2.1	38	e3,110	e4.24	e.62
Apr										
03...	4.1	30	e<1	2,400	4.5	2.4	37	e3,200	e4.36	e.52
May										
07...	4.4	27	e<1	2,500	11	2.1	38	e3,310	e4.50	e.63
Jun										
04...	4.4	27	e<1	3,100	4.2	1.7	35	e3,920	e5.34	e1.03
Jul										
02...	5.1	29	e<1	2,300	3.3	<1	40	e3,160	e4.29	e.64
Aug										
07...	4.8	29	e<1	2,200	5.0	2.5	36	e2,990	e4.06	e.29
Sep										
03...	4.6	27	e<1	2,500	6.4	2.5	37	e3,330	e4.53	e.63

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 19, 472334111104401--MOUNT OREGON MINE DRAIN TO KATE'S COULEE AT SAND COULEE, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	170,000	12	12	27	260	--	40	--	<40	330,000
Aug										
17...	170,000	14	14	26	270	--	30	--	<30	330,000
Sep										
07...	180,000	15	13	25	310	--	30	--	<30	310,000
Oct										
13...	170,000	16	14	25	240	--	30	--	<30	300,000
Nov										
15...	170,000	12	12	25	270	--	50	--	<50	300,000
Dec										
15...	150,000	13	13	24	310	--	30	--	<30	280,000
Jan 1995										
11...	170,000	18	13	24	280	--	20	--	<30	230,000
Feb										
21...	170,000	12	13	24	240	8	20	740	<30	280,000
Mar										
15...	160,000	13	14	23	240	8	30	700	<30	280,000
Apr										
12...	170,000	13	14	25	260	8	20	710	<30	280,000
May										
16...	160,000	12	27	25	260	9	40	610	<30	280,000
Jun										
13...	170,000	16	15	26	250	6	30	510	<40	330,000
Jul										
12...	170,000	12	14	24	260	9	30	730	<40	340,000
Aug										
16...	160,000	20	14	26	270	9	40	680	<40	320,000
Sep										
13...	180,000	7	15	25	270	9	40	730	<30	310,000
Oct										
11...	160,000	14	27	25	270	9	40	650	<30	290,000
Nov										
28...	180,000	11	27	23	260	8	20	670	<30	290,000
Jan 1996										
11...	180,000	22	28	24	250	8	30	580	<30	310,000
Feb										
22...	160,000	19	14	25	240	8	30	600	<50	280,000
Apr										
03...	160,000	24	27	24	260	7	30	510	<30	280,000
May										
07...	150,000	16	27	24	300	7	30	650	<30	280,000
Jun										
04...	141,000	22	26	35	--	7	50	670	<60	280,000
Jul										
02...	160,000	14	15	28	--	8	40	650	<60	310,000
Aug										
07...	150,000	9	26	23	--	8	30	660	<40	280,000
Sep										
03...	150,000	6	28	24	--	8	40	670	<40	290,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 19, 472334111104401--MOUNT OREGON MINE DRAIN TO KATE'S COULEE AT SAND COULEE, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	<10	380	1,200	<30	1,600	<2	4	1,200	130	6,500
Aug										
17...	<10	440	1,300	<30	1,600	<5	<3	1,300	160	6,400
Sep										
07...	<10	440	1,300	<30	1,500	<2	<3	1,200	150	6,100
Oct										
13...	<10	430	1,300	<30	1,600	<2	<3	1,200	140	6,200
Nov										
15...	<10	470	1,300	<30	1,600	<2	<5	1,100	150	6,300
Dec										
15...	<10	420	1,200	<30	1,600	<1	<3	1,100	130	5,900
Jan 1995										
11...	<10	440	1,200	<30	1,500	<1	<3	1,200	140	5,600
Feb										
21...	<1	430	1,200	10	1,400	<1	<3	1,100	92	5,700
Mar										
15...	<1	440	1,200	12	1,500	<1	<3	1,100	93	5,500
Apr										
12...	<1	450	1,200	12	1,500	<1	<3	1,200	86	5,700
May										
16...	<1	430	1,200	12	1,600	<1	<3	1,200	97	6,100
Jun										
13...	2	420	1,200	9	1,600	<2	<4	1,200	93	6,500
Jul										
12...	2	400	1,300	10	1,500	--	<4	1,200	89	6,300
Aug										
16...	<1	410	1,300	11	1,600	--	<4	1,200	100	6,100
Sep										
13...	<1	410	1,300	11	1,500	--	<3	1,200	94	6,000
Oct										
11...	1	410	1,200	10	1,500	--	<3	1,200	94	6,000
Nov										
28...	<1	430	1,200	10	1,500	--	<3	1,200	88	5,900
Jan 1996										
11...	<1	420	1,300	10	1,600	--	<3	1,200	86	6,600
Feb										
22...	<1	400	1,200	10	1,500	--	<5	1,100	95	6,100
Apr										
03...	2	420	1,200	12	1,500	--	<3	1,200	86	5,900
May										
07...	2	420	1,200	12	1,500	--	5	1,200	100	6,000
Jun										
04...	<1	380	1,200	9	1,700	--	<4	1,200	48	5,900
Jul										
02...	1	390	1,300	12	1,600	--	10	1,300	100	6,500
Aug										
07...	<1	390	1,200	10	1,400	--	<4	1,100	<24	5,800
Sep										
03...	<2	390	1,200	11	1,500	--	8	1,200	84	6,400

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 20, 472346111102401--NELSON MINE DRAIN TO SAND COULEE AT SAND COULEE, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	1250	0.03	8,090	26.5	17.0	2.7	1,600	260	230	20	0.2
Aug											
17...	1045	.03	8,020	24.0	15.0	2.6	1,600	250	230	20	.2
Sep											
07...	0735	.03	8,060	14.0	12.0	2.3	1,600	240	240	20	.2
Oct											
13...	1105	.03	8,140	7.5	10.0	3.0	1,600	260	230	19	.2
Nov											
14...	1640	.02	8,120	3.0	8.0	2.6	1,600	240	250	20	.2
Dec											
15...	1340	.02	7,600	4.0	5.5	2.6	1,500	240	230	20	.2
Jan 1995											
11...	1500	.02	7,620	6.5	8.0	2.6	1,600	250	230	16	.2
Feb											
21...	1310	.01	8,610	18.0	8.0	2.6	1,800	280	270	19	.2
Mar											
15...	1625	.01	8,310	11.0	8.0	2.7	1,700	270	250	20	.2
Apr											
12...	1315	.009	8,010	16.0	11.5	2.6	1,700	270	240	20	.2
May											
16...	1205	.01	7,470	16.0	14.5	2.5	1,500	250	220	19	.2
Jun											
13...	1420	.06	8,110	23.5	15.0	2.6	1,600	270	230	20	.2
Jul											
11...	1750	.08	8,980	16.0	11.5	2.8	1,700	280	240	21	.2
Aug											
16...	1420	.06	8,520	22.0	15.0	2.7	1,700	270	250	21	.2
Sep											
13...	0910	.05	8,430	11.0	11.5	2.6	1,400	190	230	24	.3
Oct											
11...	1700	.04	7,970	14.0	11.5	2.6	1,500	240	220	20	.2
Nov											
28...	1030	.03	7,360	-0.5	8.5	2.5	1,400	220	210	20	.2
Jan 1996											
11...	0940	.03	7,240	5.0	6.0	2.6	1,500	240	210	19	.2
Feb											
22...	0930	.02	6,970	1.0	6.5	2.5	1,500	240	220	21	.2
Apr											
03...	1415	.02	6,840	4.0	12.0	2.4	1,500	240	210	21	.2
May											
07...	1000	.01	7,670	4.5	9.0	2.6	1,700	270	240	19	.2
Jun											
04...	1730	.01	7,430	25.0	16.5	2.6	1,700	260	250	20	.2
Jul											
02...	1000	.02	6,810	21.5	15.0	2.6	1,400	220	210	23	.3
Aug											
06...	1730	.02	7,290	23.0	17.0	2.4	1,500	230	220	21	.2
Sep											
03...	1545	.02	7,230	23.0	17.5	2.6	1,600	250	230	21	.2

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 20, 472346111102401--NELSON MINE DRAIN TO SAND COULEE AT SAND COULEE, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994									
20...	1.4	170	e<1	10,000	<1	87	e13,200	e17.9	e1.14
Aug									
17...	1.5	170	e<1	--	<1	84	--	--	--
Sep									
07...	2.0	170	e<1	11,000	<1	88	e14,200	e19.4	e1.0
Oct									
13...	.6	170	e<1	11,000	1.4	140	e14,100	e19.2	e1.07
Nov									
14...	.7	170	e<1	10,000	--	100	e13,000	e17.7	e8.1
Dec									
15...	.9	170	e<1	10,000	--	75	e13,000	e17.7	e.74
Jan 1995									
11...	.9	170	e<1	11,000	7.3	59	e14,000	e19.0	e.68
Feb									
21...	1.1	190	e<1	13,000	4.5	140	e16,500	e22.4	e.53
Mar									
15...	.7	180	e<1	13,000	5.4	140	e16,300	e22.2	e.43
Apr									
12...	.8	170	e<1	14,000	4.5	140	e17,200	e23.3	e.42
May									
16...	.9	160	e<1	12,000	5.7	140	e15,000	e20.4	e.44
Jun									
13...	.6	180	e<1	11,000	<1	140	e14,300	e19.5	e2.12
Jul									
11...	.6	200	e<1	13,000	<1	140	e16,700	e22.7	3.60
Aug									
16...	.8	190	e<1	13,000	--	140	e16,500	e22.5	2.86
Sep									
13...	.4	180	e<1	11,000	--	--	e14,400	e19.6	e1.87
Oct									
11...	.6	170	e<1	10,000	--	130	e13,000	e17.7	e1.33
Nov									
28...	.5	160	e<1	9,600	<1	130	e12,400	e16.8	e1.00
Jan 1996									
11...	.3	160	e<1	9,100	--	140	e11,900	e16.2	e.87
Feb									
22...	.4	150	e<1	11,000	--	140	e13,700	e18.6	e.78
Apr									
03...	.5	140	e<1	9,500	4.4	140	e12,200	e16.7	e.56
May									
07...	.7	170	e<1	11,000	1.6	150	e14,000	e19.1	e.53
Jun									
04...	.5	160	e<1	11,000	2.4	140	e14,100	e19.2	e.42
Jul									
02...	.5	150	e<1	9,000	<1	140	e11,600	e15.8	e.47
Aug,									
06...	.7	160	e<1	8,900	3.4	140	e11,700	e15.9	e.57
Sep,									
03...	.8	150	e<1	8,900	3.5	150	e11,800	e16.1	e.48

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 20, 47234611102401--NELSON MINE DRAIN TO SAND COULEE AT SAND COULEE, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	910,000	75	<100	60	750	100	310	2,200	310	1,600,000
Aug										
17...	910,000	19	<100	70	800	110	290	2,000	300	1,600,000
Sep										
07...	910,000	67	<100	60	850	110	350	2,100	310	1,700,000
Oct										
13...	930,000	38	<20	110	730	--	320	5,600	380	1,490,000
Nov										
14...	890,000	16	<100	80	830	110	400	1,700	290	1,500,000
Dec										
15...	860,000	--	<100	70	900	100	370	1,900	290	1,500,000
Jan 1995										
11...	920,000	63	<100	80	830	110	320	2,200	300	1,400,000
Feb										
21...	1,000,000	76	<10	140	790	120	320	2,200	430	1,600,000
Mar										
15...	970,000	75	<10	120	770	120	310	2,200	370	1,600,000
Apr										
12...	940,000	74	<10	120	770	110	320	1,900	330	1,500,000
May										
16...	870,000	51	40	110	710	96	330	1,700	260	1,400,000
Jun										
13...	1,000,000	45	<20	110	810	110	330	2,700	310	1,600,000
Jul										
11...	1,000,000	27	<20	120	840	100	280	2,000	230	1,900,000
Aug										
16...	870,000	65	<25	130	1,000	110	400	2,200	410	1,900,000
Sep										
13...	960,000	65	<100	40	860	110	360	2,400	430	2,000,000
Oct										
11...	850,000	73	35	99	780	110	280	2,000	450	1,500,000
Nov										
28...	830,000	60	37	83	620	100	300	2,100	390	1,300,000
Jan 1996										
11...	880,000	50	38	91	660	97	330	3,900	390	1,300,000
Feb										
22...	740,000	48	<20	98	630	84	390	5,200	400	1,300,000
Apr										
03...	790,000	29	37	95	660	87	290	4,900	380	1,300,000
May										
07...	910,000	46	41	100	820	110	300	2,400	330	1,400,000
Jun										
04...	880,000	51	41	100	--	120	300	2,200	480	1,400,000
Jul										
02...	765,000	51	38	95	--	110	270	2,000	650	1,200,000
Aug										
06...	800,000	65	38	110	--	110	280	2,000	340	1,300,000
Sep										
03...	820,000	51	44	100	--	110	380	1,900	460	1,400,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 20, 472346111102401--NELSON MINE DRAIN TO SAND COULEE AT SAND COULEE, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	1.0	900	7,800	<5	4,900	<25	<1	1,500	--	16,000
Aug										
17...	<1	910	7,700	<1	5,000	<10	<1	1,600	--	18,000
Sep										
07...	<1	970	7,100	1	4,700	<10	<1	1,600	--	19,000
Oct										
13...	<10	930	8,700	<10	4,400	<5	<20	1,500	660	18,000
Nov										
14...	<1	930	8,000	<1	4,600	<5	<1	1,600	--	19,000
Dec										
15...	<1	1,000	7,100	4	4,300	<2	<1	1,500	--	18,000
Jan 1995										
11...	<1	940	8,500	3	5,100	<5	<1	1,600	--	19,000
Feb										
21...	<1	1,400	11,000	5	5,500	<2	<10	1,600	420	19,000
Mar										
15...	<1	1,100	9,900	6	5,200	<2	<10	1,600	360	19,000
Apr										
12...	<1	1,100	9,400	<2	4,800	<2	<10	1,600	330	18,000
May										
16...	<1	1,000	8,200	5	4,700	<2	<20	1,600	410	17,000
Jun										
13...	<1	1,000	8,800	<4	5,000	<5	<20	1,600	430	19,000
Jul										
11...	<1	1,100	12,000	3	5,000	--	<20	1,700	520	19,000
Aug										
16...	<1	1,000	11,000	2	5,100	--	<25	1,800	650	18,000
Sep										
13...	<1	1,400	8,200	4	4,900	--	<20	1,800	--	18,000
Oct										
11...	<1	950	8,200	4	4,400	--	<10	1,600	420	16,000
Nov										
28...	<1	920	7,900	4	4,300	--	<10	1,500	340	15,000
Jan 1996										
11...	<1	900	8,000	1	4,500	--	<20	1,500	320	16,000
Feb										
22...	<1	880	8,000	4	4,700	--	<20	1,400	380	17,000
Apr										
03...	<1	910	8,300	3	4,400	--	<12	1,500	290	16,000
May										
07...	<1	1,100	10,000	3	5,100	--	<25	1,400	350	18,000
Jun										
04...	<1	990	9,600	4	5,000	--	<25	1,500	<150	18,000
Jul										
02...	<1	890	7,600	<1	4,400	--	<25	1,500	<150	17,000
Aug										
06...	<1	970	7,500	4	4,300	--	<20	1,500	<120	16,000
Sep										
03...	<4	990	7,800	5	4,800	--	--	1,500	360	18,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 21, 472309110551201--LEWIS COULEE BELOW MINE ADIT, AT BELT, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
19...	1405	0.004	3,390	23.0	22.0	3.1	930	190	110	26	0.4
Aug											
17...	1430	.004	3,510	30.0	24.0	3.0	900	180	110	26	.4
Sep											
06...	1120	.005	3,460	23.0	15.5	3.1	900	180	110	26	.4
Oct											
14...	1020	.006	3,450	7.0	7.5	3.2	950	180	120	27	.4
Nov											
14...	1200	.004	3,510	5.5	.5	3.3	1,000	200	120	26	.4
Dec											
15...	1615	.004	3,430	-.5	1.0	3.3	930	190	110	24	.3
Jan 1995											
12...	1040	.004	3,380	6.0	3.0	3.2	1,000	200	120	26	.4
Feb											
22...	0850	.004	3,360	7.0	4.0	3.2	1,000	200	120	26	.4
Mar											
16...	1015	.004	3,330	9.0	6.0	3.1	970	190	120	26	.4
Apr											
12...	1820	.23	818	10.0	8.5	7.1	370	58	54	19	.4
May											
17...	0900	.26	874	18.0	9.5	7.2	410	62	62	19	.4
Jun											
13...	1030	.09	1,040	22.5	15.0	6.8	500	76	75	26	.5
Jul											
13...	1010	.30	1,330	17.0	14.0	7.4	600	100	85	60	1
Aug											
17...	1015	.02	2,270	18.0	14.5	4.2	740	130	100	25	.4
Sep											
14...	1140	.008	3,610	24.0	14.5	3.2	1,000	200	120	24	.3
Oct											
12...	0930	.008	3,650	5.0	8.0	3.2	950	180	120	23	.3
Nov											
29...	1100	.007	3,750	9.0	6.5	3.2	990	180	130	23	.3
Jan 1996											
12...	0910	.006	3,660	9.0	4.0	3.6	1,000	200	130	22	.3
Feb											
21...	0945	.007	3,810	8.0	3.5	3.5	1,000	200	130	22	.3
Apr											
04...	1230	.006	3,670	9.0	11.5	3.6	1,000	200	130	23	.3
May											
07...	1520	.008	3,660	13.0	18.0	3.2	990	180	130	23	.3
Jun											
05...	1330	.007	3,550	20.0	21.0	3.0	950	180	120	24	.3
Jul											
03...	0950	.007	3,670	25.0	20.5	3.0	900	180	110	21	.3
Aug											
08...	1145	.005	3,750	23.0	21.0	3.1	920	170	120	22	.3
Sep											
04	0940	.005	3,780	10.0	12.0	3.2	990	180	130	22	.3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 21, 472309110551201--LEWIS COULEE BELOW MINE ADIT, AT BELT, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
19...	6.3	41	e<1	3,000	11	<1	70	e4,030	e5.48	e0.04
Aug										
17...	6.2	45	e<1	3,000	11	<1	70	e4,050	e5.50	e.04
Sep										
06...	5.9	43	e<1	3,200	15	<1	68	e4,280	e5.82	e.06
Oct										
14...	5.6	43	e<1	3,200	10	<1	70	e4,310	e5.85	e.07
Nov										
14...	5.2	42	e<1	2,700	8.9	--	67	e3,800	e5.17	e.04
Dec										
15...	5.9	46	e<1	3,200	9.1	<1	66	e4,230	e5.75	e.05
Jan 1995										
12...	5.7	42	e<1	3,000	8.6	<1	65	e4,020	e5.46	e.04
Feb										
22...	6.0	37	e<1	3,500	11	2.2	65	e4,510	e6.13	e.04
Mar										
16...	5.7	15	e<1	3,300	10	1.8	62	e4,300	e5.84	e.04
Apr										
12...	5.0	<.1	197	200	12	<1	9.0	485	.66	.30
May										
17...	4.4	<.1	246	180	14	<1	7.9	504	.68	.35
Jun										
13...	5.0	.5	179	340	17	<1	9.6	671	.91	.16
Jul										
13...	7.7	.3	265	470	17	<1	11	914	1.24	.74
Aug										
17...	6.2	19	e<1	2,100	16	--	42	e2,770	e3.76	e.13
Sep										
14...	5.9	45	e<1	3,200	7.8	--	75	e4,360	e5.94	e.09
Oct										
12...	5.5	49	e<1	3,700	7.4	1.1	72	e4,850	e6.60	e.10
Nov										
29...	5.2	53	e<1	3,800	7.2	<1	70	e4,970	e6.76	e.09
Jan 1996										
12...	5.8	52	e<1	3,600	11	--	76	e4,870	e6.62	e.08
Feb										
21...	5.8	52	e<1	4,000	7.9	<1	75	e5,290	e7.20	e.10
Apr										
04...	5.5	49	e<1	4,000	10	1.7	71	e5,240	e7.13	e.08
May										
07...	6.2	48	e<1	4,000	9.8	1.6	70	e5,120	e6.97	e.11
Jun										
05...	6.0	48	e<1	3,900	9.9	<1	66	e4,990	e6.79	e.09
Jul										
03...	6.2	47	e<1	3,400	8.0	<1	69	e4,460	e6.06	e.08
Aug										
08...	6.2	55	e<1	3,500	9.4	2.1	71	e4,650	e6.33	e.06
Sep										
04...	5.8	50	e<1	3,600	11	2.1	75	e4,850	e6.59	e.06

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 21, 472309110551201--LEWIS COULEE BELOW MINE ADIT, AT BELT, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
19...	220,000	<1	15	21	230	<4	30	2,000	50	380,000
Aug										
17...	220,000	<1	12	19	270	--	40	1,900	40	410,000
Sep										
06...	230,000	<1	11	19	290	--	40	940	<30	430,000
Oct										
14...	230,000	<1	10	16	280	8	<30	1,600	<50	450,000
Nov										
14...	210,000	<1	23	19	260	5	40	1,000	<50	450,000
Dec										
15...	230,000	<1	10	18	290	<3	30	3,300	<30	380,000
Jan 1995										
12...	200,000	<1	11	19	230	9	40	1,100	<40	380,000
Feb										
22...	200,000	<1	12	17	220	8	30	710	<40	370,000
Mar										
16...	200,000	<1	10	17	220	10	30	660	<40	370,000
Apr										
12...	30	<1	70	<.5	50	<1	<5	20	<10	8,400
May										
17...	40	<1	75	<.5	40	<1	<5	20	<10	5,500
Jun										
13...	20	<1	77	<.5	60	<1	<5	50	<10	13,000
Jul										
13...	20	<1	130	<.5	100	<1	<5	20	<10	2,200
Aug										
17...	110,000	<1	44	11	200	9	30	370	30	230,000
Sep										
14...	250,000	<5	9	21	250	21	50	770	80	470,000
Oct										
12...	240,000	<5	19	23	260	17	50	750	60	490,000
Nov										
29...	260,000	<1	20	20	270	17	50	760	60	480,000
Jan 1996										
12...	280,000	<2	22	21	270	17	60	700	<50	530,000
Feb										
21...	280,000	<2	21	25	250	15	50	660	<50	560,000
Apr										
04...	260,000	<1	22	21	250	14	50	630	<50	530,000
May										
07...	250,000	<1	19	24	270	16	40	800	<50	440,000
Jun										
05...	230,000	<1	21	20	--	15	<30	710	<100	440,000
Jul										
03...	220,000	<1	21	20	--	17	<30	730	<100	470,000
Aug										
08...	250,000	2	20	32	--	16	<50	800	<100	490,000
Sep										
04...	260,000	<1	19	24	270	15	50	770	<80	550,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 21, 472309110551201--LEWIS COULEE BELOW MINE ADIT AT BELT, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
19...	<10	390	1,700	<10	1,300	<5	<4	1,200	82	4,600
Aug										
17...	<10	430	1,600	<10	1,300	<5	3	1,200	110	4,400
Sep										
06...	<10	410	1,500	<10	1,300	<1	<3	1,200	100	4,400
Oct										
14...	<10	480	1,500	<10	1,300	<1	<5	1,200	71	4,400
Nov										
14...	<10	440	1,900	<10	1,400	<2	<5	1,200	84	4,700
Dec										
15...	<10	380	1,700	<10	1,300	<1	<3	1,100	67	4,500
Jan 1995										
12...	<10	400	2,100	<10	1,300	<1	<4	1,300	82	4,400
Feb										
22...	2	400	1,900	<1	1,300	<1	4	1,300	64	4,200
Mar										
16...	2	400	1,600	<1	1,200	<1	<3	1,200	68	4,200
Apr										
12...	<1	47	68	2	20	2	1	400	<6	55
May										
17...	<1	54	56	2	30	2	<1	470	<6	46
Jun										
13...	<1	82	160	1	60	2	<1	590	<6	110
Jul										
13...	<1	120	85	<1	20	--	<1	980	<6	32
Aug										
17...	<1	240	1,000	<1	760	--	<3	950	<18	2,300
Sep										
14...	2	390	1,500	<1	1,500	--	<5	1,200	<30	5,000
Oct										
12...	2	420	1,500	<1	1,400	--	<10	1,300	95	4,800
Nov										
29...	<1	430	1,500	<1	1,500	--	<5	1,300	<30	5,000
Jan 1996										
12...	1	410	1,600	<1	1,600	--	6	1,300	62	5,400
Feb										
21...	2	440	1,500	<1	1,600	--	<5	1,400	59	5,600
Apr										
04...	1	420	1,600	<1	1,500	--	<5	1,400	61	5,000
May										
07...	2	440	1,400	1	1,400	--	<5	1,400	30	4,800
Jun										
05...	2	420	1,400	<1	1,400	--	<6	1,300	42	4,500
Jul										
03...	2	440	1,400	<1	1,400	--	<6	1,300	<36	4,500
Aug										
08...	2	460	1,300	<1	1,400	--	18	1,300	<60	4,800
Sep										
04...	2	450	1,500	<1	1,600	--	<8	1,300	<48	5,300

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 22, 472446111085101--PIPE SPRING AT TRACY, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	1105	0.06	1,680	24.0	10.5	2.9	480	81	68	22	0.4
Aug											
16...	1640	.05	1,620	26.0	11.0	3.0	460	76	66	22	.4
Sep											
07...	0955	.05	1,610	21.0	10.5	2.7	480	78	69	22	.4
Oct											
14...	0800	.05	1,670	5.0	11.0	2.9	480	79	68	21	.4
Nov											
15...	0855	.04	1,720	4.0	11.5	2.9	490	83	68	22	.4
Dec											
15...	1415	.04	1,710	2.5	11.0	2.8	480	83	67	22	.4
Jan 1995											
11...	1610	.04	1,700	5.5	11.0	2.8	500	84	71	22	.4
Feb											
22...	1155	.04	1,730	13.0	10.5	2.8	480	80	68	23	.5
Mar											
15...	1310	.04	1,710	13.0	10.5	2.9	490	83	69	23	.5
Apr											
12...	0900	.03	1,750	.5	10.5	2.8	510	86	72	22	.4
May											
17...	1255	.10	1,770	20.0	10.5	2.7	510	88	71	22	.4
Jun											
12...	1335	.61	2,360	25.0	11.0	2.4	540	91	76	25	.5
Jul											
12...	0900	.34	1,880	17.0	11.0	2.8	460	73	68	25	.5
Aug											
16...	1100	.18	1,660	19.0	11.0	2.9	430	67	64	24	.5
Sep											
13...	1600	.11	1,550	22.0	11.0	3.0	410	63	62	23	.5
Oct											
10...	1000	.09	1,520	10.0	10.5	2.9	420	65	63	23	.5
Nov											
28...	1530	.08	1,470	-4.0	10.5	2.9	420	65	63	24	.5
Jan 1996											
11...	1045	.06	1,450	6.5	10.5	2.9	430	69	62	21	.4
Feb											
20...	1500	.06	1,480	10.0	10.5	2.9	420	67	60	23	.5
Apr											
03...	0845	.05	1,430	0.0	10.5	2.9	430	69	62	23	.5
May											
07...	1100	.05	1,430	2.5	8.5	3.0	420	72	57	19	.4
Jun											
04...	0830	.05	1,440	18.0	11.0	3.0	440	72	64	23	.5
Jul											
02...	1030	.05	1,420	22.0	10.5	3.1	450	71	65	21	.4
Aug											
07...	0910	.05	1,410	18.0	11.0	3.1	430	67	63	21	.4
Sep											
03...	1630	.05	1,440	23.0	10.5	3.1	460	73	68	23	.5

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 22, 472446111085101--PIPE SPRING AT TRACY, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
20...	2.6	6.4	e<1	790	5.6	0.9	49	e1,070	e1.45	e0.17
Aug										
16...	2.7	6.3	e<1	810	5.6	.8	47	e1,080	e1.46	e.16
Sep										
07...	2.5	6.2	e<1	890	5.4	.6	47	e1,160	e1.58	e.16
Oct										
14...	2.5	6.1	e<1	910	5.6	2.0	50	e1,180	e1.61	e.15
Nov										
15...	2.5	--	e<1	830	5.6	2.0	49	e1,110	e1.51	e.13
Dec										
15...	2.5	6.5	e<1	830	5.6	.6	51	e1,110	e1.51	e.12
Jan 1995										
11...	2.4	6.4	e<1	860	5.7	2.1	51	e1,150	e1.56	e.12
Feb										
22...	2.6	6.3	e<1	970	5.9	1.6	50	e1,240	e1.69	e.12
Mar										
15...	2.6	6.6	e<1	950	8.0	1.7	51	e1,230	e1.68	e.11
Apr										
12...	2.6	6.3	e<1	950	8.1	1.7	54	e1,240	e1.69	e.11
May										
17...	2.5	7.6	e<1	1,000	7.2	1.6	54	e1,300	e1.77	e.35
Jun										
12...	1.7	13	e<1	1,300	5.9	1.8	54	e1,670	e2.27	e2.75
Jul										
12...	2.1	7.6	e<1	1,000	6.6	2.0	42	e1,270	e1.73	e1.17
Aug										
16...	4.9	5.8	e<1	910	7.9	1.2	39	e1,160	e1.58	e.56
Sep										
13...	2.2	5.3	e<1	800	6.3	1.0	38	e1,030	e1.40	e.31
Oct										
10...	2.2	5.2	e<1	700	6.3	1.2	39	e933	e1.27	e.23
Nov										
28...	2.2	4.4	e<1	720	5.8	.8	38	e949	e1.29	e.19
Jan 1996										
11...	2.4	4.5	e<1	710	5.5	.5	41	e944	e1.28	e.17
Feb										
20...	2.3	4.5	e<1	640	6.2	2.5	41	e875	e1.19	e.13
Apr										
03...	2.3	4.4	e<1	720	7.1	.6	43	e957	e1.30	e.14
May										
07...	2.6	4.4	e<1	710	6.5	.6	41	e938	e1.28	e.13
Jun										
04...	2.5	4.4	e<1	670	5.8	.7	44	e911	e1.24	e.12
Jul										
02...	2.7	4.2	e<1	780	5.6	.8	45	e1,020	e1.39	e.15
Aug										
07...	2.8	4.5	e<1	670	6.2	.6	41	e901	e1.23	e.13
Sep										
03...	2.5	5.0	e<1	650	6.0	.9	44	e898	e1.22	e.12

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 22, 472446111085101--PIPE SPRING AT TRACY, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	36,000	<1	3	7	170	<10	<5	200	20	6,600
Aug										
16...	36,000	<1	3	5	170	<10	<5	170	10	6,300
Sep										
07...	36,000	<1	3	7	160	<10	<5	190	10	6,200
Oct										
14...	35,000	<1	3	7	170	<10	<5	200	20	5,900
Nov										
15...	36,000	<1	3	7	160	<10	<5	190	10	6,100
Dec										
15...	36,000	<1	3	7	160	<10	<5	200	10	6,000
Jan 1995										
11...	37,000	<1	4	7	170	<10	5	210	20	6,000
Feb										
22...	34,000	<5	4	7	160	8	<5	210	<10	5,900
Mar										
15...	36,000	<1	4	7	170	8	<5	210	10	6,000
Apr										
12...	36,000	<1	4	7	170	9	<5	220	20	6,400
May										
17...	41,000	<1	7	8	180	9	7	220	20	8,000
Jun										
12...	67,000	<1	<3	12	180	16	<20	320	60	39,000
Jul										
12...	38,000	<1	<2	7	140	12	<5	220	20	12,000
Aug										
16...	31,000	<1	2	6	130	10	<5	180	20	6,400
Sep										
13...	28,000	<1	2	5	150	10	<5	190	20	5,000
Oct										
10...	25,000	<1	5	5	150	9	<5	160	10	4,700
Nov										
28...	23,000	<1	5	4	140	8	<5	150	10	4,200
Jan 1996										
11...	25,000	1	6	5	150	7	<5	190	10	4,000
Feb										
20...	26,000	<1	5	5	150	7	<5	150	<10	3,700
Apr										
03...	23,000	<1	6	5	150	7	<5	150	10	3,700
May										
07...	23,000	<1	5	4	160	7	<5	150	<10	3,400
Jun										
04...	22,000	<1	4	5	150	7	<5	170	10	3,800
Jul										
02...	22,000	<1	4	5	150	8	<5	170	10	3,500
Aug										
07...	23,000	<1	6	5	140	7	<5	150	10	3,500
Sep										
03...	24,000	<1	6	5	150	7	<5	150	10	3,700

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 22, 472446111085101--PIPE SPRING AT TRACY, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	<10	140	600	<10	360	<1	2	610	<6	1,200
Aug										
16...	<10	140	590	<10	350	<5	<1	610	<6	1,100
Sep										
07...	<10	140	600	<10	360	<1	2	610	<6	1,100
Oct										
14...	<10	140	580	<10	360	<2	<1	600	<6	1,100
Nov										
15...	<10	150	630	<10	380	1	<1	610	<6	1,200
Dec										
15...	<10	150	610	<10	380	1	<1	620	<6	1,100
Jan 1995										
11...	<10	150	630	<10	400	<2	<1	670	<6	1,200
Feb										
22...	<1	160	600	<1	360	1	<1	650	<6	1,100
Mar										
15...	<1	160	620	<1	370	1	<1	660	<6	1,100
Apr										
12...	1	160	650	<1	400	1	<1	670	<6	1,200
May										
17...	<1	160	660	<1	450	<1	<1	680	<6	1,300
Jun										
12...	<1	160	930	<1	600	<1	<3	670	<18	1,900
Jul										
12...	<1	130	650	<1	380	--	<1	540	<6	1,200
Aug										
16...	<1	120	570	<1	330	--	<1	530	<6	1,000
Sep										
13...	<1	110	530	<2	290	--	<1	500	<6	890
Oct										
10...	<1	120	520	<1	310	--	2	510	<6	930
Nov										
28...	<1	120	500	<1	280	--	<1	540	<6	840
Jan 1996										
11...	<1	110	510	<1	290	--	<1	530	<6	910
Feb										
20...	<1	120	500	<1	290	--	<1	550	<6	850
Apr										
03...	<1	130	500	<1	280	--	<1	550	<6	820
May										
07...	1	110	480	2	280	--	<1	490	<6	860
Jun										
04...	2	130	500	<1	290	--	<1	550	<6	860
Jul										
02...	<1	120	500	<1	290	--	<1	580	<6	880
Aug										
07...	<1	130	480	<1	280	--	<1	550	<6	810
Sep										
03...	<1	130	520	<1	300	--	1	580	<6	920

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 23, 472447111085301--STOCK TANK SPRING AT TRACY, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	1055	--	782	24.0	13.0	7.3	400	63	59	14	0.3
Aug											
16...	1630	--	788	26.0	16.0	7.8	390	61	58	15	.3
Sep											
07...	0945	--	782	21.0	12.0	7.2	400	62	59	15	.3
Oct											
14...	0750	--	785	5.0	9.5	7.3	400	64	59	14	.3
Nov											
15...	0910	0.002	798	4.5	7.0	7.3	410	68	59	15	.3
Dec											
15...	1405	.002	780	2.5	4.5	7.5	400	65	58	14	.3
Jan 1995											
11...	1620	.002	781	5.5	4.0	7.2	400	64	59	14	.3
Feb											
22...	1145	.002	777	13.0	5.0	7.5	390	63	57	14	.3
Mar											
15...	1305	.002	785	13.0	5.5	7.5	380	61	55	14	.3
Apr											
12...	0850	.002	848	0.0	5.0	7.2	430	73	61	15	.3
May											
17...	1250	.002	820	20.0	10.5	7.1	420	68	60	15	.3
Jun											
12...	1325	.002	967	25.0	12.0	7.1	500	83	72	17	.3
Jul											
12...	0830	.003	938	16.0	10.5	7.3	500	84	70	16	.3
Aug											
16...	1045	.003	883	19.0	11.5	7.4	440	72	64	15	.3
Sep											
13...	1550	.002	836	22.0	12.5	7.4	430	68	62	16	.3
Oct											
10...	0940	.002	824	10.0	9.0	7.4	410	66	60	15	.3
Nov											
28...	1520	.002	761	-4.0	6.0	7.4	390	61	57	15	.3
Jan 1996											
11...	1030	.002	736	6.0	4.5	7.5	380	58	56	15	.3
Feb											
20...	1450	.002	755	10.0	6.0	7.6	390	61	57	14	.3
Apr											
03...	0830	.002	740	0.0	4.0	7.4	380	61	55	14	.3
May											
07...	1050	.002	742	6.0	6.5	7.4	370	59	55	15	.3
Jun											
04...	0820	.002	756	18.0	9.5	7.3	390	63	57	15	.3
Jul											
02...	1020	.002	769	22.0	12.5	7.5	390	60	57	14	.3
Aug											
07...	0900	.002	764	18.0	11.0	7.2	350	56	52	13	.3
Sep											
03...	1615	--	791	23.0	13.5	7.3	390	62	57	14	.3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 23, 472447111085301--STOCK TANK SPRING AT TRACY, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
20...	2.1	0.3	230	170	5.7	0.8	10	463	0.63	--
Aug										
16...	2.1	.2	229	170	5.9	1.0	9.6	461	.63	--
Sep										
07...	2.0	.2	233	170	5.7	.8	10	465	.63	--
Oct										
14...	2.0	.1	237	190	6.4	.9	11	490	.67	--
Nov										
15...	2.1	.1	233	180	6.4	1.2	11	483	.66	<.01
Dec										
15...	2.0	.2	227	170	6.1	1.0	10	463	.63	<.01
Jan 1995										
11...	1.9	.3	225	170	6.5	1.1	10	462	.63	<.01
Feb										
22...	1.8	<.1	226	140	5.6	.8	10	428	.58	<.01
Mar										
15...	2.0	<.1	227	140	5.5	.9	9.6	425	.58	<.01
Apr										
12...	2.4	<.1	235	170	6.1	.9	11	481	.65	<.01
May										
17...	2.1	<.1	231	190	6.4	1.0	10	492	.67	<.01
Jun										
12...	2.3	.1	217	290	5.7	.4	11	612	.83	<.01
Jul										
12...	2.7	.1	216	300	5.4	.8	13	622	.85	<.01
Aug										
16...	2.3	.2	222	240	5.8	1.0	12	546	.74	<.01
Sep										
13...	2.4	<.1	226	210	5.8	1.0	12	513	.70	<.01
Oct										
10...	2.5	<.1	227	200	6.0	1.0	12	499	.68	<.01
Nov										
28...	--	--	--	--	--	--	11	--	--	--
Jan 1996										
11...	1.9	.4	222	160	5.3	1.1	11	442	.60	<.01
Feb										
20...	1.9	.3	225	160	5.9	.5	11	447	.61	<.01
Apr										
03...	2.0	<.1	224	160	5.9	1.2	11	445	.61	<.01
May										
07...	2.0	.2	228	160	5.9	1.1	11	446	.61	<.01
Jun										
04...	2.0	<.1	234	160	5.5	1.1	11	456	.62	<.01
Jul										
02...	1.8	.2	235	150	4.9	1.1	11	441	.60	<.01
Aug										
07...	2.3	<.1	239	150	5.7	1.1	9.7	434	.59	<.01
Sep										
03...	2.7	<.1	236	160	6.3	1.0	11	456	.62	<.01

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 23, 472447111085301--STOCK TANK SPRING AT TRACY, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	<10	<1	51	<0.5	90	<1	<5	<3	<10	23
Aug										
16...	<10	<1	51	<.5	80	<1	<5	<3	<10	28
Sep										
07...	<10	<1	51	<.5	80	<1	<5	<3	<10	6
Oct										
14...	<10	<1	48	<.5	70	<1	<5	<3	<10	<3
Nov										
15...	<10	<1	48	<.5	70	2	<5	<3	<10	<3
Dec										
15...	<10	<1	46	<.5	80	<1	<5	<3	<10	<3
Jan 1995										
11...	10	<1	48	<.5	70	<1	<5	<3	<10	7
Feb										
22...	<10	<1	46	<.5	60	<1	<5	<1	<10	3
Mar										
15...	<10	<1	44	<.5	70	<1	<5	<1	<10	<3
Apr										
12...	<10	<1	48	<.5	60	<1	<5	<1	<10	3
May										
17...	<10	<1	48	<.5	80	<1	<5	<3	<10	<3
Jun										
12...	40	<1	56	<.5	70	--	<5	--	<10	4
Jul										
12...	<10	<1	50	<.5	80	<1	<5	<3	<10	8
Aug										
16...	<10	<1	49	<.5	100	4.0	<5	<3	<10	4
Sep										
13...	10	<1	49	<.5	90	<1	<5	<3	<10	9
Oct										
10...	20	<1	46	<.5	70	<1	<5	<3	<10	<3
Nov										
28...	<10	--	44	<.5	--	--	<5	--	<10	<3
Jan 1996										
11...	<10	<2	43	<.5	60	<1	<5	<3	<10	<3
Feb										
20...	10	<1	42	<.5	80	<1	<5	<3	<10	7
Apr										
03...	<10	<1	41	<.5	50	<1	<5	<3	<10	6
May										
07...	<10	<1	45	<.5	70	<1	<5	<3	<10	<3
Jun										
04...	6	<1	45	<.5	70	<1	<5	<3	<10	<3
Jul										
02...	<5	<1	47	<.5	80	<1	<5	<3	<10	<3
Aug										
07...	<5	<1	46	<.5	70	1	<5	<3	<10	<3
Sep										
03...	10	<1	51	<.5	80	2	<5	<3	<10	10

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 23, 472447111085301--STOCK TANK SPRING AT TRACY, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	<10	33	1	<10	<10	2	<1	510	<6	7
Aug										
16...	10	35	1	<10	<10	<5	<1	520	<6	12
Sep										
07...	<10	37	<1	<10	<10	3	<1	520	<6	7
Oct										
14...	<10	33	<1	<10	<10	2	<1	500	<6	9
Nov										
15...	11	34	<1	<10	10	2	<1	500	<6	14
Dec										
15...	<10	35	1	20	<10	2	<1	490	<6	11
Jan 1995										
11...	<10	36	<1	<10	<10	2	<1	520	<6	9
Feb										
22...	<1	33	<1	2	<10	3	<1	490	<6	10
Mar										
15...	<1	32	<1	2	<10	2	<1	470	<6	7
Apr										
12...	<1	35	4	2	<10	3	1	520	<6	11
May										
17...	<10	38	<1	10	10	3	<1	530	<6	14
Jun										
12...	--	39	<1	--	<10	3	<1	660	<6	19
Jul										
12...	<10	37	3	<10	<10	--	<1	600	<6	17
Aug										
16...	<10	36	<1	20	<10	--	<1	570	<6	15
Sep										
13...	<10	37	3	<10	<10	--	<1	540	<6	18
Oct										
10...	<10	37	2	<10	10	--	<1	510	<6	25
Nov										
28...	--	37	<1	--	<10	--	<1	500	<6	10
Jan 1996										
11...	<10	35	<1	20	10	--	<1	490	<6	13
Feb										
20...	<10	34	<1	<10	<10	--	<1	460	<6	15
Apr										
03...	10	33	<1	<10	20	--	<1	460	<6	10
May										
07...	10	34	<1	<10	<10	--	<1	510	<6	13
Jun										
04...	20	37	<1	<10	<10	--	<1	490	<6	14
Jul										
02...	<10	36	<1	10	<10	--	2	510	<6	9
Aug										
07...	30	33	<1	<10	<10	--	<1	480	<6	13
Sep										
03...	10	34	5	<10	<10	--	1	510	<6	9

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 24, 472513111082501--JOHNSON BADWATER MINE SMALL WETLANDS INFLOW NEAR TRACY, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	0730	0.01	2,270	15.0	11.0	3.8	960	170	130	24	0.3
Aug											
16...	1425	.007	2,290	33.0	11.0	3.9	960	170	130	26	.4
Sep											
07...	0845	.01	2,240	17.0	11.5	3.7	1,000	170	140	25	.3
Oct											
13...	1755	.008	2,260	9.5	10.5	3.9	990	180	130	24	.3
Nov											
15...	1010	.01	2,300	9.0	10.0	3.7	990	180	130	25	.3
Dec											
16...	0830	.01	2,270	4.5	9.0	4.0	990	180	130	24	.3
Jan 1995											
12...	0805	.01	2,210	1.0	9.5	3.8	1,000	180	140	25	.3
Feb											
22...	1345	.01	2,260	12.0	9.0	3.7	960	170	130	24	.3
Mar											
15...	1145	.01	2,230	13.0	8.0	3.9	960	170	130	25	.4
Apr											
12...	0755	.01	2,250	-.5	9.0	3.8	990	180	130	25	.3
May											
17...	1635	.01	2,260	27.0	10.0	3.6	960	170	130	24	.3
Jun											
12...	1230	.01	2,180	24.0	10.0	3.5	920	170	120	25	.4
Jul											
11...	1200	.01	2,110	18.0	10.5	3.8	900	160	120	24	.3
Aug											
15...	1740	.01	2,140	22.0	11.0	3.8	900	160	120	24	.3
Sep											
12...	1645	.01	2,120	25.0	11.0	3.8	850	140	120	23	.3
Oct											
10...	1050	.009	2,120	10.0	10.0	3.8	870	150	120	24	.4
Nov											
27...	1350	.01	2,110	-2.0	9.5	3.8	940	160	130	24	.3
Jan 1996											
11...	1420	.01	2,110	7.5	9.0	3.8	920	170	120	22	.3
Feb											
21...	1310	.01	2,160	12.0	8.5	3.8	940	160	130	25	.4
Apr											
03...	0730	.01	2,100	-1.0	8.5	3.8	920	170	120	25	.4
May											
06...	1630	.01	2,150	16.0	9.5	3.8	900	160	120	24	.3
Jun											
04...	0715	.01	2,120	17.0	10.0	3.8	900	160	120	23	.3
Jul											
02...	1430	.009	2,180	30.0	10.5	3.9	940	160	130	25	.4
Aug											
07...	1000	.009	2,100	20.0	11.0	3.7	870	150	120	24	.4
Sep											
03...	1220	.009	2,100	18.0	11.0	3.8	940	160	130	24	.3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 24, 472513111082501--JOHNSON BADWATER MINE SMALL WETLANDS INFLOW NEAR TRACY, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
20...	7.5	12	e<1	1,500	6.1	7.4	49	e2,090	e2.85	e0.06
Aug										
16...	7.0	13	e<1	1,600	5.9	5.1	48	e2,190	e2.98	e.04
Sep										
07...	7.5	13	e<1	1,700	6.2	6.6	48	e2,300	e3.13	e.07
Oct										
13...	7.1	11	e<1	2,000	6.6	7.0	51	e2,590	e3.53	e.06
Nov										
15...	7.4	12	e<1	1,800	6.8	6.3	48	e2,400	e3.27	e.06
Dec										
16...	7.5	12	e<1	1,600	6.3	4.6	49	e2,190	e2.99	e.07
Jan 1995										
12...	6.8	14	e<1	1,700	5.6	6.8	49	e2,310	e3.14	e.06
Feb										
22...	7.4	11	e<1	1,600	6.2	6.1	49	e2,180	e2.97	e.06
Mar										
15...	7.4	11	e<1	2,000	8.1	5.6	47	e2,580	e3.51	e.07
Apr										
12...	7.0	11	e<1	1,800	8.9	6.2	49	e2,390	e3.26	e.06
May										
17...	7.0	12	e<1	1,700	9.2	5.6	49	e2,270	e3.09	e.07
Jun										
12...	6.9	11	e<1	1,900	6.0	5.7	48	e2,470	e3.36	e.07
Jul										
11...	7.2	11	e<1	1,600	6.4	3.2	50	e2,150	e2.92	e.06
Aug										
15...	7.5	11	e<1	1,600	8.3	5.8	50	e2,150	e2.93	e.06
Sep										
12...	6.0	10	e<1	1,400	6.0	5.9	47	e1,920	e2.61	e.05
Oct										
10...	6.9	12	e<1	1,500	5.4	5.4	48	e2,040	e2.77	e.05
Nov										
27...	6.4	12	e<1	1,600	5.5	7.4	47	e2,160	e2.94	e.06
Jan 1996										
11...	7.1	12	e<1	1,700	9.8	5.4	50	e2,270	e3.09	e.06
Feb										
21...	6.6	11	e<1	1,400	6.1	8.3	51	e1,970	e2.68	e.05
Apr										
03...	6.8	11	e<1	1,500	7.6	6.7	50	e2,060	e2.81	e.06
May										
06...	6.8	11	e<1	1,600	8.2	6.3	49	e2,150	e2.92	e.06
Jun										
04...	6.7	11	e<1	1,400	6.3	7.0	49	e1,950	e2.65	e.05
Jul										
02...	7.4	11	e<1	1,500	5.8	5.6	52	e2,070	e2.82	e.05
Aug										
07...	7.4	12	e<1	1,500	7.2	6.4	47	e2,040	e2.77	e.05
Sep										
03...	7.1	9.7	e<1	1,400	8.5	6.4	49	e1,960	e2.67	e.05

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 24, 472513111082501--JOHNSON BADWATER MINE SMALL WETLANDS INFLOW NEAR TRACY, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	57,000	<1	9	27	280	<3	<20	--	<30	130,000
Aug										
16...	55,000	<1	9	19	320	--	<20	--	<30	130,000
Sep										
07...	55,000	<1	9	25	310	--	<20	--	<30	130,000
Oct										
13...	55,000	<1	9	26	320	<3	<20	--	<30	130,000
Nov										
15...	54,000	<1	8	25	300	--	<20	--	<30	130,000
Dec										
16...	56,000	<1	9	25	320	<3	<20	--	<30	130,000
Jan 1995										
12...	54,000	<1	9	27	300	--	<20	--	<30	130,000
Feb										
22...	52,000	<1	9	24	270	3	<20	520	<30	130,000
Mar										
15...	51,000	<1	8	24	280	3	<20	430	<30	130,000
Apr										
12...	50,000	<1	9	24	290	3	<20	490	<30	130,000
May										
17...	50,000	<1	15	25	290	2	<20	470	<30	120,000
Jun										
12...	52,000	1	8	26	260	2	<20	480	<30	130,000
Jul										
11...	48,000	<1	8	23	270	3	<20	440	<30	120,000
Aug										
15...	49,000	<1	9	25	270	2	<10	450	<20	120,000
Sep										
12...	52,000	<1	8	23	290	2	<10	500	<20	110,000
Oct										
10...	49,000	<1	15	23	290	2	20	440	<30	120,000
Nov										
27...	51,000	<1	14	23	280	2	<20	400	<30	120,000
Jan 1996										
11...	57,000	<2	15	23	280	2	<20	450	<30	120,000
Feb										
21...	56,000	<1	10	26	270	2	<10	420	<20	120,000
Apr										
03...	49,000	<1	15	24	300	2	<10	400	<20	120,000
May										
06...	46,000	<1	14	23	300	2	<20	430	<30	120,000
Jun										
04...	48,000	<1	14	23	250	2	<20	450	<40	120,000
Jul										
02...	50,000	<1	9	26	230	2	<20	440	<30	130,000
Aug										
07...	48,000	<1	15	24	250	2	<10	440	<20	120,000
Sep										
04...	48,000	<1	15	24	200	2	<10	440	<20	120,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 24, 472513111082501--JOHNSON BADWATER MINE SMALL WETLANDS INFLOW NEAR TRACY, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	<10	360	980	<10	1,100	<1	<3	1,200	19	3,100
Aug										
16...	<10	380	970	<10	980	<5	<3	1,200	32	2,900
Sep										
07...	<10	380	990	<10	1,100	<1	4	1,200	33	3,200
Oct										
13...	<10	360	970	<10	1,000	<1	<3	1,200	26	3,200
Nov										
15...	<10	390	1,000	<10	1,100	<1	<3	1,200	25	3,300
Dec										
16...	<10	370	970	<10	980	<1	<3	1,200	21	3,000
Jan 1995										
12...	<10	380	1,000	<10	1,100	<1	<3	1,300	34	3,200
Feb										
22...	<1	370	970	1	1,000	<1	--	1,200	21	3,100
Mar										
15...	<1	380	950	<1	960	<1	<3	1,200	6	2,800
Apr										
12...	<1	370	980	<1	1,000	<1	<3	1,200	<6	3,000
May										
17...	<1	380	970	<1	1,000	<1	<3	1,200	10	2,900
Jun										
12...	<1	380	960	<1	980	<1	<3	1,200	<18	3,000
Jul										
11...	<1	360	940	<1	890	--	<3	1,100	<18	2,800
Aug										
15...	<1	360	890	<1	920	--	<2	1,100	13	2,700
Sep										
12...	<1	340	840	<1	910	--	<2	1,000	<12	2,500
Oct										
10...	<1	360	890	<1	880	--	<3	1,100	<18	2,800
Nov										
27...	<1	370	920	<1	940	--	<3	1,200	<18	2,800
Jan 1996										
11...	<1	320	970	1	980	--	<3	1,100	<18	3,200
Feb										
21...	<1	370	940	<1	970	--	3	1,100	15	2,800
Apr										
03...	<1	370	940	<1	970	--	<2	1,200	<12	2,800
May										
06...	<1	380	910	<1	970	--	<3	1,100	<18	2,700
Jun										
04...	<1	360	910	<1	960	--	<4	1,100	<24	2,800
Jul										
02...	<1	360	930	<1	970	--	<3	1,200	<18	2,900
Aug										
07...	<1	370	860	<1	900	--	<2	1,100	<12	2,600
Sep										
03...	<1	360	900	<1	930	--	3	1,100	<12	2,800

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 25, 472513111082901--JOHNSON BADWATER MINE LARGE WETLANDS INFLOW NEAR TRACY, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	0840	0.01	4,330	18.0	10.0	2.7	1,000	170	150	24	0.3
Aug											
16...	1450	.01	4,350	33.0	11.0	2.8	1,000	160	150	25	.3
Sep											
07...	0915	.01	4,240	16.5	11.5	2.3	1,100	170	160	25	.3
Oct											
13...	1820	.004	4,430	9.0	11.0	2.7	1,000	170	150	24	.3
Nov											
15...	1040	.01	4,520	9.0	11.0	2.5	1,100	180	150	25	.3
Dec											
16...	0855	.009	4,380	5.0	10.0	2.7	1,100	180	150	24	.3
Jan 1995											
12...	0830	.008	4,380	1.0	10.5	2.6	1,100	190	160	25	.3
Feb											
22...	1405	.008	4,320	13.0	9.0	2.4	1,000	170	150	26	.4
Mar											
15...	1205	.006	4,350	13.0	9.0	2.6	1,100	180	160	26	.3
Apr											
12...	0820	.005	4,380	-1.0	9.0	2.6	1,100	190	160	27	.3
May											
17...	1650	.007	4,320	27.0	9.0	2.4	1,100	180	160	25	.3
Jun											
12...	1300	.007	4,050	24.0	9.0	2.6	1,100	180	160	26	.3
Jul											
11...	1140	.01	3,620	18.0	9.5	2.7	980	160	140	25	.3
Aug											
15...	1810	.01	3,620	21.0	10.5	2.7	910	150	130	24	.3
Sep											
12...	1720	.01	3,560	25.0	10.5	2.7	910	150	130	24	.3
Oct											
10...	1130	.01	3,640	11.0	10.5	2.6	950	150	140	24	.3
Nov											
27...	1410	.01	3,890	-2.0	10.0	2.5	990	150	150	25	.3
Jan 1996											
11...	1445	.01	4,110	7.5	9.5	2.5	1,000	160	150	24	.3
Feb											
21...	1340	.01	4,280	12.0	9.0	2.6	1,100	170	160	25	.3
Apr											
03...	0800	.01	4,340	-1.0	8.5	2.5	1,000	170	150	25	.3
May											
06...	1700	.01	4,390	15.0	9.0	2.6	1,200	180	170	27	.3
Jun											
04...	0800	.01	4,340	18.0	9.0	2.5	1,100	160	160	23	.3
Jul											
02...	1500	.01	4,440	30.0	9.5	2.6	1,200	180	170	23	.3
Aug											
07...	1030	.01	4,180	21.0	10.5	2.6	1,100	170	160	25	.3
Sep											
04...	1240	.01	4,190	18.0	11.0	2.6	1,100	170	170	26	.3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 25, 472513111082901--JOHNSON BADWATER MINE LARGE WETLANDS INFLOW NEAR TRACY, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
20...	1.4	48	e<1	3,200	6.7	<1	77	e4,220	e5.74	e0.15
Aug										
16...	1.3	48	e<1	3,300	6.7	<1	76	e4,320	e5.88	e.15
Sep										
07...	1.3	52	e<1	3,800	7.1	2.9	76	e4,860	e6.61	e.16
Oct										
13...	1.3	46	e<1	4,000	7.2	3.9	81	e5,060	e6.88	e.05
Nov										
15...	1.2	47	e<1	3,900	6.0	2.8	76	e4,980	e6.77	e.13
Dec										
16...	1.5	47	e<1	3,400	6.1	--	77	e4,450	e6.05	e.11
Jan 1995										
12...	1.1	46	e<1	3,700	5.4	3.4	77	e4,780	e6.50	e.11
Feb										
22...	1.8	47	e<1	4,700	21	5.0	74	e5,730	e7.80	e.12
Mar										
15...	1.7	44	e<1	4,600	7.6	5.1	74	e5,620	e7.64	e.10
Apr										
12...	1.9	44	e<1	4,700	20	5.1	74	e5,760	e7.84	e.08
May										
17...	2.0	42	e<1	4,300	14	5.1	74	e5,330	e7.24	e.10
Jun										
12...	2.3	42	e<1	4,200	5.7	6.1	74	e5,260	e7.15	e.10
Jul										
11...	1.9	32	e<1	2,800	5.6	2.2	72	e3,630	e4.94	e.12
Aug										
15...	1.0	30	e<1	2,800	12	<1	73	e3,530	e4.80	e.11
Sep										
12...	1.1	30	e<1	2,600	6.3	3.2	71	e3,340	e4.54	e.10
Oct										
10...	1.5	32	e<1	2,600	6.1	1.8	73	e3,380	e4.60	e.10
Nov										
27...	1.2	38	e<1	2,900	5.7	3.1	73	e3,750	e5.10	e.11
Jan 1996										
11...	1.2	44	e<1	3,400	9.8	1.9	79	e4,370	e5.94	e.13
Feb										
21...	1.3	46	e<1	3,500	6.2	3.7	83	e4,550	e6.18	e.14
Apr										
03...	1.4	45	e<1	3,200	8.2	<3	79	e4,250	e5.78	e.13
May										
06...	1.6	46	e<1	3,500	7.2	3.3	87	e4,570	e6.22	e.12
Jun										
04...	1.5	47	e<1	3,300	5.8	2.4	74	e4,350	e5.92	e.12
Jul										
02...	1.7	48	e<1	3,500	4.9	1.1	84	e4,650	e6.32	e.13
Aug										
07...	2.0	52	e<1	3,200	5.9	4.3	75	e4,250	e5.78	e.11
Sep										
04...	1.8	43	e<1	3,300	8.5	4.6	77	e4,360	e5.92	e.12

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 25, 472513111082901--JOHNSON BADWATER MINE LARGE WETLANDS INFLOW NEAR TRACY, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	230,000	<1	<3	29	280	61	40	2,400	190	350,000
Aug										
16...	230,000	<1	<3	21	350	100	40	1,100	200	360,000
Sep										
07...	240,000	<1	<3	30	380	95	30	1,800	180	360,000
Oct										
13...	240,000	<1	<4	32	380	58	30	3,800	180	360,000
Nov										
15...	230,000	<1	<10	32	360	100	<50	2,000	160	390,000
Dec										
16...	230,000	<1	<3	32	380	70	40	2,400	150	360,000
Jan 1995										
12...	230,000	<1	<4	36	330	95	30	2,000	140	370,000
Feb										
22...	220,000	<1	<3	34	300	81	20	1,100	130	350,000
Mar										
15...	200,000	<1	<3	34	310	80	20	920	--	350,000
Apr										
12...	210,000	<1	<3	35	310	80	20	1,000	130	360,000
May										
17...	210,000	<1	<10	40	320	69	<50	860	120	340,000
Jun										
12...	230,000	<1	<4	37	280	70	30	1,000	120	360,000
Jul										
11...	170,000	<1	<3	25	250	63	20	810	100	240,000
Aug										
15...	150,000	<1	<2	24	240	68	20	780	110	180,000
Sep										
12...	170,000	<2	<3	22	240	74	40	750	120	170,000
Oct										
10...	160,000	<1	17	24	260	77	<20	830	120	210,000
Nov										
27...	190,000	<1	18	26	290	80	30	940	140	240,000
Jan 1996										
11...	230,000	<2	9	28	280	67	40	940	140	300,000
Feb										
21...	230,000	<1	<5	33	290	69	40	930	160	350,000
Apr										
03...	250,000	<1	21	31	300	86	40	1,200	140	350,000
May										
06...	240,000	<1	21	34	350	85	50	990	160	340,000
Jun										
04...	230,000	<1	23	32	270	87	60	1,100	120	380,000
Jul										
02...	250,000	<1	<10	37	--	83	<50	1,100	150	410,000
Aug										
07...	220,000	<5	21	36	--	76	40	1,100	110	370,000
Sep										
04...	210,000	<1	20	32	--	71	30	960	130	370,000

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 25, 472513111082901--JOHNSON BADWATER MINE LARGE WETLANDS INFLOW NEAR TRACY, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	<10	390	1,400	<10	2,200	<2	<3	980	<100	9,000
Aug										
16...	<10	420	1,500	<10	2,200	<5	<3	1,000	<100	8,400
Sep										
07...	<10	420	1,500	<10	2,200	<2	4	1,000	<100	8,900
Oct										
13...	<10	400	1,500	<10	2,300	<2	<4	1,000	<100	9,400
Nov										
15...	<10	470	1,600	<10	2,300	<2	<10	1,000	<100	9,900
Dec										
16...	<10	440	1,500	<10	2,200	<1	<3	1,000	<100	8,900
Jan 1995										
12...	<10	450	1,600	<10	2,400	<2	<4	1,100	<100	9,400
Feb										
22...	<1	450	1,500	1	2,100	1	<3	1,100	30	8,800
Mar										
15...	<1	450	1,500	<1	2,100	<1	<3	1,100	43	8,800
Apr										
12...	<1	460	1,600	<1	2,100	<2	<3	1,200	38	8,800
May										
17...	<1	460	1,500	<1	2,100	<2	<10	1,100	<60	7,900
Jun										
12...	1	460	1,600	<1	2,200	<5	<4	1,100	44	8,600
Jul										
11...	1	390	1,300	<1	1,700	--	<3	980	25	6,800
Aug										
15...	<1	350	1,100	<1	1,600	--	<2	960	18	6,200
Sep										
12...	<1	330	1,100	<1	1,600	--	<3	910	22	6,200
Oct										
10...	2	360	1,200	<1	1,700	--	<3	980	24	6,800
Nov										
27...	<1	390	1,300	<1	1,900	--	<3	1,000	24	7,200
Jan 1996										
11...	1	390	1,400	<1	2,100	--	<3	1,000	27	8,300
Feb										
21...	<1	410	1,500	<1	2,300	--	<5	1,000	47	8,900
Apr										
03...	1	420	1,500	<1	2,200	--	<5	1,000	34	8,400
May										
06...	2	490	1,700	2	2,500	--	<5	1,200	42	9,100
Jun										
04...	1	420	1,500	<1	2,200	--	<10	1,000	64	8,900
Jul										
02...	1	380	1,700	<1	2,400	--	<10	1,100	<60	10,000
Aug										
07...	<1	440	1,500	<1	2,100	--	<6	1,100	<36	8,600
Sep										
04...	<2	450	1,600	<1	2,200	--	9	1,100	<36	8,400

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 26, 472514111082301--JOHNSON BADWATER MINE SMALL WETLANDS OUTFLOW NEAR TRACY, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-ature, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Sep 1994											
07...	0855	0.002	2,580	17.0	12.0	2.8	1,200	220	150	28	0.4
Oct											
13...	1805	.003	2,610	9.0	7.5	3.0	1,100	200	140	26	.3
Nov											
15...	1020	.006	2,610	9.0	1.5	3.0	1,100	210	150	28	.4
Jan 1995											
12...	0810	.005	2,390	1.0	1.0	3.2	1,200	230	140	26	.3
Feb											
22...	1350	.006	2,220	12.0	2.5	3.0	950	180	120	22	.3
Mar											
15...	1150	.004	2,530	13.0	4.0	3.0	1,100	200	140	26	.3
Apr											
12...	0810	.005	2,510	-.5	1.5	3.1	1,200	230	150	28	.4
May											
17...	1645	.003	2,780	27.0	19.0	2.6	1,200	250	150	28	.3
Jun											
12...	1240	.004	2,550	24.0	19.5	2.7	1,200	230	140	27	.3
Jul											
11...	1210	.003	2,530	19.0	19.5	3.0	1,000	200	130	26	.4
Aug											
15...	1750	<.001	2,690	21.0	17.0	5.9	1,600	370	170	31	.3
Sep											
12...	1700	<.001	2,490	25.0	16.5	3.1	1,200	220	150	29	.4
Oct											
10...	1100	.004	2,450	10.0	8.0	2.9	960	170	130	25	.4
Nov											
27...	1400	.007	2,340	-2.0	0.0	3.0	960	170	130	26	.4
Jan 1996											
11...	1430	.003	2,170	7.5	.5	3.6	1,200	270	130	23	.3
Feb											
21...	1320	.007	2,110	12.0	1.5	3.5	1,100	220	130	23	.3
Apr											
03...	0750	.005	2,100	-1.0	.5	3.7	1,100	240	130	24	.3
May											
06...	1640	.001	2,650	16.0	10.0	3.5	510	100	64	11	.2
Jun											
04...	0730	.001	2,720	18.0	13.5	3.9	1,700	340	200	33	.4

Table 3. Water-quality data for sites in the Sand Coulee Area, Montana, July 1994 through September 1996 (Continued)

SITE 26, 472514111082301--JOHNSON BADWATER MINE SMALL WETLANDS OUTFLOW NEAR TRACY, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L ss SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Sep 1994										
07...	8.3	9.4	e<1	1,800	6.1	9.2	52	e2,360	e3.21	e0.01
Oct										
13...	8.1	11	e<1	2,100	7.9	8.0	50	e2,650	e3.60	e.02
Nov										
15...	8.0	12	e<1	2,000	7.5	6.7	50	e2,590	e3.52	e.04
Jan 1995										
12...	7.1	11	e<1	1,700	5.8	6.8	43	e2,260	e3.08	e.03
Feb										
22...	6.5	9.6	e<1	2,500	4.8	5.9	37	e2,960	e4.03	e.05
Mar										
15...	7.6	9.8	e<1	2,500	7.8	8.0	44	e3,030	e4.12	e.03
Apr										
12...	8.0	8.4	e<1	2,000	7.3	5.9	39	e2,560	e3.48	e.03
May										
17...	8.7	8.3	e<1	2,100	10	6.5	42	e2,670	e3.63	e.02
Jun										
12...	8.0	8.8	e<1	2,000	6.9	7.1	45	e2,550	e3.46	e.03
Jul										
11...	8.2	8.8	e<1	1,700	6.1	5.5	52	e2,210	e3.01	e.02
Aug										
15...	2.4	2.0	e<1	1,700	7.6	2.7	24	e2,320	e3.16	<.01
Sep										
12...	8.3	8.5	e<1	1,600	6.6	4.8	49	e2,140	e2.91	<.01
Oct										
10...	7.4	10	e<1	1,500	6.1	5.8	48	e1,990	e2.70	e.02
Nov										
27...	6.5	12	e<1	1,700	5.6	7.6	46	e2,200	e2.99	e.04
Jan 1996										
11...	7.6	5.5	e<1	1,600	9.8	4.8	32	e2,140	e2.91	e.02
Feb										
21...	6.3	5.5	e<1	1,300	5.5	6.5	33	e1,780	e2.42	e.03
Apr										
03...	6.5	4.5	e<1	1,400	7.6	5.5	34	e1,890	e2.57	e.03
May										
06...	9.3	3.6	e<1	1,900	9.7	5.5	--	e2,150	e2.92	e.01
Jun										
04...	9.2	3.4	e<1	1,900	7.6	4.5	33	e2,560	e3.49	e.01

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 26, 472514111082301--JOHNSON BADWATER MINE SMALL WETLANDS OUTFLOW NEAR TRACY, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Sep 1994										
07...	61,000	<1	14	27	330	<3	<20	520	<30	17,000
Oct										
13...	59,000	<1	9	27	310	<3	<20	670	<30	38,000
Nov										
15...	57,000	<1	7	27	290	5	<20	660	<30	60,000
Jan 1995										
12...	48,000	<1	8	23	250	<3	<20	540	<30	47,000
Feb										
22...	42,000	<1	6	18	220	2	<20	390	<30	37,000
Mar										
15...	50,000	<1	7	22	270	2	<20	440	<30	41,000
Apr										
12...	43,000	<1	7	20	250	2	<20	400	<30	40,000
May										
17...	41,000	<1	15	22	290	2	<20	280	<30	27,000
Jun										
12...	44,000	<1	10	22	260	2	<20	350	<30	32,000
Jul										
11...	43,000	<1	9	20	280	2	<20	390	<30	32,000
Aug										
15...	3,300	<1	14	3	300	<1	<10	200	<20	4,800
Sep										
12...	46,000	<1	13	23	290	2	<10	410	<20	22,000
Oct										
10...	47,000	<1	13	24	280	2	20	430	<30	39,000
Nov										
27...	48,000	<1	12	23	270	2	<5	400	<10	50,000
Jan 1996										
11...	33,000	<1	12	15	200	1	<20	400	<30	22,000
Feb										
21...	34,000	<1	8	16	190	2	<5	330	<10	12,000
Apr										
03...	32,000	<1	11	14	210	1	<5	210	<10	5,900
May										
06...	33,000	<1	4	5	270	1	<5	340	<10	4,200
Jun										
04...	26,000	<1	16	13	320	<1	<15	320	<30	2,900

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 26, 472514111082301--JOHNSON BADWATER MINE SMALL WETLANDS OUTFLOW NEAR TRACY, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Sep 1994										
07...	<10	420	1,300	<10	1,100	<1	7	1,500	<18	3,300
Oct										
13...	<10	370	1,100	<10	1,000	<1	<3	1,300	<18	3,100
Nov										
15...	<10	410	1,100	<10	1,100	<1	4	1,300	<18	3,400
Jan 1995										
12...	<10	370	1,100	<10	1,000	<1	<3	1,400	<18	2,900
Feb										
22...	<1	320	890	<1	810	<1	<3	1,100	<18	2,300
Mar										
15...	<1	380	970	<1	950	<1	<3	1,300	<18	2,600
Apr										
12...	<1	360	940	<1	830	<1	<3	1,400	<18	2,300
May										
17...	<1	370	1,000	<1	930	<1	<3	1,400	<18	2,400
Jun										
12...	<1	370	1,000	<1	870	<2	3	1,400	<18	2,600
Jul										
11...	<1	360	1,100	<1	860	--	<3	1,300	<18	2,500
Aug										
15...	<1	300	1,500	<1	400	--	<2	1,900	<12	690
Sep										
12...	<1	380	1,300	<1	870	--	<2	1,400	<12	2,300
Oct										
10...	<1	370	990	<1	860	--	<3	1,200	<18	2,700
Nov										
27...	<1	380	930	<1	890	--	<1	1,200	<6	2,600
Jan 1996										
11...	<1	280	1,000	<1	710	--	<3	1,400	<18	2,000
Feb										
21...	<1	290	960	<1	670	--	3	1,200	<6	1,900
Apr										
03...	<1	290	670	<1	570	--	<1	1,200	<6	1,700
May										
06...	1	110	380	<1	230	--	<1	530	<6	530
Jun										
04...	<1	350	1,100	<1	610	--	<3	1,900	<18	1,600

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 27, 472517111081001--JOHNSON GOODWATER MINE SMALL WETLANDS INFLOW NEAR TRACY, MT

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduc-tance, onsite (µS/cm)	Temper-ature, air (°C)	Temper-sture, water (°C)	pH, onsite (stand-ard units)	Hard-ness, total (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L)	Magne-sium, dis-solved (mg/L)	Sodium, dis-solved (mg/L)	Sodium adsorp-tion ratio
Jul 1994											
20...	0810	0.0002	1,290	16.0	13.5	7.3	720	130	96	17	0.3
Aug											
16...	1410	.0002	1,240	33.0	16.5	7.8	670	120	90	18	.3
Sep											
07...	0815	.0002	1,210	15.0	13.0	7.2	670	120	90	18	.3
Oct											
13...	1745	.0002	1,210	9.5	10.0	7.8	680	120	91	18	.3
Nov											
15...	0945	.0002	1,230	9.0	7.0	7.2	670	120	90	18	.3
Dec											
16...	0810	.0002	1,260	4.5	4.5	7.3	710	130	94	18	.3
Jan 1995											
12...	0740	.0002	1,220	1.0	4.5	7.2	700	120	96	18	.3
Feb											
22...	1320	.0001	1,250	11.5	4.5	7.5	690	120	94	18	.3
Mar											
15...	1125	.0001	1,250	12.0	6.0	7.8	650	110	90	18	.3
Apr											
12...	0730	.0001	1,250	-.5	5.0	7.1	730	130	99	19	.3
May											
17...	1615	.0002	1,280	25.5	11.0	7.4	680	120	92	17	.3
Jun											
12...	1125	.0002	1,060	20.5	11.5	7.8	560	99	76	16	.3
Jul											
11...	1240	.0002	1,010	19.5	13.5	7.9	520	91	72	15	.3
Aug											
15...	1720	.018	1,200	23.0	10.0	7.0	630	89	99	18	.3
Sep											
12...	1620	.013	1,180	27.0	10.0	6.9	610	84	97	18	.3
Oct											
10...	1030	.013	1,190	10.0	10.0	6.8	630	88	100	18	.3
Nov											
27...	1330	.011	1,110	-2.0	9.5	7.0	600	83	94	18	.3
Jan 1996											
11...	1400	.010	1,120	7.5	9.0	6.8	630	92	98	18	.3
Feb											
21...	1300	.011	1,160	8.5	12.0	6.8	600	88	93	18	.3
Apr											
03...	0710	.009	1,140	-1.0	8.5	6.6	640	93	99	19	.3
May											
06...	1600	.009	1,170	16.0	9.0	6.8	630	92	96	18	.3
Jun											
04...	0700	.008	1,170	16.0	9.5	6.9	650	95	100	18	.3
Jul											
02...	1400	.010	1,150	29.0	9.5	6.9	620	86	97	17	.3
Aug											
07...	0945	.009	1,140	20.0	10.0	6.8	570	80	89	17	.3
Sep											
04...	1150	.009	1,140	17.0	10.0	7.0	600	84	94	17	.3

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 27, 472517111081001--JOHNSON GOODWATER MINE SMALL WETLANDS INFLOW NEAR TRACY, MT--Continued

Date	Potassium, dissolved (mg/L)	Acidity (mg/L as H^+)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L as SiO_2)	Solids, sum of constituents, dissolved (mg/L)	Solids, dissolved (ton/acre-ft)	Solids, dissolved (ton/d)
Jul 1994										
20...	5.5	0.4	270	480	7.7	1.2	12	912	1.24	<.01
Aug										
16...	5.3	.2	264	450	8.1	1.1	11	863	1.17	<.01
Sep										
07...	5.3	.2	270	430	7.5	1.2	11	846	1.15	<.01
Oct										
13...	5.1	.1	275	450	8.1	1.2	12	871	1.18	<.01
Nov										
15...	5.1	.4	274	430	7.6	1.4	11	848	1.15	<.01
Dec										
16...	5.3	.2	267	450	7.7	1.3	12	879	1.20	<.01
Jan 1995										
12...	4.8	.6	266	450	7.2	1.2	11	869	1.18	<.01
Feb										
22...	5.0	<.1	265	460	7.6	1.2	11	877	1.19	<.01
Mar										
15...	5.0	<.1	264	420	8.3	1.3	11	823	1.12	<.01
Apr										
12...	4.8	.1	268	420	6.3	1.2	12	854	1.16	<.01
May										
17...	4.9	<.1	255	420	8.8	1.2	11	829	1.13	<.01
Jun										
12...	5.0	<.1	270	290	6.7	1.6	11	668	.91	<.01
Jul										
11...	5.1	<.1	281	270	6.4	1.5	10	640	.87	<.01
Aug										
15...	4.5	.4	174	450	6.9	1.4	9.1	787	1.07	.04
Sep										
12...	4.6	.1	180	480	6.9	1.2	8.4	811	1.10	.03
Oct										
10...	4.3	.1	184	470	7.4	1.3	8.4	810	1.10	.03
Nov										
27...	4.2	1.7	208	440	7.1	1.5	8.3	782	1.06	.02
Jan 1996										
11...	4.4	.1	200	460	6.2	1.5	8.7	810	1.10	.02
Feb										
21...	4.1	.4	202	440	7.2	1.4	8.4	783	1.06	.02
Apr										
03...	4.2	.4	199	450	7.0	1.5	8.8	803	1.09	.02
May										
06...	4.4	.3	201	450	6.9	1.5	8.6	799	1.09	.02
Jun										
04...	4.5	<.1	203	460	6.8	1.3	8.8	818	1.11	.02
Jul										
02...	4.3	.2	211	420	6.5	1.4	8.7	769	1.05	.02
Aug										
07...	4.8	<.1	211	430	6.9	1.3	7.7	764	1.04	.02
Sep										
04...	4.2	.3	213	430	7.1	1.3	7.9	774	1.05	.02

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 27, 472517111081001--JOHNSON GOODWATER MINE SMALL WETLANDS INFLOW NEAR TRACY, MT--Continued

Date	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)
Jul 1994										
20...	<10	<1	28	<0.5	140	<1	<5	<3	<10	<3
Aug										
16...	20	<1	26	<.5	130	<1	<5	<3	<10	10
Sep										
07...	<10	<1	27	<.5	110	<1	<5	<3	<10	13
Oct										
13...	<10	<1	26	<.5	120	<1	<5	<3	<10	4
Nov										
15...	20	<1	26	<.5	120	<1	<5	<3	<10	<3
Dec										
16...	<10	<1	27	<.5	120	<1	<5	<3	<10	<3
Jan 1995										
12...	10	<1	28	<.5	120	<1	<5	<3	<10	10
Feb										
22...	<10	<1	25	<.5	100	<1	<5	1	<10	4
Mar										
15...	<10	<1	24	<.5	110	<1	<5	<1	<10	<3
Apr										
12...	<10	<1	27	<.5	110	<1	<5	<1	<10	10
May										
17...	<10	<1	25	<.5	110	<1	<5	<3	<10	7
Jun										
12...	30	<1	24	<.5	90	<1	<5	<3	<10	<3
Jul										
11...	<10	<1	23	<.5	90	<1	<5	<3	<10	<3
Aug										
15...	30	<1	23	.5	120	<1	<5	40	<10	3,200
Sep										
12...	30	<1	21	<.5	130	<1	<5	30	<10	1,600
Oct										
10...	50	<1	22	<.5	130	<1	<5	20	<10	920
Nov										
27...	30	<1	20	<.5	100	<1	<5	8	<10	410
Jan 1996										
11...	<10	<1	19	<.5	120	<1	<5	<3	<10	470
Feb										
21...	10	<1	19	<.5	130	<1	<5	8	<10	680
Apr										
03...	10	<1	18	<.5	130	<1	<5	6	<10	430
May										
06...	<10	<1	19	<.5	110	<1	<5	<3	<10	250
Jun										
04...	30	<1	19	<2	120	<3	<20	<9	<30	410
Jul										
02...	6	<1	18	<.5	110	<1	<5	4	<10	160
Aug										
07...	9	<1	18	<.5	100	<1	<5	<3	<10	150
Sep										
04...	10	<1	18	<.5	120	<1	<5	4	<10	160

Table 3. Water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 27, 472517111081001--JOHNSON GOODWATER MINE SMALL WETLANDS INFLOW NEAR TRACY, MT--Continued

Date	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994										
20...	<10	95	5	<10	<10	1	<1	680	<6	31
Aug										
16...	<10	94	3	<10	20	<5	<1	660	<6	22
Sep										
07...	<10	92	4	<10	20	2	<1	630	<6	39
Oct										
13...	<10	89	13	<10	10	2	<1	620	<6	40
Nov										
15...	<10	92	32	<10	30	2	1	610	<6	36
Dec										
16...	<10	94	32	<10	30	2	<1	640	<6	34
Jan 1995										
12...	<10	94	30	<10	20	2	<1	680	<6	34
Feb										
22...	<1	89	23	<1	20	2	<1	640	<6	29
Mar										
15...	<1	86	17	<1	20	2	<1	610	<6	23
Apr										
12...	<1	94	32	<1	<10	3	1	670	<6	33
May										
17...	<10	89	7	<10	10	3	<1	640	<6	19
Jun										
12...	<10	77	4	<10	<10	3	<1	550	<6	15
Jul										
11...	10	67	2	<10	<10	--	<1	490	<6	13
Aug										
15...	20	97	170	10	80	--	2	660	<6	140
Sep										
12...	<10	94	110	<10	60	--	<1	630	<6	100
Oct										
10...	10	95	99	<10	60	--	3	640	<6	120
Nov										
27...	<10	88	71	<10	50	--	<1	620	<6	73
Jan 1996										
11...	<10	88	64	<10	50	--	<1	640	<6	73
Feb										
21...	20	90	87	<10	40	--	<1	660	<6	66
Apr										
03...	20	92	78	<10	50	--	<1	640	<6	65
May										
06...	<10	93	48	<10	50	--	<1	670	<6	57
Jun										
04...	40	92	61	<30	40	--	<3	690	<18	82
Jul										
02...	<10	91	41	<10	40	--	<1	650	<6	65
Aug										
07...	<10	84	23	<10	40	--	<1	610	<6	61
Sep										
04...	<10	86	25	<10	60	--	2	640	<6	48

Table 4. Chemical analyses of field replicates for water samples from sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996

[Site number shown in figure 2 or 3. Abbreviations: ft^3/s, cubic feet per second; °C, degrees Celsius; e, estimated; lab, laboratory; µg/L, micrograms per liter; µS/cm, microsimens per centimeter at 25 °C; mg/L, milligrams per liter. Symbols: <, less than; --, no data]

SITE 2, 06078250--COTTONWOOD CREEK NEAR STOCKETT, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
May 1996										
06...	1300	160	73	11	4.4	<0.1	153	550	5.6	0.8
06...	1305	160	74	11	4.5	.1	152	540	5.5	.8

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
May 1996										
06...	3.5	210	<1	24	<0.5	80	<1	<5	60	<10
06...	3.5	240	<1	25	<.5	80	<1	<5	60	<10

Dste	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
May 1996										
06...	<0.3	<10	46	150	<10	120	<1	450	<6	22
06...	8	<10	44	150	<10	110	<1	460	<6	24

SITE 4, 06078270--SAND COULEE AT SAND COULEE, MT

Date	Time	Csicium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Jun 1995										
13...	1150	110	85	20	3.5	11	e<1	1,700	8.5	1.7
13...	1155	120	88	21	3.5	12	e<1	1,600	8.6	2.5
Jul 1996										
02...	0820	180	120	22	2.6	33	e<1	2,700	7.1	.7
02...	0825	190	130	22	2.5	32	e<1	2,600	7.7	.7

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Jun 1995										
13...	26	73,000	<1	120	11	140	9	<5	270	20
13...	27	74,000	<1	130	12	120	9	<5	260	20
Jul 1996										
02...	57	190,000	2	11	26	200	21	60	790	<80
02...	58	190,000	2	9	26	160	22	<40	800	<80

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jun 1995											
13...	86,000	<1	190	1,100	<1	750	<1	<1	730	<6	3,000
13...	88,000	<1	200	1,100	<1	760	<1	<1	760	<6	3,000
Jul 1996											
02...	150,000	1	380	2,600	<1	1,600	--	10	950	<48	6,800
02...	150,000	<1	380	2,700	<1	1,700	--	<8	970	<48	6,900

Table 4. Chemical analyses of field replicates for water samples from sites in the Sand Coulee Coal Area, July 1994 through September 1996 (Continued)

SITE 5, 06090590--ANACONDA DRAIN AT BELT, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Oct 1995										
12...	1145	150	67	9.7	2.7	23	e<1	1,900	2.5	1.5
12...	1150	150	69	10	2.7	22	e<1	1,800	2.6	1.2

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Oct 1995										
12...	58	110,000	1	11	16	180	10	50	360	40
12...	58	110,000	2	10	17	170	10	40	360	<30

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Oct 1995											
12...	180,000	<1	190	410	<1	820	--	<3	1,500	<18	3,600
12...	180,000	1.0	200	420	<1	800	--	<3	1,500	32	3,600

SITE 6, 471851111111101--GIFFEN SPRING NEAR STOCKETT, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Jul 1994										
21...	0845	110	42	14	5.4	4.5	e<1	740	3.1	0.4
21...	0850	120	42	14	5.3	4.5	<1	740	3.2	.5
Sep 1996										
03...	1015	110	43	15	5.3	1.5	e<1	550	4.0	.8
03...	1015	110	41	14	5.5	1.5	e<1	540	3.6	.8

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Jul 1994										
21...	21	15,000	<1	24	6	90	8	<5	380	20
21...	21	15,000	<1	24	6	110	6	<5	500	20
Sep 1996										
03...	18	2,000	<1	25	3	50	3	<5	130	<10
03...	18	2,000	1	25	2	50	3	<5	150	<10

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994											
21...	81,000	<10	68	370	<10	390	<1	2	350	17	1,600
21...	83,000	<10	75	380	<10	430	<1	<1	360	13	1,600
Sep 1996											
03...	54,000	<1	67	340	<1	270	--	<1	340	<6	1,100
03...	52,000	<1	66	330	1	270	--	<1	330	<6	1,100

Table 4. Chemical analyses of field replicates for water samples from sites in the Sand Coulee Coal Area, July 1994 through September 1996 (Continued)

SITE 7, 472016111085701--COTTONWOOD MINE NO. 6 DRAIN TO COTTONWOOD CREEK NEAR STOCKETT, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Jan 1996										
10...	1450	380	140	13	2.4	87	e<1	6,200	<0.10	--
10...	1455	350	140	14	2.4	86	e<1	6,000	<.10	--
Jun										
03...	1710	350	140	14	3.0	85	e<1	7,200	3.8	<1
03...	1715	350	140	14	2.9	83	e<1	7,100	3.8	<.1

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Jan 1996										
10...	99	450,000	<2	130	120	530	72	60	3,900	<100
10...	95	450,000	<2	120	120	530	79	<50	7,100	120
Jun										
03...	98	420,000	<10	120	130	300	84	<80	6,200	110
03...	99	420,000	<10	130	120	350	88	80	6,900	<150

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jan 1996											
10...	810,000	<1	670	2,500	2	12,000	--	<10	1,300	130	56,000
10...	830,000	<1	670	2,500	1	11,000	--	<10	1,300	110	54,000
Jun											
03...	840,000	<1	700	2,400	<1	11,000	--	<10	1,200	150	55,000
03...	850,000	<1	710	2,400	<1	12,000	--	<15	1,300	150	56,000

SITE 9, 472212111093301--NUMBER FIVE COULEE NEAR STOCKETT, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Apr 1995										
11...	1800	98	35	24	5.4	<0.1	33	380	4.4	0.4
11...	1805	95	34	24	5.2	<.1	33	360	3.6	.5

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Apr 1995										
11...	6.2	70	<1	120	<0.5	60	<1	<5	20	<10
11...	6.0	50	<1	110	<.5	60	<1	<5	20	<10

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Apr 1995											
11...	6	<1	49	270	<1	40	<1	<1	260	<6	20
11...	<3	<1	50	260	1	40	<1	<1	260	<6	20

Table 4. Chemical analyses of field replicates for water samples from sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 10, 472233110552601--FRENCH COULEE WETLANDS OUTFLOW AT BELT, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Sep 1995										
14...	0930	250	92	18	3.8	38	e<1	2,900	17	1.8
14...	0935	250	97	20	3.7	37	e<1	3,000	18	2.1

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Sep 1995										
14...	86	240,000	<2	4	26	170	3	50	180	30
14...	88	230,000	<2	4	27	180	3	60	180	<30

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenumm dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Sep 1995										
14...	170,000	<1	280	1,100	<1	350	<2	1,300	<12	1,300
14...	170,000	<1	310	1,100	<1	380	<3	1,400	<18	1,300

SITE 12, 472235110553202--FRENCH COULEE WETLANDS INFLOW NO. 2 AT BELT, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Apr 1996										
04...	1130	190	94	13	5.3	79	e<1	5,300	9.6	3.9
04...	1135	190	92	12	5.4	78	e<1	5,000	9.3	4.0

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Apr 1996										
04...	100	430,000	<2	13	48	330	7	140	350	<100
04...	100	410,000	<2	14	43	340	6	150	360	<100

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Apr 1996										
04...	870,000	2	520	750	<1	870	<10	1,800	72	4,000
04...	850,000	2	520	730	<1	840	<10	1,800	95	4,100

Table 4. Chemical analyses of field replicates for water samples from sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 13, 472305110551701--LEWIS COULEE ABOVE CASTNER PARK, AT BELT, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Jul 1995										
13...	0950	190	120	27	1.1	63	e<1	4,800	5.2	<.01
13...	0955	180	120	27	1.1	62	e<1	4,600	5.0	<.1

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Jul 1995										
13...	87	320,000	<5	<10	21	270	63	170	950	150
13...	85	320,000	<5	<10	20	250	67	160	1,000	150

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1995										
13...	560,000	<1	470	1,000	<1	2,100	10	1,500	<60	7,700
13...	550,000	1	470	1,000	1	2,200	10	1,500	<60	7,700

SITE 14, 472306111103601--MINE DRAIN TO MINING COULEE NEAR SAND COULEE, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Feb 1995										
21...	1410	270	190	19	0.2	150	e<1	11,000	25	2.6
21...	1415	290	200	20	.2	150	e<1	12,000	<.1	2.6

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Feb 1995										
21...	120	860,000	<10	<100	95	720	83	310	3,300	100
21...	130	870,000	<10	<10	92	720	88	320	3,400	<100

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Feb 1995											
21...	950,000	<1	1,200	3,200	<2	7,300	<2	<4	1,200	320	33,000
21...	1,000,000	<1	1,200	3,400	2	7,500	<1	<10	1,200	330	32,000

Table 4. Chemical analyses of field replicates for water samples from sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 21, 472309110551201--LEWIS COULEE BELOW MINE ADIT, AT BELT, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
May 1995										
17...	0900	62	62	19	4.4	<0.1	246	180	14	0.4
17...	0905	63	63	19	4.3	<.1	246	180	14	.5
Feb 1996										
21...	0945	200	130	22	5.8	52	e<1	4,000	7.9	<1
21...	0950	200	140	23	5.3	52	e<1	3,900	8.3	<1

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
May 1995										
17...	7.9	40	<1	75	<0.5	40	<1	<5	20	<10
17...	8.1	40	<1	75	<.5	50	<1	<5	10	<10
Feb 1996										
21...	75	280,000	<2	21	25	250	15	50	660	<50
21...	74	260,000	<1	12	21	260	19	80	830	<100

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
May 1995											
17...	5,500	<1	54	56	2	30	2	<1	470	<6	46
17...	5,700	<1	54	57	2	30	2	<1	470	<6	54
Feb 1996											
21...	560,000	2	440	1,500	<1	1,600	--	<5	1,400	59	5,600
21...	550,000	2	420	1,500	<1	1,600	--	<10	1,300	76	5,300

Table 4. Chemical analyses of field replicates for water samples from sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 16, 472313111104901--MINE DRAIN TO SAND COULEE NEAR SAND COULEE, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Sep 1994										
06...	1730	160	100	18	1.7	42	e<1	3,200	15	0.5
06...	1735	160	100	18	1.8	43	e<1	2,800	4.6	.6
Aug 1995										
16...	1520	180	110	20	2.0	43	e<1	3,600	13	<.1
16...	1525	170	110	20	2.2	42	e<1	3,300	12	--

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Sep 1994										
06...	66	220,000	4	4	28	320	39	80	1,500	<30
06...	66	220,000	5	4	28	310	36	70	1,500	<30
Aug 1995										
16...	69	250,000	<5	8	34	360	31	100	1,200	<50
16...	69	240,000	<5	10	36	310	32	90	1,200	<50

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Sep 1994											
06...	320,000	<10	360	1,200	<10	2,300	<5	<3	990	150	10,000
06...	310,000	<10	360	1,200	<10	2,300	<5	<3	990	150	10,000
Aug 1995											
16...	390,000	<1	400	1,400	<1	2,600	--	<5	1,100	110	11,000
16...	390,000	<1	400	1,400	<1	2,600	--	<5	1,100	110	11,000

Table 4. Chemical analyses of field replicates for water samples from sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 17, 472330111082801--CENTERVILLE WETLANDS INFLOW AT CENTERVILLE, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Mar 1995										
15...	1700	180	81	14	1.0	42	e<1	3,700	3.2	0.8
15...	1705	190	84	15	1.1	42	e<1	4,300	17	2.8

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Mar 1995										
15...	87	220,000	<1	5	31	180	32	<20	470	110
15...	90	220,000	<1	6	32	180	30	20	410	120

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Mar 1995											
15...	250,000	3	340	1,500	<1	800	2	<3	910	17	2,400
15...	260,000	2	360	1,500	<1	850	1	<3	940	23	2,500

Table 4. Chemical analyses of field replicates for water samples from sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 19, 472334111104401--MOUNT OREGON MINE DRAIN TO KATE'S COULEE AT SAND COULEE, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Aug 1994										
17...	1115	170	130	24	5.2	33	e<1	2,700	4.3	0.1
17...	1120	170	130	24	5.3	34	e<1	2,500	4.1	<.1
Nov 1995										
28...	1100	160	130	24	4.2	30	e<1	2,400	3.7	1.4
28...	1105	160	130	24	4.6	31	e<1	2,500	3.3	1.5
Aug 1996										
07...	0810	160	120	22	4.8	29	e<1	2,200	5.0	2.5
07...	0815	150	120	24	4.7	30	e<1	2,300	5.0	2.7

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Aug 1994										
17...	39	170,000	14	14	26	270	29	30	2,000	<30
17...	38	170,000	14	13	20	280	32	40	530	<30
Nov 1995										
28...	37	180,000	11	27	23	260	8	20	670	<30
28...	38	160,000	10	27	23	290	8	30	710	<30
Aug 1996										
07...	36	150,000	9	26	23	170	8	30	660	<40
07...	36	150,000	14	27	25	180	8	40	670	<40

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Aug 1994											
17...	330,000	<10	440	1,300	<10	1,600	<5	<3	1,300	160	6,400
17...	320,000	<10	440	1,300	<10	1,500	<5	<3	1,200	130	5,800
Nov 1995											
28...	290,000	<1	430	1,200	10	1,500	--	<3	1,200	88	5,900
28...	290,000	<1	430	1,200	9	1,500	--	<3	1,200	86	5,800
Aug 1996											
07...	280,000	<1	390	1,200	10	1,400	--	<4	1,100	<24	5,800
07...	280,000	<1	410	1,100	9	1,400	--	<4	1,200	<24	5,800

Table 4. Chemical analyses of field replicates for water samples from sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 20, 472346111102401--NELSON MINE DRAIN TO SAND COULEE AT SAND COULEE, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Jan 1995										
11...	1500	250	230	16	0.9	170	e<1	11,000	38	7.3
11...	1505	250	230	17	1.0	170	e<1	11,000	40	5.9

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Jan 1995										
11...	59	920,000	63	<100	80	830	110	320	2,200	300
11...	70	870,000	58	<100	80	880	110	310	2,200	310

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jan 1995											
11...	1,400,000	<1	940	8,500	3	5,100	<5	<1	1,600	--	19,000
11...	1,500,000	<1	900	8,500	3	5,200	<2	<1	1,600	--	19,000

SITE 22, 472446111085101--PIPE SPRING AT TRACY, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Oct 1994										
14...	0800	79	68	21	2.5	6.1	e<1	910	5.6	2.0
14...	0805	80	67	21	2.4	6.6	e<1	930	5.8	2.0

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Oct 1994										
14...	50	35,000	<1	3	7	170	<1	<5	200	20
14...	50	36,000	<1	3	7	180	<1	<5	220	10

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Oct 1994											
14...	5,900	<10	140	580	<10	360	<2	<1	600	<6	1,100
14...	5,800	<10	130	580	<10	350	<2	<1	590	<6	1,200

Table 4. Chemical analyses of field replicates for water samples from sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

SITE 23, 472447111085301--STOCK TANK SPRING AT TRACY, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Dec 1994										
15...	1405	65	58	14	2.0	0.2	227	170	6.1	1.0
15...	1410	64	56	14	2.0	.1	226	170	6.2	1.0

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Dec 1994										
15...	10	<10	<1	46	<0.5	80	<1	<5	<3	<10
15...	10	<10	<1	45	<.5	70	<1	<5	3	<10

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Dec 1994											
15...	<3	<10	35	1	20	<10	2	<1	490	<6	11
15...	5	<10	35	1	<10	<10	2	<1	480	<6	5

SITE 24, 472513111082501--JOHNSON BADWATER MINE SMALL WETLANDS INFLOW NEAR TRACY, MT

Date	Time	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)
Nov 1994										
15...	1010	180	130	25	7.4	12	e<1	1,800	6.8	6.3
15...	1015	180	140	24	7.5	12	--	2,100	7.5	5.9

Date	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Nov 1994										
15...	48	54,000	<1	8	25	300	9	<20	790	<30
15...	47	55,000	<1	8	27	300	7	<20	730	<30

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Nov 1994											
15...	130,000	<10	390	1,000	<10	1,100	<1	<3	1,200	25	3,300
15...	140,000	<10	390	990	<10	1,100	<1	<3	1,300	28	3,200

Table 5. Chemical analyses of field blanks for water samples

[Abbreviations: lab, laboratory; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 °C; mg/L, milligrams per liter. Symbols: <, less than minimum reporting level; --, no data]

Date	Time	Specific conductance, onsite (µS/cm)	pH, onsite (standard units)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Acidity (mg/L)	Alkalinity, lab (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)
Jul 1994 20...	0945	2	6.8	<0.02	<0.01	<0.20	<0.10	0.2	1.7	<0.10	<0.10
Aug 17...	1440	1	6.8	.02	<.01	<.20	<.10	<.1	1.3	<.10	<.10
Sep 07...	1040	1	6.0	<.02	<.01	<.20	<.10	<.1	1.5	2.4	<.10
Oct 14...	1100	2	6.0	<.02	<.01	<.20	<.10	.1	1.6	<.10	<.10
Nov 15...	1220	3	7.1	<.02	<.01	<.20	<.10	<.1	2.0	.80	<.10
Dec 16...	1215	2	5.6	<.02	<.01	<.20	<.10	.1	1.6	<.10	<.10
Jan 1995 11...	1410	2	5.8	<.02	<.01	<.20	<.10	.1	--	<.10	<.10
Feb 21...	1810	2	5.8	<.02	<.01	<.20	<.10	<.1	1.3	<.10	<.10
Mar 15...	1325	1	5.5	<.02	<.01	<.20	<.10	<.1	1.4	<.10	<.10
Apr 12...	1030	2	5.3	<.02	<.01	<.20	<.10	<.1	1.4	<.10	<.10
May 17...	1415	2	6.1	.02	<.01	<.20	<.10	<.1	1.3	.10	<.10
Jun 13...	1605	2	7.3	<.02	<.01	<.20	<.10	<.1	1.8	<.10	<.10
Jul 13...	1100	2	5.5	<.02	<.01	<.20	<.10	<.1	--	7.2	<.10
Aug 16...	1200	2	6.0	<.02	<.01	<.20	<.10	<.1	1.6	<.10	<.10
Sep 13...	1110	2	5.9	.04	<.01	<.20	<.10	<.1	--	1.0	<.10
Oct 10...	1230	1	5.9	<.02	<.01	<.20	<.10	<.1	1.3	7.5	<.10
Nov 29...	1500	2	5.8	<.02	<.01	<.20	<.10	.3	<1.0	<.10	<.10
Jan 1996 11...	1100	2	5.7	<.02	<.01	<.20	<.10	.1	1.6	<.10	.04
Feb 21...	1430	2	6.6	<.02	<.01	<.20	<.10	.1	1.8	<.10	<.10
Apr 03...	0930	2	5.2	<.02	<.01	<.20	<.10	<.1	1.8	<.10	<.10
Jun 04...	0900	1	6.3	<.02	<.01	<.20	<.10	<.1	<1.0	<.10	<.10
Jul 03...	1100	1	6.5	<.02	<.01	<.20	<.10	<.1	1.5	<.10	<.10
Aug 06...	1800	2	5.8	<.02	<.01	<.20	<.10	.2	1.6	<.10	<.10
Sep 04...	1300	2	5.5	<.02	<.01	<.20	<.10	<.1	1.3	<.10	<.10

Table 5. Chemical analyses of field blanks for water samples--Continued

Date	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L)	Aluminum, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Boron, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)
Jul 1994											
20...	<0.10	<0.01	<10	<1	<2	<0.5	<10	<1	<5	<3	<10
Aug											
17...	<.10	<.01	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Sep											
07...	<.10	.10	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Oct											
14...	<.10	.05	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Nov											
15...	<.10	.02	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Dec											
16...	<.10	<.01	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Jan 1995											
11...	<.10	.05	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Feb											
21...	<.10	.03	<10	<1	<2	<.5	<10	<1	<5	<1	<10
Mar											
15...	<.10	<.01	<10	<1	<2	<.5	<10	<1	<5	4	<10
Apr											
12...	<.10	.02	20	<1	<2	<.5	<10	<1	<5	<1	<10
May											
17...	.10	.04	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Jun											
13...	<.10	14	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Jul											
13...	<.10	21	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Aug											
16...	<.10	3.2	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Sep											
13...	<.10	8.0	--	<1	<2	<.5	<10	3	<5	<3	<10
Oct											
10...	<.10	<.01	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Nov											
29...	<.10	.11	<10	<1	<2	<.5	<10	1	<5	<3	<10
Jan 1996											
11...	<.10	.02	<10	<2	<2	<.5	<10	<1	<5	<3	<10
Feb											
21...	<.10	.42	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Apr											
03...	<.10	<.01	<10	<1	<2	<.5	<10	<1	<5	<3	<10
Jun											
04...	<.10	.06	<5	<1	<2	<.5	<4	1	<5	<3	<10
Jul											
03...	<.10	.03	<5	<1	<2	<.5	5	<1	<5	<3	<10
Aug											
06...	<.10	.01	<5	<1	<2	<.5	<4	1	<5	<3	<10
Sep											
04...	<.10	.02	<5	<1	<2	<.5	<4	<1	<5	<3	<10

Table 5. Chemical analyses of field blanks for water samples--Continued

Date	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Jul 1994											
20...	<3	<10	<4	<1	<10	<10	<1	1	<1	<6	<3
Aug											
17...	5	<10	<4	<1	<10	<10	<5	<1	<1	<6	<3
Sep											
07...	20	<10	<4	<1	<10	<10	<1	<1	<1	<6	<3
Oct											
14...	6	<10	<4	<1	<10	<10	<1	<1	<1	<6	5
Nov											
15...	<3	<10	<4	<1	<10	<10	<1	<1	<1	<6	<3
Dec											
16...	<3	<10	<4	<1	<10	<10	<1	<1	<1	<6	<3
Jan 1995											
11...	<3	<10	<4	<1	<10	<10	<1	<1	<1	<6	<3
Feb											
21...	7	<10	<4	<1	<10	<10	<1	<1	1	<6	4
Mar											
15...	<3	<10	<4	<1	<10	<10	<1	<1	<1	<6	<3
Apr											
12...	<3	<10	<4	<1	<10	<10	<1	<1	<1	<6	<3
May											
17...	4	20	<4	<1	<10	<10	<1	<1	<1	<6	4
Jun											
13...	5	<10	<4	<1	<10	<10	<1	<1	<1	<6	<3
Jul											
13...	8	<10	<4	<1	<10	<10	<1	<1	<1	<6	<3
Aug											
16...	<3	<10	<4	<1	<10	<10	--	1	<1	<6	<3
Sep											
13...	4	10	<4	2	<10	<10	--	1	<1	<6	<3
Oct											
10...	<3	30	<4	<1	<10	<10	--	<1	<1	<6	7
Nov											
29...	<3	<10	<4	<1	<10	<10	--	<1	<1	<6	4
Jan 1996											
11...	<3	<10	<4	<1	<10	<10	--	<1	<1	<6	<3
Feb											
21...	<3	<10	<4	<1	<10	<10	--	<1	<1	<6	<3
Apr											
03...	3	<10	<4	<1	<10	<10	--	<1	<1	<6	<3
Jun											
04...	<3	<10	<4	<1	<10	<10	--	<1	<1	<6	<3
Jul											
03...	<3	<10	<4	<1	<10	<10	--	<1	<1	<6	<3
Aug											
06...	<3	10	<4	<1	<10	<10	--	1	<1	<6	7
Sep											
04...	<3	<10	<4	<1	<10	<10	--	<1	<1	<6	<3

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996

[Site number shown in figure 2 or 3. Abbreviations: ft^3/s, cubic feet per second; °C, degrees Celsius; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 °C; mg/L, milligrams per liter. Symbols: <, less than minimum reporting level; --, indicates insufficient data greater than minimum reporting level to compute statistic; e, estimated. Note: Multiple minimum reporting levels during the period of record may result in varying values identified with a less-than (<) symbol]

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 1, 06078230–Sand Coulee Creek above Cottonwood Creek, at Centerville, Mont.					
Streamflow, instantaneous (ft^3/s)	25	30	0.00	4.7	0.00
Specific conductance, onsite (µS/cm)	12	485	310	396	388
Temperature, water (°C)	12	30.5	0.0	15.8	16.5
pH, onsite (standard units)	10	8.8	8.0	8.4	8.4
Hardness, total (mg/L as $CaCO_3$)	10	250	160	208	200
Calcium, dissolved (mg/L as Ca)	10	63	39	50	51
Magnesium, dissolved (mg/L as Mg)	10	25	12	20	22
Sodium, dissolved (mg/L as Na)	10	5.9	3.3	4.8	5.3
Potassium, dissolved (mg/L as K)	10	4.2	2.0	2.7	2.4
Acidity (mg/L as H^+)	10	<.1	<.1	--	<.1
Alkalinity (mg/L as $CaCO_3$)	10	208	120	162	160
Sulfate, dissolved (mg/L as SO_4)	10	88	24	54	56
Chloride, dissolved (mg/L as Cl)	10	2.4	1.5	2.0	2.1
Fluoride, dissolved (mg/L as Fl)	10	.6	.2	.4	.3
Silica, dissolved (mg/L as SiO_2)	10	11	3.2	7.2	7.7
Dissolved solids, calculated (mg/L)	10	284	184	240	240
Aluminum, dissolved (µg/L as Al)	10	430	20	147	95
Arsenic, dissolved (µg/L as As)	10	2	<1	[1]1	1
Barium, dissolved (µg/L as Ba)	10	210	150	167	160
Beryllium, dissolved (µg/L as Be)	10	.5	<.5	--	<.5
Boron, dissolved (µg/L as B)	10	50	20	32	30
Cadmium, dissolved (µg/L as Cd)	10	2	<1	--	<1
Chromium, dissolved (µg/L as Cr)	10	<5	<5	--	<5
Cobalt, dissolved (µg/L as Co)	10	<3	<3	--	<3
Copper, dissolved (µg/L as Cu)	10	<10	<10	--	<10
Iron, dissolved (µg/L as Fe)	10	240	6	69	58
Lead, dissolved (µg/L as Pb)	10	10	<10	--	<10
Lithium, dissolved (µg/L as Li)	10	12	4	8	8
Manganese, dissolved (µg/L as Mn)	10	23	3	9	9
Molybdenum, dissolved (µg/L as Mo)	10	10	<10	--	<10
Nickel, dissolved (µg/L as Ni)	10	20	<10	--	<10
Selenium, dissolved (µg/L as Se)	3	<1	<1	--	--
Silver, dissolved (µg/L as Ag)	10	1	<1	--	<1
Strontium, dissolved (µg/L as Sr)	10	720	300	557	635
Vanadium, dissolved (µg/L as V)	10	6	<6	--	<6
Zinc, dissolved (µg/L as Zn)	10	8	<3	[1]4	3

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 2, 06078250–Cottonwood Creek near Stockett, Mont.					
Streamflow, instantaneous (ft^3/s)	26	17	0.00	1.6	0.09
Specific conductance, onsite (µS/cm)	13	1,360	656	1,020	1,000
Temperature, water (°C)	14	28.0	0.0	15.0	15.5
pH, onsite (standard units)	11	8.3	4.0	6.7	7.5
Hardness, total (mg/L as $CaCO_3$)	11	700	320	504	510
Calcium, dissolved (mg/L as Ca)	11	160	71	108	110
Magnesium, dissolved (mg/L as Mg)	11	73	34	57	57
Sodium, dissolved (mg/L as Na)	11	13	10	12	12
Potassium, dissolved (mg/L as K)	11	5	3.4	4.1	4
Acidity (mg/L as H^+)	11	7.7	<.1	[1]2.0	.1
Alkalinity (mg/L and $CaCO_3$)	11	229	e<1	114	153
Sulfate, dissolved (mg/L as SO_4)	11	950	97	485	370
Chloride, dissolved (mg/L as Cl)	11	5.6	4.0	4.6	4.6
Fluoride, dissolved (mg/L as F)	11	1.7	.3	.8	.7
Silica, dissolved (mg/L as SiO_2)	11	17	2.6	8.1	6.4
Dissolved solids, calculated (mg/L)	11	e1,180	366	762	683
Aluminum, dissolved (µg/L as Al)	11	54,000	<10	[1]9,380	210
Arsenic, dissolved (µg/L as As)	11	3	<1	--	<1
Barium, dissolved (µg/L as Ba)	11	220	24	127	130
Beryllium, dissolved (µg/L as Be)	11	12	<.5	--	<.5
Boron, dissolved (µg/L as B)	11	120	50	83	80
Cadmium, dissolved (µg/L as Cd)	11	11	<1	[1]3	2
Chromium, dissolved (µg/L as Cr)	11	<5	<5	--	<5
Cobalt, dissolved (µg/L as Co)	9	560	6	122	50
Copper, dissolved (µg/L as Cu)	11	50	<10	--	<10
Iron, dissolved (µg/L as Fe)	11	7,400	<3	[1]1,510	6
Lead, dissolved (µg/L as Pb)	11	<10	<10	--	<10
Lithium, dissolved (µg/L as Li)	11	110	16	57	46
Manganese, dissolved (µg/L as Mn)	11	430	25	208	150
Molybdenum, dissolved (µg/L as Mo)	11	<10	<10	--	<10
Nickel, dissolved (µg/L as Ni)	11	1,000	20	338	120
Selenium, dissolved (µg/L as Se)	4	<1	<1	--	--
Silver, dissolved (µg/L as Ag)	11	1	<1	--	<1
Strontium, dissolved (µg/L as Sr)	11	480	300	408	440
Vanadium, dissolved (µg/L as V)	11	<6	<6	--	<6
Zinc, dissolved (µg/L as Zn)	11	4,800	7	1,250	68

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 3, 06078260–Number Five Coulee below Giffen Spring, near Stockett, Mont.					
Streamflow, instantaneous (ft^3/s)	29	8.3	0.60	2.0	0.87
Specific conductance, onsite (µS/cm)	29	1,250	714	1,060	1,150
Temperature, water (°C)	29	18.0	4.5	10.0	9.5
pH, onsite (standard units)	25	7.9	6.0	6.5	6.5
Hardness, total (mg/L as $CaCO_3$)	25	600	330	516	530
Calcium, dissolved (mg/L as Ca)	25	160	74	134	140
Magnesium, dissolved (mg/L as Mg)	25	49	36	44	45
Sodium, dissolved (mg/L as Na)	25	20	14	16	16
Potassium, dissolved (mg/L as K)	25	7.0	4.1	5.6	5.7
Acidity (mg/L as H^+)	25	3.2	<.1	[1].9	.6
Alkalinity (mg/L and $CaCO_3$)	25	257	e<1	44.1	e<1
Sulfate, dissolved (mg/L as SO_4)	25	790	110	572	630
Chloride, dissolved (mg/L as Cl)	25	7.3	3.3	4.4	4.3
Fluoride, dissolved (mg/L as F)	24	1.3	.2	.6	.6
Silica, dissolved (mg/L as SiO_2)	25	17	8.3	13	14
Dissolved solids, calculated (mg/L)	25	e1,110	415	854	e919
Aluminum, dissolved (µg/L as Al)	25	400	20	123	70
Arsenic, dissolved (µg/L as As)	25	<2	<1	--	<1
Barium, dissolved (µg/L as Ba)	25	210	22	56	35
Beryllium, dissolved (µg/L as Be)	25	1	<.5	[1].8	.6
Boron, dissolved (µg/L as B)	25	100	50	77	80
Cadmium, dissolved (µg/L as Cd)	25	14	<1	[1]4	3
Chromium, dissolved (µg/L as Cr)	25	<5	<5	--	<5
Cobalt, dissolved (µg/L as Co)	25	410	10	194	190
Copper, dissolved (µg/L as Cu)	25	<10	<10	--	<10
Iron, dissolved (µg/L as Fe)	25	63,000	340	37,200	44,000
Lead, dissolved (µg/L as Pb)	25	<10	<1	--	<1
Lithium, dissolved (µg/L as Li)	25	69	11	57	62
Manganese, dissolved (µg/L as Mn)	25	1,300	130	795	830
Molybdenum, dissolved (µg/L as Mo)	25	1	<1	--	<1
Nickel, dissolved (µg/L as Ni)	25	470	30	285	310
Selenium, dissolved (µg/L as Se)	11	1	<1	--	<1
Silver, dissolved (µg/L as Ag)	25	2	<1	--	<1
Strontium, dissolved (µg/L as Sr)	25	430	290	368	380
Vanadium, dissolved (µg/L as V)	25	12	<6	[1]6	<6
Zinc, dissolved (µg/L as Zn)	25	1,900	30	1,040	1,100

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 4, 06078270–Sand Coulee at Sand Coulee, Mont.					
Streamflow, instantaneous (ft^3/s)	26	2.5	0.00	0.25	0.02
Specific conductance, onsite (µS/cm)	15	5,460	1,020	3,630	3,930
Temperature, water (°C)	15	30.0	3.0	16.2	17.0
pH, onsite (standard units)	13	6.1	2.2	3.1	2.7
Hardness, total (mg/L as $CaCO_3$)	13	1,400	480	1,040	1,200
Calcium, dissolved (mg/L as Ca)	13	250	86	193	220
Magnesium, dissolved (mg/L as Mg)	13	180	65	136	160
Sodium, dissolved (mg/L as Na)	13	26	16	22	23
Potassium, dissolved (mg/L as K)	13	7.1	2.2	3.2	2.9
Acidity (mg/L as H^+)	13	84	<.1	[1]50	38
Alkalinity (mg/L as $CaCO_3$)	13	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	13	6,800	470	4,020	4,500
Chloride, dissolved (mg/L as Cl)	13	21	3.1	8.2	7.7
Fluoride, dissolved (mg/L as F)	12	2.4	<.1	[1]1.0	.7
Silica, dissolved (mg/L as SiO_2)	13	86	9.9	61	77
Dissolved solids, calculated (mg/L)	13	e8,290	e683	e5,080	e5,810
Aluminum, dissolved (µg/L as Al)	13	490,000	30	301,000	410,000
Arsenic, dissolved (µg/L as As)	13	11	<1	[1]4.3	4
Barium, dissolved (µg/L as Ba)	13	120	<10	[1]39	11
Beryllium, dissolved (µg/L as Be)	13	60	<.5	[1]38	49
Boron, dissolved (µg/L as B)	13	490	80	322	420
Cadmium, dissolved (µg/L as Cd)	11	49	2	26	21
Chromium, dissolved (µg/L as Cr)	13	160	<5	[1]87	110
Cobalt, dissolved (µg/L as Co)	13	3,000	110	1,410	1,400
Copper, dissolved (µg/L as Cu)	12	160	<10	[1]91	110
Iron, dissolved (µg/L as Fe)	13	600,000	7,700	312,000	360,000
Lead, dissolved (µg/L as Pb)	13	2	<1	--	<1
Lithium, dissolved (µg/L as Li)	13	700	85	470	610
Manganese, dissolved (µg/L as Mn)	13	4,900	450	3,240	4,000
Molybdenum, dissolved (µg/L as Mo)	13	2	<1	--	<1
Nickel, dissolved (µg/L as Ni)	13	3,400	240	2,180	2,800
Selenium, dissolved (µg/L as Se)	7	1	<1	--	<2
Silver, dissolved (µg/L as Ag)	13	<10	<1	--	<3
Strontium, dissolved (µg/L as Sr)	13	1,400	530	1,090	1,200
Vanadium, dissolved (µg/L as V)	13	130	<6	[1]65	57
Zinc, dissolved (µg/L as Zn)	13	14,000	420	8,720	11,000

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 5, 06090590–Anaconda drain at Belt, Mont.					
Streamflow, instantaneous (ft^3/s)	25	0.29	0.15	0.22	0.22
Specific conductance, onsite (µS/cm)	26	2,460	2,280	2,380	2,380
Temperature, water (°C)	26	18.5	6.5	12.3	12.5
pH, onsite (standard units)	25	3.0	2.8	2.9	2.9
Hardness, total (mg/L as $CaCO_3$)	25	720	610	669	670
Calcium, dissolved (mg/L as Ca)	25	170	140	157	160
Magnesium, dissolved (mg/L as Mg)	25	72	63	67	67
Sodium, dissolved (mg/L as Na)	25	11	9.4	9.9	10
Potassium, dissolved (mg/L as K)	25	3.7	2.5	3.0	3.0
Acidity (mg/L as H^+)	25	25	18	21	21
Alkalinity (mg/L as $CaCO_3$)	25	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	25	2,700	1,700	1,960	1,900
Chloride, dissolved (mg/L as Cl)	25	7.9	2.2	4.5	4.5
Fluoride, dissolved (mg/L as F)	23	2.7	.6	1.6	1.7
Silica, dissolved (mg/L as SiO_2)	25	60	51	57	57
Dissolved solids, calculated (mg/L)	25	e3,290	e2,240	e2,540	e2,490
Aluminum, dissolved (µg/L as Al)	25	120,000	92,000	106,000	110,000
Arsenic, dissolved (µg/L as As)	25	3	<1	[1]1	1
Barium, dissolved (µg/L as Ba)	25	12	<2	[1]6	3
Beryllium, dissolved (µg/L as Be)	25	23	15	18	17
Boron, dissolved (µg/L as B)	25	320	60	154	150
Cadmium, dissolved (µg/L as Cd)	20	13	7	9	8
Chromium, dissolved (µg/L as Cr)	25	50	30	43	40
Cobalt, dissolved (µg/L as Co)	21	500	280	347	330
Copper, dissolved (µg/L as Cu)	25	40	<30	[1]27	<30
Iron, dissolved (µg/L as Fe)	25	190,000	150,000	169,000	170,000
Lead, dissolved (µg/L as Pb)	25	2	<1	[1]1	<30
Lithium, dissolved (µg/L as Li)	25	210	170	194	200
Manganese, dissolved (µg/L as Mn)	25	450	380	418	420
Molybdenum, dissolved (µg/L as Mo)	25	1	<1	--	<1
Nickel, dissolved (µg/L as Ni)	25	850	700	785	790
Selenium, dissolved (µg/L as Se)	12	<5	<1	--	<1
Silver, dissolved (µg/L as Ag)	25	5	<2	--	<3
Strontium, dissolved (µg/L as Sr)	25	1,700	1,400	1,540	1,600
Vanadium, dissolved (µg/L as V)	25	25	<18	[1]21	<60
Zinc, dissolved (µg/L as Zn)	25	3,800	3,100	3,450	3,500

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 6, 471851111111101–Giffen Spring near Stockett, Mont.					
Streamflow, instantaneous (ft^3/s)	25	0.55	0.38	0.49	0.50
Specific conductance, onsite (µS/cm)	25	1,400	982	1,160	1,130
Temperature, water (°C)	25	11.0	8.5	9.2	9.0
pH, onsite (standard units)	25	5.8	3.7	4.9	5.0
Hardness, total (mg/L as $CaCO_3$)	25	480	440	459	460
Calcium, dissolved (mg/L as Ca)	25	120	110	115	110
Magnesium, dissolved (mg/L as Mg)	25	44	39	42	42
Sodium, dissolved (mg/L as Na)	25	17	11	14	14
Potassium, dissolved (mg/L as K)	25	6.3	4.4	5.3	5.4
Acidity (mg/L as H^+)	25	9.5	.6	4.3	4.5
Alkalinity (mg/L as $CaCO_3$)	25	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	25	1,000	480	729	740
Chloride, dissolved (mg/L as Cl)	25	6.1	2.7	3.9	3.7
Fluoride, dissolved (mg/L as F)	24	1.5	.2	.9	.9
Silica, dissolved (mg/L as SiO_2)	25	25	16	19.8	19
Dissolved solids, calculated (mg/L)	25	e1,300	e715	e1,020	e1,020
Aluminum, dissolved (µg/L as Al)	25	35,000	1,100	11,800	6,900
Arsenic, dissolved (µg/L as As)	25	1	<1	--	<1
Barium, dissolved (µg/L as Ba)	25	40	23	28	26
Beryllium, dissolved (µg/L as Be)	25	11	2	5	5
Boron, dissolved (µg/L as B)	24	120	50	86	85
Cadmium, dissolved (µg/L as Cd)	25	18	1	7	8
Chromium, dissolved (µg/L as Cr)	25	7	<5	[1]4	<5
Cobalt, dissolved (µg/L as Co)	25	510	110	250	250
Copper, dissolved (µg/L as Cu)	25	80	<10	[1]17	<10
Iron, dissolved (µg/L as Fe)	25	110,000	40,000	72,200	71,000
Lead, dissolved (µg/L as Pb)	25	<10	<1	--	<1
Lithium, dissolved (µg/L as Li)	25	86	60	73	73
Manganese, dissolved (µg/L as Mn)	25	510	320	384	370
Molybdenum, dissolved (µg/L as Mo)	25	2	<1	--	<1
Nickel, dissolved (µg/L as Ni)	25	570	230	369	340
Selenium, dissolved (µg/L as Se)	12	<5	<1	--	<1
Silver, dissolved (µg/L as Ag)	25	2	<1	--	<1
Strontium, dissolved (µg/L as Sr)	25	380	310	352	350
Vanadium, dissolved (µg/L as V)	25	8	<6	--	<6
Zinc, dissolved (µg/L as Zn)	25	2,500	830	1,480	1,400

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 7, 472016111085701--Cottonwood Mine No. 6 drain to Cottonwood Creek near Stockett, Mont.					
Streamflow, instantaneous (ft^3/s)	18	0.15	0.02	0.05	0.03
Specific conductance, onsite (µS/cm)	18	6,020	5,570	5,788	5,790
Temperature, water (°C)	18	11.5	6 .0	9.6	10.0
pH, onsite (standard units)	18	2.8	2.5	2.6	2.6
Hardness, total (mg/L as $CaCO_3$)	18	1,500	1,300	1,420	1,400
Calcium, dissolved (mg/L as Ca)	18	380	330	348	350
Magnesium, dissolved (mg/L as Mg)	18	140	120	133	130
Sodium, dissolved (mg/L as Na)	18	15	13	14	14
Potassium, dissolved (mg/L as K)	18	5.7	.5	2.7	2.5
Acidity (mg/L as H^+)	18	87	74	82	83
Alkalinity (mg/L as $CaCO_3$)	18	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	18	7,200	5,400	6,040	5,850
Chloride, dissolved (mg/L as Cl)	18	20	<1	[1]6.7	3.6
Fluoride, dissolved (mg/L as F)	15	5.6	<1	[1]2.5	2.8
Silica, dissolved (mg/L as SiO_2)	18	100	83	93	95
Dissolved solids, calculated (mg/L)	18	e9,140	e6,530	e7,810	e7,700
Aluminum, dissolved (µg/L as Al)	18	450,000	350,000	401,000	405,000
Arsenic, dissolved (µg/L as As)	18	<25	<1	--	<5
Barium, dissolved (µg/L as Ba)	11	130	100	116	120
Beryllium, dissolved (µg/L as Be)	18	130	94	116	120
Boron, dissolved (µg/L as B)	15	570	470	509	510
Cadmium, dissolved (µg/L as Cd)	18	110	72	84	80
Chromium, dissolved (µg/L as Cr)	18	80	<50	[1]49	<80
Cobalt, dissolved (µg/L as Co)	17	9,700	3,900	6,220	6,200
Copper, dissolved (µg/L as Cu)	18	210	<100	[1]113	100
Iron, dissolved (µg/L as Fe)	18	840,000	660,000	774,000	785,000
Lead, dissolved (µg/L as Pb)	18	<4	<1	--	<1
Lithium, dissolved (µg/L as Li)	18	730	550	652	665
Manganese, dissolved (µg/L as Mn)	18	2,500	2,100	2,350	2,350
Molybdenum, dissolved (µg/L as Mo)	18	5	<1	2	1
Nickel, dissolved (µg/L as Ni)	18	12,000	9,700	10,800	11,000
Selenium, dissolved (µg/L as Se)	5	4	<1	--	--
Silver, dissolved (µg/L as Ag)	18	11	<3	--	<10
Strontium, dissolved (µg/L as Sr)	18	1,500	1,100	1,240	1,200
Vanadium, dissolved (µg/L as V)	18	240	<60	[1]138	140
Zinc, dissolved (µg/L as Zn)	18	56,000	44,000	50,500	51,000

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 8, 472114111095001--Cottonwood Mine No. 2 drain to Ladd Coulee at Stockett, Mont.					
Streamflow, instantaneous (ft^3/s)	24	0.10	0.001	0.02	0.01
Specific conductance, onsite (µS/cm)	25	10,800	6,470	8,920	8,750
Temperature, water (°C)	25	26.0	0.0	11.7	11.0
pH, onsite (standard units)	25	2.8	2.2	2.5	2.5
Hardness, total (mg/L as $CaCO_3$)	25	3,100	1,600	2,300	2,300
Calcium, dissolved (mg/L as Ca)	25	520	320	425	430
Magnesium, dissolved (mg/L as Mg)	25	430	200	300	310
Sodium, dissolved (mg/L as Na)	25	12	4.7	8.8	8.9
Potassium, dissolved (mg/L as K)	24	5.7	.3	2.2	1.8
Acidity (mg/L as H^+)	25	270	100	200	210
Alkalinity (mg/L as $CaCO_3$)	25	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	25	16,000	8,600	13,100	14,000
Fluoride, dissolved (mg/L as F)	20	8.5	<1	[1]3.0	2.0
Silica, dissolved (mg/L as SiO_2)	25	140	38	97	100
Dissolved solids, calculated (mg/L)	25	e20,700	e10,800	e16,600	e17,400
Aluminum, dissolved (µg/L as Al)	25	1,600,000	740,000	1,180,000	1,200,000
Arsenic, dissolved (µg/L as As)	25	11	<1	[1]2	<5
Barium, dissolved (µg/L as Ba)	25	200	<200	[1]150	<200
Beryllium, dissolved (µg/L as Be)	25	300	110	176	170
Boron, dissolved (µg/L as B)	23	1,000	390	727	760
Cadmium, dissolved (µg/L as Cd)	24	510	160	306	310
Chromium, dissolved (µg/L as Cr)	25	270	<100	[1]129	110
Cobalt, dissolved (µg/L as Co)	24	11,000	4,900	8,050	8,000
Copper, dissolved (µg/L as Cu)	25	820	200	450	420
Iron, dissolved (µg/L as Fe)	25	2,000,000	720,000	1,380,000	1,400,000
Lead, dissolved (µg/L as Pb)	24	1	<1	--	<1
Lithium, dissolved (µg/L as Li)	25	2,000	1,100	1,540	1,500
Manganese, dissolved (µg/L as Mn)	24	17,000	5,400	8,480	7,900
Molybdenum, dissolved (µg/L as Mo)	24	6	<1	[1]1	<2
Nickel, dissolved (µg/L as Ni)	23	17,000	8,500	12,600	13,000
Selenium, dissolved (µg/L as Se)	12	4	<1	--	<5
Silver, dissolved (µg/L as Ag)	25	<40	<1	--	<10
Strontium, dissolved (µg/L as Sr)	25	2,500	1,200	1,800	1,900
Vanadium, dissolved (µg/L as V)	19	230	<6	--	<120
Zinc, dissolved (µg/L as Zn)	25	87,000	42,000	63,200	62,000

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 9, 472212111093301--Number Five Coulee near Stockett, Mont.					
Streamflow, instantaneous (ft^3/s)	23	9.5	0.00	1.2	0.02
Specific conductance, onsite (µS/cm)	14	1,160	645	932	981
Temperature, water (°C)	14	29.0	0.0	12.2	14.8
pH, onsite (standard units)	14	8.4	5.1	7.1	7.2
Hardness, total (mg/L as $CaCO_3$)	14	620	300	468	480
Calcium, dissolved (mg/L as Ca)	14	170	61	117	125
Magnesium, dissolved (mg/L as Mg)	14	50	34	42	44
Sodium, dissolved (mg/L as Na)	14	25	11	19	20
Potassium, dissolved (mg/L as K)	14	6.9	4.1	5.4	5.4
Acidity (mg/L as H^+)	14	1.5	<.1	[1].2	<.1
Alkalinity (mg/L as $CaCO_3$)	14	259	1	74	30
Sulfate, dissolved (mg/L as SO_4)	14	750	77	432	495
Chloride, dissolved (mg/L as Cl)	14	5.7	3.1	4.4	4.4
Fluoride, dissolved (mg/L as F)	14	1	.4	.6	.6
Silica, dissolved (mg/L as SiO_2)	14	12	1.4	6.7	6.7
Dissolved solids, calculated (mg/L)	14	1,030	371	678	715
Aluminum, dissolved (µg/L as Al)	14	1,700	30	264	105
Arsenic, dissolved (µg/L as As)	14	<2	<1	--	<1
Barium, dissolved (µg/L as Ba)	14	160	32	84	75
Beryllium, dissolved (µg/L as Be)	14	.9	<.5	--	<.5
Boron, dissolved (µg/L as B)	14	100	40	69	75
Cadmium, dissolved (µg/L as Cd)	14	9	<1	[1]2	<1
Chromium, dissolved (µg/L as Cr)	14	7	<5	--	<5
Cobalt, dissolved (µg/L as Co)	12	210	<3	[1]74	30
Copper, dissolved (µg/L as Cu)	14	<10	<10	--	<10
Iron, dissolved (µg/L as Fe)	14	27,000	<3	[1]3,250	43
Lead, dissolved (µg/L as Pb)	14	10	<1	--	<10
Lithium, dissolved (µg/L as Li)	14	66	16	47.8	51.5
Manganese, dissolved (µg/L as Mn)	14	1,500	9	536	420
Molybdenum, dissolved (µg/L as Mo)	14	<10	<1	--	<10
Nickel, dissolved (µg/L as Ni)	14	450	<10	[1]162	130
Selenium, dissolved (µg/L as Se)	5	1	<1	--	--
Silver, dissolved (µg/L as Ag)	14	2	<1	--	<1
Strontium, dissolved (µg/L as Sr)	14	410	250	334	345
Vanadium, dissolved (µg/L as V)	14	<6	<6	--	<6
Zinc, dissolved (µg/L as Zn)	14	1,900	<3	[1]442	66

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 10, 472233110552601--French Coulee wetlands outflow at Belt, Mont.					
Streamflow, instantaneous (ft^3/s)	24	0.09	<0.001	0.03	0.02
Specific conductance, onsite (µS/cm)	20	6,180	2,880	4,601	4,630
Temperature, water (°C)	20	20.0	0.0	8.0	7.2
pH, onsite (standard units)	20	3.9	2.5	3.0	2.8
Hardness, total (mg/L as $CaCO_3$)	20	2,000	810	1,342	1,300
Calcium, dissolved (mg/L as Ca)	20	490	200	324	315
Magnesium, dissolved (mg/L as Mg)	20	210	75	128	110
Sodium, dissolved (mg/L as Na)	20	44	12	23	19
Potassium, dissolved (mg/L as K)	20	33	3	12	8.4
Acidity (mg/L as H^+)	20	90	23	64	66
Alkalinity (mg/L as $CaCO_3$)	20	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	20	6,800	2,200	5,005	5,450
Chloride, dissolved (mg/L as Cl)	20	29	7.8	18	17
Fluoride, dissolved (mg/L as F)	18	4.5	<1	[1]2.0	1.6
Silica, dissolved (mg/L as SiO_2)	20	130	55	92.4	90
Dissolved solids, calculated (mg/L)	20	e8,950	e2,870	e6,360	e6,800
Aluminum, dissolved (µg/L as Al)	20	570,000	100,000	371,000	375,000
Arsenic, dissolved (µg/L as As)	20	<2	<1	--	<1
Barium, dissolved (µg/L as Ba)	20	21	<10	[1]12.4	12
Beryllium, dissolved (µg/L as Be)	20	62	15	40	40
Boron, dissolved (µg/L as B)	20	510	150	283	255
Cadmium, dissolved (µg/L as Cd)	20	9	<5	[1]4	3
Chromium, dissolved (µg/L as Cr)	20	110	<50	[1]58	45
Cobalt, dissolved (µg/L as Co)	15	420	90	261	260
Copper, dissolved (µg/L as Cu)	20	140	<30	[1]41	<100
Iron, dissolved (µg/L as Fe)	19	770,000	170,000	471,000	500,000
Lead, dissolved (µg/L as Pb)	20	6	<1	[1]2	<10
Lithium, dissolved (µg/L as Li)	20	750	200	476	455
Manganese, dissolved (µg/L as Mn)	20	6,400	790	2,770	2,200
Molybdenum, dissolved (µg/L as Mo)	20	<10	<1	--	<1
Nickel, dissolved (µg/L as Ni)	20	1,100	230	671	695
Selenium, dissolved (µg/L as Se)	12	<10	<1	--	<1
Silver, dissolved (µg/L as Ag)	20	18	<1	--	<5
Strontium, dissolved (µg/L as Sr)	20	2,900	1,100	2,010	1,950
Vanadium, dissolved (µg/L as V)	18	40	<12	--	<60
Zinc, dissolved (µg/L as Zn)	17	7,400	810	3,020	2,400

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 11, 472235110553201--French Coulee wetlands inflow at Belt, Mont.					
Streamflow, instantaneous (ft^3/s)	19	0.12	0.02	0.05	0.04
Specific conductance, onsite (µS/cm)	19	6,550	2,300	4,730	5,620
Temperature, water (°C)	18	12.5	7.5	10.1	10.0
pH, onsite (standard units)	19	2.9	2.5	2.7	2.7
Hardness, total (mg/L as $CaCO_3$)	19	1,100	550	901	1,000
Calcium, dissolved (mg/L as Ca)	19	250	110	199	230
Magnesium, dissolved (mg/L as Mg)	19	120	66	96	100
Sodium, dissolved (mg/L as Na)	19	17	11	14	13
Potassium, dissolved (mg/L as K)	19	5.9	2.8	4.6	5.2
Acidity (mg/L as H^+)	19	120	22	73	91
Alkalinity (mg/L as $CaCO_3$)	19	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	19	7,400	2,000	4,950	6,000
Chloride, dissolved (mg/L as Cl)	19	38	4.5	15	12
Fluoride, dissolved (mg/L as F)	17	3.6	<1	[1]1.3	1.1
Silica, dissolved (mg/L as SiO_2)	19	120	41	87	100
Dissolved solids, calculated (mg/L)	19	e9,860	e2,530	e6,360	e7,260
Aluminum, dissolved (µg/L as Al)	19	640,000	100,000	366,000	450,000
Arsenic, dissolved (µg/L as As)	19	39	2	19	17
Barium, dissolved (µg/L as Ba)	19	17	<3	[1]6	<10
Beryllium, dissolved (µg/L as Be)	19	64	12	40	49
Boron, dissolved (µg/L as B)	19	470	90	318	360
Cadmium, dissolved (µg/L as Cd)	15	11	<1	[1]7	6
Chromium, dissolved (µg/L as Cr)	19	210	30	136	160
Cobalt, dissolved (µg/L as Co)	12	440	100	253	225
Copper, dissolved (µg/L as Cu)	19	60	<30	[1]42	<100
Iron, dissolved (µg/L as Fe)	18	1,300,000	170,000	709,000	900,000
Lead, dissolved (µg/L as Pb)	19	3	<1	[1]2	<10
Lithium, dissolved (µg/L as Li)	19	670	170	454	560
Manganese, dissolved (µg/L as Mn)	19	1,100	200	673	830
Molybdenum, dissolved (µg/L as Mo)	19	<10	<1	--	<1
Nickel, dissolved (µg/L as Ni)	19	1,300	230	789	980
Selenium, dissolved (µg/L as Se)	12	2	<1	--	<2
Silver, dissolved (µg/L as Ag)	19	7	<3	--	<5
Strontium, dissolved (µg/L as Sr)	19	2,400	890	1,820	2,200
Vanadium, dissolved (µg/L as V)	19	290	<18	[1]127	93
Zinc, dissolved (µg/L as Zn)	19	5,800	1,200	3,730	4,600

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 12, 472235110553202–French Coulee wetlands inflow No. 2 at Belt, Mont.					
Streamflow, instantaneous (ft^3/s)	6	0.04	0.03	0.03	0.03
Specific conductance, onsite (µS/cm)	6	5,550	3,640	4,430	4,350
Temperature, water (°C)	6	13.0	8.5	11.0	11.5
pH, onsite (standard units)	6	2.8	2.6	2.8	2.8
Hardness, total (mg/L as $CaCO_3$)	6	1,000	660	827	860
Calcium, dissolved (mg/L as Ca)	6	230	140	183	190
Magnesium, dissolved (mg/L as Mg)	6	110	75	90	93
Sodium, dissolved (mg/L as Na)	6	13	12	12	12
Potassium, dissolved (mg/L as K)	6	5.8	.8	4.3	4.8
Acidity (mg/L as H^+)	6	98	45	69	72
Sulfate, dissolved (mg/L as SO_4)	6	6,000	3,300	4,550	4,450
Chloride, dissolved (mg/L as Cl)	6	13	9.1	11.0	10.5
Fluoride, dissolved (mg/L as F)	6	3.9	<1	[1]2.7	2.2
Silica, dissolved (mg/L as SiO_2)	6	100	70	88	90
Aluminum, dissolved (µg/L as Al)	6	480,000	214,000	337,000	335,000
Arsenic, dissolved (µg/L as As)	6	22	<2	[1]9.3	5
Barium, dissolved (µg/L as Ba)	6	19	8	12.5	12
Beryllium, dissolved (µg/L as Be)	6	56	26	41	42
Boron, dissolved (µg/L as B)	4	390	230	--	--
Cadmium, dissolved (µg/L as Cd)	6	10	5	7.5	7.5
Chromium, dissolved (µg/L as Cr)	6	190	100	130	125
Cobalt, dissolved (µg/L as Co)	6	480	220	323	335
Copper, dissolved (µg/L as Cu)	6	<120	<50	--	<100
Iron, dissolved (µg/L as Fe)	6	1,000,000	440,000	693,000	700,000
Lead, dissolved (µg/L as Pb)	6	2	<4	[1]1.8	2
Lithium, dissolved (µg/L as Li)	6	650	320	460	460
Manganese, dissolved (µg/L as Mn)	6	930	430	650	670
Molybdenum, dissolved (µg/L as Mo)	6	1.6	<1	--	<1
Nickel, dissolved (µg/L as Ni)	6	1,100	490	780	840
Silver, dissolved (µg/L as Ag)	6	29	<5	--	<10
Strontium, dissolved (µg/L as Sr)	6	2,300	1,200	1,720	1,750
Vanadium, dissolved (µg/L as V)	6	87	<60	--	62
Zinc, dissolved (µg/L as Zn)	6	5,100	2,300	3,550	3,700

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 13, 472305110551701--Lewis Coulee above Castner Park, at Belt, Mont.					
Streamflow, instantaneous (ft^3/s)	24	0.02	0.002	0.01	0.01
Specific conductance, onsite (µS/cm)	24	4,850	3,890	4,310	4,220
Temperature, water (°C)	24	14.0	6.5	9.7	9.5
pH, onsite (standard units)	24	2.8	2.4	2.7	2.7
Hardness, total (mg/L as $CaCO_3$)	24	1,000	850	934	920
Calcium, dissolved (mg/L as Ca)	24	200	160	177	175
Magnesium, dissolved (mg/L as Mg)	24	130	110	120	120
Sodium, dissolved (mg/L as Na)	24	27	24	26	26
Potassium, dissolved (mg/L as K)	23	2.8	.8	1.9	2.2
Acidity (mg/L as H^+)	24	63	35	56	57
Alkalinity (mg/L as $CaCO_3$)	24	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	24	5,700	3,500	4,290	4,200
Chloride, dissolved (mg/L as Cl)	24	26	4.3	8.7	6.8
Fluoride, dissolved (mg/L as F)	21	2.1	<1	[1]1.0	<1
Silica, dissolved (mg/L as SiO_2)	24	88	74	82	83
Dissolved solids, calculated (mg/L)	24	e6,960	e4,630	e5,460	e5,420
Aluminum, dissolved (µg/L as Al)	24	530,000	250,000	300,000	290,000
Arsenic, dissolved (µg/L as As)	24	2	<1	[1].9	<2
Barium, dissolved (µg/L as Ba)	24	20	<3	[1]14	<10
Beryllium, dissolved (µg/L as Be)	24	31	20	23	22
Boron, dissolved (µg/L as B)	21	320	220	267	270
Cadmium, dissolved (µg/L as Cd)	24	65	9	43	44
Chromium, dissolved (µg/L as Cr)	24	190	100	129	125
Cobalt, dissolved (µg/L as Co)	24	5,900	750	1,450	1,000
Copper, dissolved (µg/L as Cu)	24	200	<80	[1]89	70
Iron, dissolved (µg/L as Fe)	24	560,000	450,000	504,000	505,000
Lead, dissolved (µg/L as Pb)	24	3	<1	[1].7	<1
Lithium, dissolved (µg/L as Li)	24	520	390	452	450
Manganese, dissolved (µg/L as Mn)	24	1,000	840	923	920
Molybdenum, dissolved (µg/L as Mo)	24	1	<1	--	<1
Nickel, dissolved (µg/L as Ni)	24	2,200	1,800	2,080	2,100
Selenium, dissolved (µg/L as Se)	11	<10	<1	--	<1
Silver, dissolved (µg/L as Ag)	24	11	<3	--	<5
Strontium, dissolved (µg/L as Sr)	24	1,600	1,300	1,490	1,500
Vanadium, dissolved (µg/L as V)	24	150	<48	[1]70	41
Zinc, dissolved (µg/L as Zn)	24	8,300	6,500	7,450	7,450

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 14, 472306111103601–Mine drain to Mining Coulee near Sand Coulee, Mont.					
Streamflow, instantaneous (ft^3/s)	25	0.04	0.01	0.02	0.01
Specific conductance, onsite (µS/cm)	25	7,620	6,680	7,310	7,300
Temperature, water (°C)	25	14.5	7.5	9.6	9.5
pH, onsite (standard units)	25	3.0	2.4	2.6	2.6
Hardness, total (mg/L as $CaCO_3$)	25	1,600	1,300	1,530	1,500
Calcium, dissolved (mg/L as Ca)	25	310	210	281	280
Magnesium, dissolved (mg/L as Mg)	25	220	190	202	200
Sodium, dissolved (mg/L as Na)	25	23	17	20	20
Potassium, dissolved (mg/L as K)	25	.4	<.1	[1].2	.2
Acidity (mg/L as H^+)	25	160	140	150	150
Alkalinity (mg/L as $CaCO_3$)	25	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	25	12,000	8,700	9,860	9,700
Fluoride, dissolved (mg/L as F)	20	8.4	<1	[1]2.3	1.4
Silica, dissolved (mg/L as SiO_2)	24	140	55	118	130
Dissolved solids, calculated (mg/L)	25	e14,600	e11,200	e12,500	e12,300
Aluminum, dissolved (µg/L as Al)	25	990,000	860,000	893,000	890,000
Arsenic, dissolved (µg/L as As)	25	12	<1	[1]2.8	1
Barium, dissolved (µg/L as Ba)	25	85	<100	[1]76	<100
Beryllium, dissolved (µg/L as Be)	25	100	40	86	94
Boron, dissolved (µg/L as B)	25	890	220	693	730
Cadmium, dissolved (µg/L as Cd)	24	98	71	84	85
Chromium, dissolved (µg/L as Cr)	25	400	130	315	320
Cobalt, dissolved (µg/L as Co)	25	9,500	2,900	4,060	3,600
Copper, dissolved (µg/L as Cu)	25	120	<100	[1]90	<200
Iron, dissolved (µg/L as Fe)	25	1,200,000	940,000	1,060,000	1,100,000
Lead, dissolved (µg/L as Pb)	25	<10	<1	--	<1
Lithium, dissolved (µg/L as Li)	25	1,500	1,100	1,210	1,200
Manganese, dissolved (µg/L as Mn)	24	3,900	2,900	3,390	3,400
Molybdenum, dissolved (µg/L as Mo)	25	3	<1	[1]1.5	1
Nickel, dissolved (µg/L as Ni)	25	8,700	7,200	7,830	7,800
Selenium, dissolved (µg/L as Se)	12	<10	<1	--	<2
Silver, dissolved (µg/L as Ag)	25	54	<1	--	<10
Strontium, dissolved (µg/L as Sr)	25	1,300	1,100	1,220	1,200
Vanadium, dissolved (µg/L as V)	17	490	<120	[1]345	340
Zinc, dissolved (µg/L as Zn)	25	38,000	32,000	33,700	33,000

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 16, 472313111104901 Mine Drain to Sand Coulee near Sand Coulee, Mont.					
Streamflow, instantaneous (ft^3/s)	25	0.11	0.00	0.03	0.02
Specific conductance, onsite (µS/cm)	19	3,480	3,100	3,290	3,290
Temperature, water (°C)	19	23.0	7.5	11.1	10.5
pH, onsite (standard units)	19	3.4	2.9	3.1	3.2
Hardness, total (mg/L as $CaCO_3$)	19	950	790	849	850
Calcium, dissolved (mg/L as Ca)	19	180	160	167	160
Magnesium, dissolved (mg/L as Mg)	19	120	95	105	100
Sodium, dissolved (mg/L as Na)	19	21	18	19	19
Potassium, dissolved (mg/L as K)	19	2	1.6	1.8	1.8
Acidity (mg/L as H^+)	19	44	35	41	42
Alkalinity (mg/L as $CaCO_3$)	19	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	19	3,600	2,700	3,020	3,000
Chloride, dissolved (mg/L as Cl)	19	15	3.9	7.4	5.2
Fluoride, dissolved (mg/L as F)	19	3.1	<1	[1]1.5	1.3
Silica, dissolved (mg/L as SiO_2)	19	71	53	64	64
Dissolved solids, calculated (mg/L)	19	e4,650	e3,570	e3,970	e3,880
Aluminum, dissolved (µg/L as Al)	19	270,000	180,000	229,000	230,000
Arsenic, dissolved (µg/L as As)	19	11	<1	[1]4.6	4
Barium, dissolved (µg/L as Ba)	19	30	<4	[1]18	25
Beryllium, dissolved (µg/L as Be)	19	34	26	31	30
Boron, dissolved (µg/L as B)	18	360	130	273	280
Cadmium, dissolved (µg/L as Cd)	18	50	18	30	30
Chromium, dissolved (µg/L as Cr)	19	100	60	80	80
Cobalt, dissolved (µg/L as Co)	19	2,300	800	1,320	1,100
Copper, dissolved (µg/L as Cu)	19	<60	<30	--	<50
Iron, dissolved (µg/L as Fe)	19	410,000	290,000	349,000	350,000
Lead, dissolved (µg/L as Pb)	19	<10	<1	--	<1
Lithium, dissolved (µg/L as Li)	19	400	310	364	370
Manganese, dissolved (µg/L as Mn)	19	1,400	1,100	1,280	1,300
Molybdenum, dissolved (µg/L as Mo)	19	2	<1	--	<1
Nickel, dissolved (µg/L as Ni)	19	2,600	2,100	2,370	2,300
Selenium, dissolved (µg/L as Se)	6	<5	<1	--	<2
Silver, dissolved (µg/L as Ag)	18	3	<3	--	<5
Strontium, dissolved (µg/L as Sr)	19	1,100	940	1,030	1,000
Vanadium, dissolved (µg/L as V)	19	160	<36	[1]104	98
Zinc, dissolved (µg/L as Zn)	19	12,000	9,200	10,300	10,000

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 17, 472330111082801--Centerville wetlands inflow at Centerville, Mont.					
Streamflow, instantaneous (ft^3/s)	25	0.02	0.01	0.02	0.02
Specific conductance, onsite (µS/cm)	25	3,690	2,970	3,310	3,300
Temperature, water (°C)	25	12.5	7.5	9.7	10.0
pH, onsite (standard units)	25	2.8	2.5	2.6	2.6
Hardness, total (mg/L as $CaCO_3$)	25	1,100	610	764	760
Calcium, dissolved (mg/L as Ca)	25	260	130	173	170
Magnesium, dissolved (mg/L as Mg)	25	100	70	80	78
Sodium, dissolved (mg/L as Na)	25	16	13	15	15
Potassium, dissolved (mg/L as K)	25	1.9	.2	1.1	1
Acidity (mg/L as H^+)	25	77	33	42	42
Alkalinity (mg/L as $CaCO_3$)	25	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	25	4,400	2,400	2,996	2,900
Chloride, dissolved (mg/L as Cl)	25	9.7	1.4	4.2	2.9
Fluoride, dissolved (mg/L as F)	24	2.4	<1	[1]1.0	1.0
Silica, dissolved (mg/L as SiO_2)	25	94	67	82	84
Dissolved solids, calculated (mg/L)	25	e5,330	e3,070	e3,820	e3,740
Aluminum, dissolved (µg/L as Al)	25	260,000	190,000	223,000	230,000
Arsenic, dissolved (µg/L as As)	25	3	<1	--	<1
Barium, dissolved (µg/L as Ba)	25	12	5	8	7
Beryllium, dissolved (µg/L as Be)	25	37	24	31	31
Boron, dissolved (µg/L as B)	22	220	130	189	190
Cadmium, dissolved (µg/L as Cd)	22	32	11	25	27
Chromium, dissolved (µg/L as Cr)	25	40	<20	[1]19	20
Cobalt, dissolved (µg/L as Co)	19	520	310	428	440
Copper, dissolved (µg/L as Cu)	25	130	80	106	110
Iron, dissolved (µg/L as Fe)	25	290,000	170,000	233,000	240,000
Lead, dissolved (µg/L as Pb)	25	4	<1	[1]2.2	2
Lithium, dissolved (µg/L as Li)	25	590	270	349	340
Manganese, dissolved (µg/L as Mn)	25	2,200	1,100	1,430	1,400
Molybdenum, dissolved (µg/L as Mo)	25	1	<1	--	<1
Nickel, dissolved (µg/L as Ni)	25	950	630	779	790
Selenium, dissolved (µg/L as Se)	12	2	<2	[1]1.8	2
Silver, dissolved (µg/L as Ag)	25	3	<2	--	<3
Strontium, dissolved (µg/L as Sr)	25	1,100	760	890	880
Vanadium, dissolved (µg/L as V)	25	71	<12	[1]27	11
Zinc, dissolved (µg/L as Zn)	25	2,500	1,700	2,240	2,300

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 18, 472331111083001--Centerville wetlands outflow at Centerville, Mont.					
Streamflow, instantaneous (ft^3/s)	16	0.02	0.002	0.01	0.01
Specific conductance, onsite (µS/cm)	24	5,370	1,760	3,596	3,425
Temperature, water (°C)	24	27.5	0.0	11.8	12.5
pH, onsite (standard units)	24	4.3	2.4	2.8	2.7
Hardness, total (mg/L as $CaCO_3$)	24	2,200	370	1,210	1,050
Calcium, dissolved (mg/L as Ca)	24	550	90	304	280
Magnesium, dissolved (mg/L as Mg)	24	190	34	109	96
Sodium, dissolved (mg/L as Na)	24	45	7.0	23	19
Potassium, dissolved (mg/L as K)	24	140	4.2	41	28
Acidity (mg/L as H^+)	24	55	14	33	32
Alkalinity (mg/L as $CaCO_3$)	24	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	24	4,600	1,100	3,130	3,050
Chloride, dissolved (mg/L as Cl)	24	44	2.4	18	14
Fluoride, dissolved (mg/L as F)	23	1.5	<1	[1]1.0	<1
Silica, dissolved (mg/L as SiO_2)	23	75	26	56	61
Dissolved solids, calculated (mg/L)	24	e5,870	e1,440	e4,010	e3,920
Aluminum, dissolved (µg/L as Al)	24	280,000	84,000	195,000	200,000
Arsenic, dissolved (µg/L as As)	24	3	<1	--	<1
Barium, dissolved (µg/L as Ba)	24	39	<3	[1]12	8
Beryllium, dissolved (µg/L as Be)	24	44	11	28	28
Boron, dissolved (µg/L as B)	24	410	60	203	190
Cadmium, dissolved (µg/L as Cd)	19	30	12	22	21
Chromium, dissolved (µg/L as Cr)	24	40	<20	[1]15	<20
Cobalt, dissolved (µg/L as Co)	24	640	190	422	400
Copper, dissolved (µg/L as Cu)	24	130	<30	[1]74	70
Iron, dissolved (µg/L as Fe)	24	240,000	50,000	129,000	105,000
Lead, dissolved (µg/L as Pb)	24	1	<1	--	<1
Lithium, dissolved (µg/L as Li)	24	650	120	395	380
Manganese, dissolved (µg/L as Mn)	24	6,100	740	3,020	2,500
Molybdenum, dissolved (µg/L as Mo)	24	1	<1	--	<1
Nickel, dissolved (µg/L as Ni)	24	1,000	300	695	695
Selenium, dissolved (µg/L as Se)	11	1	<1	--	<2
Silver, dissolved (µg/L as Ag) ,	24	2	<2	--	<3
Strontium, dissolved (µg/L as Sr)	24	2,200	390	1,260	1,100
Vanadium, dissolved (µg/L as V)	24	30	<6	--	<18
Zinc, dissolved (µg/L as Zn)	24	2,500	820	1,750	1,700

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 19, 472334111104401--Mount Oregon Mine drain to Kate's Coulee at Sand Coulee, Mont.					
Streamflow, instantaneous (ft^3/s)	25	0.18	0.02	0.07	0.07
Specific conductance, onsite (µS/cm)	25	3,010	2,690	2,830	2,860
Temperature, water (°C)	25	15.0	10.0	11.4	11.0
pH, onsite (standard units)	25	4.7	4.0	4.2	4.1
Hardness, total (mg/L as $CaCO_3$)	25	960	900	939	940
Calcium, dissolved (mg/L as Ca)	25	170	160	166	170
Magnesium, dissolved (mg/L as Mg)	25	130	120	127	130
Sodium, dissolved (mg/L as Na)	25	25	22	24	24
Potassium, dissolved (mg/L as K)	24	5.2	4.1	4.6	4.6
Acidity (mg/L as H^+)	25	33	27	30	30
Alkalinity (mg/L as $CaCO_3$)	25	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	25	3,700	2,200	2,700	2,500
Chloride, dissolved (mg/L as Cl)	25	17	3	6.2	4.5
Fluoride, dissolved (mg/L as F)	24	3.4	<1	[1]2.0	2.1
Silica, dissolved (mg/L as SiO_2)	25	41	34	38	37
Dissolved solids, calculated (mg/L)	25	e4,500	e2,990	e3,540	e3,390
Aluminum, dissolved (µg/L as Al)	25	180,000	140,000	164,000	170,000
Arsenic, dissolved (µg/L as As)	25	24	6	14	14
Barium, dissolved (µg/L as Ba)	25	28	12	18	14
Beryllium, dissolved (µg/L as Be)	25	35	23	25	25
Boron, dissolved (µg/L as B)	21	310	240	265	260
Cadmium, dissolved (µg/L as Cd)	18	9	6	8	8
Chromium, dissolved (µg/L as Cr)	25	50	20	33	30
Cobalt, dissolved (µg/L as Co)	18	740	510	651	665
Copper, dissolved (µg/L as Cu)	25	<60	<30	--	<30
Iron, dissolved (µg/L as Fe)	25	340,000	230,000	296,000	290,000
Lead, dissolved (µg/L as Pb)	25	2	<1	[1].9	<10
Lithium, dissolved (µg/L as Li)	25	470	380	418	420
Manganese, dissolved (µg/L as Mn)	25	1,300	1,200	1,240	1,200
Molybdenum, dissolved (µg/L as Mo)	25	12	<30	[1]11	10
Nickel, dissolved (µg/L as Ni)	25	1,600	1,400	1,530	1,500
Selenium, dissolved (µg/L as Se)	12	<5	<1	--	<1
Silver, dissolved (µg/L as Ag)	25	10	<3	--	<3
Strontium, dissolved (µg/L as Sr)	25	1,300	1,100	1,180	1,200
Vanadium, dissolved (µg/L as V)	25	160	24	102	94
Zinc, dissolved (µg/L as Zn)	25	6,600	5,500	6,080	6,100

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 20, 472346111102401--Nelson Mine drain to Sand Coulee at Sand Coulee, Mont.					
Streamflow, instantaneous (ft^3/s)	25	0.08	0.009	0.03	0.02
Specific conductance, onsite (µS/cm)	25	8,980	6,810	7,800	7,970
Temperature, water (°C)	25	17.5	5.5	11.6	11.5
pH, onsite (standard units)	25	3.0	2.3	2.6	2.6
Hardness, total (mg/L as $CaCO_3$)	25	1,800	1,400	1,580	1,600
Calcium, dissolved (mg/L as Ca)	25	280	190	249	250
Magnesium, dissolved (mg/L as Mg)	25	270	210	232	230
Sodium, dissolved (mg/L as Na)	25	24	16	20	20
Potassium, dissolved (mg/L as K)	25	2	.3	.8	.7
Acidity (mg/L as H^+)	25	200	140	168	170
Alkalinity (mg/L as $CaCO_3$)	25	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	24	14,000	8,900	10,900	11,000
Fluoride, dissolved (mg/L as F)	18	7.3	<1	[1]2.9	1.6
Silica, dissolved (mg/L as SiO_2)	24	150	59	126	140
Dissolved solids, calculated (mg/L)	24	e17,200	e11,600	e14,000	e14,000
Aluminum, dissolved (µg/L as Al)	25	1,000,000	740,000	889,000	890,000
Arsenic, dissolved (µg/L as As)	24	76	16	53	51
Barium, dissolved (µg/L as Ba)	25	44	<10	[1]36	<100
Beryllium, dissolved (µg/L as Be)	25	140	40	96	99
Boron, dissolved (µg/L as B)	21	1,000	620	781	790
Cadmium, dissolved (µg/L as Cd)	24	120	84	106	110
Chromium, dissolved (µg/L as Cr)	25	400	270	325	320
Cobalt, dissolved (µg/L as Co)	25	5,600	1,700	2,540	2,200
Copper, dissolved (µg/L as Cu)	25	650	230	369	370
Iron, dissolved (µg/L as Fe)	25	2,000,000	1,200,000	1,390,000	1,500,000
Lead, dissolved (µg/L as Pb)	25	1	<1	--	<1
Lithium, dissolved (µg/L as Li)	25	1,400	880	1,010	970
Manganese, dissolved (µg/L as Mn)	25	12,000	7,100	8,650	8,200
Molybdenum, dissolved (µg/L as Mo)	25	6	<1	[1]3	3
Nickel, dissolved (µg/L as Ni)	25	5,500	4,300	4,760	4,800
Selenium, dissolved (µg/L as Se)	12	<25	<2	--	<5
Silver, dissolved (µg/L as Ag)	24	<25	<1	--	<12
Strontium, dissolved (µg/L as Sr)	25	1,800	1,400	1,560	1,600
Vanadium, dissolved (µg/L as V)	18	660	<120	[1]385	360
Zinc, dissolved (µg/L as Zn)	25	19,000	15,000	17,600	18,000

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 21, 472309110551201--Lewis Coulee below mine adit, at Belt, Mont.					
Streamflow, instantaneous (ft^3/s)	25	0.30	0.004	0.04	0.01
Specific conductance, onsite (µS/cm)	25	3,810	818	3,110	3,510
Temperature, water (°C)	25	24.0	.5	11.4	11.5
pH, onsite (standard units)	25	7.4	3	3.9	3.2
Hardness, total (mg/L as $CaCO_3$)	25	1,000	370	876	950
Calcium, dissolved (mg/L as Ca)	25	200	58	167	180
Magnesium, dissolved (mg/L as Mg)	25	130	54	111	120
Sodium, dissolved (mg/L as Na)	25	60	19	25	24
Potassium, dissolved (mg/L as K)	25	7.7	4.4	5.8	5.8
Acidity (mg/L as H^+)	25	55	<.1	[1]37	45
Alkalinity (mg/L as $CaCO_3$)	25	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	25	4,000	180	2,880	3,200
Chloride, dissolved (mg/L as Cl)	25	17	7.2	11	10
Fluoride, dissolved (mg/L as F)	21	2.2	<1	[1]1.2	<1
Silica, dissolved (mg/L as SiO_2)	25	76	7.9	59	69
Dissolved solids, calculated (mg/L)	25	e5,290	e485	e3,860	e4,310
Aluminum, dissolved (µg/L as Al)	25	280,000	20	193,000	230,000
Arsenic, dissolved (µg/L as As)	25	2	<1	--	<1
Barium, dissolved (µg/L as Ba)	25	130	9	29	20
Beryllium, dissolved (µg/L as Be)	25	32	<.5	[1]19	19
Boron, dissolved (µg/L as B)	22	290	40	220	250
Cadmium, dissolved (µg/L as Cd)	23	21	<1	[1]11	10
Chromium, dissolved (µg/L as Cr)	25	60	<5	[1]36	30
Cobalt, dissolved (µg/L as Co)	25	3,300	20	871	750
Copper, dissolved (µg/L as Cu)	25	80	<10	[1]29	<50
Iron, dissolved (µg/L as Fe)	25	560,000	2,200	373,000	440,000
Lead, dissolved (µg/L as Pb)	25	2	<1	[1]1.6	<10
Lithium, dissolved (µg/L as Li)	25	480	47	360	410
Manganese, dissolved (µg/L as Mn)	25	2,100	56	1,320	1,500
Molybdenum, dissolved (µg/L as Mo)	25	10	<1	[1].8	<1
Nickel, dissolved (µg/L as Ni)	25	1,600	20	1,160	1,300
Selenium, dissolved (µg/L as Se)	12	2	<1	--	<1
Silver, dissolved (µg/L as Ag)	25	18	<1	[1]1.7	<5
Strontium, dissolved (µg/L as Sr)	25	1,400	400	1,150	1,200
Vanadium, dissolved (µg/L as V)	25	110	<6	[1]56	59
Zinc, dissolved (µg/L as Zn)	25	5,600	32	3,880	4,500

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 22, 472446111085101–Pipe spring at Tracy, Mont.					
Streamflow, instantaneous (ft^3/s)	25	0.61	0.03	0.09	0.05
Specific conductance, onsite (µS/cm)	25	2,360	1,410	1,620	1,620
Temperature, water (°C)	25	11.5	8.5	10.7	10.5
pH, onsite (standard units)	25	3.1	2.4	2.9	2.9
Hardness, total (mg/L as $CaCO_3$)	25	540	410	461	460
Calcium, dissolved (mg/L as Ca)	25	91	63	75	73
Magnesium, dissolved (mg/L as Mg)	25	76	57	66	67
Sodium, dissolved (mg/L as Na)	25	25	19	22	22
Potassium, dissolved (mg/L as K)	25	4.9	1.7	2.5	2.5
Acidity (mg/L as H^+)	24	13	4.2	5.9	6.0
Alkalinity (mg/L as $CaCO_3$)	25	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	25	1,300	640	831	810
Chloride, dissolved (mg/L as Cl)	25	8.1	5.4	6.2	5.9
Fluoride, dissolved (mg/L as F)	25	2.5	.5	1.2	1
Silica, dissolved (mg/L as SiO_2)	25	54	38	46	45
Dissolved solids, calculated (mg/L)	25	e1,670	e875	e1,090	e1,080
Aluminum, dissolved (µg/L as Al)	25	67,000	22,000	32,000	34,000
Arsenic, dissolved (µg/L as As)	25	1	<1	--	<1
Barium, dissolved (µg/L as Ba)	25	7	<2	[1]4	4
Beryllium, dissolved (µg/L as Be)	25	12	4	6	6
Boron, dissolved (µg/L as B)	25	180	130	157	160
Cadmium, dissolved (µg/L as Cd)	25	16	<10	[1]8	7
Chromium, dissolved (µg/L as Cr)	25	7	<5	--	<5
Cobalt, dissolved (µg/L as Co)	25	320	150	189	190
Copper, dissolved (µg/L as Cu)	25	60	<10	[1]15	10
Iron, dissolved (µg/L as Fe)	25	39,000	3,400	6,800	5,900
Lead, dissolved (µg/L as Pb)	25	2	<1	--	<1
Lithium, dissolved (µg/L as Li)	25	160	110	136	130
Manganese, dissolved (µg/L as Mn)	25	930	480	578	580
Molybdenum, dissolved (µg/L as Mo)	25	2	<1	--	<1
Nickel, dissolved (µg/L as Ni)	25	600	280	346	350
Selenium, dissolved (µg/L as Se)	12	1	<1	[1]1	<2
Silver, dissolved (µg/L as Ag)	25	2	<1	--	<1
Strontium, dissolved (µg/L as Sr)	25	680	490	586	580
Vanadium, dissolved (µg/L as V)	25	<18	<6	--	<6
Zinc, dissolved (µg/L as Zn)	25	1,900	810	1,050	1,100

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 23, 472447111085301–Stock tank spring at Tracy, Mont.					
Streamflow, instantaneous (ft^3/s)	20	0.003	0.002	0.002	0.002
Specific conductance, onsite (µS/cm)	25	967	736	800	782
Temperature, water (°C)	25	16.0	4.0	8.8	9.5
pH, onsite (standard units)	25	7.8	7.1	7.4	7.4
Hardness, total (mg/L as $CaCO_3$)	25	500	350	405	400
Calcium, dissolved (mg/L as Ca)	25	84	56	65	63
Magnesium, dissolved (mg/L as Mg)	25	72	52	59	58
Sodium, dissolved (mg/L as Na)	25	17	13	15	15
Potassium, dissolved (mg/L as K)	24	2.7	1.8	2.1	2.0
Acidity (mg/L as H^+)	24	.4	<.1	[1].1	.1
Alkalinity (mg/L as $CaCO_3$)	24	239	216	228	228
Sulfate, dissolved (mg/L as SO_4)	24	300	140	182	170
Chloride, dissolved (mg/L as Cl)	24	6.5	4.9	5.8	5.8
Fluoride, dissolved (mg/L as F)	24	1.2	.4	1.0	1.0
Silica, dissolved (mg/L as SiO_2)	25	13	9.6	11	11
Dissolved solids, calculated (mg/L)	24	622	425	478	462
Aluminum, dissolved (µg/L as Al)	25	40	<5	[1]6	<10
Arsenic, dissolved (µg/L as As)	24	<2	<1	--	<1
Barium, dissolved (µg/L as Ba)	25	56	41	47	48
Beryllium, dissolved (µg/L as Be)	25	<.5	<.5	--	<.5
Boron, dissolved (µg/L as B)	24	100	50	74	70
Cadmium, dissolved (µg/L as Cd)	23	4	<1	--	<1
Chromium, dissolved (µg/L as Cr)	25	<5	<5	--	<5
Cobalt, dissolved (µg/L as Co)	23	<3	<1	--	<3
Copper, dissolved (µg/L as Cu)	25	<10	<10	--	<10
Iron, dissolved (µg/L as Fe)	25	28	<3	[1]5	3
Lead, dissolved (µg/L as Pb)	23	30	<1	[1]7	<10
Lithium, dissolved (µg/L as Li)	25	39	32	35	35
Manganese, dissolved (µg/L as Mn)	25	5	<1	[1]1	<1
Molybdenum, dissolved (µg/L as Mo)	23	20	<10	[1]6	<10
Nickel, dissolved (µg/L as Ni)	25	20	<10	[1]5	<10
Selenium, dissolved (µg/L as Se)	12	3	<5	[1]2	2
Silver, dissolved (µg/L as Ag)	25	2	<1	--	<1
Strontium, dissolved (µg/L as Sr)	25	660	460	514	510
Vanadium, dissolved (µg/L as V)	25	<6	<6	--	<6
Zinc, dissolved (µg/L as Zn)	25	25	7	12	12

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 24, 472513111082501–Johnson Badwater Mine small wetlands inflow near Tracy, Mont.					
Streamflow, instantaneous (ft^3/s)	25	0.01	0.007	0.01	0.01
Specific conductance, onsite (µS/cm)	25	2,300	2,100	2,190	2,180
Temperature, water (°C)	25	11.5	8.0	9.9	10.0
pH, onsite (standard units)	25	4.0	3.5	3.8	3.8
Hardness, total (mg/L as $CaCO_3$)	25	1,000	850	939	940
Calcium, dissolved (mg/L as Ca)	25	180	140	166	170
Magnesium, dissolved (mg/L as Mg)	25	140	120	127	130
Sodium, dissolved (mg/L as Na)	25	26	22	24	24
Potassium, dissolved (mg/L as K)	25	7.5	6	7.1	7.1
Acidity (mg/L as H^+)	25	14	9.7	12	11
Alkalinity (mg/L as $CaCO_3$)	25	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	25	2,000	1,400	1,620	1,600
Chloride, dissolved (mg/L as Cl)	25	9.8	5.4	6.9	6.3
Fluoride, dissolved (mg/L as Fl)	25	8.3	3.2	6.1	6.2
Silica, dissolved (mg/L as SiO_2)	25	52	47	49	49
Dissolved solids, calculated (mg/L)	25	e2,590	e1,920	e2,190	e2,160
Aluminum, dissolved (µg/L as Al)	25	57,000	46,000	51,700	51,000
Arsenic, dissolved (µg/L as As)	25	1	<1	--	<1
Barium, dissolved (µg/L as Ba)	25	15	8	11	9
Beryllium, dissolved (µg/L as Be)	25	27	19	24	24
Boron, dissolved (µg/L as B)	25	320	200	281	280
Cadmium, dissolved (µg/L as Cd)	21	3	<3	[1]2	2
Chromium, dissolved (µg/L as Cr)	25	20	<10	--	<20
Cobalt, dissolved (µg/L as Co)	18	520	400	449	440
Copper, dissolved (µg/L as Cu)	25	<40	<20	--	<30
Iron, dissolved (µg/L as Fe)	25	130,000	110,000	124,000	120,000
Lead, dissolved (µg/L as Pb)	25	<10	<1	--	<1
Lithium, dissolved (µg/L as Li)	25	390	320	367	370
Manganese, dissolved (µg/L as Mn)	25	1,000	840	942	950
Molybdenum, dissolved (µg/L as Mo)	25	1	<1	--	<1
Nickel, dissolved (µg/L as Ni)	25	1,100	880	980	970
Selenium, dissolved (µg/L as Se)	12	<5	<1	--	<1
Silver, dissolved (µg/L as Ag)	24	4	<2	--	<3
Strontium, dissolved (µg/L as Sr)	25	1,300	1,000	1,160	1,200
Vanadium, dissolved (µg/L as V)	25	34	<6	[1]14	<24
Zinc, dissolved (µg/L as Zn)	25	3,300	2,500	2,920	2,900

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 25, 472513111082901–Johnson Badwater Mine large wetlands inflow near Tracy, Mont.					
Streamflow, instantaneous (ft^3/s)	25	0.01	0.004	0.01	0.01
Specific conductance, onsite (µS/cm)	25	4,520	3,560	4,190	4,320
Temperature, water (°C)	25	11.5	8.5	9.9	10.0
pH, onsite (standard units)	25	2.8	2.3	2.6	2.6
Hardness, total (mg/L as $CaCO_3$)	25	1,200	910	1,050	1,100
Calcium, dissolved (mg/L as Ca)	25	190	150	170	170
Magnesium, dissolved (mg/L as Mg)	25	170	130	154	150
Sodium, dissolved (mg/L as Na)	25	27	23	25	25
Potassium, dissolved (mg/L as K)	25	2.3	1.0	1.5	1.5
Acidity (mg/L as H^+)	25	52	30	43	46
Alkalinity (mg/L as $CaCO_3$)	25	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	25	4,700	2,600	3,540	3,400
Chloride, dissolved (mg/L as Cl)	25	21	4.9	8.2	6.7
Fluoride, dissolved (mg/L as F)	24	6.1	<1	[1]3.1	3.1
Silica, dissolved (mg/L as SiO_2)	25	87	71	76	76
Dissolved solids, calculated (mg/L)	25	e5,760	e3,340	e4,530	e4,450
Aluminum, dissolved (µg/L as Al)	25	250,000	150,000	216,000	230,000
Arsenic, dissolved (µg/L as As)	25	<5	<1	--	<1
Barium, dissolved (µg/L as Ba)	25	23	<2	[1]12	<4
Beryllium, dissolved (µg/L as Be)	25	40	21	31	32
Boron, dissolved (µg/L as B)	22	380	240	307	300
Cadmium, dissolved (µg/L as Cd)	25	100	58	78	77
Chromium, dissolved (µg/L as Cr)	25	60	<20	[1]33	30
Cobalt, dissolved (µg/L as Co)	25	3,800	750	1,310	1,000
Copper, dissolved (µg/L as Cu)	24	200	100	142	140
Iron, dissolved (µg/L as Fe)	25	410,000	170,000	329,000	350,000
Lead, dissolved (µg/L as Pb)	25	2	<1	[1].9	<10
Lithium, dissolved (µg/L as Li)	25	490	330	420	420
Manganese, dissolved (µg/L as Mn)	25	1,700	1,100	1,470	1,500
Molybdenum, dissolved (µg/L as Mo)	25	2	<1	--	<1
Nickel, dissolved (µg/L as Ni)	25	2,500	1,600	2,120	2,200
Selenium, dissolved (µg/L as Se)	12	1	<1	--	<2
Silver, dissolved (µg/L as Ag)	25	9	<2	--	<4
Strontium, dissolved (µg/L as Sr)	25	1,200	910	1,040	1,000
Vanadium, dissolved (µg/L as V)	25	64	<36	[1]33	22
Zinc, dissolved (µg/L as Zn)	25	10,000	6,200	8,420	8,800

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 26, 472514111082301–Johnson Badwater Mine small wetlands outflow near Tracy, Mont.					
Streamflow, instantaneous (ft^3/s)	23	0.007	<0.001	0.003	0.003
Specific conductance, onsite (µS/cm)	19	2,780	2,100	2,480	2,530
Temperature, water (°C)	19	19.5	0.0	8.1	7.5
pH, onsite (standard units)	19	5.9	2.6	3.2	3.0
Hardness, total (mg/L as $CaCO_3$)	19	1,700	510	1,140	1,100
Calcium, dissolved (mg/L as Ca)	19	370	100	224	220
Magnesium, dissolved (mg/L as Mg)	19	200	64	139	140
Sodium, dissolved (mg/L as Na)	19	33	11	26	26
Potassium, dissolved (mg/L as K)	19	9.3	2.4	7.5	8.0
Acidity (mg/L as H^+)	19	12	2	8.0	8.8
Alkalinity (mg/L as $CaCO_3$)	19	e<1	e<1	--	e<1
Sulfate, dissolved (mg/L as SO_4)	19	2,500	1,300	1,840	1,800
Chloride, dissolved (mg/L as Cl)	19	10	4.8	7.1	7.3
Fluoride, dissolved (mg/L as F)	19	9.2	2.7	6.2	5.9
Silica, dissolved (mg/L as SiO_2)	18	52	24	42	44
Dissolved solids, calculated (mg/L)	19	e3,030	e1,780	e2,370	e2,320
Aluminum, dissolved (µg/L as Al)	19	61,000	3,300	41,600	43,000
Arsenic, dissolved (µg/L as As)	19	<1	<1	--	<1
Barium, dissolved (µg/L as Ba)	19	16	4	10	10
Beryllium, dissolved (µg/L as Be)	19	27	3	19	22
Boron, dissolved (µg/L as B)	19	330	190	265	270
Cadmium, dissolved (µg/L as Cd)	19	5	<1	[1]2	2
Chromium, dissolved (µg/L as Cr)	19	20	<5	--	<20
Cobalt, dissolved (µg/L as Co)	19	670	200	404	400
Copper, dissolved (µg/L as Cu)	19	<30	<10	--	<30
Iron, dissolved (µg/L as Fe)	19	60,000	2,900	28,100	32,000
Lead, dissolved (µg/L as Pb)	19	1	<1	--	<1
Lithium, dissolved (µg/L as Li)	19	420	110	341	370
Manganese, dissolved (µg/L as Mn)	19	1,500	380	1,020	1,000
Molybdenum, dissolved (µg/L as Mo)	19	<10	<1	--	<1
Nickel, dissolved (µg/L as Ni)	19	1,100	230	803	860
Selenium, dissolved (µg/L as Se)	9	<2	<1	--	<1
Silver, dissolved (µg/L as Ag)	19	7	<1	--	<3
Strontium, dissolved (µg/L as Sr)	19	1,900	530	1,330	1,300
Vanadium, dissolved (µg/L as V)	19	<18	<6	--	<18
Zinc, dissolved (µg/L as Zn)	19	3,400	530	2,280	2,400

Table 6. Statistical summary of water-quality data for sites in the Sand Coulee Coal Area, Montana, July 1994 through September 1996 (Continued)

Property or constituent (reporting unit)	Number of samples	Maximum	Minimum	Mean	Median
Site 27, 472517111081001--Johnson Goodwater Mine small wetlands inflow near Tracy, Mont.					
Streamflow, instantaneous (ft^3/s)	25	0.018	0.0001	0.005	0.0002
Specific conductance, onsite (µS/cm)	25	1,290	1,010	1,190	1,190
Temperature, water (°C)	25	16.5	4.5	9.5	10.0
pH, onsite (standard units)	25	7.9	6.6	7.2	7.1
Hardness, total (mg/L as $CaCO_3$)	25	730	520	642	640
Calcium, dissolved (mg/L as Ca)	25	130	80	103	95
Magnesium, dissolved (mg/L as Mg)	25	100	72	93	94
Sodium, dissolved (mg/L as Na)	25	19	15	18	18
Potassium, dissolved (mg/L as K)	25	5.5	4.1	4.7	4.8
Acidity (mg/L as H^+)	25	1.7	<.1	[1].3	.2
Alkalinity (mg/L as $CaCO_3$)	25	281	174	235	255
Sulfate, dissolved (mg/L as SO_4)	25	480	270	432	450
Chloride, dissolved (mg/L as Cl)	25	8.8	6.2	7.2	7.1
Fluoride, dissolved (mg/L as F)	25	1.6	1.1	1.3	1.3
Silica, dissolved (mg/L as SiO_2)	25	12	7.7	9.9	10
Dissolved solids, calculated (mg/L)	25	912	640	812	811
Aluminum, dissolved (µg/L as Al)	25	50	<10	[1]15	9
Arsenic, dissolved (µg/L as As)	25	<1	<1	--	<1
Barium, dissolved (µg/L as Ba)	25	28	18	23	23
Beryllium, dissolved (µg/L as Be)	25	.5	<.5	--	<.5
Boron, dissolved (µg/L as B)	25	140	90	116	120
Cadmium, dissolved (µg/L as Cd)	25	<3	<1	--	<1
Chromium, dissolved (µg/L as Cr)	25	<20	<5	--	<5
Cobalt, dissolved (µg/L as Co)	25	40	<1	[1]5	<3
Copper, dissolved (µg/L as Cu)	25	<30	<10	--	<10
Iron, dissolved (µg/L as Fe)	25	3,200	<3	[1]356	13
Lead, dissolved (µg/L as Pb)	25	40	<1	[1]7	<10
Lithium, dissolved (µg/L as Li)	25	97	67	90	92
Manganese, dissolved (µg/L as Mn)	25	170	2	43	32
Molybdenum, dissolved (µg/L as Mo)	25	10	<1	--	<10
Nickel, dissolved (µg/L as Ni)	25	80	<10	[1]33	30
Selenium, dissolved (µg/L as Se)	12	3	<5	[1]2	2
Silver, dissolved (µg/L as Ag)	25	3	<1	[1].7	<1
Strontium, dissolved (µg/L as Sr)	25	690	490	635	640
Vanadium, dissolved (µg/L as V)	25	<18	<6	--	<6
Zinc, dissolved (µg/L as Zn)	25	140	13	53	40

[1]Value is estimated by using a log-probability regression to predict the values of data less than the minimum reporting level (Helsel and Cohn, 1988).

☆U.S. GOVERNMENT PRINTING OFFICE:1998-675-372/85036