Water Resources Data
Montana
Water Year 2004

Volume 1. Hudson Bay and Upper Missouri River Basins

By Wayne R. Berkas, Melvin K. White, Patricia B. Ladd, Fred A. Bailey, and Kent A. Dodge

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PREFACE

In the act that established the U.S. Geological Survey more than a century ago, the agency was charged by Congress with the responsibility for "...classification of the public lands, and examination of the geologic structure, mineral resources, and products of the national domain." This charge was simple recognition of the principle that factual information is essential to sound development and management decisions involving natural resources. In keeping with this principle, the Water Resources Division of the Survey publishes annually, by district, hydrologic records for water resources thought to be of particular usefulness to the public and to the scientific community.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey, who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

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Water resources data for Montana for the 2004 water year, volumes 1 and 2, consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels in wells. This volume contains discharge records for 134 streamflow-gaging stations; stage or content records for 18 lakes and reservoirs; and water-quality records for 66 streamflow stations (34 ungaged), and 13 ground-water wells. Additional water year 2004 data collected at crest-stage gage and miscellaneous-measurement sites were collected but are not published in this report. These data are stored within the District office files in Helena and are available on request. These data represent part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Montana.

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SURFACE-WATER AND GROUND-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

[Letter after station name designates types of data: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment, (e) elevations or contents]

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INTRODUCTION

The U.S. Geological Survey (USGS), in cooperation with other Federal, State, and local agencies and Tribal governments, collects a large amount of data pertaining to the water resources of Montana each water year. These data, accumulated over many years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the USGS, the data are published annually, by water year, in this report series entitled, "Water Resources Data, Montana."

This report, volumes 1 and 2, includes records of both surface and ground water from stations within the State and selected stations near the Montana border in adjacent states and Canada. Specifically, it contains (1) discharge records for 253 streamflow-gaging stations; (2) stage or content records for 39 reservoirs or lakes; (3) water-quality records for 135 stream sites (50 ungaged), 13 wells, and 3 lake sites; (4) water-level records for 51 wells; and (5) precipitation and water-quality records for 2 atmospheric-deposition stations. Volume 1 contains discharge records for 134 streamflow-gaging stations; stage or content records for 18 reservoirs or lakes; and water-quality records for 66 stream sites (34 ungaged) and 13 wells. Volume 2 contains discharge records for 119 streamflow-gaging stations; stage or content records for 21 reservoirs or lakes; water-quality records for 69 stream sites (17 ungaged) and 3 lake sites; water-level records for 51 observation wells; and precipitation and water-quality records for 2 atmospheric-deposition stations. The locations of streamflow-gaging and reservoir stations are shown in figure 6, locations of water-quality and precipitation stations are shown in figure 7, and locations of observation wells are shown in figure 8.

Additional data for water year 2004 were collected at crest-stage gage and miscellaneous-measurement sites but are not published in this report. These data are stored in the USGS Montana District Office in Helena and are available on request.

Records pertaining to the discharge of streams and contents of lakes and reservoirs were first published in a series of USGS Water-Supply Papers entitled "Surface Water Supply of the United States." These Water-Supply Papers were published in an annual series for water years 1899-1960 and then in a 5-year series for water years 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of Water-Supply Papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of Water-Supply Papers entitled "Ground-Water Levels in the United States." Water-Supply Papers may be reviewed in the libraries of the principal cities of the United States. The annual Water-Supply Papers were compiled and may be purchased by writing to USGS Information Services, Box 25286, Denver, Colorado 80225. For water years 1961 through 1970, streamflow data were published by the USGS in annual reports for each State. Water-quality records for water years 1964 through 1970 were similarly published either in separate reports or in conjunction with streamflow records. Beginning with the 1971 water year, data for surface and ground water are published as a single or multi-volume USGS annual water-data report for each State. These reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, volume 1 is identified as "U.S. Geological Survey Water-Data Report MT-04-1." The water-data reports published prior to 2003 are for sale, in paper copy or on microfiche, by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161, telephone 1-800-553-6847. Reports published from 2003 to present are located on the Web at *http://water.usgs.gov/pubs/wdr*.

Water-resources information for Montana and the rest of the Nation are available through the World Wide Web as part of the USGS National Water-Information System (NWIS) at *http://waterdata.usgs.gov/nwis*. For Montana, this information includes surface-water, water-quality, and ground-water data. Surface-water information available from the USGS includes provisional real-time streamflow data for stations with satellite telemetry, provisional daily data for the previous 18 months, and daily data for the period of record at each site. Daily, monthly, and annual streamflow statistics also are available as well as annual peak streamflow data. In addition, flood-frequency and basin-characteristics information for selected sites in Montana is available at *http://mt.water.usgs.gov/freq*.

Water-quality information available from the USGS includes provisional real-time specific-conductance and water-temperature data for selected sites with satellite telemetry and historical water-quality data for many surface- and ground-water sites in Montana.

Ground-water information available from the USGS includes descriptive information for wells, springs, and test holes such as location (latitude and longitude), well depth, site use, water levels, and aquifer.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone at (406) 457-5900 or 1-888-ASK-USGS.

COOPERATION

The USGS has had cooperative agreements with other agencies and organizations for the systematic collection of streamflow records since 1906, for water-quality records since 1946, and for ground-water levels since 1964. In water year 2004, agencies and organizations that supported data collection through cooperative agreements with the USGS are:

Federal Agencies
- Department of Energy, Bonneville Power Administration
- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- Department of State, International Joint Commission
- Federal Emergency Management Agency
- National Park Service
- U.S. Army Corps of Engineers
- U.S. Department of Agriculture, Forest Service
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey

Tribal Governments
- Blackfeet Nation
- Chippewa Cree Tribe of the Rocky Boy's Reservation
- Confederated Salish and Kootenai Tribes of the Flathead Reservation
- Fort Peck Tribes
- Northern Cheyenne Tribe

State Agencies
- Montana Bureau of Mines and Geology
- Montana Department of Environmental Quality
- Montana Fish, Wildlife and Parks
- Montana Department of Natural Resources and Conservation
- Montana Department of Transportation
- Wyoming Department of Environmental Quality
- Wyoming State Engineer

Federal Energy Regulatory Commission Licensees
- Avista Corporation
- Pacific Power and Light

Local Agencies
- Cascade County Conservation District
- City of Bozeman
- East Bench Irrigation District
- Lewis and Clark County Water Quality Protection District
- Lower Musselshell Conservation District
- North Powell Conservation District
- Park Conservation District
- Stillwater Conservation District
- Teton County Conservation District

GENERAL HYDROLOGIC SETTING

Montana, with an area of about 147,200 square miles (mi^2), is the fourth largest State in the Nation (fig. 1). The major drainage basins in the State are the Hudson Bay basin (465 mi^2) and the upper Missouri River basin (120,700 mi^2) east of the Continental Divide, and the upper Columbia River basin (26,000 mi^2) west of the divide. The Hudson Bay and upper Missouri River basins drain about 82 percent of the State and provide slightly less than 50 percent of the total annual streamflow. The upper Columbia River basin drains about 18 percent of the State and provides about 50 percent of the total annual streamflow.

The western and southwestern parts of the State are in the Northern and Middle Rocky Mountains physiographic provinces. The central and eastern parts are in the Great Plains physiographic province. The Northern and Middle Rocky Mountains are characterized by rugged mountains and intermontane valleys, whereas the Great Plains consists of rolling to dissected plains and small mountain ranges. Altitude in Montana ranges from more than 12,000 feet above the National Geodetic Vertical Datum of 1929 (NGVD 29) in the mountains northeast of Yellowstone National Park to about 1,850 feet above NGVD 29 where the Kootenai River flows from the northwestern part of the State.

Climate and hydrologic conditions differ substantially across the State. Annual precipitation varies considerably throughout the basins, from about 100-120 inches along the Continental Divide in Glacier National Park to about 6-12 inches in parts of eastern and south-central Montana and in some of the western intermontane valleys. The diverse precipitation patterns in Montana result from the effects of geographic and topographic features on warm, moist air from either the Gulf of Mexico or the Pacific Ocean. In mountainous areas, much of the annual precipitation falls as snow during the winter. Although much of the annual precipitation on the Great Plains also falls as snow during the winter, intense rainstorms during the summer can add substantial quantities of precipitation to the annual totals in a short time. In areas east of the mountains, generally one-half of the annual precipitation falls from May through July.

Peak runoff from the basins can result from snowmelt, snowmelt mixed with rain, or intense rainfall. In addition, backwater from ice jams commonly creates flooding in many rivers throughout the State. The record flood of April

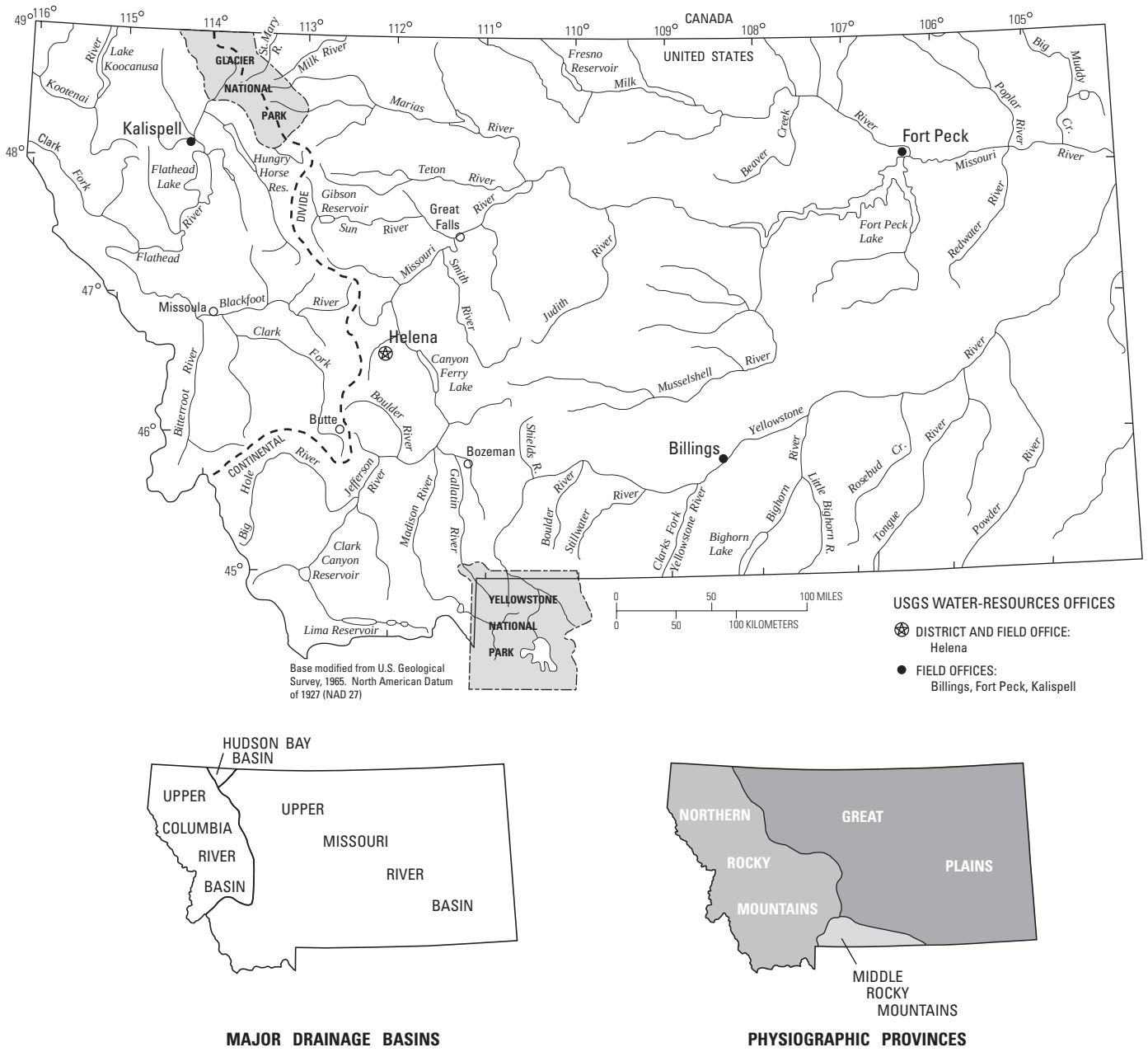


Figure 1. General geographic features of Montana.

1952 in northeastern Montana is an example of spring snowmelt flooding. The flood in May 1981 in west-central Montana is an example of flooding caused by snowmelt mixed with rain. The floods of June 1964, June 1975, and May 1978 are examples of flooding predominantly caused by intense rainfall. Flash floods, although restricted in areal extent, are at times numerous in the north-central and eastern parts of the State. In many areas, peak runoff is stored in reservoirs to decrease flooding. The stored water is used for irrigation (the predominant consumptive use of water statewide), power generation, and recreation.

Surface water throughout the State generally is suitable for most uses except in parts of eastern Montana where, because of large concentrations of dissolved solids and some individual constituents, water-quality standards or recommended guidelines for protecting human health, agricultural irrigation, and freshwater aquatic life may be exceeded. The ionic composition of surface water is largely influenced by geology and can vary markedly between the western mountains and the eastern plains. In addition, dissolved-solids concentrations can vary substantially between runoff conditions and base flow. In the western mountains, where the rocks generally are older and resistant to weathering, the streamflow characteristically is a calcium bicarbonate type. The dissolved-solids concentrations in mountain streams commonly are less than 100 milligrams per liter (mg/L) and seldom exceed 500 mg/L, even during base-flow conditions. In the eastern plains, where sedimentary rocks are less resistant to weathering, streamflow commonly is a sodium sulfate type, with dissolved-solids concentrations ranging from about 100 mg/L during runoff to several thousand mg/L during base flow. In the northeastern part of the State, streamflow typically is a sodium bicarbonate type. Snowmelt and intense rainstorms sometimes produce large quantities of runoff that can dilute concentrations of dissolved solids, modify chemical compositions, and increase concentrations of suspended sediment.

The availability and quality of ground water in Montana are largely controlled by the diverse hydraulic and geochemical properties of the various rocks, sediments, and hydrologic settings. In western Montana, ground water is available from alluvium along streams and rivers, from basin fill in intermontane valleys, from glacial deposits, and from fractured consolidated rocks. In eastern Montana, ground water is available from alluvial deposits along larger rivers and streams and from sedimentary rocks. Outside of the alluvial valleys, ground-water availability in sedimentary rock is variable. Throughout Montana, alluvial deposits along streams generally are the most productive aquifers, and wells completed in alluvium along the major streams may produce several hundred gallons per minute. Alluvium can be readily recharged by precipitation, by streams during periods of high flow, and by applied irrigation water. The particle-size distribution and sorting of glacial deposits largely determines their potential for water development. Where coarse, well-sorted outwash gravels are present, the potential for developing large-yield wells is good, whereas yields from wells completed in poorly sorted glacial till generally are limited to a few gallons per minute. Many fractured consolidated-rock formations are tapped for ground water but, because of the complexity of the geology, fractured rocks might not provide an adequate water supply in all areas. Wells completed in consolidated rocks generally yield only a few gallons per minute. However, several hundred gallons per minute can be obtained from highly fractured or cavernous formations in some areas. The well depth required to reach a given aquifer varies with location.

HYDROLOGIC-MONITORING ACTIVITY

One streamflow-gaging station was established during water year 2004 to aid in the assessment of the Nation's water resources::

06036940	Tantalus Creek at Norris Junction, Yellowstone National Park

Thirteen streamflow-gaging stations were discontinued during or at the end of water year 2004. The stations were:

05016000	Swiftcurrent Creek at Sherburne
06115270	Armells Creek near Landusky
06115300	Duval Creek near Landusky
06115350	Rock Creek near Landusky
06127020	Willow Creek above LMGD Reservoir, near Roundup
06127060	Willow Creek at U.S. Canal, near Roundup
06130650	Hell Creek near Jordan
06131200	Nelson Creek near Van Norman
06139900	Beaver Creek at reservation boundary, near Rocky Boy
06177500	Redwater River at Circle
06290500	Little Bighorn River below Pass Creek, near Wyola
12331500	Flint Creek near Drummond
12343400	East Fork Bitterroot River near Conner

Six water-quality stations were established or reestablished in the Tongue River basin to supplement information in an area of potential coal-bed methane development. These stations are:

06299980	Tongue River at Monarch, Wyo.
06305700	Goose Creek near Acme, Wyo.
06306250	Prairie Dog Creek near Acme, Wyo.

06307500 Tongue River at Tongue River Dam, near Decker
06307616 Tongue River at Birney Day School, near Birney
06308400 Pumpkin Creek near Miles City

Water-quality sampling continued for surface-water sites and ground-water wells that were established in 2002 in the headwaters of Tenmile Creek and Basin Creek near the Luttrell Repository where mine wastes and mill tailings from nearby abandoned-mine sites are being placed for long-term storage. The sampling of streams and ground water in the area surrounding the repository is intended to detect any potential migration of contaminants from the repository. Two surface-water stations were reestablished for the study in 2004:

462500112170201 LAD 01
462500112170501 LAD 02

A one-time sampling for mercury and related geothermal constituents was conducted during 2004 at the following stations:

06037500 Madison River near West Yellowstone
06038500 Madison River below Hebgen Lake, near Grayling
06038800 Madison River at Kirby Ranch, near Cameron
06040800 Madison River above powerplant, near McAllister
06042600 Madison River at Three Forks

An expanded monitoring network was established for the Blackfoot River basin in 2004, which included the following new or reestablished stations:

12334650 Blackfoot River below Alice Creek, near Lincoln
12334680 Landers Fork near Lincoln
12334800 Blackfoot River at Dalton Mountain Road bridge, near Lincoln
12336600 Nevada Creek below reservoir, near Helmville
12337820 Blackfoot River at Raymond Bridge, near Ovando
12338300 North Fork Blackfoot River above Dry Gulch, near Ovando
12338690 Monture Creek near Ovando
12338700 Blackfoot River at Scotty Brown Bridge, near Ovando
12339500 Clearwater River at Clearwater

Six wells in the Buckeye Mine area that were sampled in past years were again sampled in 2004 to evaluate the effects of acid mine drainage on water quality. These stations are:

462341112174601 Well BTMW-7
462342112174201 Well BTMW-3
462342112174601 Well BTMW-6
462342112174801 Well BTMW-8
462344112173701 Well BTMW-1
462347112173301 Well BTMW-9

Water-quality data collection was discontinued at 28 locations during or at the end of water year 2004. These locations were:

05016000 Swiftcurrent Creek at Sherburne
06037500 Madison River near West Yellowstone
06038500 Madison River below Hebgen Lake, near Grayling
06038800 Madison River at Kirby Ranch, near Cameron
06040800 Madison River above powerplant, near McAllister
06042600 Madison River at Three Forks
06062750 Tenmile Creek at Tenmile Water Treatment Plant, near Rimini
06063000 Tenmile Creek near Helena
06064100 Tenmile Creek at Green Meadow Drive, near Helena
06130500 Musselshell River at Mosby
12300110 Lake Koocanusa at international boundary
12301830 Lake Koocanusa at Tenmile Creek, near Libby
12301919 Lake Koocanusa at forebay, near Libby
12301933 Kootenai River below Libby Dam, near Libby
12324590 Little Blackfoot River near Garrison
12331500 Flint Creek near Drummond
12334510 Rock Creek near Clinton
12335500 Nevada Creek above reservoir, near Helmville
445832106551401 Youngs Creek above mouth, near Decker
450047106514201 Squirrel Creek above mouth, at Decker
450137106595101 Youngs Creek near reservation boundary, near Decker
451302106583201 Rosebud Creek near Rosebud Battlefield, near Kirby
451618106590001 Indian Creek at mouth, near Kirby
452800107001101 Thompson Creek near Busby
462458112173201 Unnamed tributary to Grub Creek, SS No. 5, near Rimini
462501112173501 Unnamed tributary to Grub Creek, SS No. 4, near Rimini
463438112091801 Tenmile Creek below Colorado Gulch, near Helena
463747112033801 Sevenmile Creek at Green Meadow Drive, at Helena

SUMMARY OF HYDROLOGIC CONDITIONS

Temperature and Precipitation

For most of Montana, temperatures from October through April were warmer than normal. The above-normal temperatures in March caused valley and prairie snow in many areas to melt earlier than usual. Warmer temperatures in April caused mountain snow to begin to melt earlier than usual, but cooler than normal temperatures in May and June slowed the melting of the remaining mountain snowpack. Temperatures generally remained above normal across the State for the rest of the water year.

Precipitation, departure from normal precipitation, and percentage of normal precipitation for seven climatological divisions of the State are presented in table 1. The precipitation data listed in table 1 are averages of the total monthly precipitation for the National Weather Service (NWS) reporting stations within each of the climatological divisions. No attempt was made to area-weight the division totals. As shown in table 1, for October 2003 through March 2004, precipitation ranged from 70 percent of normal in the southwestern division to a near-record 130 percent of normal in the northeastern division. For April through September 2004, precipitation ranged from 73 percent of normal in the southeastern division to 123 percent of normal in the western division. Percentage of normal precipitation for water year 2004 varied across the State from 78 percent of normal in the southeastern division to 101 percent of normal in the north-central division. Overall, all climatological divisions, except the north-central division, received less-than-normal precipitation in water year 2004. Total average precipitation for water year 2004 ranged from 10.81 inches in the southeastern division to 19.59 inches in the western division (table 1).

Table 1. Precipitation and departure from normal, in inches, and percentage of normal, Montana, water year 2004.[1]

Climatological division (number of stations)	October 2003 through March 2004			April through September 2004			Water year 2004		
	Total monthly precipitation	Departure from normal, 1971-2000	Percentage of normal	Total monthly precipitation	Departure from normal, 1971-2000	Percentage of normal	Total average precipitation	Departure from normal, 1971-2000	Percentage of normal
Western (45)	7.73	-2.60	75	11.86	2.23	123	19.59	-0.37	98
Southwestern (22)	3.81	-1.65	70	10.50	.00	100	14.31	-1.65	90
North Central (42)	3.07	-.24	93	10.45	.42	104	13.52	.18	101
Central (35)	3.75	-.49	88	10.18	-.62	94	13.93	-1.11	93
South Central (26)	4.43	-1.00	82	9.28	-1.74	84	13.71	-2.74	83
Northeastern (27)	3.44	.80	130	8.91	-1.38	87	12.35	-.58	96
Southeastern (22)	3.27	-.28	92	7.54	-2.83	73	10.81	-3.11	78

[1]Data from U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, 2004, Climatological Data, Montana, v. 106, no. 10 through v. 107, no. 9. Normals of precipitation are determined from the base period 1971-2000.

Most NWS stations in Montana measure precipitation in valley or non-mountainous locations. Data for precipitation falling as snow in the mountainous parts of the State during the winter are published by the U.S. Department of Agriculture, Natural Resources Conservation Service (available at *http://www.wcc.nrcs.usda.gov/snow/snotel-reports.html)*. Snow-water equivalents of mountain snowpack, determined from SNOTEL information, for various basins in Montana are presented in table 2.

By March 1, 2004, snow-water equivalent of the snowpack in all basins ranged from 81 to 133 percent of average. During March, a month when mountain snowpack typically increases, early melting coupled with little additional snowfall resulted in snow-water equivalents on April 1 that were all less than average. Continued early melting and little additional snowfall in April resulted in snow-water equivalents on May 1 that were well below average. Because the snowpack began melting earlier than usual and the melt occurred over a long period, much of the melt water infiltrated the ground rather than running off to streams.

Table 2. Snow-water equivalent and percent of average snow-water equivalent of mountain snowpack in selected basins in Montana, March 1-May 1, 2004.[1]

Drainage basin	March 1, 2004			April 1, 2004			May 1, 2004		
	Basin-wide snow-water equivalent, in inches	Basin-wide average snow-water equivalent, in inches	Percentage of average	Basin-wide snow-water equivalent, in inches	Basin-wide average snow-water equivalent, in inches	Percentage of average	Basin-wide snow-water equivalent, in inches	Basin-wide average snow-water equivalent, in inches	Percentage of average
Hudson Bay									
St. Mary	21.8	26.8	81	21.2	30.2	70	18.6	26.2	71
Missouri									
Upper Missouri	13.7	14.0	98	14.4	17.4	83	12.2	17.4	70
Sun, Teton, Marias	13.2	16.2	81	14.5	19.1	76	9.7	17.7	55
Smith, Judith, Musselshell	11.3	10.6	107	11.3	13.1	86	7.1	11.4	62
Lower Milk	5.7	4.3	133	.9	4.4	20	.0	1.2	0
Upper Yellowstone	13.2	15.7	84	13.4	19.2	70	10.8	19.6	55
Bighorn	9.7	11.6	84	10.0	14.3	70	9.0	15.2	59
Tongue	9.0	8.9	101	9.3	11.6	80	7.9	12.3	64
Powder	8.4	7.4	114	7.5	9.6	78	5.8	10.0	58
Upper Columbia									
Kootenai	22.0	22.7	97	22.6	26.3	86	15.8	23.8	66
Flathead	20.0	22.8	88	20.4	26.7	76	15.5	23.8	65
Clark Fork	17.5	18.8	93	17.6	22.1	80	12.8	19.9	64

[1]SNOTEL data from Natural Resources Conservation Service (NRCS) National Water and Climate Center, accessed January 31, 2005 at *http://www.wcc.nrcs.usda.gov/snow/snotel-reports.html*. Averages were determined from the base period 1971-2000.

SURFACE WATER

Streamflow

Streamflow data for water year 2004 can be compared to long-term data for water years 1971-2000 and maximum and minimum monthly mean discharge for the period of record at seven streamflow-gaging stations (fig. 2). Compared to the mean annual discharge (average of the annual mean discharges) for water years 1971-2000, the annual mean discharge (fig. 2) during water year 2004 was 84 percent of average at Middle Fork Flathead River near West Glacier (station 12358500); 73 percent of average at Clark Fork at St. Regis (station 12354500); 53 percent of average at Missouri River at Toston (station 06054500); 72 percent of average at Yellowstone River at Corwin Springs (station 06191500); 59 percent of average at Yellowstone River at Billings (station 06214500); 100 percent of average at Rock Creek below Horse Creek, near international boundary (station 06169500); and 55 percent of average at Marias River near Shelby (station 06099500).

The annual departure from mean annual discharge at two streamflow-gaging stations on unregulated streams is shown in figure 3. At both Yellowstone River at Corwin Springs and Middle Fork Flathead River near West Glacier, the annual mean discharge during water year 2004 was less than the long-term average for the period of record.

Extraordinary flooding did not occur in any major river basins in Montana during water year 2004. Although near-record amounts of snow were on the ground in much of northeastern Montana on March 1, the anomalously cool temperatures in that part of the State resulted in a slow melting with no substantial flooding. Generally the low soil-moisture conditions also meant that much of the slowly melting prairie snowpack percolated into the soil.

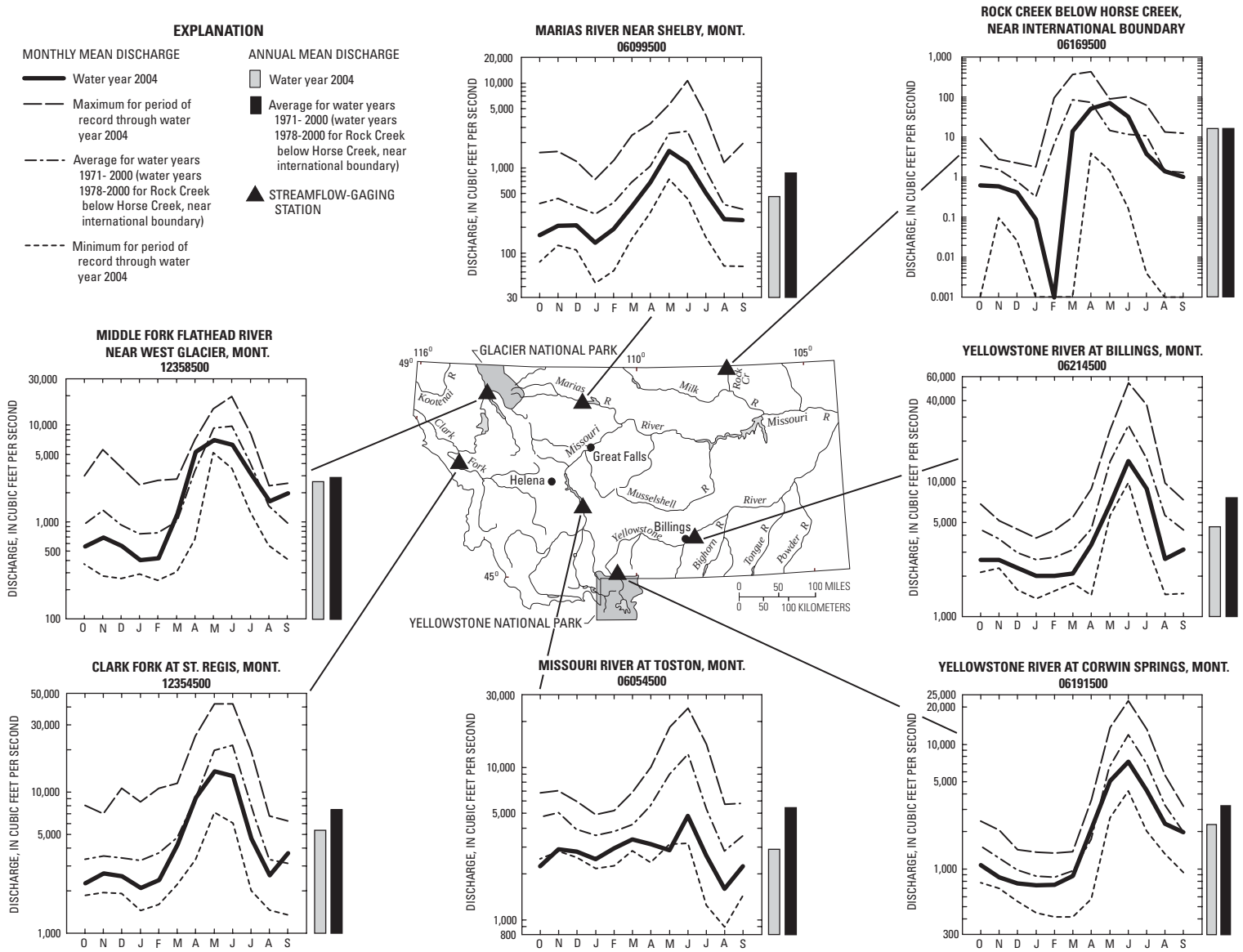


Figure 2. Streamflow data for water year 2004 compared to long-term data at selected streamflow-gaging stations in Montana.

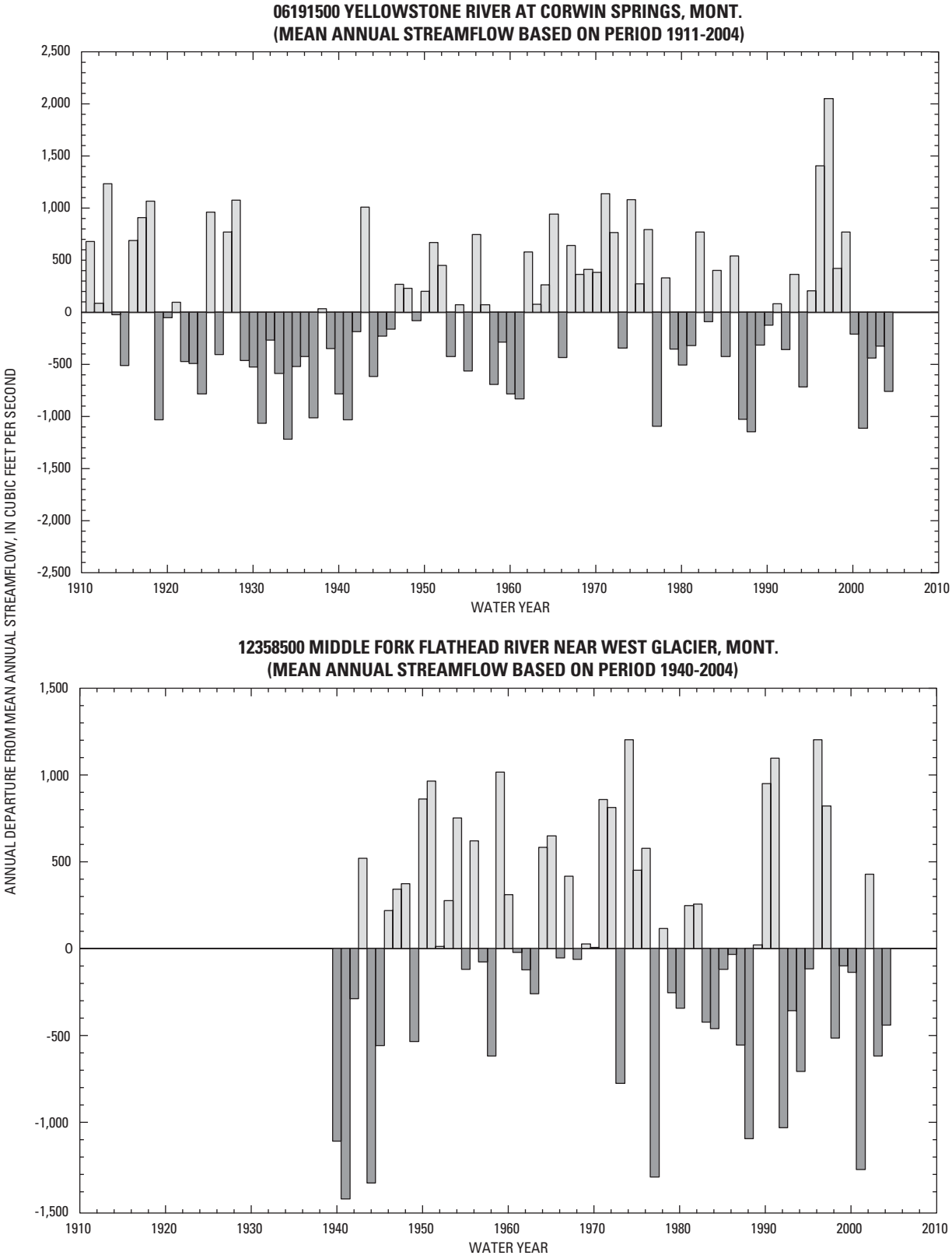


Figure 3. Annual departure from mean annual discharge at two streamflow-gaging stations on unregulated streams in Montana.

A comparison of instantaneous peak discharge at 25 selected streamflow-gaging stations for water year 2004 to instantaneous peak discharge for the period of record is presented in table 3. Record peak discharges were not recorded for any of these stations. However, peak discharge could not be determined at two stations in water year 2004 due to ice conditions. The recurrence intervals for peaks during water year 2004 were less than 2 years, except for one station in northeastern Montana that had a recurrence interval of 2-5 years.

Table 3. Comparisons of instantaneous peak discharge for water year 2004 to instantaneous peak discharge for period of record at selected stations in Montana.

[Symbols: <, less than; --, not determined; *, outside period of record]

Station number	Station name	Drainage area (square miles)	Peak discharge, water year 2004			Peak discharge, period of record through water year 2003	
			Date	Cubic feet per second	Recurrence interval (years)	Date	Cubic feet per second
05014500	Swiftcurrent Creek at Many Glacier	30.9	08/26	773	<2	06/08/64	6,700
05017500	St. Mary River near Babb	276	06/07	2,080	<2	06/09/64	16,500
06025500	Big Hole River near Melrose	2,476	06/12	2,250	<2	06/10/72	14,300
06054500	Missouri River at Toston	14,669	06/12	9,730	<2	06/12/97	34,000
06089000	Sun River near Vaughn	1,854	06/08	1,800	<2	06/09/64	53,500
06099500	Marias River near Shelby	3,242	06/08	18,400	<2	06/09/64	241,000
06115200	Missouri River near Landusky	40,987	05/30	10,700	<2	06/03/53	137,000
06120500	Musselshell River at Harlowton	1,125	06/13	694	<2	06/20/75	7,270
06154400	Peoples Creek near Hays	220	03/09	238	2-5	06/08/72	8,460
06174500	Milk River at Nashua	22,332	--	--	--	04/18/52	45,300
06181000	Poplar River near Poplar	3,174	05/31	1,380	<2	04/06/54	37,400
06191500	Yellowstone River at Corwin Springs	2,623	06/10	11,800	<2	06/10/96 06/06/97	32,200 32,200
06200000	Boulder River at Big Timber	523	06/10	3,230	<2	06/05/97	9,940
06214500	Yellowstone River at Billings	11,795	06/11	27,800	<2	06/12/97	82,000
06289000	Little Bighorn River at State line, near Wyola	193	05/08	215	<2	06/03/44	2,730
06308500	Tongue River at Miles City	5,397	--	--	--	06/15/62	13,300
06329500	Yellowstone River near Sidney	69,103	06/14	25,800	<2	06/21/21	159,000
12301300	Tobacco River near Eureka	440	04/15	857	<2	05/13/91	3,180
12304500	Yaak River near Troy	766	04/09	2,990	<2	05/17/97 * 05/54	12,600 *13,400
12332000	Middle Fork Rock Creek near Philipsburg	123	06/10	547	<2	06/16/74	1,680
12335500	Nevada Creek above reservoir, near Helmville	116	03/17	328	<2	06/02/53	1,800
12340000	Blackfoot River near Bonner	2,290	05/08	4,590	<2	06/10/64	19,200
12354500	Clark Fork at St. Regis	10,709	06/02	19,600	<2	05/24/48 05/18/97	68,900 68,900
12358500	Middle Fork Flathead River near West Glacier	1,128	05/05	11,100	<2	06/09/64	140,000
12370000	Swan River near Bigfork	671	06/08	3,150	<2	06/20/74	8,890

A comparison of minimum daily mean discharge at 24 selected long-term streamflow-gaging stations for water year 2004 to minimum daily mean discharge for the period of record is presented in table 4. Record minimum daily mean discharges were not recorded during water year 2004, although below-normal streamflow conditions prevailed at many stations throughout the year in Montana. Minimum daily discharges had recurrence intervals of less than 2 years at 5 sites, recurrence intervals of 2-5 years at 12 sites, recurrence intervals of 5-10 years at 4 sites, recurrence intervals of 10-20 years at 2 sites, and a recurrence interval of greater than 100 years at 1 site.

Table 4. Comparisons of minimum daily mean discharge for water year 2004 to minimum daily mean discharge for period of record at selected stations in Montana.

[Symbol: <, less than; >, greater than]

Station number	Station name	Drainage area (square miles)	Minimum daily mean discharge, water year 2004			Minimum daily mean discharge, period of record through water year 2003	
			Date	Cubic feet per second	Recurrence interval (years)	Date	Cubic feet per second
05014500	Swiftcurrent Creek at Many Glacier	30.9	01/29	10	2-5	11/14,16/76	0
05017500	St. Mary River near Babb	276	01/01	45	2-5	01/03/53	27
06025500	Big Hole River near Melrose	2,476	08/16	157	2-5	08/17/31	49
06054500	Missouri River at Toston	14,669	08/16	1,240	2-5	01/12/63	700
06089000	Sun River near Vaughn	1,854	05/06	97	2-5	05/26/41	23
06099500	Marias River near Shelby	3,242	01/27	86	2-5	08/20/19	10
06115200	Missouri River near Landusky	40,987	01/02	3,400	2-5	12/13/36	1,220
06120500	Musselshell River at Harlowton	1,125	09/02	6.7	2-5	([1])	0
06174500	Milk River at Nashua	22,332	01/05	40	2-5	([1])	0
06181000	Poplar River near Poplar	3,174	01/28	4.0	<2	([1])	0
06191500	Yellowstone River at Corwin Springs	2,623	01/05	660	<2	02/05/89	380
06200000	Boulder River at Big Timber	523	01/05	60	2-5	08/26/61	12
06214500	Yellowstone River at Billings	11,795	08/17	1,450	<2	12/12/32	450
06289000	Little Bighorn River at State line, near Wyola	193	01/04	28	5-10	02/02/89	18
06308500	Tongue River at Miles City	5,397	05/08	7.6	5-10	07/09/40	0
06329500	Yellowstone River near Sidney	69,103	08/22	1,480	10-20	05/17/61	570
12301300	Tobacco River near Eureka	440	08/18	44	2-5	01/11/63	20
12304500	Yaak River near Troy	766	10/05	64	5-10	09/19/01	49
12332000	Middle Fork Rock Creek near Philipsburg	123	01/05	25	<2	02/09/53	5.3
12335500	Nevada Creek above reservoir, near Helmville	116	01/06	5.0	<2	01/11/44	2.0
12340000	Blackfoot River near Bonner	2,290	01/06	300	2-5	01/04/50	200
12354500	Clark Fork at St. Regis	10,709	01/06	826	>100	02/03/89	800
12358500	Middle Fork Flathead River near West Glacier	1,128	01/28	228	10-20	11/27/52	189
12370000	Swan River near Bigfork	671	01/07	272	5-10	01/26-29/30	193

[1]At various dates.

The percentage-of-normal storage (based on water years 1971-2000), by month, for selected major reservoirs is presented in table 5. At the end of water year 2004, storage was within 20 percent of normal in four of the six major reservoirs used to supply water primarily for hydroelectric-power generation. Storage was within 20 percent of normal at the end of water year 2004 in two of the four reservoirs used to supply water primarily for irrigation.

Table 5. Percentage-of-normal storage, by month, during water year 2004 for selected major reservoirs in Montana.

Reservoir	Usable capacity (acre-feet)	Percentage-of-normal storage based on 1971-2000 period of record											
		2003			2004								
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Hydroelectric-power generation													
Canyon Ferry Lake	1,993,000	88	86	88	89	92	94	93	83	80	82	83	83
Fort Peck Lake	18,910,000	64	64	64	62	63	65	63	58	57	58	55	55
Bighorn Lake	1,356,000	79	82	83	81	83	82	81	75	65	65	71	72
Lake Koocanusa	5,748,000	108	117	119	141	168	158	158	139	109	99	97	103
Hungry Horse Reservoir	3,451,000	104	106	110	115	119	130	145	123	109	102	98	103
Flathead Lake	1,791,000	108	102	94	98	97	88	131	106	100	99	101	101
Irrigation													
Lima Reservoir	84,050	15	15	17	20	22	28	28	43	49	59	76	101
Clark Canyon Reservoir	255,600	16	20	25	30	34	36	35	31	23	19	17	21
Gibson Reservoir	96,480	22	34	41	45	48	65	111	106	101	82	56	75
Fresno Reservoir	103,000	47	43	40	35	29	39	50	55	62	88	77	82

WATER QUALITY

The USGS operates water-quality stations throughout Montana in cooperation with numerous Federal, State, local agencies, and Tribal governments. The stations change from year to year as objectives are achieved or modified, or funding levels change. Some stations are operated for only a few years and commonly are part of a short-term investigation to examine water quality related to a specific condition. Other stations have been in operation for many years and provide a basis for description of long-term water-quality conditions or trends that represent a wide range of hydrologic or land-use variability. Long-term stations typically are located on major streams that represent an important water resource in the area and require data on an ongoing basis for various management concerns. A monitoring network in the Tongue River basin was expanded to 11 sites in 2004. These sites, plus three sites in the Powder River basin and one site in the Rosebud Creek basin, are operated to assist water managers with assessing the potential effects of coal-bed methane development.

Various water-quality measurements are made, either onsite or by laboratory analysis of samples, depending on the objective of the investigation. Several types of water-quality data that describe physical and chemical characteristics are routinely obtained in many sampling programs. Examples of commonly measured water-quality characteristics are dissolved solids, dissolved oxygen, dissolved nitrite plus nitrate, total phosphorus, and suspended sediment. Guideline concentrations and standards have been established by the State of Montana (*http://www.deq.state.mt.us/wqinfo/Circulars/WQB-7.PDF*) and U.S. Environmental Protection Agency (USEPA) (*http://epa.gov/waterscience/standards/wqcriteria.html*) to provide values protective of human health and aquatic organisms.

The concentration of dissolved solids, which represents the mass (milligrams) of all constituents dissolved in a unit volume (liter) of water, can be determined either from the weight of dry residue that remains after evaporation of a known volume of water that has been filtered to remove particulate material, or estimated from the sum of the individual dissolved major-ion concentrations. An excessive concentration of dissolved solids can render the water unsuitable for certain uses such as human consumption, irrigation of crops, or livestock watering. Recommended guidelines compiled by the U.S. Department of Agriculture[1] indicate that water might not be suitable when dissolved-solids concentrations exceed 500 mg/L if used for human consumption,

1. U.S. Department of Agriculture, 2002, Natural Resources Conservation Service, Assessing water quality for agriculture and aquatic life uses: Environment Technical Note No. MT-1, 27 p.

1,000 mg/L if used for crop irrigation, and 10,000 mg/L if used for livestock watering.

Dissolved oxygen in surface water is essential for most aquatic organisms and is an indicator of the biochemical condition of the stream or lake. The solubility of oxygen in water is a function of water temperature and barometric pressure; therefore, the oxygen content in surface water is subject to considerable daily and seasonal change. Biological activities such as photosynthesis and decomposition also can cause rapid and large changes in dissolved-oxygen concentration. Dissolved-oxygen concentrations less than 5.0 mg/L for warm-water fish or less than 8.0 mg/L for cold-water fish may be detrimental to early life stages.[2]

Nitrogen (N) is an essential plant nutrient that occurs in several forms in water. Common sources of nitrogen are atmospheric deposition, soils, plant fertilizers, animal waste, and sewage or septic effluent. Nitrite and nitrate are inorganic forms of nitrogen that can occur in water, although nitrite is seldom present in large amounts in oxygenated water. Dissolved nitrate is a major nutrient for plants; consequently, large concentrations of nitrate in streams and lakes can cause rapid growth of aquatic plants. Nitrate concentrations in excess of 0.3 mg/L as N have the potential to stimulate growths of algae in the presence of adequate phosphorus.[3] In addition, human health can be adversely affected if the nitrate concentration exceeds 10 mg/L as N in drinking water.[2,4]

Phosphorus (P) is an essential plant nutrient that can stimulate excessive growth of aquatic plants. Total phosphorus includes the inorganic and organic forms of dissolved and suspended phosphorus and is commonly analyzed as an indicator of eutrophication potential. Although phosphorus can originate naturally from igneous and sedimentary rock formations, more common sources include sewage, detergents, fertilizer, and livestock waste. Total phosphorus concentrations to limit nuisance aquatic plant growth in streams should not exceed 0.03 mg/L as P in western Montana and 1.0 mg/L as P in eastern Montana.[1] Water-quality criteria established by the USEPA[5] also indicate that total phosphorus should not exceed 0.05 mg/L as P in streams discharging directly to lakes or 0.025 mg/L as P within lakes.

Suspended sediment is particulate material eroded from the land surface by either wind or water and maintained in suspension in streams by hydraulic energy. The quantity of suspended sediment in streams typically increases during periods of increased runoff, when large amounts of rainfall or snowmelt can rapidly erode soil and the increased streamflow can scour channel sediments. Although large suspended-sediment concentrations can occur naturally in areas underlain by easily erodible geologic materials, land use that disturbs soils also can contribute substantial quantities of sediment to streams and lakes. The quantity of sediment in suspension has important physical and chemical implications for aquatic life. Sediment in suspension during high flow may be deposited in stream channels or lakes where water velocities decrease. In areas of sediment deposition, aquatic insects or fish eggs can be smothered, thereby rendering the bottom habitat unsuitable for their survival. Many chemical constituents such as some metals, phosphorus, and some pesticides tend to sorb strongly to sediment. As a result, chemicals may be readily transported from land sources into river systems where aquatic organisms could be exposed to toxic concentrations.

Statistical summaries of selected water-quality measurements made at eight long-term water-quality stations in Montana are presented in table 6. The range of values for each type of measurement is described by the minimum and maximum values. To compare current and long-term water-quality conditions, the range of values are summarized for both water year 2004 and the period of record through water year 2003. In addition, the central tendency of data collected over the period of record is described by the median (50th percentile).

2. Montana Department of Environmental Quality, 2004, Montana numeric water quality standards: Circular WBQ-7, 38 p., Administrative Rules of Montana 17.30.619.
3. Mackenthun, K.M., 1969, The practice of water pollution biology: U.S. Department of the Interior, Federal Water Pollution Control Administration, Division of Technical Support, 281 p.
4. U.S. Environmental Protection Agency, 1991, Maximum Contaminant Levels (section 141.62 of subpart G of part 141, National Revised Primary Drinking Water Regulations): U.S. Code of Federal Regulations Title 40, Parts 100 to 149, revised as of July 1, 1991, p. 673.
5. U.S. Environmental Protection Agency, 1986, Quality criteria for water, 1986: Washington, D.C., Office of Water Regulations and Standards, EPA 440/5-86-001, unpaged.

Table 6. Statistical summaries of selected water-quality measurements for long-term water-quality stations in Montana for water year 2004 and the period of record through water year 2003.

[Symbols: <, less than; --, no data]

Station number	Station name	Water year 2004			Period of record through water year 2003			
		Number of samples	Minimum	Maximum	Number of samples	Minimum	Maximum	Median
Dissolved solids, in milligrams per liter								
06089000	Sun River near Vaughn	0	--	--	306	155	1,100	462
06178500	East Poplar River at international boundary	4	945	1,060	267	97	1,480	940
06185500	Missouri River near Culbertson	8	325	398	239	221	579	403
06308500	Tongue River at Miles City	16	361	842	203	155	1,330	553
06326500	Powder River near Locate	11	891	2,260	218	408	3,450	1,460
06329500	Yellowstone River near Sidney	0	--	--	297	142	863	467
12301933	Kootenai River below Libby Dam, near Libby	2	138	148	242	55	211	139
12352500	Bitterroot River near Missoula	2	39	73	33	26	107	56
Dissolved oxygen, in milligrams per liter								
06089000	Sun River near Vaughn	0	--	--	47	7.4	13.2	10.9
06178500	East Poplar River at international boundary	4	6.4	10.0	263	.9	17.2	9.1
06185500	Missouri River near Culbertson	8	6.2	12.8	277	6.0	14.2	9.3
06308500	Tongue River at Miles City	16	7.0	14.4	192	6.5	15.6	8.7
06326500	Powder River near Locate	11	5.3	13.5	254	2.7	15.7	8.6
06329500	Yellowstone River near Sidney	11	8.1	12.4	419	4.4	15.0	9.1
12301933	Kootenai River below Libby Dam, near Libby	9	8.3	12.2	448	6.9	18.3	10.8
12352500	Bitterroot River near Missoula	0	--	--	33	8.2	15.2	10.6
Dissolved nitrite plus nitrate, in milligrams per liter as nitrogen								
06089000	Sun River near Vaughn	9	.157	.980	346	<.01	4.7	.62
06178500	East Poplar River at international boundary	4	<.016	.091	65	<.01	.29	.07
06185500	Missouri River near Culbertson	8	<.016	.213	165	<.005	.38	.005
06308500	Tongue River at Miles City	10	<.016	.520	141	<.02	.97	.04
06326500	Powder River near Locate	11	<.016	.505	156	<.01	1.8	.27
06329500	Yellowstone River near Sidney	11	<.06	.570	246	<.005	.73	.20
12301933	Kootenai River below Libby Dam, near Libby	9	.057	.127	310	<.05	.79	.10
12352500	Bitterroot River near Missoula	4	.012	.072	40	<.005	.17	.03
Total phosphorus, in milligrams per liter as phosphorus								
06089000	Sun River near Vaughn	9	.008	.14	120	<.01	.64	.03
06178500	East Poplar River at international boundary	4	.04	.09	269	<.01	.40	.03
06185500	Missouri River near Culbertson	8	.12	1.0	225	.01	.93	.09
06308500	Tongue River at Miles City	10	.006	2.6	167	<.01	1.9	.04
06326500	Powder River near Locate	11	.005	3.0	219	.008	26	.18
06329500	Yellowstone River near Sidney	11	.018	1.1	377	<.01	2.7	.09
12301933	Kootenai River below Libby Dam, near Libby	9	<.004	.006	523	<.001	.26	.008
12352500	Bitterroot River near Missoula	4	.005	.034	40	.004	.18	.021
Suspended sediment, in milligrams per liter								
06089000	Sun River near Vaughn	9	11	99	121	8	910	57
06178500	East Poplar River at international boundary	4	40	160	233	4	322	55
06185500	Missouri River near Culbertson	8	129	1,540	186	19	2,370	240
06308500	Tongue River at Miles City	16	14	4,560	178	5	14,000	86
06326500	Powder River near Locate	12	42	8,320	247	8	41,400	1,120
06329500	Yellowstone River near Sidney	18	14	2,230	361	10	15,500	307
12301933	Kootenai River below Libby Dam, near Libby	6	1	1	23	1	3	2
12352500	Bitterroot River near Missoula	4	2	25	42	1	186	9

GROUND WATER

Ground-Water Levels

Water levels were measured in 51 observation wells during water year 2004. Measurements in 24 wells in Lewis and Clark County were discontinued in August. Water levels in most of the observation wells primarily reflect the response of the ground-water system in the area to natural climatic conditions. However, several wells are within the zone of influence of human activities, and water levels in these wells can be affected by pumping or infiltration of applied irrigation water. Seventeen of the 51 observation wells are equipped with continuous water-level recorders and have varying lengths of record. One of the continuous recorders also provides near real-time data delivery with water-level data collected hourly and transmitted every 4 hours via satellite for display as part of the USGS National Water Information System program (accessed at *http://waterdata.usgs.gov/nwis)*. Discrete data values from the continuous recorders are not presented in this report but are available at the USGS Montana District Office in Helena.

Water levels commonly fluctuate throughout the year and from year to year as a result of changes in climatic conditions or human activities. Little or no water was released to irrigation canals near wells 08S09W01CCCC01(in Beaverhead County) and 23N24W34ADAA01 (in Sanders County) during water year 2004, resulting in reduced annual fluctuation of water levels in these two wells.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for water year 2004 that began October 1, 2003, and ended September 30, 2004. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface and ground water, and ground-water-level data. The locations of the stations and wells where the data were collected are shown in figures 6 through 8. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, hydrologic-station records in USGS reports have been listed in order of downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary entering between two main-stream stations is listed between those stations. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is located with respect to the stream to which it is immediately tributary is indicated by an indention in that list of stations in the front of this report. Each indentation represents one rank. This downstream order and system of indentation indicates which stations are on tributaries between any two stations and the rank of the tributary on which each station is located.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These station numbers are in the same downstream order used in this report. In assigning a station number, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list composed of both types of stations. Gaps are consecutive. The complete 8-digit (or 10-digit) number for each station such as 09004100, which appears just to the left of the station name, includes a 2-digit part number “09” plus the 6-digit (or 8-digit) downstream order number “004100.” In areas of high station density, an additional two digits may be added to the station identification number to yield a 10-digit number. The stations are numbered in downstream order as described above between stations of consecutive 8-digit numbers.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The USGS well and miscellaneous site-numbering system is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, and the next 7 digits denote degrees, minutes, and seconds of longitude; the last 2 digits are a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and miscellaneous site are the same, a sequential number such as “01,” “02,” and so forth, would be assigned as one would for wells (see fig. 4). The 8-digit, downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

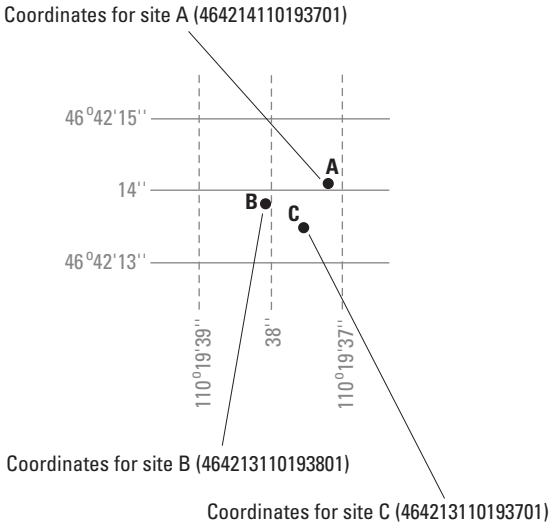


Figure 4. System for numbering wells and miscellaneous sites (latitude and longitude).

In addition to the well number that is based on latitude and longitude given for each well, another well number may be provided which in many States is based on the Public Land Survey System, a set of rectangular surveys that is used to identify land parcels. The location number consists of as many as 14 characters. The first three characters specify the township and its position south (S) or north (N) of the Montana Base Line. The next three characters specify the range and its position east (E) or west (W) of the Montana Principal Meridian. The next two characters are the section number. The next three to four characters designate the quarter section (160-acre tract), the quarter-quarter section (40-acre tract), the quarter-quarter-quarter section (10-acre tract), the quarter-quarter-quarter-quarter tract (2.5-acre tract), respectively, in which the well is located. The four subdivisions of the section are designated A, B, C, and D in a counter-clockwise direction, beginning in the northeastern quadrant. The last two characters in the location number specify a sequence number to distinguish between multiple wells in a single tract. For example, as shown in figure 5, well 30N33W05ABAB01 is the first well inventoried in the $NW^1/_4$ (B) of the $NE^1/_4$ (A) of the $NW^1/_4$ (B) of the $NE^1/_4$ (A) of section 5, in township 30 north, range 33 west.

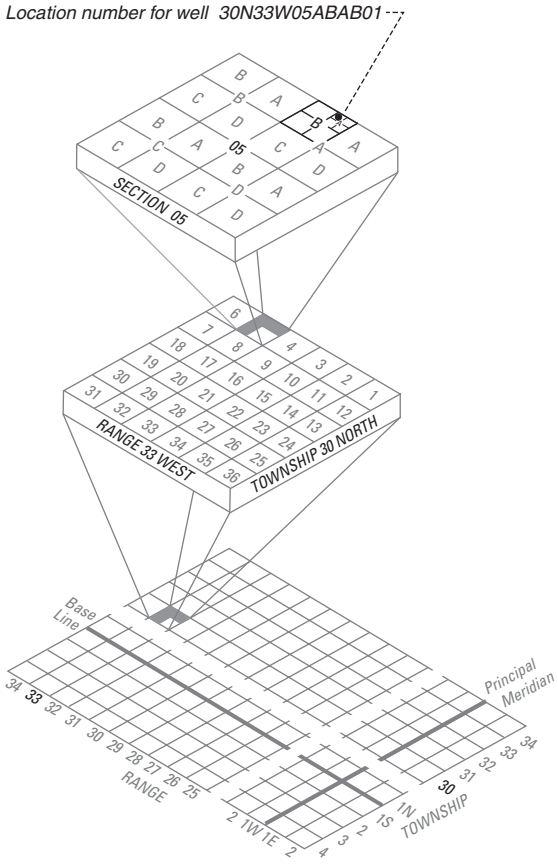


Figure 5. System for numbering wells and miscellaneous sites (township and range).

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 61 sites in small drainage basins in 39 States that was established in 1963 to provide consistent streamflow data representative of undeveloped watersheds nationwide, and from which data could be analyzed on a continuing basis for use in comparison and contrast with conditions observed in basins more obviously affected by human activities. At selected sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program may be accessed from *http://water.usgs.gov/hbn/*.

National Stream-Quality Accounting Network (NASQAN) is a network of sites used to monitor the water quality of large rivers within the Nation's largest river basins. From 1995 through 1999, a network of approximately 40 stations was operated in the Mississippi, Columbia, Colorado, and Rio Grande River basins. For the period 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia Rivers so that a network of 5 stations could be implemented on the Yukon River. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment (NAWQA) Program; (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals. Additional information about the NASQAN Program may be accessed from *http://water.usgs.gov/nasqan/*.

The National Atmospheric Deposition Program/ National Trends Network (NADP/NTN) is a network of monitoring sites that provides continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead Federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from this network of 250 precipitation-chemistry monitoring sites. The USGS supports 74 of these 250 sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as data from the individual sites, may be accessed from *http://bqs.usgs.gov/acidrain/*.

The USGS National Water-Quality Assessment (NAWQA) Program is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; to provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and to provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 42 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents is measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for water-resources managers to use in making decisions and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key Federal, State, and local water-resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. Additional information about the NAWQA Program may be accessed from *http://water.usgs.gov/nawqa/*.

The USGS National Streamflow Information Program (NSIP) is a long-term program with goals to provide framework streamflow data across the Nation. Included in the program are creation of a permanent Federally funded streamflow network, research on the nature of streamflow, regional assessments of streamflow data and databases, and upgrades in the streamflow information delivery systems. Additional information about NSIP may be accessed from *http://water.usgs.gov/nsip/*.

EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS

Data Collection and Computation

The base data collected at gaging stations (fig. 6) consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and volume of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or

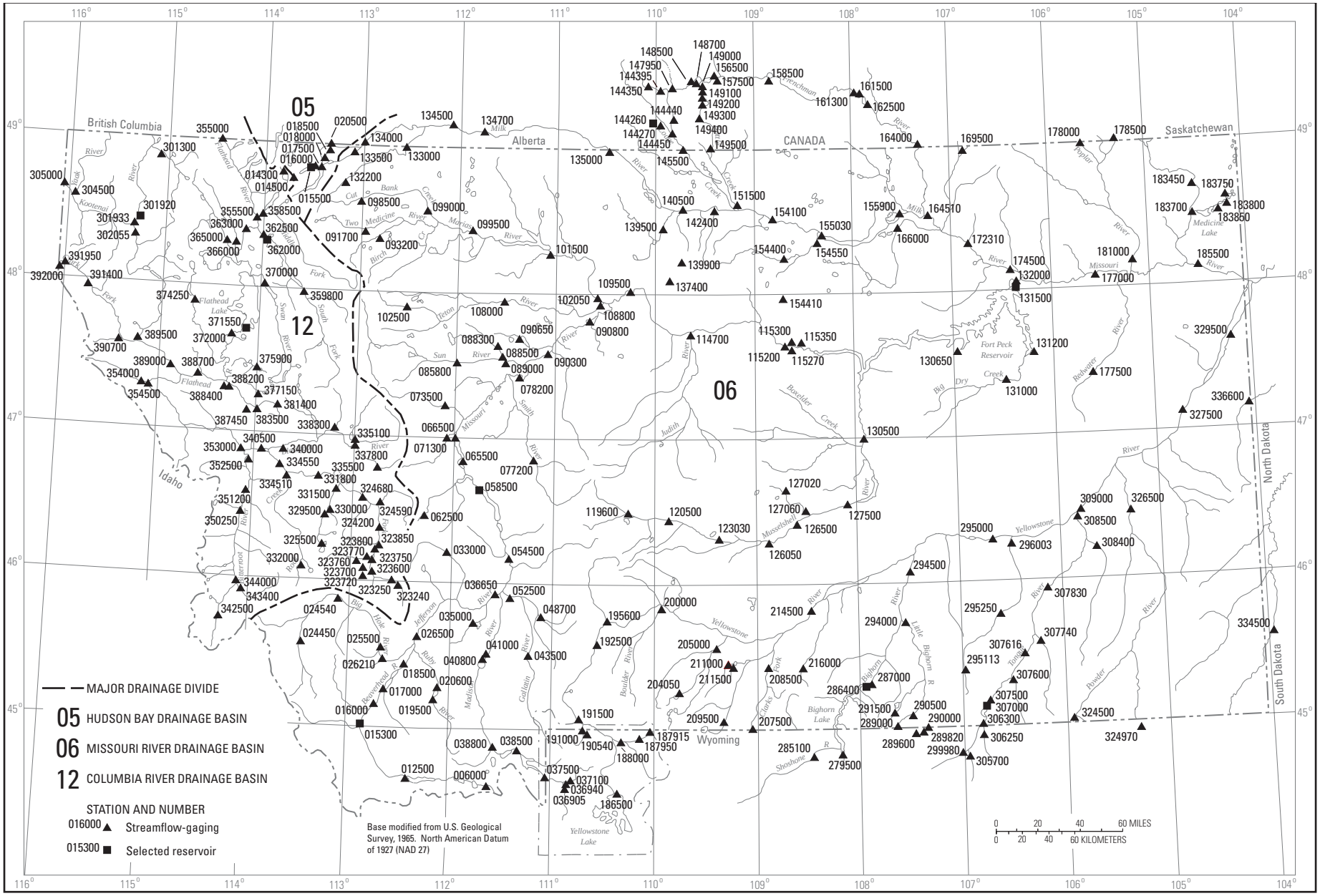


Figure 6. Location of streamflow-gaging and selected reservoir stations in Montana and adjacent areas, water year 2004.

volume of water in storage. Records of stage are obtained from a water-stage recorder that is either downloaded electronically in the field to a laptop computer or similar device or is transmitted using telemetry such as GOES satellite, land-line or cellular-phone modems, or by radio transmission. Measurements of discharge are made with a current meter or acoustic Doppler current profiler, using the general methods adopted by the USGS. These methods are described in standard textbooks, USGS Water-Supply Paper 2175, and the Techniques of Water-Resources Investigations of the United States Geological Survey (TWRIs), Book 3, Chapters A1 through A19 and Book 8, Chapters A2 and B2, which may be accessed from *http://water.usgs.gov/pubs/twri/*. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standardization (ISO).

For stream-gaging stations, discharge-rating tables for any stage are prepared from stage-discharge curves. If extensions to the rating curves are necessary to express discharge greater than measured, the extensions are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams and weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharges are computed from the daily values. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features of the stream channel, the daily mean discharge is computed by the shifting-control method in which correction factors based on individual discharge measurements and notes by engineers and observers are used when applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the controlling section, the daily mean discharge is computed by the shifting-control method.

The stage-discharge relation at some stream-gaging stations is affected by backwater from reservoirs, tributary streams, or other sources. Such an occurrence necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage at some distance from the base gage.

An index velocity is measured using ultrasonic or acoustic instruments at some stream-gaging stations and this index velocity is used to calculate an average velocity for the flow in the stream. This average velocity along with a stage-area relation is then used to calculate average discharge.

At some stations, stage-discharge relation is affected by changing stage. At these stations, the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations in the northern United States, the stage-discharge relation is affected by ice in the winter; therefore, computation of the discharge in the usual manner is impossible. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter-discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge from other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the volume or contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly changes are computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some stream-gaging stations, periods of time occur when no gage-height record is obtained or the recorded gage height is faulty and cannot be used to compute daily discharge or contents. Such a situation can happen when the recorder stops or otherwise fails to operate properly, the intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records from other stations in the same or nearby basins. Likewise, lake or reservoir volumes may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

Data Presentation

The records published for each continuous-record surface-water discharge station (stream-gaging station) consist of five parts: (1) the station manuscript or description; (2) the data table of daily mean values of discharge for the current water year with summary data; (3) a tabular statistical summary of monthly mean flow data for a designated period, by water year; (4) a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as

data pertaining to annual runoff, 7-day low-flow minimums, and flow duration; and (5) a hydrograph of discharge.

Station Manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments follow that clarify information presented under the various headings of the station description.

LOCATION.—Location information is obtained from the most accurate maps available. The location of the gaging station with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for most stations, were determined by methods given in Montana Department of Natural Resources and Conservation River Mile Index.[6,7,8]

DRAINAGE AREA.—Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.—This term indicates the time period for which records have been published for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not and whose location was such that its flow reasonably can be considered equivalent to flow at the present station.

REVISED RECORDS.—If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

GAGE.—The type of gage in current use, the datum of the current gage referred to a standard datum, and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.—All periods of estimated daily discharge either will be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See section titled Identifying Estimated Daily Discharge.) Information is presented relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period of record and the current year; and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, the outlet works and spillway, and the purpose and use of the reservoir.

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.—Information here documents major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the USGS.

REVISIONS.—Records are revised if errors in published records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (*http://water.usgs.gov/nwis/nwis*). Users are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent data updates. Updates to NWISWeb are made on an annual basis.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because no current or, possibly, future station manuscript would be published for these stations to document the revision in a REVISED RECORDS entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office (address given on the back of the title page of this report) to determine if the published records were revised after the station was discontinued. If, however, the data for a discontinued station were obtained by computer retrieval, the data would be current. Any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the

6. Montana Department of Natural Resources and Conservation, 1976, River mile index of the Yellowstone River: Helena, Mont., 61 p.
7. Montana Department of Natural Resources and Conservation, 1979, River mile index of the Missouri River: Helena, Mont., 142 p.
8. Montana Department of Natural Resources and Conservation, 1984, River mile index of the Columbia River basin: Helena, Mont., p. 1-76.

REMARKS and in the inclusion of a stage-capacity table when daily volumes are given.

Data Table of Daily Mean Values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed TOTAL gives the sum of the daily figures for each month; the line headed MEAN gives the arithmetic average flow in cubic feet per second for the month; and the lines headed MAX and MIN give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month is expressed in cubic feet per second per square mile (line headed CFSM); or in inches (line headed IN); or in acre-feet (line headed AC-FT). Values for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if extensive regulation or diversion is in effect or if the drainage area includes large noncontributing areas. At some stations, monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir volumes are given. These values are identified by a symbol and a corresponding footnote.

Statistics of Monthly Mean Data

A tabular summary of the mean (line headed MEAN), maximum (MAX), and minimum (MIN) of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those values. The designated period will be expressed as FOR WATER YEARS __-__, BY WATER YEAR (WY), and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. The designated period will consist of all of the station record within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript.

Summary Statistics

A table titled SUMMARY STATISTICS follows the statistics of monthly mean data tabulation. This table consists of four columns with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, WATER YEARS __-__, will consist of all of the station records within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the ANNUAL 7-DAY MINIMUM statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When the dates of occurrence do not fall within the selected water years listed in the heading, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration-curve statistics and runoff data also are given. Runoff data may be omitted if extensive regulation or diversion of flow is in effect in the drainage basin.

The following summary statistics data are provided with each continuous record of discharge. Comments that follow clarify information presented under the various line headings of the SUMMARY STATISTICS table.

ANNUAL TOTAL.—The sum of the daily mean values of discharge for the year.

ANNUAL MEAN.—The arithmetic mean for the individual daily mean discharges for the year noted or for the designated period.

HIGHEST ANNUAL MEAN.—The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.—The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.—The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.—The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.—The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day

minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. This value should not be confused with the 7-day 10-year low-flow statistic.

MAXIMUM PEAK FLOW.—The maximum instantaneous peak discharge occurring for the water year or designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the REMARKS paragraph in the manuscript.

MAXIMUM PEAK STAGE.—The maximum instantaneous peak stage occurring for the water year or designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the manuscript or in a footnote. If the dates of occurrence of the maximum peak stage and maximum peak flow are different, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.—The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.—Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Cubic feet per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

Inches (INCHES) indicate the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.—The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.—The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.—The discharge that has been exceeded 90 percent of the time for the designated period.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified. This identification is shown either by flagging individual daily values with the letter “e” and noting in a table footnote, “e–Estimated,” or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of Field Data and Computed Results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The degree of accuracy of the records is stated in the REMARKS in the station description. “Excellent” indicates that about 95 percent of the daily discharges are within 5 percent of the true value; “good” within 10 percent; and “fair,” within 15 percent. “Poor” indicates that daily discharges have less than “fair” accuracy. Different accuracies may be attributed to different parts of a given record.

Values of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft^3/s; to the nearest tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures above 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharge values listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur

if adjustments or losses are large in comparison with the observed discharge.

Other Data Records Available

Information of a more detailed nature than that published for most of the stream-gaging stations such as discharge measurements, gage-height records, and rating tables is available from the District office. Also, most stream-gaging station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the District office (see address that is shown on the back of the title page of this report).

Publications

The annual series of Water-Supply Papers that give information on quantity of surface waters in Montana are given in table 7. Data for the Hudson Bay basin is given in Part 5, for the Missouri River basin in Part 6, and for the Columbia River basin in Part 12.

Table 7. Water-Supply Paper numbers and parts for surface-water stations, 1899-1970.

Year	Part 5	Part 6	Part 12	Year	Part 5	Part 6	Part 12
1899		36,37	38				
1900	49	49	51,52				
1901	66,75	66,75	66,75	1926	625	626	632
1902	83,85	84	85	1927	645	646	652
1903	98,99,100	99	100	1928	665	666	672
1904	130	130	135	1929	685	686	692
1905	171	172	178	1930	700	701	707
1906	207	208	214	1931	715	716	722
1907	245	246	252	1932	730	731	737
1908	245	246	252	1933	745	746	752
1909	265	266	272	1934	760	761	767
1910	285	286	292	1935	785	786	792
1911	305	306	312	1936	805	806	812
1912	325	326	332A	1937	825	826	832
1913	355	356	362A	1938	855	856	862
1914	385	386	392	1939	875	876	882
1915	405	406	412	1940	895	896	902
1916	435	436	442	1941	925	926	932
1917	455	456	462	1942	955	956	962
1918	475	476	482	1943	975	976	982
1919	505	506	512	1944	1005	1006	1012
1920	505	506	512	1945	1035	1036	1042
1921	525	526	532	1946	1055	1056	1062
1922	545	546	552	1947	1085	1086	1092
1923	565	566	572	1948	1115	1116	1122
1924	585	586	592	1949	1145	1146	1152
1925	605	606	612	1950	1175	1176	1182

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Table 7. Water-Supply Paper numbers and parts for surface-water stations, 1899-1970--Continued.

Year	Part 5	Part 6	Part 12	Year	Part 5	Part 6	Part 12
1951	1208	1209	1216	1961-65	1913	1916	1933
1952	1238	1239	1246	1966-70	2113	2116	2133
1953	1278	1279	1286				
1954	1338	1339	1346	1950 Compilation	1308	1309	1316
1955	1388	1389	1396				
1956	1438	1439	1446	1960 Compilation	1728	1729	1736
1957	1508	1509	1516				
1958	1558	1559	1566				
1959	1628	1629	1636				
1960	1708	1709	1716				

EXPLANATION OF PRECIPITATION RECORDS

Data Collection and Computation

Rainfall data generally are collected using electronic data loggers that measure the rainfall in 0.01-inch increments every 15 minutes using either a tipping-bucket rain gage or a collection well gage. Twenty-four hour rainfall totals are tabulated and presented. A 24-hour period extends from just past midnight of the previous day to midnight of the current day. Snowfall-affected data can result during cold weather when snow fills the rain-gage funnel and then melts as temperatures rise. Snowfall-affected data are subject to errors. Missing values are indicated by this symbol "---" in the table.

Data Presentation

Precipitation records collected at surface-water gaging stations are identified with the same station number and name as the stream-gaging station. Where a surface-water daily-record station is not available, the precipitation record is published with its own name and latitude-longitude identification number.

Information pertinent to the history of a precipitation station is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, period of record, and general remarks.

The following information is provided with each precipitation station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.—See Data Presentation in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

PERIOD OF RECORD.—See Data Presentation in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

INSTRUMENTATION.—Information on the type of rainfall collection system is given.

REMARKS.—Remarks provide added information pertinent to the collection, analysis, or computation of records.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and Examination of Data

Surface-water samples for analysis usually are collected at or near stream-gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, water temperature, sediment discharge, and so forth); extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, sampling date, or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water Analysis

Most of the methods used for collecting and analyzing water samples are described in the TWRIs, which may be accessed from *http://water.usgs.gov/pubs/twri/*.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross-section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled at several verticals to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values (and sometimes mean or median values) for each constituent measured, and are based on 15-minute or 1-hour intervals of recorded data beginning at 0000 hours and ending at 2359 hours for the day of record.

SURFACE-WATER-QUALITY RECORDS

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because discharge data are useful in the interpretation of surface-water quality. Records of surface-water quality in this report involve a variety of types of data and measurement frequencies.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A *continuous-record station* is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A *partial-record station* is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A *miscellaneous sampling site* is a location other than a continuous- or partial-record station, where samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between *continuous records* as used in this report and *continuous recordings* that refer to a continuous graph or a series of discrete values recorded at short intervals. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 7.

Accuracy of the Records

One of four accuracy classifications is applied for measured physical properties at continuous-record stations on a scale ranging from poor to excellent. The accuracy rating is based on data values recorded before any shifts or corrections are made. Additional consideration also is given to the amount of publishable record and to the amount of data that have been corrected or shifted.

Table 8. Rating classifications for continuous water-quality records.

[≤, less than or equal to; ±, plus or minus value shown; °C, degree Celsius; >, greater than; %, percent; mg/L, milligram per liter; pH unit, standard pH unit]

Measured physical property	Rating			
	Excellent	Good	Fair	Poor
Water temperature	≤ ±0.2 °C	> ±0.2 to 0.5 °C	> ±0.5 to 0.8 °C	> ±0.8 °C
Specific conductance	≤ ±3%	> ±3 to 10%	> ±10 to 15%	> ±15%
Dissolved oxygen	≤ ±0.3 mg/L	> ±0.3 to 0.5 mg/L	> ±0.5 to 0.8 mg/L	> ±0.8 mg/L
pH	≤ ±0.2 unit	> ±0.2 to 0.5 unit	> ±0.5 to 0.8 unit	> ±0.8 unit
Turbidity	≤ ±5%	> ±5 to 10%	> ±10 to 15%	> ±15%

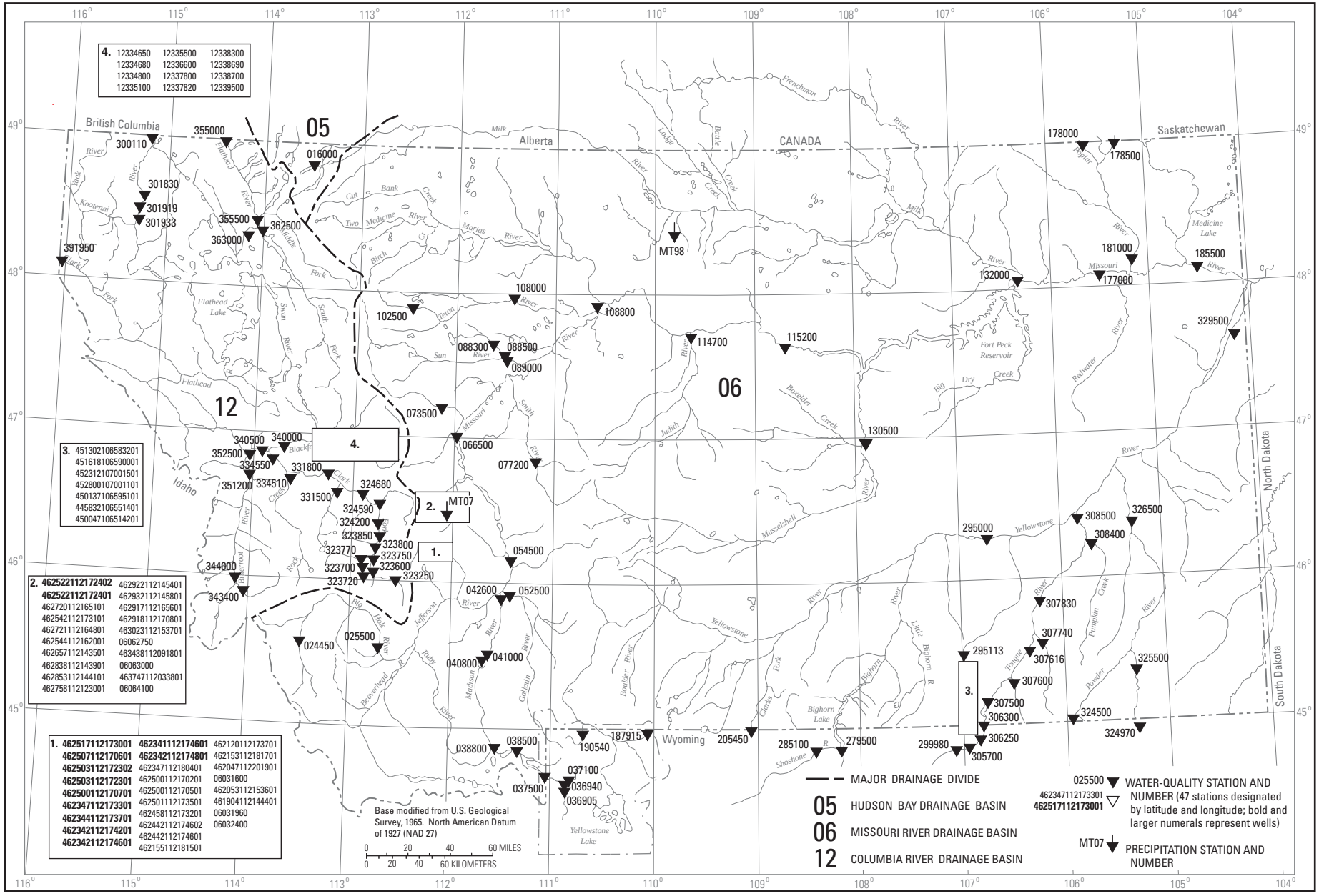


Figure 7. Location of water-quality and precipitation stations in Montana and adjacent areas, water year 2004.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern is assuring that the data obtained represent the naturally occurring quality of the water. To ensure this, certain measurements, such as water temperature, pH, and dissolved oxygen, must be made on site when the samples are taken. To assure that measurements made in the laboratory also represent the naturally occurring water, carefully prescribed procedures must be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1-A9. Most of the methods used for collecting and analyzing water samples are described in the TWRIs, which may be accessed from *http://water.usgs.gov/pubs/twri/*. Also, detailed information on collecting, treating, and shipping samples can be obtained from the USGS District office (see address that is shown on the back of title page in this report).

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at the time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may be collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples are collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observation, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Measurements

Samples for biochemical oxygen demand (BOD) and indicator bacteria are analyzed locally. All other samples are analyzed in the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chapter C1. Methods used by the USGS laboratories are given in the TWRIs, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. The TWRI publications may be accessed from

http://water.usgs.gov/pubs/twri/. These methods are consistent with ASTM standards and generally follow ISO standards.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

DRAINAGE AREA.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

PERIOD OF RECORD.—This indicates the time periods for which published water-quality records for the station are available. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.—Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.—Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES.—Maximums and minimums are given only for parameters measured daily or more frequently. For parameters measured weekly or less frequently, true maximums or minimums may not have been obtained. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.—Records are revised if errors in published water-quality records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (http://waterdata.usgs.gov/nwis). Users of USGS water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent updates. Updates to the NWISWeb are made on an annual basis.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this section:

Printed Output	Remark
E	Value is estimated.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

Water-Quality Control Data

The USGS National Water Quality Laboratory collects quality-control data on a continuing basis to evaluate selected analytical methods to determine long-term method detection levels (LT-MDLs) and laboratory reporting levels

(LRLs). These values are re-evaluated each year on the basis of the most recent quality-control data and, consequently, may change from year to year.

This reporting procedure limits the occurrence of false positive error. Falsely reporting a concentration greater than the LT-MDL for a sample in which the analyte is not present is 1 percent or less. Application of the LRL limits the occurrence of false negative error. The chance of falsely reporting a non-detection for a sample in which the analyte is present at a concentration equal to or greater than the LRL is 1 percent or less.

Accordingly, concentrations are reported as less than LRL for samples in which the analyte was either not detected or did not pass identification. Analytes detected at concentrations between the LT-MDL and the LRL and that pass identification criteria are estimated. Estimated concentrations will be noted with a remark code of "E." These data should be used with the understanding that their uncertainty is greater than that of data reported without the E remark code.

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this District office are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples. These data are not presented in this report but are available from the District office.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated in the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. Many types of blank samples are possible; each is designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this district are:

Field blank—A blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank—A blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank—A blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank—A blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank—A blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank—A blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank—A blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory. The reference material composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. Many types of replicate samples are possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this district are:

Concurrent samples—A type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating the collection of samples into two or more compositing containers.

Sequential samples—A type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample—A type of replicate sample in which a sample is split into subsamples, each subsample contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

Publications

The annual series of Water-Supply Papers that gives information on quality of surface waters in Montana is shown in the following table. Data for Hudson Bay and Missouri River basins are given in parts 5-6 and data for Upper Columbia River basin are given in part 12.

Table 9. Water-Supply Paper numbers and parts for water-quality stations, 1947-70.

Year	Parts 5-6	Part 12	Year	Parts 5-6	Part 12
1946	1050	---	1961	1883	1885
1947	1102	---	1962	1943	1945
1948	1132	---	1963	1949	1951
1949	1162	1163	1964	1956	1959
1950	1187	1189	1965	1963	1966
1951	1198	1200	1966	1993	1996
1952	1251	1253	1967	2013	2016
1953	1291	1293	1968	2094, 2095	2100
1954	1351	1353	1969	2145	2150
1955	1401	1403	1970	2155	2160
1956	1451	1453			
1957	1521	1523			
1958	1572	1574			
1959	1643	1645			
1960	1743	1745			

EXPLANATION OF GROUND-WATER-LEVEL RECORDS

Generally, only ground-water-level data from selected wells with continuous recorders from a basic network of observation wells are published in this report. This basic network contains observation wells located so that the most significant data are obtained from the fewest wells in the most important aquifers.

Site Identification Numbers

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is produced for local needs. (See NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES in this report for a detailed explanation.)

Data Collection and Computation

Measurements are made in many types of wells, under varying conditions of access and at different temperatures; hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Most methods for collecting and analyzing water samples are described in the TWRIs referred to in the On-site Measurements and Sample Collection and the Laboratory Measurements sections in this report. In addition, TWRI Book 1, Chapter D2, describes guidelines for the collection and field analysis of ground-water samples for selected unstable constituents. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1 through A9. The TWRI publications may be accessed from http://water.usgs.gov/pubs/twri/. The values in this report represent water-quality conditions at the time of sampling, as much as possible, and that are consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. Trained personnel collected all samples. The wells sampled were pumped long enough to ensure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface

at each well. If known, the elevation of the land-surface datum above sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (EOM).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth of water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

Data Presentation

Water-level data are presented in alphabetical order by county. The primary identification number for a given well is the 15-digit site identification number that appears in the upper left corner of the table. The secondary identification number is the local or county well number. Well locations are shown in figure 8.

Each well record consists of three parts: the well description, the data table of water levels observed during the water year, and, for most wells, a hydrograph following the data table. Well descriptions are presented in the headings preceding the tabular data.

The following comments clarify information presented in these various headings.

LOCATION.—This paragraph follows the well-identification number and reports the hydrologic-unit number and a geographic point of reference. Latitudes and longitudes used in this report are reported as North American Datum of 1927 unless otherwise specified.

HYDROGEOLOGIC UNIT.—This entry designates by name and geologic age the aquifer that the well taps.

WELL CHARACTERISTICS.—This entry describes the well in terms of depth, casing diameter and depth or screened interval, method of construction, use, and changes since construction.

INSTRUMENTATION.—This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on continuous, monthly, or some other frequency of measurement.

DATUM.—This entry describes both the measuring point and the land-surface elevation at the well. The altitude of the land-surface datum is described in feet above the altitude datum; it is reported with a precision depending on the method of determination. The measuring point is described physically (such as top of casing, top of instrument shelf, and so forth), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above National Geodetic Vertical Datum of 1929 (NGVD 29); it is reported with a precision depending on the method of determination.

REMARKS.—This entry describes factors that may influence the water level in a well or the measurement of the water level, when various methods of measurement were begun, and the network (climatic, terrane, local, or areal effects) or the special project to which the well belongs.

PERIOD OF RECORD.—This entry indicates the time period for which records are published for the well, the month and year at the start of publication of water-level records by the USGS, and the words “to current year” if the records are to be continued into the following year. Time periods for which water-level records are available, but are not published by the USGS, may be noted.

EXTREMES FOR PERIOD OF RECORD.—This entry contains the highest and lowest instantaneously recorded or measured water levels of the period of published record, with respect to land-surface datum or sea level, and the dates of occurrence.

Water-Level Tables

A table of water levels follows the well description for each well. Water-level measurements in this report are given in feet with reference to either sea level or land-surface datum (lsd). Missing records are indicated by dashes in place of the water-level value.

For wells not equipped with recorders, water-level measurements were obtained periodically by steel or electric tape. Tables of periodic water-level measurements in these wells show the date of measurement and the measured water-level value.

Hydrographs

Hydrographs are a graphic display of water-level fluctuations over a period of time. In this report, current water

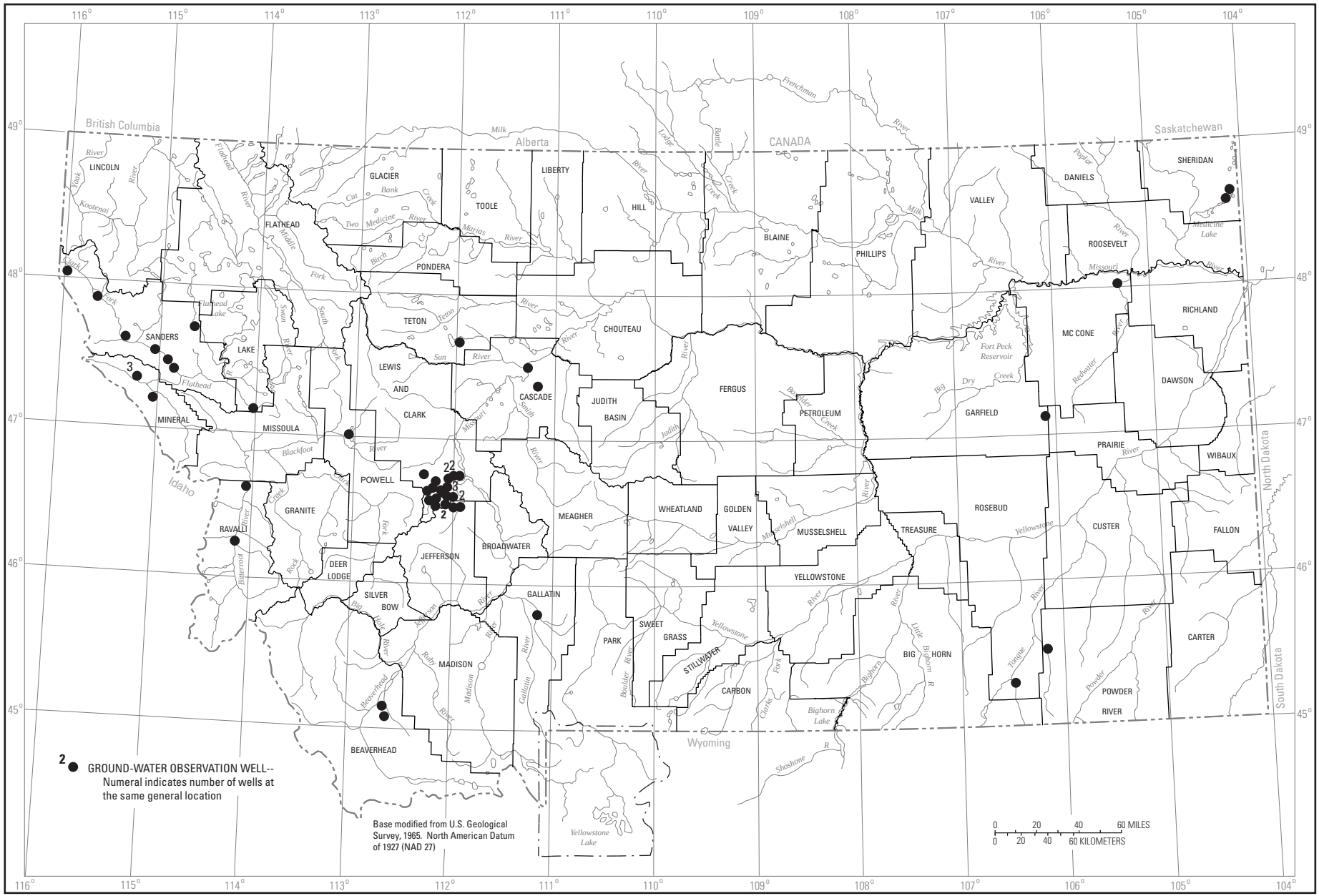


Figure 8. Location of ground-water observation wells in Montana, water year 2004.

year and, when appropriate, period-of-record hydrographs are shown. Hydrographs that display periodic water-level measurements show points that may be connected with a dashed line from one measurement to the next. Hydrographs that display recorder data show a solid line representing the mean water level recorded for each day. Missing data are indicated by a blank space or break in a hydrograph. Missing data may occur as a result of recorder malfunctions, battery failures, or mechanical problems related to the response of the recorder's float mechanism to water-level fluctuations in a well.

GROUND-WATER-QUALITY DATA

Data Collection and Computation

The ground-water-quality data in this report were obtained as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some wells within a county but not for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide.

Most methods for collecting and analyzing water samples are described in the TWRIs, which may be accessed from http://water.usgs.gov/pubs/twri/. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRI, Book 1, Chapter D2; Book 5, Chapters A1, A3, and A4; and Book 9, Chapters A1-A6. Also, detailed information on collecting, treating, and shipping samples may be obtained from the USGS District office (see address shown on back of title page in this report).

Laboratory Measurements

Analysis for sulfide and measurement of alkalinity, pH, water temperature, specific conductance, and dissolved oxygen are performed on site. All other sample analyses are performed at the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used by the USGS laboratory are given in TWRI, Book 1, Chapter D2; and Book 5, Chapters A1, A3, and A4, which may be accessed from http://water.usgs.gov/pubs/twri/.

Publications

Publication of ground-water level data for the United States in Water-Supply Papers was begun by the USGS in 1935. From 1935 through 1939, a single Water-Supply Paper for each year covering the entire nation was issued (Water-Supply Papers 777, 817, 840, 845, and 886). From 1940 through 1974, separate Water-Supply Papers were issued for 6 sections of the United States. Water-level data for Montana are in the Water-Supply Papers listed in the following table, each report containing one or more calendar years (January-December) of data. Data in this report are for the 12-month water year ending September 30. Information about reports and other data on ground water in Montana may be obtained from the District office, at the address given on the back of the title page.

Table 10. Water-Supply Paper numbers and parts for ground-water stations, 1940-74.

Year	WSP No. Pt. 5	Year	WSP No. Pt. 5	Year	WSP No. Pt.5
1940	910	1947	1100	1954	1325
1941	940	1948	1130	1955	1408
1942	948	1949	1160	1956-60	1760
1943	990	1950	1169	1961-65	1845
1944	1020	1951	1195	1966-70	1980
1945	1027	1952	1225	1971-74	2161
1946	1075	1953	1269		

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily mean and peak-flow discharge data for most current or discontinued gaging stations through the World Wide Web (WWW). These data may be accessed from http://water.usgs.gov.

Water-quality data and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on various media. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each Water Discipline District Office (see address that is shown on the back of the title page of this report).

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Terms such as algae, water level, and precipitation are used in their common everyday meanings, definitions of which are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting English units to International System (SI) Units. Other glossaries that also define water-related terms are accessible from http://water.usgs.gov/glossaries.html.

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an "unfiltered" sample (formerly reported as alkalinity).

Acre-foot (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also "Annual runoff")

Adenosine triphosphate (ATP) is an organic, phosphate-rich compound important in the transfer of energy in organisms. Its central role in living cells makes ATP an excellent indicator of the presence of living material in water. A measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter**.**

Adjusted discharge is discharge data that have been mathematically adjusted (for example, to remove the effects of a daily tide cycle or reservoir storage).

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample. (See also "Biomass" and "Dry weight")

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a "filtered" sample.

Annual runoff is the total quantity of water that is discharged ("runs off") from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day, 10-year low-flow statistic.)

Aroclor is the registered trademark for a group of polychlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

Artificial substrate is a device that purposely is placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is collected. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection. (See also "Substrate")

Ash mass is the mass or amount of residue present after the residue from a dry-mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2). (See also "Biomass" and "Dry mass")

Aspect is the direction toward which a slope faces with respect to the compass.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, whereas others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Bankfull stage, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

Base discharge (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also "Peak flow")

Base flow is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed. (See also "Bedload" and "Sediment")

Bedload is material in transport that primarily is supported by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to the top of the bedload sampler nozzle (an elevation ranging from 0.25 to 0.5 foot). These particles are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

Bedload discharge (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also "Bedload," "Dry weight," "Sediment," and "Suspended-sediment discharge")

Benthic organisms are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as mass per unit area or volume of habitat.

Biomass pigment ratio is an indicator of the total proportion of periphyton that are autotrophic (plants). This also is called the Autotrophic Index.

Blue-green algae *(Cyanophyta)* are a group of phytoplankton and periphyton organisms with a blue pigment in addition to a green pigment called chlorophyll. Blue-green algae can cause nuisance water-quality conditions in lakes and slow-flowing rivers; however, they are found commonly in streams throughout the year. The abundance of blue-green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of blue-green algae in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also "Phytoplankton" and "Periphyton"*)*

Bottom material (See "Bed material")

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved-solids content of the pore water, and the lithology and porosity of the rock.

Canadian Geodetic Vertical Datum 1928 is a geodetic datum derived from a general adjustment of Canada's first order level network in 1928.

Cell volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are used frequently in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

sphere $4/3\ \pi r^3$ cone $1/3\ \pi r^2 h$ cylinder $\pi r^2 h$.

pi (π) is the ratio of the circumference to the diameter of a circle; pi = 3.14159…

From cell volume, total algal biomass expressed as biovolume (μm^3/mL) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

Cells/volume refers to the number of cells of any organism that is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample volume, and generally are reported as cells or units per milliliter (mL) or liter (L).

Cfs-day (See "Cubic foot per second-day")

Channel bars, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an

approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes. [See also "Biochemical oxygen demand (BOD)"]

Clostridium perfringens (*C. perfringens*) is a spore-forming bacterium that is common in the feces of human and other warmblooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and the presence of microorganisms that are resistant to disinfection and environmental stresses. (See also "Bacteria")

Coliphages are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Continuous-record station is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

Control designates a feature in the channel that physically affects the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure, as used in this report, is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of saltwater.

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term "second-foot" sometimes is used synonymously with "cubic foot per second" but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, [$(ft^3/s)/d$]) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables numerically are equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

Cubic foot per second per square mile [CFSM, $(ft^3/s)/mi^2$] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (See also "Annual runoff")

Daily mean suspended-sediment concentration is the time-weighted mean concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also "Sediment" and "Suspended-sediment concentration")

Daily record station is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to data collection on a daily or near-daily basis.

Data collection platform (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

Data logger is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data usually are downloaded from onsite data loggers for entry into office data systems.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or Universal Transverse Mercator (UTM) coordinates. (See also "Gage datum," "Land-surface datum," "National Geodetic Vertical Datum of 1929," and "North American Vertical Datum of 1988")

Diatoms *(Bacillariophyta)* are unicellular or colonial algae with a siliceous cell wall. The abundance of diatoms in phytoplankton samples is expressed as the number of cells

per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (mm^3/mL). The abundance of diatoms in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter (mm^3/cm^2). (See also "Phytoplankton" and "Periphyton")

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or **flow**, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, and so forth, within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment, bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

Dissolved refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of "dissolved" constituent concentrations are made on sample water that has been filtered.

Dissolved oxygen (DO) is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved-solids concentration in water is the quantity of dissolved material in a sample of water. It is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4917 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L $CaCO_3$) can be converted to carbonate concentration by multiplying by 0.60.

Diversity index (H) (Shannon index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i \approx 1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n},$$

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth's surface that contains a drainage system with a common outlet for its surface runoff. (See "Drainage area")

Dry mass refers to the mass of residue present after drying in an oven at 105°C, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass. (See also "Ash mass," "Biomass," and "Wet mass")

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65°C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also "Wet weight")

Embeddedness is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also "Substrate embeddedness class")

Enterococcus bacteria commonly are found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41°C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus feacalis, Streptococ-*

cus feacium, Streptococcus avium, and their variants. (See also "Bacteria")

EPT Index is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that generally are considered pollution sensitive; the index usually decreases with pollution.

Escherichia coli *(E. coli)* are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

Estimated (E) value of a concentration is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an E code will be reported with the value. If the analyte is identified qualitatively as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an E code even though the measured value is greater than the MDL. A value reported with an E code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less than sign (<). For bacteriological data, concentrations are reported as estimated when results are based on non-ideal colony counts.

Euglenoids (*Euglenophyta*) are a group of algae that usually are free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also "Phytoplankton")

Extractable organic halides (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediment.

Fecal coliform bacteria are present in the intestines or feces of warmblooded animals. They often are used as indicators of the sanitary quality of the water. In the laboratory, they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5°C plus or minus 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

Fecal streptococcal bacteria are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35°C plus or minus 1.0°C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

Filtered pertains to constituents in a water sample passed through a filter of specified pore diameter, most commonly 0.45 micrometer or less for inorganic analytes and 0.7 micrometer for organic analytes.

Filtered, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that has passed through a filter has been extracted. Complete recovery is not achieved by the extraction procedure and thus the analytical determination represents something less than 95 percent of the total constituent concentration in the sample. To achieve comparability of analytical data, equivalent extraction procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results.

Fire algae *(Pyrrhophyta)* are free-swimming unicells characterized by a red pigment spot. (See also "Phytoplankton")

Flow-duration percentiles are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

Gage datum is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum is not an actual physical object, the datum is usually defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national

datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term "stage," although gage height is more appropriate when used in reference to a reading on a gage.

Gage values are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

Gaging station is a site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained.

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

Geomorphic channel units, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

Green algae *(Chlorophyta)* are unicellular or colonial algae with chlorophyll pigments similar to those in terrestrial green plants. Some forms of green algae produce mats or floating "moss" in lakes. The abundance of green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of green algae in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also "Phytoplankton" and "Periphyton")

Habitat, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat typically are made over a wider geographic scale than are measurements of species distribution.

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

Hardness of water is a physical-chemical characteristic that commonly is recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations (primarily calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate ($CaCO_3$).

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. See NOAA Web site: http://www.csc.noaa.gov/text/glossary.html

Hilsenhoff's Biotic Index (HBI) is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = sum\frac{(n)(a)}{N},$$

where n is the number of individuals of each taxon, a is the tolerance value of each taxon, and N is the total number of organisms in the sample.

Horizontal datum (See "Datum")

Hydrologic index stations referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the USGS. Each hydrologic unit is identified by an 8-digit number.

Inch (IN., in.), in reference to streamflow, as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were distributed uniformly on it. (See also "Annual runoff")

Instantaneous discharge is the discharge at a particular instant of time. (See also "Discharge")

International Boundary Commission Survey Datum refers to a geodetic datum established at numerous monu-

ments along the United States-Canada boundary by the International Boundary Commission.

Island, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year, on average, and remains stable except during large flood events.

Laboratory reporting level (LRL) generally is equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent. The value of the LRL will be reported with a "less than" (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. The LRL replaces the term 'non-detection value' (NDV).

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

Latent heat flux (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L},$$

where I_o is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L}\log_e \frac{I}{I_o}.$$

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Long-term method detection level (LT-MDL) is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike-sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL. The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. See NOAA Web site: *http://www.csc.noaa.gov/text/glossary.html*

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Mean concentration of suspended sediment (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also "Daily mean suspended-sediment concentration" and "Suspended-sediment concentration")

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period. (See also "Discharge")

Mean high or **low tide** is the average of all high or low tides, respectively, over a specific period.

Mean sea level is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also "Datum")

Measuring point (MP) is an arbitrary permanent reference point from which the distance to water surface in a well is measured to obtain water level.

Megahertz is a unit of frequency. One megahertz equals one million cycles per second.

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Method code is a one-character code that identifies the analytical or field method used to determine a value stored in the National Water Information System (NWIS).

Method detection limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

Method of Cubatures is a method of computing discharge in tidal estuaries based on the conservation of mass equation.

Methylene blue active substances (MBAS) indicate the presence of detergents (anionic surfactants). The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (UG/G, µg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per kilogram (UG/KG, µg/kg) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

Microsiemens per centimeter (US/CM, µS/cm) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in water as the mass (milligrams) of constituent per unit volume (liter) of water. Concentration of suspended sediment also is expressed in milligrams per liter and is based on the mass of dry sediment per liter of water-sediment mixture.

Minimum reporting level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

Miscellaneous site, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

Nanograms per liter (NG/L, ng/L) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD 29) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It formerly was called "Sea Level Datum of 1929" or "mean sea level." Although the datum was derived from the mean sea level at 26 tide stations, it does not necessarily represent local mean sea

level at any particular place. See NOAA Web site: *http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88* (See "North American Vertical Datum of 1988")

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also "Substrate")

Nekton are the consumers in the aquatic environment and consist of large, free-swimming organisms that are capable of sustained, directed mobility.

Nonfilterable refers to the portion of the total residue retained by a filter.

North American Datum of 1927 (NAD 27) is the horizontal control datum for the United States that was defined by a location and azimuth on the Clarke spheroid of 1866.

North American Datum of 1983 (NAD 83) is the horizontal control datum for the United States, Canada, Mexico, and Central America that is based on the adjustment of 250,000 points including 600 satellite Doppler stations that constrain the system to a geocentric origin. NAD 83 has been officially adopted as the legal horizontal datum for the United States by the Federal government.

North American Vertical Datum of 1988 (NAVD 88) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian**,** Mexican, and United States first-order terrestrial leveling networks.

Open or **screened interval** is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediment. May be reported as dissolved organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

Organic mass or **volatile mass** of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also "Ash mass," "Biomass," and "Dry mass")

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

Parameter code is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

Partial-record station is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

Particle size is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method uses the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, sedigraph) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification, as used in this report, agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	>0.00024 - 0.004	Sedimentation
Silt	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. For the sedimentation method, most of the organic

matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

Percent composition or **percent of total** is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, weight, mass, or volume.

Percent shading is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

Periodic-record station is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year but at a frequency insufficient to develop a daily record.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. Although primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed “acidic,” and solutions with a pH greater than 7.0 are termed “basic.” Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

Phytoplankton is the plant part of the plankton. They usually are microscopic, and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and commonly are known as algae. (See also “Plankton”)

Picocurie (PC, pCi) is one-trillionth (1×10^{-12}) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Polychlorinated naphthalenes (PCNs) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

Pool, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated (carbon method) by the plants.

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time

[mg C/(m^2/time)] for periphyton and macrophytes or per volume [mg C/(m^3/time)] for phytoplankton. The carbon method defines the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light- and dark-bottle method and is preferred for use with unenriched water samples. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [mg O/(m^2/time)] for periphyton and macrophytes or per volume [mg O/(m^3/time)] for phytoplankton. The oxygen method defines production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light- and dark-bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

Radioisotopes are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

Reach, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

Recoverable is the amount of a given constituent that is in solution after a representative water sample has been extracted or digested. Complete recovery is not achieved by the extraction or digestion and thus the determination represents something less than 95 percent of the constituent present in the sample. To achieve comparability of analytical data, equivalent extraction or digestion procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results. (See also "Bed material")

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or nonexceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day, 10-year low flow ($7Q_{10}$) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the nonexceedances of the $7Q_{10}$ occur less than 10 years after the previous nonexceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous nonexceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period (See "Recurrence interval")

Riffle, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

River mileage is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

Run, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

Runoff is the quantity of water that is discharged ("runs off") from a drainage basin during a given time period. Runoff data may be presented as volumes in acre-feet, as

mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also "Annual runoff")

Salinity is the total quantity of dissolved salts, measured by weight in parts per thousand. Values in this report are calculated from specific conductance and temperature. Seawater has an average salinity of about 35 parts per thousand (for additional information, refer to: Miller, R.L., Bradford, W.L., and Peters, N.E., 1988, Specific conductance: theoretical considerations and application to analytical quality control: U.S. Geological Survey Water-Supply Paper 2311, 16 p.)

Sea level, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as "fluvial sediment." Sediment includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

Sensible heat flux (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

Seven-day, 10-year low flow ($7Q_{10}$) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the $7Q_{10}$ is 10 years; the chance that the annual 7-day minimum flow will be less than the $7Q_{10}$ is 10 percent in any given year. (See also "Annual 7-day minimum" and "Recurrence interval")

Shelves, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

Soil heat flux (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

Soil-water content is the water lost from the soil upon drying to constant mass at 105°C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stable isotope ratio (per MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage (See "Gage height")

Stage-discharge relation is the relation between the water-surface elevation, termed stage (gage height), and the volume of water flowing in a channel per unit time.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Substrate embeddedness class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2 mm, sand or finer). Below

are the class categories expressed as the percentage covered by fine sediment:

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

Surface area of a lake is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

Surficial bed material is the upper surface (0.1 to 0.2 foot) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Surrogate is an analyte that behaves similarly to a target analyte, but that is highly unlikely to occur in a sample. A surrogate is added to a sample in known amounts before extraction and is measured with the same laboratory procedures used to measure the target analyte. Its purpose is to monitor method performance for an individual sample.

Suspended is the amount (concentration) of undissolved material in a water-sediment mixture. Most commonly refers to that material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer filter has been extracted or digested. Complete recovery is not achieved by the extraction or digestion procedures and thus the determination represents less than 95 percent of the constituent present in the sample. To achieve comparability of analytical data, equivalent extraction or digestion procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results. (See also "Suspended")

Suspended sediment is sediment carried in suspension by the turbulent components of the fluid or by the Brownian movement (a law of physics). (See also "Sediment")

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also "Sediment" and "Suspended sediment")

Suspended-sediment discharge (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/s) x 0.0027. (See also "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

Suspended-sediment load is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also "Sediment")

Suspended solids, total residue at 105°C concentration is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

Suspended, total is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also "Suspended")

Synoptic studies are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxa (Species) richness is the number of species (taxa) present in a defined area or sampling unit.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchial scheme beginning

with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata,* is the following:

Kingdom:	Animal
Phylum:	Arthropeda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	*Hexagenia*
Species:	*Hexagenia limbata*

Thalweg is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table descriptions and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

Tons per acre-foot (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (acre-foot) of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric ton per day.

Total is the amount of a given constituent in a representative whole-water (unfiltered) sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determined at least 95 percent of the constituent in the sample.)

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warmblooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35°C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C plus or minus 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliters of sample. (See also "Bacteria")

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total in bottom material is the amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total length (fish) is the straight-line distance from the anterior point of a fish specimen's snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

Total load refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

Total organism count is the number of organisms collected and enumerated in any particular sample. (See also "Organism count/volume")

Total recoverable is the amount of a given constituent in a whole-water sample after a sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than

95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

Total sediment discharge is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also "Bedload," "Bedload discharge," "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

Total sediment load or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (See also "Sediment," "Suspended-sediment load," and "Total load")

Transect, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

Turbidity is an expression of the optical properties of a liquid that causes light rays to be scattered and absorbed rather than transmitted in straight lines through water. Turbidity, which can make water appear cloudy or muddy, is caused by the presence of suspended and dissolved matter, such as clay, silt, finely divided organic matter, plankton and other microscopic organisms, organic acids, and dyes (ASTM International, 2003, D1889–00 Standard test method for turbidity of water, *in* ASTM International, Annual Book of ASTM Standards, Water and Environmental Technology, v. 11.01: West Conshohocken, Pennsylvania, 6 p.). The color of water, whether resulting from dissolved compounds or suspended particles, can affect a turbidity measurement. To ensure that USGS turbidity data can be understood and interpreted properly within the context of the instrument used and site conditions encountered, data from each instrument type are stored and reported in the National Water Information System (NWIS) using parameter codes and measurement reporting units that are specific to the instrument type, with specific instruments designated by the method code. The respective measurement units, many of which also are in use internationally, fall into two categories: (1) the designations NTU, NTRU, BU, AU, and NTMU signify the use of a broad spectrum incident light in the wavelength range of 400-680 nanometers (nm), but having different light detection configurations; (2) The designations FNU, FNRU, FBU, FAU, and FNMU generally signify an incident light in the range between 780-900 nm, also with varying light detection configurations. These reporting units are equivalent when measuring a calibration solution (for example, formazin or polymer beads), but their respective instruments may not produce equivalent results for environmental samples. Specific reporting units are as follows:

NTU (Nephelometric Turbidity Units): white or broadband [400-680 nm] light source, 90 degree detection angle, one detector.

NTRU (Nephelometric Turbidity Ratio Units): white or broadband [400-680 nm] light source, 90 degree detection angle, multiple detectors with ratio compensation.

BU (Backscatter Units): white or broadband [400-680 nm] light source, 30 ± 15 degree detection angle (backscatter).

AU (Attenuation Units): white or broadband [400-680 nm] light source, 180 degree detection angle (attenuation).

NTMU (Nephelometric Turbidity Multibeam Units): white or broadband [400-680 nm] light source, multiple light sources, detectors at 90 degrees and possibly other angles to each beam.

FNU (Formazin Nephelometric Units): near infrared [780-900 nm] or monochrome light source, 90 degree detection angle, one detector.

FNRU (Formazin Nephelometric Ratio Units): near infrared [780-900 nm] or monochrome light source, 90 degree detection angle, multiple detectors, ratio compensation.

FBU (Formazin Backscatter Units): near infrared [780-900 nm] or monochrome light source, 30±15 degree detection angle.

FAU (Formazin Attenuation Units): near infrared [780-900 nm] light source, 180 degree detection angle.

FNMU (Formazin Nephelometric Multibeam Units): near infrared [780-900 nm] or monochrome light source, multiple light sources, detectors at 90 degrees and possibly other angles to each beam.

For more information please see *http://water.usgs.gov/owq/FieldManual/Chapter6/6.7_contents.html*.

Ultraviolet (UV) absorbance (absorption) at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of path length of UV light through a sample.

Unconfined aquifer is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See "Water-table aquifer")

Unfiltered pertains to the constituents in an unfiltered, representative water-suspended sediment sample.

Unfiltered, recoverable is the amount of a given constituent in a representative water-suspended sediment sample that has been extracted or digested. Complete recovery is not achieved by the extraction or digestion treatment and thus the determination represents less than 95 percent of the constituent present in the sample. To achieve comparability of analytical data, equivalent extraction or digestion procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results.

Vertical datum (See "Datum")

Volatile organic compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and, subsequently, analyzed by gas chromatography. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They often are components of fuels, solvents, hydraulic fluids, paint thinners, and dry-cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human-health concern because many are toxic and are known or suspected human carcinogens**.**

Water table is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

Water-table aquifer is an unconfined aquifer within which the water table is found.

Water year in USGS reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2002, is called the "2002 water year."

Watershed (See "Drainage basin")

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports. (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976.)

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

Wet mass is the mass of living matter plus contained water. (See also "Biomass" and "Dry mass")

Wet weight refers to the weight of animal tissue or other substance including its contained water. (See also "Dry weight")

WSP is used as an acronym for "Water-Supply Paper" in reference to previously published reports.

Zooplankton is the animal part of the plankton. Zoo-plankton are capable of extensive movements within the water column and often are large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers. (See also "Plankton")

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)

[P, present; --, no data]

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 5--Hudson Bay Basin							
05010000	Belly River at international boundary	74.8	1947-64	1948-64	--	--	--	--	--	--
05010500	North Fork Belly River at international boundary	10.1	1947-55	1948-55	--	--	--	--	--	--
05010700	Mountain View Irrigation District Canal near Mtn. View, Alberta	--	1935-78	--	--	--	--	--	--	--
05011000	Belly River near Mountain View, Alberta	121	1912-78	1912-78	--	--	--	--	--	--
05011500	Waterton River near international boundary	61.0	1947-64	1948-64	--	--	--	--	--	--
05012000	Street Creek at international boundary	6.0	1948-55	1948-55, 1964	--	--	--	--	--	--
05012500	Boundary Creek at international boundary	21.0	1948-64	1948-64	--	--	--	--	--	--
05013000	Waterton River near Waterton Park, Alberta	238	1908-33, 1948-78	1908-30, 1933, 1948-78	--	--	--	--	--	--
05013500	St. Mary Lake near St. Mary	130	1929-61	--	--	--	--	--	--	--
05013600	St. Mary River near St. Mary	130	1961-62	--	--	--	--	--	--	--
05013700	St. Mary River above Swiftcurrent Creek, near Babb	173	1902-15	1902-15	--	--	--	--	--	--
05013900	Grinnell Creek at Grinnell Glacier, near Many Glacier	1.1	1959-71	1960-63, 1965-66, 1968-71	--	--	--	--	--	--
05014000	Grinnell Creek near Many Glacier	3.32	1949-78	1950-78	--	--	--	--	--	--
05014300	**Swiftcurrent Creek ab Swiftcurrent Lake, nr Many Glacier**		**2003-P**	**2003-P**						
05014500	**Swiftcurrent Creek at Many Glacier**	30.9	**1912-P**	**1913-P**	--	1966-69	--	--	1966	--
05015000	Canyon Creek near Many Glacier	7.1	1918-37	1919, 1921-27, 1929-31, 1934,1936	--	--	--	--	--	--
05015500	**Lake Sherburne at Sherburne**	64.1	**1915-P**	--	--	--	--	--	--	--
05016000	**Swiftcurrent Creek at Sherburne**	64.6	**1912-81, 1984-2004**	**1913-P**	--	--	--	1990-92	**1996-2004**	--
05016400	Swiftcurrent Creek at mouth, near Babb	--	--	--	--	--	--	--	1996	--
05016500	Swiftcurrent Creek near Babb	98.6	1902-10	1902, 1904-07, 1909	--	--	--	--	--	--
05017000	Lower St. Mary Lake near Babb	276	1929-55	--	--	--	--	--	--	--
05017500	**St. Mary River near Babb**	276	**1901-02, 1910-25, 1950-P**	**1902, 1911-25, 1951-P**	--	--	--	1965	--	--
05018000	**St. Mary Canal at intake, near Babb**	--	**1918-50, 1997-P**	--	--	--	--	--	--	--
05018500	**St. Mary Canal at St. Mary Crossing, near Babb**	--	**1918-P**	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 5--Hudson Bay Basin--Continued							
05019000	St. Mary Canal at Hudson Bay Divide, near Browning	--	1917-66	--	--	--	--	1965, 1981-83	--	--
05019500	St. Mary River below St. Mary Canal, near Babb	286	1929-50	1929-33, 1935-50	--	--	--	--	--	--
05020000	Kennedy Creek near Babb	60.8	1905	1964,1975	--	--	--	--	--	--
05020500	**St. Mary River at international boundary**	465	**1902-P**	**1903-P**	1978-81	1978-79	--	1978-93	1978-93	1978-93
			Part 6--Missouri River Basin							
06006000	**Red Rock Creek above Lakes, near Lakeview**	39.2	**1997-P**	**1997-P**	--	--	--	--	--	--
06007000	Tom Creek near Lakeview	6.43	1989	1989	--	--	--	--	--	--
06008000	Odell Creek above Taft Ranch, near Lakeview	17.7	1993-98	1994-98	--	--	--	--	--	--
06010000	Red Rock River near Lakeview	237	1933-37	--	--	--	--	--	--	--
06010500	Red Rock River at Metzel Fork, near Monida	264	1925-29	--	--	--	--	--	--	--
06010600	Red Rock River at Brundage Bridge, near Lakeview	277	1988-89	1989	--	--	--	--	--	--
06011000	Red Rock River at Kennedy Ranch, near Lakeview	323	1936-67	1937-42, 1945-54, 1956-67, 1984	--	--	--	--	--	--
06011400	Long Creek near Lakeview	36	--	1960-67, 1969,1984	--	--	--	--	--	--
06011500	Red Rock River above Lima Reservoir, near Monida	431	1911, 1914-18, 1925,1930	--	--	--	--	--	--	--
06011900	Red Rock River tributary near Monida	0.37	--	1960-67, 1984	--	--	--	--	--	--
06012000	**Lima Reservoir near Monida**	570	**1940-P**	--	--	--	--	--	--	--
06012500	**Red Rock River below Lima Reservoir, near Monida**	570	**1911-19, 1925-69, 1974-82, 1985-P**	**1912-18, 1926-69, 1974-82, 1985-P**	--	--	--	--	--	--
06013000	Red Rock River at Lima	602	1907-11	--	--	--	--	--	--	--
06013200	Traux Creek near Lima	4.06	--	1960-74, 1984	--	--	--	--	--	--
06013400	Muddy Creek near Dell	63.4	--	1960-74, 1984	--	--	--	--	--	--
06013500	Big Sheep Creek below Muddy Creek, near Dell	278	1936, 1946-53, 1977-79	1946-53, 1960-91	--	1977-79	1977-79	--	1977-79	--
06013900	Sage Creek tributary near Dell	0.34	--	1959-67	--	--	--	--	--	--
06014000	Red Rock River near Dell	1,421	1942-67	1943-67	--	--	--	--	--	--
06014500	Red Rock River at Red Rock	1,548	1890, 1951-52, 1974-83	1974-83	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06015000	Horse Prairie Creek near Grant	325	1946-53	1946-53	--	--	--	--	--	--
06015300	**Clark Canyon Reservoir near Grant**	2,321	**1964-P**	--	--	--	--	--	--	--
06015400	Beaverhead River near Grant	2,322	1962-83	1963-83	--	--	--	--	--	--
06015430	**Clark Canyon near Dillon**	18.0	--	**1969, 1974-P**	--	--	--	--	--	--
06015460	**Farlin Creek near Polaris, MT**	5.46	--	**2003-P**	--	--	--	--	--	--
06015480	**Grasshopper Creek tributary near Dillon**	0.80	--	**2003-P**	--	--	--	--	--	--
06015500	Grasshopper Creek near Dillon	348	1921-33, 1946-54, 1955-58, 1960-61	1921-32, 1946-53, 1955-58, 1960-73, 1975	--	--	--	1986	--	--
06016000	**Beaverhead River at Barretts**	2,737	**1907-P**	**1908-P**	1965-78	1965-78	--	1965-78, 1986		--
06016500	Rattlesnake Creek near Dillon	23.9	1946-49	--	--	--	--	--	--	--
06016900	Beaverhead River tributary near Dillon	0.93	--	1960-74	--	--	--	--	--	--
06017000	**Beaverhead River at Dillon**	2,895	**1950-52, 1963-71 2002-P**	**1951-52, 1964-71 2002-P**	--	--	--	--	--	--
06017500	Blacktail Deer Creek near Dillon	312	1946-54, 1955-66	1946-53, 1955-66, 1984	--	--	--	--	--	--
06017600	Blacktail Deer Creek at Dillon	--	--	--	--	--	--	1986	--	--
06018000	Beaverhead River near Dillon	3,484	1951-52, 1963-83	1951-52, 1964-83	--	--	--	--	--	--
06018200	Beaverhead River tributary No. 2 near Dillon	0.88	--	1958-65	--	--	--	--	--	--
06018500	**Beaverhead River near Twin Bridges**	3,619	**1935-P**	**1936-44, 1946-P**	--	2001-03	1962-74	1950-51, 1962-81, 1986, 1999-2003	1999-2003	--
06019000	Ruby River above Warm Springs Creek, near Alder	145	1948-53	1948-53	--	--	--	--	--	--
06019400	Sweetwater Creek near Alder	81.5	--	1974-91	--	--	--	--	--	--
06019500	**Ruby River above reservoir, near Alder**	534	**1938-P**	**1939-P**	--	--	--	--	1994	--
06019800	Idaho Creek near Alder	11.0	--	1960-85	--	--	--	--	--	--
06020000	Ruby River at damsite, near Alder	592	1911-14, 1935-37	--	--	--	--	--	--	--
06020600	**Ruby River below reservoir, near Alder**	596	**1962-P**	**1963-P**	--	--	--	--	1994	--
06021000	Ruby River near Alder	614	1929-39, 1946-61	1929-39, 1947-60	--	--	--	--	--	--
06021500	Ruby River at Laurin	650	1946-61	1947-60	--	--	--	--	--	--
06022000	Ruby River below Ramshorn Creek, near Sheridan	843	1946-53	1947-53	--	--	--	--	--	--
06022500	Ruby River near Sheridan	863	1946-51	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06023000	Ruby River near Twin Bridges	935	1940-43, 1946-65, 1979-81	1942-73, 1947-65, 1980-81	--	1979-81	--	1986	1965	--
06023500	Big Hole River near Jackson	44.0	1948-54	1948-53	--	--	--	--	--	--
06024000	Miner Creek near Jackson	17.6	1948-54	1948-53	--	--	--	--	--	--
06024100	**Fox Gulch near Jackson**	3.32	--	**2003-P**	--	--	--	--	--	--
06024450	**Big Hole River below Big Lake Creek, at Wisdom**	575	**1988-P**	**1988-P**	--	**1988-P**	--	--	--	--
06024470	Swamp Creek near Wisdom	66.1	1995-96	1995-96	--	--	--	--	--	--
06024500	Trail Creek near Wisdom	71.4	1948-54, 1966-72	1948-53, 1967-72	--	--	--	--	--	--
06024510	West Fork Ruby Creek near Wisdom	13.4	1995-96	1995-96	--	--	--	--	--	--
06024540	**Big Hole River below Mudd Creek, near Wisdom**	1,267	**1997-P**	**1998-P**	--	--	--	--	--	--
06024580	Big Hole River near Wise River	1,611	1979-81	1980-81	--	--	--	--	--	--
06024590	Wise River near Wise River	214	1973-85	1973-85	--	--	--	--	--	--
06025000	Big Hole River near Dewey	1,990	1910-13	--	--	--	--	--	--	--
06025100	**Quartz Hill Gulch near Wise River**	14.3	--	**1974-P**	--	--	--	--	--	--
06025250	Big Hole River at Maiden Rock, near Divide	2,199	1997-2002	1998-2002	--	--	--	--	--	--
06025270	Moose Creek above McClean Creek, near Divide	31.9	1998-99	1998-99	--	--	--	--	--	--
06025300	Moose Creek near Divide	42.3	--	1960-74	--	--	--	--	--	--
06025480	Rock Creek below Browns Lake, near Glen	23.0	1998-99	1998-99	--	--	--	--	--	--
06025500	**Big Hole River near Melrose**	2,476	**1923-P**	**1924-40, 1942-P**	--	**1960-64, 1977-P**	1960-64	1957, 1961, 1961-64	--	--
06025700	Willow Creek diversions to Birch Creek, near Glen	--	1946-53, 1955-66	--	--	--	--	--	--	--
06025800	Willow Creek near Glen	35.6	1962-66, 1997-99	1998-99	--	--	--	1963-65	1964-65	--
06026000	Birch Creek near Glen	36.0	1946-53, 1955-76	1946-53, 1955-76	--	--	--	1959-62	1960-61	--
06026210	**Big Hole River near Glen**	2,655	**1997-P**	**1998-P**	--	--	--	--	--	--
06026400	Big Hole River near Twin Bridges	2,762	1979-81	1980-81	--	--	--	1986	--	--
06026500	**Jefferson River near Twin Bridges**	7,632	**1940-43, 1958-72, 1994-P**	**1942-43, 1958-72, 1994-P**	--	1994-2002	1960-62, 1965-72	1958-62, 1965-72	1971-72	--
06027000	Jefferson River near Silver Star	7,683	1910-16, 1920-39	1911-16, 1921-39, 1966	--	--	--	--	--	--
06027200	Jefferson River at Silver Star	7,683	1972-74	1973-74	--	--	--	1973-74	1974	--
06027500	Bell Creek near Waterloo	5.63	1941-42	--	--	--	--	--	--	--
06027700	Fish Creek near Silver Star	38.9	1959-91	1959-91	--	--	--	--	--	--
06028000	Big Pipestone Creek near Whitehall	108	1910-11	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06028500	Little Pipestone Creek near Whitehall	30.7	1935-40	1935-40	--	--	--	--	--	--
06028700	Big Pipestone Creek at Whitehall	--	--	--	--	--	--	1986	--	--
06029000	Whitetail Creek near Whitehall	30.8	1949-68	1950-53, 1955-68, 1981	--	--	--	--	--	--
06029500	Little Whitetail Creek near Whitetail	91.0	1911	--	--	--	--	--	--	--
06030000	Whitetail Creek at Whitehall	179	1911	--	--	--	--	--	--	--
06030200	Jefferson River tributary near Whitehall	1.85	--	1960-75	--	--	--	--	--	--
06030300	**Jefferson River tributary No. 2 near Whitehall**	4.50	--	**1958-P**	--	--	--	--	--	--
06030500	Boulder River above Rock Creek, near Basin	19.4	1936, 1946-53, 1955-57	1947-53, 1955-57, 1975,1981	--	--	--	--	--	--
06031000	Rock Creek at CCC Camp, near Bernice	9.87	1936	--	--	--	--	--	--	--
06031450	**Boulder River above Kleinsmith Gulch, near Basin**	--	--	--	--	--	--	**1997-P**	**1997-P**	--
06031500	Boulder River at Basin	219	1921-23	--	--	--	--	1997-99	1997-99	--
06031600	**Basin Creek at Basin**	--	--	--	--	--	--	**1997-P**	**1997-P**	--
06031950	**Cataract Creek near Basin**	30.6	--	**1973-P**	--	--	--	1997-99	1997-99	--
06031960	**Cataract Creek at Basin**	--	--	--	--	--	--	**1997-P**	**1997-P**	--
06032000	Boulder River near Basin	292	1919-20	--	--	--	--	1997-99	1997-99	--
06032300	High Ore Creek near Basin	8.86	1997	1997	--	--	1997	1997-2002	1997-2002	--
06032400	**Boulder River below Little Galena Gulch near Boulder**	318	1997	1997	--	--	1997	**1997-P**	**1997-P**	--
06032500	Muskrat Creek near Boulder	6.09	1912-14	--	--	--	--	--	--	--
06033000	**Boulder River near Boulder**	381	**1929-72, 1985-P**	**1929-72, 1975,1981, 1985-P**	--	--	--	1997-99	1997-99	--
06033500	North Fork Little Boulder River near Boulder	18.8	1926-27	--	--	--	--	--	--	--
06033900	Boulder River near Cardwell	756	--	--	--	--		1986	1997	--
06034000	South Boulder River near Jefferson Island	27.5	1926-33	1926-33	--	--	--	--	--	--
06034300	South Boulder River near Cardwell	--	--	--	--	--	--	1986	--	--
06034500	Jefferson River at Sappington	9,277	1895-1905, 1938-69	1895-1905, 1939-69, 1975	--	--	--	--	--	--
06034700	Sand Creek at Sappington	9.41	--	1960-74	--	--	--	--	--	--
06034800	Jefferson River tributary No. 3 near Sappington	1.14	--	1960-74	--	--	--	--	--	--
06035000	**Willow Creek near Harrison**	83.8	**1938-2002, 2004**	**1938-2002, 2004**	--	**2002-P**	--	--	--	--
06035500	Norwegian Creek near Harrison	22.4	1938-43, 1946-51	1938-43, 1947-51	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06036500	Willow Creek near Willow Creek	165	1919-33, 1946-53, 1955-57	1920-29, 1931-32, 1947-53, 1955-56	--	--	--	1986	--	--
06036600	Jefferson River tributary No. 4 near Three Forks	0.53	--	1960-74, 1982-83	--	--	--	--	--	--
06036650	**Jefferson River near Three Forks**	9,532	**1978-P**	**1979-P**	--	1980-81 2000-2003	--	1986-87, 1999-2003	1999-2003	--
06036700	Jefferson River tributary No. 5 near Three Forks	3.69	--	1960-73, 1980, 1982-83	--	--	--	--	--	--
06036800	Firehole River near Old Faithful, Yellowstone National Park	--	--	--	--	--	--	1958	--	--
06036905	**Firehole River near West Yellowstone**	282	**1984-96 2003-P**	**1984-96 2003-P**	1983-88	**1983-93 2003-P**	--	1987,1989	--	--
06036940	**Tantalus Creek at Norris Junction, Yellowstone National Park**	1.29	**2004**	**2004**	--	**2004**	--	--	--	--
06037000	Gibbon River near West Yellowstone	118	1913-16, 1984-96	1984-96	1983-88	1983-93	--	1987, 1989	--	--
06037100	**Gibbon River at Madison Junction, Yellowstone Nat'l Park**	126	**2003-P**	**2003-P**	--	**2003-P**	--	--	--	--
06037500	**Madison River near West Yellowstone**	420	**1913-73, 1983-86, 1989-P**	**1914-17, 1919-73, 1984-86, 1989-P**	1983-86	1983-86	--	**1959, 1986-95 2004**	1989-90 1992-95	--
06037600	Madison River above Hebgen Lake, near West Yellowstone	--	--	--	--	--	--	1993-94	1993-94	--
06037700	South Fork Madison River above Denny Creek, near West Yellowstone	--	--	--	--	--	--	1987-88	--	--
06038000	**Hebgen Lake near Grayling**	904	**1936-P**	--	--	--	--	--	--	--
06038500	**Madison River below Hebgen Lake, near Grayling**	905	**1909-P**	**1940-P**	--	--	--	**1986-95 2004**	1992-95	--
06038550	**Cabin Creek near West Yellowstone**	30.3	--	**1974-P**	--	--	--	--	--	--
06038800	**Madison River at Kirby Ranch, near Cameron**	1,065	**1959-63, 1978-P**	**1960-61, 1963, 1985-P**	--	1995-2002	1960	**1959, 2004**	1959-60	--
06039000	West Fork Madison River near Lakeview	11.9	1936	--	--	--	--	--	--	--
06039200	West Fork Madison River near Cameron	220	1965-67	1966-67	--	--	--	1986-88	--	--
06039500	Madison River at Lyon	1,346	1928-32	--	--	--	--	1959	--	--
06040000	Madison River near Cameron	1,669	1952-63, 1968-70	1952-58, 1960-63, 1968-70	--	--	--	1988, 1993-95	1993-95	--
06040010	Blaine Spring Creek near Cameron	3.42	1971-72	--	--	--	--	--	--	--
06040300	Jack Creek near Ennis	51.5	1973-86, 1992	1974-86, 1991-92	--	--	--	1980	--	--
06040400	Meadow Creek near McAllister	--	--	--	--	--	--	1986	--	--
06040500	**Ennis Lake near McAllister**	2,181	**1936-P**	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06040800	**Madison River above powerplant, near McAllister**	4,690	**2002-P**	**2002-P**	--	--	--	**2004**	--	--
06041000	**Madison River below Ennis Lake, near McAllister**	2,186	**1901-P**	**1943-P**	--	**1977-P**	--	1972-73, 1986-87, 1991-95	1991-95	1972-73
06041300	Hot Springs Creek near Norris	72.5	--	--	--	--	--	1986-87, 1993-94	1993-94	--
06041500	Madison River near Norris	2,288	1890-93, 1910	--	--	--	--	1993-95	1993-95	--
06041700	Cherry Creek near Norris	--	--	--	--	--	--	1986-87, 1993-94	1993-94	--
06042000	Madison River below Cherry Creek, near Norris	2,387	1897-1905	1898-1905	--	--	--	--	--	--
06042500	Madison River near Three Forks	2,511	1893-97, 1928-32, 1941-50	1894-96 1929-32, 1942-50	--	--	--	--	--	--
06042600	**Madison River at Three Forks**	2,531	--	--	--	--	--	**1986-87 1990, 1993-95, 2004**	1990, 1993-95	--
06043000	Taylor Creek near Grayling	98.0	1946-54, 1955-57, 1966-67	1947-53, 1955-57, 1967	--	--	--	--	--	--
06043200	Squaw Creek near Gallatin Gateway	40.4	--	1959-75	--	--	--	--	--	--
06043300	**Logger Creek near Gallatin Gateway**	2.48	--	**1959-P**	--	--	--	--	--	--
06043500	**Gallatin River near Gallatin Gateway**	825	**1889-94, 1930-69, 1971-81, 1985-P**	**1890-94, 1931-81, 1985-P**	--	2001-2002	--	1949-51, 1986-87, 1998	--	1998
06044000	Gallatin River near Salesville	833	1895-1905, 1910-13, 1921-23	1896-1905, 1912-13, 1921-23	--	--	--	--	--	--
06044100	Wilson Creek near Gallatin Gateway	5.33	1952-53	--	--	--	--	--	--	--
06044200	West Fork Wilson Creek near Gallatin Gateway	3.81	1952-53	--	--	--	--	--	--	--
06044300	Big Bear Creek near Gallatin Gateway	13.2	1952-53	--	--	--	--	--	--	--
06044400	Little Bear Creek near Gallatin Gateway	3.87	1952-53	--	--	--	--	--	--	--
06044500	South Cottonwood Creek near Gallatin Gateway	21.9	1951-53	--	--	--	--	--	--	--
06045000	Gallatin River at Axtell Bridge, near Gallatin Gateway	927	1950-54	--	--	--	--	--	--	--
06045200	Fish Creek near Gallatin Gateway	--	1952-53	--	--	--	--	--	--	--
06045300	Yellow Dog Creek near Belgrade	6.85	1952-53	--	--	--	--	--	--	--
06045350	Godfrey Creek near Belgrade	6.32	1952-53	--	--	--	--	--	--	--
06045400	Baker Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--
06045500	Gallatin River near Belgrade	965	1950-54	--	--	--	--	1949	--	--
06046000	Gallatin River near Manhattan	970	1950-54	--	--	--	--	1949	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06046100	Ridgley Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--
06046200	Gallatin River above Camp Creek, near Manhattan	--	--	--	--	--	--	1949	--	--
06046300	Camp Creek near Belgrade	34.5	1952-53	--	--	--	--	--	--	--
06046400	Randall Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--
06046500	Rocky Creek near Bozeman	50.5	1951-53	1952-53, 1959-91	--	--	--	1949	--	--
06046520	Unnamed Creek near Bozeman	2.63	--	1997-2002	--	--	--	--	--	--
06046700	Pitcher Creek near Bozeman	2.33	--	1960-75, 1981	--	--	--	--	--	--
06047000	Bear Canyon near Bozeman	17.0	1951-53	1952-53, 1959-73, 1975,1981	--	--	--	--	--	--
06047500	Sourdough Creek near Bozeman	28.2	1951-53	--	--	--	--	--	--	--
06048000	East Gallatin River at Bozeman	148	1939-61	1940-61, 1981	--	--	--	1949,1951	--	--
06048500	Bridger Creek near Bozeman	62.5	1946-69, 1971-72, 1987	1946-69, 1971-72, 1981,1987	--	--	--	1949	--	--
06048600	Lyman Creek near Bozeman	1.75	1952-53	--	--	--	--	1949	--	--
06048700	**East Gallatin River below Bridger Creek, near Bozeman**	226	**2002-P**	**2002-P**	--	2002	--	--	--	--
06048800	Deer Creek near Bozeman	--	1953	--	--	--	--	--	--	--
06048900	East Gallatin River near Belgrade	--	1952-53	--	--	--	--	--	--	--
06049000	Middle Cottonwood Creek near Bozeman	4.25	1951-53	--	--	--	--	--	--	--
06050000	Hyalite Creek at Hyalite Ranger Station, near Bozeman	48.2	1895-96, 1898-1900, 1902,1904, 1935-95	1898-1899, 1902, 1935-95	--	--	--	1949	--	--
06050100	Hyalite Creek near Belgrade	--	1952	--	--	--	--	--	--	--
06050200	Bostwick Creek near Belgrade	5.04	1952-53	--	--	--	--	1949	--	--
06050400	Thompson Creek near Belgrade	--	1952-53	--	--	--	--	--	--	--
06050450	Ben Hart Creek near Belgrade	--	1952-53	--	--	--	--	--	--	--
06050500	Ross Creek near Belgrade	1.25	1951-53	--	--	--	--	1949,1951	--	--
06050700	Truman Creek near Belgrade	2.94	1952-53	--	--	--	--	--	--	--
06051000	Reese Creek near Belgrade	21.5	1951-53	--	--	--	--	--	--	--
06051200	Bear Creek near Belgrade	4.30	1952-53	--	--	--	--	--	--	--
06051300	Foster Creek near Belgrade	--	1953	--	--	--	--	--	--	--
06051500	Dry Creek at Andrus Ranch, near Manhattan	96.2	1952-53	--	--	--	--	--	--	--
06051700	Reynolds (Quagle) Creek near Manhattan	--	1953	--	--	--	--	--	--	--
06052000	Dry Creek at Brownell Ranch, near Manhattan	104	1951	--	--	--	--	--	--	--
06052050	Story Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06052100	Cowan Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--
06052200	Gibson Creek near Manhattan	--	1952-53	--	--	--	--	1949,1951	--	--
06052300	Bull Run Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--
06052500	**Gallatin River at Logan**	1,795	**1893-1905, 1928-P**	**1895-1900, 1902-1905, 1929-33, 1935-P**	--	**1979-85, 2001-P**	--	1949,1951, 1957,1986, 1999-2003	1965, 1999-2003	--
06053000	Sixteenmile Creek at Ringling	79.0	1950-55	1951-55	--	--	--	--	--	--
06053050	**Lost Creek near Ringling**	9.59	--	**1974-P**	--	--	--	--	--	--
06053400	Sixteenmile Creek near Toston	--	--	--	--	--	--	1986	--	--
06053500	Broadwater East Canal near Toston	--	1941-49	--	--	--	--	--	--	--
06054000	Broadwater West Canal near Toston	--	1941-49	--	--	--	--	--	--	--
06054500	**Missouri River at Toston**	14,669	**1890-91, 1910-16, 1941-P**	**1890, 1910-16, 1941-P**	1973-81	**1949-53 1973-P**	1949-53	1949-51, 1972-95, 1999-2003	1965, 1973-95, 1999-2003	1972-94
06055000	Crow Creek near Townsend	48.6	1912-13	--	--	--	--	1950,1986, 1988-91	1989-90	--
06055500	Crow Creek near Radersburg	76.6	1901, 1919-29, 1966-72, 1989-90	1901, 1920-29, 1966-72, 1975,1981, 1989-90	--	--	--	--	--	--
06056200	Castle Creek tributary near Ringling	2.51	--	1960-74, 1981, 1989-90	--	--	--	--	--	--
06056300	**Cabin Creek near Townsend**	11.8	--	**1960-P**	--	--	--	--	--	--
06056500	Deep Creek near Townsend	65.4	1910-15	--	--	--	--	--	--	--
06056600	Deep Creek below North Fork Deep Creek, near Townsend	87.7	--	1959-73, 1975,1981, 1989-90	--	--	--	--	--	--
06057000	Missouri River near Townsend	15,343	1891-1904	1892-1903, 1964	--	--	--	--	--	--
06057400	Beaver Creek above Weasel Creek, near Winston	21.5	--	--	--	--	--	1950, 1988-91	1989-90	--
06057500	Lake Sewell near Helena	15,894	1936-53	--	--	--	--	--	--	--
06058000	Missouri River at Canyon Ferry	15,894	1889	--	--	--	--	--	--	--
06058500	**Canyon Ferry Lake near Helena**	15,904	**1953-P**	--	--	--	--	--	--	--
06058502	Missouri River below Canyon Ferry Dam, near Helena	15,904	--	--	1968-87	--	--	1968-87	--	--
06058700	Mitchell Gulch near East Helena	8.09	--	1959-2002	--	--	--	--	--	--
06058900	Prickly Pear Creek below Anderson Gulch, near Jefferson City	14.0	--	1989-90	--	--	--	1988-90	1989-90	--
06059000	Dutchman Creek near Alhambra	9.78	1921-24	--	--	--	--	--	--	--
06059500	Warm Springs Creek at Alhambra	20.6	1921-24	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06060000	Clancy Creek at Clancy	33.1	1921-23	--	--	--	--	--	--	--
06060500	Lump Gulch at Foley's Ranch, near Clancy	33.0	1921-24	--	--	--	--	--	--	--
06061000	Lump Gulch at Zastrow's Ranch, near Clancy	43.4	1908-13	1909-13, 1981	--	--	--	--	--	--
06061500	Prickly Pear Creek near Clancy	192	1908-16, 1921-33, 1945-69, 1978-2002	1911-16, 1923-33, 1946-53, 1955-69, 1975, 1979-2002	--	--	--	1950, 1999-2003	1999-2003	--
06061700	Jackson Creek near East Helena	3.44	--	1961-75, 1981, 1989-90	--	--	--	--	--	--
06061800	Crystal Creek near East Helena	3.77	--	1961-75, 1981, 1989-90	--	--	--	--	--	--
06061900	McClellan Creek near East Helena	33.2	--	1961-75, 1981, 1989-90	--	--	--	1988-90	1989-90	--
06062000	Prickly Pear Creek at East Helena	251	1908-13	--	--	--	--	1995	--	--
06062010	Prickly Pear Creek below East Helena	--	--	--	--	--	--	1971	--	--
06062500	**Tenmile Creek near Rimini**	30.9	**1914-94, 1997-P**	**1915-94, 1997-P**	--	--	--	1981, 1997-99	1997-99	--
06062700	Little Porcupine Creek tributary near Helena	0.39	--	1959-73, 1981,1989	--	--	--	--	--	--
06062750	**Tenmile Creek at Tenmile Water Treatment Plant, near Rimini**	51.1	1997-2002	1997-2002	--	--	--	**1999-2004**	**1999-2004**	--
06063000	**Tenmile Creek near Helena**	96.5	1908-54, 1997-98	1909-54, 1975,1981, 1997-98	--	--	--	**1950-51, 1997-98 2002-P**	**1997-98 2002-P**	--
06063500	Sevenmile Creek at Birdseye	31.9	1908-13	--	--	--	--	--	--	--
06064000	Sevenmile Creek near Helena	--	1908	--	--	--	--	--	--	--
06064100	**Tenmile Creek at Green Meadow Drive, at Helena**	161	1997-98	1997-98	--	--	--	**2002-04**	**2002-04**	--
06064150	Tenmile Creek above Prickly Pear Creek, near Helena	188	1997-98	1997-98	--	--	--	--	--	--
06064500	**Lake Helena near Helena**	610	**1945-P**	--	--	--	--	--	--	--
06065000	**Hauser Lake near Helena**	16,876	**1936-P**	--	--	--	--	--	--	--
06065500	**Missouri River below Hauser Dam, near Helena**	16,876	**1923-42 1995-P**	**1923-42, 1995-P**	--	--	--	--	--	--
06066000	**Holter Lake near Wolf Creek**	17,149	**1936-P**	--	--	--	--	--	--	--
06066500	**Missouri River below Holter Dam, near Wolf Creek**	17,149	**1945-P**	**1946-P**	--	**2000-P**	--	--	--	--
06067000	Little Prickly Pear Creek above Deadman Creek, near Marysville	20.1	1909-11	--	--	--	--	--	--	--
06067500	Deadman Creek near Marysville	9.52	1909-11	--	--	--	--	--	--	--
06068000	Lost Horse Creek near Marysville	13.1	1909-11	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06068500	Little Prickly Pear Creek near Marysville	44.4	1913-33	1913-32	--	--	--	--	--	--
06069000	Marsh Creek near Marysville	6.07	1909-12	--	--	--	--	--	--	--
06070000	Canyon Creek near Canyon Creek	73.8	1921-23	--	--	--	--	--	--	--
06070500	Cottonwood Creek near Canyon Creek	16.5	1921-22	--	--	--	--	--	--	--
06071000	Little Prickly Pear Creek near Canyon Creek	183	1909-11, 1913-24	1909-11, 1913-24	--	--	--	--	--	--
06071080	Sieben Ranch ditch below Clark Creek, near Wolf Creek	--	--	--	--	--	--	--	1964-67	--
06071100	Little Prickly Pear Creek at Sieben Ranch, near Wolf Creek	270	1962-67	1962-67	--	--	1962-67	1964	1966	--
06071130	Little Prickly Pear Creek above Medicine Rock Creek, near Wolf Creek	--	--	--	--	--	--	--	1964-67	--
06071180	Medicine Rock Creek near Wolf Creek	--	--	--	--	--	--	--	1964-67	--
06071200	Lyons Creek near Wolf Creek	29.9	--	1959-73, 1975	--	--	--	--	1964-67	--
06071220	Little Prickly Pear Creek below Lyons Creek, near Wolf Creek	--	--	--	--	--	--	--	1965-67	--
06071230	Little Prickly Pear Creek above Sheep Creek, near Wolf Creek	--	--	--	--	--	--	--	1964	--
06071240	Sheep Creek near Wolf Creek	--	--	--	--	--	--	--	1964-67	--
06071290	Wolf Creek at Wolf Creek	--	--	--	--	--	--	--	1964-64	--
06071300	**Little Prickly Pear Creek at Wolf Creek**	381	**1962-67, 1992-P**	**1962-65, 1967,1975, 1992-P**	--	2001-2002	1962-67	1964	1964-67	--
06071400	Dog Creek near Craig	15.7	--	1960-75	--	--	--	--	--	--
06071500	Missouri River at Craig	17,739	1890-92	--	--	--	--	--	--	--
06071600	Wegner Creek at Craig	35.7	--	1960-91	--	--	--	--	--	--
06072000	Dearborn River above Falls Creek, near Clemons	69.6	1908-12	--	--	--	--	--	--	--
06072500	Falls Creek near Clemons	37.6	1908-12	--	--	--	--	--	--	--
06073000	Dearborn River near Clemons	123	1921-23, 1929-53	1921-23 1929-53, 1964,1975	--	--	--	--	--	--
06073500	**Dearborn River near Craig**	325	**1946-69, 1994-P**	**1946-69, 1975, 1994-P**	--	**1993-P**	--	1991, 1999-2003	1999-2003	--
06073600	**Black Rock Creek near Augusta**	5.54	--	**1974-P**	--	--	--	--	--	--
06074000	Missouri River at Cascade	18,493	1902-15, 1953	1903-15	--	--	--	--	--	--
06074500	Smith River near White Sulphur Springs	30.7	1923-31, 1934-36	1923-31, 1934-36	--	--	--	--	--	--
06075500	Smith River above Fivemile Creek, near White Sulphur Springs	73.2	1934-43	1934-43	--	--	--	--	--	--
06075600	Fivemile Creek near White Sulphur Springs	6.42	--	1960-74	--	--	--	--	--	--
06075700	North Fork Smith River near mouth, near White Sulphur Springs	185	--	--	--	--	--	1993-95	1993-95	1993-95
06075800	South Fork Smith River at mouth, near White Sulphur Springs	174	--	--	--	--	--	1993-95	1993-95	1993-95
06075900	Big Birch Creek at mouth, near White Sulphur Springs	49.6	--	--	--	--	--	1993-95	1993-95	1993-95

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06076000	Newlan Creek near White Sulphur Springs	7.27	1946-54	1946-53, 1960-73	--	--	--	--	--	--
06076500	Newlan Creek near damsite, near White Sulphur Springs	44.8	1950-57	1951-57	--	--	--	--	--	--
06076550	Newlan Creek at mouth, near White Sulphur Springs	--	--	--	--	--	--	1993-95	1993-95	1993-95
06076600	Camas Creek at mouth, near White Sulphur Springs	--	--	--	--	--	--	1993-95	1993-95	1992-95
06076650	Benton Gulch at mouth, near White Sulphur Springs	57.6	--	--	--	--	--	1993-95	1993-95	1993-95
06076690	Smith River near Fort Logan	846	1978-96	1978-96	--	--	--	1993-95	1993-95	1993-95
06076700	Sheep Creek near Neihart	5.22	--	1960-91	--	--	--	--	--	--
06076800	Nugget Creek near Neihart	1.50	--	1959-73	--	--	--	--	--	--
06077000	Sheep Creek near White Sulphur Springs	42.8	1941-72	1942-72, 1975,1981	--	--	--	1956,1980	1980	--
06077090	Sheep Creek near mouth, near White Sulphur Springs	192	--	--	--	--	--	1993-95	1993-95	1991, 1993-95
06077200	**Smith River below Eagle Creek, near Fort Logan**	1,088	**1996-P**	**1997-P**	--	**1997-P**	--	--	--	--
06077300	Trout Creek near Eden	13.2	--	1974-84	--	--	--	--	--	--
06077500	Smith River near Eden	1,594	1951-69	1951-69, 1975,1981	--	--	--	--	--	--
06077700	Smith River tributary near Eden	1.44	--	1960-73, 1975	--	--	--	--	--	--
06077800	Goodman Coulee near Eden	22.1	--	1959-82	--	--	--	--	--	--
06078000	Smith River at Truly	2,006	1905-07, 1929-32	1905-07, 1929-32, 1953	--	--	--	1991	--	--
06078200	**Missouri River near Ulm**	20,941	**1957-P**	**1948,1953, 1958-P**	--	--	--	--	--	--
06078230	Sand Coulee Creek above Cottonwood Creek, at Centerville	78.8	1995-96	1995-96	--	--	--	1994-96	--	--
06078250	Cottonwood Creek near Stockett	--	1995-96	1995-96	--	--	--	1994-96	--	--
06078260	Number Five Coulee below Giffen Spring, near Stockett	16.7	1995-96	1995-96	--	--	--	1994-96	--	--
06078270	Sand Coulee at Sand Coulee	6.36	1995-96	1995-96	--	--	--	1994-96	--	--
06078500	North Fork Sun River near Augusta	258	1911-12, 1946-68, 1989-93	1911-12, 1946-68, 1989-93	--	--	--	--	1989-93	--
06079000	South Fork Sun River near Augusta	252	1911-12	--	--	--	--	--	--	--
06079500	**Gibson Reservoir near Augusta**	575	**1930-P**	--	--	--	--	1951	--	--
06079600	Beaver Creek at Gibson Dam, near Augusta	20.8	--	1959-73	--	--	--	--	--	--
06080000	Sun River near Augusta	609	1889-91, 1904-40	1890, 1905-29, 1964	--	--	--	--	--	--
06080500	Pishkun Reservoir near Augusta	--	1936-95	--	--	--	--	1951	--	--
06080700	Spring Valley Canal below Spring Valley drop, near Fairfield	--	1967-68	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
	Part 6--Missouri River Basin--Continued									
06080800	Spring Valley Canal above Upper Turnbull drop, near Fairfield	--	1967-68	--	--	--	--	--	--	--
06080900	Sun River below diversion dam, near Augusta	609	1967-80	1964, 1968-80	1968-79	--	--	1968-79	--	--
06081000	Floweree Big Canal near Augusta	--	1912	--	--	--	--	--	--	--
06081500	Willow Creek near Augusta	96.1	1905-25	1905-1910, 1912-25	--	--	--	--	--	--
06082000	Willow Creek Reservoir near Augusta	--	1936-95	--	--	--	--	--	--	--
06082200	Sun River below Willow Creek, near Augusta	827	1967-74	1964, 1968-75	--	--	--	--	--	--
06082500	Smith Creek near Augusta	25.0	1906-13	1906-12	--	--	--	--	--	--
06083000	Nilan Reservoir near Augusta	--	1951-95	--	--	--	--	--	--	--
06083500	Ford Creek near Augusta	19.4	1906-13	1906-12, 1964	--	--	--	--	--	--
06084000	Smith Creek below Ford Creek, near Augusta	74.0	1946-52	1946-52, 1964,1975	--	--	--	1951	--	--
06084500	Elk Creek at Augusta	157	1905-25	1905-24, 1964,1975	--	--	--	--	--	--
06085000	Crown Butte Canal at Riebling	--	1912	--	--	--	--	--	--	--
06085500	Crown Butte Canal near Simms	--	1912	--	--	--	--	--	--	--
06085800	**Sun River at Simms**	1,320	**1953, 1966-79. 1997-P**	**1964, 1966-79, 1997-P**	--	--	--	1996-98	1996-98	--
06086000	Sun River at Fort Shaw	1,417	1912-28	1913-28	--	--	--	--	--	--
06086500	Sun River Canal at Sun River	--	1912	--	--	--	--	--	--	--
06087000	Sun River Canal at Vaughn	--	1912	--	--	--	--	--	--	--
06087500	Sun River at Sun River	1,454	1905-12	1906-12	--	--	--	--	--	--
06087900	Muddy Creek tributary near Power	3.15	--	1963-78, 1986	--	--	--	--	--	--
06088000	Muddy Creek near Power	137	1935-40, 1982-83	1982-83	--	--	--	1992	--	--
06088100	Spring Coulee near Power	30.4	1982-83	1982	--	--	--	1992	--	--
06088200	Tank Coulee near Power	31.0	1982-83	1982	--	--	--	1992	--	--
06088300	**Muddy Creek near Vaughn**	282	**1968-87, 1996-P**	**1968-87, 1996-P**	1968-82	1968-79	1968-82	**1968-82, 1992-P**	**1971-82, 1996-P**	--
06088500	**Muddy Creek at Vaughn**	314	**1925-26. 1934-68, 1971-P**	**1925, 1934-37, 1939-68, 1971-P**	1968, 1972-82	1968, 1971-79	1971-82	**1968, 1972-82, 1992-P**	**1968, 1971-81, 1993-P**	--
06089000	**Sun River near Vaughn**	1,849	**1897, 1934-P**	**1934-P**	1969-2003	1969-79 1999-2003	--	**1969-P**	**1987-94 1996-P**	1987-94
06089300	Sun River tributary near Great Falls	21.0	--	1956-73, 1975, 1979-80	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)								
			Discharge or contents		Water quality						
					Daily			Periodic			
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued								
06090100	Missouri River at Black Eagle Dam, at Great Falls	--	--	--	--	--	--	1951	--	--
06090130	Missouri River below Rainbow Dam, near Great Falls	--	--	--	--	--	--	1971	--	--
06090300	**Missouri River near Great Falls**	23,292	**1953, 1956-P**	**1952-P**	--	--	--	1994-95	1994-95	--
06090500	Belt Creek near Monarch	368	1951-82	1952-82	--	1977-81	--	--	--	--
06090550	**Little Otter Creek near Raynesford**	39.5	--	**1974-P**	--	--	--	--	--	--
06090570	Big Otter Creek near Belt	197	1994-98	1994-98	--	--	--	--	--	--
06090590	Anaconda Drain at Belt	0.05	1995-96	1995-96	--	--	--	94-96	--	--
06090600	Belt Creek near Belt	700	1905-07	--	--	--	--	--	--	--
06090610	Belt Creek near Portage	799	1980-83	1981-83	--	1981-83	--	1981-83	1981-83	--
06090650	**Lake Creek near Power**	83.8	**1990-P**	**1990-P**	1992-96	1992-95	1992-95	1990-96	--	--
06090700	Highwood Creek near Highwood	57.8	1905-06	--	--	--	--	--	--	--
06090720	Highwood Creek near Portage	122	1980-83	1981-83	--	1981-83	--	1981-83	1981-83	1981
06090800	**Missouri River at Fort Benton**	24,749	**1890-P**	**1891-1899, 1901-P**	--	1981-82	1980	1969-73 1981-86	1965, 1980-86	1969-73 1981-86
06090810	Ninemile Coulee near Fort Benton	16.9	--	1972-73, 1975-90	--	--	--	--	--	--
06091000	Two Medicine River near East Glacier	51.1	1912-13, 1918-24, 1962-64	1912, 1918-21, 1923-24, 1963-64	--	--	--	--	--	--
06091500	Two Medicine River at Midvale	--	1902-03	--	--	--	--	--	--	--
06091700	**Two Medicine River below South Fork, near Browning**	250	**1977-P**	**1977-P**	--	--	--	1988-89	--	--
06091850	Two Medicine Canal wasteway to Mission Lake, near Blackfoot	--	--	--	--	--	--	1971	--	--
06091852	Mission Lake near Blackfoot	--	--	--	--	--	--	1971-75	--	--
06091853	Spring Creek at Mission Lake outlet, near Cut Bank	--	--	--	--	--	--	1971	--	--
06091900	Two Medicine Canal near Cut Bank	--	--	--	--	--	--	1956	--	--
06092000	Two Medicine River near Browning	317	1907-25, 1951-77	1907, 1909-12, 1914-24, 1951-77	--	--	--	1956	--	--
06092500	Badger Creek near Browning	133	1951-73	1951-73	--	--	--	--	--	--
06093200	**Badger Creek below Four Horns Canal, near Browning**	152	**1973-P**	**1974-P**	--	--	--	1988-89	--	--
06093300	Badger Canal near Dupuyer	--	--	--	--	--	--	1956	--	--
06093500	Badger Creek near Family	239	1907-25	1910-13, 1915-24	--	--	--	--	--	--
06093600	Two Medicine River near Cut Bank	--	--	--	--	--	--	1982-84	--	--
06094000	Swift Reservoir near Dupuyer	75.3	1916, 1936-64, 1967-95	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06094500	Birch Creek at Swift Dam, near Dupuyer	75.3	1913-29	1913-26, 1929	--	--	--	--	--	--
06095000	Birch Creek near Dupuyer	105	1907-37	1909-37, 1964	--	--	--	--	--	--
06095500	Lake Frances near Valier	--	1936-95	--	--	--	--	--	--	--
06096000	Birch Creek at Nelson's Ranch, near Dupuyer	111	1914-26	1914-15, 1917-21, 1923-26	--	--	--	--	--	--
06096500	Birch Creek at Hall's Ranch, near Dupuyer	122	1913-20	1913-15, 1917-20	--	--	--	--	--	--
06097000	Birch Creek at Robare	128	1914-26	1915, 1917-23, 1925-26	--	--	--	--	--	--
06097100	Blacktail Creek near Heart Butte	16.4	--	1975-91	--	--	--	--	--	--
06097200	Blacktail Creek near Dupuyer	--	--	--	--	--	--	1982-84	--	--
06097300	Cartwright Coulee near Dupuyer	7.86	--	2003	--	--	--	--	--	--
06097500	Dupuyer Creek at Dupuyer	65.7	1908-13	--	--	--	--	--	--	--
06098000	Dupuyer Creek near Valier	137	1912-37	1913-29, 1932-37, 1948,1964	--	--	--	--	--	--
06098100	Birch Creek near Valier	471	1978-83	1978-83	--	--	--	1955, 1978-83	--	--
06098500	**Cut Bank Creek near Browning**	123	**1918-25, 1991-P**	**1918, 1920-24, 1991-P**	--	--	--	1991-92	--	--
06098700	**Powell Coulee near Browning**	12.7	--	**1974-P**	--	--	--	--	--	--
06098900	Big Rock Coulee near Santa Rita	185	--	--	--	--	--	1982-84, 1991-92	--	--
06099000	**Cut Bank Creek at Cut Bank**	1,041	**1905-20, 1922-24, 1951-73, 1982-P**	**1906-12, 1914-17, 1919-20, 1922-24, 1951-73, 1975, 1982-P**	--	--	--	1951, 1982-89, 1991-92	--	--
06099010	**Cut Bank Creek tributary near Cut Bank**	1.96	--	**2004**	--	--	--	--	--	--
06099100	Spring Creek near Cut Bank	91	--	--	--	--	--	1982-84, 1991-92	--	--
06099300	Cut Bank Creek at mouth, near Cut Bank	1,213	--	--	--	--	--	1991-92	--	--
06099500	**Marias River near Shelby**	3,242	**1902-08, 1911-P**	**1902-04, 1906-07, 1911-46, 1948-P**	--	1950-51	1950-51	--	--	--
06099700	Middle Fork Dry Fork Marias River near Dupuyer	20.2	--	1960-74, 1986	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06100000	Dry Fork Marias River near Valier	131	1911-15	--	--	--	--	--	1980	--
06100200	Heines Coulee tributary near Valier	0.60	--	1960-75, 1986	--	--	--	--	--	--
06100300	**Lone Man Coulee near Valier**	14.1	--	**1960-P**	--	--	--	--	--	--
06100500	Dry Fork Marias River at Fowler	314	1921-31	1920-31	--	--	--	--	--	--
06101000	Willow Creek near Devon	310	1921-25	--	--	--	--	--	--	--
06101200	Willow Creek near Galata	839	1977-82	1978-82	--	--	--	--	--	--
06101300	Lake Elwell near Chester	4,923	1956-95	--	--	--	--	--	--	--
06101500	**Marias River near Chester**	4,927	**1921, 1945-47, 1955-P**	**1921,1946, 1956-P**	--	**1994-P**	--	1964-72, 1978-86, 1991	1978-86	1978-86
06101510	Pondera Coulee near Conrad	4.96	--	2003	--	--	--	--	--	--
06101520	**Favot Coulee tributary near Ledger**	0.86	--	**1974-P**	--	--	--	--	--	--
06101560	Pondera Coulee near Chester	598	1976-85	1964, 1976-85	--	--	--	--	--	--
06101600	Marias River tributary No. 3 near Chester	0.26	--	1962-76, 1978	--	--	--	--	--	--
06101700	Fey Coulee tributary near Chester	2.47	--	1963-91	--	--	--	--	--	--
06101800	Sixmile Coulee near Chester	30.3	--	1963-77, 1979,1986	--	--	--	--	--	--
06101900	Dead Indian Coulee near Fort Benton	2.73	--	1963-77, 1986	--	--	--	--	--	--
06102000	Marias River near Brinkman	6,425	1922-56	1908, 1922-56	--	--	--	--	--	--
06102050	**Marias River near Loma**	7,137	**1960-72 2001-P**	**1960-72 2001-P**	--	--	--	--	1965	--
06102100	Dry Fork Coulee tributary near Loma	0.84	--	1959-73	--	--	--	--	--	--
06102200	Marias River tributary at Loma	1.62	--	1956-60, 1962-73	--	--	--	--	--	--
06102300	Maris River tributary No. 2 at Loma	0.25	--	1956-60, 1962-73	--	--	--	--	--	--
06102500	**Teton River below South Fork, near Choteau**	105	**1947-55 1998-P**	**1948-54, 1964, 1998-P**	--	--	--	**1998-P**	**1998-P**	--
06103000	Teton River at Strabane	128	1904-06, 1908-25	1908-25	--	--	--	--	--	--
06103500	McDonald Creek near Strabane	5.17	1913-14, 1917-20	--	--	--	--	--	--	--
06104000	McDonald Creek near Choteau	10.4	1917-20	--	--	--	--	--	--	--
06104500	Teton River near Choteau	221	1906, 1913-19	--	--	--	--	--	--	--
06105000	Deep Creek at Frazer's ranch, near Choteau	37.7	1912	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
		Part 6--Missouri River Basin--Continued								
06105500	Willow Creek near Choteau	88.2	1912-17	--	--	--	--	--	--	--
06105800	Bruce Coulee tributary near Choteau	1.70	--	1963-2002	--	--	--	--	--	--
06106000	Deep Creek near Choteau	223	1911-25	1911-24, 1964	--	--	--	--	--	--
06106500	Muddy Creek near Bynum	71.1	1912-25	1913-18, 1920, 1922-24	--	--	--	--	--	--
06107000	North Fork Muddy Creek near Bynum	61.3	1912-24	1913-17, 1919-24	--	--	--	--	--	--
06107500	Muddy Creek near Agawam	274	1917	--	--	--	--	--	--	--
06108000	**Teton River near Dutton**	1,307	**1954-P**	**1955-P**	--	--	--	**1998-P**	**1998-P**	--
06108200	Kinley Coulee near Dutton	9.67	--	1963-78	--	--	--	--	--	--
06108300	Kinley Coulee tributary near Dutton	2.65	--	1963-78	--	--	--	--	--	--
06108500	Teton River near Fort Benton	1,989	1929-32	--	--	--	--	1991	--	--
06108800	**Teton River at Loma**	2,010	**1998-P**	**1999-P**	--	2000-03	--	**1998-P**	**1965, 1998-P**	--
06109000	Missouri River at Loma	34,221	1935-53	--	--	--	--	--	--	--
06109500	**Missouri River at Virgelle**	34,379	**1935-P**	**1935-P**	--	--	--	1975-85 1991	1975-85, 1991	1975-85
06109530	Little Sandy Creek tributary near Virgelle	0.80	--	1972, 1974-2002	--	--	--	--	--	--
06109560	**Alkali Coulee tributary near Virgelle**	0.96	--	**1974-P**	--	--	--	--	--	--
06109600	**Chip Creek tributary near Winifred**	0.07	--	**2003-P**	--	--	--	--	--	--
06109750	Middle Fork Judith River below Lost Fork, near Utica	108	1972-75	1972-75	--	--	--	--	--	--
06109775	Middle Fork Judith River at Ranger Station, near Utica	--	--	--	--	--	--	1964	--	--
06109780	Middle Fork Judith River near Utica	160	1972-79	1972-79	--	--	--	--	--	--
06109800	South Fork Judith River near Utica	58.7	1958-79	1959-79	--	--	--	--	--	--
06109900	Judith River tributary near Utica	7.15	--	1960-74	--	--	--	--	--	--
06109950	Judith River tributary No. 2, near Utica	6.97		1959-67	--	--	--	--	--	--
06110000	Judith River near Utica	328	1920-75	1920-32, 1934-75	--	--	--	--	--	--
06110500	Ackley Lake near Hobson	--	1938-95	--	--	--	--	--	--	--
06111000	Ross Fork Creek near Hobson	337	1946-54, 1955-62	1947-53, 1955-62, 1975	--	--	--	--	--	--
06111500	Big Spring Creek near Lewistown	20.9	1932-57	1932-40	--	--	--	--	--	--
06111700	Mill Creek near Lewistown	3.14	--	1960-91	--	--	--	--	--	--
06112000	Cottonwood Creek near Lewistown	45.6	1946-51	--	--	--	--	--	--	--
06112100	Cottonwood Creek near Moore	47.9	1957-63	1958-73, 1975,1978	--	--	--	--	--	--
06112500	Sage Creek at Windham	58.6	1920-22	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
		Part 6--Missouri River Basin--Continued								
06112800	**Bull Creek tributary near Hilger**	0.99	--	**1974-P**	--	--	--	--	--	--
06113000	Judith River near Lewistown	1,939	1910-11	--	--	--	--	--	--	--
06113500	Judith River near Winifred	2,160	1929-32	--	--	--	--	1991	--	--
06114000	Wolf Creek at Neubert ranch, near Stanford	79.2	1920-26	1920-26	--	--	--	--	--	--
06114500	Wolf Creek near Stanford	112	1950-53, 1955-62	1950-53, 1955-58, 1960-62, 1975,1978	--	--	--	--	--	--
06114550	**Wolf Creek tributary near Coffee Creek**	1.73	--	**1974-P**	--	--	--	--	--	--
06114700	**Judith River near mouth, near Winifred**	2,731	**2001-P**	**2001-P**	--	**2001-P**	--	2001-03	2001-03	--
06114900	Taffy Creek tributary near Winifred	2.95	--	1974-2002	--	--	--	--	--	--
06115000	Missouri River at Power Plant ferry, near Zortman	40,763	1934-68	1934-67	--	--	--	--	--	--
06115200	**Missouri River near Landusky**	40,987	**1934-P**	**1934-P**	--	--	**1972-P**	1976-94	**1972-P**	1979-94
06115270	**Armells Creek near Landusky**		**2000-2004**	**2000-2004**	--	--	--	--	--	--
06115300	**Duval Creek near Landusky**	3.31	**2000-2004**	**1963-2004**	--	--	--	--	--	--
06115350	**Rock Creek near Landusky**		**2000-2004**	**2000-2004**						
06115500	North Fork Musselshell River near Delpine	31.4	1940-79	1941-79	--	--	--	--	--	--
06116000	North Fork Musselshell River at Delpine	48.6	1909-12, 1922-32	1909-11, 1922-32	--	--	--	--	--	--
06116500	Bair Reservoir near Delpine	48.6	1939-95	--	--	--	--	--	--	--
06116900	Checkerboard Creek near Delpine	21.1	1909-15	--	--	--	--	--	--	--
06117000	Checkerboard Creek at Delpine	23.9	1922-32	1922-30, 1932	--	--	--	--	--	--
06117500	Spring Creek near Martinsdale	32.5	1922-24	--	--	--	--	--	--	--
06117800	Big Coulee near Martinsdale	2.86	--	1972, 1974-2002	--	--	--	--	--	--
06118000	North Fork Musselshell River near Martinsdale	233	1907-14	1908-14	--	--	--	--	--	--
06118500	South Fork Musselshell River above Martinsdale	287	1942-79	1942-79	--	--	--	--	--	--
06119000	Martinsdale Reservoir near Martinsdale	--	1939-95	--	--	--	--	--	--	--
06119500	South Fork Musselshell River near Martinsdale	300	1907-15, 1930-32	1908-14, 1930,1932	--	--	--	--	--	--
06119600	**Musselshell River at Martinsdale**	538	**2003-P**	**2003-P**	--	--	--	--	--	--
06120000	Big Elk Creek at Twodot	89.1	1953-56	--	--	--	--	--	--	--
06120500	**Musselshell River at Harlowton**	1,125	**1907-P**	**1909-P**	--	2001-2002	--	1988-91	1988-91	--
06120600	Antelope Creek tributary near Harlowton	0.47	--	1956-73	--	--	--	--	--	--
06120700	Antelope Creek tributary near mouth, near Harlowton	1.92	--	1956-73	--	--	--	--	--	--
06120800	Alkali Creek near Harlowton	21.2	--	1956-91	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06120900	Antelope Creek at Harlowton	88.7	--	1950, 1954-73, 1976, 1978-80	--	--	--	--	--	--
06121000	American Fork near Harlowton	94.6	1907-14, 1924-32	1908-11, 1913, 1924-30, 1932	--	--	--	--	--	--
06121500	Lebo Creek near Harlowton	59.1	1907-14, 1924-32	1910,1913, 1924-32	--	--	--	--	--	--
06122000	American Fork below Lebo Creek, near Harlowton	166	1946-67	1947-67, 1975	--	--	--	--	--	--
06122500	Deadmans Basin Reservoir near Shawmut	--	1941-95	--	--	--	--	--	--	--
06122800	Musselshell River near Shawmut	1,479	1986-98	1986-97	--	--	--	--	--	--
06123000	Musselshell River at Shawmut	1,496	1902-07	--	--	--	--	--	--	--
06123030	**Musselshell River above Mud Creek, near Shawmut**	--	**1998-P**	**1998-P**	--	--	--	--	--	--
06123200	**Sadie Creek tributary near Harlowton**	2.10	--	**1971, 1973-P**	--	--	--	--	--	--
06123500	Musselshell River near Ryegate	1,979	1946-79	1947-79	--	--	--	--	--	--
06124000	Careless Creek near Living Springs	21.2	1920-23	--	--	--	--	--	--	--
06124500	West Careless Creek near Living Springs	23.5	1920-21	--	--	--	--	--	--	--
06124600	**East Fork Roberts Creek tributary near Judith Gap**	0.74	--	**1974-P**	--	--	--	--	--	--
06125000	Roberts Creek at Hedgesville	322	1920-23	--	--	--	--	--	--	--
06125500	Careless Creek at Wallum	471	1934-42	1934-37, 1939-42	--	--	--	--	--	--
06125520	**Swimming Woman Creek tributary near Living Springs**	1.27	--	**1974-P**	--	--	--	--	--	--
06125680	**Big Coulee Creek tributary near Cushman**	1.23	--	**1974-P**	--	--	--	--	--	--
06125700	Big Coulee Creek near Lavina	232	1957-72	1958-72	--	--	--	--	--	--
06126000	Musselshell River at Lavina	2,928	1906	--	--	--	--	--	--	--
06126050	**Musselshell River near Lavina**	2,970	**1992-P**	**1992-P**	--	--	--	--	--	--
06126300	Currant Creek near Roundup	220	--	1958-59, 1961-73	--	--	--	--	--	--
06126470	Halfbreed Creek near Klein	53.2	1978-91	1978-91	--	--	--	1978-81, 1984	1978-81, 1984	--
06126500	**Musselshell River near Roundup**	4,023	**1946-P**	**1946-48, 1950-P**	--	--	--	1978-81	1978-81	--
06127000	South Willow Creek near Roundup	--	1922-23	--	--	--	--	--	--	--
06127020	**Willow Creek above LMGA Reservoir, near Roundup**	124	**1995-2004**	**1996-2004**	--	--	--	--	--	--
06127060	**Willow Creek at U.S. canal, near Roundup**	141	**1995-2004**	**1996-2004**	--	--	--	--	--	--
06127100	South Willow Creek tributary near Roundup	1.38	--	1962-76	--	--	--	--	--	--
06127150	East Parrot Creek near Roundup	20.2	--	--	--	--	--	1979-80	1979-80	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
		Part 6--Missouri River Basin--Continued								
06127160	West Parrot Creek near Roundup	20.5	--	--	--	--	--	1978-81	1978-81	--
06127200	Musselshell River tributary near Musselshell	10.8	--	1963-77, 1991	--	--	--	--	--	--
06127300	Fattig Creek near Delphia	22.9	--	--	--	--	--	1978-81	1978-81	--
06127500	**Musselshell River at Musselshell**	4,568	**1928-32, 1945-79, 1983-P**	**1929-30, 1932, 1946-79, 1983-P**	--	--	--	1988-91	1988-91	--
06127505	**Fishel Creek near Musselshell**	16.5	--	**1974-P**	--	--	--	--	--	--
06127520	**Home Creek near Sumatra**	1.98	--	**1973-P**	--	--	--	--	--	--
06127570	**Butts Coulee near Melstone**	6.71	--	**1963-P**	--	--	--	--	--	--
06127585	**Little Wall Creek tributary near Flatwillow**	9.77	--	**1974-P**	--	--	--	--	--	--
06127600	Musselshell River near Mosby	5,941	1963-66	--	--	--	1963-66	1963-66	1964-66	--
06127900	Flatwillow Creek near Flatwillow	188	1911-32, 1934-56	1911-32, 1934-36, 1938-56	--	--	--	--	--	--
06128200	Flatwillow Creek near Winnett	642	1921-32, 1948-51	1923-29, 1931-32, 1948-51	--	--	--	--	--	--
06128400	South Fork Bear Creek near Roy	39.6	--	1962-76	--	--	--	--	--	--
06128500	**South Fork Bear Creek tributary near Roy**	5.40	--	**1962-P**	--	--	--	--	--	--
06128900	Box Elder Creek tributary near Winnett	16.2	--	1955-73	--	--	--	--	--	--
06129000	Box Elder Creek near Winnett	684	1930-33, 1934-38, 1958-72	1931-32, 1934-38, 1959-71, 1978	--	--	--	--	--	--
06129100	North Fork McDonald Creek tributary near Heath	2.24	--	1960-75	--	--	--	--	--	--
06129200	Alkali Creek near Heath	3.76	--	1960-74	--	--	--	--	--	--
06129400	South Fork McDonald Creek tributary near Grass Range	0.51	--	1963-77	--	--	--	--	--	--
06129500	McDonald Creek at Winnett	421	1930-32, 1934-45, 1953-56	1931-32, 1934-45, 1953-73, 1975	--	--	--	--	--	--
06129700	**Gorman Coulee near Cat Creek**	2.32	--	**1955-59, 1962-73, 1977,1980, 1991-P**	--	--	--	--	--	--
06129800	Gorman Coulee tributary near Cat Creek	0.81	--	1955-2002	--	--	--	--	--	--
06130000	Flatwillow Creek near Mosby	1,855	1964-66	--	--	--	1964-66	1964-66	1964-66	--
06130500	**Musselshell River at Mosby**	7,846	**1929-35, 1934-P**	**1929, 1931-32, 1934-P**	--	2000-03	1983-95	1975-95, 1999-2003	**1975-1997, 1999-2004**	1975-95

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06130600	Cat Creek near Cat Creek	36.5	--	1958-73, 1977,1980	--	--	--	--	--	--
06130610	**Bair Coulee near Mosby**	1.79	--	**1974-P**	--	--	--	--	--	--
06130620	**Blood Creek tributary near Valentine**	1.97	--	**1974-P**	--	--	--	--	--	--
06130630	**Crooked Creek tributary near Roy**	0.61	--	**2003-P**	--	--	--	--	--	--
06130650	**Hell Creek near Jordan**	70.6	**2000-04**	**2000-04**	--	--	--	--	--	--
06130680	Big Dry Creek at Jordan	521	--	--	--	--	--	1976-77	1976-77	--
06130700	Sand Creek near Jordan	317	1957-67	1958-67, 1986	--	--	--	--	--	--
06130800	Second Creek tributary near Jordan	0.52	--	1954, 1958-73	--	--	--	--	--	--
06130850	Second Creek tributary No. 2 near Jordan	2.08	--	1958-90	--	--	--	--	--	--
06130900	Second Creek tributary No. 3 near Jordan	0.72	--	1958-72	--	--	--	--	--	--
06130915	**Russian Coulee near Jordan**	3.45	--	**1974-P**	--	--	--	--	--	--
06130925	Thompson Creek tributary near Cohagen	1.23	--	1974-95	--	--	--	--	--	--
06130935	Crow Rock Creek near Cohagen	213	--	--	--	--	--	1978-80	1978-80	1978-80
06130940	**Spring Creek tributary near Van Norman**	1.39	--	**1974-P**	--	--	--	--	--	--
06130950	Little Dry Creek near Van Norman	1,224	1980	1958-75, 1986,1995	--	--	--	1976-77	1976-77	--
06131000	**Big Dry Creek near Van Norman**	2,554	**1939-P**	**1940-P**	--	--	--	1978,1981	1978	--
06131100	**Terry Coulee near Van Norman**	0.48	--	**1974-P**	--	--	--	--	--	--
06131120	Timber Creek near Van Norman	287	1982-85, 1988	1982-85, 1988	--	--	--	1976-79	1976-80	--
06131200	**Nelson Creek near Van Norman**	100	**1976-85, 2000-04**	**1976-85, 1991, 2000-04**	--	--	--	1976-79	1976-79	--
06131300	**McGuire Creek tributary near Van Norman**	0.79	--	**1974-P**	--	--	--	--	--	--
06131500	**Fort Peck Lake at Fort Peck**	57,500	**1938-P**	--	--	--	--	--	--	--
06132000	**Missouri River below Fork Peck Dam, at Fort Peck**	57,556	**1936-P**	**1934-P**	--	**2002-P**	--	**1964, 1975-87, 2002-P**	**1975-87, 2002-P**	1975-86
06132200	**South Fork Milk River near Babb**	70.4	**1961-P**	**1961-P**	--	--	--	1990-92	--	--
06132250	Livermore Creek near Babb	25.0	--	1962-67	--	--	--	--	--	--
06132400	Dry Fork Milk River near Babb	17.9	--	1962-91	--	--	--	--	--	--
06132500	South Fork Milk River near international boundary, near Browning	287	1905-31	--	--	--	--	1964	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06132700	Milk River near Del Bonita	325	1962-65	1906-08, 1911, 1913-17, 1919, 1923-24, 1927, 1929-30, 1962-67	--	--	--	--	--	--
06133000	**Milk River at western crossing of international boundary**	401	**1931-P**	**1931-38, 1940-P**	--	--	--	1960,1973, 1984-86, 1993	--	--
06133500	**North Fork Milk River above St. Mary Canal, near Browning**	60.2	**1911-12, 1919-P**	**1911-12, 1924, 1926-27, 1937, 1941-42, 1944-45, 1948, 1950-51, 1953-P**	--	--	--	1960,1965, 1973-74, 1982-83, 1990-92	--	--
06134000	**North Milk River near international boundary**	91.8	**1909-P**	**1911, 1913-P**	--	--	--	1960,1965, 1973-74, 1981, 1984-86, 1993	--	--
06134500	**Milk River at Milk River, Alberta**	1,050	**1909-P**	**1909, 1913-P**	--	--	--	1960,1965	--	--
06134600	Red River at international boundary	138	--	--	--	--	--	1995	--	--
06134700	**Verdigris Coulee near the mouth, near Milk River, Alberta**	137	**1985-P**	**1985-P**	--	--	--	--	--	--
06134800	Van Cleeve Coulee tributary near Sunburst	10.8	--	1963-91	--	--	--	--	--	--
06134850	Milk River near Writing-on-Stone Provincial Park, Alberta	1,690	1978-83	1978-82	--	--	--	--	--	--
06134890	Miners Coulee near international boundary	--	1966-94	--	--	--	--	--	--	--
06134930	Bear Creek near international boundary	--	1966-94	--	--	--	--	--	--	--
06134950	Milk River near Pendant D'Oreille	2,330	1978-83	1978-82	--	--	--	--	--	--
06135000	**Milk River at eastern crossing of international boundary**	2,525	**1910-P**	**1910-11, 1913-15, 1917, 1919-P**	--	--	--	1960,1965, 1974, 1984-86, 1993-94	--	--
06135500	Sage Creek at Q Ranch, near Wild Horse, Alberta	175	1935-83	1936-41, 1943, 1946-83	--	--	--	1965	--	--
06136000	Sage Creek at international boundary	220	1946-84	1946-83	--	--	--	1965	--	--
06136400	Spring Coulee tributary near Simpson	2.49	--	1972, 1974-2002	--	--	--	--	--	--
06136500	**Fresno Reservoir near Havre**	3,766	**1940-P**	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06136700	Milk River below Fresno Dam, near Havre	3,400	1952-53	--	--	--	--	1950-53	--	--
06137000	Milk River above Havre	3,826	1928-33	--	--	--	--	--	--	--
06137400	**Big Sandy Creek at reservation boundary, near Rocky Boy**	24.7	**1982-P**	**1982-P**	--	--	--	1982-84, 1987-89	--	--
06137500	Big Sandy Creek near Big Sandy	83.3	1946-51	--	--	--	--	--	--	--
06137540	Duck Creek near Box Elder	--	--	--	--	--	--	1982-84	--	--
06137550	Camp Creek near Box Elder	7.2	--	--	--	--	--	1983-84	--	--
06137570	Boxelder Creek near Rocky Boy	48.2	1975-97	1976-97	--	--	--	1977-81 1983-84, 1993	1977-81, 1993	1977-81
06137575	Boxelder Creek at Box Elder	67.1	--	--	--	--	--	1983	--	--
06137580	Sage Creek near Whitlash	7.26	1976-82, 1985-90	1977-82, 1985-90	--	--	--	--	--	--
06137600	**Sage Creek tributary No. 2 near Joplin**	2.21	--	**1974-P**	--	--	--	--	--	--
06137900	England Coulee at Hingham	0.93	--	1960-74	--	--	--	--	--	--
06138000	Sage Creek near Kremlin	914	1946-51	1946-48, 1950-52	--	--	--	--	--	--
06138500	Big Sandy Creek near Box Elder	1,629	1927-39	1927-32, 1934-36, 1938	--	--	--	--	--	--
06138570	Big Sandy Creek above Gravel Coulee, near Laredo	1,639	--	--	--	--	--	1982-84	--	--
06138700	**South Fork Spring Coulee near Havre**	6.47	--	**1960-P**	--	--	--	--	--	--
06138800	Spring Coulee near Havre	17.8	--	1959-73	--	--	--	--	--	--
06139000	Big Sandy Creek near Laredo	1,752	1918-20	--	--	--	--	--	--	--
06139500	**Big Sandy Creek near Havre**	1,805	**1946-53, 1984-P**	**1946-53, 1955-67, 1969,1978, 1984-P**	--	--	--	1986-90	1986-90	--
06139800	West Fork Beaver Creek near Rocky Boy	2.92	2001-2003	--	--	--	--	--	--	--
06139850	Beaver Creek above Elk Creek, near Rocky Boy	7.63	2001-2003	--	--	--	--	--	--	--
06139900	**Beaver Creek at reservation boundary, near Rocky Boy**	16.1	**2001-04**	--	--	--	--	1982-84	--	--
06140000	Beaver Creek near Havre	87.4	1918-21	1919-21, 1966-86	--	--	--	--	--	--
06140400	Bullhook Creek near Havre	39.6	--	1960-71, 1973-75, 1986	--	--	--	--	--	--
06140500	**Milk River at Havre**	5,785	**1898-1923, 1954-P**	**1899-1922, 1952-53, 1955-P**	--	--	--	1964-72	--	--
06141000	Boxelder Creek near Havre	23.7	1919-22	--	--	--	--	--	--	--
06141500	Boxelder Creek at P.X. ranch, near Havre	33.3	1918	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06141600	Little Boxelder Creek at mouth, near Havre	95.9	1986-92, 1994-96	1986-92, 1994-96	--	--	--	--	--	--
06141900	Milk River tributary near Lohman	0.11	--	1960-74	--	--	--	--	--	--
06142000	Clear Creek near Bearpaw	69.6	1918-22	--	--	--	--	--	--	--
06142400	**Clear Creek near Chinook**	135	**1984-P**	**1984-P**	--	--	--	--	--	--
06142500	Fort Belknap Canal near Chinook	--	1903-21	--	--	--	--	--	--	--
06143000	Milk River at Lohman	6,166	1918-26, 1934-51	1919,1923, 1925, 1934-48, 1950-52	--	--	--	--	--	--
06144000	Paradise Valley Canal near headgate, near Chinook	--	1906-08, 1920-21	--	--	--	--	--	--	--
06144100	Walburger Coulee below diversion, near Govenlock, Saskatchewan	32.6	1963-79	1963-78	--	--	--	--	--	--
06144250	Lodge Creek at Alberta boundary	342	1951, 1963-67	--	--	--	--	1960	--	--
06144260	**Altawan Reservoir near Govenlock, Saskatchewan**	373	**1966-P**	--	--	--	--	--	--	--
06144270	**Spangler Ditch near Govenlock, Saskatchewan**	--	**1966-P**	--	--	--	--	--	--	--
06144300	Lodge Creek below Spangler Project, near Govenlock, Sask.	--	1963-66	--	--	--	--	--	--	--
06144350	**Middle Creek near Saskatchewan boundary**	118	**1963-P**	**1952, 1963-P**	--	--	--	--	--	--
06144360	Middle Creek Reservoir near Govenlock, Saskatchewan	130	1966-95	--	--	--	--	--	--	--
06144395	**Middle Creek below Middle Creek Reservoir, near Govenlock, Saskatchewan**	149	**1972-P**	1974-78, 1983, 1986-87	--	--	--	--	--	--
06144400	Middle Creek near Battle Creek, Saskatchewan	177	1963-72	1963-71, 1994	--	--	--	--	--	--
06144440	**Middle Creek near Govenlock, Saskatchewan**	253	**1986-P**	**1986-P**	--	--	--	--	--	--
06144450	**Middle Creek above Lodge Creek, near Govenlock, Sask.**	276	**1962-66, 1986-P**	**1986-P**	--	--	--	--	--	--
06144500	Lodge Creek at international boundary	753	1910-52	1911-15, 1917-52	--	--	--	--	--	--
06145000	McRae Creek at international boundary	59.0	1927-52	1927-28, 1930-33, 1935-47, 1950-52	--	--	--	--	--	--
06145500	**Lodge Creek below McRae Creek, at international boundary**	825	**1951-P**	**1952-P**	--	--	--	1960,1964, 1973, 1977-80, 1987-89	--	--
06146000	North Chinook Irrigation Canal near Havre	--	1921-24, 1928-68	--	--	--	--	--	--	--
06146500	Reser Ditch near Chinook	--	1905-06	--	--	--	--	--	--	--
06147000	West Fork Ditch near Chinook	--	1905-07	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06147500	Lodge Creek at Chinook	1,175	1906-08	--	--	--	--	--	--	--
06147950	**Gaff Ditch near Merryflat, Saskatchewan**	--	**1972-P**	--	--	--	--	--	--	--
06148000	Battle Creek above Cypress Lake west inflow canal, near West Plains, Saskatchewan	270	1939-66	1939-66	--	--	--	1960	--	--
06148500	**Cypress Lake west inflow canal near West Plains, Sask.**	--	**1939-P**	--	--	--	--	--	--	--
06148700	**Cypress Lake west inflow canal drain near Oxarat, Sask.**	--	**1963-P**	--	--	--	--	--	--	--
06149000	**Cypress Lake west outflow near West Plains, Sask.**	--	**1940-P**	--	--	--	--	1960	--	--
06149100	**Vidora Ditch near Consul, Saskatchewan**	--	**1963-P**	--	--	--	--	--	--	--
06149200	**Richardson Ditch near Consul, Saskatchewan**	--	**1963-P**	--	---	--	--	--	--	--
06149300	**McKinnon Ditch near Consul Saskatchewan**	--	**1963-P**	--	--	--	--	--	--	--
06149400	**Nashlyn Canal near Consul, Saskatchewan**	--	**1963-P**	--	--	--	--	--	--	--
06149500	**Battle Creek at international boundary**	997	**1917-P**	**1917-P**	--	--	--	1960,1964, 1972-74, 1987-89	--	1972
06150000	Woodpile Coulee near international boundary	60.2	1927-77	1927-30, 1932-47, 1950-63, 1965-76, 1986	--	--	--	--	--	--
06150500	East Fork Battle Creek near international boundary	89.5	1927-76	1927-33, 1935-63, 1965-67, 1969, 1971-76, 1986	--	--	--	--	--	--
06151000	Lyons Creek at international boundary	66.7	1927-94	1927-30, 1932, 1934-47, 1950-52, 1954-63, 1965-94	--	--	--	--	--	--
06151500	**Battle Creek near Chinook**	1,623	**1905-21, 1984-P**	**1905-14, 1917-21, 1952, 1984-P**	--	--	--	--	--	--
06152000	Cook Canal near Chinook	--	1905-19	--	--	--	--	--	--	--
06152500	Matheson Ditch near Chinook	--	1905-21, 1928-49, 1951-56	--	--	--	--	--	--	--
06153000	Paradise Valley Canal near Chinook	--	1903-19	--	--	--	--	--	--	--
06153400	**Fifteenmile Creek tributary near Zurich**	1.60	--	**1974-P**	--	--	--	--	--	--
06153500	Harlem Canal near Zurich	--	1904-21	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06154000	Milk River Canal A near Harlem	--	1905, 1910-20, 1986-87	--	--	--	--	--	--	--
06154100	**Milk River near Harlem**	9,822	**1959-69, 1983-P**	**1952, 1960-69, 1978, 1983-P**	--	--	--	1959-69 1994	--	--
06154140	Fifteenmile Creek tributary near Harlem	2.31	1983-92	1983-92	--	--	--	--	--	--
06154150	White Bear Creek below Fifteenmile Creek, near Dodson	--	--	--	--	--	--	1982-84	--	--
06154350	**Peoples Creek tributary near Lloyd**	2.51	--	**1974-P**	--	--	--	--	--	--
06154390	Peoples Creek near Cleveland	--	--	--	--	--	--	1982-84	--	--
06154400	**Peoples Creek near Hays**	220	**1966-P**	**1967-P**	--	--	--	1960-61, 1963,1994	--	--
06154410	**Little Peoples Creek near Hays**	13	**1973-P**	**1973-P**	--	--	--	1977-2003	1977-85 1988-2003	1977-85
06154430	Lodge Pole Creek at Lodge Pole	19.5	1987-2000	1987-2000	--	--	--	1982-84, 1988-92, 1994	1988-92	--
06154490	Willow Creek near Dodson	5.16	1983-92	1983-92	--	--	--	--	--	--
06154500	Peoples Creek near Dodson	670	1918-22, 1951-73, 1982-88	1952-66, 1968-73, 1982-88	--	--	--	1982-88	--	--
06154510	**Kuhr Coulee tributary near Dodson**	1.25	1983-92	**1983-P**	--	--	--	--	--	--
06154550	**Peoples Creek below Kuhr Coulee, near Dodson**	675	**1918-21, 1951-73, 1982-P**	**1989-P**	--	--	--	1989-92, 1994, 1999-2003	--	--
06155000	Nelson Reservoir near Saco	--	1928-95	--	--	--	--	--	--	--
06155005	Dodson North Canal near Dodson	--	--	--	--	1973	--	--	--	--
06155030	**Milk River near Dodson**	11,192	**1983-P**	**1983-P**	--	--	--	1994	--	--
06155100	Black Coulee near Malta	6.64	--	1956-67, 1986	--	--	--	--	--	--
06155200	Alkali Creek near Malta	162	--	1956-59, 1961-73, 1986	--	--	--	--	--	--
06155300	Disjardin Coulee near Malta	4.84	--	1956-2002	--	--	--	--	--	--
06155400	South Fork Taylor Coulee near Malta	5.08	--	1956-73, 1986	--	--	--	--	--	--
06155500	Milk River at Malta	11,762	1902-22, 1952	1903-09, 1911-13, 1915-22, 1952	--	--	--	--	--	--
06155600	**Murphy Coulee tributary near Hogeland**	2.62	--	**1974-P**	--	--	--	--	--	--
06155900	**Milk River at Cree Crossing, near Saco**	13,118	**2000-P**	**2000-P**	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06156000	Whitewater Creek near international boundary	458	1927-80	1927-33, 1935-79	--	--	--	1965, 1977-80	--	--
06156100	**Lush Coulee near Whitewater**	9.58	--	**1972, 1974-P**	--	--	--	--	--	--
06156500	**Belanger Creek diversion canal near Vidora, Saskatchewan**	--	**1946-P**	--	--	--	--	--	--	--
06157000	**Cypress Lake near Vidora, Saskatchewan**	107	**1939-P**	--	--	--	--	--	--	--
06157500	**Cypress Lake east outflow canal near Vidora, Saskatchewan**	--	**1940, 1943-P**	--	--	--	--	--	--	--
06158000	Frenchman River above Eastend Reservoir, near Ravenscrag, Saskatchewan	601	1912-18, 1937-67	1913-15, 1917, 1937-66	--	--	--	1960	--	--
06158500	**Eastend Canal at Eastend, Saskatchewan**	--	**1937-P**	--	--	--	--	--	--	--
06159000	**Eastend Reservoir at Eastend, Saskatchewan**	619	**1937-P**	--	--	--	--	--	--	--
06159500	Frenchman River below Eastend Reservoir, near Eastend, Saskatchewan	619	1909-16, 1918-31, 1935-36, 1939-91	1909, 1911-15, 1918-31, 1940-91	--	--	--	--	--	--
06160500	Frenchman River at Morrison's, near Eastend, Saskatchewan	800	1937-55	1939-52	--	--	--	1960	--	--
06160600	Frenchman River below Eastern Irrigation Project, near Eastend, Saskatchewan	835	1937-55, 1962-75	1939-52, 1962-75	--	--	--	--	--	--
06161000	Frenchman River at 50-mile, near Bracken, Saskatchewan	1,248	1914-31, 1935-55	1914-17, 1919-31, 1936-52	--	--	--	--	--	--
06161300	**Huff Lake pumping canal near Val Marie, Saskatchewan**	--	**1963-P**	--	--	--	--	--	--	--
06161500	**Huff Lake gravity canal near Val Marie, Saskatchewan**	--	**1946-P**	--	--	--	--	--	--	--
06162000	**Huff Lake near Val Marie, Saskatchewan**	1,274	**1940-P**	--	--	--	--	--	--	--
06162500	**Newton Lake main canal near Val Marie, Saskatchewan**	--	**1937-P**	--	--	--	--	--	--	--
06163000	**Newton Lake near Val Marie, Saskatchewan**	1,349	**1937-P**	--	--	--	--	--	--	--
06163050	Frenchman River below Newton Lake, near Val Marie, Sask.	1,349	1976-94	--	--	--	--	--	--	--
06163400	Denniel Creek near Val Marie, Saskatchewan	251	1963-77	1963-76	--	--	--	--	--	--
06163500	Frenchman River below Val Marie, Saskatchewan	1,725	1937-53, 1963-76	1937-52, 1962-67, 1969-75	--	--	--	1960	--	--
06164000	**Frenchman River at international boundary**	2,120	**1917-P**	**1917-P**	--	--	--	1960,1964 1973, 1987-89	--	--
06164500	Frenchman Canal near Saco	--	1921, 1928-68	--	--	--	--	--	--	--
06164510	**Milk River at Juneburg Bridge, near Saco**	17,670	**1978-P**	**1978-P**	--	--	--	1978-96	--	--
06164590	Beaver Creek near Zortman	10.1	1983-92	1984-92	--	--	--	1984,1994	--	--
06164600	**Beaver Creek tributary near Zortman**	3.89	--	**1974-P**	--	--	--	--	--	--
06164615	Little Warm Creek at reservation boundary, near Zortman	6.31	1983-92	1983-92	--	--	--	1983-90	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

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			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06164620	Little Warm Creek near Lodge Pole	--	--	--	--	--	--	1982-83	--	--
06164623	**Little Warm Creek tributary near Lodge Pole**	2.42	1983-92	**1983-P**	--	--	--	1994	--	--
06164630	Big Warm Creek near Zortman	8.58	1983-87	1983-87	--	--	--	1983-84	--	--
06164640	Big Warm Creek near Lodge Pole	--	--	--	--	--	--	1982-83	--	--
06164800	Beaver Creek above Dix Creek, near Malta	929	1967-69, 1976-82	1967-69, 1974, 1976-82, 1986	--	--	--	--	--	--
06165000	Beaver Creek near Malta	1,010	1917-21	--	--	--	--	--	--	--
06165200	**Guston Coulee near Malta**	2.06	--	**1974-P**	--	--	--	--	--	--
06165500	Beaver Creek overflow near Bowdoin	--	1903-13	1903-06, 1909, 1912	--	--	--	--	--	--
06166000	**Beaver Creek below Guston Coulee, near Saco (Beaver Creek near Bowdoin)**	1,208	**1920-21, 1981-P**	**1982-93, 1995-P**	--	--	--	1980-85	--	--
06166500	Beaver Creek near Saco	1,224	1903-06, 1908-13	--	--	--	--	--	--	--
06167000	Beaver Creek near Brady's Ranch, at Ashfield	1,327	1918	--	--	--	--	--	--	--
06167100	Beaver Creek above dam, near Saco	1,338	--	--	--	--	--	1982-83, 1985	--	--
06167500	Beaver Creek near Hinsdale	1,785	1918-21, 1952	--	--	--	--	--	--	--
06168000	Bowray Ditch near Barnard	--	1914	--	--	--	--	--	--	--
06168500	Rock Creek at international boundary	241	1914-16, 1927-62	1927-61	--	--	--	--	--	--
06169000	Horse Creek at international boundary	73.5	1914-62	1915-33, 1935-61	--	--	--	--	--	--
06169500	**Rock Creek below Horse Creek, near international boundary**	328	**1916-26, 1956-P**	**1917, 1919-26, 1952, 1957-P**	--	--	--	1964,1965, 1977-96	1979-96	1979-96
06169600	South Creek tributary near Opheim	2.15	1983-87	1983-87	--	--	--	--	--	--
06169700	South Creek tributary No. 2 near Opheim	1.62	1983-87	1983-87	--	--	--	--	--	--
06169800	South Creek tributary No. 3 near international boundary	.32	1983-87	1983-87	--	--	--	--	--	--
06170000	McEachern Creek at international boundary	182	1924-77	1924-76	--	--	--	1965, 1978-80	--	--
06170050	Rock Creek below McEachern Creek, near international boundary	650	1983-87	1983-87	--	--	--	--	--	--
06170080	Starbuck Coulee near international boundary	4.16	1983-87	1983-87	--	--	--	--	--	--
06170200	Willow Creek near Hinsdale	283	1965-73	1965-73, 1979	--	--	--	--	--	--
06170500	Rock Creek Canal near Hinsdale	--	1918-20	--	--	--	--	--	--	--

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Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06171000	Rock Creek near Hinsdale	1,313	1906-07, 1912-20	1906-07, 1912, 1914-20, 1952	--	--	--	--	--	--
06171500	Milk River at Hinsdale	20,897	1908-14, 1952	--	--	--	--	--	--	--
06172000	Milk River near Vandalia	20,926	1915-25, 1928-39, 1952	1915, 1917-25, 1929-39, 1952	--	--	--	1970-73	--	--
06172000	Milk River at Vandalia	20,944	1970-73, 1983-86	1970-73, 1983-87	--	--	--	--	--	--
06172200	Buggy Creek near Tampico	105	1958-67	1958-67, 1972, 1982	--	--	--	--	--	--
06172300	**Unger Coulee near Vandalia**	11.1	--	**1958-P**	--	--	--	--	--	--
06172310	**Milk River at Tampico**	21,078	**1973-77, 1987-P**	**1974-77, 1988-P**	--	--	--	1974-77	--	--
06172350	Mooney Coulee near Tampico	14.3	--	1961-75, 1982	--	--	--	--	--	--
06172400	Milk River tributary No. 2 near Glasgow	1.79	--	1958-60	--	--	--	--	--	--
06172500	Sheepshed Reservoir	11.3	1955-67	--	--	--	--	--	--	--
06173000	Halfway Reservoir	16.2	1955-62	--	--	--	--	--	--	--
06173300	Willow Creek tributary near Fort Peck	0.86	--	1972, 1974-91	--	--	--	--	--	--
06173500	Burnett Northwest Reservoir	5.0	1954-59, 1960-67	--	--	--	--	--	--	--
06174000	Willow Creek near Glasgow	538	1954-87	1954-87, 1993	--	--	--	--	1960-64	--
06174200	Milk River near Glasgow	21,965	1952	--	--	--	--	1969-73	--	1969-73
06174300	**Milk River tributary No. 3 near Glasgow**	1.82	--	**1974-P**	--	--	--	--	--	--
06174500	**Milk River at Nashua**	22,332	**1939-P**	**1940-P**	--	**2000-P**	--	1950-53, 1959-94, 1999-2003	1974-94, 1999-2003	1974-94
06174550	Middle Fork Porcupine Creek near Baylor	--	--	--	--	--	--	1982-83	--	--
06174600	**Snow Coulee at Opheim**	3.11	--	**1972, 1974-P**	--	--	--	--	--	--
06174700	West Fork Porcupine Creek near Baylor	--	--	--	--	--	--	1982-83	--	--
06175000	Porcupine Creek at Nashua	725	1908-24, 1982-92	1909, 1912-21, 1923-24, 1939, 1982-93	--	--	--	1982-89	--	--

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Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06175400	Frazer Reservoir outlet near Frazer	--	--	--	--	--	--	1960-63 1966-97, 1969-72	--	--
06175500	Little Porcupine Creek at Frazer	280	1909-16, 1918-19	--	--	--	--	--	--	--
06175505	Little Porcupine Creek below diversion, at Frazer	--	--	--	--	--	--	1982-83	--	--
06175540	Prairie Elk Creek near Oswego	352	1975-85	1976-85	--	--	--	1976-79	1976-79	--
06175550	East Fork Sand Creek near Vida	8.51	--	1963-77	--	--	--	--	--	--
06175580	Sand Creek near Wolf Point	201	--	--	--	--	--	1976-77	1976-77	--
06175600	West Fork Wolf Creek near Lustre	6.57	--	1956-67	--	--	--	--	--	--
06175700	East Fork Wolf Creek near Lustre	9.61	--	1956-2002	--	--	--	--	--	--
06175800	Wolf Creek tributary near Wolf Point	2.46	--	1955-67	--	--	--	--	--	--
06175900	Wolf Creek tributary No. 2 near Wolf Point	6.10	--	1955-84	--	--	--	--	--	--
06176000	Wolf Point ditch at Wolf Point	--	1909-10	--	--	--	--	--	--	--
06176500	Wolf Creek near Wolf Point	251	1908-14, 1950-53, 1982-92	1910-12, 1950-54, 1956-70, 1972-73, 1982-93	--	--	--	1982-84	--	--
06176950	Missouri River tributary No. 6 near Wolf Point	0.53	--	1973-91	--	--	--	--	--	--
06177000	**Missouri River near Wolf Point**	82,290	**1928-P**	**1929-P**	--	**1979-85 2002-P**	--	**1949-51, 1961-62, 1965-68, 1970-73 2002-P**	**2002-P**	--
06177020	**Tule Creek tributary near Wolf Point**	1.91	--	**1974-P**	--	--	--	--	--	--
06177025	Tule Creek near Poplar	--	--	--	--	--	--	1982	--	--
06177050	East Fork Duck Creek near Brockway	12.4	--	1955-2002	--	--	--	--	--	--
06177100	Duck Creek near Brockway	54.0	--	1957-73	--	--	--	--	--	--
06177150	Redwater River at Brockway	216	--	1957-73, 1986	--	--	--	1980-83	--	--
06177200	Tusler Creek near Brockway	90.2	--	1957-72	--	--	--	--	--	--
06177250	Tusler Creek tributary near Brockway	3.17	--	1957-73, 1986	--	--	--	--	--	--
06177300	Redwater River tributary near Brockway	0.29	--	1954,1957, 1959-73	--	--	--	--	--	--
06177350	South Fork Dry Ash Creek near Circle	5.74	--	1955-60, 1962-72, 1986	--	--	--	--	--	--
06177400	McCune Creek near Circle	29.9	1982-85	1955-58, 1960-73, 1982-86	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06177500	**Redwater River at Circle**	547	**1929-72, 1974-2004**	**1929-30, 1932-72, 1975-2004**	--	--	--	1975-85	1975-85	--
06177520	Horse Creek near Circle	101	--	--	--	--	--	1977-79, 1982	1977-79	--
06177650	Redwater River near Richey	1,071	1982-86	1983-85	1982-85	--	--	1982-85	1982-84	--
06177700	**Cow Creek tributary near Vida**	1.71	1982-85	**1963-P**	--	--	--	--	--	--
06177720	West Fork Sullivan Creek near Richey	14.8	--	1972, 1974-92	--	--	--	--	--	--
06177800	Gady Coulee near Vida	0.91	--	1962-91	--	--	--	--	--	--
06177820	**Horse Creek tributary near Richey**	0.63	--	**1974-P**	--	--	--	--	--	--
06177825	Redwater River near Vida	1,974	1975-85	1976-85	--	--	--	1976-85	1976-85	--
06178000	**Poplar River at international boundary**	358	**1931-P**	**1931, 1933-P**	--	--	--	**1964-65, 1976-P**	**1977-P**	1977-78
06178150	Poplar River near Scobey	572	--	--	--	--	--	1975-80	1977-79	1977-78
06178500	**East Poplar River at international boundary**	541	**1931-P**	**1931-32, 1935-43, 1945-P**	**1982-P**	--	--	**1964-65, 1975-P**	**1975-P**	1977-81
06179000	East Fork Poplar River near Scobey	722	1935-40, 1975-79	1975-79	--	--	--	1975-95	1977-95	1977-78
06179100	**Butte Creek tributary near Four Buttes**	1.60	--	**1972, 1974-P**	--	--	--	--	--	--
06179200	Poplar River above West Fork, near Bredette	1,745	--	--	--	--	--	1976-81, 1985-93	1977-81	1977-78
06179500	West Fork Poplar River at international boundary	139	1931-53	1931-33, 1935-37, 1939-52	--	--	--	1976-83	1977-79	1977-78
06180000	West Fork Poplar River near Richland	428	1935-49	1935-49, 1990,1994	--	--	--	--	--	--
06180200	West Fork Poplar River near Four Buttes	732	--	--	--	--	--	1975-76	--	--
06180400	West Fork Poplar River near Bredette	1,010	--	--	--	--	--	1976-93	1977-84	1977-78
06180500	Poplar River near Bredette	2,940	1934-47	1934-47	--	--	--	--	--	--
06180600	Poplar River above Slims Coulee, near Poplar	--	--	--	--	--	--	1991-93	--	--
06181000	**Poplar River near Poplar**	3,174	**1908-24, 1947-69, 1975-79, 1982-P**	**1909,1915, 1921,1923, 1946, 1948-63, 1965-69, 1975-79, 1982-P**	--	2000-03	--	**1975-81, 1987-94, 1999-P**	**1975-81, 1987-94, 1999-P**	1975-78, 1987-94
06181200	Missouri River tributary No. 2 near Brockton	1.60	--	1962-76	--	--	--	--	--	--
06181500	Big Muddy Creek at international boundary	29.0	1949-52	--	--	--	--	--	--	--
06181995	Beaver Creek at international boundary	149	1977-94	1978-94	--	--	--	1977-91	1977-91	1977-78

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06182000	Beaver Creek near international boundary	224	1949-53	--	--	--	--	--	--	--
06182500	Big Muddy Creek at Daleview	279	1947-72	1948-72, 1975	--	--	--	--	--	--
06182700	Middle Fork Big Muddy Creek near Flaxville	3.12	--	1972, 1974-83	--	--	--	--	--	--
06183000	Big Muddy Creek at Plentywood	850	1948-53	1948-53, 1955-67	--	--	--	--	--	--
06183100	Box Elder Creek near Plentywood	9.40	--	1956-73, 1976	--	--	--	--	--	--
06183200	Box Elder Creek at dam site, near Plentywood	19.9	--	1953,1955, 1957-63	--	--	--	--	--	--
06183300	Marron Creek tributary near Plentywood	6.08	--	1955-2002	--	--	--	--	--	--
06183400	Spring Creek at Highway 16, near Plentywood	16.9	--	1956-73, 1976	--	--	--	--	--	--
06183450	**Big Muddy Creek near Antelope**	967	**1979-P**	**1979-P**	--	--	--	1979-93	1979-87	--
06183500	Big Muddy Creek at Reserve	1,044	1920-25, 1950-53	1920-21, 1923-24, 1950-53	--	--	--	--	--	--
06183700	**Big Muddy Creek diversion canal near Medicine Lake**	--	**1985-P**	--	--	--	--	--	--	--
06183750	**Lake Creek near Dagmar**	101	**1985-89, 1995-P**	**1986-89, 1996-P**	--	--	--	--	--	--
06183800	**Cottonwood Creek near Dagmar**	126	**1985-89, 1995-P**	**1986-89, 1996-P**	--	--	--	--	--	--
06183850	**Sand Creek near Dagmar**	122	**1985-89, 1995-P**	**1986-89, 1995-P**	--	--	--	--	--	--
06183900	Wolf Creek near Reserve	--	--	--	--	--	--	1982-84	--	--
06184000	Wolf Creek near Medicine Lake	165	1918-19	--	--	--	--	--	--	--
06184200	**Lost Creek tributary near Homestead**	1.90	--	**1972, 1974-P**	--	--	--	--	--	--
06184400	Smoke Creek near Flaxville	--	--	--	--	--	--	1982	--	--
06184500	Smoke Creek near Poplar	283	1918	--	--	--	--	--	--	--
06185000	Big Muddy Creek near Culbertson	2,447	1908-21	1909-14, 1916-21	--	--	--	--	--	--
06185100	Big Muddy Creek tributary near Culbertson	7.38	--	1963-77	--	--	--	--	--	--
06185110	Big Muddy Creek near mouth, near Culbertson	2,684	1982-92	1982-92	--	--	--	1982-89	--	--
06185150	Hardscrabble Creek near Culbertson	121	--	--	--	--	--	1981-83	1981-83	--
06185200	Missouri River tributary No. 3 near Culbertson	1.23	--	1963-77	--	--	--	--	--	--
06185300	Missouri River tributary No. 4 near Bainville	11.6	--	1963-77	--	--	--	--	--	--
06185400	**Missouri River tributary No. 5 at Culbertson**	3.67	--	**1963-P**	--	--	--	--	--	--
06185500	**Missouri River near Culbertson**	91,557	**1941-51, 1958-P**	**1942-51, 1959-P**	--	**2002-P**	1972-76	**1965-86, 1992-94, 1997-P**	**1972-86, 1997-P**	**1969-86, 2003-P**

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin							
06186000	Yellowstone Lake at Bridge Bay, Yellowstone National Park	1,006	1921-86	--	--	--	--	--	--	--
06186500	**Yellowstone River at Yellowstone Lake outlet, Yellowstone National Park**	991	**1922-82, 1984-86, 1989-P**	**1923-86, 1989-P**	1984-85	1984-85	--	--	--	--
06187000	Yellowstone River near Canyon Hotel, Yellowstone National Park	1,157	1913-51	1913-18, 1821-51	--	--	--	--	--	--
06187500	Tower Creek at Tower Falls, Yellowstone National Park	50.4	1922-43	1923-43	--	--	--	--	--	--
06187550	Yellowstone River at Tower Junction, Yellowstone National Park	1,342	1984-86	1984-86	1984-85	1984-85	--	--	--	--
06187915	**Soda Butte Creek at park boundary, at Silver Gate**	31.2	**1999-P**	**1999-P**	--	**2003-P**	--	1999-2001	1999-2001	2000-2001
06187950	**Soda Butte Creek near Lamar Ranger Station, Yellowstone National Park**	99	**1989-P**	**1989-P**	--	--	--	1989	--	--
06188000	**Lamar River near Tower Ranger Station, Yellowstone National Park**	660	**1922-69, 1985-86, 1988-P**	**1923-69, 1985-86, 1989-P**	--	--	1985-86, 1989-92	1989	1985-86, 1988-92,	--
06188500	East Fork Blacktail Deer Creek near Mammoth, Yellowstone National Park	10.3	1938-41	--	--	--	--	--	--	--
06189000	Blacktail Deer Creek near Mammoth, Yellowstone National Park	15	1938-45, 1989-93	1938-45, 1989-93	--	--	--	1989	--	--
06189500	Bear Creek at Jardine	40.8	1946-49	--	--	--	--	--	--	--
06190000	Lupine Creek near Mammoth, Yellowstone National Park	4.67	1938-41	--	--	--	--	--	--	--
06190370	Gardner River above Mammoth Hot Springs outflow, near Mammoth, Yellowstone National Park	--	--	--	--	--	--	1988-93	--	--
06190415	Mammoth Hot Springs outflow at Mammoth, Yellowstone National Park	--	--	--	--	--	--	1988-94	--	--
06190500	Gardner River at Mammoth, Yellowstone National Park	200	1922-39	1923-38	--	--	--	--	--	--
06190525	Gardner River sinkhole diversion at Mammoth, Yellowstone National Park	--	--	--	--	--	--	1989-92	--	--
06190530	Clematis Creek at Mammoth, Yellowstone National Park	2.71	--	--	--	--	--	1990-92	--	--
06190540	**Boiling River at Mammoth, Yellowstone National Park**	--	**1989-94 2003-P**	**1989-95 2003-P**	1989-90	**1989-90 2003-P**	--	1967, 1988-94	--	--
06191000	**Gardner River near Mammoth, Yellowstone National Park**	202	**1938-72, 1984-P**	**1939-72, 1984-P**	1985	1985	--	1988-93	1989	--
06191400	LaDuke Hot Springs near Corwin Springs	--	--	--	--	--	--	1988-94	--	--
06191500	**Yellowstone River at Corwin Springs**	2,619	**1889-93, 1910-P**	**1890-93, 1911-P**	1984-85	1977-81, 1984-85 2002	1985-92	1956-57, 1969-74, 1988-90 1999-2001	1965, 1985-92 1999-2001	1969-74 2000-2001
06191800	Big Creek near Emigrant	60.9	1973-79, 1983-85	1974-79, 1983-85	--	--	--	--	--	--
06192000	Mill Creek near Pray	148	1951-56	1951-56	--	--	--	--	--	--
06192500	**Yellowstone River near Livingston**	3,551	**1897-1905, 1928-32, 1937-P**	**1897-1905, 1929-32, 1938-P**	--	2000-03	1985-86	1970-94, 1999-2003	1965, 1979-94, 1999-2003	1979-94

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06193000	Shields River near Wilsall	87.8	1935-57	1936-57	--	--	--	--	--	--
06193500	Shields River at Clyde Park	543	1921-23, 1929-32, 1934-67	1921-23, 1929-32, 1934-67	--	--	--	--	1965	--
06194000	Brackett Creek near Clyde Park	57.9	1921-23, 1934-57	1921-23, 1934-57	--	--	--	--	--	--
06194500	Canyon Creek near Chadbourn	21.5	1923	--	--	--	--	--	--	--
06195000	Bangtail Creek at Chadbourn	13.3	1923	--	--	--	--	--	--	--
06195500	Willow Creek near Chadbourn	29.7	1923	--	--	--	--	--	--	--
06195600	**Shields River near Livingston**	852	**1979-P**	**1979-P**	--	2000-03	--	1999-2003	1999-2003	--
06196000	North Fork Big Timber Creek near Big Timber	36.6	1907-12	--	--	--	--	--	--	--
06196500	South Fork Big Timber Creek near Big Timber	28.1	1907-11	--	--	--	--	--	--	--
06197000	Big Timber Creek near Big Timber	74.9	1912-24	1912-16, 1918-24, 1971	--	--	--	--	--	--
06197020	Big Timber Creek near mouth, near Big Timber	--	--	--	--	--	--	--	1965	--
06197500	Boulder River near Contact	226	1910-16, 1929, 1950-69, 1970-74, 1981-83	1910-16, 1929, 1951-69, 1971-75, 1982-83	--	--	1972	1971-73	1971-73 1981-83	--
06197800	East Boulder River below Dry Fork Creek, near McLeod	--	--	--	--	--	--	--	1981-83	--
06198000	East Fork Boulder River near McLeod	85.6	1907-10, 1981-83	1908-09, 1982-83	--	--	--	--	1981-83	1982-83
06198450	West Fork Boulder River at West Boulder Reservoir, near McLeod	--	--	--	--	--	--	--	1981-83	--
06198500	West Fork Boulder River near Bruffeys	91.6	1904-10	1904-1908, 1910	--	--	--	--	--	--
06199000	West Boulder River at McLeod	135	1907-14	1907-14	--	--	--	--	1981-83	--
06199500	Boulder River near McLeod	476	1912-14	--	--	--	--	--	--	--
06200000	**Boulder River at Big Timber**	523	**1947-53, 1955-P**	**1947-53, 1955-P**	--	2000-03	--	1965, 1999-2003	1965, 1981-83, 1999-2003	--
06200400	Sweet Grass Creek near Melville	46.3	1907-12	--	--	--	--	--	--	--
06200500	Sweet Grass Creek above Melville	63.8	1913-25, 1937-69	1914-24, 1937-69, 1971,1975	--	--	--	--	--	--
06201000	Sweet Grass Creek below Melville	143	1907-24, 1937-43, 1946-52	1907-16, 1918-24, 1937-42, 1946-52	--	--	--	--	--	--
06201500	Sweet Grass Creek near Greycliff	368	1941-42	--	--	--	--	--	--	--
06201550	Yellowstone River tributary near Greycliff	2.72	--	1960-74	--	--	--	--	--	--
06201600	Bridger Creek near Greycliff	61.5	--	1960-75	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
		Part 6--Yellowstone River Basin--Continued								
06201650	Work Creek near Reed Point	32.5	--	1959-73, 1978	--	--	--	--	--	--
06201700	**Hump Creek near Reed Point**	7.61	--	**1960-P**	--	--	--	--	--	--
06201750	Berry Creek near Columbus	23.5	--	1958-73, 1978	--	--	--	--	--	--
06201800	Stillwater River above Woodbine Creek, near Nye	160	1924-27	--	--	--	--	--	--	--
06202000	Woodbine Creek near Nye	19.4	1924-27	--	--	--	--	--	--	--
06202500	Stillwater River near Nye	180	1929-32	--	--	--	--	--	--	--
06202510	Stillwater River above Nye Creek, near Nye	193	1980-91	1980-91	--	--	--	--	1981-83	1982-83
06202530	Stillwater River above West Fork, at Nye	193	--	--	--	--	--	--	1971-73	--
06202590	West Fork Stillwater River above Cathedral Creek, near Nye	--	--	--	--	--	--	--	1981-83	--
06202597	Castle Creek near Nye	--	--	--	--	--	--	--	1973	--
06202598	West Fork Stillwater River below Castle Creek, near Nye	122	--	--	--	--	--	--	1971-73 1981-83	--
06202600	Stillwater River at Nye	337	1969-77	1970-76	--	--	--	--	--	--
06202610	Stillwater River at Beehive	371	--	--	--	--	1972-73	1971-73, 1982-83	1973, 1982-83	1982-83
06203000	East Rosebud Creek near Roscoe	105	1920-21	--	--	--	--	--	--	--
06203500	East Rosebud Creek at Roscoe	125	1921-24	--	--	--	--	--	--	--
06204000	**Mystic Lake near Roscoe**	46.9	**1936-P**	--	--	--	--	--	--	--
06204050	**West Rosebud Creek near Roscoe**	52.1	**1965-P**	**1966-P**	--	--	--	--	--	--
06204150	Fishtail Creek near Dean	--	--	--	--	--	--	--	1981-83	--
06204170	**Meadow Creek near Dean**	6.11	--	**2003-P**	--	--	--	--	--	--
06204220	Butcher Creek near Luther	9.69	--	--	--	--	--	1960	1960-61	--
06204240	Butcher Creek near Roscoe	--	--	--	--	--	--	--	1960-61	--
06204260	Butcher Creek near Fishtail	--	--	--	--	--	--	--	1960-61	--
06204300	Butcher Creek near Absarokee	39.6	1960-62	--	--	--	--	1960	--	--
06204500	Rosebud Creek near Absarokee	394	1935-69	1935-69	--	--	--	--	--	--
06204700	Rosebud Creek at Absarokee	401	1910-14	--	--	--	--	--	--	--
06205000	**Stillwater River near Absarokee**	975	**1910-14, 1935-P**	**1911-14, 1935-P**	--	2001-2002	--	1999-2003	1965,1981, 1999-2003	--
06205050	Stillwater River near Columbus	--	--	--	--	--	--	--	1982-83	--
06205100	Allen Creek near Park City	7.17	--	1961-2002	--	--	--	--	--	--
06205200	Yellowstone River at Laurel	8,189	--	--	--	--	--	1951-52, 1974-79	1975-78	1974-79
06207500	**Clarks Fork Yellowstone River near Belfry**	1,154	**1921-P**	**1922-P**	--	--	1984	1966-88	1965,1971 1984	--
06207510	Big Sand Coulee at Wyoming-Montana State line	134	1973-81	1973-80	--	--	1973-81	--	--	--
06207520	Silver Tip Creek below Amoco dam, near Belfry	--	--	--	--	--	--	1972	--	--

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Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
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					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06207523	Silver Tip Creek below Sinclair oil field, near Belfry	--	--	--	--	--	--	1972	--	--
06207530	Silver Tip Creek above Gobblers draw, near Belfry	--	--	--	--	--	--	1971	--	--
06207540	Silver Tip Creek near Belfry	88.0	1968-75	1968-75	--	--	1969-72, 1974	1969-75	1970-75	--
06207600	Jack Creek tributary near Belfry	0.85	--	1975-91	--	--	--	--	--	--
06207700	North Fork Bluewater Creek near Bridger	8.1	--	--	--	--	--	--	1960-61, 1964-68	--
06207800	Bluewater Creek near Bridger	28.1	1960-70	1960-70, 1978	--	--	1962-70	1960	1964-65	--
06207850	Bluewater Creek at Sanford Ranch	43.9	--	--	--	--	1964-70	--	1960-61 1964-70	--
06207870	Bluewater Creek near Fromberg	46.6	--	--	--	--	1964-70	1960	1960-61, 1964-68	--
06207900	Bluewater Creek at Fromberg	53.2	1961-64	--	--	--	1962-64	1960,1980	1960-761, 1964-68, 1970,1980	--
06208000	Clarks Fork Yellowstone River at Fromberg	1,940	1905-14	1905-13	--	--	--	--	--	--
06208400	Elbow Creek near Joliet	48.6	1984	1984	--	--	--	1984	1984	--
06208500	**Clarks Fork Yellowstone River at Edgar**	2,022	**1921-69, 1987-P**	**1922-32, 1934-69, 1987-P**	--	2000-03	1972-73	1964-65, 1999-2003	1965,1973, 1999-2003	2000-01
06208800	Clarks Fork Yellowstone River near Silesia	2,093	1970-87	1970-86	--	--	1984	1984	1984	--
06209000	Glacier Lake near Red Lodge	3.77	1939-47, 1960-64	--	--	--	--	--	--	--
06209010	Rock Creek below Glacier Lake, near Red Lodge	3.89	1960-64	--	--	--	--	--	--	--
06209500	**Rock Creek near Red Lodge**	105	**1932-82, 1985-86, 2000-P**	**1932, 1934-82, 1985-86, 2000-P**	--	2001-2002	--	--	--	--
06210000	West Fork Rock Creek below Basin Creek, near Red Lodge	63.1	1937-57	1938-56	--	--	--	--	--	--
06210500	West Fork Rock Creek near Red Lodge	66.9	1932-44	1932, 1934-44	--	--	--	--	--	--
06210950	**Cole Creek near Red Lodge**	4.30	--	**2003-P**	--	--	--	--	--	--
06211000	**Red Lodge Creek above Cooney Reservoir, near Boyd**	143	**1937-P**	**1937-P**	--	--	--	--	--	--
06211500	**Willow Creek near Boyd**	53.3	**1937-P**	**1937-P**	--	--	--	--	--	--
06212000	Cooney Reservoir near Boyd	206	1937-95	--	--	--	--	--	--	--
06212500	Red Lodge Creek below Cooney Reservoir, near Boyd	210	1937-2002	1938-2002	--	--	--	--	--	--
06213000	Red Lodge Creek near Boyd	234	1932-37	--	--	--	--	--	--	--
06213500	Rock Creek at Joliet	539	1946-53	1946-53	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06214000	Rock Creek at Rockvale	569	1920-22, 1952-40, 1984-90	1921-22, 1932,1934, 1935-40, 1985-90	--	--	--	--	--	--
06214050	Clarks Fork Yellowstone River near Laurel	2,783	--	--	--	--	--	1969-73	--	1969-73
06214100	Yellowstone River near Laurel	11,036	--	--	--	--	--	1969-72	--	1969-72
06214150	Mills Creek at Rapelje	3.32	--	1974-2002	--	--	--	--	--	--
06214500	**Yellowstone River at Billings**	11,805	**1904-05, 1928-P**	**1904-05, 1918, 1929-P**	--	2001-2002	1977-81	1963-93 1999-2001	1965, 1975-93 1999-2001	1975-93 2000-01
06215000	Pryor Creek above Pryor	39.6	1921-24, 1967-74	1921-24, 1967-74	--	--	--	1987-90	--	--
06215500	Lost Creek near Pryor	9.72	1921-24	1922-24	--	--	--	--	--	--
06216000	**Pryor Creek at Pryor**	117	**1921-24, 1966-P**	**1922-24, 1967-P**	--	--	--	--	--	--
06216200	**West Wets Creek near Billings**	8.80	--	**1955-P**	--	--	--	--	--	--
06216300	West Buckeye Creek near Billings	2.64	--	1955-73, 1978	--	--	--	--	--	--
06216500	Pryor Creek near Billings	440	1911-24, 1938-54	1912-24, 1938-53, 1955-73, 1978	--	--	--	--	--	--
06216900	Pryor Creek near Huntley	582	1979-99	1978-99	--	--	--	--	--	--
06217000	Pryor Creek at Huntley	606	1904-17	1905-06, 1908, 1910-15, 1978	--	--	--	--	--	--
06217300	**Twelvemile Creek near Shepherd**	9.05	--	**1973-P**	--	--	--	--	--	--
06217500	Yellowstone River at Huntley	12,840	1908-16	1908-16	--	--	--	1951-52, 1971-81	1975-81	1972-81
06217700	**North Fork Crooked Creek tributary near Shepherd**	6.85	--	**1962-P**	--	--	--	--	--	--
06217750	Fly Creek at Pompeys Pillar	285	1969-81	1969-81	--	--	--	1969-81	--	--
06217800	Yellowstone River tributary No. 2 near Pompeys Pillar	0.70	--	1962-73	--	--	--	--	--	--
06217950	Buffalo Creek near Custer	221	1980-83	1980-83	--	--	--	--	--	--
06218000	Yellowstone River at Junction (at Custer)	14,427	1906-08	--	--	--	--	1969-70	--	1969-70
06286258	Big Coulee near Lovell, Wyoming	30.1	1970-78	--	--	--	--	--	--	--
06286270	Porcupine Creek near Lovell, Wyoming	135	1964-67	--	--	--	--	--	--	--
06286340	Dry Head Creek near Pryor	58.0	1965-66	--	--	--	--	--	--	--
06286350	Dry Head Creek above Hoodoo Creek, near Pryor	80.0	1966-68	1966-67	--	--	--	--	--	--
06286370	Big Bull Elk Creek near St. Xavier	35.0	1965-68	--	--	--	--	--	--	--
06286390	Black Canyon Creek near St. Xavier	52.0	1965-66	1965-66	--	--	--	--	--	--
06286395	Black Canyon Creek below Three Springs Creek, near St. Xavier	75.0	1966-68	1966-67	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06286400	**Bighorn Lake near St. Xavier**	19,626	**1965-P**	--	---	--	--	--	--	--
06286490	**Big Horn Canal near St. Xavier**	--	**1966-P**	--	--	--	--	--	--	--
06286500	Big Horn Canal below wasteway, near St. Xavier	--	1947-52	--	--	--	--	--	--	--
06287000	**Bighorn River near St. Xavier**	19,667	**1934-P**	**1935-P**	--	1970-79	--	1967-81		1969-70
06287500	Soap Creek near St. Xavier	98.3	1911-14, 1939-53, 1968-72	1939-53, 1963, 1968-72, 1978	--	--	--	--	--	--
06287700	Soap Creek near mouth, near St. Xavier	111	1914-24	1914-18, 1920-24	--	--	--	--	--	--
06288000	Rotten Grass Creek near St. Xavier	147	1911-22, 1968-73	1914-17, 1968-72, 1978	--	--	--	--	--	--
06288200	Beauvais Creek near St. Xavier	100	1967-77	1968-78	--	--	--	1967-78	1968-78	1969-78
06288500	Bighorn River near Hardin	20,722	1904-25, 1928-33	1904-24, 1929-33	--	1968-74	--	1951, 1969-73, 1987-89	--	1970-73
06288960	Little Bighorn River near Parkman, Wyoming	137	1970-72	1972	--	--	--	--	--	--
06288990	West Fork Little Bighorn River near Parkman, Wyoming	38.2	1970-72, 1983-87	--	--	--	--	--	--	--
06289000	**Little Bighorn River at State line, near Wyola**	182	**1939-P**	**1939-P**	--	--	--	1993-2001	1993-2001	1993-2001
06289500	Little Bighorn River near Wyola	251	1912-24	1912-24	--	--	--	1993-2001	1993-2001	1993-2001
06290000	**Pass Creek near Wyola**	111	**1935-56, 1983-P**	**1935-56, 1978, 1983-P**	--	--	--	--	--	--
06290200	Little Bighorn River tributary near Wyola	4.43	--	1973-86	--	--	--	--	--	--
06290500	**Little Bighorn River below Pass Creek, near Wyola**	428	**1939-75, 1977-2004**	**1939-2004**	--	--	1970-73	1970-75, 1977	1970-73	--
06291000	Owl Creek near Lodge Grass	163	1939-45, 1980-92	1939-42, 1944-45, 1980-92	--	--	--	--	--	--
06291200	Lodge Grass Creek at State Line, near Wyola	16.7	1983-84	1983-89	--	--	--	--	--	--
06291500	**Lodge Grass Creek above Willow Creek diversion, near Wyola**	80.7	**1939-74, 1983-P**	**1939-74, 1978, 1983-P**	--	--	--	--	--	--
06292000	Lodge Grass Creek near Wyola	88.9	1921-24	--	--	--	--	--	--	--
06292500	Lodge Grass Creek near Lodge Grass	143	1912-16, 1921-24	1912-15, 1921-24	--	--	--	--	--	--
06293000	Lodge Grass Creek at Lodge Grass	170	1916-20	--	--	--	--	--	--	--
06293300	**Long Otter Creek near Lodge Grass**	11.7	--	**1973-P**	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06293500	Little Bighorn River near Crow Agency	1,181	1912-24, 1928-33, 1938-60	1912, 1914-24, 1929-32, 1938-60	--	--	--	--	--	--
06293900	Little Bighorn River at Crow Agency	1,190	1905-06	--	--	--	--	--	--	--
06294000	**Little Bighorn River near Hardin**	1,294	**1953-P**	**1953-P**	--	--	1970-77	1970-79, 1987-89, 1993-2001	1971-75, 1977, 1993-2001	1993-2001
06294400	**Andresen Coulee near Custer**	2.35	--	**1963-P**	--	--	--	--	--	--
06294500	**Bighorn River above Tullock Creek, near Bighorn**	22,414	**1982-P**	**1982-P**	--	2000-03	--	1999-2003	1999-2003	--
06294600	**East Cabin Creek tributary near Hardin**	8.63	1982-85	**1973-P**	--	--	--	--	--	--
06294690	Tullock Creek near Bighorn	446	1975-82	1975-82	--	--	--	--	--	--
06294700	Bighorn River at Bighorn	22,885	1945-81	1945-81	--	--	1960-72	1960-92	1960-72, 1975-92	1975-92
06294800	Unknown Creek near Bighorn	14.6	--	1962-76, 1979,1991	--	--	--	--	--	--
06294840	Yellowstone River at Myers	37,674	--	--	--	--	--	1974-77	--	1975-77
06294850	Buckingham Coulee near Myers	2.63	--	1962-76, 1979,1991	--	--	--	--	--	--
06294900	Middle Fork Froze to Death Creek tributary near Ingomar	1.36	--	1962-76	--	--	--	--	--	--
06294920	East Fork Sarpy Creek near Colstrip	79.2	--	--	--	--	--	1981-83	1981-83	--
06294930	**Sarpy Creek tributary near Colstrip**	4.44	--	**1972-P**	--	--	--	--	--	--
06294940	Sarpy Creek near Hysham	453	1973-84	1974-84	--	--	--	1975-84	1975-84	--
06294950	Starved to Death Creek near Sanders	36.9	1980-85	1980-85	--	--	--	--	--	--
06294960	Anderson Creek at Vananda	5.71	--	1973-84, 1991	--	--	--	--	--	--
06294980	East Fork Armells Creek near Colstrip	97.3	--	--	--	--	--	1975-85	1975-85	--
06294985	**East Fork Armells Creek tributary near Colstrip**	1.87	--	**1973-P**	--	--	--	--	--	--
06294991	West Fork Armells Creek near Forsyth	148	--	--	--	--	--	1975-77	1975-77	--
06294995	Armells Creek near Forsyth	370	1974-84, 1988-95	1975-84, 1988-95	--	--	--	1975-86, 1988-95	1975-86, 1988-95	--
06295000	**Yellowstone River at Forsyth**	40,146	**1921-23, 1977-P**	**1921-23, 1978-P**	--	--	1978-81	**1974-82 1999-P**	**1975-82 1999-P**	**1975,1978, 1979,2000-2002,2004**
06295020	**Short Creek near Forsyth**	3.23	--	**1962-P**	--	--	--	--	--	--
06295050	Little Porcupine Creek near Forsyth	614	--	1958-73, 1975,1978, 1986,1993	--	--	--	--	--	--
06295100	Rosebud Creek near Kirby	35.5	1982-85, 1988	1960-74, 1982-2002	--	--	--	--	--	--
06295110	Rosebud Creek at Kirby	--	--	--	--	--	--	1978-79	1978-79	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06295113	**Rosebud Creek at reservation boundary, near Kirby**	123	**1980-P**	**1980-P**	--	--	--	**1980-84 2003-P**	**1980-84 2003-P**	**2003-2004**
06295130	Rosebud Creek tributary near Busby	1.14	--	1963-77	--	--	--	--	--	--
06295200	Whitedirt Creek near Lame Deer	1.58	--	1959-73	--	--	--	--	--	--
06295250	**Rosebud Creek near Colstrip**	799	**1974-P**	**1975-P**	--	--	--	1975-85	1975-84	--
06295350	Greenleaf Creek near Colstrip	30.5	--	--	--	--	--	1975	1975	--
06295380	Cow Creek near Colstrip	27.2	--	--	--	--	--	1980-85	1980-85	--
06295400	Rosebud Creek above Pony Creek, near Colstrip	961	--	--	--	--	--	1975-78	1975-77	--
06295420	Snider Creek near Brandenberg	11.9	--	--	--	--	--	1978	1978	--
06295500	Rosebud Creek near Rosebud	1,193	1938-43	1938-43	--	--	--	1975-77	1975-77	--
06296000	Rosebud Creek near Forsyth	1,279	1947-54	1948-53, 1655-57, 1959, 1961-67, 1969,1978	--	--	--	--	--	--
06296003	**Rosebud Creek at mouth, near Rosebud**	1,302	**1974-P**	**1975-P**	--	--	--	1975-86, 1988-93, 1999-2003	1975-86, 1988-93, 1999-2003	--
06296100	**Snell Creek near Hathaway**	10.5	1982-85	**1963-77, 1979, 1982-P**	--	--	--	--	--	--
06296115	**Reservation Creek near Miles City**	6.29	--	**1973-P**	--	--	--	--	--	--
06296120	Yellowstone River near Miles City	42,847	--	--	1969-84	--	--	1969-84	1975-84	1974-81
06306000	Tongue River near Acme, Wyoming	894	1939-57	--	--	--	--	--	--	--
06306100	Squirrel Creek near Decker	33.6	1975-85	1976-85	--	--	--	1976-85	1976-85	--
06306250	**Prairie Dog Creek near Acme, Wyoming**	358	**1971-79, 2004**	**2004**	**2004**	--	--	**2004**	**2004**	--
06306300	**Tongue River at State line, near Decker**	1,453	**1960-P**	**1961-P**	**1983-87 2001-P**	**1966-76 2001-P**	--	**1966-P**	**1966-P**	**1986-88, 2003-2004**
06306500	Tongue River near Decker	1,585	1928-38	1928-38	--	--	--	--	--	--
06306800	Deer Creek near Decker	47.7	--	--	--	--	--	1975-77	1975-76	--
06306900	Spring Creek near Decker	34.7	--	1958-86	--	--	--	1978,1980	1978,1980	--
06306950	South Fork Leaf Rock Creek near Kirby (Leaf Rock Creek near Kirby)	4.53	1982-85	1958, 1960-96	--	--	--	--	--	--
06307000	**Tongue River Reservoir near Decker**	1,770	**1938-P**	--	--	--	--	--	--	--
06307500	**Tongue River at Tongue River Dam, near Decker**	1,770	**1939-P**	**1939-P**	**1981-87, 2004**	--	--	**1951, 1976-95, 2004**	**1976-96, 2004**	--
06307510	Fourmile Creek near Birney	22.3	--	--	--	--	--	1975	1975	--
06307520	Canyon Creek near Birney	50.2	--	1972-91	--	--	--	--	--	--
06307525	Prairie Dog Creek above Jack Creek, near Birney	6.57	1979-83	1979-83	--	--	--	1978-81, 1983	1978-83	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06307528	Prairie Dog Creek near Birney	19.6	1979-84	1979-84	--	--	--	1978-80, 1983	1978-83	--
06307530	Bull Creek near Birney	45.8	--	--	--	--	--	1975	1975	--
06307540	Hanging Woman Creek at State line, near Otter	90.2	--	--	--	--	--	1980, 1982-83	1980, 1982-83	--
06307560	East Trail Creek near Otter	31.3	1976-81	1977-81	--	--	--	1977-80	1977-78, 1980	--
06307563	Corral Creek near Otter	26.5	--	--	--	--	--	1980-83	1980-83	--
06307567	Horse Creek near Birney	16.0	--	--	--	--	--	1983	1983	--
06307570	Hanging Woman Creek below Horse Creek, near Birney	321	--	--	--	--	--	1978-83, 1986-87	1978-83, 1986-87	--
06307600	**Hanging Woman Creek near Birney**	470	**1974-84, 1986-95 2003-P**	**1974-84, 1986-95 2003-P**	**1981-83, 1986-87 2004**	--	--	**1975-95 2003-P**	**1975-95 2003-P**	**2004**
06307610	Tongue River below Hanging Woman Creek, near Birney	2,533	--	--	--	--	--	1974-79	1975-79	1975-79
06307615	Cook Creek near Birney	62.6	--	--	--	--	--	1975-77	1975-77	--
06307616	**Tongue River at Birney Day School, near Birney**	2,621	**1980-P**	**1980-P**	**2004**	--	--	**1980-93 2004**	**1980-86 2004**	--
06307620	Tie Creek near Birney	18.7	--	1973-84, 1991	--	--	--	--	--	--
06307640	Spring Creek near Ashland	1.56	--	1962-76	--	--	--	--	--	--
06307660	Walking Horse Creek near Ashland	3.33	--	1963-78	--	--	--	--	--	--
06307665	Otter Creek near Otter	40.9	--	--	--	--	--	1978-84	1978-84	--
06307670	Bear Creek at Otter	90.4	--	--	--	--	--	1975-76	1975-76	--
06307700	**Cow Creek near Fort Howes Ranger Station, near Otter**	8.37	--	**1972-P**	--	--	--	--	--	--
06307717	Otter Creek below Fifteenmile Creek, near Otter	453	1982-86	1982-85	1983-85	--	--	1982-85	1982-85	--
06307720	**Brian Creek near Ashland**	8.03	--	**1973-P**	--	--	--	--	--	--
06307725	Otter Creek above Tenmile Creek, near Ashland	466	--	--	--	--	--	1978-81	1978-81	--
06307730	Threemile Creek near Ashland	51.5	--	--	--	--	--	1975	1975	--
06307735	Home Creek near Ashland	58.7	--	--	--	--	--	1977-84	1977-84	--
06307740	**Otter Creek at Ashland**	707	**1973-85, 1988-95 2003-P**	**1973-85, 1988-95 2003-P**	**1981-85 2004**	--	--	**1975-85, 1988-95 2003-P**	**1975-85, 1988-95 2003-P**	2003
06307760	Stebbins Creek near Ashland	5.41	--	1963-77	--	--	--	--	--	--
06307780	Stebbins Creek at mouth, near Ashland	20.8	--	1963-91	--	--	--	--	--	--
06307800	Tongue River near Ashland	3,830	1956-73	1967-72	--	--	--	--	--	--
06307810	Beaver Creek near Ashland	92.3	--	--	--	--	--	1975-76	1975-76	--
06307830	**Tongue River below Brandenberg bridge, near Ashland**	3,948	**1973-84, 2000-P**	**1974-84, 2000-P**	**2001-P**	2001-03	1975-81	**1974-81, 2000-P**	**1975, 1978-81, 2000-P**	**2003-2004**
06307840	Liscom Creek near Ashland	47.6	--	--	--	--	--	1975,1977	1975,1977	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06307890	Foster Creek near Volborg	116	--	--	--	--	--	1975-77	1975-77	--
06307930	Jack Creek near Volborg	5.47	--	1973-2002	--	--	--	--	--	--
06308000	Tongue River near Miles City	4,539	1929-33	--	--	--	--	--	--	--
06308100	Sixmile Creek tributary near Epsie	0.80	--	1972-91	--	--	--	--	--	--
06308160	Pumpkin Creek near Loesch	102	--	--	--	--	--	1976-79	1976-79	--
06308170	Little Pumpkin Creek near Volborg	101	--	--	--	--	--	1976-77	1976-77	--
06308190	Pumpkin Creek near Volborg	386	--	--	--	--	--	1976-77	1976-77	--
06308200	**Basin Creek tributary near Volborg**	0.14	--	**1955-P**	--	--	--	--	--	--
06308300	Basin Creek near Volborg	11.1	--	1955-73	--	--	--	--	--	--
06308330	**Deer Creek tributary near Volborg**	1.65	--	**1973-P**	--	--	--	--	--	--
06308340	**LaGrange Creek near Volborg**	3.66	--	**1973-P**	--	--	--	--	--	--
06308400	**Pumpkin Creek near Miles City**	697	**1972-85 2004**	**1973-85 2004**	**2004**	--	--	**1976-85, 2004**	**1976-85, 2004**	--
06308500	**Tongue River at Miles City**	5,379	**1938-42, 1946-P**	**1938-41, 1946-P**	**2004**	2000-03	1978-86	**1949-94, 1999-P**	**1975-94, 1999-P**	1975-94
06309000	**Yellowstone River at Miles City**	48,253	**1922-23, 1928-P**	**1923, 1929-P**	--	--	--	1948-52, 1965	1965	--
06309020	Rock Springs Creek tributary at Rock Springs	0.96	--	1963-78, 1987	--	--	--	--	--	--
06309040	Dry House Creek near Angela	38.6	--	1963-77, 1987	--	--	--	--	--	--
06309060	North Fork Sunday Creek tributary No. 2 near Angela	0.22	--	1962-91	--	--	--	--	--	--
06309075	Sunday Creek near Miles City	714	1975-84	1975-84	--	--	--	--	--	--
06309078	Tree Coulee near Kinsey	4.13	--	1972, 1974-2002	--	--	--	--	--	--
06309079	Muster Creek near Kinsey	28.5	--	--	--	--	--	1978-80	1978-80	1978-80
06309080	**Deep Creek near Kinsey**	11.5	--	**1962-P**	--	--	--	--	--	--
06309090	Ash Creek near Locate	6.23	--	1962-76	--	--	--	--	--	--
06309145	Custer Creek near Kinsey	151	--	--	--	--	--	1978-80	1978-80	1978-80
06324500	**Powder River at Moorhead**	8,086	**1929-72, 1974-P**	**1923, 1929-72, 1975-P**	**1986-89 2001-P**	--	1975-96	**1949, 1951-53, 1956-57, 1969-72, 1975-92 2001-P**	**1975-1997 2001-P**	1969-72
06324700	Sand Creek near Broadus	10.2	--	1955-84	--	--	--	--	--	--
06324710	Powder River at Broadus	8,748	1975-92	1976-92	--	--	1976-92	1979, 1988-90	1976-92, 1995	--
06324995	**Badger Creek at Biddle**	6.06	--	**1972-P**	--	--	--	--	--	--
06325000	Little Powder River at Biddle	1,541	1938-43	--	--	--	--	--	--	--
06325400	East Fork Little Powder River tributary near Hammond	3.45	--	1974-84	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
		Part 6--Yellowstone River Basin--Continued								
06325500	**Little Powder River near Broadus**	1,974	1947-53, 1957-72	1947-53, 1956-72, 1978	--	--	--	**2002-P**	**2002-P**	--
06325550	Little Powder River at mouth, near Broadus	--	--	--	--	--	--	1978-79, 1988-90 2001-2002	1988-89 2001-2002	--
06325650	Powder River near Powderville	--	--	--	--	--	--	1978-90	1988	--
06325700	**Deep Creek tributary near Powderville**	3.00	--	**1973-P**	--	--	--	--	--	--
06325950	**Cut Coulee near Mizpah**	2.23	--	**1973-P**	--	--	--	--	--	--
06326000	Powder River near Mizpah	12,132	1928-33	--	--	--	--	1989	--	--
06326050	Mizpah Creek at Olive	129	--	--	--	--	--	1976-79	1976-79	--
06326200	Mizpah Creek near Volberg	510	--	--	--	--	--	1976-79	1976-77	--
06326300	Mizpah Creek near Mizpah	797	1975-86	1975-86	--	--	--	1976-84, 1989-90	1976-84	--
06326400	Meyers Creek near Locate	9.42	--	1962-76, 1982	--	--	--	--	--	--
06326500	**Powder River near Locate**	13,068	**1938-P**	**1938-P**	1951-62, 1975-81, 1988-90	--	1975-84	**1948-63, 1975-94, 1999-P**	**1965, 1974-94 1999-P**	1975-94
06326507	Locate Creek near Ismay	--	--	--	--	--	--	1982-83	1982-83	--
06326510	Locate Creek tributary near Locate	0.91	--	1973-91	--	--	--	--	--	--
06326520	Powder River at mouth, near Terry	13,512	--	--	--	--	--	1978,1989	--	--
06326530	Yellowstone River near Terry	63,447	--	--	--	--	--	1974-83	1975-83	1975-80
06326550	Cherry Creek tributary near Terry	2.52	--	1973-91	--	--	--	--	--	--
06326555	Cherry Creek near Terry	358	1980-81, 1990-94	1980-81, 1990-94	1990-94	--	1990-94	1978-81	1978-81, 1990-94	--
06326580	**Lame Jones Creek tributary near Willard**	0.51	--	**1974-P**	--	--	--	--	--	--
06326600	O'Fallon Creek near Ismay	669	1978-92	1962-92	--	--	--	1978-84	1978-84	1978-80
06326650	O'Fallon Creek tributary near Ismay	0.16	--	1962-76	--	--	--	--	--	--
06326700	Deep Creek near Baker	3.79	--	1962-76, 1978	--	--	--	--	--	--
06326800	Pennel Creek tributary near Baker	0.86	--	1962-91	--	--	--	--	--	--
06326850	O'Fallon Creek at Mildred	1,396	1975-78	1976-78	--	--	--	--	--	--
06326900	Yellowstone River tributary No. 4 near Fallon	0.67	--	1962-76	--	--	--	--	--	--
06326940	**Spring Creek tributary near Fallon**	3.10	--	**1972-P**	--	--	--	--	--	--
06326950	**Yellowstone River tributary No. 5 near Marsh**	0.87	--	**1962-P**	--	--	--	--	--	--
06326952	Clear Creek near Lindsay	101	1982-85, 1988	1982-86	--	--	--	--	--	--
06326953	Clear Creek near Hoyt	138	--	1980	--	--	--	1978-80	1978-80	1978-80
06326960	**Timber Fork Upper Sevenmile Creek tributary near Lindsay**	1.13	--	**1974-P**	--	--	--	--	--	--
06326995	Upper Sevenmile Creek near Lindsay	137	--	--	--	--	--	1978-80	1978-80	1978-80

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06327000	Upper Sevenmile Creek near Glendive	--	1921-22	--	--	--	--	--	--	--
06327450	**Cains Coulee at Glendive**	3.72	--	**1991-P**	--	--	--	--	--	--
06327500	**Yellowstone River at Glendive**	66,788	**1898-1911, 1932-34 2003-P**	**1903-10, 1932-34 2003-P**	--	--	--	1950	--	--
06327550	**South Fork Horse Creek tributary near Wibaux**	1.34	--	**1973-P**	--	--	--	--	--	--
06327700	Griffith Creek near Glendive	15.5	--	1955-63, 1965-67	--	--	--	--	--	--
06327720	**Griffith Creek tributary near Glendive**	3.48	--	**1965, 1974-P**	--	--	--	--	--	--
06327790	**Krug Creek tributary No. 2 near Wibaux**	0.44	--	**1974-P**	--	--	--	--	--	--
06327800	Krug Creek tributary near Wibaux	1.74	--	1955-61	--	--	--	--	--	--
06327850	Glendive Creek near Glendive	300	--	--	--	--	--	1978-81	1978-81	--
06328000	Deer Creek near Glendive	198	1921-22	--	--	--	--	1978-80	1978-80	1978-80
06328100	**Yellowstone River tributary No. 6 near Glendive**	2.93	--	**1974-P**	--	--	--	--	--	--
06328200	Lower Sevenmile Creek near Bloomfield	25.2	1982-85	1983-87	--	--	--	--	--	--
06328400	Thirteenmile Creek tributary near Bloomfield	0.67	--	1972, 1974-91	--	--	--	--	--	--
06328700	Linden Creek at Intake	4.20	--	1958-73, 1980	--	--	--	--	--	--
06328800	Indian Creek at Intake	0.46	--	1958-73	--	--	--	--	--	--
06328900	War Dance Creek near Intake	3.69	--	1958-73, 1980	--	--	--	--	--	--
06329000	Cottonwood Creek near Intake	85.3	--	--	--	--	--	1978-81	1978-81	--
06329200	Burns Creek near Savage	233	1958-67, 1975-84, 1986	1958-67, 1975-84, 1986	--	--	--	1976-79, 1984,1986	1976-79, 1984,1986	--
06329350	**Alkali Creek near Sidney**	0.49	--	**1974-P**	--	--	--	--	--	--
06329500	**Yellowstone River near Sidney**	69,083	**1910-31, 1933-P**	**1911-31, 1934-P**	--	--	**1972-81, 1983-P**	**1948-P**	**1965, 1972-P**	**1970-95 2004**
06329510	Fox Creek tributary near Lambert	5.01	--	1972, 1974-96	--	--	--	--	--	--
06329520	Fox Creek near Lambert	183	--	--	--	--	--	1981-83	1981-83	--
06329540	Lone Tree Creek near Sidney	39.4	--	--	--	--	--	1981-83	1981-83	--
06329570	**First Hay Creek near Sidney**	29.1	--	**1963-P**	--	--	--	--	--	--
06333500	Little Missouri River at Alzada	671	1904-07	--	--	--	--	1949-51	--	--
06333850	North Creek near Alzada	1.25	1951	1951-52, 1956-77	--	--	--	--	--	--
06333900	North Creek spreader diversion near Alzada	1.29	1952-56	--	--	--	--	--	--	--
06334000	Little Missouri River near Alzada	904	1911-25, 1928-32, 1935-69	1912-25, 1929-32, 1935-69	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
		Part 6--Yellowstone River Basin--Continued								
06334100	Wolf Creek near Hammond	10.1	--	1955-2002	--	--	--	--	--	--
06334200	Willow Creek near Alzada	122	--	1958-73	--	--	--	--	--	--
06334330	**Little Missouri River tributary near Albion**	1.49	--	**1972-P**	--	--	--	--	--	--
06334610	Hawks Nest Creek tributary near Albion	0.92	--	1973-2002	--	--	--	--	--	--
06334625	**Coal Creek tributary near Mill Iron**	0.64	--	**1974-P**	--	--	--	--	--	--
06334630	Boxelder Creek at Webster	1,092	1959-73	1960-73, 1975	--	--	--	1972-73	--	--
06334640	North Fork Coal Bank Creek near Mill Iron	15.6	--	1962-76	--	--	--	--	--	--
06334720	Soda Creek tributary near Webster	2.22	--	1962-91	--	--	--	--	--	--
06336447	Duck Creek near Wibaux	46.5	1978-85	1978-85	--	--	--	1979	1978-79	--
06336450	Spring Creek near Wibaux	4.00	1955-73	1956-73	--	--	--	--	--	--
06336500	Beaver Creek at Wibaux	351	1938-69, 1979-83	1872,1921, 1929, 1938-69, 1979-83	--	--	--	1979-84	1979-84	--
06336510	Upper Hay Creek tributary No. 2 near Wibaux	4.1	1978-82	1978-82	--	--	--	--	--	--
06336515	Hay Creek near Wibaux	11.4	1978-82	1978-82	--	--	--	--	--	--
06336545	Little Beaver Creek near Wibaux	96.2	1978-81	1978-81	--	--	--	1979-80	1979-80	--
06336550	Beaver Creek near Wibaux	--	1958-64	--	--	--	--	--	--	--
		Part 12--Kootenai River Basin								
12300000	Kootenay River at Newgate, British Columbia	7,660	1931-72	1931-71	--	--	--	1949,1965	--	--
12300110	**Lake Koocanusa at international boundary**	--	--	--	--	--	--	**1972-2004**	--	**1972-82, 2003-04**
12300200	Young Creek near Rexford	36.0	1973-75	1974-75	--	--	--	--	--	--
12300400	Cayuse Creek near Trego	5.29	--	1972-84	--	--	--	--	--	--
12300500	Fortine Creek near Trego	110	1947-53	1947-54, 1958, 1960-73	--	--	--	--	--	--
12300800	Deep Creek near Fortine	18.9	--	1954-91	--	--	--	--	--	--
12301000	Grave Creek near Fortine	54.9	1923-24	--	--	--	--	--	--	--
12301300	**Tobacco River near Eureka**	440	**1958-P**	**1948, 1959-P**	--	1971-85	--	1971-76	--	1974-76
12301500	Kootenai River near Rexford	8,420	1929-40, 1968-71	1929-40, 1948, 1968-71	--	--	1968-71	1967-72	1968-71	--
12301550	Pinkham Creek near Rexford	75.7	1973-81	1973-81	--	--	--	--	--	--
12301600	Lake Koocanusa below Pinkham Creek, near Rexford	--	--	--	--	--	--	1972-76	--	1972-76
12301700	Kootenai River tributary near Rexford	0.86	--	1959-70	--	--	--	--	--	--
12301800	Gold Creek near Rexford	6.12	--	1959-69	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Kootenai River Basin--Continued							
12301810	Big Creek near Rexford	137	1972-81	1973-82	--	--	--	--	--	--
12301830	**Lake Koocanusa at Tenmile Creek, near Libby**	--	--	--	--	--	--	**1972-2004**	--	**1972-2004**
12301850	Kootenai River at Worland bridge, near Libby	8,892	1961-71	1961-71	--	--	--	--	--	--
12301900	Little Jackson Creek near Libby	2.60	--	1961-69	--	--	--	--	--	--
12301919	**Lake Koocanusa at forebay, near Libby**	--	--	--	--	--	--	**1972-2004**	--	**1972-82, 2003-04**
12301920	**Lake Koocanusa near Libby**	8,985	**1972-P**	--	--	--	--	--	--	--
12301921	Libby Dam near Libby	--	--	--	--	--	--	1964	--	--
12301933	**Kootenai River below Libby Dam, near Libby**	8,985	**1972-P**	**1972-P**	--	2001-03	1968-76	**1967-2004**	1968-71	1973-82
12301990	Fisher River above Wolf Creek, near Libby	768	--	--	--	--	--	1967-70	1968-70	--
12301993	Wolf Creek tributary near Libby	2.76	--	1974-84	--	--	--	--	--	--
12301997	Richards Creek near Libby	9.50	--	1973-91	--	--	--	--	--	--
12301999	Wolf Creek near Libby	216	1967-77	1967-77	--	--	1968-70	1967-70	1969-70	--
12302000	Fisher River near Jennings	780	1951-69	1948, 1951-69, 1974	--	-	--	--	--	--
12302050	Peoples Creek near Libby	2.54	--	1961-67, 1976	--	--	--	--	--	--
12302055	**Fisher River near Libby**	838	**1967-P**	**1948, 1969-P**	--	1968-85	1968-76	1967-76, 1999-2003	1969-72, 1974-76, 1999-2003	1974-76
12302400	Shaughnessy Creek near Libby	1.16	--	1959-91	--	--	--	--	--	--
12302500	Granite Creek near Libby	23.6	1933-34, 1936-44, 1960-69	1933, 1937-44, 1948,1954, 1959-69, 1974	--	--	--	--	--	--
12303000	Kootenai River at Libby	10,240	1911-91	1911-91	--	--	--	1969-72, 1978	--	1969-73
12303100	Flower Creek near Libby	11.1	1960-92	1960-92	--	--	--	--	--	--
12303400	Ross Creek near Troy	23.8	--	1972-91	--	--	--	1971, 1976-78	1976-78	--
12303430	Stanley Creek near Troy	12.8	--	--	--	--	--	1976-78	1976-78	--
12303440	Camp Creek near Troy	11.3	--	1972-91	--	--	--	--	--	--
12303490	Lake Creek near Troy	179	--	--	--	--	--	1976-78	1976-78	--
12303500	Lake Creek at Troy	210	1945-57, 1983-95	1945-57, 1974, 1983-96	--	--	--	--	--	--
12304000	Callahan Creek at Troy	85.8	1911-12, 1914-16	--	--	--	--	--	--	--
12304040	Basin Creek near Yaak	27.4	1990-2000	1990-2000	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
12304060	Blacktail Creek near Yaak	8.66	--	1964, 1972-84	--	--	--	--	--	--
12304120	Zulu Creek near Yaak	5.27	--	1972-84	--	--	--	--	--	--
12304200	Yaak River near Yaak	493	1957-62	1956-62	--	--	--	--	--	--
12304250	Whitetail Creek near Yaak	2.48	--	1960-74	--	--	--	--	--	--
12304300	Cyclone Creek near Yaak	5.73	--	1960-91	--	--	--	--	--	--
12304400	Fourth of July Creek near Yaak	7.84	--	1960-74	--	--	--	--	--	--
12304500	**Yaak River near Troy**	766	**1910-16, 1956-P**	**1948,1954, 1956-P**	--	1963-85 2000-03	--	1999-2003	1999-2003	--
	Part 12--Pend Oreille River Basin									
12323170	Silver Bow Creek above Blacktail Creek, at Butte	--	1984-94	1984-94	--	--	--	--	--	--
12323200	Blacktail Creek near Butte	14.7	1984-88	1984-88	--	--	--	--	--	--
12323220	Basin Creek near Butte	37.6	1984-86	--	--	--	--	--	--	--
12323230	Blacktail Creek at Harrison Avenue, at Butte	--	--	--	--	--	--	1993-95, 1997-2003	1993-95, 1997-2003	--
12323240	**Blacktail Creek at Butte**	95.4	**1988-P**	**1989-P**	--	--	--	--	--	--
12323248	Silver Bow Creek above wastewater plant outflow, at Butte	--	1999-2002	2000-2002	--	--	--	--	--	--
12323250	**Silver Bow Creek below Blacktail Creek, at Butte**	103	**1984-P**	**1984-P**	--	--	--	**1993-95, 1997-P**	**1993-95, 1997-P**	--
12323300	Smith Gulch near Silver Bow	4.36	--	1959-2002	--	--	--	--	--	--
12323500	German Gulch Creek near Ramsay	40.6	1955-69	1955-69, 1975	--	--	--	--	--	--
12323600	**Silver Bow Creek at Opportunity**	363	**1988-P**	**1989-P**	--	--	1993-95	**1993-95, 1997-P**	**1993-95, 1997-P**	--
12323700	**Mill Creek at Opportunity**	43.2	**2003-P**	**2003-P**	--	--	--	**2003-P**	**2003-P**	--
12323720	**Willow Creek at Opportunity**	30.8	**2003-P**	**2003-P**	--	--	--	**2003-P**	**2003-P**	--
12323750	**Silver Bow Creek at Warm Springs**	473	**1972-79, 1994-P**	**1972-79, 1989, 1993-P**	--	--	1993-95	**1971, 1993-P**	**1993-P**	--
12323760	**Warm Springs Creek near Anaconda**	157	**1998-P**	**1998-P**	--	--	--	--	--	--
12323770	**Warm Springs Creek at Warm Springs**	163	**1984-P**	**1984-P**	--	**2000-P**	--	**1993-P**	**1993-P**	--
12323800	**Clark Fork near Galen**	651	**1988-P**	**1989-P**	--	1991-2002	--	**1971-74 1988-P**	**1988-P**	1971-74
12323850	**Lost Creek near Galen**	60.5	**2003-P**	**2003-P**	--	--	--	**2003-P**	**2003-P**	--
12324000	Racetrack Creek near Anaconda	39.5	1911-13	--	--	--	--	--	--	--
12324100	Racetrack Creek below Granite Creek, near Anaconda	39.5	1914-17, 1957-73	1958-73, 1975	--	--	--	--	--	--
12324200	**Clark Fork at Deer Lodge**	995	**1979-P**	**1979-P**	--	1979-83, 1992-98, 2001-2002	**1985-P**	**1963, 1969-71, 1985-P**	**1985-P**	1969-71
12324250	Cottonwood Creek at Deer Lodge	45.4	--	1964, 1975-91	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12324300	Clark Fork near Garrison	1,139	1961-62	--	--	--	--	--	--	--
12324590	**Little Blackfoot River near Garrison**	407	**1973-P**	**1973-P**	--	2000-03	--	**1963, 1985-2004**	**1985-2004**	--
12324600	Clark Fork at Garrison	1,550	--	--	--	--	--	1963, 1969-71	--	1970-71
12324660	Gold Creek at Goldcreek	64.1	1964-66	--	--	--	--	--	--	--
12324680	**Clark Fork at Goldcreek**	1,704	**1978-P**	**1978-P**	--	1992-98	--	**1992-P**	**1993-P**	--
12324700	Clark Fork tributary near Drummond	4.61	--	1958-95	--	--	--	--	--	--
12324800	Morris Creek near Drummond	12.6	--	1960-74, 1980	--	--	--	--	--	--
12325000	Georgetown Lake near Philipsburg	50.1	1939-97	--	--	--	--	--	--	--
12325500	**Flint Creek near Southern Cross**	52.6	**1940-98, 2000-P**	1941-98	--	--	--	--	--	--
12326000	Trout Creek above main canal, near Philipsburg	4.09	1946-49	--	--	--	--	--	--	--
12326500	Trout Creek near Southern Cross	36.1	1946-51	--	--	--	--	--	--	--
12327000	Trout Creek near Philipsburg	34.9	1939-43, 1945-46	--	--	--	--	--	--	--
12327090	Flint Creek above Fred Burr Creek, near Philipsburg	108	1994-98	1994-98	--	--	--	--	--	--
12327100	Fred Burr Creek near Philipsburg	15.7	1994-96	1994-96	--	--	--	--	--	--
12327500	Marshall Creek near Philipsburg	22.8	1942-43	--	--	--	--	--	--	--
12328000	Marshall Creek at mouth, near Philipsburg	23.2	1939-42	--	--	--	--	--	--	--
12328500	Flint Creek near Philipsburg	192	1939-41	--	--	--	--	1972-73	--	1972-73
12329000	Flint Creek above Maxville siding, at Maxville	207	1939-41	--	--	--	--	--	--	--
12329500	**Flint Creek at Maxville**	208	**1941-P**	**1942-P**	--	--	--	--	--	--
12330000	**Boulder Creek at Maxville**	71.3	**1939-P**	**1940-P**	--	--	--	--	--	--
12330100	Flint Creek below Boulder Creek, near Maxville	--	--	--	--	--	--	1971	--	--
12330500	Flint Creek near Maxville	325	1946-49	--	--	--	--	--	--	--
12331000	Flint Creek near Hall	325	1939	--	--	--	--	--	--	--
12331100	Flint Creek below Douglas Creek, near Hall	339	1994-98	1995-98	--	--	--	--	--	--
12331500	**Flint Creek near Drummond**	490	**1990-2004**	**1991-2004**	--	--	--	**1972-73, 1985-2004**	**1985-2004**	1972-73
12331600	Clark Fork at Drummond	2,378	1967-68, 1973-83	1967, 1973-83	--	--	--	1971-74	--	1971-74
12331700	Edwards Gulch at Drummond	4.69	--	1960-62, 1974-91, 1996-2002	--	--	--	--	--	--
12331800	**Clark Fork near Drummond**	2,501	**1993-P**	**1993-P**	--	--	--	**1993-P**	**1993-P**	--
12331900	Clark Fork near Clinton	2,629	1979-90, 1992-94	1980-90, 1992-94	--	--	--	1963	--	--
12332000	**Middle Fork Rock Creek near Philipsburg**	123	**1937-P**	**1938-P**	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12332500	East Fork Rock Creek Reservoir near Philipsburg	30.3	1939-95	--	--	--	--	--	--	--
12333000	East Fork Rock Creek near Philipsburg	30.3	1935-43	--	--	--	--	--	--	--
12333500	Rock Creek near Quigley	749	1922-27	1922	--	--	--	--	--	--
12334000	Ranch Creek near Quigley	42.7	1922-27	1922-27	--	--	--	--	--	--
12334500	Rock Creek below Ranch Creek, near Quigley	794	1911-12	--	--	--	--	--	--	--
12334510	**Rock Creek near Clinton**	885	**1972-P**	**1972-P**	--	1979-83, 1995-2002	--	**1985-2004**	**1985-2004**	--
12334550	**Clark Fork at Turah Bridge, near Bonner**	3,641	**1985-P**	**1986-P**	--	1992-98	**1985-P**	**1985-P**	**1985-P**	--
12334600	Blackfoot River near Lincoln	15.1	1969-70	1969-70, 1975	--	--	--	1969-70	--	--
12334620	Blackfoot River below First Gulch, near Lincoln	25.9	--	--	--	--	--	1995-97	1995-97	--
12334650	**Blackfoot River below Alice Creek, near Lincoln**	96.9	1971-75	1971-75	--	--	--	**1971-74, 1995-97, 2004**	**1971-73, 1995-97, 2004**	1973
12334680	**Landers Fork near Lincoln**	130	--	--	--	--	--	**1995-97, 2004**	**1995-97, 2004**	--
12334700	Blackfoot River below Seven-up Pete Creek, near Lincoln	255	--	--	--	--	--	1973, 1995-97	1995-97	1973, 1995-97
12334800	**Blackfoot River at Dalton Mountain Road bridge, near Lincoln**	399	--	--	--	--	--	**1973, 1995-97, 2004**	**1995-97, 2004**	1973, 1995-97
12334900	Blackfoot River at Blackfoot Canyon Campground, near Lincoln	437	--	--	--	--	--	1973	--	1973 1995-97
12335000	Blackfoot River near Helmville	481	1940-54	1941-53, 1964, 1974-75	--	--	--	--	--	--
12335100	**Blackfoot River above Nevada Creek, near Helmville**	494	**2000-P**	--	--	2000-2002	--	**1995-97 2003-P**	**1995-97 2003-P**	--
12335500	**Nevada Creek above reservoir, near Helmville**	116	**1939-P**	**1940-P**	--	--	--	**1980, 2003-P**	**1980,1994-2000, 2003-P**	--
12336000	Nevada Creek near Finn	144	1934-39	--	--	--	--	--	--	--
12336500	Nevada Lake near Finn	142	1939-95	--	--	-	--	--	--	--
12336600	**Nevada Creek below reservoir, near Helmville**	143	--	--	--	--	--	**2004**	**2004**	--
12337000	Nevada Creek near Helmville	165	1946-49	--	--	--	--	--	--	--
12337500	Douglas Creek near Helmville	84.8	1946-47	--	--	--	--	--	--	--
12337800	**Nevada Creek at mouth, near Helmville**	308	**2002-P**	--	--	--	--	**2002-P**	**2002-P**	--
12337820	**Blackfoot River at Raymond Bridge, near Ovando**	--	--	--	--	--	--	**2004**	**2004**	--
12338000	North Fork Blackfoot River near Ovando	228	1921-23	--	--	--	--	--	--	--
12338100	Rock Creek above Salmon Creek, near Ovando	7.60	1998	1998	--	--	--	--	--	--
12338300	**North Fork Blackfoot River above Dry Gulch, near Ovando**	314	**1998-P**	**1998-P**	--	2001-2002	--	**1995-97, 2004**	**1995-97, 2004**	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12338500	Blackfoot River near Ovando	1,274	1940-63	1941-64, 1975	--	--	--	--	--	--
12338540	Monture Creek above Dunham Creek, near Ovando	64.7	--	1978-91	--	--	--	--	--	--
12338550	Dunham Creek at mouth, near Ovando	31.7	--	1978-91	--	--	--	--	--	--
12338600	Monture Creek at Forest Service boundary, near Ovando	105	--	1964, 1974-91	--	--	--	--	--	--
12338690	**Monture Creek near Ovando**	140	1973-83	1974-83	--	--	--	**2004**	**2004**	--
12338700	**Blackfoot River at Scotty Brown Bridge, near Ovando**	1,428	--	--	--	--	--	**1995-97, 2004**	**1995-97, 2004**	1995-97
12339000	Blackfoot River at Clearwater	1,550	1921-23	--	--	--	--	--	--	--
12339300	Deer Creek near Seeley Lake	19.8	--	1974-91	--	--	--	--	--	--
12339450	Clearwater River near Clearwater	345	1975-92	1975-92, 1997	--	--	--	1995-97	1995-97	--
12339500	**Clearwater River at Clearwater**	391	1921-23	--	--	--	--	**2004**	**2004**	--
12339800	Blackfoot River near Potomac	2,046	1957-65	1957-65	--	--	--	--	--	--
12339900	West Twin Creek near Bonner	7.33	--	1959-91	--	--	--	--	--	--
12340000	**Blackfoot River near Bonner**	2,290	**1898-99, 1901, 1903-05 1939-P**	**1899-1901, 1903-05, 1940-P**	--	**2000-P**	1986-95	**1963, 1985-P**	**1985-P**	--
12340200	Marshall Creek near Missoula	5.63	--	1959-73, 1980	--	--	--	--	--	--
12340500	**Clark Fork above Missoula**	5,999	**1929-P**	**1908, 1930-P**	--	1977-83	**1986-P**	**1969-71 1986-P**	**1986-P**	1969-71
12341000	Rattlesnake Creek at Missoula	79.7	1899-1901, 1958-67	1899,1948, 1958-59, 1961-64, 1966-67	--	--	--	--	--	--
12341500	Clark Fork at Missoula	6,084	1898-1907	1899-1907	--	--	--	1963	--	--
12342000	Painted Rocks Lake near Conner	317	1940-95	--	--	--	--	--	--	--
12342500	**West Fork Bitterroot River near Conner**	317	**1941-P**	**1941-P**	--	--	--	2001-2003	2001-2003	--
12342950	Trapper Creek near Conner	28.5	--	1974-91	--	--	--	--	--	--
12343000	**West Fork Bitterroot River near Darby**	552	1910-17	1911-17	--	--	--	**2004**	**2004**	--
12343300	**Laird Creek near Sula**	9.3	--	**2001-P**	--	--	--	--	--	--
12343400	**East Fork Bitterroot River near Conner**	381	**1956-72 2001-2004**	**1956-72 2001-2004**	--	--	--	**2001-2004**	**2001-2004**	--
12343500	East Fork Bitterroot River at Conner	405	1910-16, 1937-57	1937-57	--	--	--	--	--	--
12344000	**Bitterroot River near Darby**	1,049	**1937-P**	**1938-P**	--	**2001-P**	--	**1956, 1997-98 2001-P**	**1997-98 2001-P**	--
12344300	Burke Gulch near Darby	6.50	--	1958-82, 2001-03	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
	Part 12--Pend Oreille River Basin--Continued									
12344500	Lake Como near Darby	54.6	1939-99	--	--	--	--	1956	--	--
12345000	Rock Creek near Darby	55.4	1946-53, 1957-59	1948-53, 1958-59	--	--	--	--	--	--
12345500	Rock Creek Canal near Darby	--	1946, 1948-53	--	--	--	--	--	--	--
12345800	Camas Creek near Hamilton	5.05	--	1958-73	--	--	--	--	--	--
12345850	Sleeping Child Creek near Hamilton	65.2	1973-77	1972-91	--	--	--	1956	--	--
12346000	Bitterroot River near Grantsdale	1,414	1902-07	--	--	--	--	--	--	--
12346500	Skalkaho Creek near Hamilton	87.8	1949-53, 1957-79, 2001-03	1948-54, 1958-79, 2001-03	--	--	--	1956,1980, 2001-03	1980, 2001-03	--
12347000	Skalkaho Creek at Brennan's ranch, near Hamilton	96.2	1920-24	1920-24, 1948	--	--	--	--	--	--
12347360	Bitterroot River at Hamilton	--	--	--	--	--	--	1997-98	1997-98	--
12347500	Blodgett Creek near Corvallis	25.9	1947-69	1947-69, 1972	--	--	--	1956	--	--
12348000	Blodgett Creek near Hamilton	28.3	1938-43	1938-43	--	--	--	--	--	--
12348200	Bitterroot River near Corvallis	1,711	1959-63	--	--	--	--	--	--	--
12348500	Willow Creek near Corvallis	21.9	1920-24, 1957-66	1920-22, 1958-73	--	--	--	1956	--	--
12349000	Willow Creek at Anfinson Ranch, near Corvallis	23.2	1938-43	1938-43	--	--	--	--	--	--
12349500	Fred Burr Creek near Victor	17.7	1947-51	--	--	--	--	--	--	--
12350000	Bear Creek near Victor	26.8	1938-55, 1957-59	1938-54, 1958-59	--	--	--	1956	--	--
12350200	Gash Creek near Victor	3.37	--	1958-73	--	--	--	--	--	--
12350250	**Bitterroot River at Bell Crossing, near Victor**	1,963	**1987-P**	**1987-P**	--	--	--	1997-98	1997-98	--
12350300	Big Creek near Victor	--	--	--	--	--	--	1956	--	--
12350500	Kootenai Creek near Stevensville	28.9	1949-53, 1957-63	1948-53, 1958-73	--	--	--	1956	--	--
12351000	Burnt Fork Bitterroot River near Stevensville	73.2	1920, 1922-24, 1938-62	1920, 1922-24, 1938-73	--	--	--	1956	1965	--
12351200	**Bitterroot River near Florence**	2,354	**1957-66 2003-2004**	**1958-66, 1974,1982 2003-2004**	--	--	--	**1956, 1997-98, 2004**	**1997-98, 2004**	--
12351400	Eightmile Creek near Florence	19.5	1957-63	1958-73	--	--	--	1956	--	--
12351500	Lolo Creek near Lolo	231	1911-15	--	--	--	--	--	--	--
12352000	Lolo Creek above Sleeman Creek, near Lolo	250	1951-60	1951-60, 1972,1974	--	--	--	--	--	--
12352200	Hays Creek near Missoula	4.16	--	1959-66, 1968-74, 1980	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12352500	**Bitterroot River near Missoula**	2,814	**1898-1901, 1903-04, 1989-P**	**1899-1901, 1903-04, 1990-P**	--	**2000-P**	--	**1997-P**	**1997-P**	--
12352980	Bitterroot River at Maclay bridge, near Missoula	2,850	--	--	--	--	--	1970-73	--	1970-73
12353000	**Clark Fork below Missoula**	9,003	**1929-P**	**1930-P**	--	1977-82	--	1979-95	1979-95	1979-95
12353250	Ninemile Creek near Alberton	50.2	--	1972, 1974-82	--	--	--	--	--	--
12353280	Ninemile Creek near Huson	170	1973-83	1974-83	--	--	--	--	--	--
12353300	Clark Fork near Alberton	9,272	1959-63	--	--	--	--	1969-71	--	1970-71
12353400	Negro Gulch near Alberton	8.02	--	1959-73, 1984-91	--	--	--	--	--	--
12353450	Fish Creek below West Fork, near Tarkio	242	--	--	--	1985-91	--	--	--	--
12353500	Clark Fork at Tarkio	9,882	1945-49	--	--	--	--	--	--	--
12353650	Clark Fork at Superior	10,210	--	--	--	1985-91	--	--	--	--
12353800	Thompson Creek near Superior	12.2	--	1961-79, 1982	--	--	--	--	--	--
12353820	Dry Creek near Superior	46.3	1982-86	1982-91	--	--	--	--	--	--
12353850	East Fork Timber Creek near Haugan	2.72	--	1961-75, 1979	--	--	--	--	--	--
12353900	St. Regis River tributary near St. Regis	1.16	1959-61	--	--	--	--	--	--	--
12354000	**St. Regis River near St. Regis**	303	**1910-17, 1958-75, 2002-P**	**1911-17, 1934,1948, 1954, 1959-75, 2002-P**	--	1985-91	--	--	--	--
12354100	North Fork Little Joe Creek near St. Regis	14.7	--	1960-74	--	--	--	--	--	--
12354500	**Clark Fork at St. Regis**	10,709	**1910-P**	**1911-23, 1929-P**	--	2002	--	1999-2003	--	--
12354700	Clark Fork near Paradise	10,794	--	--	--	1985-91	--	--	--	--
12355000	**Flathead River at Flathead, British Columbia**	427	**1929-95, 1999-P**	**1929-94, 2000-P**	--	1975-91	1975-79, 1985-91,	**1949-50, 1965,1970, 1975-93, 1999-P**	**1965,1970, 1975-93 1999-P**	1970, 1975-93
12355100	Starvation Creek near Flathead, British Columbia	16.4	1986-87	1986-87	--	--	--	--	--	--
12355150	Tuchuck Creek near Flathead, British Columbia	10.1	1986-88	1986-88	--	--	--	--	--	--
12355350	Big Creek at Big Creek Ranger Station, near Columbia Falls	82.1	--	1964, 1973-91	--	--	--	1980	1980	--
12355500	**North Fork Flathead River near Columbia Falls**	1,548	**1910-17, 1929-P**	**1911-17, 1929-P**	1976-79	**1976-P**	1976-79	1950,1970, 1976-79 1999-2003	1976-79, 1999-2003	1970, 1976-79
12355600	Middle Fork Flathead River at Schafer Ranger Station, near Essex	--	--	--	--	--	--	1970	--	1970

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12355700	Middle Fork Flathead River near Essex	408	1957-61	1942-43, 1945-53, 1956-61, 1964	--	--	--	--	--	--
12355900	Middle Fork Flathead River above Bear Creek, near Essex	--	--	--	--	--	--	1970	--	1970
12356000	Skyland Creek near Essex	8.09	1946-52	1946-52, 1954, 1959-75	--	--	--	--	--	--
12356500	Bear Creek near Essex	20.4	1946-52	1946-52, 1964, 1975-91	--	--	--	--	--	--
12357000	Middle Fork Flathead River at Essex	510	1940-53, 1956-64	1940-54, 1956-64	--	--	--	--	--	--
12357300	Moccasin Creek near West Glacier	2.38	--	1959-75	--	--	--	--	--	--
12357400	Middle Fork Flathead River tributary at West Glacier	0.14	--	1960-74	--	--	--	--	--	--
12357500	Middle Fork Flathead River at West Glacier	943	1911-23, 1929-33, 1943-48	1911-23, 1929-33, 1944-48	--	--	--	--	--	--
12358000	McDonald Creek at Apgar	175	1912-14	--	--	--	--	--	--	--
12358500	**Middle Fork Flathead River near West Glacier**	1,128	**1939-P**	**1940-P**	--	--	--	1949-50, 1970, 1998-2003	1999-2003	1970
12358900	South Fork Flathead River above Harrison Creek, near Swan Lake	--	--	--	--	--	--	1970	--	1970
12359000	South Fork Flathead River at Spotted Bear Ranger Station, near Hungry Horse	958	1948-57, 1959-67	1948-57, 1960-67	--	--	--	--	--	--
12359500	Spotted Bear River near Hungry Horse	184	1949-56	1948-56, 1964	--	--	--	--	--	--
12359800	**South Fork Flathead River above Twin Creek, near Hungry Horse**	1,160	**1964-82, 1985-P**	**1964-82, 1985-P**	--	--	--	1970	--	1970
12360000	Twin Creek near Hungry Horse	47.0	1948-56, 1965-67	1948-56, 1964-67	--	--	--	--	--	--
12360500	Lower Twin Creek near Hungry Horse	22.4	1948-56	1948-56	--	--	--	--	--	--
12360600	Soldier Creek near Hungry Horse	4.77	1965-67	1965-66	--	--	--	--	--	--
12361000	Sullivan Creek near Hungry Horse	71.3	1948-56, 1959-76	1948-56, 1960-76	--	--	--	--	--	--
12361500	Graves Creek near Hungry Horse	27.0	1948-56, 1965-67	1948-56, 1964-67	--	--	--	--	--	--
12361600	Canyon Creek near Hungry Horse	5.8	1965-67	1965-66	--	--	--	--	--	--
12361700	Goldie Creek near Hungry Horse	3.29	1965-67	1966	--	--	--	--	--	--
12361880	Wounded Buck Creek near Hungry Horse	13.6	1965-67	1965-66	--	--	--	--	--	--
12361950	Hungry Horse Creek near Hungry Horse	23.3	1969-72	1970	--	--	--	--	--	--
12361960	Emery Creek near Hungry Horse	26.4	1965-67	1965-66	--	--	--	--	--	--
12362000	**Hungry Horse Reservoir near Hungry Horse**	1,654	**1951-P**	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12362500	**South Fork Flathead River near Columbia Falls**	1,663	**1910-16, 1923-P**	**1911-P**	--	**1964-68, 1979-P**	--	1949-50	--	--
12363000	**Flathead River at Columbia Falls**	4,464	**1922-23, 1928-P**	**1894, 1922-23, 1928-P**	1996-67, 1979-81	**1949-50, 1963-67, 1979-P**	1965-67	**1949-50, 1963-67, 1970, 1979-94 2002-P**	**1965,1967, 1979-94 2002-P**	1979-94
12363500	Flathead River near Kalispell	4,500	--	--	--	--	1968-69	--	1968	--
12363900	Rock Creek near Olney	3.61	--	1961-75	--	--	--	--	--	--
12363920	Stillwater River at Olney	146	1973-82	1973-82	--	--	--	--	--	--
12364000	Logan Creek at Tally Lake, near Whitefish	183	1931-34, 1936-42, 1945-47	1936-42, 1945-47	--	--	--	--	--	--
12364500	Logan Creek near Whitefish	199	1931	--	--	--	--	--	--	--
12365000	**Stillwater River near Whitefish**	524	**1930-50, 1972-P**	**1931-50, 1964, 1973-P**	--	--	--	--	--	--
12365500	Stillwater River near Kalispell	338	1907,1922, 1928-31	--	--	--	--	--	--	--
12365800	Swift Creek near Whitefish	78.0	1973-81	1973-81	--	--	--	--	--	--
12366000	**Whitefish River near Kalispell**	170	**1928-50, 1972-P**	**1929-50, 1964, 1973-P**	--	--	--	1999-2003	1999-2003	--
12366100	Trumbull Creek near Columbia Falls	9.0	--	1997-2002	--	--	--	--	--	--
12367000	Ashley Creek near Kila	44.2	1916	--	--	--	--	--	--	--
12367500	Ashley Creek near Kalispell	201	1931-50, 1972-74	1931-32, 1935-50, 1973-74	--	--	---	1969-70	--	1969-70
12367800	Ashley Creek below Kalispell	--	--	--	--	--	--	1969-70	--	1969-70
12368500	Flathead River at Therriault ferry, near Kalispell	--	1934-45	--	--	--	--	--	--	--
12369000	Flathead River near Bigfork	6,300	1909-12, 1928-37, 1939-45	--	--	--	--	--	--	1969-71
12369200	Swan River near Condon	69.1	1973-92	1973-92	--	--	--	--	--	--
12369250	Holland Creek near Condon	22.3	--	1974-91	--	--	--	--	--	--
12369650	North Fork Lost Creek near Swan Lake	13.0	--	1982-91	--	--	--	--	--	--
12370000	**Swan River near Bigfork**	671	**1910-11, 1922-P**	**1922-P**	--	2000-2003	--	1999-2003	1999-2003	--
12370500	Dayton Creek near Proctor	18.5	--	1959-91	--	--	--	--	--	--
12370900	Teepee Creek near Polson	2.18	1983-87	1960-74, 1980, 1983-87	--	--	--	1983-85	1983-85	--
12371000	**Turtle Lake near Polson**	--	**1939-P**	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12371100	Hell Roaring Creek near Polson	6.22	1917-32	1917-32, 1948, 1959-67, 1980	--	--	--	--	--	--
12371500	Flathead Lake at Somers	7,086	1900, 1908-98	--	--	--	--	--	--	--
12371550	**Flathead Lake at Polson**	7,086	**1999-P**	--	--	--	--	1969-71	--	1969-71
12372000	**Flathead River near Polson**	7,096	**1907-P**	**1894, 1908-P**	--	1977-83	--	--	--	--
12372500	**Little Bitterroot Lake near Marion**	31.8	**1939-P**	--	--	--	--	--	--	--
12373000	Little Bitterroot River near Marion	31.8	1910-16	--	--	--	--	--	--	--
12373500	**Hubbart Reservoir near Niarada**	114	**1939-P**	--	--	--	--	--	--	--
12374000	Little Bitterroot River near Hubbart	134	1909-16	--	--	--	--	--	--	--
12374250	**Mill Creek above Bassoo Creek, near Niarada**	19.6	**1983-P**	**1983-P**	--	--	--	1983-85	1983-85	--
12374300	Mill Creek near Niarada	28.2	--	1959-73	--	--	--	--	--	--
12374500	Little Bitterroot River near Niarada	223	1908-10, 1916-17	--	--	--	--	--	--	--
12374800	Cromwell Creek near Niarada	14.3	1983-89	1983-89	--	--	--	1983-85	1983-85	--
12374900	Garden Creek near Hot Springs	3.57	--	1959-73	--	--	--	--	--	--
12375000	**Upper Dry Fork Reservoir near Lonepine**	8.53	**1940-P**	--	--	--	--	--	--	--
12375500	**Dry Fork Reservoir near Lonepine**	17.8	**1939-P**	--	--	--	--	--	--	--
12375800	Little Bitterroot River near Perma	--	--	--	--	--	--	1987-92	1987-92	--
12375900	**South Crow Creek near Ronan**	7.57	**1982-P**	**1983-P**	--	--	--	1983-85	1983-85	--
12376000	Crow Creek near Ronan	46.1	1906-17	1907-11, 1913-17	--	--	--	--	--	--
12376500	Mud Creek near Ronan	30.4	1908-11	--	--	--	--	--	--	--
12376700	**Lower Crow Reservoir near Charlo**	--	**1939-P**	--	--	--	--	--	--	--
12376900	Crow Creek at mouth, near Ronan	--	--	--	--	--	--	1987-92	1987-92	--
12377000	Crow Creek at Lozeaus ranch, near Ronan	139	1911-16	--	--	--	--	--	--	--
12377150	**Mission Creek above reservoir, near St. Ignatius**	12.4	**1982-P**	**1982-P**	--	--	--	1983-85	1983-86	--
12377200	**Mission Reservoir near St. Ignatius**	--	**1939-P**	--	--	--	--	--	--	--
12377300	**St. Mary's Lake near St. Ignatius**	--	**1939-P**	--	--	--	--	--	--	--
12377500	Dry Creek near St. Ignatius	24.7	1908-16	1909-16	--	--	--	--	--	--
12377900	**Pablo Reservoir near Polson**	--	**1939-P**	--	--	--	--	--	--	--
12378000	Mission Creek near St. Ignatius	74.8	1906-17	1907-17	--	--	--	--	--	--
12378200	**McDonald Reservoir near Charlo**	--	**1939-P**	--	--	--	--	--	--	--
12378300	**Kicking Horse Reservoir near Charlo**	--	**1939-P**	--	--	--	--	--	--	--
12378400	**Ninepipe Reservoir near Charlo**	--	**1939-P**	--	--	--	--	--	--	--
12378500	Post Creek at Fitzpatrick's ranch, near Ronan	28.4	1906-11	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12379000	Post Creek at Deschamp's ranch, near Ronan	29.7	1911	--	--	--	--	--	--	--
12379500	Post Creek near St. Ignatius	47.6	1911-17	--	--	--	--	--	--	--
12379600	Mission Creek at National Bison Range, at Moiese	236	--	--	--	--	--	1987-92	1987-92	--
12380000	**Upper Jocko Lake near Arlee**	2.99	**1968-P**	--	--	--	--	--	--	--
12380500	**Lower Jocko Lake near Arlee**	7.39	**1939-P**	--	--	--	--	--	--	--
12381000	Jocko River above South Fork, near Jocko	14.9	1912-16	--	--	--	--	--	--	--
12381400	**South Fork Jocko River near Arlee**	56.0	**1982-P**	**1983-P**	--	--	--	1983-86	1983-86	
12381500	Jocko River below South Fork, near Jocko	72.3	1912-16	--	--	--	--	--	--	--
12382000	Middle Fork Jocko River near Jocko	19.5	1912-16	--	--	--	--	--	--	--
12382500	Falls Creek near Jocko	3.57	1912-16	--	--	--	--	--	--	--
12383000	Jocko River near Jocko	140	1918-19	--	--	--	--	--	--	--
12383500	**Big Knife Creek near Arlee**	6.88	**1910-16, 1983-P**	**1982-P**	--	--	--	1983-85	1983-85	--
12384000	Big Knife Creek near Jocko	7.44	1909-11	--	--	--	--	--	--	--
12384500	Jocko River below Big Knife Creek, near Jocko	154	1909-16	--	--	--	--	--	--	--
12386000	East Finley Creek near Jocko	5.48	1909-16	--	--	--	--	--	-	--
12386500	Indian Ditch near Jocko	--	1909-16	--	--	--	--	--	--	--
12387000	Finley Creek near Jocko	36.7	1909-16	--	--	--	--	--	--	--
12387100	Agency Creek near Jocko	4.00	1909-16	--	--	--	--	--	--	--
12387200	Blodgett Creek near Jocko	5.48	1909	--	--	--	--	--	--	--
12387450	**Valley Creek near Arlee**	15.3	**1983-P**	**1983-P**	--	--	--	1983-85	1983-85	--
12387500	Valley Creek near Ravalli	64.1	1909-10	--	--	--	--	--	--	--
12388000	Jocko River at Ravalli	348	1907-11	--	--	--	--	--	--	--
12388200	**Jocko River at Dixon**	380	**1990-P**	**1990-P**	--	--		1987-92	1987-92	--
12388400	**Revais Creek below West Fork, near Dixon**	23.4	**1983-P**	**1983-P**	--	--	--	1983-85, 1991-92	1983-85 1991-92	--
12388500	Revais Creek near Dixon	26.3	1911-19	1911-16, 1918-19	--	--	--	--	--	--
12388650	Camas Creek near Hot Springs	4.46	1983-87	1983-87	--	--	--	1983-85	1983-85	--
12388700	**Flathead River at Perma**	8,795	**1984-P**	**1984-P**	--	2000-2003	--	1971-73, 1984-92 1997-2003	1984-92, 1999-2003	1971-73
12389000	**Clark Fork near Plains**	19,958	**1910-P**	**1912-P**	--	--	--	1969-70	--	1969-70
12389150	McGregor Creek tributary near Marion	2.55	--	1972-82	--	--	--	--	--	--
12389200	Thompson River near Marion	104	--	--	--	--	--	1975-76	1975-76	1975-76
12389300	Thompson River above Little Thompson River, near Thompson Falls	321	--	--	--	--	--	1975-76	1975-76	1975-76
12389400	Little Thompson River near Thompson Falls	129	--	--	--	--	--	1975-76	1975-76	1975-76
12389450	West Fork Thompson River near Thompson Falls	35.7	--	--	--	--	--	1975-76	1975-76	1975-76

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12389500	**Thompson River near Thompson Falls**	642	**1911-16, 1956-P**	**1948, 1956-P**	--	--	--	1975-76	1975-76	1975-76
12390000	**Thompson Falls Reservoir at Thompson Falls**	20,968	**1939-P**	--	--	--	--	--	--	--
12390500	Prospect Creek near Thompson Falls	145	1911	--	--	--	--	--	--	--
12390700	**Prospect Creek at Thompson Falls**	182	**1956-P**	**1956-P**	--	--	--	--	--	--
12391000	Clark Fork at Thompson Falls	21,113	1952-59	1952-59	--	--	--	1963, 1969-73	--	1970-73
12391100	White Pine Creek near Trout Creek	8.75	--	1974-84	--	--	--	--	--	--
12391200	Canyon Creek near Trout Creek	8.64	--	1972, 1974-91	--	--	--	--	--	--
12391300	**Noxon Rapids Reservoir near Noxon**	21,833	**1959-P**	--	--	--	--	--	--	--
12391400	**Clark Fork below Noxon Rapids Dam, near Noxon**	21,833	**1960-P**	**1960-P**	--	--	--	--	--	--
12391420	Rock Creek near Noxon	32	--	--	--	--	--	1998	1998	--
12391430	Skeleton Creek near Noxon	2.10	--	1973-84	--	--	--	--	--	--
12391500	Bull River near Heron	45.7	--	--	--	--	--	1971	--	--
12391525	Snake Creek near Noxon	3.11	--	1972-84	--	--	--	--	--	--
12391550	Bull River near Noxon	139	1973-82	1973-82	--	--	--	--	--	--

05014300 SWIFTCURRENT CREEK ABOVE SWIFTCURRENT LAKE, AT MANY GLACIER, MT

LOCATION.--Lat 48°47'43", long 113°40'45" (NAD 27), in NE$^1/_4$ sec.15, T.35 N., R.16 W., Glacier County, Hydrologic Unit 10010002, Glacier National Park, on left bank .7 mi upstream of inlet to Swiftcurrent Lake at Many Glacier, and 12 mi southwest of Babb.

DRAINAGE AREA.--14.5 mi^2.

PERIOD OF RECORD.--May 1, 2003 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 4,920 ft (NGVD 29).

REMARKS.--Seasonal records good. No regulation or diversion upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				53	111	155	205	42	61	30		
2				47	136	152	196	39	55	28		
3				44	284	170	170	39	51	26		
4				51	294	204	149	38	46	25		
5				64	245	252	131	37	41	23		
6				74	179	301	120	34	37	21		
7				86	151	280	141	43	36	22		
8				94	167	231	145	41	34	21		
9				83	172	176	116	35	31	22		
10				75	148	146	105	32	29	22		
11				74	132	176	104	30	32	21		
12				84	110	200	94	28	39	19		
13				107	95	186	87	27	49	20		
14				126	84	182	84	27	62	20		
15				114	79	157	92	27	87	24		
16				99	78	130	95	27	97	32		
17				82	83	127	93	29	95	43		
18				73	98	117	91	51	85	47		
19				67	128	113	91	44	76	44		
20				62	156	115	99	39	70	42		
21				60	164	121	87	70	63	43		
22				60	146	148	71	61	55	42		
23				68	124	165	60	79	50	40		
24				81	106	179	54	143	47	37		
25				86	97	179	50	243	44	31		
26				96	128	193	50	239	43	31		
27				137	200	173	50	158	41	30		
28				197	244	153	45	118	37	29		
29				159	250	158	42	98	34	28		
30				122	211	172	39	81	33	29		
31				---	174	---	40	69	---	30		
TOTAL				2,625	4,774	5,211	2,996	2,068	1,560	922		
MEAN				87.5	154	174	96.6	66.7	52.0	29.7		
MAX				197	294	301	205	243	97	47		
MIN				44	78	113	39	27	29	19		
AC-FT				5,210	9,470	10,340	5,940	4,100	3,090	1,830		

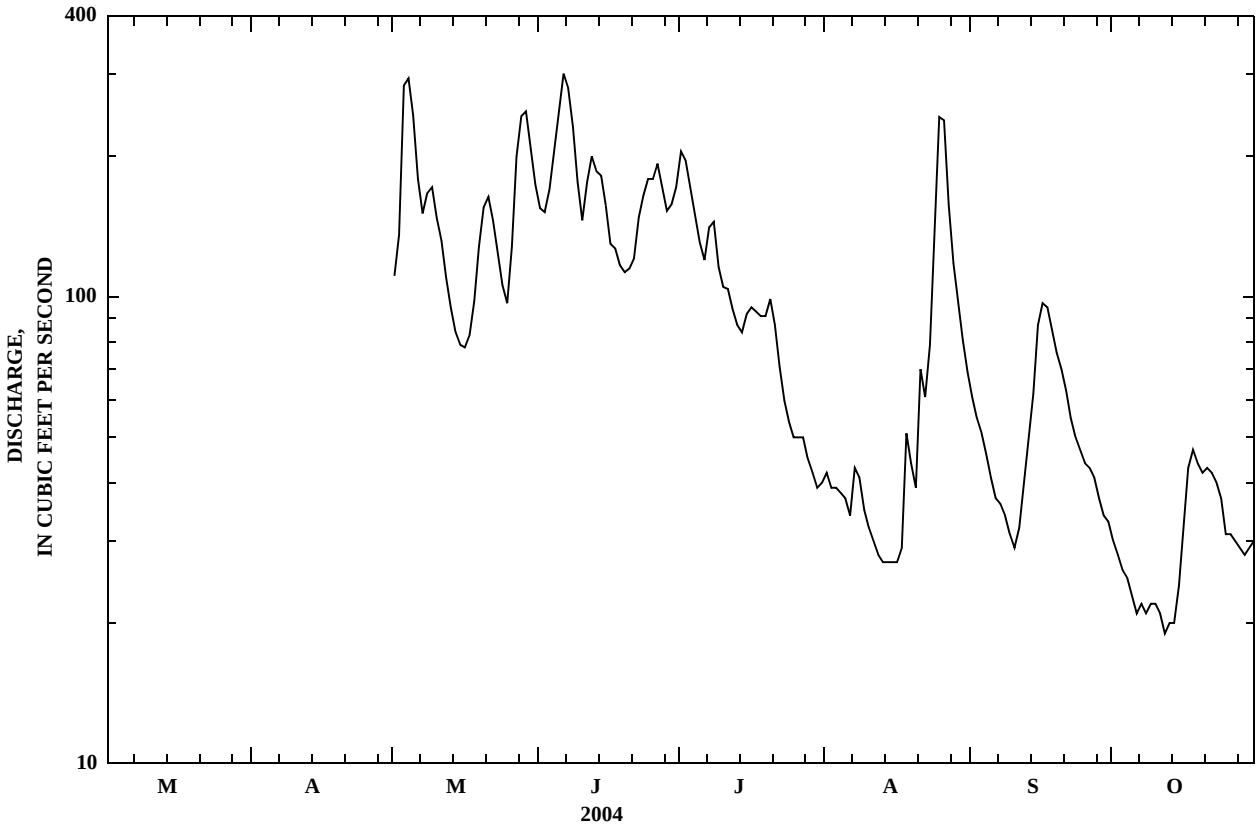
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 2003 - 2004

MEAN	87.5	164	185	82.5	44.7	31.5	23.1
MAX	87.5	175	196	96.6	66.7	52.0	29.7
(WY)	(2004)	(2003)	(2003)	(2004)	(2004)	(2004)	(2005)
MIN	87.5	154	174	68.5	22.6	10.9	16.5
(WY)	(2004)	(2004)	(2004)	(2003)	(2003)	(2003)	(2004)

SUMMARY STATISTICS	FOR 2004 SEASON		FOR SEASONS 2003 - 2004	
HIGHEST DAILY MEAN	301	Jun 6	700	May 26, 2003
LOWEST DAILY MEAN	19	Oct 12	6.6	Oct 8, 2003
MAXIMUM PEAK FLOW	346	May 3	a900	May 26, 2003
MAXIMUM PEAK STAGE	2.61	May 3	a3.76	May 26, 2003

a--About, from highwater mark.

05014300 SWIFTCURRENT CREEK ABOVE SWIFTCURRENT LAKE, AT MANY GLACIER, MT—Continued



05014500 SWIFTCURRENT CREEK AT MANY GLACIER, MT

LOCATION.--Lat 48°47'57", long 113°39'21" (NAD 27), in SE$^1/_4$ sec.11, T.35 N., R.16 W., Glacier County, Hydrologic Unit 10010002, Glacier National Park, on right bank 100 ft upstream from outlet of Swiftcurrent Lake at Many Glacier, and 11 mi southwest of Babb.

DRAINAGE AREA.--30.9 mi^2.

PERIOD OF RECORD.--June 1912 to current year (records incomplete most years prior to 1959). Published as "at McDermott Lake" 1912-14. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1508: 1918(M), 1943. WDR MT-75-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,876.78 ft (NGVD 29). Prior to May 23, 1916, nonrecording gage on left bank of lake opposite present gage and at present elevation, and May 23, 1916, to June 15, 1918, nonrecording gage at present site and elevation.

REMARKS.--Records good. No regulation or diversion upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	61	34	18	13	17	92	220	332	442	105	171
2	22	58	32	19	14	16	86	242	310	456	103	153
3	21	56	35	18	14	14	79	465	340	411	99	136
4	20	51	35	17	17	15	82	588	416	361	95	121
5	20	46	32	15	42	14	105	519	530	329	92	108
6	20	41	41	14	53	13	126	400	642	302	87	99
7	19	39	45	14	37	11	147	319	622	321	103	94
8	17	37	40	15	27	18	170	337	506	345	114	88
9	19	36	37	17	22	40	162	360	383	287	102	81
10	18	35	31	21	19	70	143	322	308	251	88	77
11	18	40	29	22	18	70	136	286	336	243	80	81
12	20	39	29	20	16	62	148	234	438	223	76	88
13	22	32	30	18	15	57	188	195	426	203	74	109
14	23	30	32	18	15	49	238	170	415	193	74	142
15	22	29	31	17	14	43	236	153	370	203	73	224
16	27	28	24	17	14	38	207	145	298	216	75	265
17	25	30	25	15	13	35	173	151	277	214	80	259
18	19	39	28	15	16	38	147	175	258	208	113	224
19	23	90	26	15	17	40	135	230	241	207	117	197
20	32	90	24	15	15	43	122	291	239	231	109	177
21	85	70	24	14	14	40	112	324	244	218	145	154
22	143	57	22	13	14	39	107	308	295	184	150	130
23	131	48	22	13	13	42	116	262	349	154	166	117
24	101	48	21	15	13	52	133	220	416	137	277	113
25	82	46	21	15	13	59	147	195	423	126	550	109
26	68	45	22	17	15	61	161	228	462	122	712	106
27	56	40	21	16	17	58	218	394	423	123	471	101
28	62	33	20	13	18	55	363	513	360	118	330	92
29	78	37	21	10	17	51	344	552	352	108	274	85
30	76	37	18	11	---	54	262	480	368	101	232	81
31	67	---	16	12	---	75	---	388	---	100	195	---
TOTAL	1,380	1,368	868	489	545	1,289	4,885	9,666	11,379	7,137	5,361	3,982
MEAN	44.5	45.6	28.0	15.8	18.8	41.6	163	312	379	230	173	133
MAX	143	90	45	22	53	75	363	588	642	456	712	265
MIN	17	28	16	10	13	11	79	145	239	100	73	77
AC-FT	2,740	2,710	1,720	970	1,080	2,560	9,690	19,170	22,570	14,160	10,630	7,900
CFSM	1.44	1.48	0.91	0.51	0.61	1.35	5.27	10.1	12.3	7.45	5.60	4.30
IN.	1.66	1.65	1.04	0.59	0.66	1.55	5.88	11.64	13.70	8.59	6.45	4.79

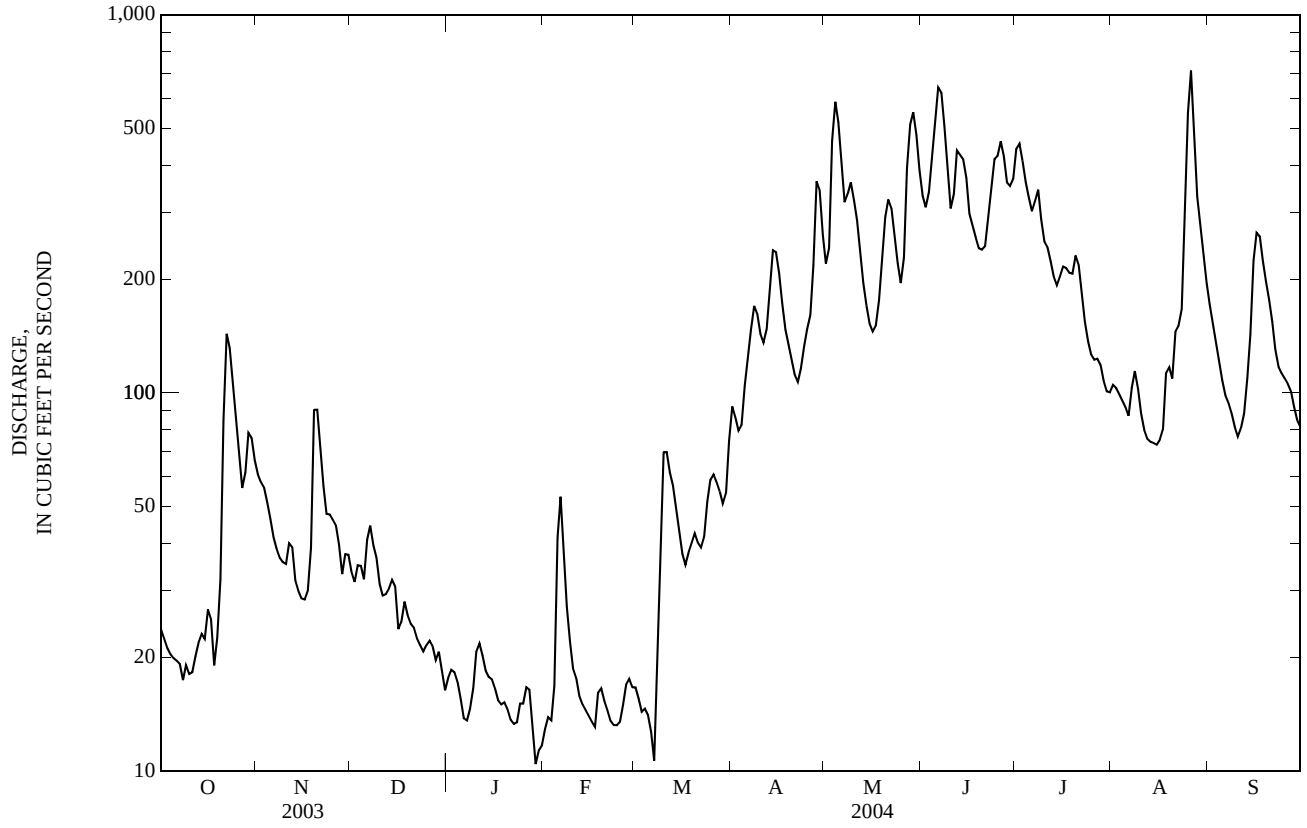
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2004, BY WATER YEAR (WY)*

MEAN	83.5	70.7	36.7	32.4	26.7	30.4	106	376	488	260	117	86.2
MAX	243	237	99.8	177	68.4	96.2	340	656	822	519	207	236
(WY)	(1948)	(2000)	(1981)	(1918)	(1995)	(1986)	(1934)	(1928)	(1975)	(1916)	(1916)	(1968)
MIN	19.5	13.0	13.6	10.1	6.93	9.71	16.9	205	193	114	57.4	32.5
(WY)	(1988)	(1988)	(1979)	(1979)	(1985)	(1975)	(1975)	(1955)	(1926)	(1944)	(1988)	(2001)

05014500 SWIFTCURRENT CREEK AT MANY GLACIER, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1912 - 2004**	
ANNUAL TOTAL	43,560		48,349			
ANNUAL MEAN	119		132		141	
HIGHEST ANNUAL MEAN					184	1991
LOWEST ANNUAL MEAN					86.4	2001
HIGHEST DAILY MEAN	1,120	May 26	712	Aug 26	4,130	Jun 8, 1964
LOWEST DAILY MEAN	16	Dec 31	10	Jan 29	a0.00	Nov 14, 1976
ANNUAL SEVEN-DAY MINIMUM	18	Jan 18	12	Jan 28	4.6	Nov 13, 1976
MAXIMUM PEAK FLOW			773	Aug 26	b6,700	Jun 8, 1964
MAXIMUM PEAK STAGE			3.98	Aug 26	c10.00	Jun 8, 1964
ANNUAL RUNOFF (AC-FT)	86,400		95,900		101,800	
ANNUAL RUNOFF (CFSM)	3.86		4.28		4.55	
ANNUAL RUNOFF (INCHES)	52.44		58.21		61.79	
10 PERCENT EXCEEDS	308		346		387	
50 PERCENT EXCEEDS	51		80		65	
90 PERCENT EXCEEDS	21		15		17	

*--Only for complete months of operation (records incomplete most years prior to 1959)
**--For complete water years only.
a--Result of pumping operations, Nov. 14-16, 1976.
b--From rating curve extended above 1,100 ft^3/s, on basis of flow over dam computation.
c--From floodmarks.



05015500 LAKE SHERBURNE AT SHERBURNE, MT
(International gaging station)

LOCATION.--Lat 48°49'42", long 113°31'16" (NAD 27), in SE¼SE¼SE¼ sec.35, T.36 N., R.15 W., Glacier County, Hydrologic Unit 10010002, Blackfeet Indian Reservation, in gatehouse at dam on Swiftcurrent Creek, 4.5 mi southwest of Babb.

DRAINAGE AREA.--64.1 mi^2.

PERIOD OF RECORD.--May 1915 to September 1923 (fragmentary), May 1924 to September 1925, November 1925 to June 1926 September 1926 to March 1936 (no winter records some years), May 1936 to September 1952 (monthend contents and daily elevations). October 1952 to current year (monthend contents only). Monthend contents for some periods, published in WSP 1308. Published as Sherburne Lake Reservoir at Sherburne 1915, 1917-28, 1931-52, and as Sherburne Lake Reservoir near Babb 1929-30.

REVISED RECORDS.--W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,709.45 ft (NGVD 29). Prior to May 7, 1931, nonrecording gage at present site, and May 8, 1931, to Sept. 30, 1974, water-stage recorder at present site, all at elevation 9.45 ft lower.

REMARKS.--Reservoir is formed on a natural lake by earthfill dam completed in 1921. Prior to 1919, flashboards on a temporary dam provided limited storage. Storage behind main dam began in l9l9. The following capacity figures are from capacity table effective Jan. 1, 1983; see previous reports for superseded figures. Usable capacity, 64,790 acre-ft between gage height 29.3 ft, 9.3 ft, above lowest outlet gage sill, and 88.00 ft, spillway crest. Streambed above gates prevents withdrawal of storage to sill elevation. Dead storage, 3,060 acre-ft below gage height, 29.30 ft. Figures given herein represent usable contents. Water is used for irrigation on Milk River project of Bureau of Reclamation. Bureau of Reclamation satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 65,480 acre-ft, June 30, 1986, gage height, 88.40 ft; no usable contents at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 50,740 acre-ft, July 28, gage height, 79.11 ft; minimum, 4,780 acre-ft, Oct. 1, gage height, 36.72 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, SEPTEMBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
September 30	36.72	4,780	--
October 31	37.18	5,120	+340
November 30	42.70	9,460	+4,340
December 31	45.66	12,000	+2,540
Calendar year 2003			+3,630
January 31	47.46	13,620	+1,620
February 29	49.03	15,080	+1,460
March 31	52.80	18,720	+3,640
April 30	39.69	7,030	-11,690
May 31	55.25	21,210	+14,180
June 30	70.40	38,570	+17,360
July 31	77.60	48,510	+9,940
August 31	61.22	27,670	-20,840
September 30	49.56	15,570	-12,100
Water year 2004	--	--	+10,790

05016000 SWIFTCURRENT CREEK AT SHERBURNE, MT

LOCATION.--Lat 48°49'49", long 113°30'59" (NAD 27), in NW¼SW¼SW¼ sec.36, T.36 N., R.15 W., Glacier County, Hydrologic Unit 10010002, Blackfeet Indian Reservation, on left bank 1,200 ft downstream from outlet of Lake Sherburne Dam at Sherburne and 4.2 mi southwest of Babb.

DRAINAGE AREA.--64.6 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1912 to November 1915 (no winter records), March 1916 to October 1923, May 1924 to September 1981 (no winter records), March 1984 to October 2004 (seasonal records only), (discontinued). Monthly discharge only for some periods, published in WSP 1308, 1728. Published as "at Sherburne Lake" 1912-14.

REVISED RECORDS.--WSP 1388: Drainage area. WSP 1508: 1935.

GAGE.--Water-stage recorder. Elevation of gage is 4,730.26 ft (NGVD 29). Prior to Aug. 10, 1920, nonrecording gages at two sites within 1,000 ft of present site at different elevations. Aug. 10, 1920, to May 17, 1921, nonrecording gage at present site and May 18, 1921, to Sept. 30, 1975, water-stage recorder at present site, all at elevation 9.45 ft lower.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated by Lake Sherburne (see preceding page). Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--7 years (1916-23), 199 ft^3/s, 144,200 acre-ft/yr, unadjusted.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e3.5	167	401	244	45	535	518	e1.0		
2			e3.5	405	400	246	44	533	514	e1.0		
3			e3.5	607	377	247	45	553	509	e1.0		
4			e3.4	631	296	249	45	569	506	e1.0		
5			e3.4	561	262	214	45	621	503	e1.0		
6			e3.4	462	207	162	45	604	500	e1.0		
7			e3.2	433	170	58	46	599	496	e1.0		
8			e3.2	429	172	42	46	596	518	e1.0		
9			e3.2	424	174	65	46	591	556	e1.0		
10			e3.2	421	148	106	46	614	559	e1.0		
11			e3.0	418	74	127	46	626	570	e1.0		
12			e3.0	430	33	153	46	621	564	e1.0		
13			e3.0	442	33	213	109	616	661	e1.0		
14			e3.0	440	33	288	146	610	863	e1.0		
15			e3.0	439	34	323	226	606	867	e1.0		
16			e3.0	466	34	323	280	601	810	e1.0		
17			e3.0	484	118	239	280	596	743	e1.0		
18			e3.0	478	304	240	280	591	596	e1.0		
19			e3.0	473	448	297	280	587	464	e1.0		
20			e3.0	465	503	330	280	581	311	e1.0		
21			e3.0	458	478	330	280	579	154	e1.0		
22			e3.0	450	411	377	96	574	64	e1.0		
23			e3.0	444	329	413	48	570	e3.0	e1.0		
24			e14	438	159	361	48	581	e2.0	e1.0		
25			24	429	36	250	48	650	e1.5	e1.0		
26			36	422	36	209	48	762	e1.0	e1.0		
27			22	406	144	184	48	799	e1.0	e1.0		
28			17	399	235	122	208	666	e1.0	e1.0		
29			e34	402	238	60	463	507	e1.0	e1.0		
30			93	404	241	45	538	448	e1.0	e1.0		
31			78	---	243	---	537	493	---	e1.0		
TOTAL			390.5	13,327	6,771	6,517	4,788	18,479	11,857.5	31.0		
MEAN			12.6	444	218	217	154	596	395	1.00		
MAX			93	631	503	413	538	799	867	1.0		
MIN			3.0	167	33	42	44	448	1.0	1.0		
AC-FT			775	26,430	13,430	12,930	9,500	36,650	23,520	61		

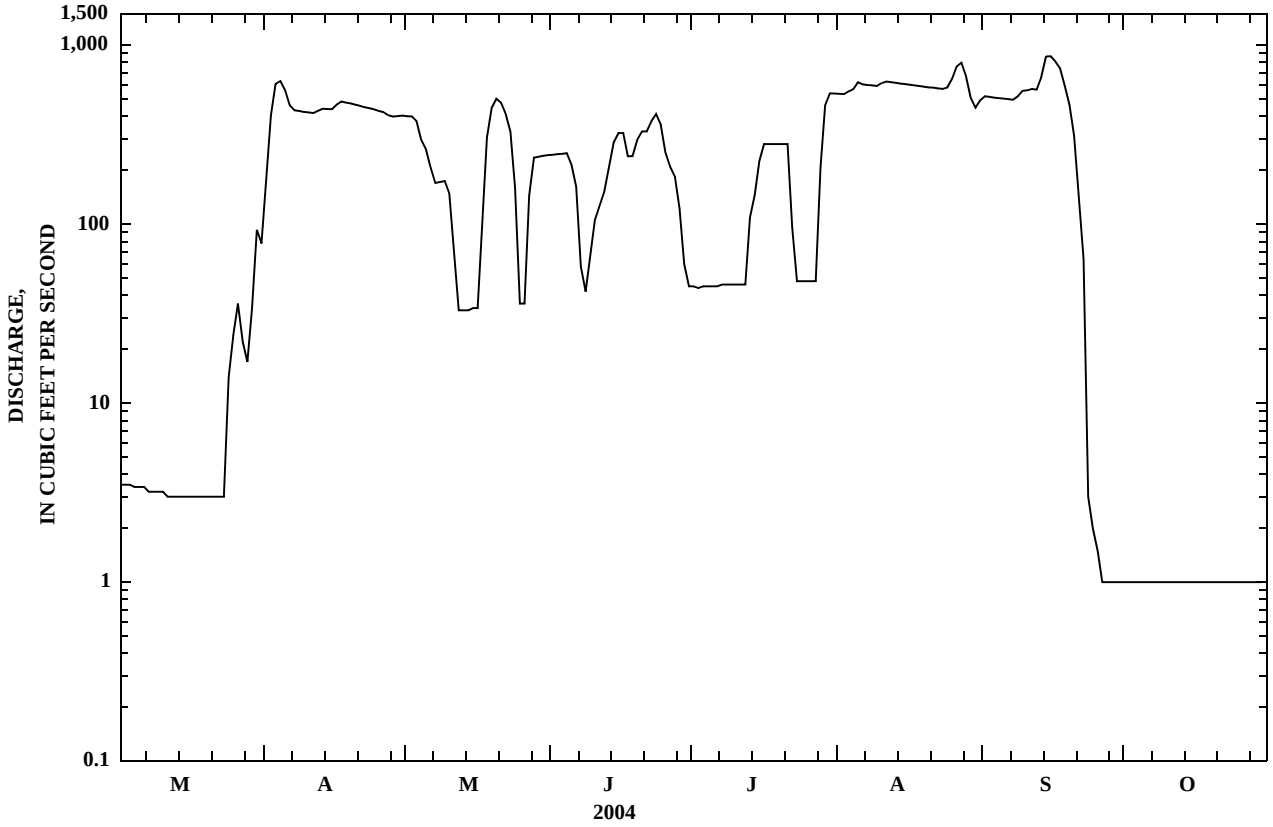
STATISTICS OF MONTHLY MEAN DATA FOR 1924 - 2004 SEASONS*

MEAN	76.6	224	353	371	431	527	362	97.0	a169	b86.1
MAX	407	644	1,033	973	970	756	792	477	495	172
(WY)	(1981)	(1963)	(1972)	(1975)	(1982)	(1937)	(1975)	(1951)	(2000)	(2000)
MIN	0.00	0.54	11.0	17.9	134	76.1	0.16	0.01	4.91	.048
(WY)	(1954)	(1967)	(1987)	(1963)	(1956)	(1988)	(1992)	(1975)	(2002)	(1966)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1924 - 2004*	
HIGHEST DAILY MEAN	867	Sep 15	2,340	Jun 12, 1964
LOWEST DAILY MEAN	1.0	Many days	0.00	Oct 3, 1935
MAXIMUM PEAK FLOW	1,620	Aug 5	2,510	Jun 7, 1995
MAXIMUM PEAK STAGE	7.46	Aug 5	8.63	Jun 7, 1995

*--During periods of seasonal operation (May 1924 to September 1981, March 1984 to current year).
a--Based upon 4 years of record (water years 1966, 1998, 2000, and 2002).
b--Based upon 2 years of record (water years 1966 and 2000).
e--Estimated.

05016000 SWIFTCURRENT CREEK AT SHERBURNE, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--1990-92, 1996 to current year, (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
APR								
01...	1140	78	77	0.0	2.0	96	3	.64
MAY								
27...	1140	176	127	11.0	9.5	74	41	19
JUL								
29...	0900	377	130	18.0	16.0	82	4	4.1
AUG								
24...	1245	569	106	16.0	16.5	80	6	9.2

05017500 ST. MARY RIVER NEAR BABB, MT

LOCATION.--Lat 48°50'00", long 113°25'08" (NAD 27), in NW¼NW¼SE¼ sec.34, T.36 N., R.14 W., Glacier County, Hydrologic Unit 10010002, Blackfeet Indian Reservation, on right bank 0.7 mi upstream from outlet of Lower St. Mary Lake and 2.0 mi southeast of Babb.

DRAINAGE AREA.--276 mi^2.

PERIOD OF RECORD.--July 1901 to October 1902, May 1910 to September 1925, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as "at Main" in 1901-02, and as "below Swiftcurrent Creek, at Babb" 1910-15. Records published as "near Babb" for April 1902 to September 1915, May 1929 to September 1950 at sites about 1.5 mi downstream not equivalent because flow of Swiftcurrent Creek not included 1902-15 and because diversion by St. Mary Canal not included 1929-50.

REVISED RECORDS.--WSP 1308: 1913-14, 1920, 1922-24. WSP 1508: 1902.

GAGE.--Water-stage recorder. Elevation of gage is 4,468.13 ft (NGVD 29). Prior to Oct. 1, 1915, water-stage recorder or nonrecording gages at several sites about 3.8 mi downstream at different elevations. Oct. 1, 1915, to Sept. 30, 1925, water-stage recorder or nonrecording gages at several sites within 1.5 mi downstream at different elevations.

REMARKS.--Records good. Entire flow of Swiftcurrent Creek below Lake Sherburne is diverted into Lower St. Mary Lake upstream from station. Flow of Swiftcurrent Creek regulated by Lake Sherburne (station number 05015500) since 1919. October 1950 to September 1976, monthly discharge and runoff figures adjusted for change in contents in Lake Sherburne. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	485	129	45	77	46	214	1,210	1,660	1,880	1,030	1,420
2	100	385	114	48	77	46	284	1,220	1,610	1,890	1,040	1,380
3	97	332	105	52	76	47	417	1,270	1,570	1,870	1,040	1,290
4	94	291	106	54	73	48	567	1,410	1,590	1,860	1,040	1,210
5	92	266	107	54	73	50	670	1,500	1,710	1,870	1,040	1,130
6	90	238	113	56	70	51	690	1,580	1,900	1,830	1,040	1,060
7	90	229	114	54	69	50	684	1,560	2,050	1,800	1,040	1,010
8	90	213	112	53	66	56	696	1,520	2,040	1,810	1,040	969
9	91	202	111	54	65	59	727	1,520	1,930	1,770	1,030	945
10	84	204	107	56	62	66	757	1,500	1,800	1,680	1,010	932
11	80	192	102	56	59	69	777	1,490	1,700	1,580	1,010	931
12	83	192	99	57	58	73	789	1,400	1,630	1,480	995	921
13	79	182	97	57	53	83	814	1,260	1,610	1,380	978	940
14	74	175	97	58	53	87	887	1,140	1,650	1,340	957	1,070
15	72	161	94	58	52	91	939	1,030	1,690	1,320	935	1,250
16	70	154	90	57	50	92	1,010	947	1,680	1,350	924	1,350
17	85	148	90	56	48	96	1,060	884	1,640	1,360	912	1,390
18	78	156	88	54	50	104	1,090	911	1,540	1,360	963	1,370
19	73	175	85	54	50	109	1,070	1,020	1,460	1,350	965	1,280
20	69	164	83	53	49	113	1,030	1,190	1,430	1,350	967	1,160
21	79	161	78	53	49	115	984	1,360	1,420	1,340	1,010	1,010
22	91	158	74	50	49	119	943	1,460	1,410	1,280	1,010	846
23	115	160	70	50	49	124	914	1,510	1,500	1,120	1,020	710
24	126	164	67	49	49	132	877	1,450	1,670	1,010	1,040	616
25	142	164	64	49	48	139	860	1,250	1,780	918	1,140	554
26	161	152	62	49	48	142	855	1,120	1,870	843	1,440	507
27	167	143	61	57	47	150	868	1,110	1,980	791	1,720	476
28	181	147	57	66	47	154	973	1,310	1,970	759	1,800	448
29	e400	156	53	65	46	160	1,080	1,510	1,900	839	1,700	427
30	e600	142	50	72	---	170	1,160	1,640	1,880	956	1,570	411
31	641	---	48	77	---	191	---	1,690	---	1,010	1,480	---
TOTAL	4,394	6,091	2,727	1,723	1,662	3,032	24,686	40,972	51,270	42,996	34,886	29,013
MEAN	142	203	88.0	55.6	57.3	97.8	823	1,322	1,709	1,387	1,125	967
MAX	641	485	129	77	77	191	1,160	1,690	2,050	1,890	1,800	1,420
MIN	69	142	48	45	46	46	214	884	1,410	759	912	411
AC-FT	8,720	12,080	5,410	3,420	3,300	6,010	48,960	81,270	101,700	85,280	69,200	57,550

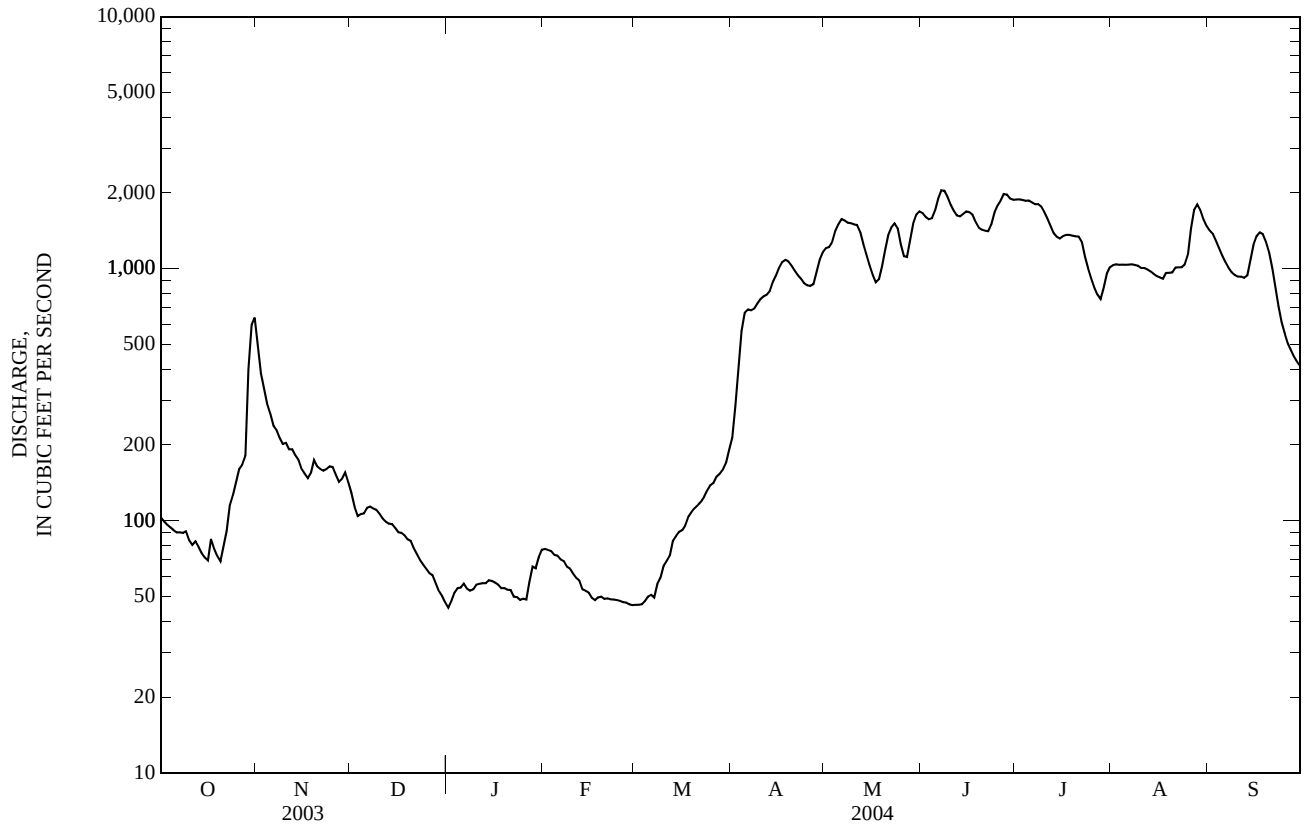
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2004, BY WATER YEAR (WY)*

MEAN	373	255	147	109	103	157	486	1,630	2,446	1,596	1,017	717
MAX	1,323	1,281	722	302	249	457	977	2,573	4,807	2,697	1,413	1,291
(WY)	(1952)	(2000)	(1996)	(1981)	(1996)	(1981)	(1988)	(1957)	(1975)	(1954)	(1976)	(1959)
MIN	67.4	45.0	33.5	37.2	33.8	38.6	85.0	670	1,289	687	320	119
(WY)	(2002)	(1988)	(1953)	(2001)	(2001)	(2001)	(1975)	(1955)	(1992)	(1977)	(1988)	(1988)

05017500 ST. MARY RIVER NEAR BABB, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1951 - 2004*	
ANNUAL TOTAL	215,534		243,452			
ANNUAL MEAN	591		665		755	
HIGHEST ANNUAL MEAN					1,073	1951
LOWEST ANNUAL MEAN					442	2001
HIGHEST DAILY MEAN	2,950	May 31	2,050	Jun 7	15,600	Jun 9, 1964
LOWEST DAILY MEAN	48	Dec 31	45	Jan 1	27	Jan 3, 1953
ANNUAL SEVEN-DAY MINIMUM	56	Dec 25	47	Feb 26	28	Dec 30, 1952
MAXIMUM PEAK FLOW			2,080	Jun 7	a16,500	Jun 9, 1964
MAXIMUM PEAK STAGE			4.03	Jun 7	b12.96	Jun 9, 1964
INSTANTANEOUS LOW FLOW					27	Jan 3, 1953
ANNUAL RUNOFF (AC-FT)	427,500		482,900		547,300	
10 PERCENT EXCEEDS	1,430		1,610		1,870	
50 PERCENT EXCEEDS	225		414		357	
90 PERCENT EXCEEDS	78		53		73	

*--During periods of operation (1951 to current year).
a--From rating curve extended above 6,000 ft^3/s on basis of slope-area measurement of peak flow.
b--From highwater mark in well.
e--Estimated.



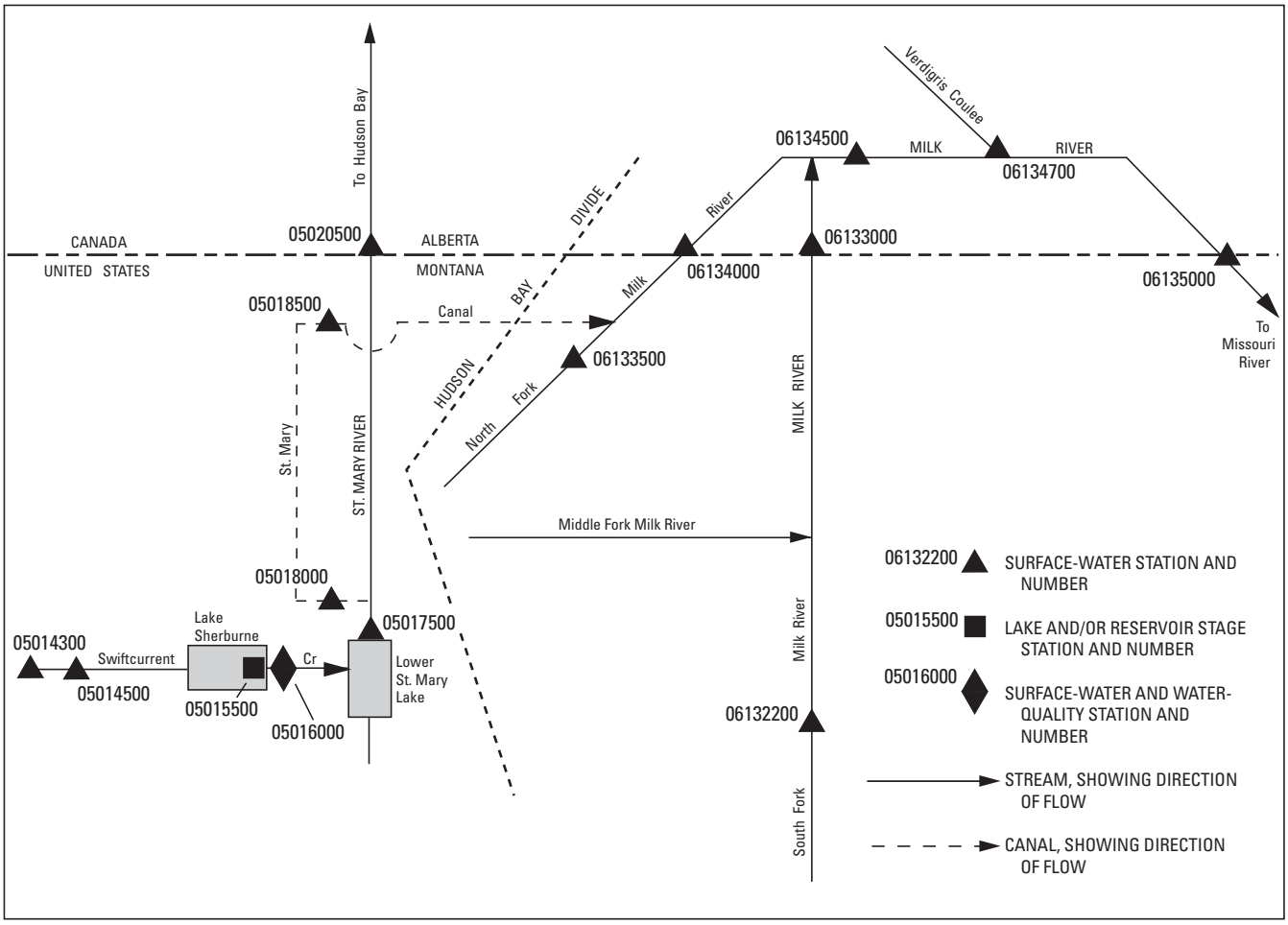


Figure 9. Schematic diagram showing diversion from St. Mary River in Part 5 to Milk River in Part 6.

05018000 ST. MARY CANAL AT INTAKE, NEAR BABB, MT

LOCATION.--Lat 48°51'10", long 113°24'57" (NAD 27), in SE¼NW¼NE¼ sec.27, T.36 N., R.14 W., Glacier County, Hydrologic Unit 10010002, Blackfeet Indian Reservation, on right bank of canal 500 ft upstream from St. Mary intake structure, and 1.0 mi east of Babb.

PERIOD OF RECORD.--July 1918 to November 1951, May 1997 to current season (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 4,470 ft (NGVD 29). Prior to April 17, 1919, staff gage at site 300 ft upstream at different elevation.

REMARKS.--Records good. Canal diverts water from left bank of St. Mary River near Babb and discharges into North Fork Milk River. This water flows in the natural channel of Milk River through Canada and then back into Montana where it is used for irrigation in Milk River Valley downstream from Havre, Montana. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

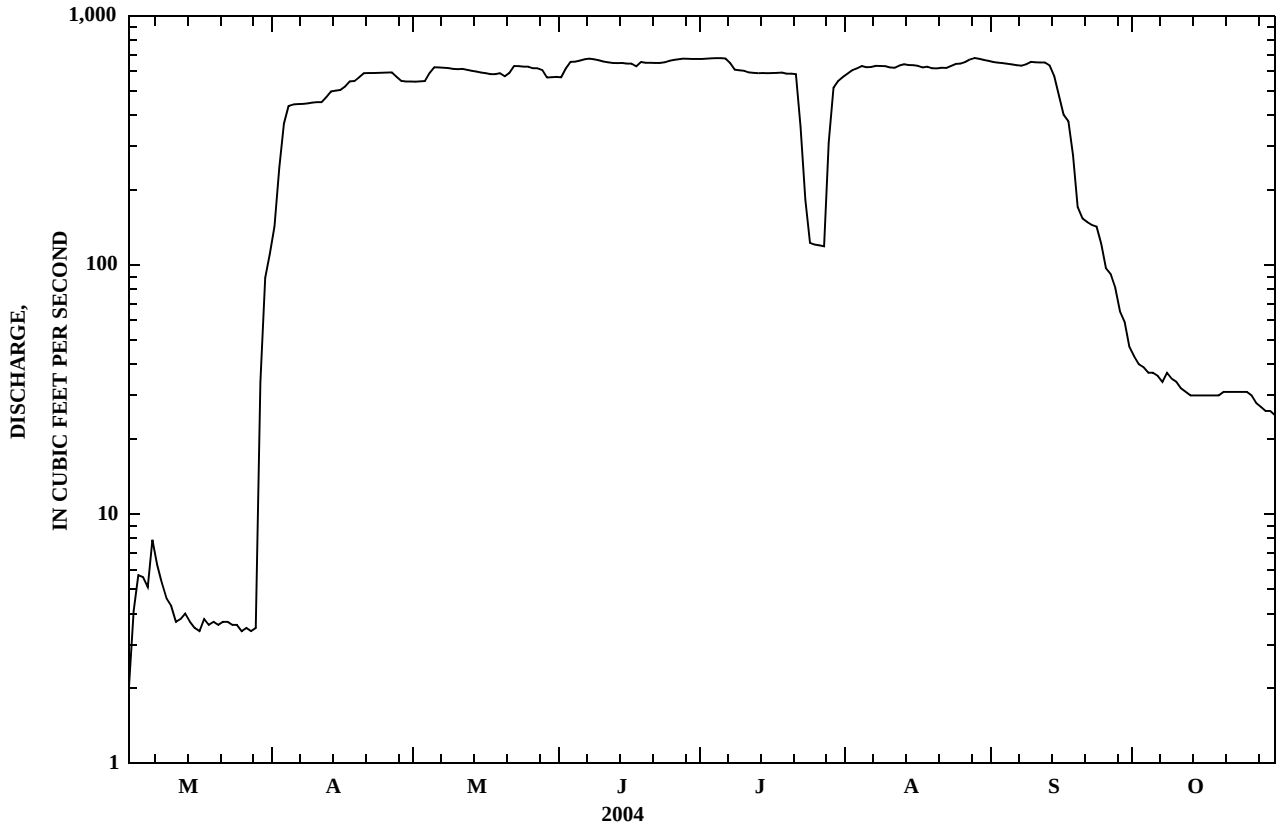
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 871 ft^3/s, May 26, 27, 1936; no flow at times most seasons.

DISCHARGE, CUBIC FEET PER SECOND CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e5.4	143	545	567	672	588	654	43		
2			e5.4	246	547	615	674	606	650	40		
3			5.7	370	548	655	676	617	647	39		
4			5.6	436	590	656	677	630	643	37		
5			5.1	442	623	662	677	623	639	37		
6			7.9	443	622	670	675	624	635	36		
7			6.3	444	620	674	648	631	632	34		
8			5.3	446	618	670	609	630	640	37		
9			4.6	449	613	664	605	629	655	35		
10			4.3	451	612	657	603	622	652	34		
11			3.7	451	613	652	594	620	651	32		
12			3.8	472	608	648	591	633	651	31		
13			4.0	498	603	647	589	640	634	30		
14			3.7	502	598	648	590	636	572	30		
15			3.5	505	593	644	589	635	477	30		
16			3.4	521	589	644	590	631	402	30		
17			3.8	547	584	628	591	622	378	30		
18			3.6	548	584	654	593	626	276	30		
19			3.7	568	589	649	587	617	171	30		
20			3.6	589	573	649	587	616	154	31		
21			3.7	590	591	648	584	620	149	31		
22			3.7	590	630	648	359	619	145	31		
23			3.6	591	629	652	183	631	143	31		
24			3.6	592	626	660	123	642	122	31		
25			3.4	593	626	666	121	644	97	31		
26			3.5	594	617	670	120	654	92	30		
27			3.4	570	617	674	119	669	81	28		
28			3.5	549	607	673	311	678	65	27		
29			34	546	566	672	516	673	59	26		
30			89	546	568	672	549	666	47	26		
31			111	---	570	---	570	660	---	25		
TOTAL			354.8	14,832	18,519	19,588	15,972	19,632	11,813	993		
MEAN			11.4	494	597	653	515	633	394	32.0		
MAX			111	594	630	674	677	678	655	43		
MIN			3.4	143	545	567	119	588	47	25		
AC-FT			704	29,420	36,730	38,850	31,680	38,940	23,430	1,970		

e--Estimated.

05018000 ST. MARY CANAL AT INTAKE, NEAR BABB, MT—Continued



05018500 ST. MARY CANAL AT ST. MARY CROSSING, NEAR BABB, MT
(International gaging station)

LOCATION.--Lat 48°56'50", long 113°22'28" (NAD 27), in NE¼SW¼SW¼ sec.19, T.37 N., R.13 W., Glacier County, Hydrologic Unit 10010002, Blackfeet Indian Reservation, on left bank 50 ft upstream from inlet of St. Mary siphon, 6.6 mi northeast of Babb, and 9 mi downstream from intake.

PERIOD OF RECORD.--July 1918 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1308, 1728.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,450 ft (NGVD 29). Prior to June 14, 1951, water-stage recorder at several sites 0.8 mi downstream at different elevations.

REMARKS.--Records excellent. Canal diverts water from left bank of St. Mary River near Babb and discharges into North Fork Milk River. This water flows in the natural channel of Milk River through Canada and then back into Montana where it is used for irrigation in Milk River Valley downstream from Havre, Mt. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

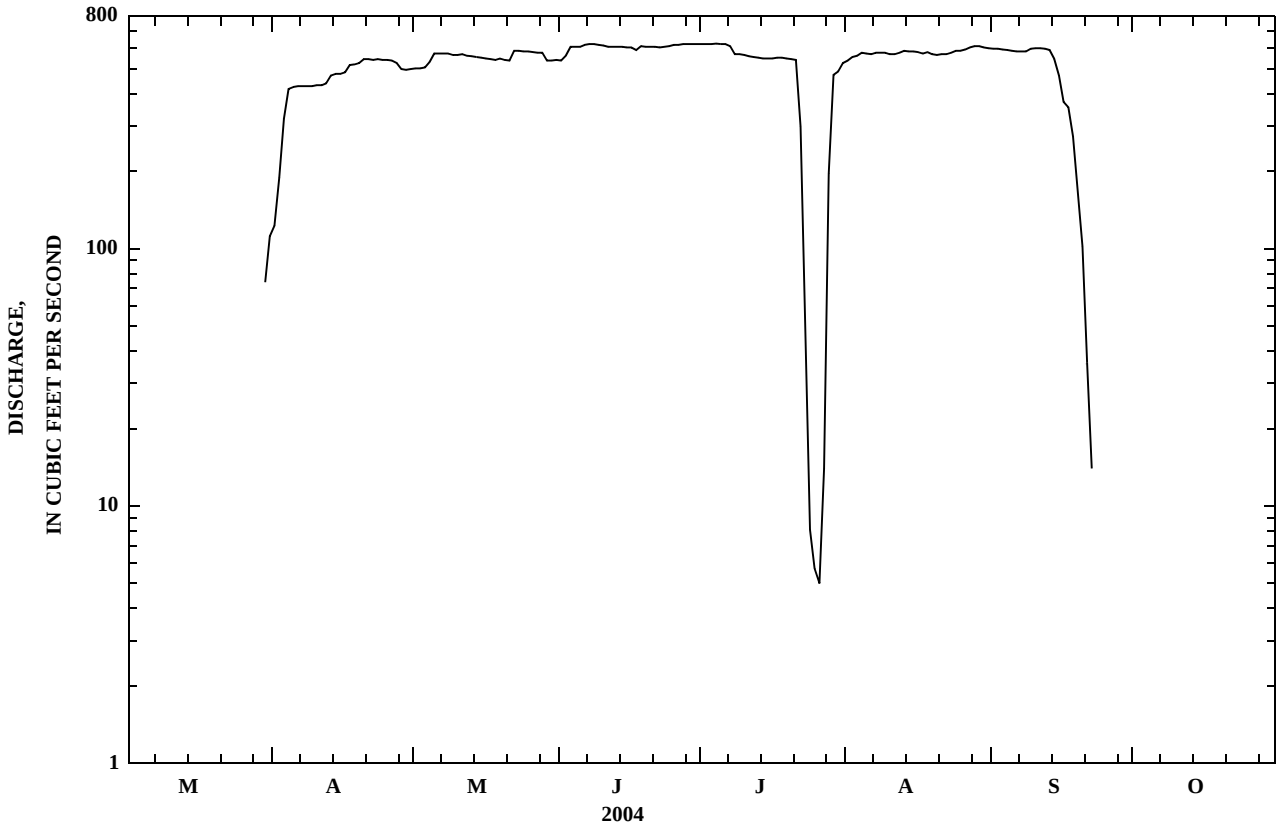
COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 767 ft^3/s, June 19, 28, 1936; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0.00	123	501	537	622	537	597	0.00		
2			0.00	189	501	561	622	554	597	0.00		
3			0.00	319	505	607	622	561	593	0.00		
4			0.00	417	530	607	625	576	590	0.00		
5			0.00	424	572	607	622	572	586	0.00		
6			0.00	427	572	618	622	569	583	0.00		
7			0.00	427	572	622	611	576	583	0.00		
8			0.00	427	572	622	569	576	583	0.00		
9			0.00	427	565	618	569	576	597	0.00		
10			0.00	431	565	614	565	569	600	0.00		
11			0.00	431	569	607	558	569	600	0.00		
12			0.00	438	561	607	554	576	597	0.00		
13			0.00	470	558	607	551	586	590	0.00		
14			0.00	477	554	607	547	583	544	0.00		
15			0.00	477	551	604	547	583	470	0.00		
16			0.00	484	547	604	547	579	371	0.00		
17			0.00	516	544	590	551	572	353	0.00		
18			0.00	519	540	611	551	579	272	0.00		
19			0.00	526	547	607	547	569	161	0.00		
20			0.00	544	540	607	544	565	102	0.00		
21			0.00	544	537	607	540	569	36	0.00		
22			0.00	540	586	604	298	569	14	0.00		
23			0.00	544	586	607	85	576	0.00	0.00		
24			0.00	540	583	611	8.1	586	0.00	0.00		
25			0.00	540	583	618	5.7	586	0.00	0.00		
26			0.00	537	579	618	5.0	593	0.00	0.00		
27			0.00	526	576	622	14	604	0.00	0.00		
28			0.00	498	576	622	195	611	0.00	0.00		
29			0.00	494	537	622	473	611	0.00	0.00		
30			74	498	537	622	487	604	0.00	0.00		
31			112	---	540	---	526	600	---	0.00		
TOTAL			186.00	13,754	17,186	18,217	14,182.8	17,936	10,019.00	0.00		
MEAN			6.00	458	554	607	458	579	334	0.00		
MAX			112	544	586	622	625	611	600	0.00		
MIN			0.00	123	501	537	5.0	537	0.00	0.00		
AC-FT			369	27,280	34,090	36,130	28,130	35,580	19,870	0.00		

05018500 ST. MARY CANAL AT ST. MARY CROSSING, NEAR BABB, MT—Continued



05020500 ST. MARY RIVER AT INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 49°00'43", long 113°17'57" (NAD 27), in NE¼ sec.5, T.1, R.25 W., fourth meridian, in Alberta, Hydrologic Unit 10010002, on left bank 1.0 mi north of international boundary, 3.6 mi downstream from Boundary Creek, 6.5 mi southwest of Kimball, Alberta, and 13 mi northeast of Babb, MT.

DRAINAGE AREA.--465 mi^2.

PERIOD OF RECORD.--September 1902 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as "near Cardston, Alberta" and "at Cook's Ranch, Alberta" 1902-12 and as "near Kimball, Alberta" 1913-55.

REVISED RECORDS.--WSP 1308: 1902, 1908-12. WSP 1508: 1902, 1908-9. W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,087.40 ft (NGVD 29) based upon levels from elevation established at previous site 1.1 mi upstream by Prairie Farm Rehabilitation Administration. Prior to Jan. 1, 1913, nonrecording gages at two sites within 0.3 mi of previous site at different elevations. Jan. 1, 1913, to Oct. 25, 1955, water-stage recorder at several sites about 7 mi downstream from present site at various elevations. Oct. 26, 1955, to Mar. 23, 1965, water-stage recorder at site 200 ft upstream from previous site at elevation 2 ft higher. Mar. 24, 1965, to Sept. 8, 1975, water-stage recorder at site 100 ft upstream from previous site at same elevation. Water-stage recorder at site 1.1 miles upstream June 22, 1975 to Oct. 31, 1999.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since 1917, St. Mary Canal has diverted water from the river near Babb, MT, to North Fork Milk River. Some regulation by Lake Sherburne on Swiftcurrent Creek. Bureau of Reclamation satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	515	e160	e60	e98	e72	123	836	1,370	1,600	536	906
2	140	405	e130	e58	e100	e68	133	864	1,280	1,570	524	856
3	135	342	e120	e62	e100	e70	107	958	1,220	1,530	506	775
4	134	310	e120	e62	e98	e68	156	1,110	1,270	1,520	485	695
5	131	287	e120	e68	e94	e70	276	1,190	1,430	1,520	481	626
6	129	277	e130	e68	e92	e70	314	1,250	1,630	1,480	475	560
7	138	265	e140	e74	e90	e72	320	1,160	1,780	1,460	475	512
8	132	249	e140	e72	e88	e74	333	1,130	1,730	1,470	468	467
9	139	247	e130	e70	e86	e90	365	1,140	1,580	1,420	467	424
10	133	222	e130	e72	e84	e100	388	1,110	1,440	1,310	452	412
11	125	e200	e120	e72	e82	e105	411	1,120	1,340	1,210	450	409
12	123	e195	e120	e72	e80	e110	413	1,010	1,300	1,080	430	413
13	125	e190	e120	e72	e78	e115	401	854	1,270	979	400	430
14	120	e190	e120	e74	e74	116	481	742	1,280	925	387	593
15	113	e180	e120	e76	e72	115	535	670	1,320	889	369	823
16	112	187	e110	e76	e72	116	592	585	1,300	913	363	1,020
17	130	178	e110	e74	e70	119	610	512	1,320	926	363	1,090
18	123	190	e110	e70	e68	125	632	528	1,140	918	439	1,170
19	118	242	e100	e70	e72	128	605	630	1,040	901	430	1,210
20	115	218	e100	e70	e70	124	554	835	1,010	896	428	1,160
21	117	178	e100	e68	e70	126	511	1,020	1,030	889	508	1,070
22	129	e175	e96	e66	e74	132	467	1,120	1,040	1,110	580	914
23	152	e180	e96	e64	e80	136	437	1,180	1,120	1,170	565	773
24	166	e190	e94	e64	e86	146	406	1,120	1,370	1,140	572	699
25	180	e190	e90	e64	e84	154	386	934	1,430	1,050	627	629
26	200	e180	e84	e66	e82	152	377	814	1,500	957	844	568
27	214	e180	e82	e74	e80	156	419	771	1,610	868	1,120	536
28	222	e170	e76	e80	e78	155	592	953	1,600	629	1,220	509
29	373	e180	e70	e90	e76	162	731	1,240	1,580	428	1,140	485
30	643	e190	e64	e86	---	102	798	1,370	1,590	504	1,040	472
31	693	---	e62	e94	---	106	---	1,410	---	533	969	---
TOTAL	5,648	6,902	3,364	2,208	2,378	3,454	12,873	30,166	40,920	33,795	18,113	21,206
MEAN	182	230	109	71.2	82.0	111	429	973	1,364	1,090	584	707
MAX	693	515	160	94	100	162	798	1,410	1,780	1,600	1,220	1,210
MIN	112	170	62	58	68	68	107	512	1,010	428	363	409
AC-FT	11,200	13,690	6,670	4,380	4,720	6,850	25,530	59,830	81,160	67,030	35,930	42,060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 2004, BY WATER YEAR (WY)

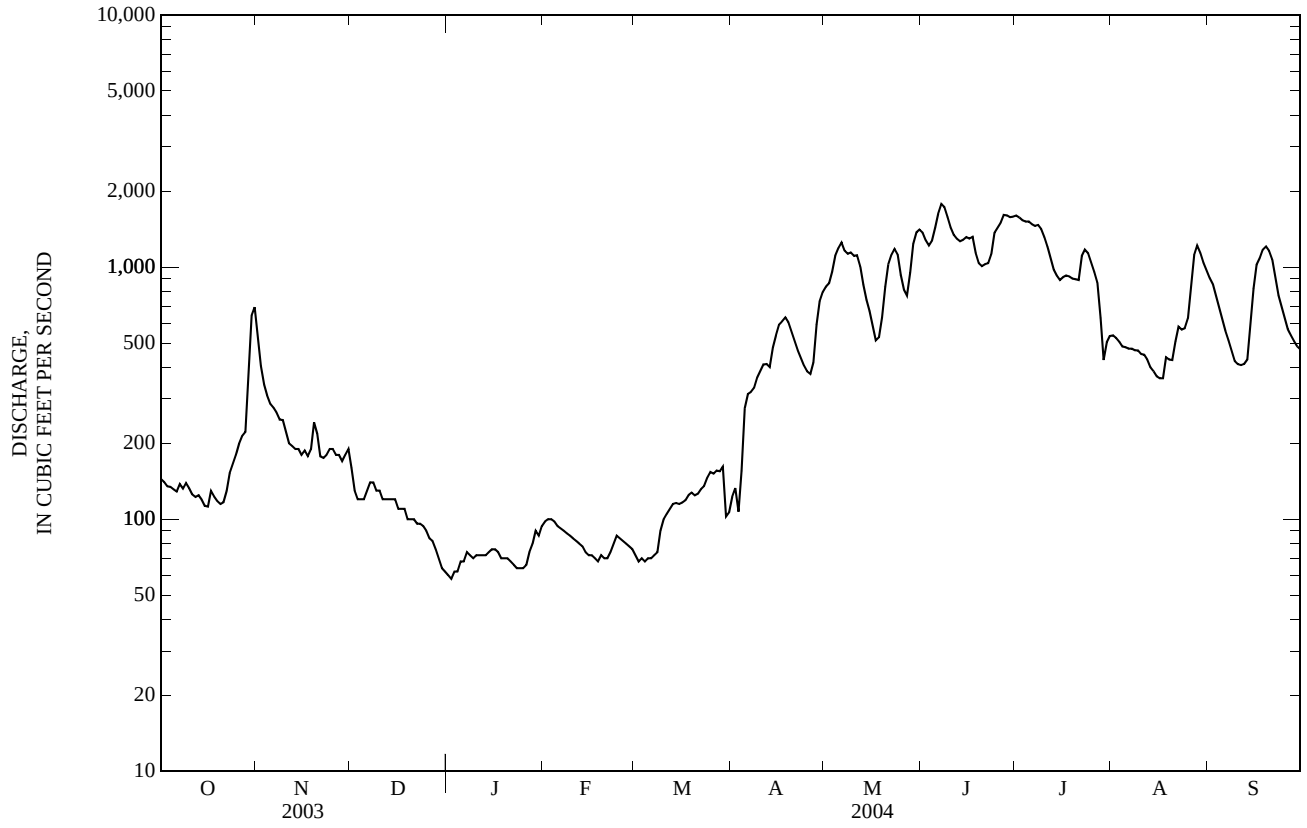
MEAN	448	338	201	153	150	189	471	1,666	2,586	1,323	597	489
MAX	1,588	1,423	844	729	411	516	1,330	3,565	7,499	3,463	1,460	1,511
(WY)	(1952)	(2000)	(1996)	(1918)	(1934)	(1916)	(1934)	(1928)	(1908)	(1916)	(1909)	(1927)
MIN	88.4	80.3	64.3	55.5	41.6	54.7	136	678	694	496	246	153
(WY)	(2002)	(1988)	(2001)	(1944)	(1936)	(2001)	(1975)	(1941)	(1941)	(1988)	(1988)	(1988)

05020500 ST. MARY RIVER AT INTERNATIONAL BOUNDARY—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1902 - 2004	
ANNUAL TOTAL	164,493		181,027			
ANNUAL MEAN	451		495		719	
HIGHEST ANNUAL MEAN					1,353	1908
LOWEST ANNUAL MEAN					316	1941
HIGHEST DAILY MEAN	2,840	May 31	1,780	Jun 7	28,000	Jun 5, 1908
LOWEST DAILY MEAN	62	Dec 31	58	Jan 2	16	Nov 29, 1936
ANNUAL SEVEN-DAY MINIMUM	75	Jan 6	62	Dec 30	27	Nov 26, 1936
MAXIMUM PEAK FLOW			1,820	Jun 7	a40,000	Jun 5, 1908
MAXIMUM PEAK STAGE			5.61	Jun 7	b13.46	Jun 21, 1975
ANNUAL RUNOFF (AC-FT)	326,300		359,100		520,900	
10 PERCENT EXCEEDS	972		1,240		1,820	
50 PERCENT EXCEEDS	239		317		357	
90 PERCENT EXCEEDS	86		72		109	

SUMMARY STATISTICS	WATER YEARS 1902 - 1916*		WATER YEARS 1917 - 2004**	
ANNUAL MEAN	1,002		674	
HIGHEST ANNUAL MEAN	1,353	1908	1,285	1927
LOWEST ANNUAL MEAN	646	1905	316	1941
HIGHEST DAILY MEAN	28,000	Jun 5, 1908	17,000	Jun 9, 1964
LOWEST DAILY MEAN	70	Feb 5, 1914	16	Nov 29, 1936
ANNUAL SEVEN-DAY MINIMUM	75	Feb 1, 1914	27	Nov 26, 1936
MAXIMUM PEAK FLOW	a40,000	Jun 5, 1908	23,300	Jun 21, 1975
MAXIMUM PEAK STAGE	b12.75	Jun 5, 1908	b13.46	Jun 21, 1975
ANNUAL RUNOFF (AC-FT)	726,000		488,200	
10 PERCENT EXCEEDS	2,470		1,680	
50 PERCENT EXCEEDS	538		336	
90 PERCENT EXCEEDS	150		105	

*--Before St. Mary Canal diversions.
**--Post operation of St. Mary Canal.
a--From rating curve extended above 6,000 ft^3/s.
b--From floodmarks at site and datum then in use.
e--Estimated.



06006000 RED ROCK CREEK ABOVE LAKES, NEAR LAKEVIEW, MT

LOCATION.--Lat 44°36'56", long 111°37'42" (NAD 27), in NE¼SE¼NW¼ sec. 17, T.14 S., R.1 E., Beaverhead County, Hydrologic Unit 10020001, on right bank 0.2 mi downstream from Red Rock Lakes National Wildlife Refuge boundary, 9.1 mi east of Lakeview, and at river mile 2,602.2.

DRAINAGE AREA.--39.2 mi^2.

PERIOD OF RECORD.--July 1997 to October 2004 (seasonal records only) (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 6,670 ft (NGVD 29).

REMARKS.--Seasonal records good except those for June, which are fair. Diversion for use by Wildlife Refuge about 1.5 mi upstream from station. Several observations of water temperature and specific conductance were made during the year. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				22	21	54	63	32	25	22		
2				20	22	57	64	31	25	22		
3				20	26	67	61	32	25	22		
4				23	28	82	70	31	25	22		
5				24	36	96	71	30	25	21		
6				25	46	117	61	29	25	21		
7				27	55	110	57	28	24	21		
8				27	57	97	54	29	24	21		
9				26	46	101	50	29	23	21		
10				22	40	118	48	29	23	22		
11				22	42	98	46	28	23	22		
12				23	36	78	44	29	23	21		
13				25	33	67	40	28	26	21		
14				27	29	63	40	28	28	21		
15				25	24	63	40	27	25	20		
16				23	30	65	37	27	26	20		
17				24	31	67	36	31	24	20		
18				25	32	71	35	35	23	23		
19				21	32	67	36	31	25	22		
20				20	31	68	39	29	30	28		
21				20	33	67	40	29	26	24		
22				19	46	68	35	29	24	22		
23				19	57	69	35	33	24	22		
24				19	45	71	33	32	24	18		
25				19	37	73	33	31	23	18		
26				19	35	75	32	31	23	21		
27				20	35	71	32	29	23	23		
28				23	58	68	30	28	22	24		
29				20	110	67	30	27	22	23		
30				21	74	69	30	26	22	22		
31				---	60	---	30	26	---	21		
TOTAL				670	1,287	2,304	1,352	914	730	671		
MEAN				22.3	41.5	76.8	43.6	29.5	24.3	21.6		
MAX				27	110	118	71	35	30	28		
MIN				19	21	54	30	26	22	18		
AC-FT				1,330	2,550	4,570	2,680	1,810	1,450	1,330		

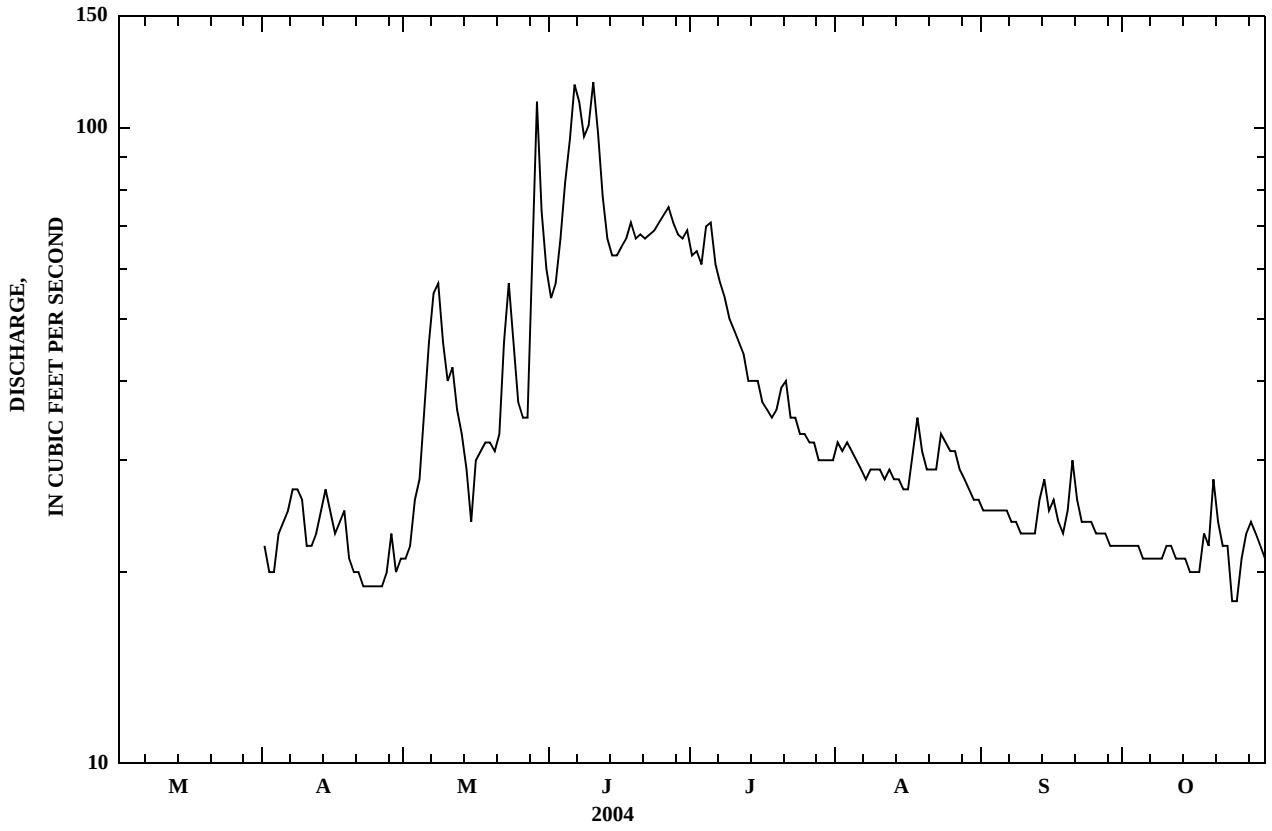
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1997 - 2004

MEAN	26.2	55.1	91.9	56.4	35.5	28.9	25.5
MAX	35.6	90.3	192	110	56.7	43.0	37.6
(WY)	(2000)	(1998)	(1999)	(1999)	(1999)	(1997)	(1998)
MIN	18.7	37.8	30.5	24.7	19.3	17.4	16.3
(WY)	(2003)	(2002)	(2001)	(2001)	(2001)	(2001)	(2002)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1997 - 2004	
HIGHEST DAILY MEAN	118	Jun 10	270	Jun 22, 1999
LOWEST DAILY MEAN	19	Apr 22	12	Oct 30, 2003
MAXIMUM PEAK FLOW	131	Jun 10	b293	Jun 10, 1997
MAXIMUM PEAK STAGE	4.11	Jun 10	5.34	Jun 22, 1999
INSTANTANEOUS LOW FLOW	a14	Apr 3	c8.9	Oct 25, 2001

a--Gage height, 2.56 ft, result of freezeup.
b--Gage height, 3.93 ft, from crest-stage gage at miscellaneous site downstream.
c--Gage height, 2.48 ft, result of freezeup.

06006000 RED ROCK CREEK ABOVE LAKES, NEAR LAKEVIEW, MT—Continued



06012500 RED ROCK RIVER BELOW LIMA RESERVOIR, NEAR MONIDA, MT

LOCATION.--Lat 44°39'22", long 112°22'14" (NAD 27), in NE¼SE¼SE¼ sec. 31, T.13 S., R.6 W., Beaverhead County, Hydrologic Unit 10020001, on right bank just downstream from Lima Reservoir, 7 mi northwest of Monida, and at river mile 2,542.1.

DRAINAGE AREA.--570 mi^2.

PERIOD OF RECORD.--January 1911 to December 1918, April 1919, May 1925 to October 1933, April 1934 to September 1935, May 1936 to October 1938, May 1939 to September 1969, seasonal records only June 1974 to September 1982 and April 1985 to current year. Monthly discharge only for some periods, published in WSP 1309. Prior to October 1950, published as "below Red Rock Reservoir".

REVISED RECORDS.--WSP 1309: 1935. WSP 1389: 1912, 1934. WSP 1559: Drainage area.

GAGE.--Water-stage recorder and sharp-crested weir. Elevation of gage is 6,530 ft (NGVD 29), estimated from spillway elevation based on Montana Department of Natural Resources and Conservation elevation. Prior to Oct. 1, 1978, at elevation 1.00 ft higher. See WSP 1709 for history of nonrecording gage changes prior to May 8, 1939.

REMARKS.--Seasonal records good. Flow regulated by Lima Reservoir (station number 06012000). No storage during 1934. Diversions for irrigation of about 10,000 acres upstream from reservoir. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1984 reached a discharge of 1,500 ft^3/s, gage height, 5.15 ft, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				0.00	56	174	140	33	26	21		
2				0.00	56	173	134	33	26	18		
3				0.00	56	168	129	33	26	18		
4				0.00	56	165	127	33	26	18		
5				7.8	55	161	125	33	25	18		
6				28	55	148	118	33	24	17		
7				29	55	144	108	33	25	17		
8				53	55	148	98	33	26	17		
9				94	55	152	91	33	26	17		
10				86	55	152	84	33	26	17		
11				66	55	152	65	33	26	17		
12				66	55	152	55	33	27	17		
13				67	55	152	50	31	27	16		
14				67	55	152	40	29	27	16		
15				66	56	152	40	29	27	16		
16				67	56	152	38	29	27	16		
17				67	55	152	34	29	27	17		
18				67	56	153	33	29	27	17		
19				68	56	152	33	28	27	17		
20				67	56	152	33	27	27	17		
21				63	56	131	33	27	27	17		
22				55	56	153	33	27	27	16		
23				55	56	152	33	27	26	17		
24				55	56	152	33	27	26	17		
25				55	56	152	33	27	26	17		
26				55	103	152	33	27	27	17		
27				55	173	151	33	26	27	17		
28				56	173	151	33	26	27	17		
29				56	173	151	33	26	27	17		
30				55	173	151	33	26	27	17		
31				---	173	---	33	26	---	17		
TOTAL				1,525.80	2,357	4,602	1,938	919	792	530		
MEAN				50.9	76.0	153	62.5	29.6	26.4	17.1		
MAX				94	173	174	140	33	27	21		
MIN				0.00	55	131	33	26	24	16		
AC-FT				3,030	4,680	9,130	3,840	1,820	1,570	1,050		

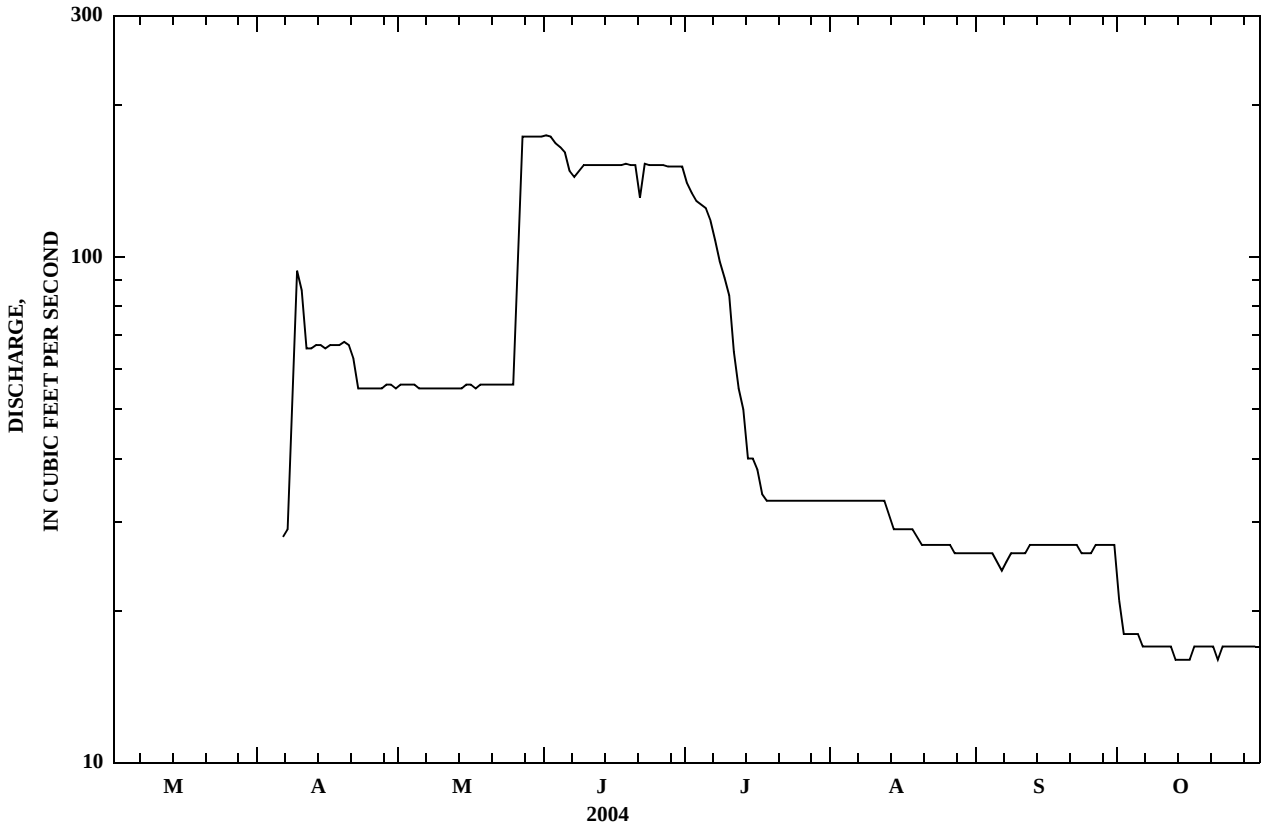
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1969 AND SEASONS 1974 - 2004*

MEAN	21.5	19.9	18.8	69.2	299	537	323	215	139	56.5	54.0	28.0
MAX	57.9	55.3	48.0	571	948	754	652	513	384	430	353	97.6
(WY)	(1928)	(1928)	(1918)	(1913)	(1917)	(1917)	(1982)	(1982)	(1995)	(1917)	(1913)	(1926)
MIN	0.00	0.00	0.00	0.00	26.2	4.62	0.63	0.00	0.00	0.00	0.00	0.00
(WY)	(1932)	(1932)	(1932)	(1980)	(1934)	(1934)	(1934)	(1934)	(1937)	(1932)	(1932)	(1932)

06012500 RED ROCK RIVER BELOW LIMA RESERVOIR, NEAR MONIDA, MT—Continued

SUMMARY STATISTICS	FOR 2004 SEASON		WATER YEARS 1911 - 1969*		SEASONS 1974 - 2004*	
ANNUAL MEAN			143			
HIGHEST ANNUAL MEAN			271	1913		
LOWEST ANNUAL MEAN			59.5	1935		
HIGHEST DAILY MEAN	174	Jun 1	a2,500	May 15, 1933	946	May 28, 1975
LOWEST DAILY MEAN	.00	Apr 1	0.00	Oct 1, 1931	.00	Oct 9, 1978
ANNUAL SEVEN DAY MINIMUM			0.00	Oct 1, 1931		
MAXIMUM PEAK FLOW	178	May 27	a2,500	May 15, 1933	b946	May 28, 1975
MAXIMUM PEAK STAGE	2.16	May 27	6.4	May 15, 1933	4.00	Jun 26, 1981
ANNUAL RUNOFF (AC-FT)			103,300			
10 PERCENT EXCEEDS			449			
50 PERCENT EXCEEDS			56			
90 PERCENT EXCEEDS			8.0			

*--During periods of operation (January 1911 to December 1918, April 1919, May 1925 to October 1933, April 1934 to September 1935, May 1936 to Ocrtober 1938, May 1939 to September 1969, June 1974 to September 1982, April 1985 to current year; seasonal records beginning water year 1974).
a--Observed, estimated by dam tender; released to prevent dam failure.
b--Gage height, 3.38 ft, datum then in use.



06015300 CLARK CANYON RESERVOIR NEAR GRANT, MT

LOCATION.--Lat 45°00'06", long 112°51'27" (NAD 27), in SE¼SW¼ sec 32, T.9 S., R.10 W., Beaverhead County, Hydrologic Unit 10020001, in shaft house near left end of dam on Beaverhead River, 1.5 mi upstream from Clark Canyon Creek, 10 mi east of Grant, and at river mile 2,483.9.

DRAINAGE AREA.--2,321 mi^2.

PERIOD OF RECORD.--May 1964 to current year (monthend contents only). Records of daily elevations are in files of Helena district.

GAGE.--Water-stage recorder in shaft house. Elevation of gage is 5,455 ft (NGVD 29) (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by zoned earthfill dam with concrete control works and spillway completed in October 1964. Storage began Aug. 28, 1964 (uncontrolled storage began June 10, 1964). Capacity table effective Oct. 1, 2001. Elevations are referenced to the National Geodetic Vertical Datum of 1929. Usable capacity, 253,400 acre-ft between elevation 5,470.60 ft, invert of outlet works, and 5,560.40 ft, top of flood control. Dead storage, 1,060 acre-ft, below elevation 5,470.60 ft. Normal operating level, 174,400 acre-ft at elevation 5,546.10 ft. Minimum operating level, 1,060 acre-ft at elevation 5,470.60 ft. Figures given herein represent usable contents. Total contents published in previous water-supply papers and annual reports for May 1964 to September 1975. Water is used for irrigation, flood control, and recreation.

COOPERATION.--Elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 283,000 acre-ft, June 25, 1984, elevation, 5,564.70 ft; minimum since normal operating level was reached, 9,660 acre-ft, Aug. 18, 19, 2003, elevation, 5,490.01 ft

EXTREMES FOR CURRENT YEAR.--Maximum contents, 56,240 acre-ft, Apr. 25, 26, elevation, 5,516.76 ft; minimum, 14,920 acre-ft, Oct. 1, elevation, 5,494.94 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, SEPTEMBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
September 30	5,494.82	14,780	--
October 31	5,499.03	20,340	+5,560
November 30	5,503.26	27,010	+6,670
December 31	5,507.41	34,680	+7,670
Calendar Year 2003	--	--	-7,310
January 31	5,510.69	41,530	+6,850
February 29	5,513.65	48,360	+6,830
March 31	5,515.98	54,180	+5,820
April 30	5,516.68	56,020	+1,840
May 31	5,514.03	49,280	-6,740
June 30	5,508.43	36,730	-12,550
July 31	5,502.30	25,400	-11,330
August 31	5,498.90	20,150	-5,250
September 30	5,501.23	23,670	+3,520
Water Year 2004	--	--	+8,890

06016000 BEAVERHEAD RIVER AT BARRETTS, MT

LOCATION.--Lat 45°06'59", long 112°44'59" (NAD 27), in SE¼SW¼SE¼ sec.19, T.8 S., R.9 W., Beaverhead County, Hydrologic Unit 10020002, on left bank 1.4 mi upstream from Barretts, 2.2 mi downstream from Grasshopper Creek, 8.9 mi southwest of Dillon, and at river mile 2,469.2.

DRAINAGE AREA.--2,737 mi^2.

PERIOD OF RECORD.--August 1907 to September 1986, October 1986 to current year (seasonal records only). Monthly discharge only for some periods, published in WSP 1309. Prior to October 1963, published as "at Barratts".

REVISED RECORDS.--WSP 1279: 1908(M), 1910-12(M), 1929(M), 1935-36. WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,268.17 ft (NGVD 29). Prior to Oct. 19, 1934, nonrecording gages at same site and elevation.

REMARKS.--Seasonal records good. Some regulation by Lima Reservoir (station number 06012000) and nearly complete regulation by Clark Canyon Reservoir (station number 06015300) since August 1964. Diversions for irrigation of about 90,000 acres above station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e95	121	124	154	290	453	98	74		
2			e95	130	123	236	288	443	97	74		
3			e95	119	139	270	274	393	98	72		
4			e95	114	199	327	274	354	98	73		
5			e95	116	280	351	266	327	99	73		
6			98	115	328	367	238	296	99	73		
7			98	119	349	394	231	283	95	75		
8			99	120	378	425	223	268	79	75		
9			102	121	396	435	248	267	68	75		
10			104	117	409	467	249	267	67	75		
11			110	110	402	454	251	266	66	76		
12			115	105	369	416	260	263	68	75		
13			120	105	321	410	284	269	68	75		
14			124	106	313	407	312	281	71	75		
15			127	100	324	392	320	280	71	76		
16			132	99	333	373	330	273	70	76		
17			133	105	325	359	330	257	69	76		
18			142	108	314	338	328	239	69	79		
19			165	104	306	332	339	211	73	81		
20			143	101	274	335	363	177	82	81		
21			131	100	274	314	376	143	80	82		
22			126	99	261	296	388	131	78	82		
23			128	95	239	302	425	132	78	80		
24			129	93	220	331	443	119	76	80		
25			122	90	190	353	439	118	76	79		
26			120	103	140	355	441	118	76	80		
27			115	145	131	363	453	115	75	84		
28			109	148	134	351	462	103	73	98		
29			109	143	142	323	460	103	73	102		
30			107	126	137	293	458	100	73	98		
31			111	---	134	---	458	99	---	95		
TOTAL			3,594	3,377	8,008	10,523	10,501	7,148	2,363	2,469		
MEAN			116	113	258	351	339	231	78.8	79.6		
MAX			165	148	409	467	462	453	99	102		
MIN			95	90	123	154	223	99	66	72		
AC-FT			7,130	6,700	15,880	20,870	20,830	14,180	4,690	4,900		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEAR 1908 - 1986 AND SEASONS 1987 - 2004*

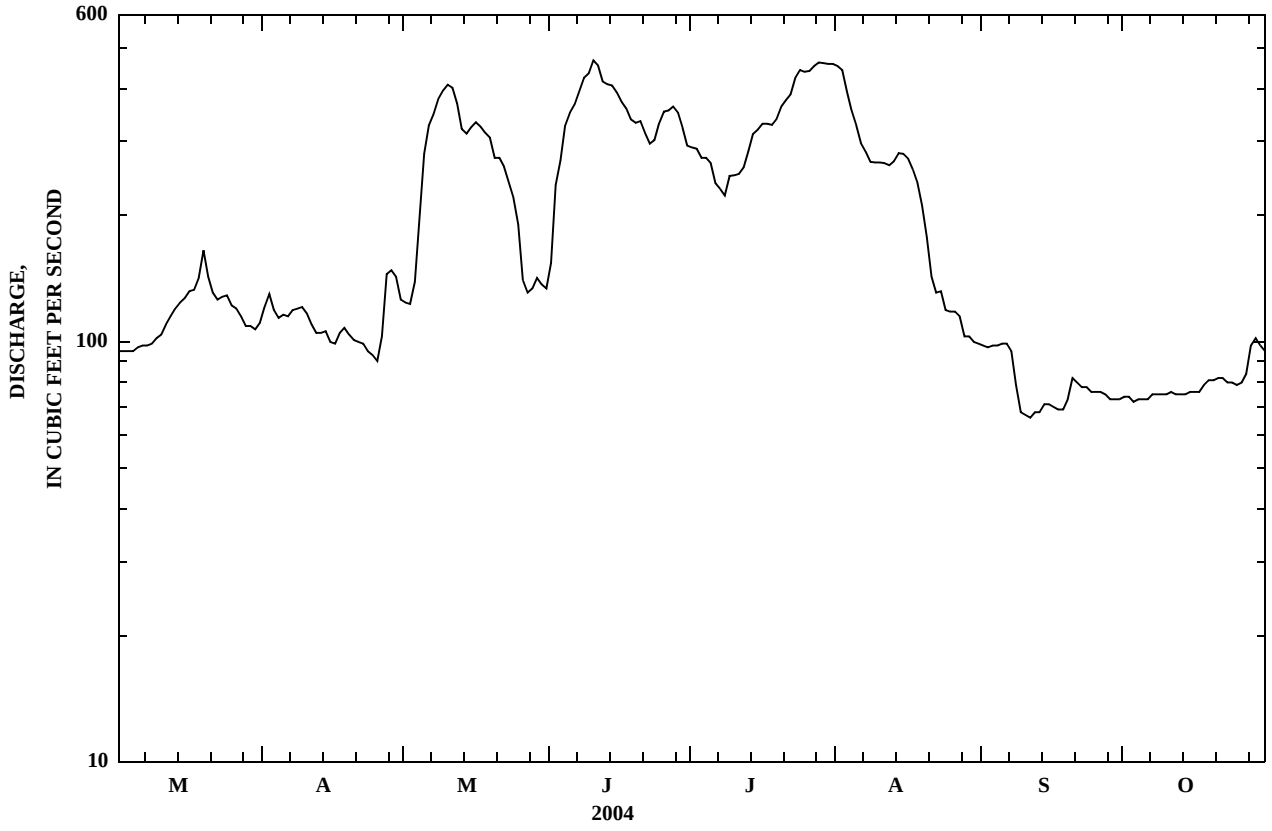
MEAN	293.2	289.7	240	283	529	738	763	552	273	232	408.7	345.8
MAX	547	513	934	1,347	1,913	2,608	2,147	1,929	1,645	1,093	889	645
(WY)	(1984)	(1984)	(1910)	(1913)	(1917)	(1908)	(1984)	(1984)	(1984)	(1985)	(1913)	(1984)
MIN	120	132	111	123	131	146	95.5	96.1	76.2	76.8	138	133
(WY)	(1932)	(1975)	(2002)	(1934)	(1934)	(1934)	(1934)	(1934)	(2002)	(2003)	(1975)	(1975)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1987 - 2004		WATER YEARS 1908 - 2004*	
ANNUAL MEAN					441	
HIGHEST ANNUAL MEAN					1,101	1984
LOWEST ANNUAL MEAN					168	1934
HIGHEST DAILY MEAN	467	Jun 10	1,640	Jul 26, 1995	3,640	Jun 19, 1908
LOWEST DAILY MEAN	66	Sep 11	64	Sep 11, 2002	64	Sep 11, 2002
ANNUAL SEVEN-DAY MINIMUM					64	Sep 10, 2002
MAXIMUM PEAK FLOW	489	Jun 10	1,650	Jul 25, 1995	3,720	Jun 20, 1908
MAXIMUM PEAK STAGE	1.74	Jun 10	3.25	Jul 25, 1995	6.10	Jun 20, 1908
INSTANTANEOUS LOW FLOW	a65	Sep 10			b61	Sep 15, 2002
ANNUAL RUNOFF (AC-FT)					319,200	
10 PERCENT EXCEEDS					836	
50 PERCENT EXCEEDS					347	
90 PERCENT EXCEEDS					182	

06016000 BEAVERHEAD RIVER AT BARRETTS, MT—Continued

SUMMARY STATISTICS	WATER YEARS 1908 - 1986**		WATER YEARS 1908 - 1964***		WATER YEARS 1965 - 1986****	
ANNUAL MEAN	441		401		543	
HIGHEST ANNUAL MEAN	1,101	1984	738	1913	1,101	1984
LOWEST ANNUAL MEAN	168	1934	168	1934	293	1967
HIGHEST DAILY MEAN	3,640	Jun 19, 1908	3,640	Jun 23, 1908	2,930	Jun 23, 1984
LOWEST DAILY MEAN	80	Jan 22, 1962	80	Jan 22, 1962	110	Jan 29, 1975
ANNUAL SEVEN-DAY MINIMUM	81	Sep 11, 1934	81	Sep 11, 1934	119	Jan 28, 1975
MAXIMUM PEAK FLOW	3,720	Jun 2, 1908	3,720	Jun 20, 1908	3,000	Jun 22, 1984
MAXIMUM PEAK STAGE	6.10	Jun 2, 1908	6.10	Jun 20, 1908	5.04	Jun 22, 1984
INSTANTANEOUS LOW FLOW	c69	Jun 30, 1939	c69	Jan 30, 1939		
ANNUAL RUNOFF (AC-FT)	319,200		290,500		393,700	
10 PERCENT EXCEEDS	830		676		1,000	
50 PERCENT EXCEEDS	344		330		454	
90 PERCENT EXCEEDS	177		179		190	

*--Seasonal records after 1986 water year.
**--Annual record.
***--Prior to Clark Canyon Dam construction.
****--After Clark Canyon Dam construction.
a--Gage height, 0.49 ft.
b--Gage height, 0.33 ft.
c--Gage height, 0.76 ft.



06017000 BEAVERHEAD RIVER AT DILLON, MT

LOCATION.--Lat 45°13'05", long 112°39'18" (NAD 27), in NW¼NE¼NW¼ sec.24, T.7 S., R.9 W., Beaverhead County, Hydrologic Unit 10020002, on right bank 0.2 mi downstream from West Side Canal and county road bridge, at Dillon, and at river mile 2,456.1.
DRAINAGE AREA.--2,895 mi^2.
PERIOD OF RECORD.--August to September 1907 (gage heights only), October 1950 to September 1952, September 1963 to September 1971, April 2002 to current year (seasonal records only).
GAGE.--Water-stage recorder. Elevation of gage is 5,100 ft (NGVD 29). Prior to Sept. 30, 1952, nonrecording gages at same site at different elevation.
REMARKS.--Seasonal records good. Some regulation by Lima Reservoir (station number 06012000) and nearly complete regulation by Clark Canyon Reservoir (station number 06015300) since August 1964. Diversions for irrigation of about 125,500 acres, of which about 23,000 acres lies downstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				106	96	91	125	181	73	58		
2				114	91	94	130	188	72	60		
3				110	87	102	124	193	75	60		
4				105	95	134	129	179	79	59		
5				105	110	114	133	181	76	64		
6				101	123	124	112	158	83	63		
7				97	118	148	116	147	82	61		
8				98	115	151	108	123	68	61		
9				98	116	144	114	118	57	59		
10				97	139	170	119	104	53	59		
11				94	161	198	119	100	51	64		
12				84	155	190	121	98	55	62		
13				79	142	189	116	98	58	64		
14				79	121	188	141	104	58	64		
15				81	125	188	135	104	55	64		
16				73	129	176	151	114	44	73		
17				75	137	163	148	108	51	80		
18				86	122	145	149	104	54	86		
19				82	136	144	152	105	58	90		
20				80	116	149	150	98	70	93		
21				76	145	144	153	81	73	97		
22				75	144	128	147	73	72	97		
23				69	131	117	141	91	71	104		
24				65	109	128	163	89	72	101		
25				61	108	141	164	86	70	98		
26				57	98	145	170	88	69	100		
27				101	108	157	159	93	67	101		
28				126	104	161	152	87	64	114		
29				122	108	142	155	83	64	128		
30				104	106	121	162	83	60	124		
31				---	102	---	168	79	---	122		
TOTAL				2,700	3,697	4,386	4,326	3,538	1,954	2,530		
MEAN				90.0	119	146	140	114	65.1	81.6		
MAX				126	161	198	170	193	83	128		
MIN				57	87	91	108	73	44	58		
AC-FT				5,360	7,330	8,700	8,580	7,020	3,880	5,020		

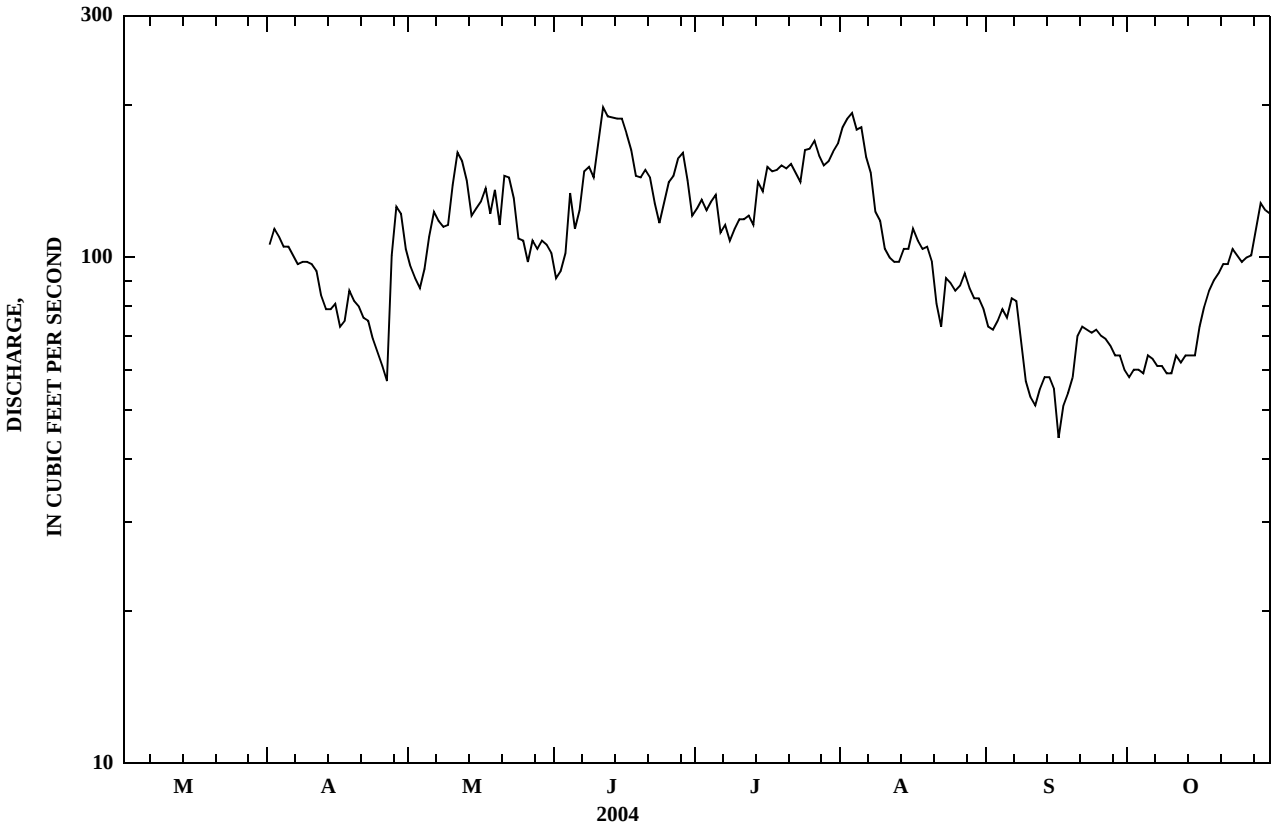
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1971 AND SEASONS 2002 - 2004*

MEAN	372	385	388	377	282	354	237	223	297	280	457	429
MAX	462	539	606	1,078	742	1,157	493	475	796	680	700	613
(WY)	(1971)	(1971)	(1969)	(1969)	(1969)	(1964)	(1971)	(1965)	(1965)	(1966)	(1966)	(1966)
MIN	221	218	204	90.0	110	126	67.1	114	65.1	81.6	230	226
(WY)	(1967)	(1967)	(1967)	(2004)	(2002)	(2002)	(1951)	(2004)	(2004)	(2005)	(1965)	(1967)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 2002 - 2004		WATER YEARS 1951 - 1971*	
ANNUAL MEAN					370	
HIGHEST ANNUAL MEAN					523	1971
LOWEST ANNUAL MEAN					183	1967
HIGHEST DAILY MEAN	198	Jun 11	288	Jul 21, 2003	1,700	Jun 21, 1964
LOWEST DAILY MEAN	44	Sep 16	44	Sep 16, 2004	18	Jun 19, 1952
ANNUAL SEVEN-DAY MINIMUM					32	Jul 27, 1951
MAXIMUM PEAK FLOW	a218	Jun 11	317	Jul 21, 2003	1,740	Jun 21, 1964
MAXIMUM PEAK STAGE	3.99	Aug 2	4.56	Jul 21, 2003	6.63	Jun 21, 1964
INSTANTANEOUS LOW FLOW					b18	Jun 19, 1952
ANNUAL RUNOFF (AC-FT)					267,800	
10 PERCENT EXCEEDS					615	
50 PERCENT EXCEEDS					357	
90 PERCENT EXCEEDS					134	

*--During period of operation [October 1950 to September 1952, September 1963 to September 1971, April 2002 to October 2004 (seasonal records only)].
a--Gage height, 3.76 ft.
b--Observed.

06017000 BEAVERHEAD RIVER AT DILLON, MT—Continued



06018500 BEAVERHEAD RIVER NEAR TWIN BRIDGES, MT

LOCATION.--Lat 45°23'01", long 112°27'07" (NAD 27), in SW¼NW¼SE¼ sec.22, T.5 S., R.7 W., Madison County, Hydrologic Unit 10020002, on left bank at downstream side of bridge on State Highway 41, 11.5 mi upstream from Ruby River, 12.7 mi southwest of Twin Bridges, 14.5 mi northeast of Dillon, and at river mile 2,430.4.

DRAINAGE AREA.--3,619 mi^2.

PERIOD OF RECORD.--August 1935 to current year. Prior to October 1968, published as "at Blaine."

REVISED RECORDS.--WSP 1309: 1938(M), 1945(M). WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,809.15 ft (NGVD 29). Prior to Feb. 17, 1949, nonrecording gage at bridge 0.5 mi upstream at different elevation. Feb. 17, 1949, to June 28, 1951, nonrecording gage at present site and elevation.

REMARKS.--Records good. Flow partly regulated by Lima Reservoir (station number 06012000) and Clark Canyon Reservoir (station number 06015300) since August 1964. Diversions upstream from station for irrigation of about 135,400 acres of which about 5,000 acres are irrigated by imported water from Birch and Willow Creeks and of which about 9,200 acres lies downstream from station including 600 acres in Ruby River drainage. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	e190	224	202	177	204	150	103	129	74	72	66
2	144	e210	223	e181	161	199	170	84	106	78	90	60
3	138	220	222	e140	198	199	166	77	73	96	108	66
4	142	222	221	e130	186	199	152	66	77	105	106	66
5	127	e180	216	e100	196	198	141	67	84	125	132	70
6	109	e190	219	e100	187	198	134	60	69	111	140	71
7	97	e200	230	150	191	198	135	68	69	106	133	84
8	102	e220	233	180	186	200	133	64	65	96	131	85
9	97	e230	217	193	188	206	127	57	49	92	113	59
10	116	234	224	204	180	206	123	57	47	91	85	54
11	132	234	222	200	191	204	113	81	72	108	79	46
12	135	232	212	191	176	217	94	100	86	106	72	38
13	147	228	226	189	180	220	74	119	68	99	68	45
14	154	226	227	195	184	220	61	108	77	73	66	46
15	155	225	211	187	176	215	67	89	85	58	70	56
16	167	224	191	194	183	198	81	95	93	53	66	56
17	174	228	204	187	206	200	85	116	101	58	80	55
18	172	227	185	174	204	207	88	113	89	63	89	54
19	171	232	190	193	208	219	90	135	87	71	90	69
20	170	235	213	195	195	228	91	134	80	67	99	101
21	166	226	213	186	193	216	95	129	87	67	112	135
22	171	199	198	170	193	207	96	165	82	68	95	142
23	181	194	184	164	199	200	88	198	58	66	100	133
24	182	202	220	196	198	196	87	168	56	66	112	145
25	198	e200	207	187	198	201	70	156	61	65	76	134
26	198	e200	204	165	199	186	60	154	74	71	71	127
27	206	e200	199	179	199	205	58	139	97	69	71	135
28	207	e210	155	192	200	179	107	131	114	57	73	141
29	210	226	195	201	202	175	140	136	120	53	75	136
30	e200	220	176	204	---	158	121	148	99	63	86	135
31	e190	---	177	187	---	139	---	137	---	65	87	---
TOTAL	4,890	6,464	6,438	5,516	5,534	6,197	3,197	3,454	2,454	2,440	2,847	2,610
MEAN	158	215	208	178	191	200	107	111	81.8	78.7	91.8	87.0
MAX	210	235	233	204	208	228	170	198	129	125	140	145
MIN	97	180	155	100	161	139	58	57	47	53	66	38
AC-FT	9,700	12,820	12,770	10,940	10,980	12,290	6,340	6,850	4,870	4,840	5,650	5,180

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2004, BY WATER YEAR (WY)

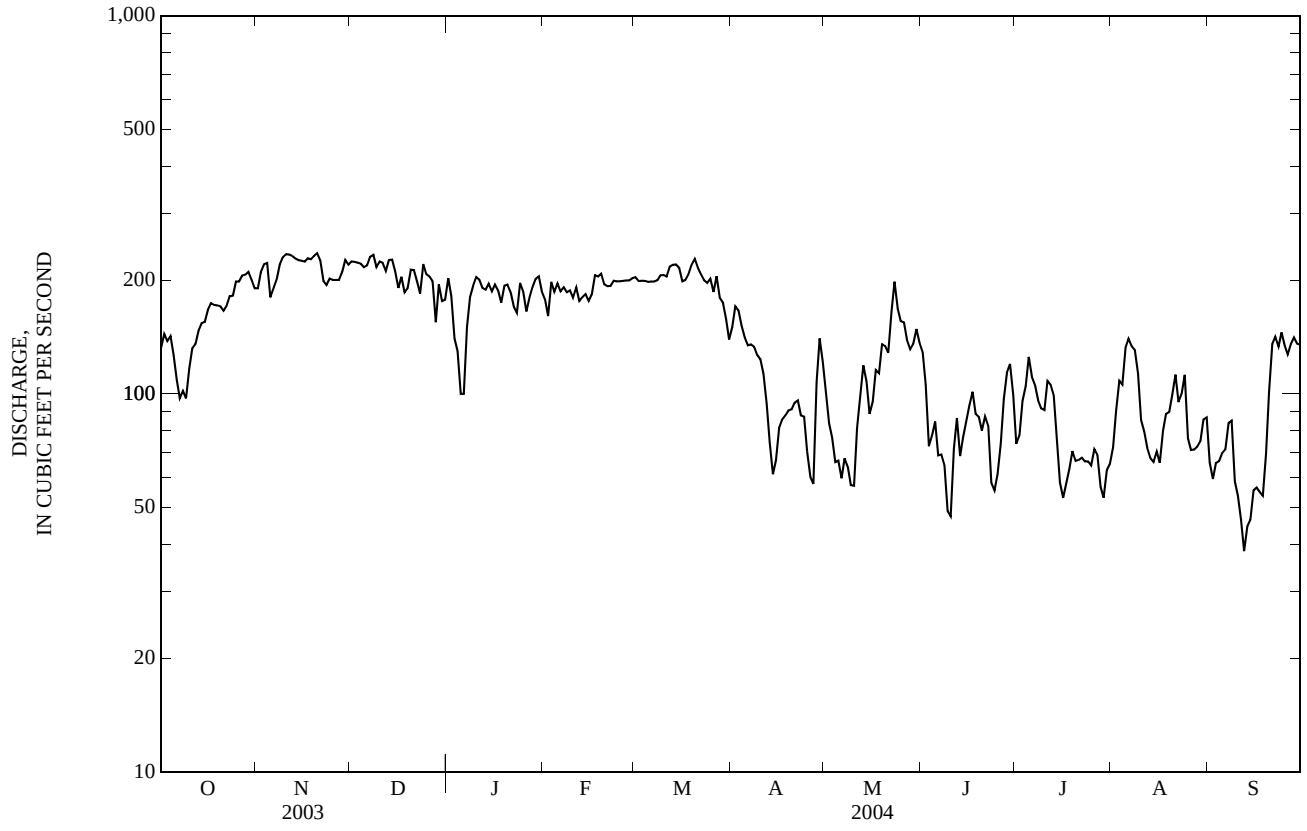
MEAN	440	545	480	405	419	469	470	310	381	278	245	378
MAX	1,328	1,065	852	725	707	799	1,251	1,117	1,615	1,586	1,581	1,691
(WY)	(1985)	(1985)	(1984)	(1976)	(1984)	(1972)	(1969)	(1984)	(1984)	(1984)	(1984)	(1984)
MIN	32.4	215	208	173	191	200	95.5	40.8	24.2	28.0	25.8	28.1
(WY)	(1938)	(2004)	(2004)	(1937)	(2004)	(2004)	(1961)	(1937)	(1940)	(1937)	(1937)	(1937)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1935 - 2004	
ANNUAL TOTAL	60,343		52,041			
ANNUAL MEAN	165		142		402	
HIGHEST ANNUAL MEAN					1,097	1984
LOWEST ANNUAL MEAN					142	2004
HIGHEST DAILY MEAN	416	Mar 15	235	Nov 20	3,130	Jan 12,1944
LOWEST DAILY MEAN	37	Jul 10	38	Sep 12	7.0	May 25, 1940
ANNUAL SEVEN-DAY MINIMUM	61	Jul 9	49	Sep 10	8.7	May 13,1954
MAXIMUM PEAK FLOW			344	Nov 9	b3,130	Jun 12, 1944
MAXIMUM PEAK STAGE			4.61	Nov 6	7.88	Jun 25, 1984
INSTANTANEOUS LOW FLOW			a34	Sep 12	c28	Jun 24, 1990
ANNUAL RUNOFF (AC-FT)	119,700		103,200		290,900	
10 PERCENT EXCEEDS	228		216		717	
50 PERCENT EXCEEDS	179		140		382	
90 PERCENT EXCEEDS	82		66		97	

06018500 BEAVERHEAD RIVER NEAR TWIN BRIDGES, MT—Continued

SUMMARY STATISTICS	WATER YEARS 1935 - 1964*		WATER YEARS 1965 - 2004**	
ANNUAL MEAN	391		409	
HIGHEST ANNUAL MEAN	642	1984	1,097	1984
LOWEST ANNUAL MEAN	170	1937	142	2004
HIGHEST DAILY MEAN	3,130	Jun 12, 1944	2,180	Jun 25, 1984
LOWEST DAILY MEAN	7.0	May 25, 1940	28	Jun 24, 1990
ANNUAL SEVEN-DAY MINIMUM			31	Jun 23, 1990
MAXIMUM PEAK FLOW	3,130	Jun 12, 1944	2,200	Jun 25, 1984
MAXIMUM PEAK STAGE	6.76	Jun 12, 1944	7.88	Jun 25, 1984
INSTANTANEOUS LOW FLOW	c7.0	May 25, 1940	d28	Jun 24, 1990
ANNUAL RUNOFF (AC-FT)	283,100		296,500	
10 PERCENT EXCEEDS	648		778	
50 PERCENT EXCEEDS	410		354	
90 PERCENT EXCEEDS	60		119	

*--Prior to construction of Clark Canyon Dam.
**--After construction of Clark Canyon Dam.
a--Gage height, 3.15 ft.
b--Observed, gage height, 6.76 ft, site and datum then in use.
c--Observed, site and datum then in use.
d--Gage height, 3.01 ft.
e--Estimated.



06019500 RUBY RIVER ABOVE RESERVOIR, NEAR ALDER, MT

LOCATION.--Lat 47°11'57", long 112°05'44" (NAD 27), in NW¼SE¼SW¼ sec.30, T.7 S., R.4 W., Madison County, Hydrologic Unit 10020003, on right bank at county road bridge, 0.7 mi downstream from Mormon Creek, 4.2 mi upstream from Ruby Dam, 9.3 mi south of Alder, and at river mile 52.1.
DRAINAGE AREA.--534 mi^2.
PERIOD OF RECORD.--May 1938 to current year. Monthly discharge only for May 1938, published in WSP 1309.
REVISED RECORDS.--WSP 1309: 1938(M). WSP 1559: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 5,400 ft (NGVD 29). Prior to Oct. 1, 1938, nonrecording gage at bridge 2.0 mi upstream at different elevation. Oct. 1, 1938, to Aug. 5, 1955, water-stage recorder at site 2.2 mi upstream at different elevation. Aug. 6, 1955 to Sept. 30, 1997, water-stage recorder 2.3 mi upstream at different elevation.
REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversion for irrigation of about 3,000 acres upstream from station. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	98	101	99	96	95	125	122	247	201	94	84
2	96	97	102	e96	e96	93	133	143	246	197	96	86
3	101	102	102	e94	98	96	126	175	288	203	100	93
4	108	105	102	e90	99	95	129	190	341	233	91	93
5	107	99	98	e85	96	96	136	236	396	246	91	93
6	104	e95	104	e88	94	93	135	276	468	212	88	90
7	105	e95	105	e94	96	94	135	239	401	192	85	92
8	109	e97	103	e96	96	106	135	245	340	183	87	90
9	106	99	96	e100	95	106	138	223	331	165	85	92
10	108	102	99	e96	93	106	130	207	453	162	84	89
11	110	105	102	e96	96	103	121	208	604	166	87	85
12	108	104	101	e94	95	103	118	195	422	154	86	86
13	109	102	101	e96	e94	104	122	162	359	146	82	104
14	110	103	103	e96	e94	101	134	149	315	142	78	117
15	114	104	99	e96	96	101	131	143	290	148	83	118
16	114	105	98	e96	e96	100	120	152	266	145	83	116
17	113	105	98	96	96	101	122	172	252	135	84	113
18	111	104	e96	99	99	105	127	174	247	129	94	109
19	110	105	e96	94	101	109	121	233	247	139	92	115
20	108	106	e96	96	97	104	119	199	270	146	85	142
21	108	95	98	96	94	106	116	214	251	141	82	143
22	108	99	97	98	95	108	112	239	230	129	80	132
23	108	98	e96	97	98	110	105	331	202	125	81	130
24	107	97	95	96	97	111	108	318	192	117	85	134
25	105	e96	98	98	97	119	114	253	198	113	89	132
26	106	e96	100	96	98	122	104	240	218	113	87	125
27	109	e97	98	96	97	113	105	234	209	110	86	127
28	109	98	e96	97	96	112	131	277	229	106	85	128
29	111	98	e94	96	96	109	135	366	227	102	83	123
30	106	100	e96	97	---	108	123	310	204	95	84	121
31	99	---	e98	94	---	111	---	273	---	95	86	---
TOTAL	3,318	3,006	3,068	2,958	2,791	3,240	3,710	6,898	8,943	4,690	2,683	3,302
MEAN	107	100	99.0	95.4	96.2	105	124	223	298	151	86.5	110
MAX	114	106	105	100	101	122	138	366	604	246	100	143
MIN	91	95	94	85	93	93	104	122	192	95	78	84
AC-FT	6,580	5,960	6,090	5,870	5,540	6,430	7,360	13,680	17,740	9,300	5,320	6,550

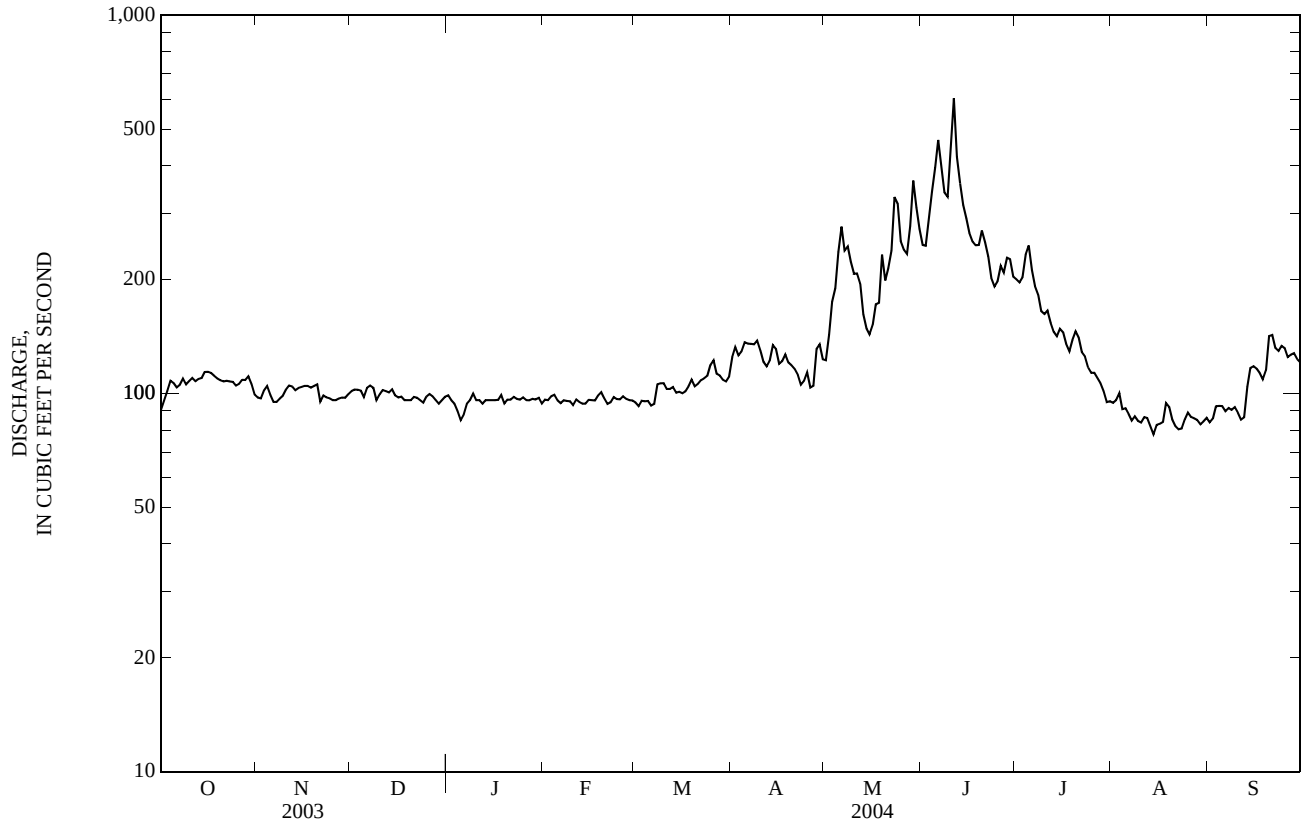
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2004, BY WATER YEAR (WY)

MEAN	122	122	111	103	102	110	164	415	468	193	120	114
MAX	185	177	170	158	135	181	288	1,010	1,117	482	235	171
(WY)	(1984)	(1984)	(1948)	(1948)	(1971)	(1960)	(1962)	(1984)	(1984)	(1975)	(1975)	(1984)
MIN	83.4	87.8	80.3	69.8	79.2	84.3	94.6	187	136	74.8	59.3	73.3
(WY)	(1940)	(1940)	(1940)	(1943)	(1942)	(1945)	(1945)	(2002)	(1987)	(1961)	(1940)	(1988)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1938 - 2004	
ANNUAL TOTAL	52,543		48,607			
ANNUAL MEAN	144		133		179	
HIGHEST ANNUAL MEAN					336	1984
LOWEST ANNUAL MEAN					119	1961
HIGHEST DAILY MEAN	1,110	May 31	604	Jun 11	2,940	May 16, 1984
LOWEST DAILY MEAN	70	Feb 25	78	Aug 14	35	Jan 23, 1962
ANNUAL SEVEN-DAY MINIMUM	83	Feb 24	83	Aug 10	38	Aug 14, 1992
MAXIMUM PEAK FLOW			731	Jun 11	3,810	May 16, 1984
MAXIMUM PEAK STAGE			4.39	Jun 11	b6.24	May 16, 1984
INSTANTANEOUS LOW FLOW			a75	Aug 13	c34	Aug 14, 1992
ANNUAL RUNOFF (AC-FT)	104,200		96,410		129,700	
10 PERCENT EXCEEDS	219		233		348	
50 PERCENT EXCEEDS	102		105		119	
90 PERCENT EXCEEDS	90		91		90	

a--Gage height, 2.71 ft.
b--Site and datum then in use.
c--Gage height, 1.99 ft, site and datum then in use.
e--Estimated.

06019500 RUBY RIVER ABOVE RESERVOIR, NEAR ALDER, MT—Continued



06020600 RUBY RIVER BELOW RESERVOIR, NEAR ALDER, MT

LOCATION.--Lat 45°14'32", long 112°06'36" (NAD 27), in SE¼SE¼NE¼ sec.8, T.7 S., R.4 W., Madison County, Hydrologic Unit 10020003, on right bank 0.2 mi downstream from Ruby Dam, 5.7 mi south of Alder, and at river mile 47.8.

DRAINAGE AREA.--596 mi^2.

PERIOD OF RECORD.--December 1962 to current year.

REVISED RECORDS.--1985 (M).

GAGE.--Water-stage recorder. Elevation of gage is 5,286.63 ft (NGVD 29) (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good. Flow regulated by Ruby River Reservoir (station number 06020500). Diversions for irrigation of about 3,500 acres upstream from station. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	58	39	27	28	29	30	54	112	283	345	254
2	63	58	39	27	28	29	30	54	112	260	343	221
3	63	53	34	27	28	29	30	97	129	243	342	202
4	63	45	29	27	28	30	30	137	200	243	340	205
5	64	45	29	27	28	30	30	210	241	239	340	204
6	64	45	29	27	28	30	30	320	251	210	339	204
7	64	44	29	27	28	30	30	319	281	196	341	224
8	64	44	29	27	28	29	30	380	298	201	333	234
9	65	44	28	27	28	29	41	400	319	199	332	256
10	66	44	28	27	28	29	52	408	331	206	329	266
11	66	44	28	27	28	29	52	460	321	213	333	264
12	67	45	28	27	28	29	52	507	303	240	347	261
13	67	43	28	27	28	29	52	505	296	255	340	255
14	60	40	28	27	28	29	52	503	296	255	338	242
15	56	40	28	27	28	29	52	501	296	256	344	226
16	56	40	28	27	29	29	52	499	297	266	335	214
17	56	40	28	27	29	30	51	497	297	277	329	213
18	56	40	28	27	29	30	52	482	297	299	327	212
19	57	40	28	27	29	29	52	469	303	298	327	210
20	57	40	27	27	29	29	52	414	302	295	327	180
21	57	40	27	27	29	30	52	406	309	294	334	162
22	57	40	28	27	29	30	53	387	323	293	322	152
23	57	40	27	27	29	30	53	278	323	293	320	145
24	58	40	28	27	29	30	53	179	316	292	316	145
25	59	39	28	27	29	30	53	183	316	289	313	144
26	59	39	28	27	29	30	53	188	319	289	306	123
27	59	39	28	27	29	30	54	170	317	290	276	114
28	59	39	28	27	29	30	54	152	317	298	260	114
29	59	39	28	28	29	30	54	122	306	310	258	115
30	59	39	27	28	---	30	54	111	292	336	257	115
31	58	---	27	28	---	30	---	112	---	346	255	---
TOTAL	1,878	1,286	896	840	826	916	1,385	9,504	8,420	8,264	9,948	5,876
MEAN	60.6	42.9	28.9	27.1	28.5	29.5	46.2	307	281	267	321	196
MAX	67	58	39	28	29	30	54	507	331	346	347	266
MIN	56	39	27	27	28	29	30	54	112	196	255	114
AC-FT	3,730	2,550	1,780	1,670	1,640	1,820	2,750	18,850	16,700	16,390	19,730	11,660

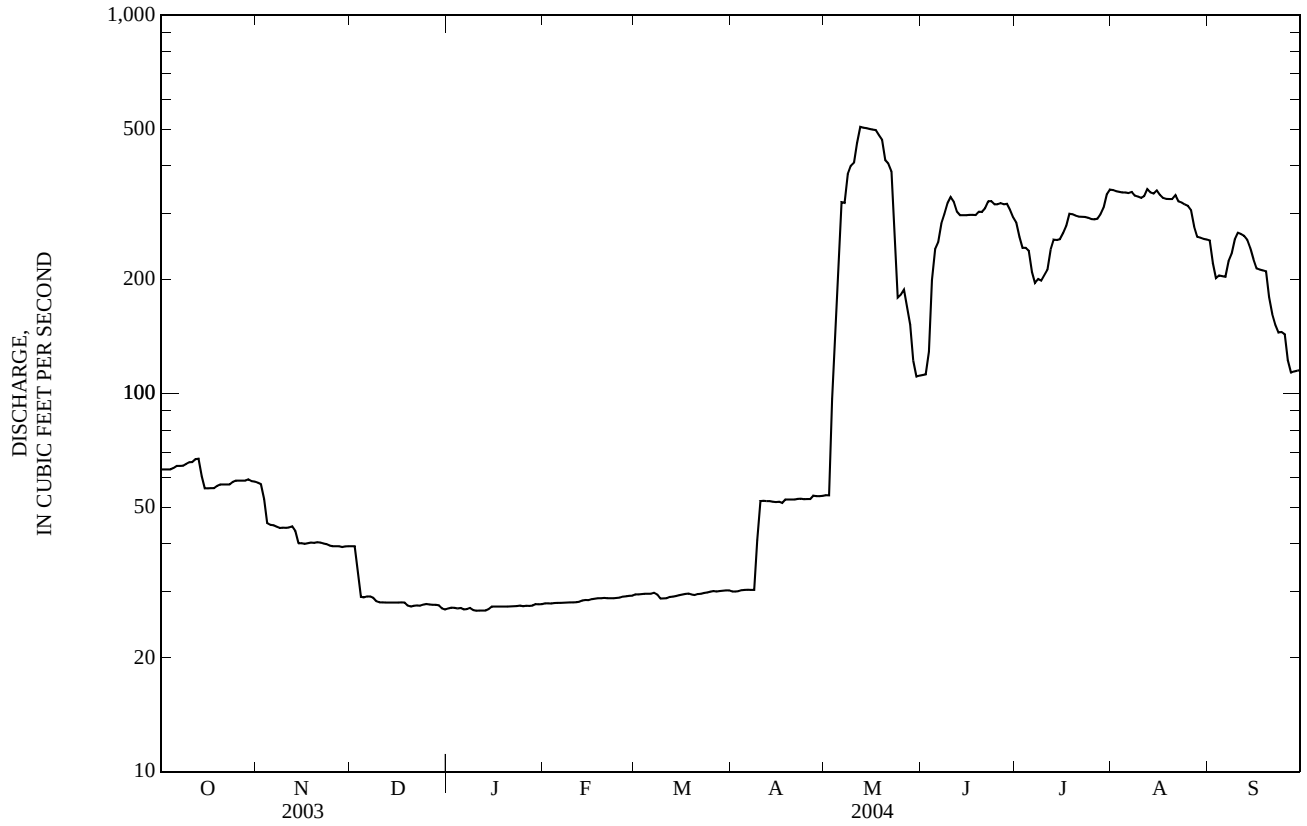
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2004, BY WATER YEAR (WY)

MEAN	120	72.3	54.1	50.0	45.2	56.1	89.2	417	583	350	353	247
MAX	244	222	142	139	92.4	174	192	1,035	1,209	559	473	399
(WY)	(1965)	(1985)	(1984)	(1984)	(1971)	(1998)	(1965)	(1984)	(1984)	(1975)	(1970)	(1975)
MIN	38.0	28.9	23.6	20.9	21.4	19.3	30.5	189	281	197	222	59.4
(WY)	(1986)	(2003)	(2003)	(1989)	(1991)	(1991)	(1991)	(1963)	(2004)	(1992)	(1985)	(1994)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1963 - 2004	
ANNUAL TOTAL	56,542		50,039			
ANNUAL MEAN	155		137		205	
HIGHEST ANNUAL MEAN					352	1984
LOWEST ANNUAL MEAN					128	2002
HIGHEST DAILY MEAN	1,030	May 31	507	May 12	2,500	May 17, 1984
LOWEST DAILY MEAN	22	Jan 22	27	Dec 20	15	Feb 17, 1995
ANNUAL SEVEN-DAY MINIMUM	22	Jan 22	27	Dec 30	16	Jan 3, 1989
MAXIMUM PEAK FLOW			519	May 12	3,010	May 16, 1984
MAXIMUM PEAK STAGE			4.06	May 12	a8.52	May 16, 1984
INSTANTANEOUS LOW FLOW					b1.4	Dec 5, 1974
ANNUAL RUNOFF (AC-FT)	112,200		99,250		148,300	
10 PERCENT EXCEEDS	369		328		448	
50 PERCENT EXCEEDS	57		56		109	
90 PERCENT EXCEEDS	23		28		31	

a--From floodmark.
b--Dam closure; result of discharge measurement..

06020600 RUBY RIVER BELOW RESERVOIR, NEAR ALDER, MT—Continued



06024450 BIG HOLE RIVER BELOW BIG LAKE CREEK, AT WISDOM, MT

LOCATION.--Lat 45°37'07", long 113°27'25" (NAD 27), in SW¼SW¼NE¼ sec. 33, T.2 S., R.15 W., Beaverhead County, Hydrologic Unit 10020004, on downstream side of State Highway 43 bridge, 0.3 mi west of Wisdom, 0.6 mi downstream from Big Lake Creek, and at river mile 116.0.

DRAINAGE AREA.--575 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1988 to current year (seasonal records only).

REVISED RECORDS.--WDR-MT-95-1: 1991 (M).

GAGE.--Water-stage recorder. Elevation of gage is 6,040 ft (NGVD 29).

REMARKS.--Seasonal water-discharge records good. Diversions for irrigation of about 66,900 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND , CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				165	17	49	362	41	29	81		
2				174	16	32	234	36	30	77		
3				166	16	23	207	39	29	76		
4				169	16	18	248	39	37	75		
5				170	15	16	262	35	36	71		
6				163	17	18	188	34	33	66		
7				149	13	41	143	33	33	66		
8				145	11	67	127	30	34	66		
9				143	9.7	88	106	29	34	68		
10				138	8.0	133	96	27	34	67		
11				128	7.2	344	91	25	31	66		
12				120	11	232	78	24	36	65		
13				109	12	137	71	22	54	64		
14				89	9.7	98	58	21	62	64		
15				79	8.1	62	59	20	62	65		
16				65	7.1	44	78	20	64	65		
17				49	8.5	40	85	23	62	66		
18				56	15	42	87	34	60	76		
19				56	57	71	157	36	85	83		
20				38	50	103	223	33	117	81		
21				34	57	81	210	29	113	82		
22				32	191	68	147	30	103	82		
23				26	224	58	107	34	98	82		
24				22	146	38	97	35	97	83		
25				20	99	31	84	45	100	73		
26				18	65	45	76	51	96	76		
27				16	38	72	62	55	91	83		
28				19	37	122	54	50	88	86		
29				18	73	186	49	42	84	87		
30				18	84	342	47	37	85	87		
31				---	68	---	47	33	---	80		
TOTAL				2,594	1,406.3	2,701	3,940	1,042	1,917	2,309		
MEAN				86.5	45.4	90.0	127	33.6	63.9	74.5		
MAX				174	224	344	362	55	117	87		
MIN				16	7.1	16	47	20	29	64		
AC-FT				5,150	2,790	5,360	7,810	2,070	3,800	4,580		

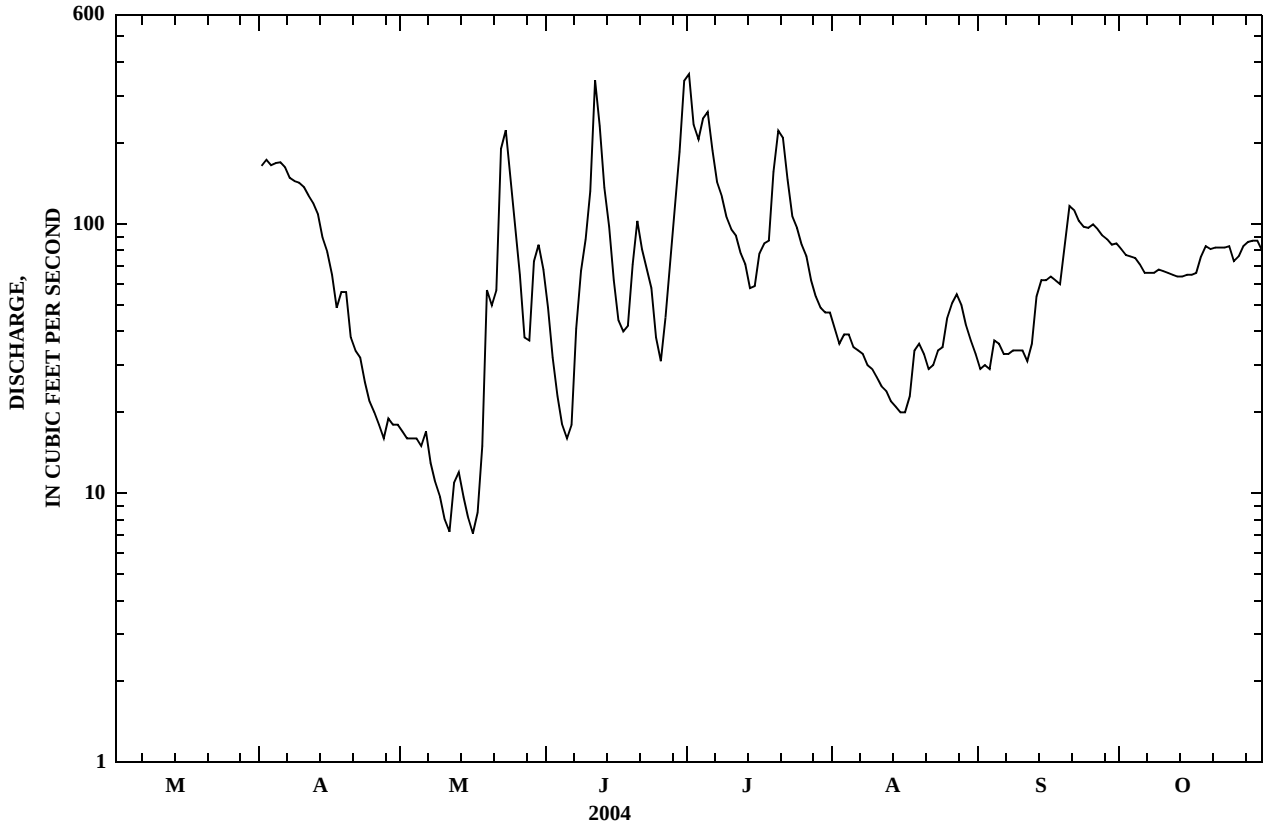
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1988 - 2004

MEAN	379	465	546	211	61.3	39.3	66.0
MAX	614	1,476	1,797	739	215	95.4	139
(WY)	(1996)	(1997)	(1997)	(1995)	(1997)	(1997)	(1998)
MIN	86.5	45.4	68.9	21.4	1.11	2.42	23.5
(WY)	(2004)	(2004)	(1994)	(1988)	(1988)	(1988)	(2004)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1988 - 2004	
HIGHEST DAILY MEAN	362	Jul 1	3,830	Jun 7 1991
LOWEST DAILY MEAN	7.1	May 16	b.00	Aug 28 1988
MAXIMUM PEAK FLOW	437	Jun 30	4,200	Jun 6 1995
MAXIMUM PEAK STAGE	3.77	Jun 30	6.37	Jun 6 1995
INSTANTANOUS LOW FLOW	a5.7	May 11	b.00	Aug 28 1988

a--Gage height, 1.93 ft.
b--No flow many days in August and September 1988.

06024450 BIG HOLE RIVER BELOW BIG LAKE CREEK, AT WISDOM, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1988 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: May 1988 to current year (seasonal records only).

INSTRUMENTATION.--Temperature recorder since Apr. 27, 1988.

REMARKS.--Daily water temperatures record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE (seasonal records): Maximum, 26.5°C, July 12, 2002, minimum, 0.0°C many days during winter period.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: During period of seasonal operation, maximum, 25.5°C, July 16-17; minimum, 0.0°C, Oct. 25 and 31.

06024450 BIG HOLE RIVER BELOW BIG LAKE CREEK, AT WISDOM, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
APRIL 2004 TO OCTOBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		APRIL			MAY			JUNE			JULY	
1	7.0	2.5	4.5	17.5	5.5	11.0	20.0	10.0	14.5	20.5	14.5	17.0
2	5.0	2.0	3.5	17.5	7.0	12.0	21.0	10.5	15.5	20.5	13.0	16.5
3	10.5	2.0	6.0	16.0	8.0	12.5	21.5	11.0	16.0	19.5	14.0	16.5
4	10.0	5.5	7.5	16.5	8.0	12.5	19.5	12.0	16.0	19.5	13.5	16.0
5	12.0	4.5	8.0	17.5	9.0	12.5	19.5	11.5	16.0	21.0	13.0	16.5
6	10.0	6.5	8.0	16.5	8.0	12.0	16.0	11.5	13.5	21.0	13.5	17.5
7	11.0	5.0	8.0	18.0	9.0	13.0	19.0	8.5	13.5	19.0	14.0	16.0
8	11.5	5.0	8.0	16.0	8.0	12.0	17.0	10.0	12.5	19.5	11.0	15.0
9	9.5	4.5	6.5	16.0	7.0	11.5	19.5	10.5	14.5	19.5	11.5	15.5
10	10.5	2.0	6.0	12.5	7.5	9.5	14.5	11.0	12.0	19.5	13.0	16.0
11	11.5	2.5	7.0	10.0	5.0	7.5	15.0	9.0	12.0	19.5	12.5	16.0
12	13.5	3.5	8.0	10.5	3.0	6.5	16.5	9.5	13.0	23.0	13.0	17.5
13	10.5	5.0	8.0	12.0	5.0	8.0	18.0	11.0	14.0	23.0	14.0	18.5
14	11.0	5.5	8.0	13.0	4.5	8.5	18.5	10.0	14.0	23.5	14.5	19.0
15	10.0	4.0	7.0	14.0	5.5	10.0	15.0	10.0	12.0	25.0	15.5	19.5
16	11.5	2.5	6.5	12.0	7.5	9.0	19.0	7.0	12.5	25.5	15.5	20.0
17	9.5	5.0	7.0	16.5	7.5	11.0	19.0	9.0	13.5	25.5	16.5	21.0
18	9.5	4.0	6.5	11.5	8.5	9.5	15.5	10.5	13.0	21.5	18.0	19.5
19	9.0	3.5	6.0	14.0	7.5	10.5	16.5	10.5	13.0	23.5	16.5	19.5
20	8.5	3.5	6.0	18.0	9.0	13.0	18.5	11.0	14.5	22.5	16.5	19.5
21	11.0	2.5	6.0	15.0	10.0	12.5	20.5	10.5	15.5	22.5	15.0	18.5
22	13.5	4.0	8.0	12.5	9.0	10.5	20.5	12.0	16.5	22.5	14.5	18.5
23	15.0	4.5	9.0	13.5	8.0	10.0	23.0	12.5	17.5	23.5	14.5	19.0
24	13.5	6.0	9.0	12.5	7.0	9.5	23.0	13.5	18.0	23.5	15.0	19.0
25	14.5	4.0	9.0	14.0	6.5	10.5	21.5	14.5	17.5	21.5	15.0	18.5
26	16.5	5.5	10.5	13.0	8.5	10.5	21.0	12.5	16.5	22.0	14.5	18.0
27	15.0	6.5	10.5	16.5	9.0	12.5	19.5	13.5	16.0	22.5	14.0	18.0
28	10.0	4.5	7.0	13.5	9.5	11.0	20.0	13.5	16.5	23.0	14.0	18.5
29	13.0	1.5	6.5	10.5	7.5	8.5	20.5	13.5	16.5	22.0	14.0	18.0
30	16.0	3.5	9.0	13.5	6.5	9.5	21.0	14.0	17.0	23.0	14.0	18.5
31	---	---	---	16.0	8.0	12.0	---	---	---	23.5	14.0	18.5
MONTH	16.5	1.5	7.5	18.0	3.0	10.5	23.0	7.0	15.0	25.5	11.0	18.0

		AUGUST			SEPTEMBER			OCTOBER	
1	22.0	14.5	18.5	19.5	13.0	16.0	14.0	8.5	11.0
2	18.0	14.5	16.0	17.0	12.5	14.5	13.5	7.0	10.0
3	22.0	13.5	17.0	16.5	8.0	12.0	13.5	7.0	10.0
4	23.5	13.5	18.0	17.0	9.5	12.5	13.0	6.5	9.5
5	20.5	14.0	17.0	16.0	9.5	12.5	12.5	6.0	9.5
6	21.0	12.5	16.5	17.5	8.0	12.5	11.5	5.5	8.5
7	21.0	13.5	17.0	17.5	9.5	13.0	13.5	8.5	10.5
8	22.0	11.5	16.5	18.0	9.5	13.5	12.0	6.0	9.5
9	23.0	12.5	17.5	17.5	10.0	13.5	10.0	7.0	8.5
10	22.5	12.5	17.5	18.0	11.5	14.5	10.5	5.0	7.5
11	23.5	13.0	18.0	17.5	10.5	14.0	9.5	3.5	6.5
12	23.5	13.0	18.0	14.0	10.5	12.0	10.0	5.0	7.0
13	23.5	13.0	18.0	13.5	9.0	11.0	9.5	3.5	6.5
14	24.0	13.0	18.5	13.0	8.5	10.0	11.0	4.0	7.5
15	20.5	14.0	17.5	12.0	8.5	10.0	9.5	6.0	8.0
16	21.0	15.0	17.5	14.0	9.0	11.5	9.0	7.0	8.0
17	18.0	15.0	16.0	13.5	8.5	11.0	8.0	6.0	7.0
18	20.5	14.5	17.0	10.5	8.0	9.0	8.5	5.0	6.5
19	21.5	14.0	17.5	8.0	5.5	7.0	7.0	2.0	4.5
20	22.5	13.5	17.5	9.0	5.0	6.5	7.0	4.5	5.5
21	19.0	13.5	16.5	7.0	5.0	6.0	6.0	4.0	5.0
22	16.5	13.5	15.0	8.5	5.5	7.0	6.0	3.0	4.5
23	17.0	12.0	14.0	12.0	7.0	9.5	5.0	3.5	4.0
24	14.0	10.0	12.5	14.5	7.0	10.5	4.0	1.0	2.5
25	15.5	10.5	12.5	14.5	8.0	11.0	3.5	0.0	1.5
26	14.5	10.0	12.0	14.5	8.0	11.5	5.0	0.5	2.5
27	17.0	10.0	13.0	15.0	8.0	11.5	4.5	1.5	3.0
28	17.0	10.0	13.5	14.5	8.0	11.5	4.0	1.5	2.5
29	19.5	11.0	15.0	14.0	7.5	10.5	3.0	2.0	2.5
30	20.5	11.5	15.5	13.5	7.5	10.5	3.0	1.5	2.0
31	21.0	11.5	16.0	---	---	---	2.0	0.0	1.0
MONTH	24.0	10.0	16.0	19.5	5.0	11.0	14.0	0.0	6.0

06024540 BIG HOLE RIVER BELOW MUDD CREEK, NEAR WISDOM, MT

LOCATION.--Lat 45°48'27", long 113°18'45" (NAD 27), in SE¼ SW¼NW¼ sec. 26, T.1N., R. 14 W., Beaverhead County, Hydrologic Unit 10020004, on right bank at bridge on Montana Highway 43, 0.5 mi downstream from Mudd Creek, 15.0 mi northeast of Wisdom, 17.3 mi west of Wise River, and at river mile 91.6.

DRAINAGE AREA.--1,267 mi^2.

PERIOD OF RECORD.--October 1997 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 5,880 ft (NGVD 29).

REMARKS.--Seasonal records good except those from July 23 to August 23, which are poor. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductances were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				617	411	718	891	123	143	235		
2				597	416	635	778	119	145	230		
3				562	450	574	638	119	141	232		
4				588	509	538	592	118	172	232		
5				618	556	529	626	113	187	230		
6				635	602	547	551	98	161	229		
7				651	630	555	465	99	162	226		
8				676	605	529	397	95	155	227		
9				678	579	563	361	91	154	232		
10				643	547	834	324	88	146	229		
11				582	578	1,160	300	84	148	230		
12				562	598	1,120	275	81	155	229		
13				575	543	836	250	76	200	230		
14				591	482	687	234	72	222	231		
15				616	441	578	212	69	212	232		
16				568	446	494	209	72	206	238		
17				533	502	449	209	94	199	238		
18				534	536	459	201	117	197	266		
19				503	735	485	224	117	231	276		
20				426	795	584	317	107	297	280		
21				380	756	550	339	101	299	276		
22				364	1,000	477	262	97	281	275		
23				341	1,260	431	206	120	273	272		
24				332	1,170	370	187	116	271	273		
25				338	951	326	176	131	276	270		
26				333	813	322	167	151	267	252		
27				353	739	391	162	159	254	259		
28				382	724	474	150	161	249	270		
29				448	792	495	137	155	242	274		
30				425	817	699	126	147	237	274		
31				---	777	---	124	146	---	275		
TOTAL				15,451	20,760	17,409	10,090	3,436	6,282	7,722		
MEAN				515	670	580	325	111	209	249		
MAX				678	1,260	1,160	891	161	299	280		
MIN				332	411	322	124	69	141	226		
AC-FT				30,650	41,180	34,530	20,010	6,820	12,460	15,320		

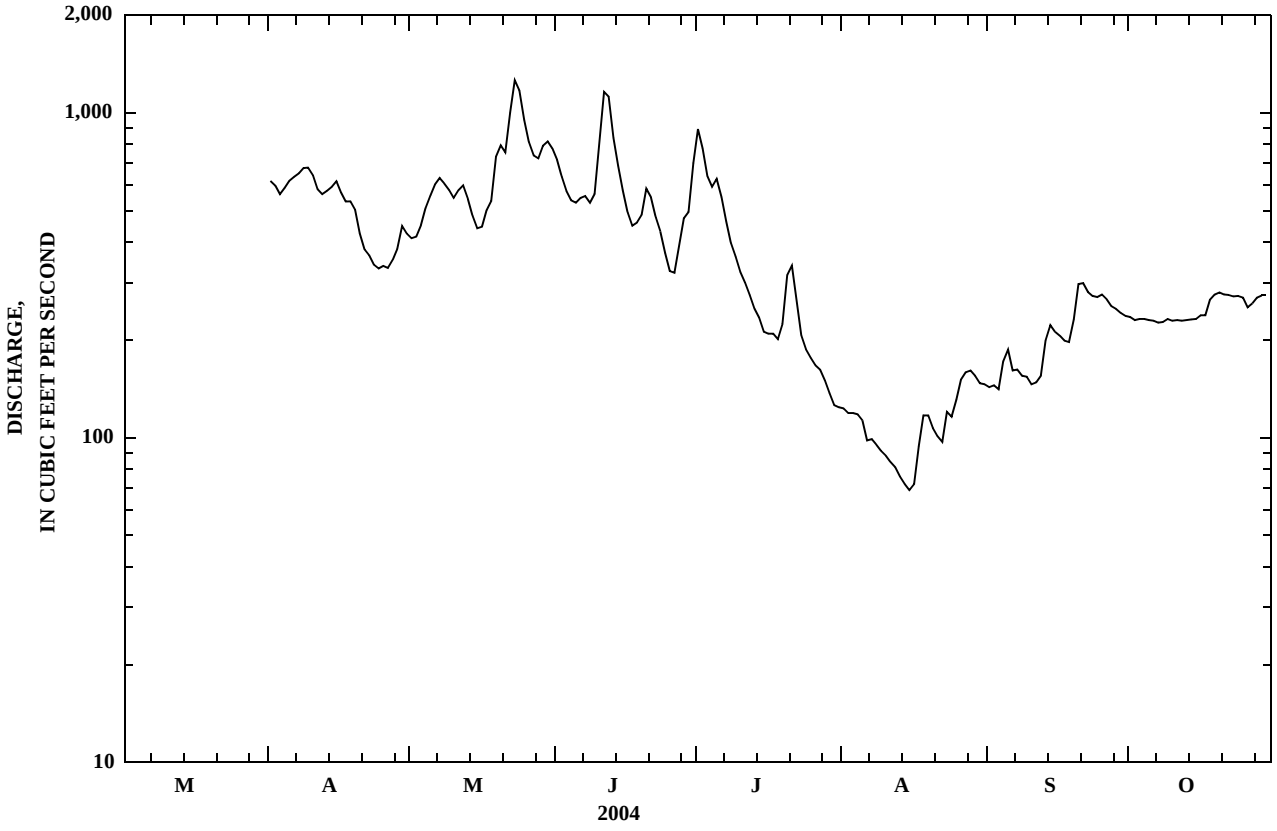
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2004, BY WATER YEAR (WY)

MEAN	796	1,209	1,339	348	122	119	172
MAX	1,086	2,306	2,272	961	244	209	258
(WY)	(2003)	(1998)	(1999)	(1998)	(1998)	(2004)	(1998)
MIN	515	670	506	113	48.5	75.6	104
(WY)	(2004)	(2004)	(2000)	(2000)	(2000)	(2000)	(2004)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1997 - 2004	
HIGHEST DAILY MEAN	1,260	May 23	4,810	Jun 1 2003
LOWEST DAILY MEAN	69	Aug 15	38	Aug 28 2000
MAXIMUM PEAK FLOW	1,340	May 23	4,900	Jun 1 2003
MAXIMUM PEAK STAGE	3.86	May 23	5.97	Jun 1 2003
INSTANTANEOUS LOW FLOW	a45	Aug 15	b36	Aug 27 2000

a--Gage height, 2.34 ft.
b--Gage height, 2.31 ft.

06024540 BIG HOLE RIVER BELOW MUDD CREEK, NEAR WISDOM, MT—Continued



06025500 BIG HOLE RIVER NEAR MELROSE, MT

LOCATION.--Lat 45°31'36", long 112°42'03" (NAD 27), in SE¼SE¼SW¼ sec.34, T.3 S., R.9 W., Madison County, Hydrologic Unit 10020004, on left bank 50 ft downstream from bridge, on frontage road east of Interstate 15, 0.1 mi downstream from Rock Creek, 7 mi south of Melrose, and at river mile 31.1.

DRAINAGE AREA.--2,476 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 5,032.87 ft (NGVD 29). Prior to June 14, 1927, water-stage recorder, and July 17, 1927, to Sept. 30, 1931, nonrecording gage, at site 1.7 mi upstream at different elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 136,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	222	185	351	e300	e290	322	912	685	1,280	1,480	302	281
2	225	301	350	e300	e290	313	938	698	1,170	1,570	293	275
3	224	339	352	e290	e300	302	846	745	1,110	1,410	291	286
4	226	318	336	e270	e300	320	845	880	1,120	1,330	294	287
5	231	284	333	e240	e300	308	937	1,050	1,280	1,270	287	292
6	234	e270	341	e200	e290	313	1,010	1,220	1,550	1,200	278	314
7	236	e270	349	e210	e300	305	1,050	1,260	1,640	1,060	260	290
8	238	e270	337	e230	e300	324	1,080	1,270	1,470	938	242	273
9	238	e290	329	e250	e300	335	1,110	1,240	1,410	819	230	261
10	240	e320	332	e280	e300	345	1,060	1,140	1,590	750	218	258
11	248	e330	330	e270	e300	354	950	1,050	2,160	699	205	245
12	253	339	341	e270	e290	360	879	1,090	2,180	649	191	252
13	263	336	365	e270	e290	378	880	1,000	1,840	594	183	292
14	267	338	352	e270	e290	378	933	897	1,570	556	171	348
15	276	336	327	e270	e290	382	972	802	1,370	526	158	364
16	284	353	318	e280	e290	389	934	754	1,230	507	157	376
17	293	357	344	e280	e290	404	852	862	1,090	492	169	376
18	297	354	306	e280	e290	466	851	893	1,020	490	204	368
19	289	362	290	e290	e290	559	834	1,070	1,080	535	225	398
20	284	371	301	e280	e290	654	775	1,300	1,210	572	248	478
21	279	363	339	e280	e290	824	691	1,330	1,220	660	237	535
22	273	332	325	e280	e290	1,040	621	1,480	1,120	637	238	538
23	273	281	315	e290	e290	1,250	582	1,800	1,030	560	282	518
24	275	311	327	e300	e300	1,440	555	1,900	977	494	326	530
25	272	309	354	e290	e300	1,490	566	1,670	937	464	340	522
26	269	324	323	e280	e310	1,460	548	1,460	940	452	360	521
27	277	327	316	e290	e310	1,130	581	1,360	1,200	421	381	514
28	280	317	e270	e290	e310	889	715	1,320	1,330	395	371	508
29	316	358	e280	e290	320	789	781	1,410	1,300	370	355	504
30	347	345	e290	e300	---	750	747	1,440	1,300	350	331	496
31	219	---	e300	e290	---	815	---	1,400	---	325	296	---
TOTAL	8,148	9,590	10,123	8,510	8,600	19,388	25,035	36,476	39,724	22,575	8,123	11,500
MEAN	263	320	327	275	297	625	834	1,177	1,324	728	262	383
MAX	347	371	365	300	320	1,490	1,110	1,900	2,180	1,570	381	538
MIN	219	185	270	200	290	302	548	685	937	325	157	245
AC-FT	16,160	19,020	20,080	16,880	17,060	38,460	49,660	72,350	78,790	44,780	16,110	22,810

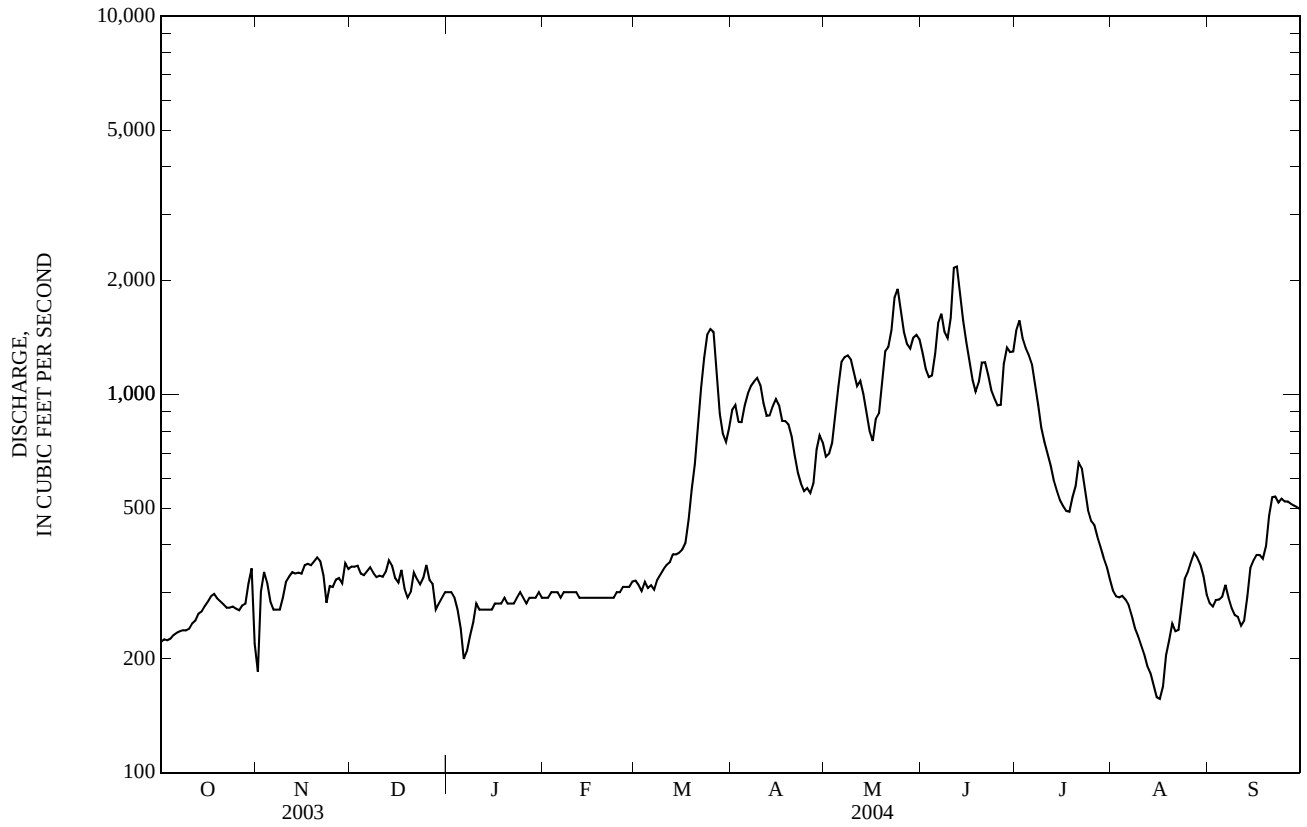
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2004, BY WATER YEAR (WY)

MEAN	489	489	390	346	360	477	1,482	3,242	3,904	1,290	461	371
MAX	1,109	1,037	763	716	800	958	3,515	8,294	8,380	4,120	1,457	870
(WY)	(1947)	(1928)	(1976)	(1928)	(1971)	(1986)	(1943)	(1976)	(1965)	(1975)	(1975)	(1965)
MIN	184	255	223	143	143	247	490	1,108	814	254	87.6	114
(WY)	(1936)	(1938)	(1933)	(1937)	(1937)	(1937)	(1975)	(1977)	(1992)	(1931)	(1988)	(1988)

06025500 BIG HOLE RIVER NEAR MELROSE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1924 - 2004	
ANNUAL TOTAL	317,489		207,792			
ANNUAL MEAN	870		568		1,109	
HIGHEST ANNUAL MEAN					2,024	1976
LOWEST ANNUAL MEAN					486	1931
HIGHEST DAILY MEAN	9,110	Jun 1	2,180	Jun 12	13,800	Jun 4, 1948
LOWEST DAILY MEAN	177	Sep 6	157	Aug 16	49	Aug 17, 1931
ANNUAL SEVEN-DAY MINIMUM	179	Sep 2	176	Aug 12	55	Aug 30, 1988
MAXIMUM PEAK FLOW			2,250	Jun 12	b23,000	Jun 14, 1927
MAXIMUM PEAK STAGE			3.18	Jun 12	14.00	Jun 14, 1927
INSTANTANEOUS LOW FLOW			a117	Nov 1	c49	Aug 17, 1931
ANNUAL RUNOFF (AC-FT)	629,700		412,200		803,500	
10 PERCENT EXCEEDS	2,170		1,260		2,970	
50 PERCENT EXCEEDS	330		340		471	
90 PERCENT EXCEEDS	216		256		255	

a--Gage height, 0.83 ft.
b--On June 10, 1972, when Wise River Reservoir failed; maximum discharge unaffected by dam failure, 14,300 ft^3/s.
c--Observed, gage height, 0.70 ft, site and datum then in use.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: August 1956 to September 1957, August 1960 to September 1964, June 1977 to current year.
SUSPENDED-SEDIMENT DISCHARGE: August 1956 to September 1957, August 1960 to September 1964.

INSTRUMENTATION.--Temperature recorder since June 1977.

REMARKS--Daily water temperature record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 24.0°C, June 25, 1988, July 12, and 19-22, 2003; minimum, 0.0°C on many days during winter most years.
SEDIMENT CONCENTRATION (water years 1956-57, 1960-64): Maximum daily mean, 200 mg/L, June 29, 1961; minimum daily mean, 1 mg/L, on many days in 1960-64.
SEDIMENT LOAD (water years 1956-57, 1960-64): Maximum daily, 4,300 tons, June 9, 1964; minimum daily, less than 0.5 ton on several days in 1961.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.5°C, July 17; minimum, 0.0°C many days October through March.

06025500 BIG HOLE RIVER NEAR MELROSE, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.5	9.0	11.5	0.0	0.0	0.0	1.0	0.0	0.5	0.0	0.0	0.0
2	13.5	9.5	11.5	1.0	0.0	0.5	1.5	0.5	1.0	0.0	0.0	0.0
3	13.0	8.5	11.0	1.5	0.0	0.5	2.0	0.5	1.0	0.0	0.0	0.0
4	13.0	8.5	11.0	0.5	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
5	13.5	9.0	11.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
6	13.0	10.0	11.5	0.0	0.0	0.0	2.5	0.5	1.5	0.0	0.0	0.0
7	12.0	10.0	11.0	0.0	0.0	0.0	2.5	0.5	1.5	0.0	0.0	0.0
8	13.0	10.0	11.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
9	13.0	9.5	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	11.0	8.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	8.0	5.5	7.0	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
12	9.5	6.5	8.0	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
13	9.0	6.5	7.5	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
14	8.0	5.5	6.5	1.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0
15	7.0	5.0	6.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	8.0	5.0	6.5	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
17	11.0	7.0	9.0	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
18	10.5	7.0	9.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
19	11.0	7.5	9.5	3.5	1.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
20	10.5	7.5	9.0	3.0	0.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
21	12.0	8.0	10.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	11.5	7.5	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	10.0	7.5	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	8.0	5.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	6.0	3.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	7.0	3.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	8.0	5.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	9.5	7.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	9.0	3.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	3.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	13.5	0.0	8.5	3.5	0.0	0.5	2.5	0.0	0.0	0.0	0.0	0.0
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	2.0	0.5	1.5	7.5	5.0	6.5	15.0	8.0	11.0
2	0.0	0.0	0.0	1.5	0.0	0.5	6.5	4.0	5.0	15.5	10.0	12.5
3	0.0	0.0	0.0	1.0	0.0	0.0	8.0	2.5	5.0	16.0	10.5	13.5
4	0.0	0.0	0.0	2.0	0.0	1.0	9.5	5.5	7.5	15.5	10.5	13.5
5	0.0	0.0	0.0	2.0	0.0	1.0	12.0	6.5	9.0	16.0	11.5	13.5
6	0.0	0.0	0.0	1.5	0.0	0.5	10.0	8.0	9.0	14.5	11.5	12.5
7	0.0	0.0	0.0	2.5	0.0	1.0	11.5	7.5	9.5	14.5	11.0	12.5
8	0.0	0.0	0.0	5.5	0.5	3.0	11.0	8.0	9.5	14.5	11.0	12.5
9	0.0	0.0	0.0	5.0	0.5	3.0	9.0	7.0	8.0	14.5	10.5	12.5
10	0.0	0.0	0.0	5.5	1.0	3.5	9.5	5.0	7.0	12.0	10.0	11.0
11	0.0	0.0	0.0	5.0	1.0	3.0	11.0	5.0	8.0	10.5	7.5	9.0
12	0.0	0.0	0.0	5.5	1.5	3.5	12.5	6.5	9.5	9.0	5.5	7.0
13	0.0	0.0	0.0	5.5	2.5	4.0	11.5	8.0	9.5	9.0	5.5	7.0
14	0.0	0.0	0.0	5.0	2.0	3.5	11.0	8.0	9.5	10.0	5.5	8.0
15	0.0	0.0	0.0	6.0	2.0	4.0	11.0	7.0	9.0	11.5	6.5	9.0
16	0.0	0.0	0.0	6.5	3.0	4.5	10.0	5.5	8.0	10.5	8.5	9.5
17	0.0	0.0	0.0	6.0	3.0	4.5	9.0	6.5	8.0	14.0	8.0	10.5
18	0.0	0.0	0.0	7.5	3.5	5.5	10.0	6.5	8.0	11.5	9.5	10.0
19	0.0	0.0	0.0	8.0	4.0	5.5	10.0	6.5	8.0	11.5	8.5	10.0
20	0.0	0.0	0.0	6.0	2.0	4.0	9.5	6.5	7.5	12.0	9.0	10.5
21	0.0	0.0	0.0	6.0	2.0	4.0	9.5	5.0	7.5	13.5	10.5	12.0
22	0.0	0.0	0.0	5.5	3.0	4.0	12.0	5.5	8.5	13.5	11.0	12.0
23	0.0	0.0	0.0	6.0	2.5	4.0	12.5	7.0	10.0	11.5	9.5	10.0
24	0.0	0.0	0.0	5.0	3.0	4.0	11.5	8.0	10.0	10.0	8.0	9.0
25	0.5	0.0	0.0	4.5	2.5	3.5	13.0	7.0	10.0	12.0	8.0	9.5
26	0.5	0.0	0.5	3.5	1.5	3.0	15.5	8.5	12.0	12.0	10.0	11.0
27	2.0	0.0	1.0	4.0	1.0	2.0	15.0	10.0	12.5	14.0	10.0	12.0
28	1.5	0.0	0.5	7.0	1.0	4.0	13.0	7.0	10.0	12.5	11.0	12.0
29	2.0	0.0	1.0	8.5	2.5	5.5	10.5	4.5	7.5	11.5	9.5	10.5
30	---	---	---	10.0	4.0	7.0	13.0	6.0	9.0	11.5	8.5	9.5
31	---	---	---	9.0	5.5	7.5	---	---	---	13.5	8.5	10.5
MONTH	2.0	0.0	0.0	10.0	0.0	3.5	15.5	2.5	8.5	16.0	5.5	11.0

06025500 BIG HOLE RIVER NEAR MELROSE, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.5	10.5	12.5	18.5	15.5	17.0	20.0	16.5	18.5	18.5	14.0	16.5
2	17.0	12.0	14.0	17.5	15.0	16.0	19.0	16.5	17.5	16.5	13.5	15.0
3	18.0	13.0	15.0	17.5	15.0	16.0	20.0	14.5	17.5	15.5	11.0	13.0
4	18.0	14.0	16.0	18.5	14.5	16.5	20.5	15.0	18.0	16.0	10.5	13.0
5	18.0	14.0	16.0	19.0	14.0	16.5	20.0	15.5	18.0	16.0	11.5	13.5
6	16.5	13.5	15.0	19.5	15.0	17.0	20.0	15.0	17.5	16.0	10.5	13.5
7	15.5	11.0	13.0	18.0	15.0	16.5	20.5	15.0	17.5	16.5	11.5	14.0
8	14.5	11.5	12.5	18.5	13.0	15.5	20.5	13.5	17.0	16.5	12.0	14.0
9	15.5	10.0	12.5	18.5	13.0	16.0	21.5	15.0	18.0	16.5	12.5	14.5
10	13.5	11.5	12.5	17.5	14.0	16.0	21.5	15.5	18.5	16.5	12.5	14.5
11	12.5	10.0	11.0	20.0	14.0	16.5	21.5	15.5	18.5	17.0	12.5	15.0
12	13.5	10.5	12.0	21.5	14.0	17.5	21.0	15.0	18.0	15.5	12.0	13.5
13	15.0	12.5	13.5	21.5	15.5	18.5	21.5	15.0	18.0	13.5	10.5	12.0
14	16.0	12.0	13.5	22.0	16.0	19.0	22.0	15.5	18.5	13.0	10.5	12.0
15	15.5	12.0	13.5	22.5	17.0	19.5	20.5	16.0	18.5	13.5	10.0	11.5
16	14.5	10.0	12.0	23.0	17.0	20.0	20.5	17.0	19.0	15.0	10.5	12.5
17	15.5	11.0	13.0	23.5	17.5	20.5	19.5	17.0	18.0	14.0	10.5	12.0
18	15.0	12.0	13.0	21.5	18.0	19.5	18.0	16.0	16.5	12.0	10.0	11.0
19	14.5	11.5	12.5	22.0	17.0	19.5	20.0	14.5	17.0	10.5	8.5	9.5
20	15.5	11.0	13.0	22.0	17.5	19.5	20.5	16.0	18.5	10.5	7.5	9.0
21	17.5	12.5	14.5	22.0	17.0	19.5	18.5	15.5	17.0	9.5	7.0	8.5
22	18.0	13.0	15.5	21.0	16.0	18.5	17.0	14.5	16.0	10.0	8.0	9.0
23	19.5	14.0	16.5	21.0	16.0	18.5	16.0	14.0	15.0	12.0	8.5	10.0
24	19.5	15.0	17.0	22.0	16.0	18.5	15.5	12.5	14.0	14.0	9.5	11.5
25	19.0	15.5	17.0	20.5	16.5	18.5	15.0	12.5	13.5	14.5	9.5	12.0
26	18.5	14.5	16.5	21.0	15.5	18.0	14.5	11.5	13.0	14.5	10.5	12.5
27	16.5	14.5	15.5	21.5	15.0	18.0	16.0	11.5	13.5	14.5	10.5	12.5
28	16.5	13.0	15.0	21.5	15.5	18.5	17.5	11.5	14.0	14.5	10.5	12.5
29	17.0	14.0	15.5	22.0	16.0	18.5	18.5	13.0	15.5	14.0	10.0	12.0
30	19.5	14.5	16.5	22.0	16.0	19.0	19.0	13.0	16.0	13.5	10.0	11.5
31	---	---	---	21.5	16.0	19.0	19.5	13.5	16.5	---	---	---
MONTH	19.5	10.0	14.0	23.5	13.0	18.0	22.0	11.5	17.0	18.5	7.0	12.5

06026210 BIG HOLE RIVER NEAR GLEN, MT

LOCATION.--Lat 45°26'26", long 112°33'20" (NAD 27), in NW¼SW¼SE¼ sec. 35, T.4 S, R.8 W, Madison County, Hydrologic Unit 10020004, on left bank 50 ft downstream from private suspension bridge, 0.1 mi downstream from Sandy Hollow, 7.0 mi southeast of Glen, and at river mile 17.2.

DRAINAGE AREA.--2,655 mi^2.

PERIOD OF RECORD.--October 1997 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 4,850 ft (NGVD 29).

REMARKS.--Seasonal records good. Figures of discharge for seasons 1998-99 are the sum of river flow, Fred Bryan Ditch on left bank, and Upper and Lower Raffety Ditches on right bank. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				916	712	1,230	1,410	313	270	493		
2				956	699	1,130	1,540	301	267	477		
3				878	739	1,070	1,420	307	278	464		
4				854	845	1,050	1,320	305	281	457		
5				931	986	1,170	1,280	286	269	456		
6				995	1,140	1,400	1,220	279	277	448		
7				1,040	1,190	1,560	1,110	263	276	435		
8				1,060	1,190	1,400	1,010	241	262	430		
9				1,080	1,180	1,320	903	231	257	434		
10				1,060	1,110	1,430	844	218	252	433		
11				973	1,040	2,070	794	203	246	430		
12				898	1,060	2,140	732	190	261	428		
13				890	1,010	1,830	675	180	310	432		
14				929	916	1,500	627	167	365	432		
15				960	821	1,260	575	156	388	440		
16				937	764	1,170	557	155	398	441		
17				876	800	1,050	532	165	404	443		
18				873	858	978	532	203	392	449		
19				860	959	1,020	560	223	421	472		
20				821	1,180	1,150	612	243	504	493		
21				745	1,240	1,180	691	236	589	512		
22				675	1,380	1,110	679	240	604	513		
23				632	1,720	1,020	627	276	570	506		
24				604	1,860	985	552	299	579	500		
25				614	1,660	968	494	327	570	489		
26				598	1,430	997	480	340	560	474		
27				600	1,320	1,170	441	362	543	491		
28				719	1,280	1,330	391	362	528	506		
29				809	1,340	1,270	347	346	520	515		
30				778	1,370	1,260	338	330	499	520		
31				---	1,320	---	316	292	---	518		
TOTAL				25,561	35,119	38,218	23,609	8,039	11,940	14,531		
MEAN				852	1,133	1,274	762	259	398	469		
MAX				1,080	1,860	2,140	1,540	362	604	520		
MIN				598	699	968	316	155	246	428		
AC-FT				50,700	69,660	75,810	46,830	15,950	23,680	28,820		

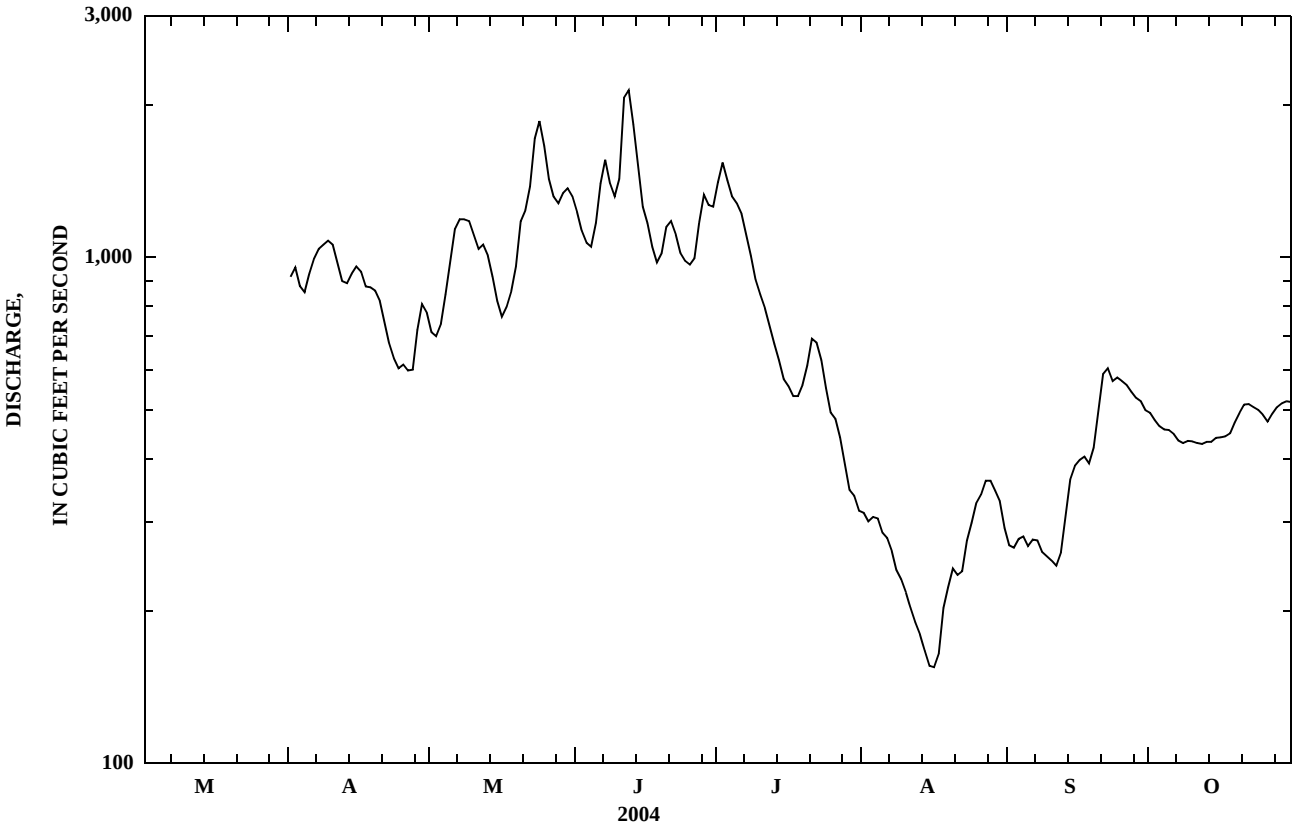
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1997-2004

MEAN	1,216	2,120	2,725	885	310	299	456
MAX	1,572	3,829	4,432	2,138	565	398	708
(WY)	(2003)	(1998)	(1999)	(1998)	(1998)	(2004)	(1998)
MIN	852	1,133	1,274	399	149	207	318
(WY)	(2004)	(2004)	(2004)	(2000)	(2000)	(2001)	(2004)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1997-2004	
HIGHEST DAILY MEAN	2,140	Jun 12	10,000	Jun 1, 2003
LOWEST DAILY MEAN	155	Aug 16	122	Aug 29, 2000
MAXIMUM PEAK FLOW	2,210	Jun 12	10,500	May 31, 2003
MAXIMUM PEAK STAGE	3.84	Jun 12	7.05	May 31, 2003
INSTANTANEOUS LOW FLOW	a146	Aug 16	119	Aug 28, 2000

a--Gage height, 1.95 ft.

06026210 BIG HOLE RIVER NEAR GLEN, MT—Continued



06026500 JEFFERSON RIVER NEAR TWIN BRIDGES, MT

LOCATION.--Lat 45°36'45", long 112°19'47" (NAD 27), in SE¼SE¼SW¼ sec. 34, T.2 S., R.6 W., Madison County, Hydrologic Unit 10020005, on left bank 0.4 mi upstream from Hells Canyon Creek, 4.8 mi north of Twin Bridges, and at river mile 2,399.7.

DRAINAGE AREA.--7,632 mi^2.

PERIOD OF RECORD.--August 1940 to September 1943, October 1957 to September 1972, May 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,560 ft (NGVD 29). August 1940 to September 1943, nonrecording gage at site 500 ft downstream at different elevation. October 1957 to June 3, 1972, water-stage recorder at site 250 ft downstream and June 4 to September 30, 1972, nonrecording gage 6.5 mi downstream at different elevations.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by Clark Canyon, Lima and Ruby River Reservoirs. Diversion for irrigation of about 310,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of specific conductance and water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	489	e700	829	e600	e500	709	1,190	851	1,510	1,560	331	581
2	506	e750	829	e650	e500	690	1,290	759	1,340	1,720	335	522
3	510	815	828	e600	e500	672	1,240	795	1,220	1,690	377	525
4	510	e750	814	e500	e500	684	1,170	824	1,160	1,620	390	532
5	539	e700	769	e400	e550	679	1,210	933	1,210	1,570	404	514
6	537	e650	816	e350	e550	690	1,260	1,070	1,400	1,490	429	527
7	541	e650	844	e400	e600	673	1,310	1,190	1,660	1,380	420	512
8	539	e700	836	e450	e650	725	1,330	1,180	1,560	1,250	393	501
9	542	805	769	e450	e680	763	1,350	1,190	1,460	1,140	372	475
10	552	837	797	e500	691	769	1,340	1,160	1,520	1,090	344	441
11	584	841	795	e500	702	753	1,260	1,110	2,320	1,070	307	444
12	605	834	746	e500	660	755	1,180	1,130	2,520	972	276	456
13	617	794	819	e500	650	775	1,120	1,150	2,260	895	257	534
14	641	801	841	e500	673	778	1,120	1,070	1,870	833	243	567
15	663	798	762	e500	678	778	1,130	971	1,550	749	238	596
16	677	818	730	e500	661	769	1,130	941	1,440	701	244	607
17	687	830	741	e500	684	777	1,110	987	1,310	675	235	614
18	693	831	739	e500	710	792	1,090	1,070	1,220	651	268	592
19	693	834	649	e500	726	871	1,070	1,140	1,220	680	329	640
20	682	856	694	e500	683	973	1,060	1,360	1,310	753	358	792
21	668	838	757	e500	679	1,070	1,000	1,460	1,370	784	402	981
22	652	785	745	e500	680	1,220	920	1,610	1,310	802	440	982
23	672	708	644	e550	685	1,410	860	2,110	1,190	753	565	953
24	668	730	696	e550	682	1,530	793	2,340	1,110	657	613	919
25	689	696	781	e500	694	1,670	741	2,040	1,100	593	636	919
26	699	720	743	e450	701	1,720	701	1,760	1,210	564	666	894
27	716	738	680	e500	702	1,590	639	1,620	1,310	532	698	896
28	721	799	598	e550	706	1,310	736	1,560	1,550	496	705	870
29	755	816	e580	e600	696	1,160	923	1,700	1,500	438	676	856
30	773	827	e550	e550	---	1,090	911	1,690	1,490	386	655	842
31	e770	---	e580	e550	---	1,080	---	1,630	---	358	602	---
TOTAL	19,590	23,251	23,001	15,700	18,773	29,925	32,184	40,401	44,200	28,852	13,208	20,084
MEAN	632	775	742	506	647	965	1,073	1,303	1,473	931	426	669
MAX	773	856	844	650	726	1,720	1,350	2,340	2,520	1,720	705	982
MIN	489	650	550	350	500	672	639	759	1,100	358	235	441
AC-FT	38,860	46,120	45,620	31,140	37,240	59,360	63,840	80,140	87,670	57,230	26,200	39,840

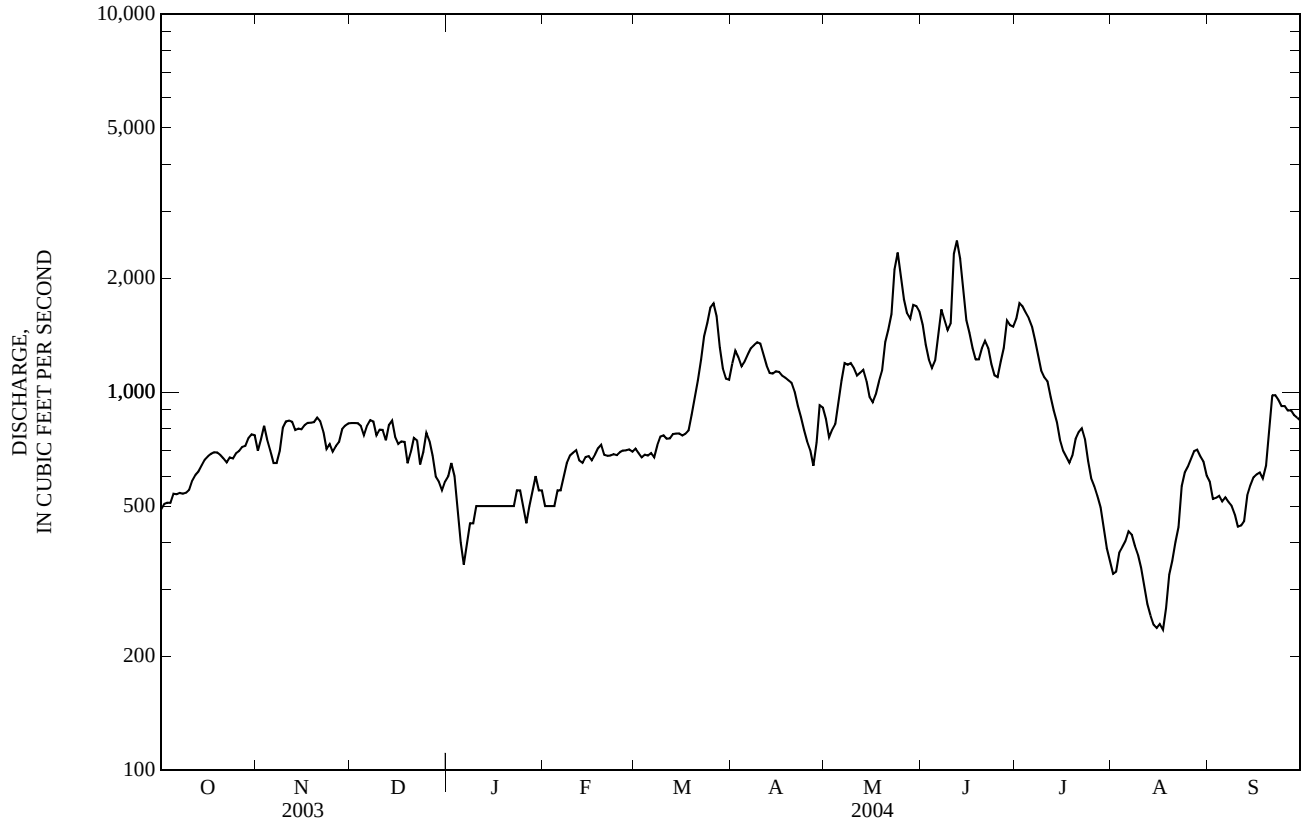
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)*

MEAN	1,300	1,439	1,224	1,038	1,112	1,285	2,288	3,697	5,513	1,958	818	979
MAX	2,052	2,025	1,864	1,424	1,690	2,092	4,634	7,025	9,816	4,477	1,700	2,114
(WY)	(1966)	(1966)	(1996)	(1996)	(1971)	(1972)	(1943)	(1997)	(1997)	(1995)	(1995)	(1965)
MIN	632	775	708	506	627	622	927	1,303	1,296	527	208	288
(WY)	(2004)	(2004)	(2002)	(2004)	(2002)	(2002)	(1961)	(2004)	(1994)	(1966)	(1961)	(1994)

06026500 JEFFERSON RIVER NEAR TWIN BRIDGES, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004*	
ANNUAL TOTAL	451,395		309,169			
ANNUAL MEAN	1,237		845		1,915	
HIGHEST ANNUAL MEAN					2,824	1997
LOWEST ANNUAL MEAN					845	2004
HIGHEST DAILY MEAN	10,500	Jun 1	2,520	Jun 12	14,900	Jun 9, 1997
LOWEST DAILY MEAN	289	Sep 3	235	Aug 17	165	Aug 19, 1961
ANNUAL SEVEN-DAY MINIMUM	301	Sep 2	252	Aug 12	176	Aug 16, 1961
MAXIMUM PEAK FLOW			a2,580	Jun 11	d16,500	Jun 10, 1964
MAXIMUM PEAK STAGE			b8.79	Jan 3	12.60	Jun 8, 1995
INSTANTANEOUS LOW FLOW			c223	Aug 17	f82	Aug 17, 1966
ANNUAL RUNOFF (AC-FT)	895,300		613,200		1,387,000	
10 PERCENT EXCEEDS	2,590		1,400		4,160	
50 PERCENT EXCEEDS	750		741		1,300	
90 PERCENT EXCEEDS	368		494		682	

*--During periods of operation (August 1940 to September 1943, October 1957 to September 1972, May 1994 to current year).
a--Gage height, 5.83 ft.
b--Backwater from ice.
c--Gage height, 2.97 ft.
d--Gage height, 9.04 ft, site and datum then in use.
e--Estimated.
f--Gage height, 1.61 ft. site and datum then in use.



462517112173001 08N06W25AABB01 (LUTTRELL WELL EPA-1)

LOCATION.--Lat 46°25'16.6", long 112°17'29.8" (NAD 83), in NW¼NE¼NE¼ sec. 25, T.8N., R.6W., Jeffferson County, Hydrologic Unit 10030101.

HYDROGEOLOGIC UNIT.--Tertiary volcanics.

WELL CHARACTERISTICS.--Drilled in May 1999, casing diameter 4 in., depth 108 ft.

DATUM.--Measuring point, top of PVC casing, 1.20 ft above land surface datum. Elevation of land-surface datum is 7,565.63 ft (NGVD 29).

PERIOD OF RECORD.--October 2001 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum. Well was pumped extensively on June 30 and Aug. 8 in an attempt to remove sediment and standing water from the well casing.

MEASURED WATER LEVEL
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 22	73.59	July 12	61.68
Apr. 5	84.27	Aug. 18	66.55
Apr. 26	78.00	Sept. 8	68.21
June 4	63.35		

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instan-taneous gal/min (00059)	Pump or flow period prior to sam-pling, minutes (72004)	Sam-pling depth, feet (00003)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)
APR													
26...	1400	--	--	--	33	--	4.0	143	5.0	1	.32	.066	4.32
JUN													
04...	1300	1.0	63	100	1.2	<.1	3.8	140	6.0	--	.20	.066	4.36
SEP													
08...	1600	1.2	70	103	.8	<.1	3.6	148	6.0	1	.31	.101	4.49

Date	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, water, fltrd inc tit field, mg/L as CaCO3 (39086)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)
APR												
26...	1	2.80	<2	.35	<.2	49.9	69.2	E128	E.17	3,730	E.1	.57
JUN												
04...	1	2.92	<2	.31	<.2	55.8	64.8	E130	E.18	3,800	<.2	.54
SEP												
08...	1	2.92	<2	.39	<.2	50.8	48.3	E109	E.15	4,350	E.1	.62

Date	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
APR						
26...	3.5	180	5.75	1.3	8.0	170
JUN						
04...	1.1	260	6.12	1.2	6.4	166
SEP						
08...	1.9	214	13.5	1.2	6.7	189

E--Estimated.

462507112170601 08N05W30BBCD01 (LUTTRELL WELL EPA-6)

LOCATION.--Lat 46°25'06.8", long 112°17'05.6" (NAD 83), in SW¼NW¼NW¼ sec. 30, T.8 N., R.5 W., Lewis and Clark County, Hydrologic Unit 10020006.

HYDROGEOLOGIC UNIT.--Boulder batholith quartz monzonite.

WELL CHARACTERISTICS.--Drilled in June 2000, casing diameter 2 in., depth 84.5 ft.

DATUM.--Measuring point, top of PVC casing, 2.60 ft above land surface datum. Elevation of land-surface datum is 7,689.44 ft (NGVD 29).

PERIOD OF RECORD.--June 2000 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum. Well was pumped extensively on Aug. 8 in an attempt to remove sediment and standing water from the well casing.

MEASURED WATER LEVEL,
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 22	36.95	July 12	31.40
Apr. 5	42.08	Aug. 18	34.39
Apr. 27	33.98	Sept. 9	36.28
June 3	26.15		

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instantaneous gal/min (00059)	Pump or flow period prior to sampling, minutes (72004)	Sampling depth, feet (00003)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
JUN													
03...	1300	.50	65	65.0	12	<.1	6.6	107	12.5	38	9.18	3.56	1.48
SEP													
09...	1300	.60	39	77.0	16	<.1	6.5	105	9.0	37	9.43	3.35	1.43

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alkalinity, water, fltrd inc tit field, mg/L as CaCO3 (39086)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)
JUN													
03...	.3	4.12	43	--	.40	.3	28.0	8.3	86	.12	E1	E.2	E.02
SEP													
09...	.3	4.13	42	48	.29	.3	28.7	7.6	88	.12	E1	<.2	<.04

Date	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
JUN						
03...	<.4	4,380	<.08	6.9	343	2.6
SEP						
09...	<.4	4,100	<.08	7.8	317	2.0

E--Estimated.

462503112172302 08N06W25ADAC02 (LUTTRELL WELL EPA-4S)

LOCATION.--Lat 46°25'02.7", long 112°17'22.8" (NAD 83), in NE¼SE¼NE¼ , sec. 25, T.8 N., R.6 W., Jefferson County, Hydrologic Unit 10020006.

HYDROGEOLOGIC UNIT.--Tertiary volcanics.

WELL CHARACTERISTICS.--Drilled in June 2000, casing diameter 2 in., depth 98.5 ft.

DATUM.--Measuring point, top of PVC casing, 1.60 ft above land surface datum. Elevation of land-surface datum is 7,521.47 ft (NGVD 29).

PERIOD OF RECORD.--June 2000 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum. Well was pumped extensively on Aug. 8 in an attempt to remove sediment and standing water from well casing.

MEASURED WATER LEVEL,
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 22	23.98	July 12	19.55
Apr. 5	23.03	Aug. 18	20.25
Apr. 27	19.23	Sept. 8	20.60
June 4	17.50		

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instan-taneous gal/min (00059)	Pump or flow period prior to sam-pling, minutes (72004)	Sam-pling depth, feet (00003)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)
APR													
27...	1100	--	--	--	>1,000	--	4.5	62	5.0	3	1.08	.131	3.68
JUN													
04...	1000	.50	100	90.0	250	3.1	4.6	64	9.0	3	1.04	.144	3.87
SEP													
08...	1200	.30	75	95.0	170	3.1	4.4	64	11.5	3	1.07	.139	3.72

Date	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alka-linity, water, fltrd inc tit field, mg/L as CaCO3 (39086)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Alum-inum, water, fltrd, ug/L (01106)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)
APR													
27...	.9	3.88	<2	<2	3.40	<.2	33.9	21.6	409	E69	E.09	<.2	.10
JUN													
04...	1	4.40	<2	<2	4.73	<.2	34.0	24.7	553	E74	E.10	<.2	.11
SEP													
08...	.9	3.93	<2	E1	3.48	<.2	35.6	16.7	500	E66	E.09	<.2	.12

Date	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
APR						
27...	2.1	12	70.0	.7	11.2	89.7
JUN						
04...	2.4	23	49.2	E.6	9.0	96.4
SEP						
08...	3.7	51	244	.8	10.4	96.6

E--Estimated.

462503112172301 08N06W25ADAC01 (LUTTRELL WELL EPA-4)

LOCATION.--Lat 46°25'02.7", long 112°17'22.8" (NAD 83), in NE¼SE¼NE¼ sec. 25, T.8 N., R.6 W., Jefferson County, Hydrologic Unit 10020006.

HYDROGEOLOGIC UNIT.--Boulder batholith quartz monzonite.

WELL CHARACTERISTICS.--Drilled in May 1999, casing diameter 4 in., depth 170 ft.

DATUM.--Measuring point, top of PVC casing, 0.0 ft above land surface datum. Elevation of land-surface datum is 7,521.1 ft (NGVD 29).

PERIOD OF RECORD.--October 2001 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum. Well was pumped extensively on June 30 and Aug. 8 in an attempt to remove sediment and standing water from the well casing.

MEASURED WATER LEVEL,
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 22	39.17	July 12	34.41
Apr. 5	44.54	Aug. 18	35.91
June 3	34.60	Sept. 8	36.62

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instan-taneous gal/min (00059)	Pump or flow period prior to sam-pling, minutes (72004)	Sam-pling depth, feet (00003)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)
JUN													
04...	1100	.50	59	160	190	.6	6.8	128	8.0	33	9.37	2.43	5.66
SEP													
08...	1100	1.4	--	165	87	<.1	6.6	135	7.5	34	9.89	2.37	5.32

Date	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alka-linity, water fltrd inc tit field, mg/L as CaCO3 (39086)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)
JUN													
04...	.6	7.49	20	--	.50	.2	37.8	32.2	109	.15	E2	1.1	.04
SEP													
08...	.6	7.53	25	24	.44	.2	35.1	32.7	109	.15	<2	.9	.06

Date	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
JUN						
04...	.5	924	<.08	6.5	123	10.4
SEP						
08...	.4	454	.11	7.6	109	8.7

E--Estimated.

462500112170701 08N05W30BCBD01 (LUTTRELL WELL EPA-5)

Lat 46°24'59.6", long 112°17'06.6 (NAD 83)", in NW¼SW¼NW¼ sec. 30, T.8 N., R.5 W., Jefferson County, Hydrologic Unit 10020006.

HYDROGEOLOGIC UNIT.--Boulder batholith quartz monzonite.

WELL CHARACTERISTICS.--Drilled in June 1999, casing diameter 4 in., depth 110 ft.

DATUM.--Measuring point, top of PVC casing, 0.8 ft above land surface datum. Elevation of land-surface datum is 7,577.99 ft (NGVD 29).

PERIOD OF RECORD.--October 2001 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum. Well was pumped extensively on Aug. 8 in an attempt to remove sediment and standing water from the well casing.

MEASURED WATER LEVEL,
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 22	31.34	July 12	27.11
Apr. 5	34.27	Aug. 18	29.10
Apr. 27	29.43	Sept. 10	28.54
June 3	25.45		

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instan-taneous gal/min (00059)	Pump or flow period prior to sam-pling, minutes (72004)	Sam-pling depth, feet (00003)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)
JUN													
03...	1600	1.5	90	100	26	.9	6.2	60	6.0	19	3.30	2.63	1.15
SEP													
10...	1200	.60	78	90.0	11	1.1	6.2	62	6.5	17	3.00	2.24	1.06

Date	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alka-linity, water, fltrd inc tit field, mg/L as CaCO3 (39086)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)
JUN													
03...	.6	5.57	24	--	.42	.3	33.0	7.7	69	.09	2	.3	<.04
SEP													
10...	.6	5.50	22	20	.37	.3	34.0	6.9	66	.09	2	.3	<.04

Date	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
JUN						
03...	E.4	83	<.08	12.1	102	6.0
SEP						
10...	.7	86	<.08	17.9	70.0	6.1

E--Estimated.

462347112173301 08N06W36DCAA01 (BUCKEYE WELL BTMW-9)

LOCATION.--Lat 46°23'47", long 112°17'33", (NAD 27) in NE¼SW¼SE¼ sec. 36, T.8N., R.6W., Jefferson County, Hydrologic Unit 10020006.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in December 1998, casing diameter 2 in., depth 15.3 ft.

DATUM.--Measuring point, top of protective casing, 2.7 ft above land surface datum. Elevation of land-surface datum is 7,040 ft (NGVD 29).

PERIOD OF RECORD.--December 1998 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum.

MEASURED WATER LEVEL,
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL
July 12	1.57
July 13	1.63
Sept. 8	1.56
Sept. 9	1.59

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instan-taneous gal/min (00059)	Pump or flow period prior to sam-pling, minutes (72004)	Sam-pling depth, feet (00003)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)
JUL 13...	0900	.10	--	--	7.1	6.5	912	8.0	460	141	27.2	6.39	.3
SEP 09...	0930	.13	5	4.00	--	6.2	868	9.0	440	132	27.0	6.44	.2

Date	Sodium, water, fltrd, mg/L (00930)	Alka-linity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alka-linity, water, fltrd inc tit field, mg/L as CaCO3 (39086)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)	Copper, water, fltrd, ug/L (01040)
JUL 13...	13.9	57	--	1.02	<.2	42.0	398	664	.90	--	17.0	15.2	2.6
SEP 09...	10.6	54	59	.70	<.2	42.0	403	663	.90	<2	2.0	22.5	2.2

Date	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
JUL 13...	--	.15	--	--	679
SEP 09...	3,670	E.06	65.7	1,250	644

E--Estimated.

462344112173701 08N06W36DCAC01 (BUCKEYE BTMW-1)

LOCATION.--Lat 46°23'44", long 112°17'37", (NAD 27) in NE¼SW¼SE¼ sec. 36, T.8N., R.6W., Jefferson County, Hydrologic Unit 10020006.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in December 1998, casing diameter 2 in., depth 10.6 ft.

DATUM.--Measuring point, top of PVC casing, 2.8 ft above land surface datum. Elevation of land-surface datum is 7,040 ft (NGVD 29).

PERIOD OF RECORD.--December 1998 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum.

MEASURED WATER LEVEL,
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL
July 12	1.17
July 13	1.27
Sept. 8	6.99
Sept. 9	7.15

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instan-taneous gal/min (00059)	Pump or flow period prior to sam-pling, minutes (72004)	Sam-pling depth, feet (00003)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)
JUL 13...	1000	.10	--	--	8.9	4.2	524	6.0	150	47.2	7.40	2.44	.2
SEP 09...	1000	.13	5	9.00	--	7.8	417	--	160	40.1	14.4	2.13	.6

Date	Sodium, water, fltrd, mg/L (00930)	Alka-linity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alka-linity, water, fltrd inc tit field, mg/L as CaCO3 (39086)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)	Copper, water, fltrd, ug/L (01040)
JUL 13...	6.03	--	<2	1.47	.5	47.1	222	E335	E.46	--	1.9	54.4	914
SEP 09...	18.8	73	80	.62	.3	19.5	126	273	.37	<2	12.3	.04	.7

Date	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
JUL 13...	--	96.6	--	--	5,140
SEP 09...	688	E.04	13.6	1,600	2.6

E--Estimated.

462342112174201 08N06W36DCBD02 (BUCKEYE WELL BTMW-3)

LOCATION.--Lat 46°23'42", long 112°17'42", (NAD 27) in NW¼SW¼SE¼ sec. 36, T.8N., R.6W., Jefferson County, Hydrologic Unit 10020006.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in December 1998, casing diameter 2 in., depth 10.5 ft.

DATUM.--Measuring point, top of PVC casing, 3.0 ft above land surface datum. Elevation of land-surface datum is 7,035 ft (NGVD 29).

PERIOD OF RECORD.--December 1998 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum.

MEASURED WATER LEVEL,
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL
July 12	3.96
July 13	4.04
Sept. 8	4.25
Sept. 9	4.28

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instan-taneous gal/min (00059)	Pump or flow period prior to sam-pling, minutes (72004)	Sam-pling depth, feet (00003)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)
JUL 13...	1200	.10	3	--	1.0	5.6	1,060	5.0	360	108	22.9	1.76	.3
SEP 09...	1130	.13	5	8.00	--	5.9	495	7.5	180	50.9	12.2	1.08	.2

Date	Sodium, water, fltrd, mg/L (00930)	Alka-linity, water, fltrd inc tit field, mg/L as CaCO3 (39086)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)
JUL 13...	12.1	--	1.88	.4	54.3	760	--	--	--	9,590	93.2	18.1	--
SEP 09...	6.67	40	.59	.3	40.0	228	425	.58	59	4,800	5.33	.9	52,300

Date	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
JUL 13...	8.54	--	--	6,600
SEP 09...	2.16	10.3	1,940	1,620

462342112174601 08N06W36DCBC01 (BUCKEYE WELL BTMW-6)

LOCATION.--Lat 46°23'42", long 112°17'46", (NAD 27) in NW¼SW¼SE¼ sec. 36, T.8N., R.6W., Jefferson County, Hydrologic Unit 10020006.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in December 1998, casing diameter 2 in., depth 10 ft.

DATUM.--Measuring point, top of PVC casing, 3.2 ft above land surface datum. Elevation of land-surface datum is 7,035 ft (NGVD 29).

PERIOD OF RECORD.--December 1998 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum.

MEASURED WATER LEVEL,
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL
July 12	1.61
July 13	1.68
Sept. 8	2.11
Sept. 9	2.83

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instan-taneous gal/min (00059)	Pump or flow period prior to sam-pling, minutes (72004)	Sam-pling depth, feet (00003)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)
JUL 13...	1020	.10	--	--	1.4	6.6	397	8.0	170	49.9	10.5	3.61	.3
SEP 09...	1300	.13	5	5.00	--	6.4	372	10.0	170	50.1	11.2	3.74	.2

Date	Sodium, water, fltrd, mg/L (00930)	Alka-linity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alka-linity, water, fltrd inc tit field, mg/L as CaCO3 (39086)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)	Copper, water, fltrd, ug/L (01040)
JUL 13...	7.52	98	--	1.39	<.2	17.9	90.1	239	.33	--	15.1	.07	.8
SEP 09...	7.24	101	125	.55	<.2	20.4	89.3	264	.36	<2	22.6	.07	.6

Date	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
JUL 13...	--	.19	--	--	7.5
SEP 09...	2,890	<.08	17.0	3,840	3.9

462341112174601 08N06W36DCCB01 (BUCKEYE WELL BTMW-7)

LOCATION.--Lat 46°23'41", long 112°17'46", (NAD 27) in SW¼SW¼SE¼ sec. 36, T.8N., R.6W., Jefferson County, Hydrologic Unit 10020006.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in December 1998, casing diameter 2 in., depth 11 ft.

DATUM.--Measuring point, top of PVC casing, 2.9 ft above land surface datum. Elevation of land-surface datum is 7,035 ft (NGVD 29).

PERIOD OF RECORD.--December 1998 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum.

MEASURED WATER LEVEL,
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL
July 12	2.38
July 13	2.42
Sept. 8	2.56
Sept. 9	2.57

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instan-taneous gal/min (00059)	Pump or flow period prior to sam-pling, minutes (72004)	Sam-pling depth, feet (00003)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water unfltrd uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)
JUL 13...	1100	.10	--	--	.3	6.4	308	5.5	93	26.9	6.32	1.64	.2
SEP 09...	1200	.13	5	5.00	--	6.0	297	8.5	91	26.0	6.31	1.73	.2

Date	Sodium, water, fltrd, mg/L (00930)	Alka-linity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alka-linity, water, fltrd inc tit field, mg/L as CaCO3 (39086)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)	Copper, water, fltrd, ug/L (01040)
JUL 13...	5.27	25	--	.69	.3	30.5	80.0	167	.23	--	536	<.04	1.0
SEP 09...	5.01	25	64	.47	.3	32.0	81.7	218	.30	4	528	<.04	.7

Date	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
JUL 13...	--	.31	--	--	7.4
SEP 09...	23,200	.34	6.0	1,980	7.2

462342112174801 08N06W36DCBC02 (BUCKEYE WELL BTMW-8)

LOCATION.--Lat 46°23'42", long 112°17'48", (NAD 27) in NW¼SW¼SE¼ sec. 36, T.8N., R.6W., Jefferson County, Hydrologic Unit 10020006.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in December 1998, casing diameter 2 in., depth 10.5 ft.

DATUM.--Measuring point, top of PVC casing, 2.8 ft above land surface datum. Elevation of land-surface datum is 7,035 ft (NGVD 29).

PERIOD OF RECORD.--December 1998 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum.

MEASURED WATER LEVEL,
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL
July 12	5.15
July 13	5.19
Sept. 8	6.11
Sept. 9	5.49

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instan-taneous gal/min (00059)	Pump or flow period prior to sam-pling, minutes (72004)	Sam-pling depth, feet (00003)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)
JUL 13...	1050	.10	--	--	.3	6.5	322	5.5	120	36.3	7.86	1.88	.2
SEP 09...	1230	.13	5	9.00	--	6.3	305	10.0	110	32.8	7.24	1.72	.2

Date	Sodium, water, fltrd, mg/L (00930)	Alka-linity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alka-linity, water, fltrd inc tit field, mg/L as CaCO3 (39086)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)	Copper, water, fltrd, ug/L (01040)
JUL 13...	6.09	75	--	1.06	.3	35.0	59.8	196	.27	--	49.6	1.87	.7
SEP 09...	4.70	93	111	.43	<.2	29.3	32.7	188	.26	7	77.0	.05	E.3

Date	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
JUL 13...	--	.23	--	--	2,600
SEP 09...	11,400	E.06	8.2	701	402

E--Estimated.

462347112180401 BASIN CREEK BELOW BUCKEYE MINE NEAR LOGGING ROAD, NEAR BASIN, MT

LOCATION.--Lat 46°23'47", long 112°18'04" (NAD 27), in SW¼SE¼NW¼ sec. 36, T.8 N., R.6 W., Jefferson County, Hydrologic Unit 10020006, at old logging road crossing, 0.5 mi downstream from the Buckeye Mine, and 8.7 mi north of Basin.

DRAINAGE AREA.--2.54 mi^2.

PERIOD OF RECORD.--January 2000 to current year.

GAGE.--None. Elevation at site is 6,940 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
MAR													
30...	1315	.70	7.4	86	10.0	1.0	36	10.3	2.43	16.2	25	.61	.64
MAY													
24...	0945	5.2	7.1	50	0.0	0.5	19	5.48	1.23	8.6	9	.64	.63
JUL													
29...	0900	.75	7.3	77	15.0	8.0	31	9.00	1.99	12.5	19	.18	.22
SEP													
22...	0900	.92	7.6	78	3.0	3.0	31	9.23	2.03	11.7	15	.25	.28

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR									
30...	5.8	5.9	1.04	1.85	113	114	78	3	.01
MAY									
24...	7.6	7.4	1.35	2.30	92.2	87	82	1	.01
JUL									
29...	1.5	2.3	.20	1.19	36.1	38	90	3	.01
SEP									
22...	2.4	3.2	.24	.57	52.8	53	85	2	<.01

462500112170201 UNNAMED STREAM (LAD 1) DRAINING LUTTRELL REPOSITORY AREA, NEAR RIMINI

LOCATION.--Lat 46°24'59.9", long 112°17'02.5" (NAD 83), in NE$^1/_4$SW$^1/_4$NW$^1/_4$ sec. 30, T.8N., R.5W., Jeffferson County, Hydrologic Unit 10020006.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--June 2004.

GAGE.--None. Elevation at sampling location is 7,560 ft (NGVD 29).

REMARKS.--No flow during September 2004 sampling trip.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)
JUN 04...	1000	.01	5.0	86	4.0	25	6.97	1.88	.80	.3	4.00	25	3

Date	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)
JUN 04...	.51	<.2	11.3	29.9	57	.08	.00	78	.7	E1	.06	.06	2.0

Date	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
JUN 04...	1.8	30	30	<.08	<.06	E.6	4.0	5	5.0	5

462500112170501 UNNAMED STREAM (LAD 2) DRAINING LUTTRELL REPOSITORY AREA, NEAR RIMINI

LOCATION.--Lat 46°24'59.6", long 112°17'05.5" (NAD 83), in NE¼ SW¼ NW¼ sec. 30, T.8N., R.5W., Jeffferson County, Hydrologic Unit 10020006.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.-- June 2004.

GAGE.--None. Elevation at sampling location is 7,560 ft (NGVD 29).

REMARKS.--No flow during September 2004 sampling trip.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)
JUN 04...	0930	.01	5.6	94	4.5	24	6.21	1.97	.99	.7	7.97	41	5

Date	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)
JUN 04...	.52	<.2	11.8	33.1	66	.09	.00	69	2.1	2	.08	.08	2.8

Date	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
JUN 04...	2.6	30	30	<.08	<.06	.9	1.6	2	7.8	7

462501112173501 UNNAMED TRIBUTARY TO GRUB CREEK, SS NO. 4, NEAR RIMINI, MT

LOCATION.--Lat 46°25'00.8", long 112°17'35.2" (NAD 83), in SE¼SW¼NE¼ sec. 25, T.8 N., R.6 W., Jefferson County, Hydrologic Unit 10020006, 0.25 mi upstream from Grub Creek and 5.9 mi south of Rimini.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--October 2001 to August 2004, (discontinued).

GAGE.--None. Elevation at site is 7,420 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)
JUN 04...	1210	.36	6.7	79	--	10.0	24	7.10	1.43	2.82	.1	1.41	10
AUG 31...	1045	.01	5.7	93	19.0	6.5	27	8.19	1.64	4.34	.2	2.00	12

Date	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
JUN 04...	5	1.25	<.2	7.22	23.1	48	.07	.05	45	.7	2	.41	.43
AUG 31...	<2	2.59	<.2	17.5	33.7	E71	E.10	<.01	38	.8	E2	.20	.20

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
JUN 04...	1.2	2.2	1,000	1,460	.23	2.05	.9	94.6	95	81.4	80
AUG 31...	.8	1.5	2,400	2,530	.16	1.43	.9	143	145	59.0	55

E--Estimated.

462458112173201 UNNAMED TRIBUTARY TO GRUB CREEK, SS NO. 5, NEAR RIMINI, MT

LOCATION.--Lat 46°24'57.6", long 112°17'32.5" (NAD 27), SW¼SE¼SE¼ sec. 25, T.8N., R.6W., Jefferson County, Hydrologic Unit 10020006, 0.2 mi upstream from Grub Creek and 5.9 mi south of Rimini.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--July 2003 to August 2004, (discontinued).

GAGE.--None. Elevation at sampling site is 7,370 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)
JUN 04...	1040	.53	6.6	82	8.0	7.0	28	8.53	1.67	3.04	.1	1.71	10
AUG 31...	1015	.03	5.9	90	19.0	7.5	26	7.65	1.69	3.64	.2	2.10	13

Date	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
JUN 04...	4	1.22	<.2	7.71	28.4	56	.08	.08	44	.6	2	.47	.46
AUG 31...	<2	2.11	<.2	15.0	31.9	E65	E.09	E.01	64	.7	E2	.23	.22

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
JUN 04...	1.3	2.6	510	880	.18	1.58	.9	104	104	84.9	83
AUG 31...	1.0	1.4	504	690	.11	.62	1.3	178	174	61.7	56

E--Estimated.

462442112174602 UNNAMED TRIBUTARY TO GRUB CREEK AT MOUTH, SS NO. 6, NEAR RIMINI, MT

LOCATION.--Lat 46°24'42.3", long 112°17'45.5" (NAD 27), SW¼NW¼SE¼ sec. 25, T.8N., R.6W., Jefferson County, Hydrologic Unit 10020006, 30 ft upstream from Grub Creek and 5.9 mi south of Rimini.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.-July 2003 to current year.

GAGE.--None. Elevation at sampling site is 7,320 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)
JUN													
04...	1300	.94	6.5	73	--	9.0	24	6.89	1.54	2.37	.2	1.71	12
AUG													
31...	0930	.02	7.3	93	17.0	6.0	33	9.52	2.28	3.00	.2	2.14	11

Date	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
JUN													
04...	6	1.13	<.2	8.28	21.7	47	.06	.12	58	.8	E2	.34	.33
AUG													
31...	12	1.79	<.2	13.3	26.3	66	.09	<.01	13	.6	<1	.15	.16

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
JUN											
04...	4.5	5.1	83	390	.16	1.28	1.5	64.2	63	76.4	73
AUG											
31...	1.9	2.2	40	160	E.07	.98	2.2	82.6	80	48.4	47

E--Estimated.

462442112174601 GRUB CREEK ABOVE MOUTH OF UNNAMED TRIBUTARY (GC03), NEAR RIMINI, MT

LOCATION.--Lat 46°24'42.1", long 112°17'45.7" (NAD 27), NE¼NW¼SE¼ sec. 25, T.8N., R.6W., Jefferson County, Hydrologic Unit 10020006, 1.1 mi upstream from Basin Creek and 5.9 mi south of Rimini.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--July 2003 to current year.

GAGE.--None. Elevation at sampling site is 7,290 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)
JUN													
04...	1330	1.4	6.2	30	--	9.0	10	2.90	.679	.61	.2	1.25	20
AUG													
31...	0945	.01	7.0	60	17.0	6.0	22	6.51	1.46	.90	.2	1.84	15

Date	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
JUN													
04...	5	.53	<.2	8.31	6.4	24	.03	.09	128	1.4	E2	.32	.32
AUG													
31...	9	1.36	<.2	8.97	15.2	42	.06	.00	39	1.0	4	.45	.44

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
JUN											
04...	15.1	15.1	42	50	.09	.19	.9	1.6	2	55.8	52
AUG											
31...	8.6	8.8	14	100	E.06	3.26	1.2	1.0	3	98.6	92

E--Estimated.

462155112181501 JACK CREEK ABOVE BULLION MINE TRIBUTARY, NEAR BASIN, MT

LOCATION.--Lat 46°21'55", long 112°18'15" (NAD 27), in NW¼SW¼SW¼ sec. 12, T.7 N., R.6 W., Jefferson County, Hydrologic Unit 10020006, 0.2 mi upstream of Bullion Mine tributary, 2.4 mi upstream of Basin Creek, and 7.1 mi north of Basin.

DRAINAGE AREA.--2.55 mi^2.

PERIOD OF RECORD.--October 1996 to August 1999, March 2003 to current year.

GAGE.--None. Elevation at site is 6,580 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
MAR													
30...	1200	.57	7.4	129	6.0	0.5	48	13.8	3.23	4.7	5	--	.34
MAY													
24...	1120	3.9	7.5	65	0.5	1.0	26	7.75	1.65	4.1	5	.13	.11
JUL													
30...	1200	.48	7.3	92	20.0	10.0	39	11.8	2.34	6.0	7	.21	.21
SEP													
23...	1200	1.8	7.6	86	8.0	5.0	36	11.1	2.12	5.9	6	.09	.09

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR									
30...	--	3.9	--	E.03	--	48	33	2	<.01
MAY									
24...	4.8	4.7	.11	.31	21.4	19	89	1	.01
JUL									
30...	3.5	3.5	<.08	.17	31.1	30	83	1	<.01
SEP									
23...	3.4	3.1	.17	.20	20.2	12	75	1	<.01

E--Estimated.

462120112173701 BULLION MINE ADIT NEAR BASIN, MT

LOCATION.--Lat 46°21'20", long 112°17'37" (NAD 27), in NW¼SW¼SE¼ sec. 13, T.7 N., R.6 W., Jefferson County, Hydrologic Unit 10020006, at PVC pipe draining the Bullion mine adit about 400 ft upstream from the Bullion mine tributary, 2 mi upstream from Jack Creek, and 6.3 mi northwest of Basin.

DRAINAGE AREA.--Indeterminate (subsurface).

PERIOD OF RECORD.--October 1999 to current year.

GAGE.--None. Elevation at site is 7,360 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)
MAR												
30...	0845	.01	3.5	1,360	-5.0	0.0	290	74.7	26.1	2.83	.1	5.42
MAY												
24...	1230	.01	3.4	1,460	4.0	5.0	310	79.0	27.5	2.67	.1	4.62
JUL												
06...	1230	.01	2.7	1,970	17.0	9.0	340	85.3	31.1	--	--	--
30...	1100	.02	2.8	2,000	--	7.0	350	89.8	31.5	<8.00	--	E3.83
AUG												
27...	1330	.01	2.8	1,820	11.0	7.0	310	76.4	28.5	--	--	--
SEP												
24...	1030	.01	2.9	1,730	7.0	5.0	330	84.1	29.6	E2.18	.1	5.25

Date	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)
MAR											
30...	1.33	.5	33.9	993	9,810	14.1	944	292	1.2	4,120	173,000
MAY											
24...	2.04	.4	32.5	1,060	10,500	15.0	1,850	355	1.2	3,490	175,000
JUL											
06...	--	--	--	--	--	--	1,890	468	--	9,990	--
30...	1.35	.5	46.6	981	17,900	17.4	1,020	434	3.3	8,660	206,000
AUG											
27...	--	--	--	--	--	--	670	380	--	7,440	--
SEP											
24...	E.57	.5	41.2	893	13,500	16.9	556	379	2.6	6,840	192,000

Date	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)
MAR						
30...	290	17,000	<.02	67.6	<.2	30,900
MAY						
24...	305	18,000	<.02	68.7	E.2	36,500
JUL						
06...	360	--	--	--	--	51,600
30...	351	23,300	<.02	97.3	.6	43,000
AUG						
27...	341	--	--	--	--	38,600
SEP						
24...	322	19,700	<.02	67.7	E.1	38,600

E--Estimated.

462153112181701 BULLION MINE TRIBUTARY AT MOUTH, NEAR BASIN, MT

LOCATION.--Lat 46°21'53", long 112°18'17" (NAD 27), in SE$^1/_4$NW$^1/_4$NW$^1/_4$ sec. 13, T.7 N., R.5 W., Jefferson County, Hydrologic Unit 10020006, at confluence with Jack Creek, 2.2 mi upstream from Basin Creek, and 6.7 mi northwest of Basin.

DRAINAGE AREA.--1.19 mi^2.

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--None. Elevation at site is 6,595 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
OCT													
28...	1250	.14	5.0	278	--	3.0	100	28.8	7.25	.4	8	50.7	48.8
MAR													
30...	1140	.15	7.0	176	7.0	0.5	65	18.3	4.71	3.5	3	20.2	--
MAY													
24...	1150	1.8	7.2	86	0.5	1.0	29	8.43	1.99	5.9	14	6.38	6.26
JUL													
06...	1315	.68	6.8	122	23.0	12.5	41	12.0	2.77	1.0	24	15.7	15.4
30...	1230	.21	4.9	231	20.0	12.0	81	23.3	5.44	.7	27	37.7	38.1
AUG													
27...	1400	.30	6.0	108	14.0	8.5	65	18.7	4.43	.6	12	28.2	27.7
SEP													
23...	1130	.65	6.8	153	5.0	7.0	55	15.8	3.74	1.1	9	18.1	18.6

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT									
28...	472	625	3.54	6.13	5,290	5,280	--	--	--
MAR									
30...	128	--	2.09	--	2,380	--	95	3	<.01
MAY									
24...	71.5	73.4	1.47	4.57	774	716	73	2	.01
JUL									
06...	38.7	224	.08	4.41	1,780	1,760	90	3	.01
30...	533	555	2.53	9.40	4,520	4,270	94	19	.01
AUG									
27...	121	313	E.08	4.65	784	3,110	97	9	.01
SEP									
23...	47.8	217	.34	4.57	1,980	2,120	92	2	<.01

E--Estimated.

462047112201901 JACK CREEK AT MOUTH, NEAR BASIN, MT

LOCATION.--Lat 46°20'47", long 112°20'19" (NAD 27), in NW¼SE¼SE¼ sec. 22, T.7 N., R.6 W., Jefferson County, Hydrologic Unit 10020006, at Basin Creek road crossing, 7 mi northwest of Basin.

DRAINAGE AREA.--8.55 mi^2.

PERIOD OF RECORD.--January 2000 to current year.

GAGE.--None. Elevation at site is 6,260 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
MAR													
22...	0830	1.4	7.9	103	4.0	0.5	39	10.9	2.97	2.8	5	2.74	2.85
MAY													
24...	1030	12	7.4	63	2.0	0.0	24	7.03	1.57	3.7	7	1.32	1.41
JUL													
29...	1000	1.4	7.5	98	7.0	9.5	37	10.7	2.42	3.8	8	2.53	2.68
SEP													
22...	1000	2.1	7.5	103	3.5	--	40	11.3	2.79	2.5	5	3.83	3.81

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR									
22...	18.7	36.9	.20	1.18	368	379	50	2	.01
MAY									
24...	20.8	24.3	.43	1.87	175	174	46	6	.19
JUL									
29...	13.6	23.2	.11	.64	331	339	90	3	.01
SEP									
22...	19.4	34.8	.18	.81	456	473	67	1	.01

06031600 BASIN CREEK AT BASIN, MT

LOCATION.--Lat 46°16'16", long 112°15'42" (NAD 27), in NE¼NW¼SW¼ sec. 17, T.6 N., R.5 W., Jefferson County, Hydrologic Unit 10020006, at county bridge on old interstate 15 in Basin.

DRAINAGE AREA.--41.1 mi^2.

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--None. Elevation at site is 5,340 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
MAR													
22...	1000	7.5	7.5	100	7.0	1.5	38	10.7	2.82	3.3	4	.51	.54
MAY													
24...	0930	67	7.2	50	0.5	0.0	17	5.16	1.12	3.3	5	.34	.37
JUL													
29...	1130	4.7	7.8	92	23.0	14.5	34	10.1	2.22	5.8	7	.25	.27
SEP													
22...	1100	7.0	7.7	92	7.0	6.0	35	10.4	2.31	4.0	5	.34	.39

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR									
22...	4.1	5.2	E.07	.44	91.2	89	50	2	.04
MAY									
24...	7.3	9.3	.26	1.61	54.7	57	77	6	1.1
JUL									
29...	4.5	4.0	.17	.26	39.9	41	72	2	.03
SEP									
22...	4.1	5.1	.09	.41	64.2	68	38	5	.09

462053112153601 CRYSTAL MINE ADIT NEAR BASIN, MT

LOCATION.--Lat 46°20'53", long 112°15'36" (NAD 27), in NE¼SW¼NW¼ sec. 20, T.7 N., R.5 W., Jefferson County, Hydrologic Unit 10020006, adit discharge from Cyrstal Mine, about 3 mi upstream from the mouth of Uncle Sam Gulch, and 5.25 mi north of Basin.

DRAINAGE AREA.--Indeterminate (subsurface).

PERIOD OF RECORD.--June 2003 to current year.

GAGE.--None. Elevation at site is 7,600 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)
MAR												
30...	0940	.06	4.5	716	-3.0	5.0	180	47.9	15.3	1.43	.1	3.91
MAY												
24...	1345	.01	4.0	726	6.0	5.0	220	60.1	16.9	1.46	.1	3.56
JUL												
06...	1030	.05	3.6	936	17.0	5.0	260	69.5	20.0	--	--	--
30...	1000	.07	3.7	900	--	5.5	250	67.7	18.8	E1.58	.1	3.65
AUG												
27...	1230	.04	3.7	910	11.0	5.0	220	57.8	18.0	--	--	--
SEP												
23...	0930	.04	3.9	864	6.5	4.5	210	57.5	17.3	1.50	.1	3.75

Date	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)
MAR											
30...	.77	<.2	18.3	471	1,840	1.47	60.7	517	<.8	3,590	40,500
MAY											
24...	1.08	<.2	18.9	501	1,760	1.20	39.2	526	<.8	3,940	24,600
JUL											
06...	--	--	--	--	--	--	129	693	--	7,480	--
30...	.74	<.2	22.6	477	3,840	2.00	95.3	737	<.8	7,450	50,200
AUG											
27...	--	--	--	--	--	--	93.5	723	--	7,280	--
SEP											
23...	.55	<.2	22.7	487	4,200	2.09	90.7	725	<.8	6,540	51,000

Date	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)
MAR						
30...	14.8	12,200	<.02	34.5	<.2	41,800
MAY						
24...	13.8	12,400	<.02	33.1	<.2	40,500
JUL						
06...	34.4	--	--	--	--	54,800
30...	38.1	13,900	<.02	41.9	.5	49,800
AUG						
27...	36.5	--	--	--	--	54,200
SEP						
23...	38.9	15,100	<.02	39.3	<.2	53,800

461904112144401 UNCLE SAM GULCH AT MOUTH, NEAR BASIN, MT

LOCATION.--Lat 46°19'04", long 112°14'44" (NAD 27), in SE¼SE¼NE¼ sec. 32, T.7 N., R.5 W., Jefferson County, Hydrologic Unit 10020006, at confluence with Cataract Creek, 3.4 mi northeast of Basin.

DRAINAGE AREA.--3.06 mi^2.

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--None. Elevation at site is 6,315 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
MAR													
30...	1015	1.1	7.1	117	-3.0	1.0	43	12.5	2.84	4.9	6	17.4	20.3
MAY													
24...	1430	3.6	7.2	73	8.0	2.0	26	7.74	1.56	5.6	14	8.75	8.48
JUL													
06...	0900	1.5	7.5	102	12.0	7.5	37	11.2	2.14	4.8	12	16.0	15.5
30...	0900	.56	7.4	156	13.5	9.0	61	18.8	3.53	3.0	7	27.2	28.1
AUG													
27...	1100	.79	7.5	135	14.0	7.0	50	15.2	2.95	6.3	14	22.7	21.7
SEP													
23...	0830	1.5	7.8	121	5.5	5.0	43	13.0	2.66	3.9	21	21.1	21.6

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR									
30...	86.2	165	.93	3.57	1,720	2,400	24	10	.03
MAY									
24...	84.0	101	1.55	8.68	826	803	61	5	.05
JUL									
06...	72.6	109	1.20	5.91	1,460	1,470	91	2	.01
30...	38.0	106	.09	2.57	2,470	2,440	92	2	<.01
AUG									
27...	96.2	116	2.25	9.31	684	2,040	64	4	.01
SEP									
23...	97.9	168	1.34	16.9	1,830	1,940	92	4	.02

06031960 CATARACT CREEK AT BASIN, MT

LOCATION.--Lat 46°16'17", long 112°14'28" (NAD 27), in NE$^1/_4$NW$^1/_4$SW$^1/_4$ sec. 16, T.6 N., R.5 W., Jefferson County, Hydrologic Unit 10020006, at county bridge, 0.1 mi upstream from the Boulder River, and 1 mi east of Basin.

DRAINAGE AREA.--29.3 mi^2.

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--None. Elevation at site is 5,270 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
MAR													
22...	1100	4.6	7.6	132	14.0	2.0	57	17.2	3.50	3.1	4	2.22	2.29
MAY													
24...	1200	45	7.4	57	3.0	0.0	22	6.84	1.27	2.4	4	.98	1.11
JUL													
29...	1200	3.8	8.0	129	--	14.5	56	17.5	3.01	3.9	5	2.44	2.51
SEP													
22...	1230	8.3	7.8	112	12.0	6.0	47	14.4	2.72	2.6	3	2.96	3.13

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR									
22...	10.2	11.2	.13	.39	232	228	68	5	.06
MAY									
24...	15.5	18.7	.26	2.00	126	128	67	3	.36
JUL									
29...	8.9	10.8	.10	.41	216	212	75	1	.01
SEP									
22...	17.0	21.6	.18	1.05	283	286	67	2	.04

06032400 BOULDER RIVER BELOW LITTLE GALENA GULCH, NEAR BASIN, MT

LOCATION.--Lat 46°14'58", long 112°10'27 (NAD 27), in NE¼NE¼NW¼ sec. 25, T.6 N., R.5 W., Jefferson County, Hydrologic Unit 10020006, at county bridge, 0.2 mi downstream from Little Galena Gulch, and 2.5 mi northeast of Basin.

DRAINAGE AREA.--318 mi^2.

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--None. Elevation at site is 5,020 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
MAR													
22...	1200	61	7.8	148	15.0	2.0	55	15.7	3.86	3.7	7	.29	.55
MAY													
24...	1330	329	7.5	79	8.0	2.5	28	8.52	1.74	2.9	5	.20	.35
JUL													
29...	1300	23	8.6	149	24.0	19.0	59	17.9	3.49	6.2	7	.37	.42
SEP													
22...	1330	105	8.1	130	11.0	9.0	48	14.4	3.00	3.5	4	.39	.53

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR									
22...	7.8	11.7	.19	1.80	64.8	96	86	18	3.0
MAY									
24...	6.9	9.6	.14	1.66	39.5	55	66	17	15
JUL									
29...	7.7	8.2	.15	.22	42.8	47	38	4	.25
SEP									
22...	6.2	7.4	.12	.72	54.3	71	84	5	1.4

06033000 BOULDER RIVER NEAR BOULDER, MT

LOCATION.--Lat 46°12'40", long 112°05'27" (NAD 27), in SE¼NE¼SW¼ sec. 3, T.5 N., R.4 W., Jefferson County, Hydrologic Unit 10020006, on left bank 40 ft downstream from county bridge, 1.1 mile downstream from Muskrat Creek, 2.0 mi southeast of Boulder, and at river mile 44.1.

DRAINAGE AREA.--381 mi^2.

PERIOD OF RECORD.--May 1929 to December 1932, March 1934 to September 1972, October 1984 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1279: 1931.

GAGE.--Water-stage recorder. Elevation of gage is 4,810 ft (NGVD 29). Prior to Aug. 29, 1946, nonrecording gage at present site and elevation.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diversions for irrigation of about 3,500 acres upstream from station. Several observations of water temperature and specific conductance were made during the year. U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 22, 1981, reached a discharge of 7,000 ft^3/s, gage height, 12.3 ft, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	16	25	21	25	28	123	168	322	97	16	17
2	12	20	26	e20	25	26	110	163	292	94	16	16
3	12	20	26	e20	24	24	94	183	291	89	18	17
4	12	19	21	e19	24	27	109	235	296	97	21	17
5	13	17	20	e18	25	26	133	284	307	99	19	16
6	13	16	26	e17	24	25	159	297	318	87	18	16
7	12	e15	28	e18	24	26	171	290	285	75	17	15
8	12	15	25	20	25	31	176	294	275	62	16	14
9	12	16	24	20	25	40	177	274	273	54	15	14
10	12	17	24	21	25	45	147	246	283	50	14	14
11	12	19	25	22	24	41	130	229	478	50	12	13
12	14	20	27	22	24	43	126	209	347	47	12	14
13	14	20	27	21	24	51	144	187	276	44	12	16
14	14	20	27	22	23	35	169	172	242	39	11	18
15	14	20	26	22	23	40	186	159	210	31	11	19
16	17	21	26	23	23	39	163	154	199	31	9.7	19
17	17	21	26	23	23	40	150	167	179	29	9.2	18
18	18	22	25	23	24	53	141	167	173	27	11	18
19	20	25	24	23	25	65	131	204	159	32	12	26
20	19	28	24	23	25	48	127	201	160	34	12	41
21	18	23	25	23	25	53	123	316	144	32	11	43
22	18	22	25	24	24	83	113	458	131	29	10	43
23	17	22	24	24	25	89	107	449	120	28	20	43
24	18	25	23	24	26	107	127	381	101	25	39	45
25	18	25	24	26	28	117	121	342	97	24	27	44
26	18	25	25	25	28	109	133	338	100	23	32	38
27	19	24	25	25	28	78	175	354	93	22	28	34
28	20	24	23	25	26	75	233	363	107	20	25	32
29	28	25	22	25	28	66	188	393	125	19	22	30
30	28	25	e20	25	---	71	191	361	130	18	20	29
31	17	---	21	25	---	93	---	348	---	17	18	---
TOTAL	500	627	759	689	722	1,694	4,377	8,386	6,513	1,425	533.9	739
MEAN	16.1	20.9	24.5	22.2	24.9	54.6	146	271	217	46.0	17.2	24.6
MAX	28	28	28	26	28	117	233	458	478	99	39	45
MIN	12	15	20	17	23	24	94	154	93	17	9.2	13
AC-FT	992	1,240	1,510	1,370	1,430	3,360	8,680	16,630	12,920	2,830	1,060	1,470

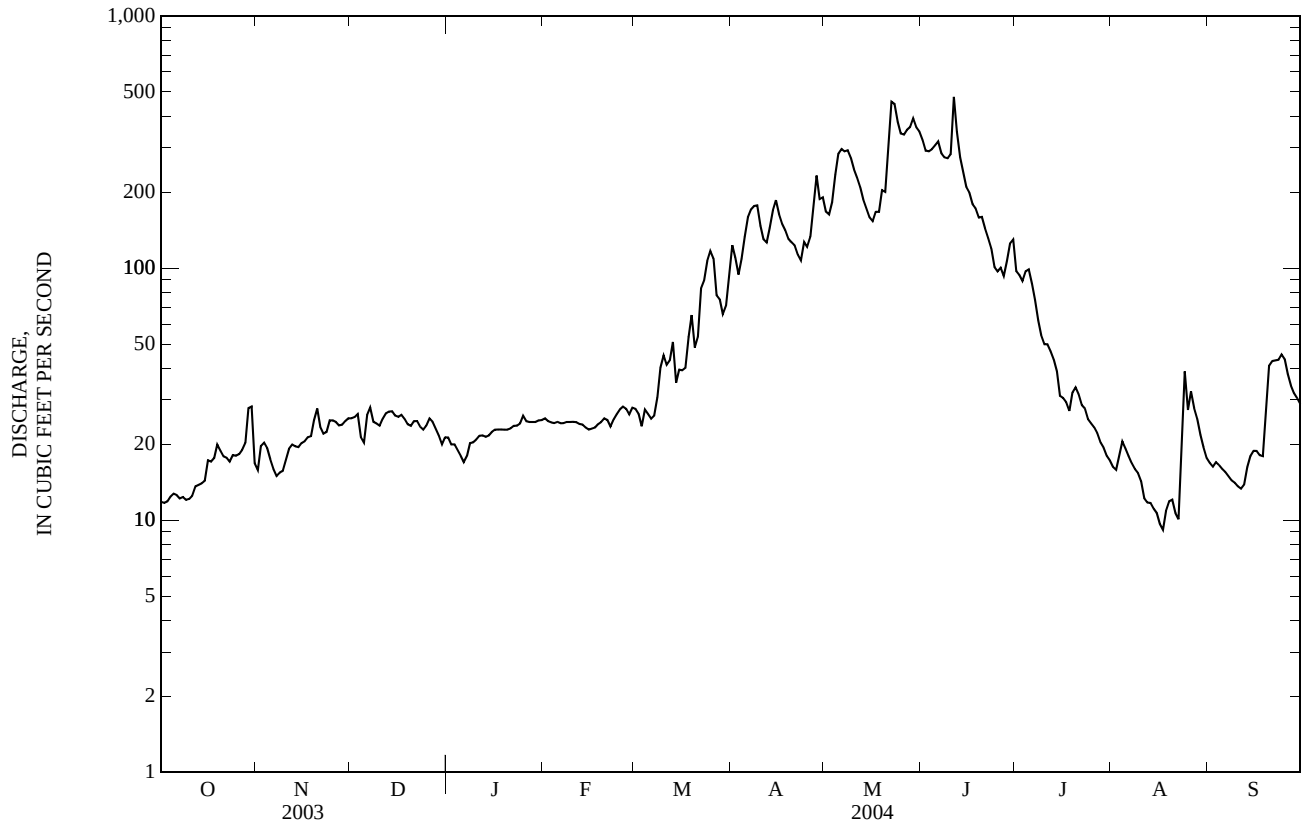
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2004, BY WATER YEAR (WY)*

MEAN	36.2	34.6	28.5	26.3	30.5	48.2	166	458	402	93.8	30.9	28.4
MAX	113	71.2	53.0	42.1	68.5	121	511	961	1,027	374	194	156
(WY)	(1966)	(1966)	(1996)	(1969)	(1971)	(1986)	(1930)	(1948)	(1965)	(1938)	(1993)	(1993)
MIN	5.85	9.09	7.45	10.1	7.71	20.7	46.0	126	70.4	10.9	7.11	5.69
(WY)	(1936)	(1936)	(1936)	(1937)	(1937)	(1937)	(1967)	(1992)	(2000)	(1931)	(1931)	(1935)

06033000 BOULDER RIVER NEAR BOULDER, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1929 - 2004*	
ANNUAL TOTAL	36,087.6		26,964.9			
ANNUAL MEAN	98.9		73.7		116	
HIGHEST ANNUAL MEAN					211	1965
LOWEST ANNUAL MEAN					48.2	2000
HIGHEST DAILY MEAN	1,060	May 29	478	Jun 11	2,400	May 22, 1948
LOWEST DAILY MEAN	8.2	Aug 21	9.2	Aug 17	0.00	Jul 15, 1931
ANNUAL SEVEN-DAY MINIMUM	8.9	Aug 17	11	Aug 16	1.0	Jan 21, 1930
MAXIMUM PEAK FLOW			554	Jun 11	3,490	Jun 9, 1964
MAXIMUM PEAK STAGE			6.82	Jun 11	10.90	Jun 9, 1964
INSTANTANEOUS LOW FLOW			9.1	Aug 17	0.00	Jul 15, 1931
ANNUAL RUNOFF (AC-FT)	71,580		53,480		83,890	
10 PERCENT EXCEEDS	317		206		334	
50 PERCENT EXCEEDS	24		25		36	
90 PERCENT EXCEEDS	11		15		16	

*--During periods of operation (May 1929 to December 1932, March 1934 to September 1972, October 1984 to present).
a--Gage height, 4.78 ft.
e--Estimated.



06035000 WILLOW CREEK NEAR HARRISON, MT

LOCATION.--Lat 46°43'23", long 111°44'25" (NAD 27), in SE¼SW¼NW¼ sec.28, T.1 S., R.1 W., Madison County, Hydrologic Unit 10020005, on right bank 2.2 mi upstream from Willow Creek Dam, 2.5 mi northeast of Harrison, and at river mile 13.6.

DRAINAGE AREA.--83.8 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1938 to September 1982, October 1982 to October 2002, March to July 2004 (seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1559: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,750 ft (NGVD 29). Prior to Oct. 8, 1946, water-stage recorder at elevation 0.22 ft higher, with different concrete control.

REMARKS.--Seasonal water-discharge records good except those for Mar. 8 to Apr. 28, which are fair, and those for estimated daily discharges, which are poor. Diversions for irrigation of about 12,500 acres of which 3,500 acres are in Norwegian Creek drainage. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						25	17	12	18	80		
2						e22	17	12	13	78		
3						e17	16	11	14	71		
4						e19	16	10	23	82		
5						e20	15	11	28	110		
6						e22	15	12	51	93		
7						e25	15	12	56	84		
8						28	15	14	52	79		
9						30	33	17	40	70		
10						28	29	22	66	58		
11						22	27	16	89	54		
12						23	23	15	61	50		
13						22	16	11	52	43		
14						20	16	6.6	48	36		
15						19	16	5.3	46	31		
16						21	13	7.8	40	27		
17						24	13	11	39	21		
18						26	14	14	36	16		
19						27	11	22	27	16		
20						23	12	13	27	19		
21						22	11	13	29	15		
22						22	9.7	20	35	13		
23						23	9.0	46	41	10		
24						23	8.6	44	54	8.2		
25						21	8.6	24	62	6.0		
26						23	8.9	17	89	4.9		
27						22	9.1	15	88	5.2		
28						20	12	21	84	7.0		
29						19	14	44	84	5.0		
30						17	15	30	79	4.9		
31						13	---	23	---	4.2		
TOTAL						688	454.9	551.7	1,471	1,201.4		
MEAN						22.2	15.2	17.8	49.0	38.8		
MAX						30	33	46	89	110		
MIN						13	8.6	5.3	13	4.2		
AC-FT						1,360	902	1,090	2,920	2,380		

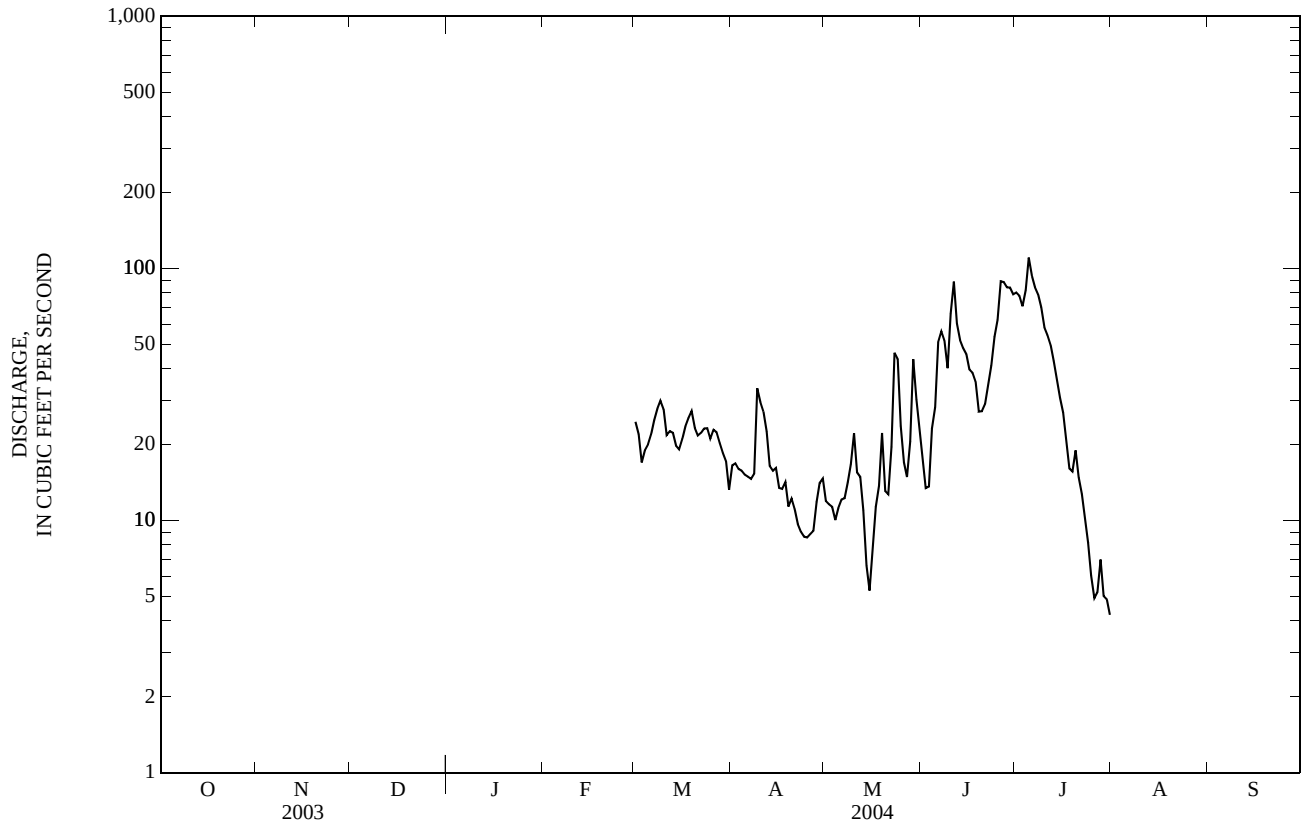
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2004, BY WATER YEAR (WY)*

MEAN	29.1	33.7	29.9	24.7	27.4	31.5	41.2	61.8	110	60.3	12.3	18.9
MAX	80.1	56.5	47.4	43.6	60.9	44.7	72.5	167	300	278	61.0	62.4
(WY)	(1983)	(1947)	(1948)	(1976)	(1963)	(1974)	(1996)	(1984)	(1995)	(1975)	(1993)	(1965)
MIN	2.01	9.40	11.5	10.0	12.0	18.0	11.1	11.1	10.1	1.52	1.12	2.01
(WY)	(1989)	(1955)	(1955)	(1940)	(1940)	(1940)	(1961)	(2002)	(1966)	(1988)	(1988)	(1956)

06035000 WILLOW CREEK NEAR HARRISON, MT—Continued

SUMMARY STATISTICS	FOR 2004 SEASON		WATER YEARS 1938 - 1982*		SEASONS 1983 - 2004*	
ANNUAL MEAN			40.7			
HIGHEST ANNUAL MEAN			76.0	1975		
LOWEST ANNUAL MEAN			19.2	1954		
HIGHEST DAILY MEAN	110	Jul 5	591	Jun 27, 1944	423	Jun 6, 1995
LOWEST DAILY MEAN	4.2	Jul 31	1.6	Sep 16, 1952	0.59	Jul 23, 1988
ANNUAL SEVEN-DAY MINIMUM			1.6	Sep 16, 1952		
MAXIMUM PEAK FLOW	122	Jul 5	813	Feb 3, 1963	448	Jun 6, 1995
MAXIMUM PEAK STAGE	1.59	Jul 5	4.24	Feb 3, 1963	3.38	Jun 6, 1995
INSTANTANEOUS LOW FLOW	a3.0	Jul 31	b1.4	Sep 17, 1956	c0.32	Jul 21, 1988
ANNUAL RUNOFF (AC-FT)			29,480			
10 PERCENT EXCEEDS			88			
50 PERCENT EXCEEDS			30			
90 PERCENT EXCEEDS			6.9			

*--During periods of operation (April 1938 to September 1982, October 1982 to October 2002, March to July 2004).
a--Gage height, 0.38 ft.
b--Gage height, 0.39 ft.
c--Gage height, 0.26 ft.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1997-98, October 2000 to October 2002, March to July 2004.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Seasonal records from Apr. 24, 2002 to Oct. 27, 2002, March to July 2004.

INSTRUMENTATION.--Temperature probe installed Apr. 23, 2002.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE (Seasonal records): Maximum, 29.5°C, July 13, 14, 2002; minimum, 0.0°C, Oct. 24-27, 2002, Mar. 2-7, and 11, 2004.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: During period of seasonal operation, maximum, 25.5°C, July 31; minimum, 0.0°C, Mar. 2-7 and 11.

06035000 WILLOW CREEK NEAR HARRISON, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		MARCH			APRIL			MAY			JUNE	
1	4.0	0.5	2.0	8.5	4.0	7.0	18.0	5.5	11.5	20.5	8.5	14.0
2	3.0	0.0	1.0	5.0	2.5	4.0	17.5	7.5	12.5	21.0	9.0	15.0
3	1.0	0.0	0.0	11.5	2.0	6.0	17.5	9.0	13.5	22.0	10.5	16.0
4	2.0	0.0	0.5	11.0	4.5	7.5	19.5	8.5	13.5	21.5	12.0	16.5
5	3.0	0.0	1.0	14.5	4.5	9.0	19.5	9.5	14.0	20.0	11.5	16.0
6	2.0	0.0	0.5	10.5	6.0	8.5	18.5	9.0	13.5	17.0	10.5	13.5
7	2.5	0.0	1.0	15.5	6.0	10.0	17.5	10.5	14.0	16.0	7.5	11.5
8	6.5	1.0	3.0	14.0	7.5	10.0	18.0	9.0	13.0	10.5	8.0	9.0
9	7.5	1.0	3.5	8.0	2.5	5.0	17.5	8.5	12.5	14.5	7.5	10.0
10	6.5	1.5	3.5	11.0	1.5	6.0	13.5	7.5	10.0	11.0	8.5	9.5
11	6.5	0.0	3.0	13.0	3.0	7.5	9.0	5.5	7.5	13.0	7.5	10.0
12	7.5	1.0	3.5	15.0	4.5	9.5	9.0	3.5	6.0	14.5	6.5	10.5
13	6.5	2.0	3.5	14.5	5.5	9.5	11.0	4.0	7.5	14.5	9.5	11.5
14	5.0	0.5	2.5	12.5	6.5	9.5	15.5	3.5	9.5	15.0	8.0	11.5
15	5.5	1.0	3.5	13.0	6.0	8.5	17.0	5.5	11.0	11.5	7.5	10.0
16	6.0	2.0	4.0	13.5	3.0	7.5	12.0	8.0	9.5	15.0	6.0	10.5
17	9.0	2.5	5.5	9.5	6.0	7.5	16.0	8.0	11.5	12.0	8.0	9.5
18	9.5	4.0	6.5	11.0	5.5	8.0	12.0	9.0	10.0	13.0	7.5	10.0
19	10.0	4.0	6.5	12.0	4.0	8.0	15.0	7.5	10.5	15.0	8.0	11.5
20	8.5	1.0	4.5	11.0	4.5	7.0	16.0	7.5	11.5	16.5	8.5	12.5
21	9.0	2.0	5.0	12.0	3.0	7.5	16.0	9.5	12.0	18.5	9.0	13.5
22	9.5	2.5	5.5	15.5	4.0	9.5	13.5	9.0	11.0	19.0	9.5	14.0
23	12.0	3.5	7.5	16.5	5.0	10.0	10.5	4.5	8.0	18.5	9.5	14.0
24	10.5	4.5	7.0	15.0	6.5	10.5	11.5	5.0	8.0	18.0	10.5	14.0
25	11.0	4.0	7.0	16.0	5.0	10.5	16.0	5.0	10.5	15.0	10.5	13.0
26	6.5	2.5	5.5	19.0	6.5	12.0	14.0	8.0	10.5	15.0	9.0	12.0
27	7.5	0.5	4.0	17.0	8.0	12.5	18.0	9.5	13.5	15.5	10.0	12.5
28	10.5	1.5	5.5	11.5	4.0	7.0	13.5	9.0	11.0	16.0	9.5	12.5
29	12.0	1.5	6.5	14.0	3.0	7.5	12.5	7.0	9.5	16.0	9.5	12.5
30	12.5	2.5	7.5	16.0	4.5	9.5	13.5	6.0	9.5	17.5	11.0	14.0
31	12.5	4.5	8.5	---	---	---	17.5	7.0	11.5	---	---	---
MONTH	12.5	0.0	4.0	19.0	1.5	8.5	19.5	3.5	11.0	22.0	6.0	12.5

		JULY	
1	16.5	10.0	13.0
2	15.5	9.5	12.5
3	16.0	10.5	13.0
4	15.5	10.5	13.0
5	16.0	10.5	13.0
6	16.5	10.0	13.5
7	14.5	11.0	13.0
8	16.0	9.0	12.5
9	16.5	9.0	13.0
10	17.5	11.5	14.0
11	19.0	10.5	14.5
12	19.5	11.0	15.0
13	19.0	12.0	15.5
14	22.0	13.0	17.0
15	23.0	14.5	18.5
16	24.0	14.0	18.5
17	25.0	14.5	19.5
18	22.5	16.0	19.5
19	24.5	16.5	19.5
20	22.5	16.0	18.5
21	24.0	14.0	18.5
22	21.0	14.0	17.5
23	22.0	13.0	17.0
24	24.0	12.0	18.0
25	25.0	13.5	18.5
26	25.0	14.5	19.5
27	25.0	14.0	19.0
28	24.5	13.5	18.5
29	24.5	13.0	18.5
30	25.0	13.5	19.5
31	25.5	14.0	19.5
MONTH	25.5	9.0	16.5

06036650 JEFFERSON RIVER NEAR THREE FORKS, MT

LOCATION.--Lat 45°53'52", long 111°35'45" (NAD 27), in SW¼SW¼NW¼ sec.27, T.2 N., R.1 E., Broadwater County, Hydrologic Unit 10020005, on left bank 50 ft downstream from bridge on U.S. Highway 10, 2.5 mi northwest of Three Forks, and at river mile 2,329.3.

DRAINAGE AREA.--9,532 mi^2.

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,076.76 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by Ruby River Reservoir (station number 06020500) and Clark Canyon Reservoir (station number 06015300). Diversions for irrigation of about 390,000 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature and conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	457	933	1,090	e650	e600	897	1,380	813	2,070	1,730	236	553
2	494	983	1,010	e700	e550	893	1,540	699	1,840	1,740	224	505
3	504	984	1,020	e650	e550	862	1,590	620	1,570	1,880	218	486
4	517	1,030	988	e550	e550	861	1,520	613	1,340	2,020	227	492
5	528	1,020	988	e450	e600	864	1,470	627	1,270	2,030	235	494
6	555	952	971	e400	e600	859	1,530	669	1,430	1,890	228	469
7	551	903	1,030	e400	e650	846	1,600	776	1,670	1,790	221	466
8	545	1,040	1,020	e450	e700	892	1,630	881	1,810	1,640	211	446
9	539	1,130	983	e500	e700	952	1,730	850	1,710	1,470	208	427
10	546	1,280	912	e500	e750	984	1,690	834	1,770	1,210	211	412
11	586	1,230	1,000	e550	e750	973	1,640	795	2,300	1,040	203	372
12	629	1,150	969	e550	e700	966	1,530	804	3,000	969	185	357
13	657	1,100	973	e550	e700	959	1,430	865	2,950	850	164	386
14	664	1,040	1,060	e550	e700	973	1,380	885	2,550	708	156	447
15	693	1,030	1,010	e550	e700	972	1,380	823	2,110	616	147	515
16	729	1,040	925	e550	e700	972	1,360	726	1,790	544	141	537
17	746	1,050	908	e550	e750	962	1,330	726	1,590	495	145	543
18	754	1,050	e900	e550	e800	960	1,300	768	1,400	451	155	546
19	751	1,060	860	e550	e850	987	1,280	913	1,300	426	186	566
20	758	1,070	840	e550	e800	1,070	1,230	1,030	1,300	455	202	675
21	753	1,070	937	e550	e750	1,180	1,190	1,330	1,390	495	217	875
22	741	966	920	e550	e750	1,330	1,110	1,570	1,410	493	230	1,060
23	775	e900	860	e600	e750	1,510	1,000	2,330	1,340	490	291	1,080
24	807	e950	863	e600	e750	1,700	885	2,940	1,220	473	428	1,060
25	814	e900	1,030	e550	e800	1,880	787	2,800	1,160	427	503	1,030
26	872	e950	1,040	e500	e850	2,040	731	2,470	1,230	400	560	1,010
27	880	1,060	926	e550	e900	2,090	655	2,200	1,340	366	591	979
28	902	1,140	800	e600	940	1,830	607	2,090	1,530	336	663	980
29	941	1,240	630	e650	910	1,590	669	2,200	1,690	304	679	952
30	975	1,200	e550	e650	---	1,420	829	2,260	1,670	273	626	931
31	973	---	e600	e600	---	1,350	---	2,210	---	248	586	---
TOTAL	21,636	31,451	28,613	17,150	21,100	36,624	38,003	40,117	50,750	28,259	9,277	19,651
MEAN	698	1,048	923	553	728	1,181	1,267	1,294	1,692	912	299	655
MAX	975	1,280	1,090	700	940	2,090	1,730	2,940	3,000	2,030	679	1,080
MIN	457	900	550	400	550	846	607	613	1,160	248	141	357
AC-FT	42,920	62,380	56,750	34,020	41,850	72,640	75,380	79,570	100,700	56,050	18,400	38,980

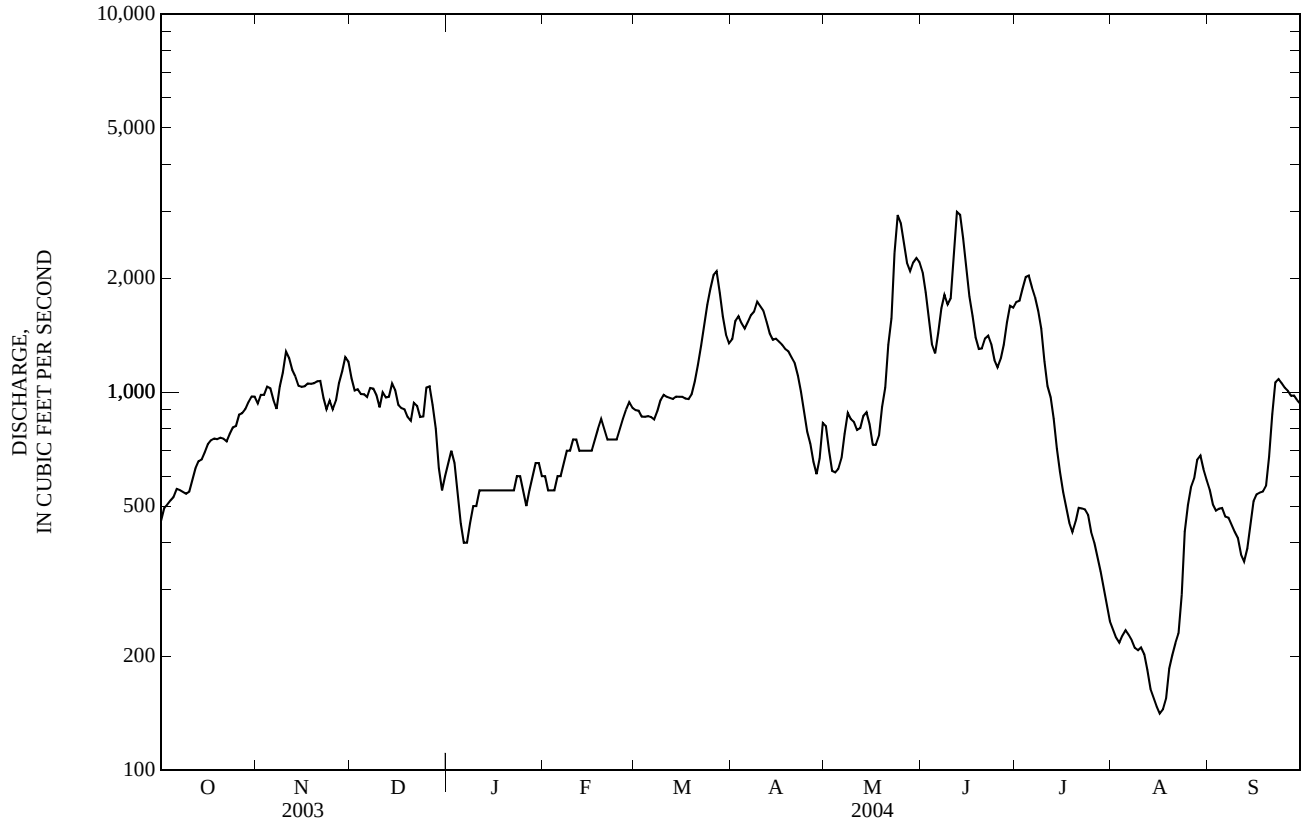
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2004, BY WATER YEAR (WY)

MEAN	1,548	1,609	1,326	1,197	1,275	1,524	2,341	3,670	4,966	1,987	868	1,109
MAX	3,163	2,805	1,993	1,929	1,964	2,295	4,444	7,679	11,420	5,505	3,030	3,303
(WY)	(1985)	(1984)	(1999)	(1983)	(1984)	(1996)	(1996)	(1997)	(1997)	(1995)	(1984)	(1984)
MIN	698	1,039	805	553	728	824	1,267	990	988	352	59.1	262
(WY)	(2004)	(1989)	(1993)	(2004)	(2004)	(2002)	(2004)	(1992)	(1992)	(1988)	(1988)	(1994)

06036650 JEFFERSON RIVER NEAR THREE FORKS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1978 - 2004	
ANNUAL TOTAL	509,620		342,631			
ANNUAL MEAN	1,396		936		1,951	
HIGHEST ANNUAL MEAN					3,650	1984
LOWEST ANNUAL MEAN					936	2004
HIGHEST DAILY MEAN	11,300	Jun 2	3,000	Jun 12	16,800	Jun 9, 1995
LOWEST DAILY MEAN	152	Aug 3	141	Aug 16	44	Aug 19, 1988
ANNUAL SEVEN-DAY MINIMUM	164	Aug 2	156	Aug 12	48	Aug 19, 1988
MAXIMUM PEAK FLOW			a3,120	Jun 12	d17,000	Jun 9, 1995
MAXIMUM PEAK STAGE			b4.97	Jan 11	c9.88	Jan 3, 1997
INSTANTANEOUS LOW FLOW			c138	Aug 16	f43	Aug 19, 1988
ANNUAL RUNOFF (AC-FT)	1,011,000		679,600		1,413,000	
10 PERCENT EXCEEDS	3,030		1,670		3,740	
50 PERCENT EXCEEDS	950		862		1,430	
90 PERCENT EXCEEDS	195		427		593	

a--Gage height, 4.71 ft.
b--Backwater from ice.
c--Gage height, 1.70 ft.
d--Gage height, 9.00 ft.
e--Estimated.
f--Gage height, 1.31 ft.



06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT

LOCATION.--Lat 44°37'13", long 110°51'44" (NAD 27), Yellowstone National Park, Hydrologic Unit 10020007, on right bank 1.6 mi south of Madison Junction, 12 mi east of West Yellowstone, and at river mile 1.8.

DRAINAGE AREA.--282 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to March 1996, October 2002 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 7,050 ft (NGVD 29).

REMARKS.--Water-discharge records good. No regulation or diversions upstream from station. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	233	240	251	262	249	241	290	303	371	309	251	244
2	235	238	248	250	244	237	295	324	370	302	251	249
3	234	243	248	258	248	237	294	360	382	294	256	251
4	235	245	248	244	244	239	301	390	398	313	255	251
5	235	240	244	242	242	236	305	434	406	333	254	245
6	235	239	253	246	239	226	305	503	426	297	251	243
7	236	239	265	258	244	232	318	530	427	283	250	242
8	236	240	261	250	241	243	320	506	425	275	247	241
9	234	244	250	249	239	251	337	460	441	272	246	239
10	265	249	253	247	238	252	302	422	483	270	244	239
11	244	250	252	245	238	246	290	417	446	265	244	238
12	243	244	250	242	233	247	283	382	461	262	243	242
13	242	245	253	240	239	244	290	340	394	263	242	272
14	243	247	258	241	235	242	302	324	373	264	243	320
15	243	250	253	241	237	238	300	313	372	260	244	294
16	242	257	250	242	236	239	281	357	374	258	246	287
17	240	259	249	238	245	245	313	385	347	261	258	267
18	240	246	244	238	250	255	310	386	348	263	267	259
19	239	252	245	240	248	275	287	448	378	277	260	262
20	239	260	248	239	242	276	301	369	357	292	262	314
21	239	256	250	236	239	272	304	384	343	284	254	274
22	239	248	245	235	236	278	283	537	323	282	279	263
23	240	243	243	238	236	288	274	562	332	278	317	264
24	239	252	246	244	236	299	278	435	322	264	269	261
25	234	251	251	246	239	292	269	371	318	261	331	255
26	241	250	258	239	242	282	275	358	359	262	358	252
27	243	243	250	239	241	259	299	402	335	260	296	250
28	246	245	246	242	241	248	340	473	342	258	265	250
29	265	250	253	246	241	246	318	579	320	255	255	249
30	240	251	255	252	---	259	306	458	331	254	250	251
31	238	---	258	252	---	275	---	394	---	251	247	---
TOTAL	7,457	7,416	7,778	7,581	6,982	7,899	8,970	12,906	11,304	8,522	8,135	7,768
MEAN	241	247	251	245	241	255	299	416	377	275	262	259
MAX	265	260	265	262	250	299	340	579	483	333	358	320
MIN	233	238	243	235	233	226	269	303	318	251	242	238
AC-FT	14,790	14,710	15,430	15,040	13,850	15,670	17,790	25,600	22,420	16,900	16,140	15,410

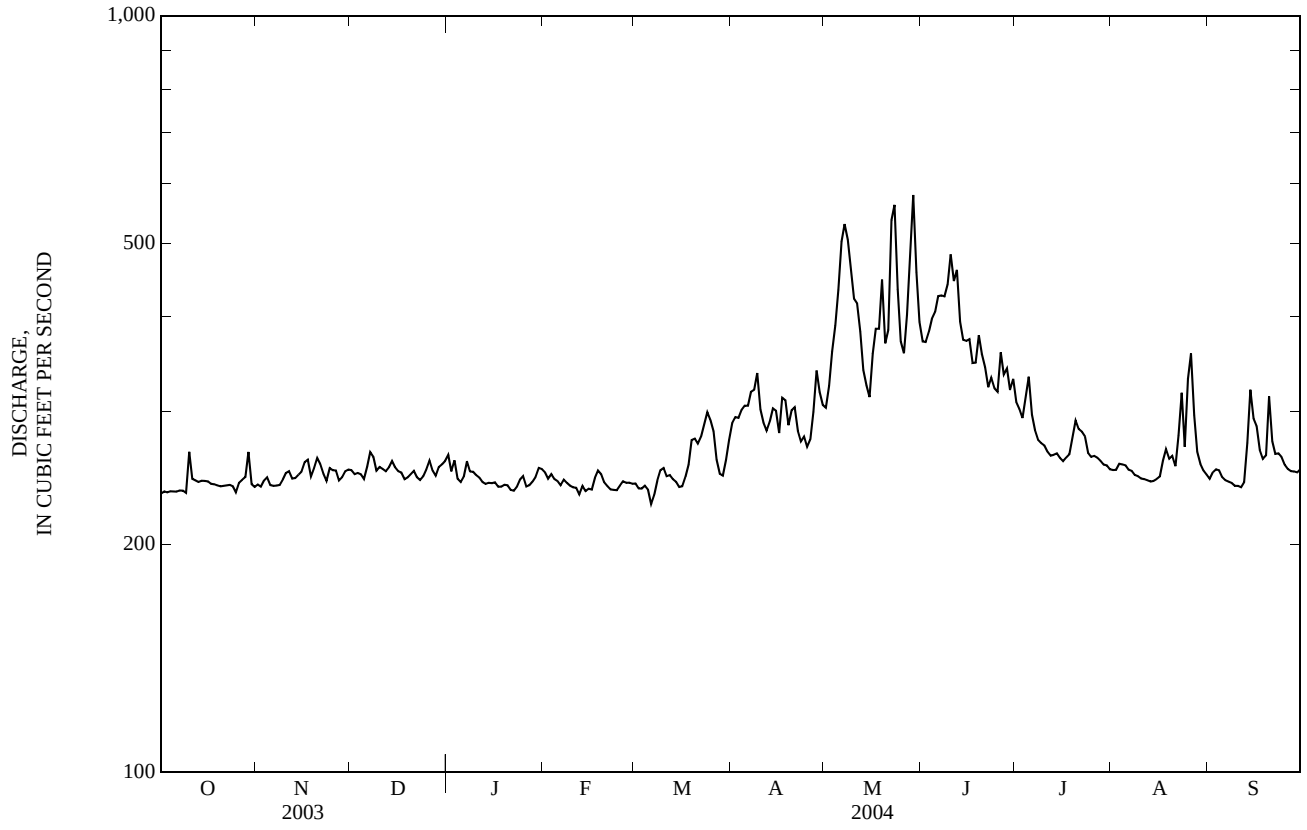
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2004, BY WATER YEAR (WY)*

MEAN	277	274	267	262	261	270	329	483	425	294	271	271
MAX	356	348	316	298	304	336	398	613	756	415	371	368
(WY)	(1984)	(1984)	(1984)	(1985)	(1986)	(1986)	(1986)	(1986)	(1986)	(1986)	(1986)	(1986)
MIN	225	227	220	223	226	239	276	367	273	221	212	217
(WY)	(1989)	(1993)	(1993)	(1993)	(1993)	(1992)	(1993)	(1987)	(1992)	(1988)	(1994)	(1988)

06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1984 - 2004*	
ANNUAL TOTAL	100,622		102,718			
ANNUAL MEAN	276		281		306	
HIGHEST ANNUAL MEAN					399	1986
LOWEST ANNUAL MEAN					264	1988
HIGHEST DAILY MEAN	644	May 30	579	May 29	1,240	May 31, 1986
LOWEST DAILY MEAN	223	Aug 21	226	Mar 6	201	Dec 4, 1992
ANNUAL SEVEN-DAY MINIMUM	225	Aug 11	235	Oct 1	205	Aug 15, 1994
MAXIMUM PEAK FLOW			659	May 7	b2,050	May 18, 1996
MAXIMUM PEAK STAGE			4.09	May 7	c6.10	May 18, 1996
INSTANTANEOUS LOW FLOW			a210	Mar 6	d190	Dec 4, 1992
ANNUAL RUNOFF (AC-FT)	199,600		203,700		221,900	
10 PERCENT EXCEEDS	349		371		419	
50 PERCENT EXCEEDS	250		252		274	
90 PERCENT EXCEEDS	232		239		233	

*--During periods of operation (October 1983 to March 1996, October 2002 to current year).
a--Gage height, 2.86 ft.
b--From rating curve extended above 1,540 ft^3/s.
c--From floodmark.
d--Gage height, 3.03 ft.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983 to 1993, October 2002 to current year.

PERIOD OF DAILY RECORD.--
SEPCIFIC CONDUCTANCE: August 1983 to September 1986, October 1987 to September 1988.
WATER TEMPERATURE: October 1983 to September 1993, October 2002 to current year.

INSTRUMENTATION.--Temperature recorder installed Sept. 18, 2002.

REMARKS.--Daily water temperature records good. Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum 633 microsiemens per centimeter (μS/cm) at 25.0°C, Apr. 1, 1988; minimum 140 μS/cm at 25.0°C, June 5, 1986.
WATER TEMPERATURE: Maximum, 30.0°C, June 24, 1988; minimum, 0.5°C Dec. 21, 1990.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 29.0°C, July 16; minimum, 2.5°C, Jan. 6.

06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	20.0	14.0	17.0	10.5	7.5	9.0	13.5	11.0	12.5	9.0	5.5	7.5
2	21.0	15.5	18.0	11.0	7.0	9.0	12.0	9.5	10.5	7.5	4.5	5.5
3	20.5	14.0	17.0	12.5	9.0	10.5	12.0	11.0	11.5	8.5	5.5	7.0
4	19.5	13.5	17.0	10.5	6.5	8.0	11.0	9.0	10.0	6.0	3.5	4.5
5	19.5	14.5	17.0	9.5	5.5	7.0	11.5	8.0	10.0	5.0	3.0	4.0
6	19.0	14.5	17.0	9.5	5.0	7.0	13.0	11.5	12.0	7.5	2.5	4.5
7	18.5	14.5	16.5	10.0	6.0	8.0	12.0	9.5	11.0	9.5	7.5	8.5
8	19.5	15.5	17.0	11.0	6.0	8.5	11.0	8.5	9.5	10.5	8.0	9.5
9	18.5	15.0	16.5	12.5	9.5	11.0	10.0	7.0	8.5	13.0	10.5	11.5
10	16.0	13.5	15.0	12.0	9.5	11.0	10.5	8.5	9.5	11.0	8.5	10.0
11	14.5	11.0	13.0	9.5	6.5	7.5	10.5	9.0	10.0	12.5	9.0	10.5
12	14.5	12.5	13.5	11.5	7.0	9.0	10.0	8.5	9.5	10.5	8.0	9.5
13	14.5	12.5	13.5	11.0	7.5	9.0	9.5	8.0	8.5	10.5	7.5	9.0
14	15.0	12.0	13.5	13.0	11.0	12.0	9.0	7.0	8.0	11.0	8.0	9.5
15	15.5	12.5	14.0	12.5	11.5	12.0	9.0	7.0	8.0	10.0	7.5	9.0
16	15.0	11.0	13.0	13.5	8.5	11.5	9.0	6.5	8.0	11.5	9.0	10.0
17	17.5	12.5	15.0	10.0	7.5	8.5	9.5	7.5	8.5	10.0	7.5	9.0
18	17.5	13.5	15.5	9.0	7.5	8.0	8.5	6.0	7.5	10.0	7.0	8.5
19	17.0	13.0	15.0	13.0	8.0	10.0	9.0	6.0	7.5	11.5	9.5	10.5
20	17.0	13.0	15.0	9.0	7.0	8.0	10.0	7.0	8.5	12.0	9.5	10.5
21	19.5	14.0	16.5	10.0	8.0	9.0	12.5	10.0	11.0	9.5	6.5	8.0
22	18.5	13.5	16.0	9.0	5.5	7.5	11.0	8.0	9.0	9.0	6.5	8.0
23	16.5	13.5	15.0	7.5	4.5	6.0	9.0	7.0	8.0	10.0	8.0	9.0
24	14.0	11.0	12.5	8.5	6.0	7.5	10.0	6.5	8.5	11.0	9.5	10.0
25	14.0	9.0	11.5	7.0	6.0	6.5	11.0	9.5	10.5	10.0	7.0	9.0
26	15.5	11.0	13.0	9.5	6.0	7.5	10.0	7.5	9.0	7.5	5.5	6.5
27	14.0	12.0	13.5	8.0	6.0	7.0	8.5	7.0	8.0	8.5	6.0	6.5
28	14.5	12.5	14.0	10.0	7.0	8.5	8.5	6.0	7.0	8.5	6.5	7.5
29	13.0	9.0	11.0	10.5	8.5	9.5	7.5	5.5	6.5	9.5	7.5	8.5
30	9.0	6.5	7.0	13.5	10.5	12.0	8.5	5.0	7.0	10.0	6.0	8.0
31	11.0	6.0	8.5	---	---	---	10.0	7.5	8.5	8.5	5.5	7.0
MONTH	21.0	6.0	14.5	13.5	4.5	9.0	13.5	5.0	9.0	13.0	2.5	8.5
		FEBRUARY			MARCH			APRIL			MAY	
1	8.5	6.0	7.0	14.0	10.5	12.0	18.5	13.5	16.0	21.5	13.5	17.5
2	9.0	5.0	7.0	13.5	8.5	10.5	17.5	13.0	15.0	21.0	14.5	18.0
3	12.5	8.5	10.0	12.5	9.0	10.5	20.0	11.5	15.5	18.5	14.5	17.0
4	11.0	8.5	10.0	13.5	9.5	11.5	17.5	13.0	15.5	19.5	13.5	16.5
5	11.5	9.5	10.0	12.0	6.0	10.0	20.0	13.5	16.5	18.0	12.5	15.5
6	11.0	8.0	9.5	8.5	4.0	6.5	19.0	12.5	16.0	17.5	10.5	14.5
7	11.0	8.5	9.5	12.5	6.5	9.5	20.0	14.0	17.0	17.5	10.0	14.0
8	11.0	8.5	9.5	16.0	9.0	12.5	19.0	14.5	16.5	16.0	10.0	13.5
9	11.0	7.5	9.5	16.5	10.5	13.5	16.5	11.0	13.0	16.5	11.5	14.0
10	10.0	6.5	8.5	16.0	11.0	13.0	17.0	9.5	13.0	17.0	12.5	15.0
11	9.5	6.0	8.0	16.5	9.5	13.0	19.0	11.0	14.5	15.5	12.0	13.5
12	9.5	4.5	7.0	16.0	11.0	13.5	20.5	12.5	16.5	14.5	9.5	12.0
13	11.0	6.0	8.5	16.5	10.0	13.0	20.0	13.5	17.0	15.5	11.0	13.5
14	10.5	6.0	8.5	13.0	11.5	12.0	18.0	14.0	16.0	16.5	12.5	14.5
15	11.5	8.5	10.0	14.5	10.5	12.0	15.0	11.0	13.0	19.5	13.0	16.5
16	13.0	9.5	11.0	14.0	10.5	12.5	18.0	10.5	14.0	17.5	14.0	16.0
17	12.5	11.0	11.5	14.5	10.0	12.5	15.5	13.0	14.5	19.5	12.0	15.5
18	14.0	11.5	12.5	16.5	11.5	13.5	15.0	13.0	14.0	18.5	15.0	16.5
19	14.0	11.0	12.5	14.5	9.0	11.5	17.0	12.0	14.5	17.0	11.0	13.5
20	13.5	10.0	11.5	17.5	9.5	13.0	15.0	11.5	13.0	17.0	13.5	15.5
21	12.0	8.0	10.0	18.5	12.5	15.0	16.5	10.0	13.5	17.5	14.0	15.5
22	12.0	6.5	9.5	17.5	12.0	15.0	17.5	12.0	14.5	15.5	12.0	13.0
23	12.5	8.0	10.5	18.5	13.0	15.5	20.5	12.5	16.0	14.5	10.0	12.0
24	13.5	9.0	11.5	17.5	11.5	14.0	18.5	14.0	16.0	15.0	11.0	13.0
25	13.0	10.5	11.5	16.5	11.0	13.5	20.5	12.5	16.0	19.0	13.5	15.5
26	13.0	10.5	12.0	14.0	11.0	13.0	22.0	14.0	17.5	16.0	13.0	14.0
27	14.5	9.5	12.0	14.0	9.5	12.0	20.5	14.5	17.5	19.0	13.5	16.0
28	12.5	10.0	11.0	16.0	10.5	13.0	17.0	9.5	12.5	17.0	13.5	15.0
29	13.0	9.5	11.0	19.0	10.0	14.5	16.0	8.0	12.0	13.5	10.0	11.5
30	---	---	---	19.0	12.0	15.5	20.0	12.0	15.5	15.5	10.0	12.5
31	---	---	---	19.0	12.5	15.5	---	---	---	18.0	12.5	15.0
MONTH	14.5	4.5	10.0	19.0	4.0	12.5	22.0	8.0	15.0	21.5	9.5	14.5

06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.5	14.5	17.5	25.5	18.5	22.0	26.5	19.5	23.0	23.0	18.0	20.5
2	22.5	16.0	19.0	24.5	18.5	21.5	26.5	20.5	23.0	21.5	17.5	19.0
3	22.0	16.0	19.5	24.5	18.0	21.0	26.5	20.5	23.0	18.0	16.5	17.0
4	21.0	17.5	19.5	22.5	20.0	21.0	25.5	19.5	22.0	22.0	15.0	18.0
5	22.0	16.5	19.5	23.0	17.5	20.0	27.0	20.5	23.5	20.0	16.0	18.0
6	20.0	16.5	18.0	24.5	18.0	21.0	24.5	18.5	21.5	22.5	15.5	19.0
7	20.5	15.0	18.0	24.5	19.0	21.5	23.5	18.0	20.5	22.0	15.5	19.0
8	22.5	16.0	19.0	24.0	17.5	20.5	25.5	17.5	21.5	22.0	16.5	19.0
9	20.0	16.5	18.5	24.0	17.0	20.5	26.0	18.5	22.0	22.0	16.0	19.0
10	18.0	12.5	14.5	26.0	18.5	22.0	25.5	19.0	22.0	20.0	16.5	18.0
11	15.0	12.0	13.0	25.0	19.5	22.0	26.0	18.5	22.0	22.0	15.5	18.5
12	18.0	13.0	15.0	27.0	18.0	22.5	25.5	18.0	22.0	19.0	17.0	18.0
13	18.0	15.0	16.5	24.0	20.0	22.0	26.0	18.5	22.0	18.0	16.0	17.0
14	21.0	15.0	18.0	28.5	19.5	23.5	26.5	18.5	22.5	16.5	13.0	14.5
15	20.0	14.5	17.5	28.0	22.5	25.0	24.0	19.5	22.0	17.0	12.5	14.5
16	18.5	14.5	16.5	29.0	20.5	24.5	25.0	19.0	21.5	19.0	15.5	17.0
17	21.5	14.0	17.5	27.0	21.0	24.0	23.5	20.5	22.0	21.0	15.5	18.0
18	18.5	15.5	17.0	27.0	20.5	23.5	23.0	20.5	21.5	20.5	17.0	19.0
19	19.5	15.0	17.0	26.5	23.0	24.5	25.0	20.0	22.5	19.0	16.5	17.5
20	19.5	17.0	18.5	25.5	20.5	22.5	23.0	18.5	21.0	16.5	14.0	15.0
21	22.0	15.0	18.5	27.0	20.0	23.0	24.0	19.0	21.5	17.5	13.0	15.0
22	24.0	16.0	20.0	24.5	21.0	23.0	22.0	18.5	20.5	15.0	12.5	13.5
23	24.0	18.0	21.0	26.0	19.5	22.5	19.5	15.0	16.5	17.5	14.0	15.5
24	25.0	18.5	21.5	27.5	19.0	23.0	20.0	14.5	17.0	20.5	15.0	17.5
25	24.5	19.0	21.5	27.0	20.0	23.5	18.5	14.5	17.0	21.5	15.5	18.5
26	23.5	17.0	20.5	26.5	21.5	23.5	18.5	13.5	15.5	21.5	15.0	18.5
27	22.0	19.0	20.5	26.5	20.0	23.0	21.0	15.5	17.5	21.5	16.5	19.0
28	23.5	18.0	20.5	27.0	20.5	23.5	21.5	16.0	19.0	20.5	16.5	18.5
29	25.0	18.5	21.5	26.0	20.0	23.0	24.0	17.0	20.5	20.5	15.0	18.0
30	23.0	19.5	21.0	26.0	19.5	23.0	24.5	18.0	21.0	19.5	17.5	18.5
31	---	---	---	26.5	19.5	23.0	25.0	17.5	21.5	---	---	---
MONTH	25.0	12.0	18.5	29.0	17.0	22.5	27.0	13.5	21.0	23.0	12.5	17.5

06036940 TANTALUS CREEK AT NORRIS JUNCTION, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°43'59", long 110°42'49" (NAD 27), Yellowstone National Park, Hydrologic Unit 10020007, on right bank 0.9 mi northwest of Norris Junction, Yellowstone National Park, and at river mile 0.3.

DRAINAGE AREA.--1.29 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 2004 to September 2004.

GAGE.--Water-stage recorder. Elevation of gage is 7,460 ft (NGVD 29).

REMARKS.--Water-discharge records good. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

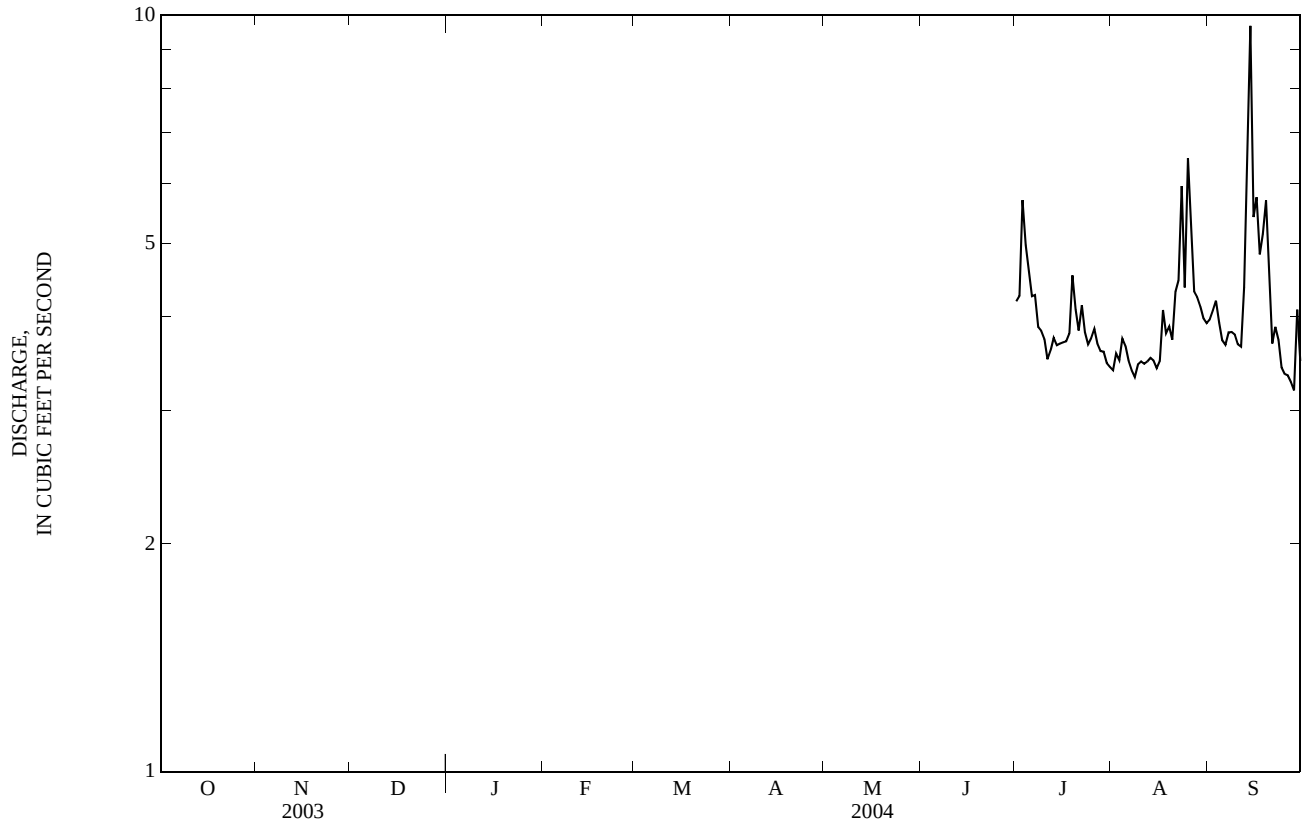
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										4.2	3.4	4.0
2										4.3	3.6	4.1
3										5.7	3.5	4.2
4										5.0	3.7	3.9
5										4.6	3.7	3.7
6										4.3	3.5	3.7
7										4.3	3.4	3.8
8										3.9	3.3	3.8
9										3.8	3.5	3.8
10										3.7	3.5	3.7
11										3.5	3.5	3.6
12										3.6	3.5	4.4
13										3.7	3.5	6.9
14										3.7	3.5	9.7
15										3.7	3.4	5.4
16										3.7	3.5	5.7
17										3.7	4.1	4.8
18										3.8	3.8	5.1
19										4.5	3.9	5.7
20										4.1	3.7	4.5
21										3.8	4.3	3.7
22										4.1	4.5	3.9
23										3.8	5.9	3.7
24										3.7	4.4	3.4
25										3.7	6.5	3.4
26										3.8	5.4	3.3
27										3.7	4.3	3.3
28										3.6	4.2	3.2
29										3.6	4.1	4.1
30										3.5	4.0	3.5
31										3.4	3.9	---
TOTAL										122.5	123.0	130.0
MEAN										3.95	3.97	4.33
MAX										5.7	6.5	9.7
MIN										3.4	3.3	3.2
AC-FT										243	244	258

SUMMARY STATISTICS	FOR 2004 WATER YEAR	
HIGHEST DAILY MEAN	9.7	Sep 14
LOWEST DAILY MEAN	3.2	Sep 28
MAXIMUM PEAK FLOW	22	Jul 3
MAXIMUM PEAK STAGE	2.60	Jul 3
INSTANTANEOUS LOW FLOW	a2.5	Jul 11

a--Gage height, 1.38 ft.

06036940 TANTALUS CREEK AT NORRIS JUNCTION, YELLOWSTONE NATIONAL PARK—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 25, 2004 to September 30, 2004.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: June 25, 2004 to September 30, 2004.

REMARKS.--Daily water temperature record rated excellent, except for June 28 to July 7, which is poor due to siltation of sensor. Unpublished records of instantaneous water temperature and specific conductance for many days are available in files of District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 37.5°C, July 16, 2004; minimum, 14.0°C, July 3, 2004.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 37.5°C, July 16; minimum, 14.0°C, July 3.

06036940 TANTALUS CREEK AT NORRIS JUNCTION, YELLOWSTONE NATIONAL PARK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1				36.0	25.0	30.0	32.5	26.5	28.5	34.0	22.0	26.5
2				36.5	25.5	29.0	31.0	26.5	28.5	27.5	21.0	24.0
3				36.0	14.0	29.5	32.0	26.5	29.0	27.0	23.0	25.0
4				33.5	27.0	29.5	32.5	26.0	28.5	32.0	22.5	25.5
5				33.5	27.0	29.5	31.5	26.5	28.5	28.5	23.0	25.0
6				33.0	27.5	29.5	31.0	26.0	27.5	30.5	22.5	25.5
7				32.0	21.5	27.0	28.5	25.0	26.5	30.0	23.0	26.0
8				29.0	23.5	26.5	31.0	24.5	27.5	31.0	23.5	25.5
9				33.5	24.0	27.5	31.0	25.0	28.0	29.5	22.0	25.0
10				33.5	25.0	28.0	32.0	25.5	28.5	29.5	23.5	25.5
11				31.5	21.5	27.0	31.5	25.5	28.0	29.0	22.0	25.0
12				33.5	24.5	28.5	32.0	25.0	28.0	27.0	21.5	24.5
13				33.5	25.5	28.5	32.5	25.5	28.5	27.5	20.5	24.0
14				36.5	26.5	30.5	32.5	26.0	29.0	27.5	20.0	23.5
15				35.5	27.5	30.5	31.0	26.0	28.5	24.5	22.5	23.5
16				37.5	27.0	31.0	32.0	27.0	28.5	26.5	21.5	24.5
17				36.5	27.0	30.5	31.0	27.5	29.0	28.5	23.5	25.5
18				34.5	27.0	30.5	30.0	27.5	28.5	28.5	24.5	26.5
19				33.0	28.0	30.5	32.5	27.5	29.0	28.5	20.5	25.5
20				33.0	28.5	29.5	30.5	27.0	28.5	26.0	21.5	23.0
21				33.0	28.0	30.0	30.0	27.0	28.0	28.5	21.5	23.0
22				32.0	27.5	29.5	30.0	25.5	28.0	24.0	21.5	22.5
23				33.0	27.5	29.5	26.5	20.5	23.5	25.0	22.0	24.0
24				34.5	26.0	30.0	28.0	21.5	25.0	31.5	23.5	26.0
25	34.5	27.0	29.0	33.0	27.0	30.0	28.5	18.5	24.5	32.0	23.5	26.0
26	35.0	26.0	29.5	33.5	27.0	29.5	29.0	18.0	25.0	33.5	23.0	27.0
27	34.0	25.5	29.0	32.5	27.0	29.5	30.5	24.0	26.5	32.5	24.5	26.5
28	37.0	26.5	30.0	33.5	27.0	29.5	29.0	23.5	25.5	29.5	22.5	25.0
29	36.5	27.0	30.5	32.0	27.0	29.0	31.5	24.5	27.0	31.5	22.5	26.5
30	34.5	28.0	30.0	31.5	26.0	28.5	32.0	25.0	28.0	32.0	22.0	26.5
31	---	---	---	31.5	26.5	28.5	34.5	24.5	28.5	---	---	---
MONTH	37.0	25.5	29.7	37.5	14.0	29.2	34.5	18.0	27.6	34.0	20.0	25.1

06037100 GIBBON RIVER AT MADISON JUNCTION, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°38'26", long 110°51'38" (NAD 27), Yellowstone National Park, Hydrologic Unit 10020007, on left bank 40 ft downstream from highway bridge, 0.4 mi south of Madison Junction, 14 mi east of West Yellowstone, and at river mile 0.2.

DRAINAGE AREA.--126 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 2001 to September 2001, October 2002 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,800 ft (NGVD 29).

REMARKS.--Water-discharge records good. No regulation or diversions upstream from station. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	81	86	92	84	88	132	141	191	122	91	86
2	88	83	86	91	85	82	133	148	173	123	91	86
3	88	85	87	87	88	87	139	170	161	119	93	86
4	88	87	86	84	88	87	163	187	157	135	91	86
5	88	80	81	e75	87	83	173	206	154	146	92	85
6	89	e80	91	e80	86	81	154	210	146	125	88	85
7	89	81	93	89	88	77	155	201	141	117	88	84
8	90	81	92	88	88	81	161	185	134	113	86	84
9	89	84	84	86	89	85	157	170	136	110	86	83
10	111	87	88	84	85	89	129	165	205	108	86	82
11	98	88	89	84	88	83	121	163	232	105	84	82
12	94	86	86	81	e82	82	122	165	204	102	83	83
13	92	82	87	80	85	80	135	148	169	101	82	106
14	91	87	93	82	84	79	145	140	150	102	81	186
15	90	85	88	79	88	79	140	138	137	100	81	159
16	89	86	81	79	87	77	125	159	134	101	81	155
17	89	90	88	79	90	78	137	198	132	99	85	131
18	88	85	79	78	92	81	146	178	130	101	90	109
19	88	85	83	81	91	87	140	201	141	113	88	105
20	87	90	86	81	86	91	141	154	135	111	85	133
21	87	88	89	77	86	91	134	149	129	108	87	113
22	87	81	84	76	87	95	123	259	123	114	94	106
23	88	80	81	80	89	114	118	301	141	111	108	105
24	87	87	81	83	90	121	123	233	124	102	110	104
25	83	87	89	87	91	118	116	187	129	99	109	99
26	87	87	91	82	91	117	118	182	136	99	130	97
27	88	82	88	82	93	108	137	190	126	98	117	99
28	90	83	84	83	90	100	170	205	141	94	98	97
29	104	86	89	84	86	96	148	280	122	93	94	94
30	89	87	89	89	---	101	146	259	121	92	90	98
31	83	---	89	86	---	116	---	214	---	91	88	---
TOTAL	2,786	2,541	2,688	2,569	2,544	2,834	4,181	5,886	4,454	3,354	2,857	3,108
MEAN	89.9	84.7	86.7	82.9	87.7	91.4	139	190	148	108	92.2	104
MAX	111	90	93	92	93	121	173	301	232	146	130	186
MIN	83	80	79	75	82	77	116	138	121	91	81	82
AC-FT	5,530	5,040	5,330	5,100	5,050	5,620	8,290	11,670	8,830	6,650	5,670	6,160

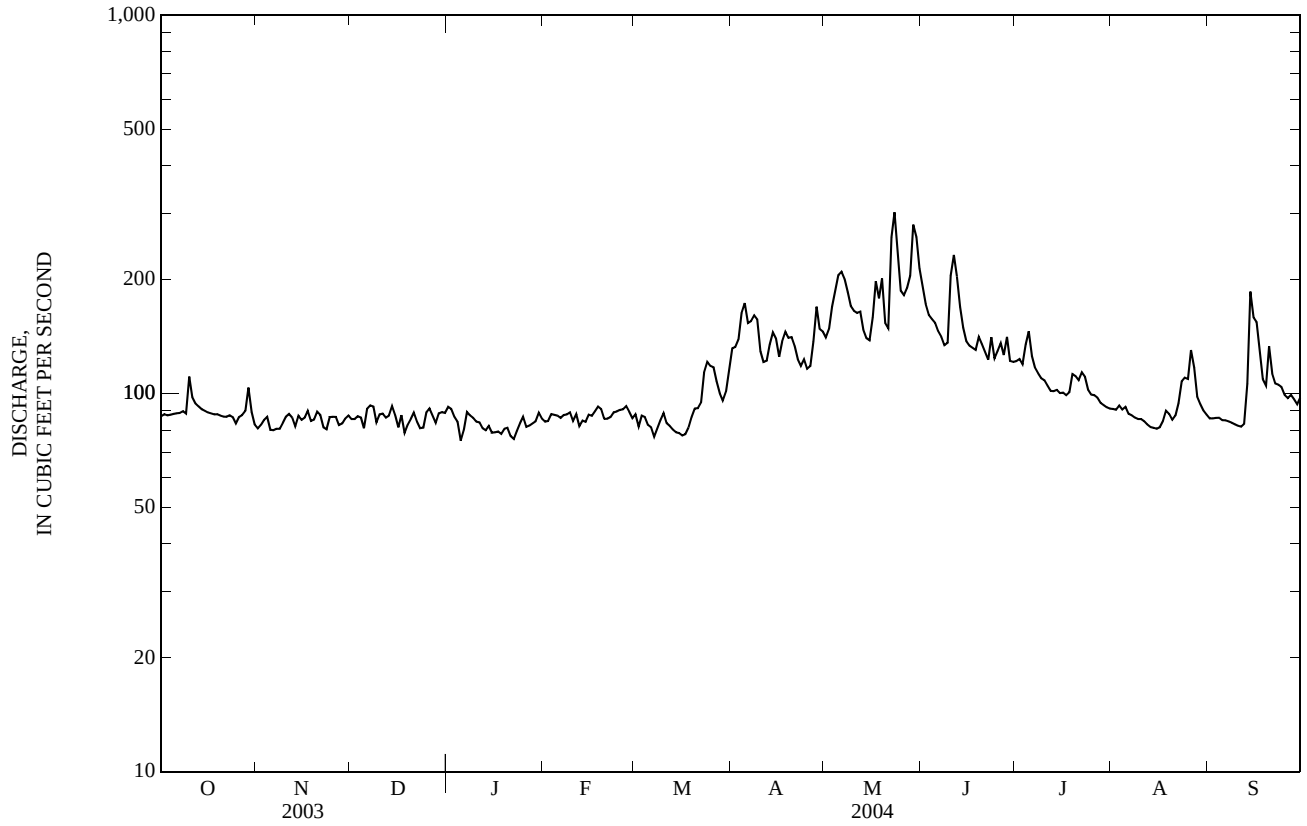
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2004, BY WATER YEAR (WY)*

MEAN	93.3	88.6	89.6	88.5	90.6	92.5	140	250	167	110	92.1	92.9
MAX	96.8	92.6	92.5	94.2	93.6	93.6	152	315	216	114	96.5	104
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2004)
MIN	89.9	84.7	86.7	82.9	87.7	91.4	130	190	137	108	87.7	82.6
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2001)	(2004)	(2001)	(2004)	(2001)	(2001)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2001 - 2004*	
ANNUAL TOTAL	46,545		39,802			
ANNUAL MEAN	128		109		119	
HIGHEST ANNUAL MEAN					129	2003
LOWEST ANNUAL MEAN					109	2004
HIGHEST DAILY MEAN	506	May 27	301	May 23	584	May 16, 2001
LOWEST DAILY MEAN	79	Dec 18	75	Jan 5	75	Jan 5, 2004
ANNUAL SEVEN-DAY MINIMUM	82	Nov 1	79	Jan 16	79	Jan 16, 2004
MAXIMUM PEAK FLOW			334	May 23	674	May 16, 2001
MAXIMUM PEAK STAGE			4.79	May 23	5.93	May 16, 2001
INSTANTANEOUS LOW FLOW			72	Dec 18	a72	Dec 18, 2003
ANNUAL RUNOFF (AC-FT)	92,320		78,950		86,200	
10 PERCENT EXCEEDS	203		159		185	
50 PERCENT EXCEEDS	95		90		95	
90 PERCENT EXCEEDS	86		81		84	

*--During periods of operation (April 2001 to September 2001, October 2002 to current year).
a--Gage height, 3.93 ft, but may have been lower during period of ice effect.
e--Estimated.

06037100 GIBBON RIVER AT MADISON JUNCTION, YELLOWSTONE NATIONAL PARK—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2002 to September 2003.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 2002 to September 2003.

INSTRUMENTATION.--Temperature recorder installed Sept. 19, 2002.

REMARKS.--Daily water temperature records good. Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.5°C, July 21, 2003; minimum, 0.0°C, several days during winter months.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 25.5°C, July 15, 16; minimum, 0.0°C, several days November through February.

06037100 GIBBON RIVER AT MADISON JUNCTION, YELLOWSTONE NATIONAL PARK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.0	9.0	12.5	5.0	1.0	3.0	8.5	5.5	7.0	4.5	1.5	3.5
2	16.0	10.5	13.5	5.5	1.0	3.0	6.5	3.5	5.5	2.5	1.5	2.0
3	15.5	9.0	12.5	6.0	4.0	5.0	7.5	6.5	6.5	3.0	0.5	2.0
4	15.5	8.5	12.0	5.0	1.5	3.5	6.5	3.5	5.0	1.5	0.5	1.0
5	14.5	9.0	12.0	2.0	0.0	1.0	6.5	2.5	4.0	0.5	0.0	0.0
6	15.0	9.0	12.0	2.0	0.0	1.0	8.0	6.0	7.0	0.5	0.0	0.0
7	14.5	9.5	12.0	3.0	0.0	1.5	7.5	4.5	6.5	2.5	0.5	1.0
8	15.5	11.0	13.0	4.5	0.0	2.5	6.5	4.0	5.0	5.5	2.5	4.5
9	14.5	9.5	12.0	6.5	3.5	5.0	5.0	1.5	3.0	7.5	5.5	6.0
10	12.5	8.5	11.0	7.0	5.5	6.5	5.0	3.0	4.0	5.5	3.0	4.5
11	10.5	6.5	8.5	5.5	3.5	4.5	5.5	3.5	4.5	6.0	3.5	4.5
12	11.5	9.0	10.0	6.5	2.5	4.0	5.0	4.5	4.5	4.5	1.5	3.0
13	10.5	8.0	9.0	6.0	1.0	3.5	5.0	4.0	4.5	4.5	1.0	3.0
14	11.0	7.0	9.0	7.5	5.5	6.5	6.0	3.5	5.0	5.0	2.0	3.5
15	10.5	8.5	9.5	7.5	6.0	7.0	4.0	2.0	3.0	3.5	0.5	2.5
16	11.0	7.5	9.0	8.0	5.0	7.0	4.5	2.5	3.5	6.0	2.5	4.0
17	13.5	8.0	10.5	6.0	4.0	5.0	5.0	2.0	3.5	4.5	1.0	3.0
18	13.0	8.5	10.5	5.5	3.0	4.5	2.5	0.0	1.5	4.5	0.0	2.5
19	12.5	8.0	10.0	8.0	5.5	6.5	3.0	0.0	1.5	6.0	4.0	5.0
20	13.0	8.0	10.5	6.0	4.0	5.0	5.0	1.0	3.0	6.5	3.5	5.0
21	14.5	9.0	11.5	4.5	2.5	3.5	7.0	5.0	6.0	3.5	0.5	2.0
22	14.0	8.5	11.0	3.5	0.0	2.0	5.5	2.5	3.5	3.0	0.5	1.5
23	12.0	8.5	10.0	2.0	0.0	1.0	3.5	2.0	3.0	4.5	2.5	3.5
24	9.5	6.5	8.0	3.0	1.0	2.0	4.5	1.0	3.0	5.0	4.0	4.5
25	8.5	4.0	6.0	2.5	0.5	1.5	7.0	4.5	5.5	4.5	2.0	3.5
26	10.5	5.5	7.5	4.5	2.0	3.0	5.5	3.0	4.5	3.0	0.5	2.0
27	10.0	7.0	8.5	3.5	1.0	2.0	3.5	2.5	3.0	3.5	2.5	3.0
28	10.0	8.5	9.5	4.5	2.0	3.0	2.5	1.5	2.0	4.0	3.5	3.5
29	9.5	5.0	8.0	5.5	2.5	4.0	3.0	2.0	2.5	6.0	4.0	5.0
30	5.0	2.0	3.5	8.0	5.5	7.0	3.0	1.5	2.5	6.5	3.0	5.0
31	6.0	1.5	3.5	---	---	---	4.5	2.5	3.5	4.0	0.5	2.0
MONTH	16.0	1.5	10.0	8.0	0.0	4.0	8.5	0.0	4.0	7.5	0.0	3.0
		FEBRUARY			MARCH			APRIL			MAY	
1	4.0	1.0	2.5	9.0	5.0	7.0	14.0	9.0	11.5	17.0	8.5	12.5
2	3.5	0.0	1.5	8.0	2.5	5.0	13.5	9.0	11.0	17.0	9.5	13.0
3	6.5	3.0	4.5	7.0	3.5	5.0	15.0	7.0	11.0	14.5	11.0	13.0
4	5.5	2.0	4.0	8.0	4.5	6.0	14.0	8.5	11.0	17.0	10.0	13.5
5	6.0	4.0	5.0	7.5	3.5	5.5	15.5	8.5	11.5	16.0	10.5	13.0
6	6.0	3.5	4.0	5.0	0.5	3.0	14.0	8.0	11.0	16.5	10.5	13.0
7	5.5	3.0	4.0	7.5	1.5	4.5	14.0	9.0	11.5	16.5	11.0	13.5
8	5.5	3.0	4.5	11.0	3.5	7.0	13.0	10.0	11.5	14.5	10.5	12.5
9	5.5	3.0	4.0	12.0	5.0	8.5	11.0	7.5	9.0	14.5	10.5	12.5
10	4.5	1.0	2.5	10.5	6.5	8.5	13.0	5.0	8.5	15.5	10.0	12.5
11	4.5	1.0	2.5	11.5	4.5	7.5	14.5	6.5	10.0	13.0	9.0	11.0
12	2.0	0.0	1.0	11.5	5.5	8.5	15.5	7.5	11.5	11.0	7.5	9.5
13	4.5	0.0	2.0	11.5	6.0	8.5	15.5	8.5	12.0	11.5	7.0	9.5
14	4.5	0.0	2.5	8.5	6.0	7.5	13.0	9.5	11.0	12.5	7.5	10.0
15	6.0	3.5	4.5	10.0	6.0	7.5	10.0	6.5	8.5	15.5	8.5	12.0
16	7.5	4.5	6.0	9.5	6.5	8.0	13.0	6.0	9.5	13.0	9.5	11.5
17	7.0	5.5	6.5	11.0	7.5	8.5	11.0	8.0	9.5	16.0	9.0	12.0
18	8.5	7.0	7.5	13.0	7.5	10.0	9.5	8.0	8.5	14.0	11.0	13.0
19	9.0	6.0	7.0	12.0	7.0	9.5	11.0	6.5	9.0	13.0	9.0	11.0
20	8.0	4.5	6.0	13.0	5.5	9.0	10.0	6.5	8.0	14.0	9.5	12.0
21	7.0	3.0	4.5	14.5	7.5	10.5	13.5	6.0	9.0	15.0	10.5	12.5
22	6.5	0.5	4.0	14.0	7.5	10.5	14.5	7.0	10.5	12.0	9.5	10.0
23	7.0	2.0	4.5	15.0	8.5	11.5	16.0	7.5	11.5	10.0	8.0	9.0
24	8.5	2.5	5.5	14.0	8.0	10.5	13.5	9.0	11.0	11.5	8.0	9.5
25	8.0	5.5	7.0	12.5	7.0	9.5	15.5	7.0	11.0	14.0	9.0	11.5
26	8.5	5.5	7.0	9.5	6.5	8.5	17.5	9.0	13.0	11.5	9.5	10.0
27	9.0	5.5	7.5	9.0	6.0	7.0	16.5	10.0	13.0	16.5	9.5	12.5
28	7.0	5.5	6.5	11.0	5.5	8.0	12.5	6.5	9.0	13.5	11.0	12.5
29	8.5	4.5	6.5	14.0	5.5	9.5	12.0	4.5	8.0	11.0	7.5	9.5
30	---	---	---	15.0	7.0	10.5	15.5	7.0	11.0	10.5	8.5	9.5
31	---	---	---	15.5	7.5	11.0	---	---	---	15.0	9.0	11.5
MONTH	9.0	0.0	4.5	15.5	0.5	8.0	17.5	4.5	10.5	17.0	7.0	11.5

06037100 GIBBON RIVER AT MADISON JUNCTION, YELLOWSTONE NATIONAL PARK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.0	11.0	14.0	23.0	14.0	18.0	23.0	14.5	18.5	20.5	13.0	16.5
2	20.0	12.0	15.5	21.0	14.5	18.0	23.5	16.0	19.0	18.5	14.5	16.0
3	20.0	12.5	16.0	21.5	13.5	17.5	23.5	16.5	19.5	14.5	12.0	13.5
4	18.5	14.0	16.5	19.5	15.5	17.5	22.0	15.5	18.5	18.0	10.0	13.5
5	20.5	13.5	17.0	19.5	13.5	16.5	23.5	16.0	19.5	17.0	11.5	14.5
6	18.5	14.0	16.0	21.0	14.0	17.5	22.0	14.5	18.0	18.5	11.0	14.5
7	20.5	13.0	16.5	20.5	14.5	17.5	20.0	13.5	17.0	18.5	11.0	14.5
8	21.0	13.5	17.0	21.0	13.5	17.0	22.0	13.0	17.0	19.0	11.5	15.0
9	19.5	14.0	16.5	20.5	12.5	16.5	22.5	14.0	18.0	18.5	11.5	15.0
10	15.5	11.0	13.0	23.0	14.0	18.0	22.5	14.5	18.5	18.0	12.0	14.5
11	13.0	10.0	11.5	22.0	15.0	18.5	22.5	14.5	18.5	18.5	11.5	15.0
12	15.0	10.5	12.5	23.5	13.5	18.5	22.5	13.0	18.0	16.0	12.5	14.0
13	17.0	12.0	14.0	20.5	15.0	18.0	22.5	13.5	18.0	13.5	12.0	12.5
14	19.0	12.0	15.5	25.0	14.5	19.5	23.0	14.5	18.5	12.0	8.5	10.0
15	17.5	11.5	14.5	25.5	17.5	21.0	20.5	14.5	17.5	12.5	8.5	10.5
16	17.0	11.5	13.5	25.5	16.0	20.5	21.5	15.0	18.0	15.0	11.0	12.5
17	18.5	11.0	14.5	25.0	16.5	20.5	20.0	17.0	18.5	17.0	11.0	13.5
18	15.0	11.5	13.5	24.0	17.0	20.5	20.0	16.0	18.0	17.5	13.0	15.0
19	17.5	12.0	14.5	22.0	19.0	20.5	23.0	15.5	18.5	15.5	12.5	13.5
20	18.5	12.5	15.5	23.0	16.5	19.0	21.5	14.5	18.0	13.0	10.5	11.5
21	20.5	12.5	16.0	24.0	15.0	19.5	19.5	14.5	16.5	13.5	8.5	11.0
22	21.5	12.5	16.5	21.0	16.5	18.5	19.0	14.0	16.5	10.0	8.0	9.0
23	21.0	13.0	17.0	22.0	15.5	18.5	16.0	12.5	13.5	13.5	9.5	11.0
24	21.5	14.5	18.0	24.0	14.5	19.0	17.0	11.0	13.5	17.0	10.0	13.0
25	20.0	15.0	17.5	22.5	15.5	19.5	14.5	12.0	13.5	17.5	10.5	14.0
26	22.0	13.5	17.5	23.0	17.0	19.5	15.5	11.0	13.0	17.5	10.5	14.0
27	19.5	15.5	17.5	22.5	15.5	19.0	17.5	11.5	14.0	18.0	12.5	15.0
28	22.5	14.0	18.0	23.5	15.5	19.5	18.0	12.0	15.0	17.0	11.5	14.0
29	22.5	15.0	18.5	22.0	15.0	18.5	20.0	13.0	16.5	16.5	10.5	13.5
30	20.0	16.0	18.0	23.0	14.5	18.5	21.0	13.0	17.0	15.5	13.0	14.0
31	---	---	---	22.5	15.0	18.5	21.5	13.0	17.0	---	---	---
MONTH	22.5	10.0	15.5	25.5	12.5	19.0	23.5	11.0	17.0	20.5	8.0	13.5

06037500 MADISON RIVER NEAR WEST YELLOWSTONE, MT

LOCATION.--Lat 44°39'25", long 111°04'03" (NAD 27), in NE¼NW¼SW¼ sec.36, T.13 S., R.5 E., Gallatin County, Hydrologic Unit 10020007, Yellowstone National Park, on left bank 0.7 mi downstream from Montana-Wyoming stateline, 1.5 mi east of West Yellowstone, 16.4 mi downstream from Gibbon River, and at river mile 132.7.

DRAINAGE AREA.--420 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1913 to December 1917, July 1918 to October 1921, June 1922 to September 1973, August 1983 to September 1986, October 1988 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 6,650 ft (NGVD 29). Prior to Oct. 20, 1918, nonrecording gage, and Oct. 20, 1918 to June 29, 1930, nonrecording gage or water-stage recorder at sites 2.5 mi upstream at different elevations. Supplementary nonrecording gage at site 0.3 mi downstream at different elevation used at time during 1927-30.

REMARKS.--Water-discharge records good except those for January to February, which are fair. No regulation or diversions upstream from station. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	341	331	341	361	347	360	458	481	599	455	375	380
2	341	331	339	354	344	355	475	499	579	442	375	379
3	341	335	338	355	347	357	476	542	575	431	380	382
4	341	340	339	344	345	358	489	588	582	439	378	384
5	341	e330	333	289	337	357	503	638	594	466	380	378
6	341	e320	345	e250	334	349	506	692	599	446	375	375
7	341	e320	359	e300	336	348	504	724	603	415	373	376
8	342	330	359	340	338	363	510	717	589	405	369	376
9	341	334	345	336	333	373	522	678	593	401	369	375
10	371	340	344	334	330	385	482	630	648	398	369	375
11	366	346	348	330	337	377	458	609	704	393	364	375
12	352	343	345	328	e325	377	449	602	672	387	366	374
13	348	337	347	326	e330	377	460	552	614	387	369	410
14	347	342	356	326	334	372	480	521	567	388	369	490
15	347	341	354	327	336	371	479	512	541	387	369	496
16	347	347	343	329	339	369	457	521	536	387	369	455
17	345	356	346	327	349	379	470	626	525	382	374	441
18	341	342	336	325	354	387	504	568	505	387	395	415
19	341	341	341	326	358	407	477	678	535	403	386	406
20	341	356	341	326	346	428	473	587	525	427	387	467
21	341	354	346	322	342	418	485	573	504	418	386	435
22	341	344	340	321	344	423	461	694	477	413	405	412
23	341	e340	334	324	347	433	443	864	484	419	428	411
24	340	347	336	332	348	463	444	738	476	398	427	409
25	334	345	345	342	354	465	437	617	456	392	430	400
26	337	345	354	333	354	458	437	579	495	387	539	393
27	341	338	347	332	355	432	465	608	481	387	457	392
28	343	335	339	339	358	416	522	652	492	387	412	392
29	365	340	345	338	360	406	511	798	478	381	396	390
30	350	343	353	349	---	410	498	790	468	376	387	390
31	333	---	353	353	---	426	---	654	---	375	385	---
TOTAL	10,682	10,193	10,691	10,218	9,961	12,199	14,335	19,532	16,496	12,559	12,143	12,133
MEAN	345	340	345	330	343	394	478	630	550	405	392	404
MAX	371	356	359	361	360	465	522	864	704	466	539	496
MIN	333	320	333	250	325	348	437	481	456	375	364	374
AC-FT	21,190	20,220	21,210	20,270	19,760	24,200	28,430	38,740	32,720	24,910	24,090	24,070

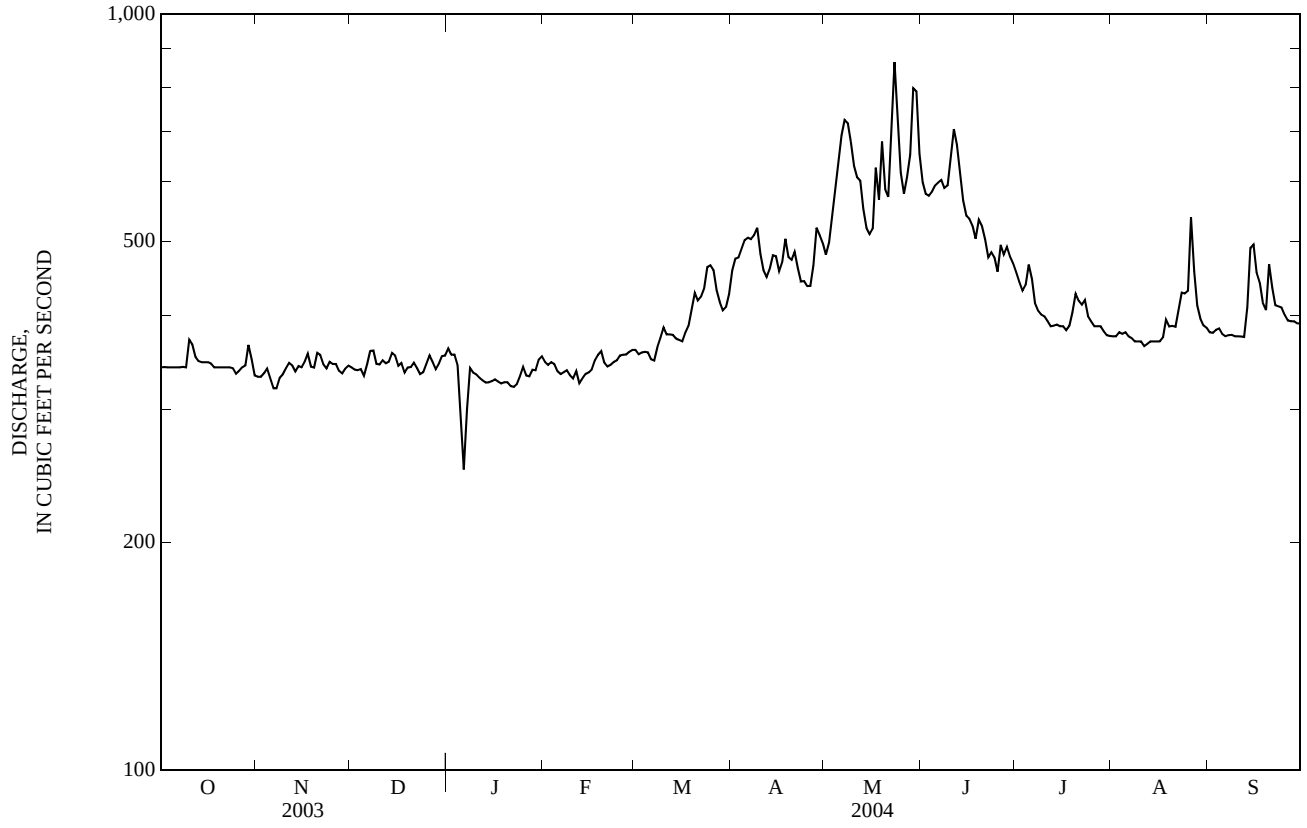
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2004, BY WATER YEAR (WY)*

MEAN	432	423	415	403	398	406	496	847	809	497	432	426
MAX	710	697	641	586	572	539	671	1,725	1,479	917	759	704
(WY)	(1914)	(1914)	(1997)	(1997)	(1914)	(1917)	(1925)	(1997)	(1997)	(1913)	(1913)	(1913)
MIN	297	297	304	304	303	313	369	388	341	282	273	282
(WY)	(1935)	(1932)	(1932)	(1932)	(1932)	(1943)	(1941)	(1934)	(1931)	(1931)	(1934)	(1934)

06037500 MADISON RIVER NEAR WEST YELLOWSTONE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1913 - 2004*	
ANNUAL TOTAL	154,876		151,142			
ANNUAL MEAN	424		413		497	
HIGHEST ANNUAL MEAN					789	1997
LOWEST ANNUAL MEAN					337	1934
HIGHEST DAILY MEAN	1,120	May 27	864	May 23	2,750	May 18, 1996
LOWEST DAILY MEAN	320	Nov 6	250	Jan 6	245	Jan 1, 1942
ANNUAL SEVEN-DAY MINIMUM	329	Nov 2	311	Jan 5	267	Aug 6, 1931
MAXIMUM PEAK FLOW			909	May 23	a2,820	May 18, 1996
MAXIMUM PEAK STAGE			2.36	May 23	b10.00	Jan 8, 1937
INSTANTANEOUS LOW FLOW					c100	Feb 7, 1933
ANNUAL RUNOFF (AC-FT)	307,200		299,800		360,400	
10 PERCENT EXCEEDS	580		570		739	
50 PERCENT EXCEEDS	373		375		431	
90 PERCENT EXCEEDS	341		334		339	

*--During periods of operation (June 1913 to December 1917, July 1918 to October 1921, June 1922 to September 1973, August 1983 to September 1986, October 1988 to current year).
a--Gage height, 3.78 ft.
b--About, backwater from ice.
c--Result of freezeup.
e--Estimated.



06037500 MADISON RIVER NEAR WEST YELLOWSTONE, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983-86, 1989-95, April 2004, (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1983 to July 1986.
WATER TEMPERATURE: July 1983 to July 1986.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 558 microsiemens per centimeter (μS/cm) at 25.0°C, Mar. 24, 25, 1986; minimum, 78 μS/cm at 25.0°C, May 30, 1986.
WATER TEMPERATURE: Maximum, 25.5°C, Aug. 6, 9, 1983; minimum, 0.0°C, many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)
APR 19...	1045	482	8.1	470	17	5.80	.712	8.29	9	86.0	87

Date	Alkalinity, water fltrd fxd end pt., lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Boron, water, fltrd, ug/L (01020)
APR 19...	106	60.0	6.8	87.5	15.9	336	.46	437	269	258	707

Date	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Mercury water fltrd, **ng/L*** (50287)	Mercury water unfltrd **ng/L*** (50286)	Zinc, water, fltrd, ug/L (01090)	Filter pore size, um (81352)
APR 19...	125	330	443	12.1	4.99	26.3	.8	.10

*--Results for mercury are reported in nanograms per liter.

06038500 MADISON RIVER BELOW HEBGEN LAKE, NEAR GRAYLING, MT

LOCATION.--Lat 44°52'00", long 111°20'15" (NAD 27), NE¼NE¼NE¼ sec.22, T.11 S., R.3 E., Gallatin County, Hydrologic Unit 10020007, Gallatin National Forest, on right bank 1,500 ft downstream from Hebgen Dam, 8 mi northwest of Grayling, 17 mi upstream from West Fork, and at river mile 108.8.

DRAINAGE AREA.--905 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1909 to current year. Prior to October 1938 adjusted runoff only, published in WSP 1309. Prior to October 1949, published as "below Hebgen Reservoir".

REVISED RECORDS.--WSP 1509: 1948. WSP 1559: Drainage area. WSP 1629: 1943. WSP 1709: 1959. WSP 1729: 1943.

GAGE.--Water-stage recorder. Elevation of gage is 6,448.47 ft (after 1959 earthquake) (NGVD 29). Prior to July 13, 1943, nonrecording gage in stilling well.

REMARKS.--Water-discharge records excellent. Flow completely regulated by Hebgen Lake (station number 06038000). Diversions for irrigation of about 1,100 acres upstream from station. Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--95 years, 1,018 ft^3/s, 15.28 in/yr, 737,500 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft^3/s, Aug. 17, 1959, caused by wave over Hebgen Dam during earthquake, gage height, 5.3 ft, from floodmark, from rating curve extended above 3,500 ft^3/s on basis of slope-area measurement of peak flow; maximum observed unaffected by wave over dam, 5,090 ft^3/s, June 3, 1943, gage height, 3.69 ft; minimum daily, 5.0 ft^3/s, May 9-12, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,270 ft^3/s, July 7, gage height, 2.00 ft; minimum daily, 406 ft^3/s, May 10.

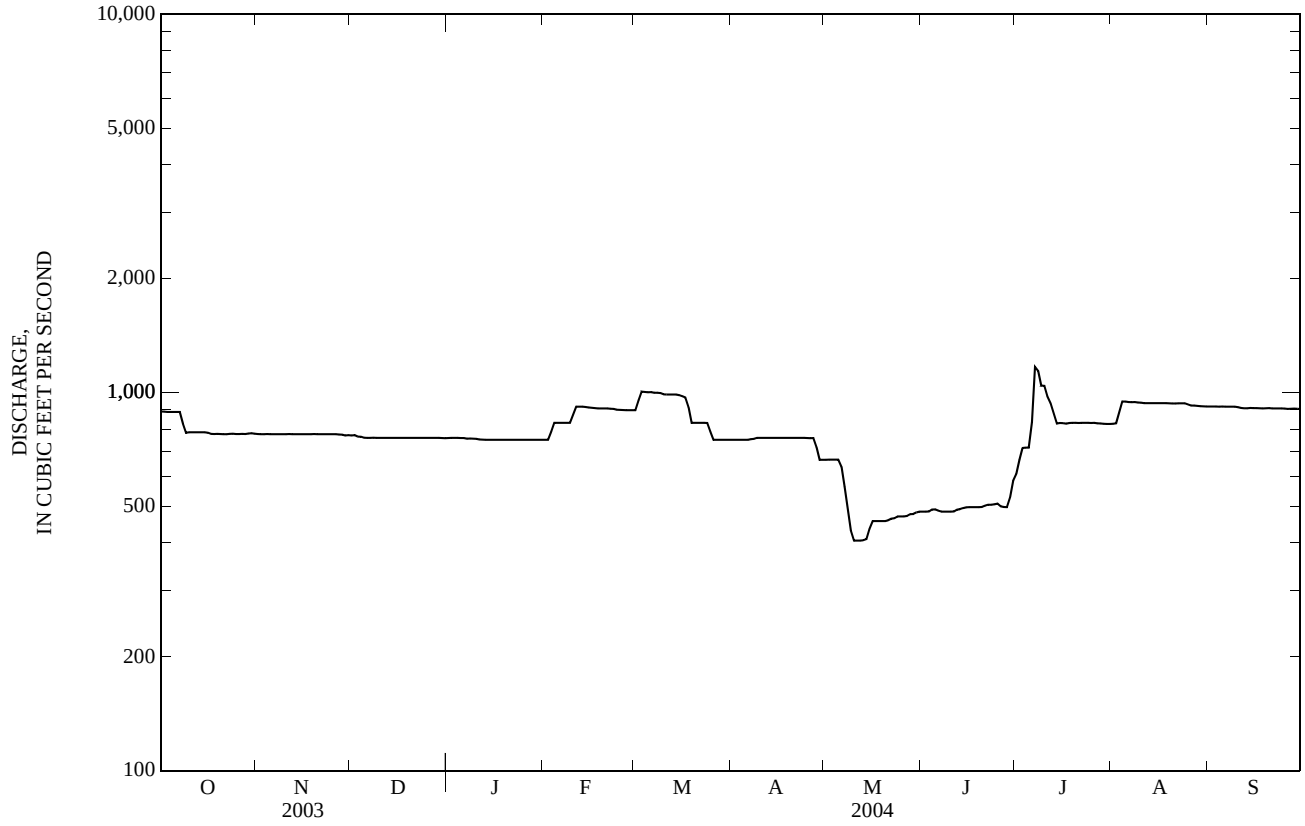
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	891	777	770	758	750	898	750	664	484	609	827	918
2	891	776	771	758	750	954	750	665	484	664	829	919
3	889	776	764	758	788	1,010	750	665	485	714	889	918
4	888	777	764	758	831	1,000	750	665	490	715	946	918
5	888	776	759	758	832	1,000	750	665	491	715	946	918
6	888	776	759	758	831	1,000	750	636	487	835	944	918
7	888	776	759	755	831	999	753	564	484	1,170	943	918
8	827	776	760	756	831	999	754	488	484	1,140	944	918
9	783	776	758	755	831	997	759	432	484	1,040	941	917
10	785	776	758	754	872	989	758	406	484	1,040	940	915
11	785	777	758	751	918	988	758	406	485	977	938	910
12	785	776	758	751	918	988	758	406	490	937	938	909
13	785	776	758	750	918	988	758	407	492	883	938	909
14	785	776	758	750	916	988	759	410	495	829	938	911
15	785	776	758	750	913	984	759	436	497	831	938	910
16	783	776	758	750	911	977	759	457	498	830	937	910
17	777	776	758	750	909	970	758	457	498	828	938	909
18	777	776	758	750	908	914	758	457	498	830	938	908
19	777	777	758	750	908	831	758	457	498	831	937	909
20	776	776	758	750	908	831	759	457	498	831	935	909
21	776	776	758	750	908	831	758	459	502	831	935	908
22	776	776	758	750	906	831	758	464	505	831	937	908
23	778	776	758	750	905	831	758	465	505	831	937	908
24	778	776	758	750	901	831	758	470	507	831	936	908
25	777	776	758	750	899	789	758	470	508	831	930	907
26	776	776	758	750	899	750	758	470	500	831	923	905
27	777	775	758	750	898	750	758	472	498	829	923	906
28	776	773	758	750	898	750	716	477	498	828	922	906
29	779	770	758	750	898	750	664	477	527	826	920	906
30	781	771	758	750	---	750	664	482	585	826	919	904
31	779	---	757	750	---	750	---	484	---	826	918	---
TOTAL	24,986	23,269	23,539	23,320	25,386	27,918	22,458	15,390	14,941	26,370	28,724	27,337
MEAN	806	776	759	752	875	901	749	496	498	851	927	911
MAX	891	777	771	758	918	1,010	759	665	585	1,170	946	919
MIN	776	770	757	750	750	750	664	406	484	609	827	904
AC-FT	49,560	46,150	46,690	46,260	50,350	55,380	44,550	30,530	29,640	52,300	56,970	54,220
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY) (UNADJUSTED)												
MEAN	1,357	1,396	983	898	838	838	926	856	1,263	1,030	1,080	1,132
MAX	2,477	2,535	2,838	1,407	1,905	1,574	2,343	2,494	2,940	2,058	1,722	1,688
(WY)	1962	1960	1960	1944	1973	1947	1948	1996	1943	1965	1939	1982
MIN	215	501	410	180	181	291	217	45.5	96.0	503	662	368
(WY)	1942	1941	1940	1940	1940	1941	1961	1962	1960	1978	1960	1941
ADJUSTED FOR CHANGE IN CONTENTS IN HEBGEN LAKE												
MEAN†	663	666	704	588	717	810	876	1,480	1,268	829	671	701
CFSM†	0.73	0.74	0.78	0.65	0.79	0.89	0.97	1.64	1.40	0.92	0.74	0.77
IN†	0.84	0.82	0.90	0.75	0.85	1.03	1.08	1.89	1.56	1.06	0.86	0.86
AC-FT†	40,760	39,650	43,290	36,160	41,250	49,780	52,150	91,030	75,440	51,000	41,270	41,720

06038500 MADISON RIVER BELOW HEBGEN LAKE, NEAR GRAYLING, MT—Continued

				OBSERVED						
CALENDAR YEAR 2003	TOTAL	316,927	MEAN	868	MAX	1,780	MIN	608	AC-FT	628,600
WATER YEAR 2004	TOTAL	283,638	MEAN	775	MAX	1,170	MIN	406	AC-FT	562,600
				ADJUSTED						
CALENDAR YEAR 2003	TOTAL	308,999	MEAN	847	CFSM	0.94	IN	12.70	AC-FT	612,900
WATER YEAR 2004	TOTAL	304,260	MEAN	831	CFSM	0.92	IN	12.50	AC-FT	603,500

†--Adjusted for change in contents in Hebgen Lake.



06038500 MADISON RIVER BELOW HEBGEN LAKE, NEAR GRAYLING, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1986-88, 1990-95, April 2004 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)
APR 19...	1200	758	7.9	352	39	11.5	2.57	5.61	4	54.2

Date	Sodium, percent (00932)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Arsenic water, fltrd, ug/L (01000)
APR 19...	72	99	35.1	4.5	61.5	11.2	247	.34	505	158

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Arsenic water unfltrd ug/L (01002)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Mercury water fltrd, **ng/L** (50287)	Mercury water unfltrd **ng/L** (50286)	Zinc, water, fltrd, ug/L (01090)
APR 19...	140	408	92	140	270	88.0	1.54	2.11	<.6

*--Results for mercury are reported in nanograms per liter.

06038800 MADISON RIVER AT KIRBY RANCH, NEAR CAMERON, MT

LOCATION.--Lat 44°53'22", long 111°34'46" (NAD 27), in NE¼NE¼SE¼ sec.10, T.11 S., R.1 E., Madison County, Hydrologic Unit 10020007, 75 ft upstream from county bridge, 0.2 mi upstream from West Fork Madison River, and 22 mi south of Cameron, and at river mile 89.8.

DRAINAGE AREA.--1,065 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1959 to September 1963, May 1978 to September 1994 (seasonal records only), October 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,860 ft (NGVD 29). Aug. 31, 1959 to Oct. 2, 1959, nonrecording gage 75 ft downstream at elevation 0.96 ft lower. Oct. 3, 1959 to September 1963, water-stage recorder at present site and elevation. May 1978 to September 1994, nonrecording gage 75 ft downstream at present elevation.

REMARKS.--Water-discharge records good. Flow regulated by Hebgen Lake (station 06038000). Diversions for irrigation of about 1,500 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	926	808	813	821	805	943	857	833	e835	982	932	984
2	924	810	811	814	e800	951	859	866	e850	998	934	980
3	920	815	810	809	812	1,020	865	929	e880	1,060	947	982
4	924	821	810	e800	858	1,040	873	986	960	1,110	1,000	984
5	923	814	809	e790	877	1,040	882	1,050	1,050	1,120	1,020	975
6	924	814	815	e790	882	1,040	888	1,120	1,150	1,080	1,020	971
7	923	814	821	e800	881	1,040	890	1,090	1,160	1,300	1,010	969
8	910	815	812	813	879	1,040	903	1,030	1,100	1,440	1,010	959
9	846	818	808	808	881	1,040	903	917	1,110	1,310	1,010	954
10	844	818	808	804	892	1,040	888	834	1,200	1,260	1,010	954
11	834	822	811	803	936	1,040	881	825	1,140	1,230	1,000	947
12	830	823	809	804	e940	1,030	884	772	1,020	1,160	997	958
13	828	819	816	805	945	1,020	907	718	931	1,130	1,000	983
14	831	818	823	808	945	1,020	926	682	889	1,050	1,000	979
15	829	818	811	809	940	1,020	925	662	881	1,030	997	965
16	829	820	811	808	941	1,010	917	688	876	1,020	985	972
17	832	820	807	805	947	1,010	918	693	859	1,010	992	963
18	833	816	807	e800	958	1,010	917	712	856	998	992	958
19	831	818	805	799	958	946	907	742	857	1,010	991	971
20	831	815	808	799	945	923	899	737	856	1,020	987	985
21	834	811	810	808	946	919	885	770	853	1,010	986	968
22	832	804	810	e800	944	917	876	809	859	988	989	962
23	826	805	810	805	940	923	872	854	881	983	1,010	974
24	823	810	807	811	938	926	870	813	911	971	1,010	982
25	823	809	816	813	941	921	871	769	930	965	1,020	972
26	825	809	814	808	944	869	883	761	945	959	1,020	968
27	826	810	810	805	946	848	917	761	933	958	1,010	965
28	834	811	813	803	943	843	950	837	897	952	1,000	965
29	840	812	813	808	940	843	860	1,000	878	949	996	963
30	820	813	811	805	---	842	828	936	927	950	993	961
31	806	---	815	802	---	848	---	860	---	940	990	---
TOTAL	26,461	24,430	25,154	24,957	26,504	29,922	26,701	26,056	28,474	32,943	30,858	29,073
MEAN	854	814	811	805	914	965	890	841	949	1,063	995	969
MAX	926	823	823	821	958	1,040	950	1,120	1,200	1,440	1,020	985
MIN	806	804	805	790	800	842	828	662	835	940	932	947
AC-FT	52,490	48,460	49,890	49,500	52,570	59,350	52,960	51,680	56,480	65,340	61,210	57,670

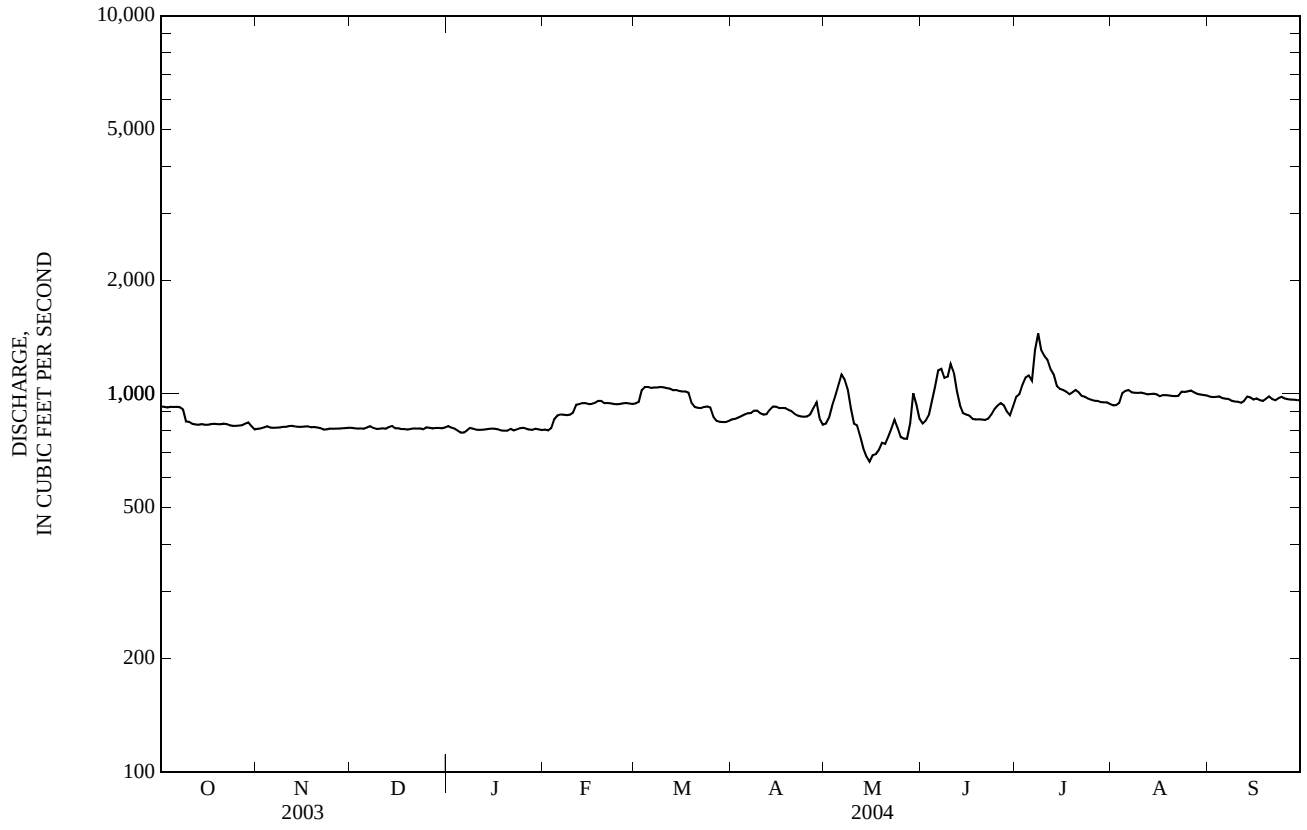
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2004, BY WATER YEAR (WY)*

MEAN	1,510	1,506	1,188	1,026	1,017	1,023	993	1,357	1,835	1,319	1,122	1,154
MAX	2,570	2,780	3,005	1,449	1,521	1,611	1,527	2,865	3,862	2,125	1,672	1,567
(WY)	(1962)	(1960)	(1960)	(1999)	(1999)	(1999)	(1995)	(1997)	(1997)	(1982)	(1997)	(1996)
MIN	854	736	739	737	626	525	370	445	619	716	734	732
(WY)	(2004)	(1961)	(1961)	(1961)	(1963)	(1963)	(1961)	(1961)	(1960)	(1979)	(1960)	(1960)

06038800 MADISON RIVER AT KIRBY RANCH, NEAR CAMERON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1959 - 2004*	
ANNUAL TOTAL	363,068		331,533			
ANNUAL MEAN	995		906		1,267	
HIGHEST ANNUAL MEAN					1,896	1997
LOWEST ANNUAL MEAN					733	1961
HIGHEST DAILY MEAN	2,090	May 30	1,440	Jul 8	5,030	May 31, 1993
LOWEST DAILY MEAN	725	May 2	662	May 15	139	Sep 1, 1959
ANNUAL SEVEN-DAY MINIMUM	731	Apr 28	700	May 13	152	Sep 1, 1959
MAXIMUM PEAK FLOW			1,490	Jul 8	b5,030	May 30, 1993
MAXIMUM PEAK STAGE			2.30	Jul 8	3.97	Jun 7, 1996
INSTANTANEOUS LOW FLOW			a650	May 15	c139	Sep 1, 1959
ANNUAL RUNOFF (AC-FT)	720,100		657,600		918,100	
10 PERCENT EXCEEDS	1,420		1,020		2,020	
50 PERCENT EXCEEDS	900		890		1,140	
90 PERCENT EXCEEDS	810		806		740	

*--During periods of operation (September 1959 to September 1963, May 1978 to September 1994 (seasonal records only), October 1994 to current year).
a--Gage height, 1.54 ft.
b--Observed gage height, 3.15 ft, previous site at present datum.
c--Observed, present site and datum.
e--Estimated.



06038800 MADISON RIVER AT KIRBY RANCH, NEAR CAMERON, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1994-2002, April 2004 (discontinued).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1994 to September 2002.

EXTREMES FOR PERIOD OF DAILY RECORD:
WATER TEMPERATURE: Maximum 21.5°C, July 2, 3, 2001, July 12, 2002; mimimum, 0.0°C many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)
APR 19...	1315	892	8.3	356	47	13.6	3.25	5.63	4	55.4	69

Date	Alkalinity, water fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Boron, water, fltrd, ug/L (01020)
APR 19...	100	34.7	4.3	58.1	11.3	247	.34	596	153	145	406

Date	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Mercury water fltrd, **ng/L** (50287)	Mercury water unfltrd **ng/L*** (50286)	Zinc, water, fltrd, ug/L (01090)
APR 19...	65	130	263	9.5	1.10	1.87	<.6

*--Results for mercury are reported in nanograms per liter.

06040800 MADISON RIVER ABOVE POWERPLANT, NEAR MCALLISTER, MT

LOCATION.--Lat 45°29'12", long 111°37'59" (NAD 27), in NW¼NE¼SW¼ sec.17, T.4 S., R.1 E., Madison County, Hydrologic Unit 10020007, on right bank 160 ft upstream from Madison powerplant, 1.4 mi downstream from Ennis Lake, 5.6 mi northeast of McAllister, and at river mile 38.9.

DRAINAGE AREA.--2,186 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 2002 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,690 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Flow regulated by Hebgen Lake (station number 06038000) and Ennis Lake (station number 06040500). Diversions for irrigation of about 23,000 acres upstream from station. Flow through Madison Powerplant bypasses the station. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	112	99	95	104	121	164	199	235	456	274	89
2	112	112	100	96	104	121	293	200	235	450	189	87
3	114	143	102	e90	101	121	205	203	233	594	183	87
4	115	114	104	e85	100	121	207	208	236	689	88	91
5	117	113	104	e80	101	121	209	213	243	811	163	93
6	119	112	103	e84	102	121	209	220	775	925	86	93
7	120	112	103	e87	103	121	211	238	1,500	940	86	94
8	122	116	103	89	103	121	214	243	1,010	534	86	232
9	121	124	102	89	104	121	217	240	588	383	88	206
10	123	144	99	90	107	123	220	226	1,220	605	90	95
11	122	123	98	92	116	124	222	222	2,140	715	92	94
12	120	121	97	92	e105	124	225	220	1,110	709	97	96
13	119	119	97	92	101	124	230	219	840	592	102	98
14	118	116	98	93	101	115	233	216	617	410	104	100
15	117	109	97	94	103	108	233	210	388	376	103	169
16	117	109	96	94	113	107	232	208	394	e290	105	209
17	116	109	94	95	125	107	233	206	395	e320	107	208
18	101	109	91	95	126	107	234	206	396	e320	110	172
19	91	109	91	95	131	107	235	205	396	e360	121	106
20	843	107	92	506	133	106	236	204	398	e120	132	136
21	1,170	106	92	1,110	132	105	236	204	398	95	133	400
22	1,180	e100	93	1,060	131	101	224	205	397	201	132	355
23	777	e98	96	133	129	94	211	209	397	323	134	255
24	116	e97	96	114	123	100	205	212	398	376	125	254
25	116	96	97	115	118	106	203	214	401	257	102	254
26	116	94	99	114	121	103	202	215	510	193	135	253
27	115	94	98	114	122	105	201	214	625	96	98	252
28	115	93	97	114	123	103	195	218	626	98	310	205
29	115	94	97	112	122	95	196	222	716	100	442	112
30	114	96	96	105	---	87	198	230	645	180	275	113
31	113	---	95	103	---	87	---	235	---	285	150	---
TOTAL	7,087	3,301	3,026	5,427	3,304	3,427	6,533	6,684	18,462	12,803	4,442	5,008
MEAN	229	110	97.6	175	114	111	218	216	615	413	143	167
MAX	1,180	144	104	1,110	133	124	293	243	2,140	940	442	400
MIN	91	93	91	80	100	87	164	199	233	95	86	87
AC-FT	14,060	6,550	6,000	10,760	6,550	6,800	12,960	13,260	36,620	25,390	8,810	9,930

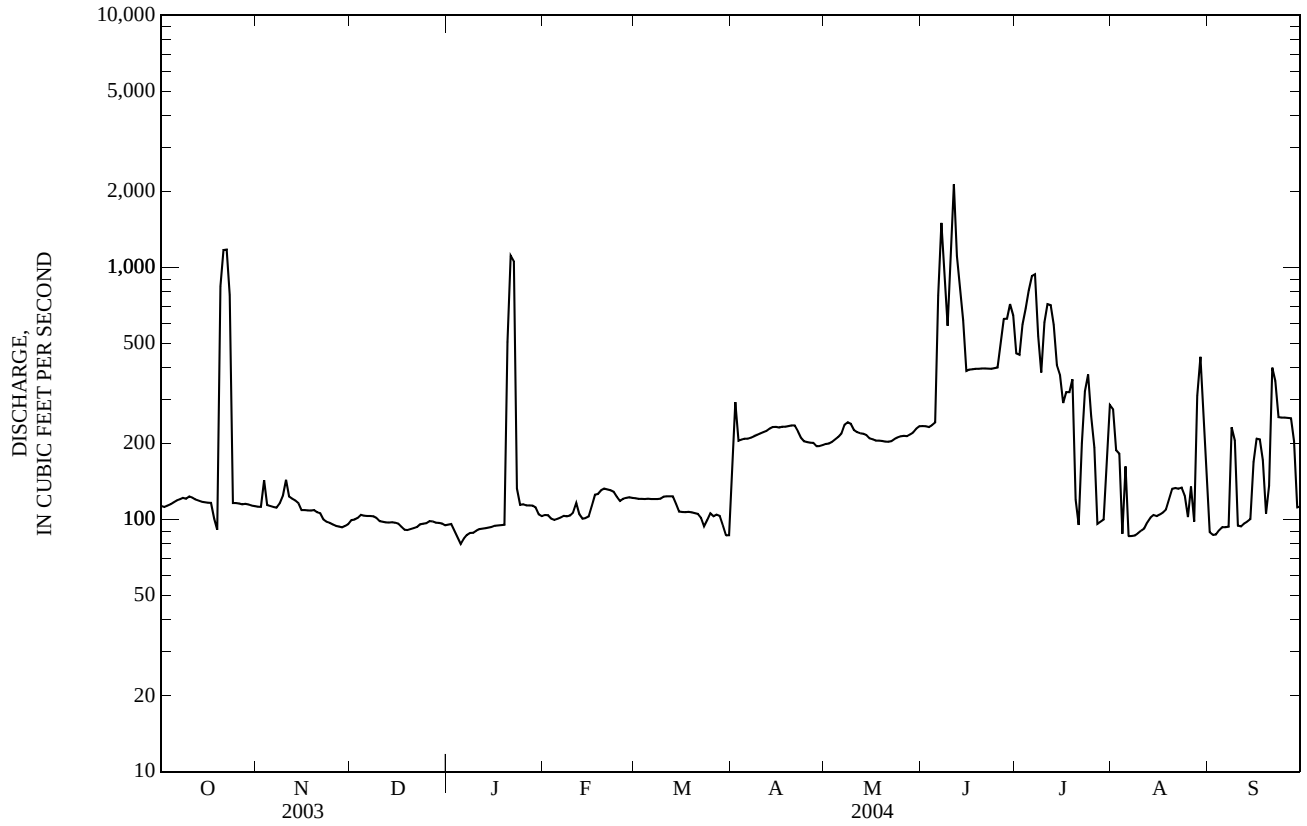
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2004, BY WATER YEAR (WY)

MEAN	251	183	91.6	144	108	116	265	530	875	458	175	172
MAX	273	255	97.6	175	114	122	351	1,031	1,076	560	203	247
(WY)	(2003)	(2003)	(2004)	(2004)	(2004)	(2003)	(2002)	(2003)	(2002)	(2002)	(2002)	(2002)
MIN	229	110	85.7	113	103	111	218	216	615	401	143	101
(WY)	(2004)	(2004)	(2003)	(2003)	(2003)	(2004)	(2004)	(2004)	(2004)	(2003)	(2004)	(2003)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2002 - 2004	
ANNUAL TOTAL	111,371		79,504			
ANNUAL MEAN	305		217		268	
HIGHEST ANNUAL MEAN					320	2003
LOWEST ANNUAL MEAN					217	2004
HIGHEST DAILY MEAN	3,540	May 31	2,140	Jun 11	3,540	May 31, 2003
LOWEST DAILY MEAN	79	Jan 9	80	Jan 5	73	Dec 27, 2002
ANNUAL SEVEN-DAY MINIMUM	80	Jan 7	86	Jan 3	77	Dec 22, 2002
MAXIMUM PEAK FLOW			2,400	Jun 10	3,940	Jun 2, 2002
MAXIMUM PEAK STAGE			7.79	Jun 10	9.42	Jun 2, 2002
ANNUAL RUNOFF (AC-FT)	220,900		157,700		194,500	
10 PERCENT EXCEEDS	749		400		586	
50 PERCENT EXCEEDS	115		121		122	
90 PERCENT EXCEEDS	92		94		90	

e--Estimated.

06040800 MADISON RIVER ABOVE POWERPLANT, NEAR MCALLISTER, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2004, (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)
APR 19...	1545	233	8.5	362	74	20.6	5.36	5.05	2	47.3	56

Date	Alkalinity, water fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Boron, water, fltrd, ug/L (01020)
APR 19...	113	29.6	3.6	44.6	14.1	239	.32	150	123	114	341

06040800 MADISON RIVER ABOVE POWERPLANT, NEAR MCALLISTER, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover -able, ug/L (01045)	Lithium water, fltrd, ug/L (01130)	Mangan- ese, water, fltrd, ug/L (01056)	Mercury water fltrd, **ng/L*** (50287)	Mercury water unfltrd **ng/L*** (50286)	Zinc, water, fltrd, ug/L (01090)
APR 19...	40	280	247	6.1	.79	1.71	<.6

*--Results for mercury are reported in nanograms per liter.

06041000 MADISON RIVER BELOW ENNIS LAKE, NEAR MCALLISTER, MT

LOCATION.--Lat 45°29'25", long 111°38'00" (NAD 27), in SW¼SE¼NW¼ sec.17, T.4 S., R.1 E., Madison County, Hydrologic Unit 10020007, on right bank 500 ft downstream from Madison powerplant, 1.5 mi downstream from Ennis Lake, 5.7 mi northeast of McAllister, and at river mile 38.8.

DRAINAGE AREA.--2,186 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1901 to December 1905, October 1906 to current year. Prior to October 1938 adjusted monthly runoff only, published in WSP 1309. Published as "below Madison Reservoir" 1938-49. Records published as "near Red Bluff" 1890-94 and as "near Norris" 1910 are not equivalent and are published as "near Norris" in WSP 1309.

REVISED RECORDS.--WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,689.03 ft (levels by U.S. Army Corps of Engineers) (NGVD 29). Prior to May 7, 1941, nonrecording gage in wooden stilling well at present site at different elevation. May 7, 1941, to Jan. 13, 1945, nonrecording gages in concrete stilling well at present site and elevation.

REMARKS.--Water-discharge records excellent. Flow regulated by Hebgen Lake (station number 06038000) and Ennis Lake (station number 06040500). Diversions for irrigation of about 23,000 acres upstream from station. U. S.Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

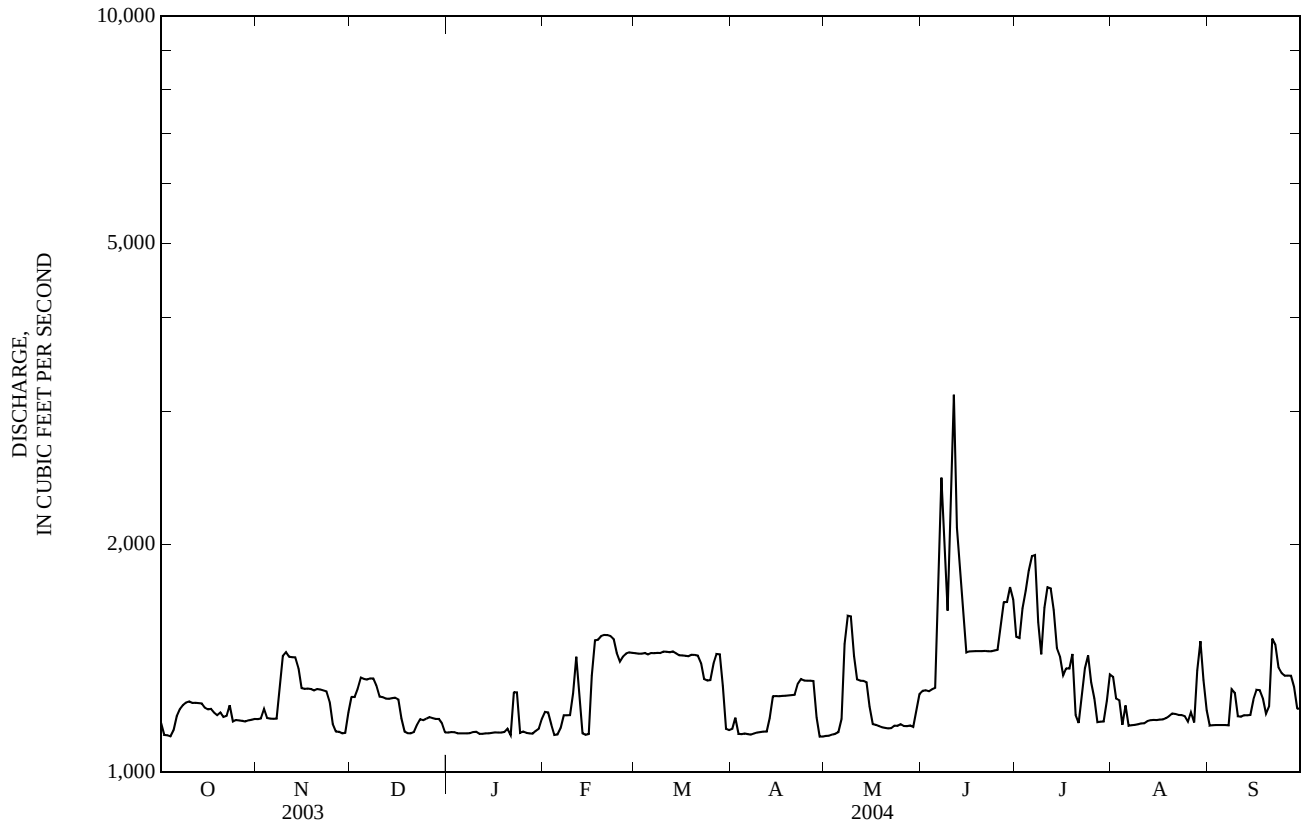
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,160	1,180	1,260	1,130	1,200	1,440	1,140	1,120	1,280	1,510	1,340	1,150
2	1,120	1,180	1,260	1,130	1,200	1,440	1,180	1,120	1,280	1,500	1,250	1,150
3	1,120	1,210	1,290	1,130	1,160	1,440	1,120	1,120	1,280	1,650	1,250	1,150
4	1,120	1,180	1,330	1,130	1,120	1,440	1,120	1,120	1,290	1,740	1,160	1,160
5	1,140	1,180	1,330	1,130	1,120	1,430	1,130	1,130	1,290	1,850	1,230	1,160
6	1,190	1,180	1,330	1,130	1,140	1,440	1,120	1,180	1,790	1,930	1,150	1,150
7	1,210	1,180	1,330	1,130	1,190	1,440	1,120	1,480	2,450	1,940	1,150	1,150
8	1,230	1,300	1,330	1,130	1,190	1,440	1,130	1,610	2,000	1,580	1,160	1,290
9	1,240	1,420	1,300	1,130	1,190	1,440	1,130	1,610	1,640	1,430	1,160	1,270
10	1,240	1,440	1,260	1,130	1,270	1,440	1,130	1,420	2,180	1,650	1,160	1,190
11	1,240	1,420	1,260	1,120	1,420	1,440	1,130	1,330	3,160	1,760	1,160	1,180
12	1,240	1,420	1,250	1,120	1,270	1,440	1,130	1,320	2,110	1,750	1,170	1,190
13	1,230	1,420	1,250	1,130	1,130	1,440	1,180	1,320	1,860	1,640	1,170	1,190
14	1,230	1,370	1,250	1,130	1,120	1,440	1,260	1,320	1,660	1,460	1,170	1,190
15	1,220	1,290	1,260	1,130	1,120	1,430	1,260	1,220	1,440	1,420	1,170	1,250
16	1,210	1,290	1,250	1,130	1,340	1,430	1,260	1,160	1,450	1,340	1,170	1,290
17	1,210	1,290	1,180	1,130	1,490	1,430	1,260	1,160	1,450	1,370	1,170	1,280
18	1,200	1,290	1,130	1,130	1,500	1,420	1,260	1,150	1,450	1,370	1,180	1,250
19	1,190	1,280	1,130	1,130	1,510	1,430	1,260	1,150	1,450	1,430	1,190	1,190
20	1,200	1,290	1,130	1,140	1,520	1,430	1,260	1,140	1,450	1,190	1,200	1,220
21	1,180	1,290	1,130	1,120	1,520	1,430	1,270	1,140	1,450	1,160	1,190	1,500
22	1,190	1,280	1,160	1,280	1,510	1,390	1,310	1,140	1,450	1,260	1,190	1,480
23	1,230	1,280	1,180	1,280	1,500	1,330	1,330	1,150	1,450	1,370	1,190	1,380
24	1,170	1,240	1,170	1,130	1,440	1,320	1,320	1,150	1,450	1,430	1,190	1,350
25	1,170	1,160	1,180	1,130	1,400	1,320	1,320	1,160	1,450	1,320	1,170	1,340
26	1,170	1,130	1,180	1,130	1,420	1,390	1,320	1,150	1,560	1,250	1,200	1,340
27	1,170	1,130	1,180	1,130	1,440	1,430	1,320	1,150	1,680	1,170	1,160	1,340
28	1,170	1,130	1,180	1,130	1,440	1,430	1,180	1,150	1,680	1,170	1,360	1,300
29	1,170	1,130	1,180	1,130	1,440	1,300	1,110	1,150	1,760	1,170	1,490	1,210
30	1,170	1,200	1,160	1,140	---	1,140	1,110	1,210	1,690	1,240	1,320	1,210
31	1,180	---	1,130	1,180	---	1,140	---	1,270	---	1,350	1,210	---
TOTAL	36,910	37,780	37,940	35,370	38,310	43,340	36,170	38,000	49,580	45,400	37,430	37,500
MEAN	1,191	1,259	1,224	1,141	1,321	1,398	1,206	1,226	1,653	1,465	1,207	1,250
MAX	1,240	1,440	1,330	1,280	1,520	1,440	1,330	1,610	3,160	1,940	1,490	1,500
MIN	1,120	1,130	1,130	1,120	1,120	1,140	1,110	1,120	1,280	1,160	1,150	1,150
AC-FT	73,210	74,940	75,250	70,160	75,990	85,960	71,740	75,370	98,340	90,050	74,240	74,380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)

MEAN	1,916	1,985	1,515	1,388	1,394	1,445	1,550	2,004	2,967	1,853	1,522	1,612
MAX	2,963	3,318	3,243	2,061	2,336	2,087	3,008	4,189	6,135	3,454	2,339	2,298
(WY)	(1960)	(1960)	(1960)	(1999)	(1943)	(1939)	(1948)	(1969)	(1997)	(1965)	(1971)	(1972)
MIN	810	961	974	767	781	891	717	859	1,122	972	1,044	934
(WY)	(1942)	(1941)	(1940)	(1940)	(1940)	(1941)	(1941)	(1961)	(1992)	(1961)	(1961)	(1941)

06041000 MADISON RIVER BELOW ENNIS LAKE, NEAR MCALLISTER, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1939 - 2004	
ANNUAL TOTAL	506,980		473,730			
ANNUAL MEAN	1,389		1,294		1,763	
HIGHEST ANNUAL MEAN					2,530	1997
LOWEST ANNUAL MEAN					1,047	1941
HIGHEST DAILY MEAN	4,560	May 31	3,160	Jun 11	9,210	Jun 11, 1970
LOWEST DAILY MEAN	1,120	Feb 26	1,110	Apr 29	210	Aug 25, 1959
ANNUAL SEVEN-DAY MINIMUM	1,150	Feb 6	1,120	Apr 29	390	Aug 23, 1959
MAXIMUM PEAK FLOW			3,440	Jun 10	9,550	Jun 12, 1970
MAXIMUM PEAK STAGE			4.70	Jun 10	8.01	Jun 12, 1970
ANNUAL RUNOFF (AC-FT)	1,006,000		939,600		1,277,000	
10 PERCENT EXCEEDS	1,810		1,490		2,690	
50 PERCENT EXCEEDS	1,240		1,240		1,560	
90 PERCENT EXCEEDS	1,150		1,130		1,100	



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972-73, 1977 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: June 1977 to current year.

INSTRUMENTATION.--Temperature recorder since June 21, 1977.

REMARKS.--Daily water temperature records good. Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 24.5°C, July 22 and 23, 2003; minimum, 0.0°C several to many day during winter months most years.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.5°C, July 19, 20; minimum, 0.0°C, Nov. 23.

06041000 MADISON RIVER BELOW ENNIS LAKE, NEAR MCALLISTER, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.5	12.0	12.5	2.0	1.0	1.0	2.0	2.0	2.0	1.5	1.0	1.0
2	12.5	12.0	12.5	2.0	1.0	1.5	2.0	2.0	2.0	1.0	1.0	1.0
3	12.5	12.0	12.0	2.5	2.0	2.0	2.0	2.0	2.0	1.0	0.5	1.0
4	12.5	11.5	12.0	2.0	2.0	2.0	2.0	1.5	2.0	1.0	0.5	0.5
5	12.5	11.5	12.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0
6	12.5	12.0	12.0	2.0	2.0	2.0	2.5	2.0	2.5	1.0	1.0	1.0
7	12.5	12.5	12.5	2.5	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0
8	12.5	12.0	12.5	2.5	2.0	2.0	2.0	1.5	2.0	1.5	1.0	1.0
9	12.5	12.0	12.5	2.5	2.0	2.0	2.0	1.5	2.0	1.5	1.0	1.5
10	12.0	11.5	11.5	2.5	2.0	2.5	2.0	2.0	2.0	1.5	1.0	1.5
11	11.5	10.0	10.5	2.5	2.0	2.5	2.0	1.5	2.0	1.5	1.0	1.0
12	10.0	9.5	10.0	2.5	2.0	2.0	2.0	1.5	2.0	1.0	1.0	1.0
13	9.5	9.0	9.5	2.5	2.0	2.5	2.5	2.0	2.0	1.5	1.0	1.0
14	9.0	9.0	9.0	3.0	2.5	2.5	2.0	1.5	2.0	1.5	1.0	1.0
15	9.0	8.5	8.5	3.0	2.5	3.0	1.5	1.5	1.5	1.5	1.0	1.0
16	9.0	8.5	8.5	3.0	3.0	3.0	1.5	1.0	1.5	1.5	1.0	1.5
17	8.5	8.5	8.5	3.0	3.0	3.0	1.5	1.5	1.5	1.5	1.0	1.5
18	8.5	8.5	8.5	3.0	3.0	3.0	1.5	1.5	1.5	1.5	1.0	1.5
19	9.0	8.5	9.0	3.0	2.0	3.0	2.0	1.5	1.5	1.5	1.5	1.5
20	9.5	9.0	9.5	2.0	0.5	1.5	2.0	2.0	2.0	1.5	1.0	1.5
21	10.5	9.5	9.5	0.5	0.5	0.5	2.5	2.0	2.5	1.5	1.0	1.0
22	10.5	10.0	10.0	0.5	0.5	0.5	2.5	2.0	2.0	1.5	0.5	1.0
23	11.5	10.0	10.0	0.5	0.0	0.5	2.5	2.0	2.0	1.5	1.0	1.5
24	10.0	9.5	9.5	0.5	0.5	0.5	2.5	2.0	2.0	1.5	1.5	1.5
25	9.5	9.0	9.0	0.5	0.5	0.5	2.5	2.0	2.5	1.5	1.0	1.0
26	9.0	8.5	9.0	1.0	0.5	1.0	2.0	1.5	2.0	1.5	1.0	1.0
27	9.0	8.5	9.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.0	1.0
28	8.5	8.5	8.5	1.0	1.0	1.0	2.0	1.5	1.5	1.5	1.0	1.5
29	8.5	7.5	8.0	2.0	1.0	1.5	2.0	1.5	1.5	1.5	1.5	1.5
30	7.5	4.0	6.0	2.0	1.5	2.0	1.5	1.0	1.5	1.5	1.0	1.5
31	4.0	2.0	2.5	---	---	---	1.5	1.0	1.5	1.5	1.0	1.0
MONTH	12.5	2.0	9.8	3.0	0.0	1.8	2.5	1.0	1.9	1.5	0.5	1.2
		FEBRUARY			MARCH			APRIL			MAY	
1	1.5	1.0	1.0	2.5	2.0	2.5	8.5	8.0	8.5	10.0	9.0	9.5
2	1.5	1.0	1.0	2.5	2.0	2.0	8.0	7.0	7.5	12.0	9.0	10.5
3	1.5	1.5	1.5	2.0	1.5	2.0	7.5	6.5	7.0	13.5	12.0	12.5
4	2.0	1.5	1.5	1.5	1.5	1.5	8.5	7.0	7.5	13.5	12.5	13.0
5	2.0	1.5	2.0	1.5	1.5	1.5	8.5	8.0	8.5	14.5	13.5	14.0
6	2.0	1.5	1.5	1.5	1.5	1.5	9.5	8.0	9.0	15.0	14.5	15.0
7	2.0	1.5	1.5	2.0	1.5	1.5	9.5	9.0	9.5	15.0	14.5	15.0
8	2.0	1.5	1.5	2.0	1.5	2.0	10.0	9.5	10.0	14.5	14.0	14.5
9	1.5	1.5	1.5	2.5	2.0	2.0	10.0	9.5	10.0	14.5	14.0	14.0
10	1.5	1.0	1.5	3.0	2.0	2.5	9.5	9.0	9.5	14.5	13.0	13.5
11	1.5	1.0	1.5	3.5	2.5	3.0	10.0	9.0	9.5	13.0	11.5	12.0
12	1.5	1.0	1.0	4.5	3.5	4.0	9.5	8.5	9.0	11.5	10.5	10.5
13	1.5	1.0	1.0	4.5	4.0	4.5	11.0	9.0	10.0	10.5	10.0	10.0
14	1.5	1.0	1.0	5.0	4.5	4.5	11.5	10.5	11.0	10.0	9.5	10.0
15	1.5	1.0	1.0	5.0	4.5	5.0	10.5	10.0	10.5	10.0	9.5	10.0
16	1.5	1.0	1.5	5.0	5.0	5.0	10.0	9.0	9.5	10.5	10.0	10.5
17	2.0	1.5	1.5	5.5	5.0	5.0	10.0	9.5	10.0	11.0	10.0	10.5
18	2.0	1.5	2.0	6.0	5.0	5.5	9.5	9.0	9.0	11.5	10.5	11.0
19	2.0	2.0	2.0	5.5	2.5	3.5	9.0	8.5	9.0	12.0	11.5	11.5
20	2.0	2.0	2.0	2.5	2.0	2.0	9.0	8.5	9.0	12.5	11.5	12.0
21	2.5	2.0	2.0	3.5	2.5	3.0	9.5	8.5	9.0	13.0	12.0	12.5
22	2.5	2.0	2.5	5.0	3.5	4.0	9.5	8.5	9.0	13.0	12.5	12.5
23	3.0	2.5	2.5	8.0	5.0	6.0	10.0	9.0	9.5	12.5	12.0	12.0
24	3.0	2.5	3.0	8.0	7.5	7.5	10.5	9.5	10.0	12.0	11.5	12.0
25	3.0	2.5	3.0	9.0	7.5	8.0	11.0	9.5	10.0	12.5	11.5	12.0
26	2.5	2.5	2.5	7.5	6.0	7.0	12.0	10.5	11.0	13.0	12.0	12.5
27	3.0	2.5	3.0	6.5	6.0	6.0	12.5	12.0	12.0	12.5	12.0	12.0
28	3.0	2.5	2.5	6.5	6.0	6.5	12.5	11.0	12.0	12.5	12.0	12.5
29	2.5	2.0	2.5	7.5	6.0	6.5	11.0	8.5	10.0	12.5	11.5	12.0
30	---	---	---	7.5	7.0	7.5	9.5	8.5	9.0	11.5	11.5	11.5
31	---	---	---	8.5	7.5	8.0	---	---	---	12.0	11.0	11.5
MONTH	3.0	1.0	2.0	9.0	1.5	4.0	12.5	6.5	9.5	15.0	9.0	12.0

06041000 MADISON RIVER BELOW ENNIS LAKE, NEAR MCALLISTER, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.0	12.0	12.5	20.5	19.5	20.0	22.0	21.5	22.0	17.5	16.5	17.0
2	14.0	12.0	13.0	20.5	20.0	20.0	21.5	21.0	21.5	17.5	16.5	17.0
3	15.5	13.5	14.5	20.0	19.5	20.0	21.0	20.5	21.0	16.5	15.5	16.0
4	16.0	15.0	15.5	20.0	19.5	19.5	21.0	20.0	20.5	16.0	15.0	15.5
5	17.5	15.0	16.0	20.0	19.0	19.5	20.5	20.0	20.0	16.0	15.5	16.0
6	18.0	17.5	17.5	20.5	19.5	20.0	20.5	20.0	20.0	16.0	15.5	15.5
7	17.5	16.5	17.0	20.5	19.5	20.0	20.0	19.5	20.0	15.5	15.0	15.5
8	16.5	15.5	16.0	19.5	18.5	19.0	20.0	19.5	19.5	16.0	15.0	15.5
9	15.5	13.5	14.0	19.5	18.5	19.0	19.5	18.5	19.0	16.0	15.5	16.0
10	14.0	13.0	13.5	19.5	19.0	19.5	19.5	19.0	19.5	16.0	16.0	16.0
11	13.5	13.0	13.0	19.5	19.0	19.5	19.5	19.0	19.0	16.5	16.0	16.0
12	14.5	13.0	13.5	19.5	19.0	19.5	19.5	18.5	19.0	16.5	15.5	16.0
13	15.0	14.0	14.5	20.0	18.5	19.0	19.0	18.5	19.0	15.5	14.5	15.0
14	15.0	14.0	14.5	20.0	19.5	20.0	19.0	18.5	19.0	15.0	14.5	14.5
15	15.0	14.5	14.5	20.5	20.0	20.0	19.5	18.5	19.0	14.5	13.5	14.0
16	14.5	14.0	14.0	21.5	20.5	21.0	19.5	19.0	19.5	14.0	13.5	13.5
17	14.5	14.0	14.5	22.0	20.0	21.0	20.0	19.5	19.5	14.0	13.5	13.5
18	14.5	14.0	14.0	23.0	22.0	22.5	19.5	19.0	19.5	13.5	13.5	13.5
19	14.5	14.0	14.0	23.5	22.5	23.0	19.5	19.0	19.0	13.5	12.5	13.0
20	15.0	14.0	14.5	23.5	23.0	23.0	19.0	18.5	19.0	12.5	11.5	12.0
21	15.5	14.5	15.0	23.0	22.5	22.5	19.5	19.0	19.0	12.0	11.5	11.5
22	16.5	15.0	15.5	22.5	21.5	22.0	19.5	18.5	19.0	11.5	11.0	11.5
23	17.5	16.0	16.5	22.0	21.0	21.5	18.5	17.0	17.5	11.0	11.0	11.0
24	17.5	16.5	17.0	21.0	20.5	21.0	17.0	16.0	16.5	11.5	11.0	11.0
25	18.5	17.0	17.5	21.0	20.0	20.5	16.5	16.0	16.0	12.0	11.5	12.0
26	18.5	18.0	18.5	21.5	21.0	21.0	16.0	15.5	16.0	12.5	11.5	12.0
27	18.5	18.0	18.0	22.0	21.5	21.5	16.0	15.5	15.5	12.5	12.0	12.0
28	19.0	18.0	18.5	21.5	20.5	21.0	16.0	16.0	16.0	13.0	12.5	13.0
29	19.0	18.5	19.0	21.5	21.0	21.0	16.0	15.5	16.0	13.0	12.0	12.5
30	20.0	19.0	19.5	21.5	21.0	21.5	16.5	16.0	16.5	13.5	12.5	13.0
31	---	---	---	22.0	21.5	21.5	17.0	16.5	17.0	---	---	---
MONTH	20.0	12.0	15.5	23.5	18.5	20.6	22.0	15.5	18.7	17.5	11.0	14.0

06042600 MADISON RIVER AT THREE FORKS, MT

LOCATION.--Lat 44°54'05", long 111°31'29" (NAD 27),in SE¼,NE¼,NW¼, sec. 30, T.2 N., R.2 E., Gallatin County, Hydrologic Unit 10020007, at bridge on old U.S. Highway 10, 1.5 mi east of Three Forks, and 3.0 mi upstream from mouth.

DRAINAGE AREA.--2,531 mi^2.

PERIOD OF RECORD.--Water years 1986-87, 1993-95, April 2004 (discontinued).

GAGE.--None. Elevation of site is 4,050 ft (NGVD 29).

REMARKS.--Water years 1986-87 published in Open-File Reports 87-124 and 87-697.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)
APR 19...	1720	8.5	361	81	22.7	5.87	4.78	2	43.7	52	117

Date	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Boron, water, fltrd, ug/L (01020)
APR 19...	27.7	3.3	40.8	14.6	234	.32	105	99	312

Date	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Mercury water fltrd, **ng/L*** (50287)	Mercury water unfltrd **ng/L*** (50286)	Zinc, water, fltrd, ug/L (01090)
APR 19...	30	400	241	10.8	.73	2.10	E.4

*--Results for mercury are reported in nanograms per liter.
E--Estimated.

06043500 GALLATIN RIVER NEAR GALLATIN GATEWAY, MT

LOCATION.--Lat 45°29'51", long 111°16'11" (NAD 27), in SE¼SE¼SE¼ sec.7, T.4 S., R.4 E., Gallatin County, Hydrologic Unit 10020008, on left bank 0.3 mi downstream from Spanish Creek, 7.3 mi south of Gallatin Gateway and at river mile 47.7.

DRAINAGE AREA.--825 mi^2.

PERIOD OF RECORD.--August 1889 to September 1894, June 1930 to September 1969, annual maximum, water years 1970-71, October 1971 to September 1981, October 1984 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as West Gallatin River near Bozeman 1889-94.

REVISED RECORDS.--WSP 1389: 1892(M), 1893-94. WSP 1559: Drainage area. WDR MT-85-1 (M), WDR MT-02-1: 1970-71 (M).

GAGE.--Water-stage recorder. Elevation of gage is 5,167.67 ft (NGVD 29). Prior to Oct. 20, 1932, nonrecording gages at several different sites and elevations within 0.8 mi of present site.

REMARKS.--Records good. Diversions for irrigation of about 1,400 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	314	224	270	268	240	252	428	630	1,380	1,650	542	408
2	313	246	266	254	229	245	433	703	1,450	1,550	545	439
3	309	282	264	224	244	243	400	869	1,630	1,460	587	468
4	309	283	272	e200	248	253	436	1,110	2,050	1,560	566	434
5	309	224	259	e180	247	252	478	1,380	2,530	1,620	531	417
6	308	199	283	e200	245	249	522	1,520	3,080	1,400	504	406
7	308	229	306	239	243	222	520	1,560	2,800	1,320	488	399
8	316	230	290	261	251	233	566	1,610	2,480	1,280	478	390
9	309	256	261	258	252	258	575	1,540	2,610	1,150	468	384
10	321	290	245	251	243	284	501	1,440	3,330	1,090	460	380
11	329	283	271	244	242	276	474	1,450	3,200	1,060	453	373
12	328	267	255	242	229	274	473	1,250	2,590	1,010	442	375
13	327	252	263	231	228	283	524	1,080	2,290	955	436	455
14	321	269	282	236	238	275	587	966	2,140	921	430	454
15	319	275	264	240	237	270	603	896	2,120	899	421	450
16	322	288	218	236	239	272	555	890	2,000	880	424	455
17	321	294	236	244	247	279	540	885	1,860	832	440	447
18	326	274	224	234	261	297	548	902	1,790	808	536	422
19	316	286	199	239	267	329	509	1,040	1,760	814	498	445
20	310	303	239	250	255	314	500	996	1,840	808	458	526
21	306	268	258	241	236	310	480	1,130	1,770	796	441	487
22	304	255	253	230	232	311	459	1,200	1,780	743	434	455
23	304	222	217	235	236	329	444	1,330	1,860	718	463	471
24	300	229	240	245	245	360	462	1,240	1,960	683	486	512
25	282	229	252	256	247	380	455	1,110	1,950	654	519	473
26	300	238	263	256	259	376	476	1,090	2,010	637	525	452
27	313	246	254	251	258	344	577	1,120	1,900	619	532	453
28	314	230	231	247	260	324	740	1,460	1,830	597	477	438
29	352	243	242	249	256	304	677	1,850	1,740	583	450	429
30	305	258	250	254	---	322	639	1,610	1,700	568	432	421
31	248	---	250	248	---	369	---	1,440	---	549	418	---
TOTAL	9,663	7,672	7,877	7,443	7,114	9,089	15,581	37,297	63,430	30,214	14,884	13,118
MEAN	312	256	254	240	245	293	519	1,203	2,114	975	480	437
MAX	352	303	306	268	267	380	740	1,850	3,330	1,650	587	526
MIN	248	199	199	180	228	222	400	630	1,380	549	418	373
AC-FT	19,170	15,220	15,620	14,760	14,110	18,030	30,900	73,980	125,800	59,930	29,520	26,020

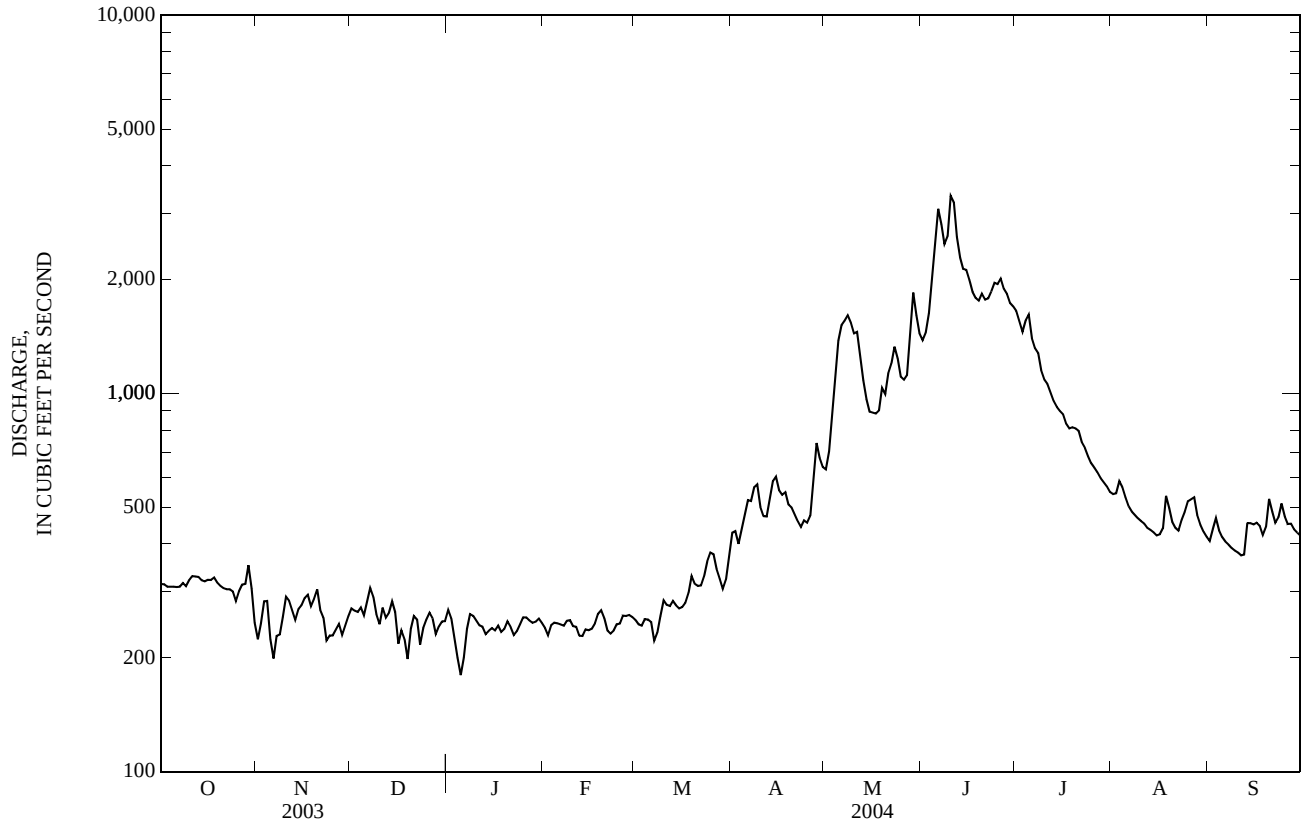
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1889 - 2004, BY WATER YEAR (WY)*

MEAN	452	380	320	306	303	311	502	1,794	2,926	1,282	607	490
MAX	743	589	549	468	430	465	899	3,135	5,110	3,669	1,162	788
(WY)	(1893)	(1960)	(1893)	(1893)	(1893)	(1960)	(1990)	(1976)	(1997)	(1975)	(1993)	(1968)
MIN	238	247	214	200	220	206	263	873	643	345	269	233
(WY)	(1932)	(1937)	(1935)	(1931)	(1935)	(1935)	(1937)	(1953)	(1934)	(1934)	(1934)	(1931)

06043500 GALLATIN RIVER NEAR GALLATIN GATEWAY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1889 - 2004*	
ANNUAL TOTAL	231,954		223,382			
ANNUAL MEAN	635		610		808	
HIGHEST ANNUAL MEAN					1,184	1976
LOWEST ANNUAL MEAN					408	1934
HIGHEST DAILY MEAN	5,860	May 30	3,330	Jun 10	8,970	Jun 17, 1974
LOWEST DAILY MEAN	196	Jan 11	180	Jan 5	153	Dec 25, 2002
ANNUAL SEVEN-DAY MINIMUM	213	Jan 7	223	Jan 2	182	Jan 18, 1931
MAXIMUM PEAK FLOW			3,810	Jun 10	b9,160	Jun 2, 1997
MAXIMUM PEAK STAGE			4.30	Jun 10	7.38	Jun 17, 1974
INSTANTANEOUS LOW FLOW			a167	Nov 6	c117	Jan 19, 1935
ANNUAL RUNOFF (AC-FT)	460,100		443,100		585,700	
10 PERCENT EXCEEDS	1,240		1,540		2,020	
50 PERCENT EXCEEDS	321		376		429	
90 PERCENT EXCEEDS	238		239		267	

*--During periods of operation (August 1889 to September 1894, June 1930 to September 1969, October 1971 to October 1981, October 1984 to current year).
a--Gage height, 0.99 ft, result of freezeup.
b--Gage height, 6.71 ft.
c--Gage height, 0.68 ft, result of freezeup.
e--Estimated.



06048700 EAST GALLATIN RIVER BELOW BRIDGER CREEK, NEAR BOZEMAN, MT

LOCATION.--Lat 45°43'30", long 111°04'08" (NAD 27), in NE¼SW¼NE¼ sec.26, T.1 S., R.5 E., Gallatin County, Hydrologic Unit 10020008, on left bank 600 ft downstream from Bozeman Wastewater Treatment Plant, 0.2 mi downstream from bridge on Montana Secondary Highway 411, 3.2 mi downstream from Bridger Creek, 2.0 mi northwest of Bozeman, and at river mile 33.0.

DRAINAGE AREA.--226 mi^2.

PERIOD OF RECORD.--October 2001 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,610 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation or diurnal effect from wastewater treatment plant upstream. Numerous diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	29	34	35	32	36	109	88	196	96	31	23
2	18	32	34	e28	31	35	109	83	182	96	33	23
3	18	32	33	e22	31	35	96	82	165	87	43	30
4	19	e30	32	e18	31	36	94	87	153	104	41	30
5	21	e27	31	e17	32	35	102	94	141	143	39	28
6	21	e25	35	e20	31	32	110	95	130	113	33	26
7	25	e28	40	e25	32	32	113	91	141	103	30	24
8	29	30	36	34	31	40	120	87	127	99	28	23
9	28	32	33	35	31	47	143	83	123	87	26	21
10	33	34	30	33	31	59	120	79	190	81	25	20
11	36	34	33	33	31	54	106	83	834	79	25	18
12	35	34	32	33	26	56	99	91	775	73	25	21
13	36	33	34	32	30	60	98	83	495	67	23	32
14	35	33	35	32	31	58	101	76	392	65	20	36
15	36	33	34	31	31	55	105	68	328	60	20	40
16	36	33	31	31	30	56	98	73	290	56	18	35
17	34	33	34	31	31	75	94	75	258	53	18	33
18	31	33	29	29	36	96	93	67	234	51	32	30
19	31	34	29	31	46	137	92	73	208	66	38	37
20	31	39	33	32	39	122	98	72	186	62	30	49
21	29	33	35	31	35	98	100	68	177	58	28	44
22	30	29	32	30	34	92	92	83	164	50	28	41
23	30	31	27	32	34	96	87	168	150	47	30	40
24	29	33	33	33	36	111	84	158	136	45	34	40
25	32	32	34	31	36	119	83	139	142	44	33	39
26	33	33	35	30	36	116	80	136	148	43	44	38
27	33	32	e30	32	38	112	81	149	127	42	43	36
28	34	32	e28	32	38	100	96	155	116	37	38	37
29	42	34	34	32	37	88	98	228	106	35	35	37
30	41	35	30	36	---	89	94	239	103	35	30	36
31	32	---	33	34	---	98	---	216	---	33	24	---
TOTAL	937	962	1,013	935	968	2,275	2,995	3,369	6,917	2,110	945	967
MEAN	30.2	32.1	32.7	30.2	33.4	73.4	99.8	109	231	68.1	30.5	32.2
MAX	42	39	40	36	46	137	143	239	834	143	44	49
MIN	18	25	27	17	26	32	80	67	103	33	18	18
AC-FT	1,860	1,910	2,010	1,850	1,920	4,510	5,940	6,680	13,720	4,190	1,870	1,920

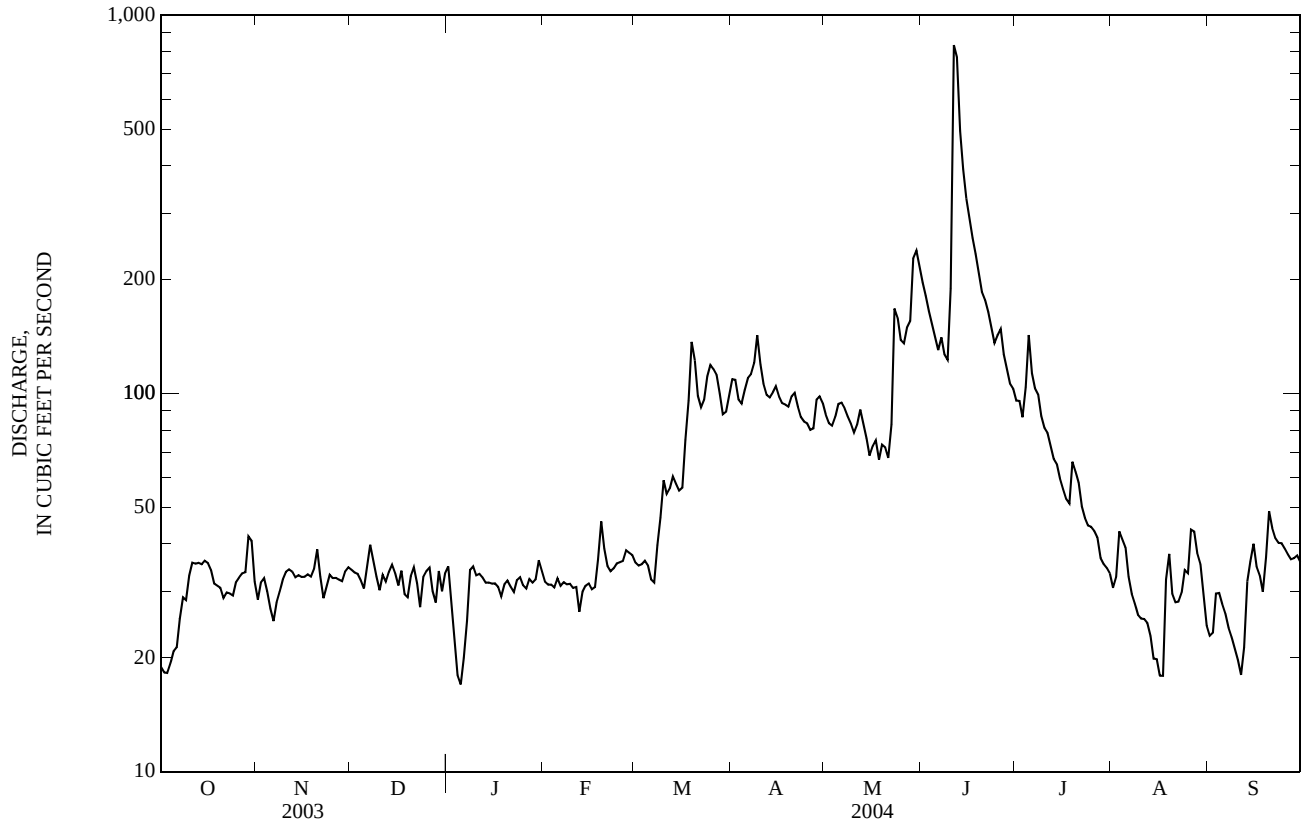
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2004, BY WATER YEAR (WY)

MEAN	36.6	36.4	32.0	33.1	34.8	60.7	141	216	220	61.7	29.9	29.5
MAX	40.6	41.2	33.0	36.0	37.4	73.4	224	328	265	70.6	37.5	36.5
(WY)	(2002)	(2002)	(2002)	(2002)	(2003)	(2004)	(2003)	(2003)	(2002)	(2002)	(2002)	(2002)
MIN	30.2	32.1	30.4	30.2	33.4	37.0	99.8	109	165	46.5	21.7	19.9
(WY)	(2004)	(2004)	(2003)	(2004)	(2004)	(2002)	(2004)	(2004)	(2003)	(2003)	(2003)	(2003)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2002 - 2004	
ANNUAL TOTAL	31,758		24,393			
ANNUAL MEAN	87.0		66.6		77.7	
HIGHEST ANNUAL MEAN					87.9	2003
LOWEST ANNUAL MEAN					66.6	2004
HIGHEST DAILY MEAN	446	May 26	834	Jun 11	834	Jun 11, 2004
LOWEST DAILY MEAN	15	Sep 5	17	Jan 5	15	Sep 5, 2003
ANNUAL SEVEN-DAY MINIMUM	17	Aug 31	20	Oct 1	17	Aug 31, 2003
MAXIMUM PEAK FLOW			1,100	Jun 11	1,100	Jun 11, 2004
MAXIMUM PEAK STAGE			5.60	Jun 11	5.60	Jun 11, 2004
INSTANTANEOUS LOW FLOW			a6.5	Feb 12	6.5	Feb 12, 2004
ANNUAL RUNOFF (AC-FT)	62,990		48,380		56,300	
10 PERCENT EXCEEDS	267		128		190	
50 PERCENT EXCEEDS	34		36		38	
90 PERCENT EXCEEDS	20		28		26	

a--Gage height, 1.38 ft, result of freezeup.
e--Estimated.

06048700 EAST GALLATIN RIVER BELOW BRIDGER CREEK, NEAR BOZEMAN, MT—Continued



06052500 GALLATIN RIVER AT LOGAN, MT

LOCATION.--Lat 45°53'07", long 111°26'15" (NAD 27), in SE¼NW¼NE¼ sec.35, T.2 N., R.2 E., Gallatin County, Hydrologic Unit 10020008, on right bank at former county road bridge site, 0.2 mi upstream from present county bridge, 0.5 mi west of Logan, and at river mile 6.3.

DRAINAGE AREA.--1,795 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1893 to December 1905, August 1928 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1389: 1898-99, 1903, 1905, 1929(M), 1935-36(M), 1938-39(M), 1941(M). WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,086.42 ft (NGVD 29). Prior to Aug. 10, 1928, nonrecording gages at several sites within 0.5 mi of present site at various elevations. Aug. 10, 1928, to Oct. 7, 1941, nonrecording gage at present site and elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Some regulation by Middle Creek Reservoir (station number 06049500). Diversions for irrigation of about 110,000 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	328	e500	606	e520	e510	548	633	383	1,040	1,100	316	377
2	325	541	608	e550	e500	544	637	335	946	1,020	319	393
3	328	591	602	e500	486	535	638	327	926	939	419	404
4	333	622	608	e450	e500	542	610	331	1,120	971	471	412
5	328	e520	579	e400	511	542	646	363	1,550	1,200	472	399
6	333	e470	606	e350	508	535	667	472	2,070	1,150	445	381
7	331	e500	661	e400	509	516	662	526	2,230	964	424	368
8	335	e520	653	e500	514	526	619	502	2,010	918	412	353
9	337	e550	623	e570	515	579	734	495	1,970	805	404	344
10	347	608	584	e600	501	651	698	461	2,440	696	414	335
11	374	645	608	e580	500	629	638	441	3,580	625	404	323
12	385	622	590	e570	e490	607	597	467	3,530	546	384	343
13	393	600	603	e560	e470	612	570	442	2,960	466	355	412
14	410	587	622	e550	e480	606	571	364	2,510	412	334	460
15	408	616	622	e560	e490	583	599	303	2,230	381	319	480
16	408	616	e580	e540	490	584	594	275	2,060	334	317	478
17	418	634	561	e550	499	601	551	287	1,860	308	333	483
18	419	631	e530	e540	521	620	554	273	1,730	278	391	482
19	425	629	e500	e530	584	658	569	284	1,630	324	466	501
20	424	665	e550	e550	561	677	550	292	1,580	347	419	618
21	411	e600	586	e570	533	632	527	301	1,520	405	390	679
22	411	e550	581	e540	505	613	481	394	1,320	376	380	642
23	412	e500	e550	e530	509	609	434	595	1,280	348	393	624
24	406	e520	e530	533	527	624	403	741	1,310	332	437	629
25	414	e550	560	e520	531	658	399	629	1,370	308	454	612
26	419	567	582	e520	545	689	382	544	1,460	309	485	598
27	433	576	579	e500	580	704	358	557	1,430	302	500	585
28	473	567	e560	e500	578	660	381	600	1,350	299	492	579
29	497	583	e530	e520	563	618	472	1,090	1,240	314	467	559
30	554	601	e550	543	---	599	437	1,360	1,150	316	441	564
31	e530	---	e500	524	---	598	---	1,190	---	314	400	---
TOTAL	12,349	17,281	18,004	16,170	15,010	18,699	16,611	15,624	53,402	17,407	12,657	14,417
MEAN	398	576	581	522	518	603	554	504	1,780	562	408	481
MAX	554	665	661	600	584	704	734	1,360	3,580	1,200	500	679
MIN	325	470	500	350	470	516	358	273	926	278	316	323
AC-FT	24,490	34,280	35,710	32,070	29,770	37,090	32,950	30,990	105,900	34,530	25,110	28,600

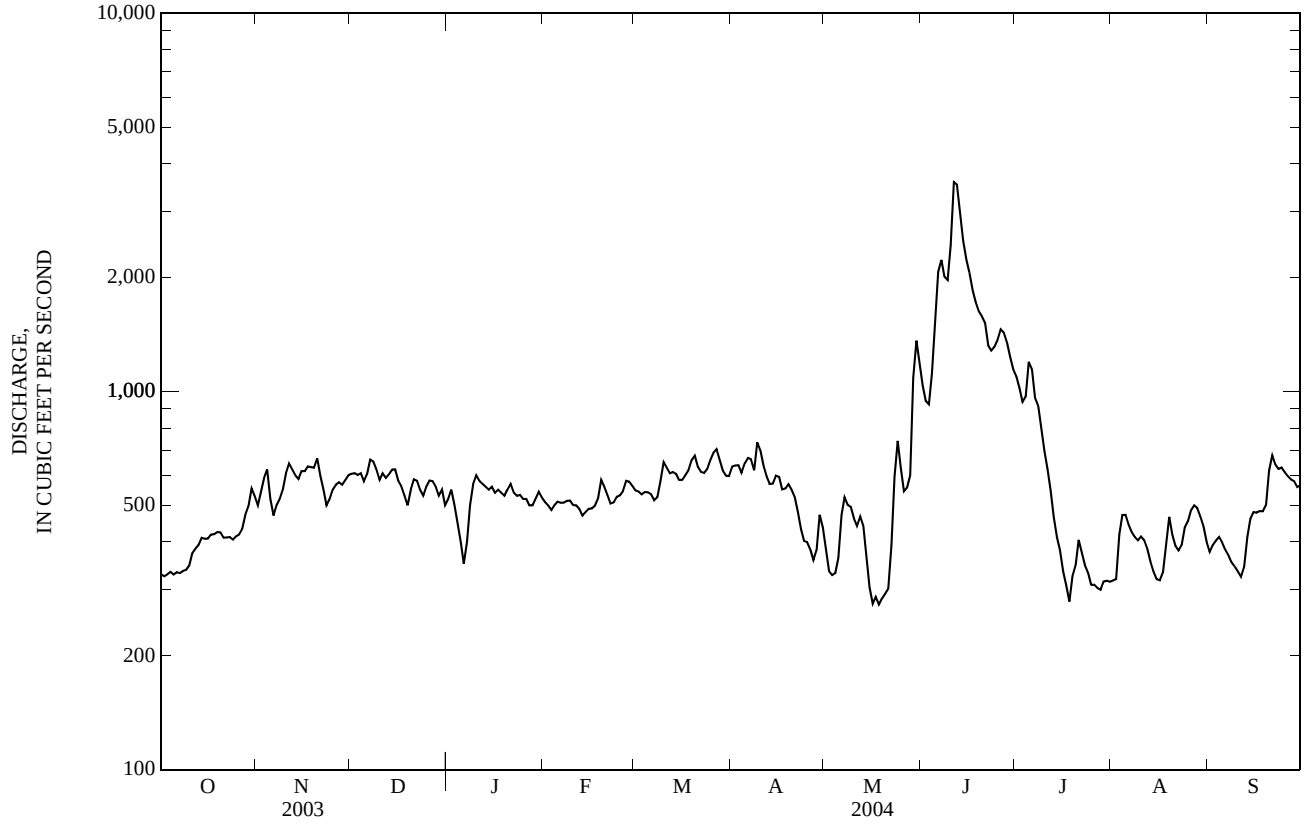
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1894 - 2004, BY WATER YEAR (WY)*

MEAN	763	813	742	685	699	787	1,036	2,108	2,960	1,002	486	639
MAX	1,265	1,186	1,049	971	1,249	1,290	1,993	4,686	5,957	3,899	1,658	1,269
(WY)	(1983)	(1976)	(1976)	(1976)	(1963)	(1960)	(1952)	(1901)	(1997)	(1975)	(1993)	(1968)
MIN	333	328	450	400	385	478	429	176	280	162	167	238
(WY)	(1935)	(1935)	(1894)	(1894)	(1936)	(1904)	(1934)	(1934)	(1934)	(1934)	(1934)	(1934)

06052500 GALLATIN RIVER AT LOGAN, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1894 - 2004*	
ANNUAL TOTAL	279,676		227,631			
ANNUAL MEAN	766		622		1,060	
HIGHEST ANNUAL MEAN					1,673	1997
LOWEST ANNUAL MEAN					454	1934
HIGHEST DAILY MEAN	5,480	May 31	3,580	Jun 11	9,840	Jun 21, 1899
LOWEST DAILY MEAN	190	Jul 23	273	May 18	130	Jul 19, 1939
ANNUAL SEVEN-DAY MINIMUM	197	Jul 18	288	May 15	147	Jul 16, 1934
MAXIMUM PEAK FLOW			a3,700	Jun 11	d9,840	Jun 21, 1899
MAXIMUM PEAK STAGE			b7.40	Jan 8	f11.88	Feb 5, 1963
INSTANTANEOUS LOW FLOW			c259	Jul 18	g130	Jul 19, 1939
ANNUAL RUNOFF (AC-FT)	554,700		451,500		767,900	
10 PERCENT EXCEEDS	1,340		966		2,100	
50 PERCENT EXCEEDS	567		533		750	
90 PERCENT EXCEEDS	254		335		415	

*--During periods of operation (October 1893 to December 1905, August 1928 to current year).
a--Gage height, 7.02 ft.
b--Backwater from ice.
d--Observed, gage height, 6.25 ft, site and datum then in use.
e--Estimated.
f--From floodmark, backwater from ice.
g--Observed, gage height, 2.04 ft.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949, 1951, 1957, 1965, 1979-86, 1999 to present.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: August 1979 to September 1985, October 1999 to present (seasonal records 2001-2003).
INSTRUMENTATION.--Temperature probe installed Sept. 14, 1999.
REMARKS--Daily water temperature record rated good.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 28.5°C, July 19-21, 2003; minimum, 0.0°C, on many days during winter periods.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 26.0°C, July 15, 17; minimum 0.0°C, many days October through February.

06052500 GALLATIN RIVER AT LOGAN, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	14.5	8.0	11.5	2.0	0.0	1.0	4.5	3.0	4.0	0.0	0.0	0.0
2	15.0	8.5	11.5	3.5	1.0	2.5	4.5	3.0	4.0	0.0	0.0	0.0
3	14.5	8.0	11.0	4.0	1.5	3.0	4.0	2.5	3.0	0.5	0.0	0.0
4	14.5	7.5	11.0	2.0	0.0	1.0	3.0	1.5	2.0	0.0	0.0	0.0
5	14.5	8.0	11.0	0.5	0.0	0.0	2.0	0.5	1.5	0.0	0.0	0.0
6	14.5	8.5	11.5	0.0	0.0	0.0	4.0	2.0	3.5	0.0	0.0	0.0
7	13.5	9.5	11.5	0.5	0.0	0.0	5.0	3.5	4.5	0.0	0.0	0.0
8	15.5	10.5	12.5	0.5	0.0	0.0	3.5	2.0	3.0	0.0	0.0	0.0
9	15.0	10.0	12.0	1.0	0.0	0.5	2.5	1.5	2.0	0.0	0.0	0.0
10	11.5	8.5	10.0	4.0	1.0	2.5	2.0	1.0	1.5	0.0	0.0	0.0
11	10.0	6.5	8.0	4.0	2.5	3.0	2.5	1.0	1.5	0.0	0.0	0.0
12	11.5	8.0	9.5	4.5	2.0	3.0	1.0	0.0	0.5	0.0	0.0	0.0
13	10.0	7.0	8.5	3.0	1.0	2.5	2.5	1.0	1.5	0.0	0.0	0.0
14	9.0	5.5	7.0	5.0	2.0	3.5	3.0	1.5	2.5	0.0	0.0	0.0
15	9.5	7.0	8.5	4.0	2.0	3.5	2.0	0.5	1.0	0.0	0.0	0.0
16	10.0	7.0	8.5	4.5	2.5	3.5	0.5	0.0	0.0	0.0	0.0	0.0
17	14.0	9.0	11.0	4.5	3.0	4.0	2.0	0.0	1.0	0.0	0.0	0.0
18	13.5	9.0	11.5	4.5	2.5	3.5	1.0	0.0	0.0	0.0	0.0	0.0
19	13.0	8.5	10.5	6.0	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
20	11.5	8.0	10.0	5.5	2.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
21	13.5	9.0	11.0	2.5	0.0	1.0	2.0	0.0	1.0	0.0	0.0	0.0
22	13.0	8.5	10.5	0.0	0.0	0.0	1.5	0.0	1.0	0.0	0.0	0.0
23	11.5	7.5	9.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
24	8.5	5.5	7.0	0.0	0.0	0.0	1.5	0.0	0.5	1.5	0.0	0.5
25	7.5	3.5	5.5	0.0	0.0	0.0	3.0	1.5	2.5	0.5	0.0	0.0
26	9.5	4.5	7.0	1.0	0.0	0.5	2.5	1.0	2.0	0.0	0.0	0.0
27	7.5	7.0	7.5	2.5	0.5	1.5	1.0	0.0	0.5	0.0	0.0	0.0
28	9.0	7.0	8.0	2.5	0.0	1.5	0.5	0.0	0.0	0.0	0.0	0.0
29	9.0	3.5	7.0	4.5	2.0	3.5	0.0	0.0	0.0	2.5	0.0	1.0
30	3.5	0.0	2.0	4.5	3.0	3.5	0.5	0.0	0.0	3.0	1.0	2.5
31	1.5	0.0	0.5	---	---	---	0.0	0.0	0.0	1.5	0.5	1.0
MONTH	15.5	0.0	9.0	6.0	0.0	2.0	5.0	0.0	1.5	3.0	0.0	0.0
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	0.0	0.5	6.5	3.0	4.5	11.5	8.5	10.0	17.0	9.5	13.0
2	1.5	0.0	0.5	5.0	2.5	3.5	8.5	7.0	8.0	17.0	10.5	14.0
3	2.5	0.0	1.0	4.0	1.0	2.5	11.0	5.5	8.5	17.0	12.0	14.5
4	0.5	0.0	0.0	5.0	2.5	4.0	10.5	7.5	9.0	18.5	11.5	15.0
5	2.0	0.0	1.0	5.0	2.5	4.0	12.5	7.0	10.0	18.5	12.5	15.5
6	1.5	0.0	0.5	3.5	1.0	2.5	11.5	9.0	10.0	17.5	12.5	15.0
7	2.0	0.0	1.0	4.5	1.5	3.0	14.0	8.0	11.0	16.5	13.0	15.0
8	2.5	1.0	1.5	8.5	4.0	6.0	13.0	10.0	11.5	15.5	12.0	13.5
9	3.0	1.0	2.0	8.5	4.5	7.0	11.0	8.0	9.5	16.5	10.5	13.0
10	1.5	0.0	1.0	8.0	5.0	6.5	10.5	6.0	8.5	14.5	11.0	12.5
11	3.0	0.0	1.5	8.0	3.5	6.0	12.5	7.0	9.5	12.5	8.0	10.5
12	0.5	0.0	0.0	7.5	4.0	6.0	14.0	8.0	11.0	9.0	5.5	7.5
13	0.0	0.0	0.0	8.0	5.0	6.0	14.0	9.0	12.0	11.5	6.5	9.0
14	0.0	0.0	0.0	5.5	4.0	4.5	12.5	10.5	11.5	13.5	7.5	10.5
15	0.5	0.0	0.0	6.0	3.5	5.0	12.5	8.5	10.0	16.5	8.0	11.5
16	1.5	0.0	0.5	6.5	5.0	6.0	11.5	6.5	9.0	11.5	7.0	8.5
17	4.0	1.0	2.5	7.5	5.5	6.5	10.5	8.5	9.5	18.5	7.0	11.5
18	4.5	3.0	3.5	10.0	6.0	8.5	11.0	7.0	9.0	15.5	7.5	10.0
19	5.0	3.0	4.0	10.5	7.0	8.5	11.5	7.5	9.5	17.0	8.5	11.5
20	5.0	2.0	3.5	9.0	5.0	7.0	10.5	8.0	9.5	19.5	8.0	13.0
21	4.0	1.5	3.0	8.0	5.5	7.0	13.0	7.0	10.0	19.0	10.0	14.0
22	4.0	0.5	2.5	10.0	5.5	7.5	14.0	8.5	11.0	14.5	12.0	12.5
23	4.0	0.5	2.5	11.5	6.5	9.5	15.0	9.0	12.0	12.0	9.0	10.5
24	4.5	1.0	3.0	10.5	8.0	9.5	14.5	10.0	12.0	11.5	8.5	10.0
25	6.0	3.0	4.5	11.0	7.0	9.0	15.0	8.5	12.0	14.5	7.5	11.0
26	5.0	3.5	4.0	9.5	6.0	7.5	17.0	10.0	13.5	13.0	11.5	12.5
27	7.0	3.5	5.0	7.5	4.0	6.0	17.0	11.0	14.0	17.0	11.5	14.0
28	5.0	3.5	4.0	9.5	5.5	7.0	13.0	7.0	9.5	15.5	12.0	14.0
29	5.5	2.5	4.0	11.0	5.0	8.0	12.0	5.0	8.5	12.5	10.5	11.5
30	---	---	---	12.0	6.5	9.5	15.0	8.0	11.5	11.5	9.0	10.0
31	---	---	---	12.0	7.5	10.0	---	---	---	13.5	9.0	11.5
MONTH	7.0	0.0	2.0	12.0	1.0	6.5	17.0	5.0	10.5	19.5	5.5	12.0

06052500 GALLATIN RIVER AT LOGAN, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.0	10.5	14.0	20.0	15.5	18.0	23.0	17.0	20.0	19.5	14.5	17.0
2	18.0	12.5	15.5	19.0	14.5	17.0	21.5	17.5	19.5	16.5	14.0	15.5
3	19.0	13.5	16.0	19.5	15.0	17.5	22.0	16.5	19.0	16.0	11.5	13.5
4	19.5	14.5	17.0	19.5	15.5	17.0	22.0	15.5	18.5	16.5	10.5	13.5
5	18.5	14.0	16.5	19.0	14.5	16.5	20.5	16.0	18.5	17.0	12.0	14.5
6	16.5	13.0	15.0	19.0	14.5	17.0	21.0	15.5	18.5	17.0	11.0	14.0
7	16.0	10.5	13.0	18.0	15.0	16.5	20.5	15.0	17.5	17.0	11.5	14.5
8	13.5	11.0	12.0	18.5	13.5	16.0	21.0	14.0	17.5	18.0	11.5	15.0
9	14.5	10.5	12.5	19.5	14.0	17.0	22.0	15.0	18.5	18.5	12.5	15.5
10	12.5	10.0	11.0	20.0	16.0	18.0	22.0	16.0	19.0	18.0	13.0	15.0
11	11.5	8.5	10.0	21.0	15.0	18.0	21.5	15.5	18.5	18.5	12.0	15.0
12	14.0	8.5	11.0	22.5	15.5	19.0	21.5	15.0	18.5	15.0	12.5	13.5
13	14.0	11.0	12.5	21.0	17.0	19.0	22.0	15.0	18.5	14.5	11.0	12.5
14	16.0	10.5	13.0	24.5	16.5	20.5	22.5	15.5	19.0	14.0	11.5	12.5
15	14.5	11.0	12.5	26.0	18.5	21.5	22.5	16.0	19.5	13.5	9.5	11.5
16	15.0	9.5	12.0	25.5	18.5	22.0	20.0	17.0	18.5	15.5	11.0	13.0
17	13.5	10.5	12.0	26.0	19.0	22.5	20.0	17.0	18.5	13.5	10.5	12.5
18	13.5	9.5	11.5	24.0	19.5	22.0	18.5	15.5	17.0	15.0	11.0	13.0
19	15.5	10.5	13.0	25.0	19.0	22.0	20.0	13.5	17.0	13.0	10.0	12.0
20	16.5	11.5	14.0	24.0	19.0	21.5	22.5	16.0	19.0	11.0	9.5	10.0
21	17.5	11.5	14.5	23.5	18.0	21.0	21.0	16.0	18.5	11.0	8.5	9.5
22	18.0	12.5	15.5	22.5	17.5	20.0	19.0	15.5	17.5	10.0	8.5	9.0
23	19.5	13.0	16.0	23.0	17.0	20.0	17.0	14.0	15.5	12.0	9.0	10.5
24	20.0	14.5	17.0	23.5	16.5	20.0	17.0	12.5	15.0	15.0	10.0	12.5
25	18.0	14.5	16.0	23.0	17.0	20.0	16.0	13.5	15.0	15.5	10.5	13.0
26	18.5	13.5	16.0	23.5	17.5	21.0	16.0	13.0	14.0	15.0	11.0	13.0
27	18.5	14.0	16.5	23.0	17.5	20.0	17.0	13.0	15.0	15.5	11.5	13.5
28	19.0	14.0	16.5	23.0	16.5	20.0	16.5	12.5	14.5	15.5	11.0	13.0
29	20.0	14.0	17.0	23.0	16.5	20.0	18.0	12.5	15.5	14.5	10.5	12.5
30	20.5	15.5	18.0	23.0	16.5	20.0	19.5	13.5	16.5	14.0	10.0	12.0
31	---	---	---	23.5	17.0	20.5	20.5	14.0	17.0	---	---	---
MONTH	20.5	8.5	14.0	26.0	13.5	19.5	23.0	12.5	17.5	19.5	8.5	13.0

06054500 MISSOURI RIVER AT TOSTON, MT

LOCATION.--Lat 46°08'46", long 111°25'11" (NAD 27), in NW¼SE¼NW¼ sec.36, T.5 N., R.2 E., Broadwater County, Hydrologic Unit 10030101, on left bank 2.2 mi southeast of Toston, 4.8 mi upstream from Crow Creek, 7.8 mi downstream from Sixteenmile Creek, and at river mile 2,296.1.

DRAINAGE AREA.--14,669 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1890 to February 1891, April 1910 to December 1916, April 1941 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 3,905.68 ft (NGVD 29). Prior to Dec. 20, 1916, nonrecording gages at site 2.5 mi downstream at different elevations.

REMARKS.--Water-discharge records good. Some regulation by six reservoirs on tributaries and Clark Canyon Reservoir (station 06015300). Diversions for irrigation of about 555,400 acres of which 12,000 acres lies downstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,850	2,530	3,300	2,330	2,690	3,100	3,210	2,250	4,360	4,110	1,430	1,940
2	1,810	2,810	3,250	2,420	2,620	3,090	3,360	2,100	4,010	3,890	1,410	1,830
3	1,800	2,930	3,200	2,160	2,720	3,060	3,510	1,960	3,620	4,040	1,470	1,840
4	1,830	2,810	3,150	1,880	2,680	3,030	3,390	1,890	3,370	4,260	1,580	1,890
5	1,830	2,550	3,030	1,680	2,700	3,040	3,340	1,860	3,560	4,670	1,490	1,880
6	1,880	2,360	3,120	1,510	2,680	3,010	3,390	1,940	4,030	4,750	1,550	1,840
7	1,910	2,360	3,180	1,470	2,690	2,990	3,460	2,160	5,460	4,470	1,420	1,820
8	1,940	2,470	3,180	1,880	2,740	3,030	3,460	2,620	5,740	4,170	1,390	1,790
9	1,950	2,960	3,110	2,550	2,800	3,150	3,750	2,680	5,050	3,590	1,390	1,870
10	1,970	3,450	2,970	2,560	2,740	3,320	3,700	2,640	5,180	3,230	1,380	1,840
11	2,050	3,670	2,990	2,710	2,820	3,310	3,580	2,360	8,260	3,200	1,330	1,710
12	2,130	3,520	2,820	2,750	2,890	3,250	3,450	2,390	9,220	3,020	1,360	1,700
13	2,160	3,330	2,920	2,670	2,670	3,230	3,310	2,420	7,940	2,840	1,300	1,830
14	2,250	3,260	3,100	2,720	2,530	3,210	3,330	2,410	7,020	2,530	1,270	1,930
15	2,340	3,160	2,990	2,630	2,630	3,190	3,380	2,290	5,920	2,200	1,250	2,010
16	2,350	3,100	2,680	2,700	2,640	3,160	3,380	2,080	5,300	2,040	1,240	2,140
17	2,380	3,120	2,810	2,740	2,900	3,160	3,330	2,030	4,860	1,820	1,290	2,150
18	2,400	3,100	2,570	2,670	3,280	3,180	3,290	2,070	4,500	1,760	1,360	2,170
19	2,430	3,090	2,390	2,670	3,490	3,200	3,290	2,170	4,250	1,970	1,510	2,170
20	2,430	3,130	2,290	2,740	3,390	3,340	3,260	2,260	4,100	1,850	1,490	2,340
21	2,420	3,080	2,930	2,760	3,330	3,410	3,150	2,440	4,100	1,770	1,470	2,660
22	2,400	2,670	2,770	2,660	3,260	3,480	3,030	2,790	3,880	1,740	1,500	3,130
23	2,410	2,380	2,480	2,830	3,220	3,550	2,860	3,620	3,720	1,820	1,580	3,100
24	2,480	2,590	2,580	2,910	3,270	3,720	2,710	4,640	3,570	1,850	1,750	2,990
25	2,450	2,460	2,950	2,720	3,270	3,890	2,530	4,650	3,520	1,790	1,930	2,940
26	2,500	2,380	2,990	2,360	3,260	4,100	2,420	4,340	3,600	1,680	2,030	2,880
27	2,530	2,630	2,740	2,650	3,240	4,310	2,290	3,950	3,910	1,530	2,080	2,840
28	2,550	2,740	2,190	2,450	3,210	4,130	2,270	3,840	4,000	1,400	2,120	2,840
29	2,690	3,120	2,120	2,830	3,160	3,820	2,180	4,200	4,150	1,350	2,440	2,720
30	2,710	3,280	2,070	2,970	---	3,410	2,260	4,690	4,220	1,320	2,460	2,640
31	2,660	---	1,770	2,960	---	3,220	---	4,610	---	1,350	2,150	---
TOTAL	69,490	87,040	86,640	77,540	85,520	104,090	93,870	88,350	144,420	82,010	49,420	67,430
MEAN	2,242	2,901	2,795	2,501	2,949	3,358	3,129	2,850	4,814	2,645	1,594	2,248
MAX	2,710	3,670	3,300	2,970	3,490	4,310	3,750	4,690	9,220	4,750	2,460	3,130
MIN	1,800	2,360	1,770	1,470	2,530	2,990	2,180	1,860	3,370	1,320	1,240	1,700
AC-FT	137,800	172,600	171,900	153,800	169,600	206,500	186,200	175,200	286,500	162,700	98,020	133,700

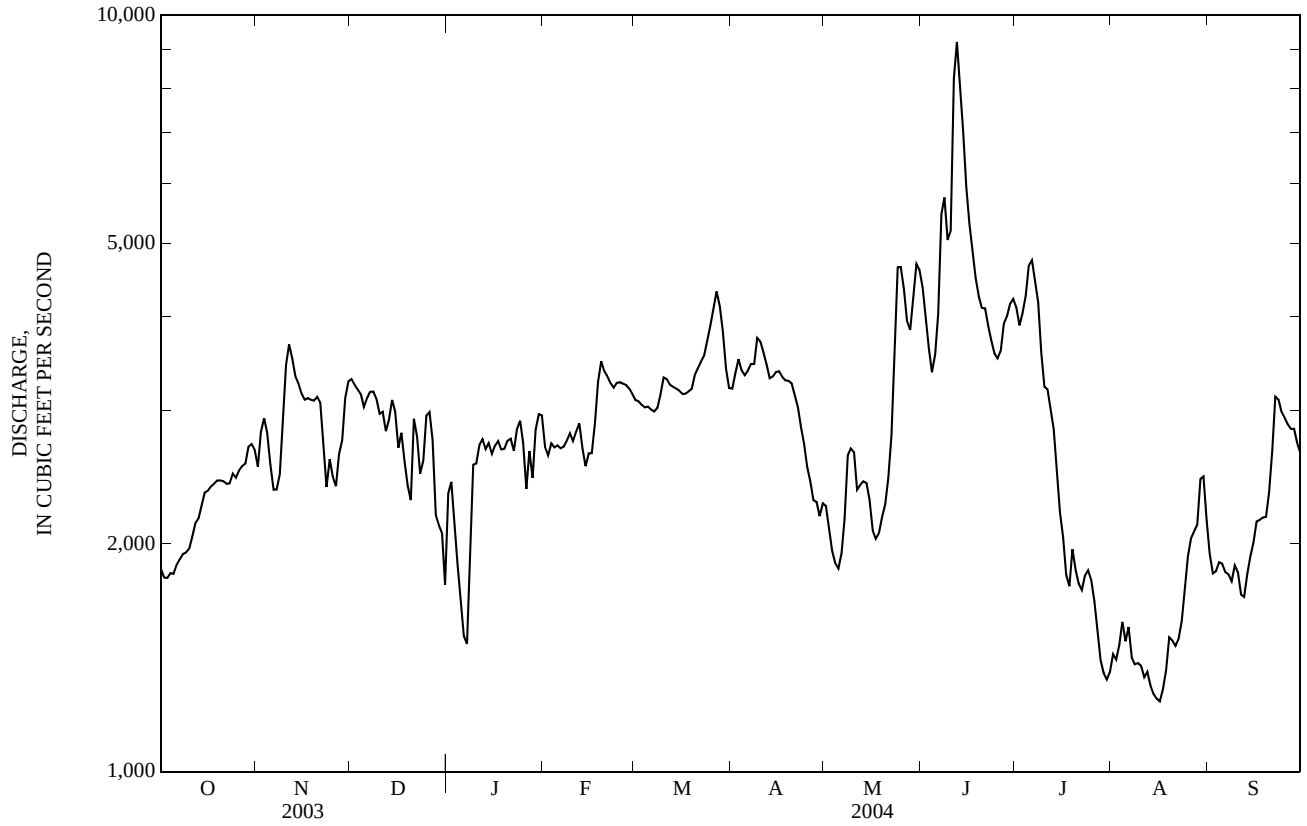
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1890 - 2004, BY WATER YEAR (WY)*

MEAN	4,361	4,669	3,733	3,358	3,684	4,103	5,560	8,701	12,280	5,132	2,710	3,370
MAX	6,778	7,028	5,968	4,893	5,217	6,900	10,090	18,400	24,520	14,240	5,729	5,813
(WY)	(1977)	(1984)	(1960)	(1984)	(1915)	(1916)	(1969)	(1976)	(1997)	(1975)	(1975)	(1984)
MIN	2,242	2,815	2,569	2,165	2,268	2,835	2,388	2,850	3,175	1,243	896	1,448
(WY)	(2004)	(1891)	(1891)	(1891)	(1989)	(1955)	(1961)	(2004)	(1987)	(1988)	(1988)	(1994)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1890 - 2004*	
ANNUAL TOTAL	1,260,370		1,035,820			
ANNUAL MEAN	3,453		2,830		5,157	
HIGHEST ANNUAL MEAN					7,742	1997
LOWEST ANNUAL MEAN					2,830	2004
HIGHEST DAILY MEAN	19,700	Jun 2	9,220	Jun 12	33,400	Jun 12, 1997
LOWEST DAILY MEAN	1,180	Aug 24	1,240	Aug 16	700	Jan 12, 1963
ANNUAL SEVEN-DAY MINIMUM	1,220	Aug 22	1,290	Aug 11	811	Jul 31, 1961
MAXIMUM PEAK FLOW			9,730	Jun 12	34,000	Jun 12, 1997
MAXIMUM PEAK STAGE			6.87	Jun 12	12.22	Jun 12, 1997
INSTANTANEOUS LOW FLOW			a905	Aug 11	b450	Jul 31, 1989
ANNUAL RUNOFF (AC-FT)	2,500,000		2,055,000		3,736,000	
10 PERCENT EXCEEDS	5,810		4,000		9,250	
50 PERCENT EXCEEDS	2,830		2,720		4,070	
90 PERCENT EXCEEDS	1,390		1,760		2,340	

*--During periods of operation (1911-16, 1942 to current year).
a--Gage height, 2.31 ft, result of regulation.
b--Gage height, 1.68 ft, result of regulation.

06054500 MISSOURI RIVER AT TOSTON, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-53, 1965, 1972 to current year. Sampling location moved in October 1978, from old bridge on U. S. Highway 287 at Toston, to cableway 2.4 miles upstream.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1973 to September 1981.
WATER TEMPERATURE: May 1949 to June 1953, April 1973 to current year.
SUSPENDED-SEDIMENT DISCHARGE: March 1949 to June 1953.

INSTRUMENTATION.--Temperature recorder since July 6, 1977.

REMARKS.--Daily water temperature record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE : Maximum daily, 524 microsiemens per centimeter (µS/cm) at 25°C, Mar. 4, 1978; minimum daily, 159 µS/cm at 25°C, May 28, 1979.
WATER TEMPERATURE: Maximum, 29.0°C, July 31, 1988, July 20, 1989; minimum, 0.0°C on many days during winter.
SEDIMENT CONCENTRATION: Maximum daily mean, 670 mg/L, Mar. 22, 25, 1951; minimum daily mean, 5 mg/L, Jul. 12, 1951.
SEDIMENT LOAD: Maximum daily, 16,100 tons, May 5, 1952; minimum daily, 51 tons Feb. 1, 1951.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 25.5°C, July 18; minimum, 0.0°C, many days October through February.

06054500 MISSOURI RIVER AT TOSTON, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	14.0	12.5	13.0	1.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.5
2	13.5	12.0	13.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0
3	13.5	12.0	12.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.0
4	13.5	11.5	12.5	1.0	0.0	0.5	1.0	0.0	0.5	0.0	0.0	0.0
5	13.5	11.5	12.5	1.0	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0
6	13.5	12.0	12.5	1.0	0.0	0.5	1.5	0.5	1.0	0.0	0.0	0.0
7	13.5	12.0	13.0	1.0	0.0	0.5	3.0	1.5	2.5	0.5	0.0	0.5
8	13.5	12.5	13.0	1.0	0.0	0.5	3.0	2.0	2.5	1.0	0.5	0.5
9	14.0	12.5	13.5	1.0	0.5	0.5	2.0	1.0	1.5	0.5	0.5	0.5
10	12.5	10.5	12.0	1.0	0.5	0.5	1.0	0.5	0.5	0.5	0.0	0.5
11	10.5	9.0	10.0	0.5	0.5	0.5	0.5	0.0	0.5	0.5	0.5	0.5
12	9.5	9.0	9.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5
13	9.5	8.5	9.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5
14	8.5	8.0	8.5	1.0	0.5	0.5	0.5	0.5	0.5	1.0	0.5	0.5
15	8.5	7.5	8.0	2.0	1.0	1.5	1.0	0.5	1.0	0.5	0.0	0.5
16	9.5	8.5	9.0	2.5	1.5	2.0	0.5	0.0	0.5	1.0	0.5	0.5
17	10.0	9.0	9.5	3.0	2.5	3.0	1.0	0.5	0.5	0.5	0.0	0.5
18	12.0	10.0	11.0	3.0	2.5	3.0	0.5	0.0	0.5	0.5	0.0	0.5
19	12.0	11.0	11.5	4.5	3.0	3.5	0.5	0.0	0.5	1.0	0.5	0.5
20	11.5	10.5	11.0	5.0	4.0	4.5	0.5	0.5	0.5	1.0	0.5	0.5
21	11.0	10.5	11.0	4.0	0.5	2.0	0.5	0.5	0.5	0.5	0.0	0.5
22	12.0	11.0	11.5	1.0	0.0	0.5	0.5	0.0	0.5	1.0	0.0	0.5
23	11.5	10.5	11.0	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.5	0.5
24	10.5	8.0	9.5	1.0	0.0	0.5	1.0	0.5	0.5	0.5	0.0	0.5
25	8.0	6.5	7.5	0.5	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0
26	7.0	6.5	7.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5
27	8.5	7.0	8.0	1.0	0.5	0.5	0.5	0.0	0.5	0.5	0.0	0.5
28	8.5	8.0	8.5	1.0	0.5	0.5	0.5	0.0	0.5	0.5	0.0	0.5
29	8.5	7.0	8.0	1.0	0.5	0.5	0.5	0.0	0.5	0.5	0.5	0.5
30	7.0	2.0	4.5	0.5	0.5	0.5	0.5	0.0	0.5	1.0	0.0	0.5
31	2.0	0.0	1.0	---	---	---	0.5	0.5	0.5	1.0	0.0	0.5
MONTH	14.0	0.0	10.0	5.0	0.0	1.0	3.0	0.0	0.5	1.0	0.0	0.5
	FEBRUARY			MARCH			APRIL			MAY		
1	0.5	0.5	0.5	4.0	2.5	3.5	11.0	9.5	10.0	14.0	12.0	13.0
2	1.0	0.0	0.5	4.0	3.0	3.5	9.5	7.5	8.5	15.5	13.5	14.5
3	1.0	0.0	0.5	3.0	1.5	2.0	8.0	6.5	7.5	16.0	14.5	15.0
4	0.5	0.0	0.5	3.0	2.0	2.5	10.0	8.0	9.0	17.0	15.0	16.0
5	1.0	0.5	0.5	3.0	2.5	3.0	11.0	10.0	10.0	18.0	15.5	16.5
6	1.0	0.0	0.5	3.0	2.0	2.5	12.0	10.5	11.5	17.0	16.0	16.5
7	1.0	0.5	0.5	2.5	2.0	2.5	11.5	10.0	11.0	17.5	15.5	16.5
8	1.0	0.5	0.5	5.0	2.5	3.5	13.0	11.5	12.5	17.0	15.5	16.5
9	1.0	0.5	0.5	7.0	5.0	6.0	12.5	10.5	11.0	16.0	14.5	15.5
10	0.5	0.5	0.5	6.5	6.0	6.0	10.5	9.0	9.5	15.0	13.5	14.5
11	1.0	0.0	0.5	6.0	5.0	5.5	11.0	9.5	10.5	13.5	11.5	12.5
12	1.0	0.0	0.5	6.5	5.0	6.0	12.5	11.0	11.5	11.5	8.0	10.0
13	1.0	0.0	0.5	6.5	5.5	6.0	13.0	12.0	12.5	9.5	8.0	9.0
14	1.0	0.0	0.5	6.5	5.0	6.0	13.5	12.5	13.0	11.5	9.5	10.5
15	1.0	0.5	0.5	5.5	4.5	5.0	12.5	11.0	11.5	12.5	10.5	11.5
16	1.0	0.0	0.5	6.0	5.0	5.5	11.0	10.5	11.0	13.5	12.5	13.0
17	1.0	0.5	0.5	6.5	5.5	6.0	11.0	10.0	10.5	13.0	12.0	12.5
18	5.0	0.5	0.5	8.5	6.5	7.5	10.5	9.5	10.0	14.5	12.0	13.5
19	1.0	0.0	0.5	8.5	8.0	8.0	11.0	10.0	10.5	14.0	13.0	13.5
20	1.0	0.0	0.5	8.0	7.0	7.5	11.5	10.5	11.0	15.0	13.0	14.0
21	1.0	0.0	0.5	7.5	7.0	7.0	11.0	10.0	10.5	15.0	14.0	14.5
22	1.0	0.0	0.5	7.5	6.5	7.0	12.0	10.5	11.5	15.0	13.5	14.5
23	1.0	0.0	0.5	9.0	7.5	8.5	13.0	11.5	12.5	13.5	10.5	12.5
24	1.0	0.0	0.5	10.5	9.0	9.5	14.0	12.5	13.0	11.0	10.0	10.5
25	1.0	0.5	0.5	10.0	9.0	9.5	13.0	12.0	12.5	12.5	10.5	11.5
26	0.5	0.5	0.5	10.0	8.0	9.5	14.5	12.5	13.5	13.5	12.5	13.5
27	1.5	0.5	1.0	8.0	6.5	7.0	15.5	14.0	14.5	15.0	13.0	13.5
28	2.0	1.5	2.0	7.0	6.5	7.0	15.0	11.0	13.5	15.5	14.5	15.0
29	2.5	2.0	2.0	8.5	7.0	8.0	11.0	8.5	9.5	14.5	12.5	13.0
30	---	---	---	10.0	8.5	9.5	12.0	8.5	10.5	12.5	11.5	12.0
31	---	---	---	11.0	9.5	10.5	---	---	---	13.0	11.5	12.0
MONTH	5.0	0.0	0.5	11.0	1.5	6.0	15.5	6.5	11.0	18.0	8.0	13.5

06054500 MISSOURI RIVER AT TOSTON, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.5	13.0	14.0	21.5	20.5	21.0	24.0	21.0	22.0	20.0	18.5	19.0
2	17.5	15.5	16.5	21.0	19.0	20.0	24.0	21.5	22.5	19.0	16.5	18.0
3	19.0	17.5	18.0	20.5	19.0	20.0	23.5	20.5	21.5	17.0	15.0	16.0
4	20.0	19.0	19.5	20.5	19.5	20.0	22.5	20.5	21.5	16.0	14.5	15.5
5	20.5	20.0	20.0	19.5	19.0	19.5	22.5	20.0	21.0	16.5	14.5	15.5
6	20.0	17.5	19.0	20.0	19.0	19.5	22.5	20.0	21.0	17.0	15.0	16.0
7	17.5	16.5	17.0	20.5	19.0	20.0	22.0	19.0	20.5	17.0	15.0	16.0
8	16.5	14.0	15.5	19.0	18.0	18.5	21.5	18.5	20.0	17.0	15.5	16.0
9	15.0	13.5	14.5	19.5	18.5	19.0	21.5	18.0	19.5	17.5	15.5	16.5
10	15.5	13.5	15.0	21.0	19.5	20.0	22.5	18.5	20.0	17.5	16.0	16.5
11	13.5	12.0	12.5	20.5	20.0	20.5	22.5	19.0	20.5	18.0	16.0	16.5
12	14.5	12.5	13.0	21.0	19.5	20.5	22.5	19.0	20.5	17.0	15.5	16.5
13	15.5	14.5	15.0	22.5	21.0	21.5	23.0	19.0	20.5	15.5	14.0	15.0
14	16.0	15.0	15.5	22.5	21.0	22.0	23.0	19.0	21.0	14.5	13.5	14.0
15	16.0	14.5	15.5	24.0	22.0	23.0	23.5	19.5	21.5	14.0	13.0	13.5
16	15.0	14.0	14.5	24.5	23.0	23.5	23.0	20.0	21.0	14.0	13.0	13.5
17	15.5	13.5	15.0	25.0	23.0	24.0	22.5	20.0	21.0	15.5	13.5	14.5
18	14.0	13.5	14.0	25.5	23.5	24.5	21.0	19.5	20.0	14.5	13.5	14.0
19	15.0	14.0	14.5	25.0	23.0	24.0	20.5	18.0	19.0	14.0	12.5	13.5
20	16.5	14.5	15.5	25.0	23.0	23.5	21.5	18.0	19.5	12.5	10.5	11.5
21	17.0	16.0	16.5	24.5	22.5	23.5	22.0	19.5	20.5	11.0	10.0	10.5
22	18.5	17.0	18.0	23.0	21.0	22.5	22.0	19.5	20.5	10.5	10.0	10.0
23	19.5	18.0	19.0	22.5	20.5	21.5	19.5	17.5	18.5	11.0	10.0	10.5
24	20.0	19.0	19.5	22.5	21.0	21.5	17.5	15.5	16.5	13.5	11.0	12.5
25	20.5	19.5	20.0	23.5	21.5	22.5	17.0	15.5	16.5	14.5	13.0	14.0
26	20.0	18.5	19.5	23.5	22.0	22.5	16.5	15.5	16.0	15.0	14.0	14.5
27	19.5	19.0	19.5	24.0	21.0	22.5	16.0	15.0	15.5	15.0	14.0	14.5
28	20.0	19.0	19.5	23.0	20.5	21.5	16.5	15.0	16.0	15.0	14.0	14.5
29	20.5	19.5	20.0	23.5	20.0	21.5	17.0	15.5	16.5	14.5	14.0	14.0
30	21.5	20.0	21.0	23.5	20.5	22.0	18.5	17.0	17.5	14.5	13.0	13.5
31	---	---	---	23.5	21.0	22.0	19.5	18.0	18.5	---	---	---
MONTH	21.5	12.0	17.0	25.5	18.0	21.5	24.0	15.0	19.5	20.0	10.0	14.5

06058500 CANYON FERRY LAKE NEAR HELENA, MT

LOCATION.--Lat 46°38'57", long 111°43'39" (NAD 27), in SE¼SE¼ sec.4, T.10 N., R.1 W., Lewis and Clark County, Hydrologic Unit 10030101, in block 17 of Canyon Ferry Dam, 15 mi east of Helena, and at river mile 2,252.8.

DRAINAGE AREA.--15,904 mi^2.

PERIOD OF RECORD.--April 1953 to current year (monthend contents only). Prior to October 1981, published as Canyon Ferry Reservoir near Helena. Records of monthend contents in Lake Sewell, submerged by present reservoir Apr. 8, 1953, available January 1936 to March 1953. Scattered daily elevations and contents for April to July 1953, published in WSP 1320-B. Daily elevations and contents for May to June 1964, published in WSP 1840-B. Daily elevations and contents on file in Helena district office.

REVISED RECORDS.--WSP 1559: Drainage area.

GAGE.--Water-stage recorder in powerhouse control room. Elevation of gage is 3,650.0 ft (NGVD 29).

REMARKS.--Reservoir is formed by concrete dam; construction began in 1949, completed in 1953. Storage began in March 1953. All elevations are referenced to the National Geodetic Vertical Datum of 1929. Usable capacity, 1,993,000 acre-ft between elevation 3,650.00 ft, contents at dead storage (1,060 acre-ft) and 3,800.00 ft, controlled spillway elevation. Minimum operating level, 396,000 acre-ft, at elevation 3,728.00 ft, for on-site power generation. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.

COOPERATION.--Elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 2,043,000 acre-ft, July 15-29, 31, 1955, July 2, 5, 6, 8, 1956, July 16, 17, 1962, June 23, 1964, elevation, 3,800.0 ft; minimum since first filling, 1,017,000 acre-ft, Apr. 11, 1967, elevation, 3,764.70 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,545,000 acre-ft, Oct. 1, elevation, 3,786.27 ft; minimum, 1,346,000 acre-ft, May 21, 22, elevation, 3,779.58 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, SEPTEMBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
September 30	3,786.31	1,546,000	--
October 31	3,785.08	1,508,000	-38,000
November 30	3,784.78	1,499,000	-9,000
December 31	3,783.86	1,471,000	-28,000
Calendar year 2003	--	--	-166,000
January 31	3,781.77	1,409,000	-62,000
February 29	3,780.93	1,385,000	-24,000
March 31	3,780.61	1,375,000	-10,000
April 30	3,780.65	1,376,000	1,000
May 31	3,780.58	1,374,000	-2,000
June 30	3,784.97	1,505,000	131,000
July 31	3,784.75	1,498,000	-7,000
August 31	3,782.14	1,420,000	-78,000
September 30	3,781.39	1,398,000	-22,000
Water year 2004	--	--	-148,000

462522112172402 08N06W24DDCD02 (LUTTRELL WELL EPA-3S)

LOCATION.--Lat 46°25'21.8", long 112°17'23.5", (NAD 83) in SW¼SE¼SE¼ sec. 24, T.8 N., R.6 W., Lewis and Clark County, Hydrologic Unit 10030101.

HYDROGEOLOGIC UNIT.--Tertiary volcanics.

WELL CHARACTERISTICS.--Drilled in June 2000, casing diameter 2 in., depth 84 ft.

DATUM.--Measuring point, top of PVC casing, 3.10 ft above land surface datum. Elevation of land-surface datum is 7,579.6 ft (NGVD 29).

PERIOD OF RECORD.--October 2001 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum.

MEASURED WATER LEVEL,
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 22	66.41	July 12	32.62
Apr. 26	44.10	Aug. 18	49.13
June 3	25.77	Sept. 10	56.49

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instantaneous gal/min (00059)	Pump or flow period prior to sampling, minutes (72004)	Sampling depth, feet (00003)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
APR 26...	1200	--	--	--	210	--	4.1	93	--	16	5.22	.816	2.40
JUN 03...	1000	.70	45	77.0	9.8	9.1	5.3	68	6.0	22	6.70	1.29	2.27
SEP 10...	1000	.25	35	80.0	72	6.6	4.2	102	8.5	10	3.08	.594	2.45

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alkalinity, water, fltrd inc tit field, mg/L as CaCO3 (39086)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)
APR 26...	.1	.96	--	<2	1.19	<.2	6.24	37.7	E56	E.08	505	.2	.11
JUN 03...	.1	1.26	6	--	.96	<.2	5.05	15.5	37	.05	104	.3	.10
SEP 10...	.1	.86	--	<2	1.07	<.2	12.5	25.0	E47	E.06	858	E.1	.15

Date	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
APR 26...	3.3	224	5.31	<.6	6.1	20.9
JUN 03...	1.8	91	.63	<.6	20.2	9.6
SEP 10...	24.8	567	9.63	E.5	12.4	45.8

E--Estimated.

462522112172401 08N06W24DDCD01 (LUTTRELL WELL EPA-3)

LOCATION.--Lat 46°25'21.8", long 112°17'23.5" (NAD 83), in SW¼SE¼SE¼ sec. 24, T.8 N., R.6 W., Lewis and Clark County, Hydrologic Unit 10030101.

HYDROGEOLOGIC UNIT.--Boulder batholith quartz monzonite.

WELL CHARACTERISTICS.--Drilled in June 1999, casing diameter 4 in., depth 227 ft.

DATUM.--Measuring point, top of PVC casing, 1.70 ft above land surface datum. Elevation of land-surface datum is 7,579.8 ft (NGVD 29).

PERIOD OF RECORD.-- October 2001 to current year.

REMARKS.--All water levels are reported as distance, in feet below land-surface datum. Well was pumped extensively one day prior to each sampling date in an attempt to remove sediment and standing water from the well casing.

MEASURED WATER LEVEL,
IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 22	129.50	July 12	118.41
Apr. 26	139.72	Aug. 18	119.23
June 3	133.82	Sept. 10	121.87

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Flow rate, instan-taneous gal/min (00059)	Pump or flow period prior to sam-pling, minutes (72004)	Sam-pling depth, feet (00003)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)
APR 26...	1300	--	--	--	880	--	6.9	274	3.5	13	4.30	.661	3.94
JUN 03...	1100	.30	38	195	380	<.1	6.8	252	8.5	24	7.43	1.43	4.88
SEP 10...	0900	.60	85	198	>1,000	<.1	6.5	338	7.5	15	4.82	.643	4.71

Date	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alka-linity, water, fltrd inc tit field, mg/L as CaCO3 (39086)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)
APR 26...	6	47.6	66	--	1.85	.3	23.9	55.5	178	.24	<1	.3	.26
JUN 03...	4	44.0	64	--	1.66	.4	26.1	55.1	180	.24	18	.3	.11
SEP 10...	7	60.9	97	91	1.63	.4	25.7	63.5	217	.30	E1	2.5	.04

Date	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Zinc, water, fltrd, ug/L (01090)
APR 26...	1.4	E3	.62	7.7	140	13.2
JUN 03...	.8	57	<.08	10.2	242	17.1
SEP 10...	.9	183	<.08	10.6	160	8.1

E--Estimated.

462720112165101 TENMILE CREEK ABOVE MONITOR CREEK, NEAR RIMINI, MT

LOCATION.--Lat 46°27'19.0", long 112°16'52.3" (NAD 27), SW¼NE¼SW¼ sec. 7, T.8N., R.5W., Lewis and Clark County, Hydrologic Unit 10020006, 30 ft above confluence with Monitor Creek and 2.9 mi south of Rimini.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--July 2003 to current year.

GAGE.--None. Elevation at sampling site is 6,230 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)
JUN													
01...	0930	6.4	12.5	6.5	24	8.0	4.0	7	2.22	.436	.74	.3	1.73
AUG													
31...	0915	.21	--	6.2	44	19.5	8.0	14	4.25	.817	.95	.5	4.60

Date	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)
JUN													
01...	31	7	.23	<.2	13.0	3.5	27	.04	.46	207	1.8	E1	.04
AUG													
31...	40	16	.27	<.2	15.6	4.0	40	.05	.02	38	1.5	2	.04

Date	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
JUN												
01...	.04	2.2	2.2	119	150	.32	.46	1.3	1.8	4	7.7	8
AUG												
31...	E.03	1.3	1.3	120	130	.18	.23	2.1	7.7	9	4.9	5

E--Estimated.

462542112173101 MONITOR CREEK SS 12, NEAR RIMINI, MT

LOCATION.--Lat 46°25'41.6", long 112°17'30.6" (NAD 27), NW¼NE¼SE¼ sec. 24, T.8N., R.6W., Lewis and Clark County, Hydrologic Unit 10020006, 1.95 mi upstream of confluence with Tenmile Creek, 5.4 mi south of Rimini.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--July 2003 to current year.

GAGE.--None. Elevation at sampling site is 7,230 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)
JUN													
01...	1330	1.0	12.1	3.9	265	17.0	8.0	64	19.2	3.87	5.96	.1	1.28
AUG													
31...	1200	.13	--	3.8	271	23.5	8.5	55	16.1	3.60	6.72	.1	1.85

Date	Sodium, percent (00932)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)
JUN												
01...	4	.62	<.2	16.5	140	5,940	<.2	<2	7.00	6.89	27.1	28.5
AUG												
31...	6	.47	.2	32.5	107	5,840	.5	<2	8.38	7.79	29.9	28.4

Date	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
JUN									
01...	192	210	17.8	18.1	3.4	655	630	532	509
AUG									
31...	668	610	33.0	30.9	5.2	661	583	627	599

462721112164801 MONITOR CREEK AT MOUTH (MCM), NEAR RIMINI, MT

LOCATION.--Lat 46°27'21", long 112°16'48" (NAD 27), SW¼NE¼SW¼ sec. 7, T.8N., R.5W., Lewis and Clark County, Hydrologic Unit 10020006, 20 ft upstream from mouth and 4.0 mi southwest of Rimini.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--July and October 1997, July 2003 to current year.

GAGE.--None. Elevation at sampling site is 6,220 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)
JUN													
01...	1000	7.3	13.6	6.1	56	8.0	3.5	17	4.88	1.18	1.43	.2	1.58
AUG													
31...	0930	.56	--	6.4	103	11.5	7.5	37	10.8	2.35	2.90	.2	2.58

Date	Sodium, percent (00932)	Alkalinity water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)
JUN													
01...	15	3	.37	<.2	14.8	18.1	45	.06	.88	275	.6	E2	.98
AUG													
31...	12	5	.31	.2	23.2	35.9	82	.11	.12	67	.5	<2	1.78

Date	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
JUN												
01...	1.11	4.0	6.3	50	120	1.02	2.55	1.6	75.4	79	90.7	94
AUG												
31...	1.74	2.1	2.8	25	60	.30	.76	3.3	69.4	66	168	161

E--Estimated.

462544112162001 RUBY CREEK RC2A, ABOVE SCOTT RESERVOIR, NEAR RIMINI, MT

LOCATION.--Lat 46°25'44.1", long 112°16'19.7" (NAD 27), NE¼NW¼SE¼ sec. 19, T.8N., R.5W., Lewis and Clark County, Hydrologic Unit 10020006, 200 ft above confluence with unnamed tributary, 0.3 mi upstream from Scott Reservoir, and 0.45 mi south of Rimini.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--July 2003 to current year.

GAGE.--None. Elevation at sampling site is 7,380 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)
JUN													
01...	1200	1.5	12.4	6.6	15	14.0	3.5	5	1.63	.246	.44	.2	.80
AUG													
31...	1100	.002	--	6.1	24	23.0	7.5	8	2.63	.382	.63	.2	1.06

Date	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)
JUN													
01...	24	4	.32	<.2	6.50	1.1	14	.02	.06	145	1.3	2	E.03
AUG													
31...	21	8	.31	<.2	7.80	1.5	20	.03	<.01	98	1.1	E2	E.03

Date	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
JUN												
01...	<.04	2.0	2.0	55	60	.19	.22	E.4	.9	1	3.7	4
AUG												
31...	E.02	1.7	1.8	86	80	.21	.21	E.5	5.6	6	4.3	2

E--Estimated.

462657112143501 BANNER CREEK AT BRIDGE, 0.5 MILE ABOVE CITY DIVERSION, NEAR RIMINI, MT

LOCATION.--Lat 46°23'57", long 112°15'25" (NAD 27), in NW¼ NW¼ SW¼ sec. 16, T. 8 N., R. 5 W., Lewis and Clark County, Hydrologic Unit 10030101, at bridge near the downstream edge of meadow, about 0.5 mi upstream from city diversion, and 2.5 mi south of Rimini.

DRAINAGE AREA.--2.6 mi^2.

PERIOD OF RECORD.--April 2000 to current year.

GAGE--None. Elevation at site is 6,700 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
MAR													
30...	1415	.20	7.1	83	9.0	6.5	34	10.4	1.93	.8	E2	.28	.31
MAY													
25...	1300	10	7.3	40	4.5	1.5	16	4.94	.842	1.4	E1	.12	.16
AUG													
02...	0900	.31	7.5	74	16.0	11.5	29	9.03	1.66	.9	<2	.08	.10
SEP													
21...	0830	.49	7.6	74	0.5	1.0	29	8.99	1.69	.6	<2	.06	.08

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR									
30...	2.2	2.5	.23	.54	46.6	47	59	14	.01
MAY									
25...	2.9	4.6	.10	2.20	22.2	25	51	23	.63
AUG									
02...	1.2	1.8	<.08	.25	13.3	14	88	1	<.01
SEP									
21...	1.4	1.5	<.08	.24	14.5	15	80	2	<.01

E--Estimated.

462838112143901 POISON CREEK AT MOUTH, NEAR RIMINI, MT

LOCATION.--Lat 46°28'38", long 112°14'39" (NAD 27), in SW¼ NW¼ NW¼ sec. 4, T. 8 N., R. 5 W., Lewis and Clark County, Hydrologic Unit 10030101, at culvert crossing on Rimini Road about 1 mi south of Rimini.

DRAINAGE AREA.--0.32 mi^2.

PERIOD OF RECORD.--May 1999 to current year.

GAGE--None. Elevation at site is 5,500 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
APR													
27...	1030	.07	6.1	--	--	4.5	45	14.0	2.35	11.4	14	12.9	12.5
MAY													
25...	1345	.40	6.3	97	6.0	3.5	33	10.4	1.74	13.4	108	8.41	8.72
AUG													
02...	0930	.04	5.9	95	17.0	12.0	30	9.24	1.73	20.0	28	6.61	6.50
SEP													
21...	0930	.07	6.5	117	2.5	3.5	41	12.7	2.19	15.0	23	8.16	8.08

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
APR									
27...	46.9	46.8	2.91	5.30	1,840	1,850	75	1	<.01
MAY									
25...	29.6	44.1	1.45	46.8	1,220	1,220	77	15	.02
AUG									
02...	25.1	25.9	1.83	5.59	1,060	1,050	91	2	<.01
SEP									
21...	26.2	26.4	.84	3.47	1,350	1,340	75	1	<.01

462853112144101 TENMILE CREEK ABOVE CITY DIVERSION, NEAR RIMINI, MT

LOCATION.--Lat 46°28'53", long 112°14'10" (NAD 27), in NW¼ NW¼ NW¼ sec. 4 , T. 8 N., R. 5 W., Lewis and Clark County, Hydrologic Unit 10030101, about 0.25 mile upstream from city diversion, about 100 feet west of Rimini road, and 0.125 mi south of Rimini.

DRAINAGE AREA.--15.2 mi^2.

PERIOD OF RECORD.--May 1999 to current year.

GAGE--None. Elevation at site is 5,350 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
APR													
27...	1100	15	7.2	55	13.5	4.0	20	5.88	1.19	2.6	3	.64	.70
MAY													
25...	1150	32	7.3	42	8.0	1.5	15	4.46	.902	2.2	4	.60	.62
AUG													
02...	1015	1.3	7.4	80	17.0	13.0	29	8.55	1.75	6.7	9	1.72	1.80
SEP													
21...	1000	3.5	7.1	79	5.0	3.5	28	8.41	1.73	3.7	6	1.34	1.27

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
APR									
27...	3.6	4.0	.69	2.45	121	120	80	6	.24
MAY									
25...	3.8	4.3	.57	2.01	100	100	91	3	.26
AUG									
02...	3.1	3.6	.41	1.25	361	375	80	2	.01
SEP									
21...	3.1	3.2	.36	1.55	295	272	61	4	.04

462758112123001 BEAVER CREEK TRIBUTARY NO. 2 NEAR RIMINI, MT

LOCATION.--Lat 46°27'58", long 112°12'30" (NAD 27), in SW¼ SE¼ SE¼ sec. 3, T. 8 N., R. 5 W., Lewis and Clark County, Hydrologic Unit 10030101, about 40 ft upstream from inlet structure to Banner Creek flume, about 100 ft. upstream from Banner Creek flume, and about 2.5 mi southwest of Rimini.

DRAINAGE AREA.--0.67 mi^2.

PERIOD OF RECORD.--April 2000 to current year.

GAGE--None. Elevation at site is 6,330 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
APR													
29...	0840	.31	6.1	49	-3.5	0.5	15	4.92	.758	6.9	7	1.55	1.53
MAY													
25...	1330	.97	7.1	48	8.0	4.0	15	4.77	.804	5.7	8	1.97	2.04
AUG													
03...	1200	.25	7.3	60	22.0	9.0	19	6.09	.980	6.8	7	2.18	2.26
SEP													
24...	1130	.21	7.6	62	12.0	5.0	20	6.47	1.03	6.7	8	2.31	2.12

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
APR									
29...	10.2	10.4	.22	.78	261	247	69	2	<.01
MAY									
25...	11.8	14.0	.56	2.79	357	343	56	2	.01
AUG									
03...	5.8	6.6	.15	.60	343	343	62	2	<.01
SEP									
24...	8.5	8.5	.23	.59	379	337	71	1	<.01

462922112145401 TENMILE CREEK BELOW SPRING CREEK, AT RIMINI, MT

LOCATION.--Lat 46°29'22", long 112°14'54" (NAD 27), in NW¼ SW¼ SW¼ sec. 33, T. 8 N., R. 5 W., Lewis and Clark County, Hydrologic Unit 10030101, at bridge crossing on road to private residence in Rimini.

DRAINAGE AREA.--22.8 mi^2.

PERIOD OF RECORD.--May 1997 to current year.

GAGE--None. Elevation at site is 5,220 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
APR													
27...	0900	21	8.4	61	16.0	3.0	20	6.06	1.19	10.2	22	.75	.86
MAY													
25...	1045	36	7.5	46	6.0	2.5	16	4.84	1.02	5.9	11	.65	.72
AUG													
02...	1100	.13	6.8	154	20.0	16.0	55	15.4	3.98	39.3	222	6.57	7.06
SEP													
21...	1100	.85	7.1	116	6.0	5.0	42	12.4	2.78	64.6	111	3.34	3.11

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
APR									
27...	4.2	4.9	.82	4.92	143	145	87	7	.40
MAY									
25...	6.0	7.5	.71	2.77	115	115	68	6	.59
AUG									
02...	3.5	7.8	E.04	3.56	1,110	1,160	70	6	<.01
SEP									
21...	4.7	5.4	1.59	3.96	631	569	77	3	.01

E--Estimated.

462932112145801 MOORES SPRING CREEK AT MOUTH, NEAR RIMINI, MT

LOCATION.--Lat 46°29'32", long 112°14'58" (NAD 27), in NW¼ NW¼ SW¼ sec. 33 , T. 8 N., R. 5 W., Lewis and Clark County, Hydrologic Unit 10030101, at culvert crossing on Rimini Road in Rimini.

DRAINAGE AREA.--0.6 mi^2.

PERIOD OF RECORD.--May 2000 to current year.

GAGE--None. Elevation at site is 5,180 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
APR													
27...	1130	.07	7.8	211	18.0	7.5	95	26.7	6.90	59.5	70	4.09	4.11
MAY													
25...	1020	.26	7.8	170	4.5	0.5	75	20.6	5.68	42.2	66	5.04	5.69
AUG													
02...	1130	.01	7.9	248	22.5	13.5	110	29.6	7.84	84.9	96	3.56	3.56
SEP													
21...	1130	.04	7.8	280	6.0	0.5	120	33.2	8.90	59.1	65	6.34	6.00

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
APR									
27...	6.0	6.7	.11	3.37	630	677	87	2	<.01
MAY									
25...	7.5	9.4	.13	6.35	826	859	80	7	<.01
AUG									
02...	5.6	5.6	<.08	.48	471	480	75	1	<.01
SEP									
21...	5.6	5.8	<.08	.96	1,120	1,100	50	1	<.01

462917112165601 MINNEHAHA CREEK BELOW ARMSTRONG MINE, NEAR RIMINI, MT

LOCATION.--Lat 46°29'17", long 112°16'56" (NAD 27), in SW¼ SW¼ NW¼ sec. 31, T. 9 N., R. 5 W., Lewis and Clark County, Hydrologic Unit 10030101, 0.6 mi downstream from the Armstrong mine road and 1.4 mi southwest of Rimini.

DRAINAGE AREA.--1.75 mi^2.

PERIOD OF RECORD.--April 1998 to current year.

GAGE--None. Elevation at site is 5,650 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
APR													
29...	1000	3.3	6.8	48	--	1.5	14	4.01	.970	4.0	5	2.98	3.06
MAY													
25...	1200	5.3	7.1	42	8.0	4.5	12	3.30	.841	3.7	5	2.02	2.05
AUG													
03...	0945	.14	7.2	85	21.0	10.5	25	6.95	1.84	10.3	11	6.29	6.33
SEP													
24...	0930	.21	7.8	86	10.5	5.0	27	7.60	1.93	10.4	11	6.22	6.48

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
APR									
29...	12.5	14.1	.71	2.06	503	426	70	3	.03
MAY									
25...	10.2	12.5	1.11	4.13	302	295	55	3	.04
AUG									
03...	17.3	19.1	.47	1.00	935	966	50	1	<.01
SEP									
24...	19.2	19.5	.79	1.15	1,020	964	71	1	<.01

462918112170801 BEATTRICE MINE TRIBUTARY AT MOUTH, NEAR RIMINI, MT

LOCATION.--Lat 46°29'18", long 112°17'08" (NAD 27), in SW¼ SW¼ SW¼ sec. 31, T. 9 N., R. 5 W., Lewis and Clark County, Hydrologic Unit 10030101, 400 ft upstream from old logging road crossing, about 1,000 ft upstream from confluence with Minnehaha Creek, and 1.5 mi southwest of Rimini.

DRAINAGE AREA.--0.24 mi^2.

PERIOD OF RECORD.--May 2000 to current year.

GAGE--None. Elevation at site is 5,660 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
APR													
29...	0945	.01	6.6	79	-1.5	0.0	25	7.98	1.34	.9	<2	.04	.04
MAY													
25...	1100	3.5	7.2	55	7.0	2.5	16	5.04	.862	1.2	<2	.05	.06
AUG													
03...	1015	.02	7.4	103	21.0	11.0	34	10.6	1.73	.7	<2	.06	.05
SEP													
24...	1000	.03	7.7	93	11.0	6.0	29	9.07	1.58	.5	<2	.05	.06

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
APR									
29...	12.1	16.8	E.06	.64	5.6	5	56	3	<.01
MAY									
25...	15.7	18.6	.21	.87	8.0	7	83	5	.05
AUG									
03...	7.0	7.6	<.08	E.04	6.6	5	67	1	<.01
SEP									
24...	7.6	8.0	<.08	.10	6.0	6	80	1	<.01

E--Estimated.

463023112153701 MINNEHAHA CREEK ABOVE CITY DIVERSION, NEAR RIMINI, MT

LOCATION.--Lat 46°30'23", long 112°15'37" (NAD 27), in NW¼ NW¼ SE¼ sec. 29, T. 9 N., R. 5 W., Lewis and Clark County, Hydrologic Unit 10030101, about 75 feet upstream from city diversion structure, about 200 feet upstream from mouth and about 3 mi north of Rimini.

DRAINAGE AREA.--5.35 mi^2.

PERIOD OF RECORD.--April 1998 to current year.

GAGE--None. Elevation at site is 5,040 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
APR													
27...	1200	4.5	8.0	57	18.0	4.5	18	5.31	1.19	2.7	2	1.57	1.70
MAY													
25...	0910	10	7.5	48	4.0	3.0	16	4.59	1.01	2.4	3	1.07	1.29
AUG													
02...	1200	.31	7.2	69	23.0	14.5	22	6.28	1.47	3.4	4	1.40	1.62
SEP													
21...	1145	.94	7.8	74	7.5	4.0	25	7.25	1.63	2.7	3	1.70	1.68

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
APR									
27...	7.9	9.5	.20	1.20	264	261	59	6	.07
MAY									
25...	7.7	10.1	.23	1.90	186	194	73	6	.16
AUG									
02...	4.4	6.6	E.04	.72	222	244	54	4	<.01
SEP									
21...	6.6	7.1	.09	.44	307	291	92	3	.01

E--Estimated.

06062500 TENMILE CREEK NEAR RIMINI, MT

LOCATION.--Lat 46°31'27", long 112°15'22" (NAD 27), in NE¼SW¼NE¼ sec. 20, T.9 N., R.5 W., Lewis and Clark County, Hydrologic Unit 10030101, Helena National Forest, on left bank at U.S. Forest Service Moose Creek campground, 500 ft upstream from Moose Creek, 2.5 mi north of Rimini, and at river mile 20.4.

DRAINAGE AREA.--30.9 mi^2.

PERIOD OF RECORD.--July 1914 to September 1994, May 1997 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 19417, 1921, 1924-25. WSP 1509: 1915, 1916-17(M), 1920(M), 1927(m), 1928-1930, 1947(m), 1948, 1950(M). WSP 1559: Drainage area. WSP 1709: 1959. WDR-MT-97-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,850 ft (NGVD 29). Prior to Dec. 17, 1934, water-stage recorder at site 40 ft downstream at different elevation and different control.

REMARKS.--Records good except those below 1.0 ft^3/s and those for estimated daily discharges, which are poor. Flow regulated by Chessman and Scott Reservoirs on tributaries upstream from station, combined capacity, 2,340 acre-feet. Some small diversions upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.28	0.51	0.54	e0.28	e0.25	0.42	10	24	45	12	0.59	0.88
2	0.27	0.47	0.58	e0.20	e0.26	0.38	7.1	24	42	11	0.76	0.88
3	0.26	e0.43	0.56	e0.20	e0.30	e0.32	6.4	28	38	9.5	0.80	0.68
4	0.27	e0.40	0.47	e0.14	e0.30	e0.36	9.7	33	36	13	0.68	0.61
5	0.28	e0.32	0.50	e0.13	e0.35	0.37	14	37	37	14	0.69	0.79
6	0.27	e0.36	0.54	e0.20	e0.35	0.40	16	35	39	9.8	0.69	0.66
7	0.26	e0.41	0.53	e0.40	e0.32	0.40	18	33	35	7.4	0.60	0.62
8	0.24	0.39	0.48	0.41	e0.45	0.57	19	32	40	6.2	0.58	0.57
9	0.24	0.38	0.47	0.40	e0.42	0.83	19	28	37	5.2	0.55	0.52
10	0.25	0.45	e0.40	0.40	0.40	1.2	16	26	49	4.7	0.53	0.47
11	0.28	0.47	e0.37	0.39	0.39	1.4	16	25	57	4.4	0.51	0.45
12	0.32	0.45	e0.44	0.37	0.37	1.5	18	22	41	3.6	0.48	0.55
13	0.41	0.43	0.47	0.38	0.36	1.5	22	21	34	2.3	0.46	0.82
14	0.36	0.43	0.54	0.40	0.36	1.5	26	19	31	1.9	0.43	0.60
15	0.34	0.42	0.49	0.38	0.36	1.4	26	17	29	1.6	0.42	0.52
16	0.35	0.43	0.47	0.37	0.36	1.3	22	18	26	1.5	0.42	0.49
17	0.30	0.43	0.47	0.37	0.37	1.6	20	21	22	1.4	0.49	0.46
18	0.27	0.43	0.45	0.36	0.41	3.0	18	19	21	1.3	0.47	0.55
19	0.25	0.55	0.48	0.37	0.43	5.8	18	23	20	1.3	0.43	1.6
20	0.23	e0.48	0.39	0.36	0.40	3.3	18	23	19	1.2	0.38	2.6
21	0.22	e0.28	0.43	0.34	0.38	3.5	16	35	17	1.1	0.34	2.3
22	0.21	e0.26	0.42	e0.32	0.38	4.1	15	52	15	1.1	0.34	1.5
23	0.23	e0.45	0.51	e0.31	0.39	5.9	16	57	14	1.00	9.2	3.2
24	0.24	0.49	0.38	e0.30	0.41	8.4	18	50	13	0.94	4.2	2.4
25	0.24	0.54	0.38	e0.23	0.43	8.2	17	54	13	0.87	4.4	1.2
26	0.22	0.50	0.40	e0.22	0.43	7.1	19	63	13	0.81	4.0	0.84
27	0.21	0.50	e0.39	e0.17	0.41	5.3	24	67	16	0.78	4.8	0.68
28	0.26	0.47	e0.33	e0.18	0.42	4.2	33	67	20	0.77	1.8	0.61
29	3.2	0.50	e0.32	e0.28	0.42	4.1	27	66	15	0.72	1.1	0.53
30	0.96	0.54	e0.27	e0.34	---	5.5	25	57	15	0.68	0.89	0.50
31	0.57	---	e0.30	e0.32	---	8.7	---	51	---	0.64	0.78	---
TOTAL	12.29	13.17	13.77	9.52	10.88	92.55	549.2	1,127	849	122.71	42.81	29.08
MEAN	0.40	0.44	0.44	0.31	0.38	2.99	18.3	36.4	28.3	3.96	1.38	0.97
MAX	3.2	0.55	0.58	0.41	0.45	8.7	33	67	57	14	9.2	3.2
MIN	0.21	0.26	0.27	0.13	0.25	0.32	6.4	17	13	0.64	0.34	0.45
AC-FT	24	26	27	19	22	184	1,090	2,240	1,680	243	85	58

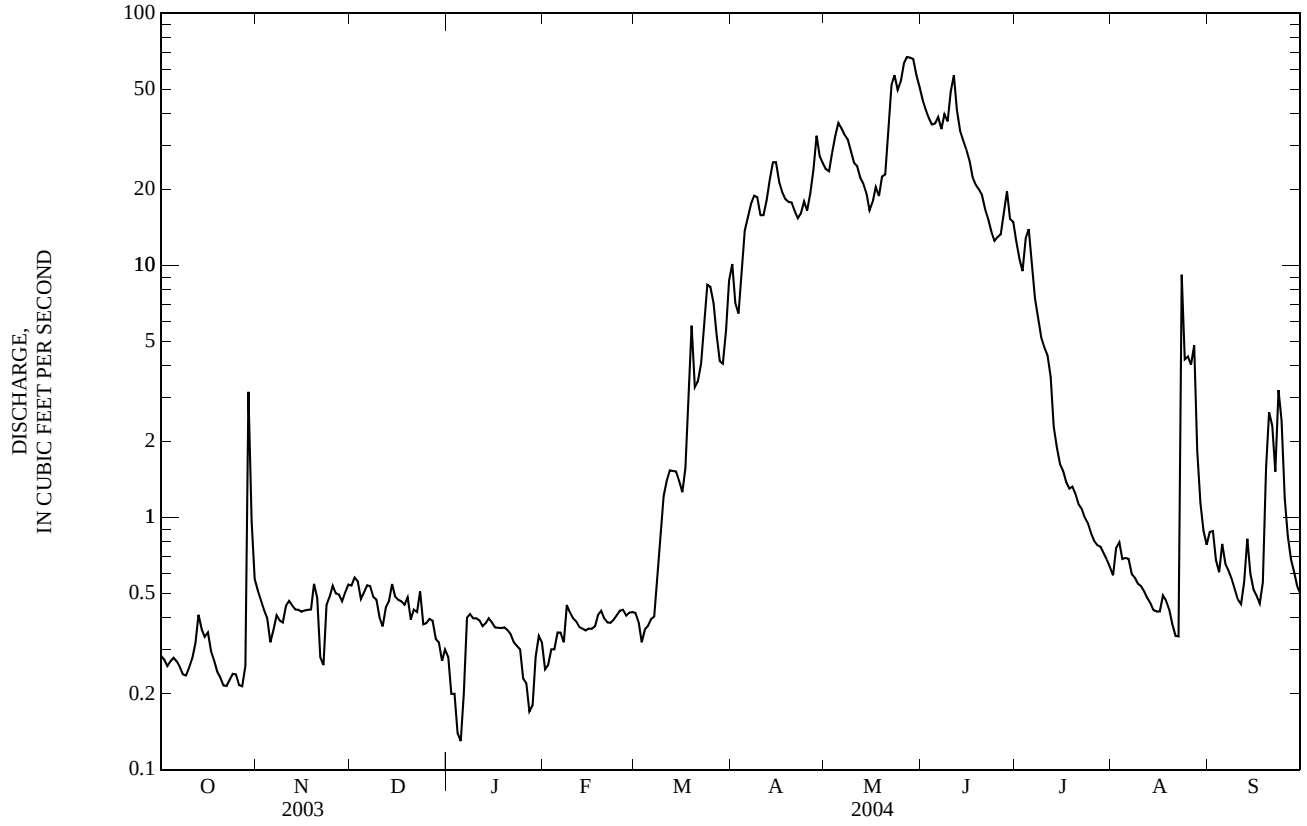
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2004, BY WATER YEAR (WY)*

MEAN	3.03	2.29	1.74	1.43	1.31	2.50	17.9	82.8	72.2	12.2	2.52	2.32
MAX	23.1	13.6	9.64	6.97	5.05	17.5	66.7	300	346	66.4	22.5	22.4
(WY)	(1966)	(1986)	(1918)	(1918)	(1921)	(1986)	(1926)	(1917)	(1975)	(1969)	(1993)	(1993)
MIN	0.19	0.22	0.17	0.14	0.06	0.07	1.50	6.14	3.01	0.34	0.13	0.23
(WY)	(1974)	(1941)	(1941)	(1941)	(2002)	(2002)	(1975)	(2000)	(2000)	(1985)	(2000)	(1935)

06062500 TENMILE CREEK NEAR RIMINI, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1915 - 2004*	
ANNUAL TOTAL	4,648.15		2,871.98			
ANNUAL MEAN	12.7		7.85		16.8	
HIGHEST ANNUAL MEAN					53.1	1917
LOWEST ANNUAL MEAN					1.74	2000
HIGHEST DAILY MEAN	170	May 29	67	May 27	1,880	May 22, 1981
LOWEST DAILY MEAN	0.20	Jan 12	0.13	Jan 5	0.00	Aug 31, 1931
ANNUAL SEVEN-DAY MINIMUM	0.22	Oct 21	0.21	Dec 31	0.00	Aug 31, 1931
MAXIMUM PEAK FLOW			73	May 26	3,290	May 22, 1981
MAXIMUM PEAK STAGE			2.49	May 26	6.20	May 22, 1981
ANNUAL RUNOFF (AC-FT)	9,220		5,700		12,140	
10 PERCENT EXCEEDS	44		26		50	
50 PERCENT EXCEEDS	0.50		0.58		2.0	
90 PERCENT EXCEEDS	0.27		0.28		0.40	

*--During period of operation (1915-1944, May 1997 to current year).
e--Estimated.



06062750 TENMILE CREEK AT TENMILE WATER TREATMENT PLANT, NEAR RIMINI, MT

LOCATION.--Lat 46°34'22", long 112°12'52" (NAD 27), in NE¼SW¼SE¼ sec. 34, T.10N., R.5W., Lewis and Clark County, Hydrologic Unit 10030101, on left bank near Tenmile Water Treatment Plant, about 0.1 mi south of U.S. Highway 12, and about 8 mi north of Rimini. Formerly published as Tenmile Creek at Helena Water Treatment Plant, near Rimini.

DRAINAGE AREA.--51.1 mi^2.

PERIOD OF RECORD.--May 1999 to September 2004 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
DEC 04...	0820	.57	8.1	190	-5.0	0.0	68	20.2	4.36	.12	<.016	<.002
APR 27...	1300	25	7.8	80	--	7.5	29	8.58	1.80	--	--	--
MAY 25...	0740	53	7.5	66	4.0	1.0	24	7.05	1.53	--	--	--
AUG 03...	0830	.68	7.8	166	16.0	14.5	64	19.7	3.65	--	--	--
SEP 21...	1230	4.5	7.8	168	8.5	7.0	65	19.5	3.92	--	--	--

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)
DEC 04...	.006	.014	13.9	15	.38	.40	2.2	1.6	<.08	.09
APR 27...	--	--	12.9	16	.66	.74	4.4	5.2	.32	1.96
MAY 25...	--	--	8.1	13	.61	.76	5.8	6.8	.34	2.28
AUG 03...	--	--	23.1	24	.56	.67	2.2	2.5	<.08	.18
SEP 21...	--	--	13.1	15	.45	.44	2.1	2.3	<.08	.39

Date	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
DEC 04...	78.1	76	89	1	<.01
APR 27...	138	144	85	5	.34
MAY 25...	134	140	79	6	.85
AUG 03...	91.4	94	80	1	<.01
SEP 21...	85.8	87	88	1	.01

463438112091801 TENMILE CREEK BELOW COLORADO GULCH, NEAR HELENA, MT

LOCATION.--Lat 46°34'38", long 112°09'18" (NAD 27), in NW¼NW¼SE¼ sec. 31, T.10N., R4W., Lewis and Clark County, Hydrologic Unit 10030101, at U.S. Highway 12 bridge over Tenmile Creek, about 0.5 mi below the mouth of Colorado Gulch, and about 5.0 mi west of Helena.

DRAINAGE AREA.--77.8 mi^2.

PERIOD OF RECORD.--April 2002 to December 2003 (discontinued).

GAGE.--None. Elevation of gage is 4,190 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Nitrite + nitrate water fltrd, mg/L as N (00631)
DEC 04...	0930	3.1	7.9	312	-1.0	6.0	130	35.8	10.1	E.09	.350

Date	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)
DEC 04...	E.001	.013	.016	10.3	11	.07	.09	1.2	1.6	<.08	.06

Date	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspnd. sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
DEC 04...	13.5	13	86	1	.01

06063000 TENMILE CREEK NEAR HELENA, MT

LOCATION.--Lat 46°36'20", long 112°05'20" (NAD 27), in SW¼NE¼SE¼ sec. 22, T.10N., R4W., Lewis and Clark County, Hydrologic Unit 10030101, at Williams Street bridge over Tenmile, about 1.2 mi southeast of Fort Harrison, and about 3.5 mi west of Helena.

DRAINAGE AREA.--96.5 mi^2.

PERIOD OF RECORD.--April 2002 to December 2003 (discontinued).

GAGE.-- Non-recording wire-weight gage on bridge. Elevation at gage is 3,960 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Nitrite + nitrate water fltrd, mg/L as N (00631)
DEC 04...	1030	3.0	8.1	360	-3.0	.5	120	36.0	8.52	E.09	.241

Date	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)
DEC 04...	E.001	E.004	.008	13.7	15	.07	.09	1.4	1.9	<.08	.12

Date	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
DEC 04...	9.0	10	80	1	.01

463747112033801 SEVENMILE CREEK AT MOUTH, NEAR HELENA, MT

LOCATION.--Lat 46°37'47", long 112°03'38" (NAD 27), in NW¼NW¼NW¼ sec. 13, T.10N., R4W., Lewis and Clark County, Hydrologic Unit 10030101, at railroad bridge over Sevenmile Creek, about 0.15 mi upstream from Tenmile Creek, about 3.2 mi northwest of Helena.

DRAINAGE AREA.--57.2 mi^2.

PERIOD OF RECORD.--April 2002 to December 2003 (discontinued).

GAGE.--None. Elevation at site is 3,850 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Nitrite + nitrate water fltrd, mg/L as N (00631)
DEC 04...	1100	5.2	7.8	506	5.5	.0	230	59.9	18.7	.14	.302

Date	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)
DEC 04...	.003	.012	.030	8.0	8	<.04	E.02	1.3	1.3	.18	.46

Date	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspnd. sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
DEC 04...	.9	E2	60	22	.31

06064100 TENMILE CREEK AT GREEN MEADOW DRIVE, AT HELENA, MT

LOCATION.--Lat 46°37'54", long 112°02'46" (NAD 27), in SW¼SE¼SE¼ sec. 12, T.10N., R4W., Lewis and Clark County, Hydrologic Unit 10030101, at Green Meadow Drive bridge over Tenmile Creek, about 1.1 mi north of Custer Avenue, and about 3 mi northwest of Helena.

DRAINAGE AREA.--161 mi^2.

PERIOD OF RECORD.--May 1997 to September 1998, April 2002 to December 2003 (discontinued).

GAGE.--None. Elevation at site is 3,820 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Nitrite + nitrate water fltrd, mg/L as N (00631)
DEC 04...	1200	7.7	8.2	455	.5	.0	200	52.8	15.4	.16	.143

Date	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)
DEC 04...	.002	.006	.019	8.7	10	E.04	.06	1.5	1.1	<.08	.37

Date	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
DEC 04...	2.9	6	97	3	.06

06065500 MISSOURI RIVER BELOW HAUSER DAM, NEAR HELENA, MT

LOCATION.--Lat 46°46'02", long 111°53'27" (NAD 27), in SE¼NW¼SW¼ sec. 29, T.12 N., R.2 W., Lewis and Clark County, Hydrologic Unit 10030101, 0.2 mi downstream from Hauser Dam, 1.3 mi upstream from Beaver Creek, 15 miles northeast of Helena, and at river mile 2,237.2.

DRAINAGE AREA.--16,876 mi^2.

PERIOD OF RECORD.--January 1923 to September 1942, October 1994 to current year. Monthly means for October, November, and December 1922 were from Congressional documents: 73rd Congress, 2nd session, H. Doc. 238, Missouri River. Published figures are in acre feet.

GAGE.--Water-stage recorder. Elevation of gage is 3,580 ft (NGVD 29).

REMARKS.--Records excellent. Flow regulated by eight small irrigation reservoirs and two power plants, Clark Canyon Reservoir (station number 06015300) and Canyon Ferry Lake (station number 06058500). Diversions for irrigation of about 594,400 acres. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were obtained during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,080	3,040	2,980	3,570	3,790	3,650	3,770	3,150	3,080	2,840	2,730	2,970
2	3,060	3,060	2,980	3,580	3,710	3,660	3,800	3,020	3,040	2,840	2,730	2,970
3	3,030	3,070	3,030	3,590	3,710	3,640	3,850	2,970	3,010	2,840	2,730	2,980
4	2,960	3,060	3,100	3,580	3,710	3,710	3,850	2,940	2,960	2,850	2,760	2,980
5	2,930	3,030	3,190	3,560	3,720	3,770	3,850	2,940	2,920	2,840	2,890	2,990
6	2,920	3,030	3,260	3,540	3,710	3,770	3,820	2,900	2,930	2,840	2,950	2,990
7	2,910	3,020	3,260	3,520	3,710	3,760	3,600	2,880	2,990	2,810	2,960	3,060
8	2,980	3,010	3,370	3,520	3,720	3,770	3,350	2,890	2,970	2,740	2,960	3,160
9	3,140	3,010	3,430	3,520	3,710	3,770	3,210	2,930	2,940	2,740	2,970	3,170
10	3,140	3,010	3,560	3,520	3,670	3,790	3,070	3,000	2,910	2,760	2,980	3,260
11	3,120	3,020	3,650	3,520	3,580	3,770	3,040	3,010	2,950	2,760	2,930	3,300
12	3,130	3,010	3,730	3,520	3,540	3,770	3,010	2,960	2,950	2,760	2,900	3,290
13	3,110	3,140	3,780	3,520	3,540	3,790	3,000	2,880	2,940	2,760	2,910	3,290
14	3,110	3,320	3,730	3,530	3,600	3,780	3,000	2,880	2,940	2,730	2,910	3,140
15	3,110	3,400	3,660	3,610	3,690	3,780	3,000	2,840	2,920	2,720	2,930	2,880
16	3,110	3,430	3,660	3,720	3,720	3,780	3,000	2,850	2,920	2,710	2,930	2,840
17	3,100	3,420	3,660	3,760	3,710	3,870	3,000	2,930	2,870	2,710	2,930	2,840
18	3,090	3,390	3,650	3,760	3,690	3,890	3,030	2,990	2,760	2,700	2,950	2,830
19	3,090	3,360	3,640	3,720	3,690	3,870	3,100	3,080	2,750	2,680	2,940	2,850
20	3,090	3,370	3,650	3,610	3,670	3,850	3,120	3,090	2,780	2,690	3,070	2,940
21	3,080	3,360	3,660	3,640	3,640	3,850	3,070	3,090	2,860	2,720	3,240	2,970
22	3,080	3,310	3,560	3,670	3,640	3,850	3,040	3,050	2,870	2,750	3,310	2,950
23	3,080	3,300	3,570	3,750	3,640	3,790	3,040	3,060	2,840	2,740	3,310	2,930
24	3,080	3,310	3,550	3,820	3,640	3,690	3,050	3,040	2,850	2,740	3,190	2,930
25	3,080	3,270	3,550	3,830	3,720	3,610	3,040	3,050	2,860	2,740	3,130	2,820
26	3,080	3,170	3,570	3,720	3,760	3,610	3,050	3,130	2,810	2,730	3,020	2,790
27	3,080	3,080	3,560	3,690	3,680	3,630	3,050	3,100	2,750	2,740	2,960	2,780
28	3,080	2,980	3,560	3,670	3,650	3,710	3,310	3,140	2,740	2,730	2,970	2,790
29	3,100	2,980	3,580	3,680	3,650	3,720	3,600	3,160	2,780	2,740	2,880	2,820
30	3,090	2,980	3,560	3,680	---	3,720	3,380	3,160	2,840	2,730	2,880	2,920
31	3,060	---	3,550	3,710	---	3,730	---	3,080	---	2,730	2,960	---
TOTAL	95,100	94,940	108,240	112,630	106,610	116,350	98,100	93,190	86,730	85,410	91,910	89,430
MEAN	3,068	3,165	3,492	3,633	3,676	3,753	3,270	3,006	2,891	2,755	2,965	2,981
MAX	3,140	3,430	3,780	3,830	3,790	3,890	3,850	3,160	3,080	2,850	3,310	3,300
MIN	2,910	2,980	2,980	3,520	3,540	3,610	3,000	2,840	2,740	2,680	2,730	2,780
AC-FT	188,600	188,300	214,700	223,400	211,500	230,800	194,600	184,800	172,000	169,400	182,300	177,400

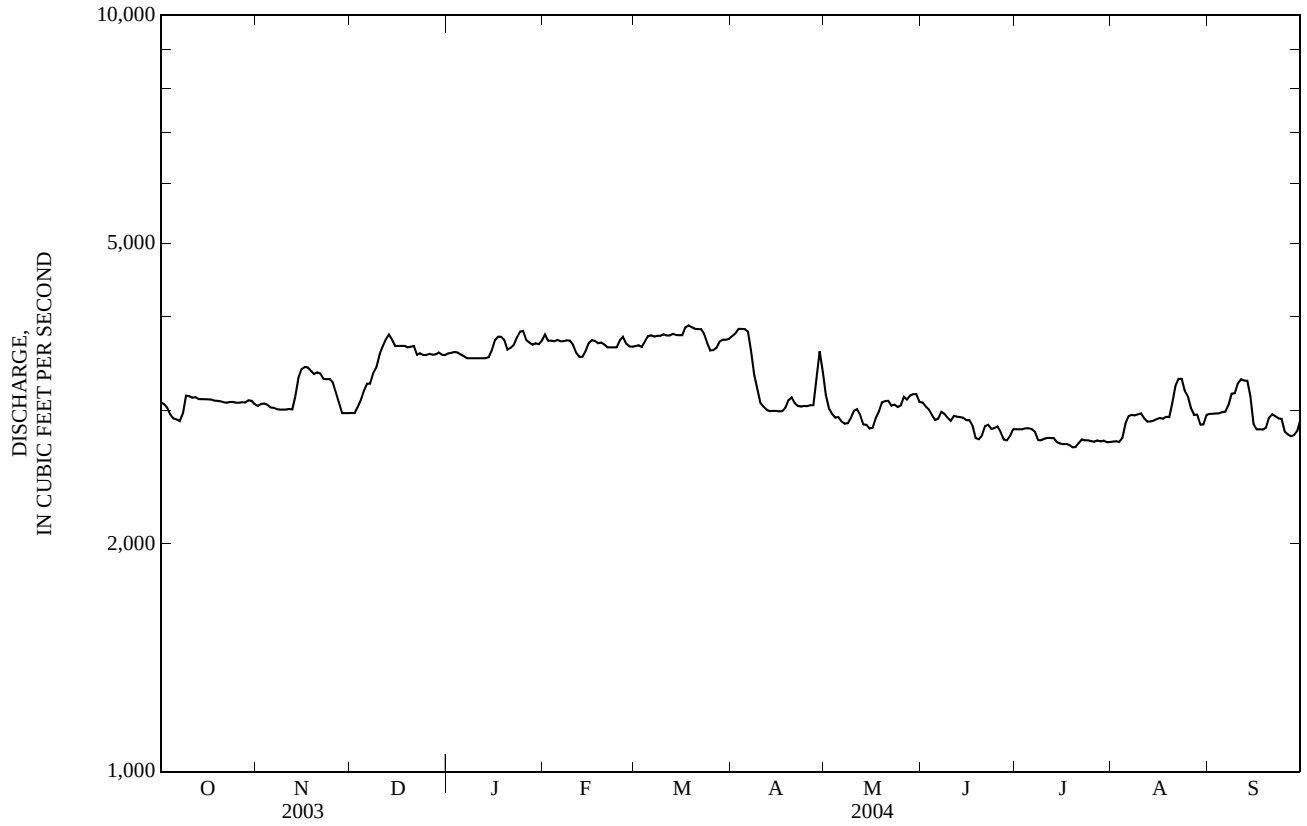
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 2004, BY WATER YEAR (WY)*

MEAN	3,540	3,630	3,595	3,565	3,767	4,389	5,199	6,841	8,146	4,280	3,060	3,250
MAX	6,489	6,021	5,622	6,665	8,101	8,271	9,227	16,340	23,540	12,020	5,797	5,684
(WY)	(1998)	(1998)	(1996)	(1997)	(1997)	(1997)	(1942)	(1928)	(1927)	(1998)	(1998)	(1995)
MIN	1,944	1,998	1,935	1,896	1,666	2,398	2,585	2,381	2,546	1,208	971	1,495
(WY)	(1935)	(1935)	(1935)	(1937)	(1938)	(1938)	(1938)	(1934)	(1934)	(1934)	(1934)	(1934)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1923 - 2004*	
ANNUAL TOTAL	1,425,860		1,178,640			
ANNUAL MEAN	3,906		3,220		4,437	
HIGHEST ANNUAL MEAN					7,862	1997
LOWEST ANNUAL MEAN					2,381	1934
HIGHEST DAILY MEAN	9,910	Jun 4	3,890	Mar 18	33,300	Jun 15, 1927
LOWEST DAILY MEAN	2,900	Aug 13	2,680	Jul 19	280	Mar 3, 1938
ANNUAL SEVEN-DAY MINIMUM	2,970	Oct 2	2,700	Jul 15	716	Aug 3, 1934
MAXIMUM PEAK FLOW			3,980	Mar 17	33,300	Jun 15, 1927
MAXIMUM PEAK STAGE			3.82	Mar 17	a78.80	Jun 15, 1927
INSTANTANEOUS LOW FLOW					280	Mar 3, 1938
ANNUAL RUNOFF (AC-FT)	2,828,000		2,338,000		3,214,000	
10 PERCENT EXCEEDS	5,780		3,720		7,520	
50 PERCENT EXCEEDS	3,630		3,080		3,640	
90 PERCENT EXCEEDS	3,070		2,790		2,070	

*During periods of operation (December 1922 to September 1942, October 1994 to present.
a--Site and datum then in use.

06065500 MISSOURI RIVER BELOW HAUSER DAM, NEAR HELENA, MT—Continued



06066500 MISSOURI RIVER BELOW HOLTER DAM, NEAR WOLF CREEK, MT

LOCATION.--Lat 46°59'41", long 112°00'37" (NAD 27), in NE¼SW¼SE¼ sec.5, T.14 N., R.3 W., Lewis and Clark County, Hydrologic Unit 10030102, on left bank 0.4 mi downstream from Holter Dam, 2.8 mi southeast of Wolf Creek, and at river mile 2,210.7.

DRAINAGE AREA.--17,149 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,464.11 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for July to September, which are fair. Flow regulated by nine smaller irrigation reservoirs and powerplants, Clark Canyon Reservoir (station number 06015300), and Canyon Ferry Lake (station number 06058500). Diversions for irrigation of about 594,400 acres. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,020	3,070	3,090	3,620	3,740	3,600	3,750	3,180	3,050	2,830	2,730	3,030
2	3,020	3,070	3,010	3,640	3,710	3,650	3,850	3,090	3,050	2,840	2,730	3,030
3	3,010	3,070	3,020	3,640	3,720	3,690	3,920	3,000	3,020	2,850	2,740	2,980
4	3,020	3,070	3,020	3,620	3,740	3,750	3,930	2,960	2,940	2,860	2,810	2,930
5	3,020	3,110	3,050	3,620	3,750	3,790	3,880	2,940	2,900	2,860	2,890	2,950
6	3,080	3,090	3,060	3,610	3,760	3,790	3,820	2,920	2,870	2,900	2,920	2,960
7	3,120	3,080	3,120	3,570	3,770	3,800	3,650	2,920	2,820	2,940	2,960	3,030
8	3,130	3,100	3,280	3,550	3,760	3,760	3,370	2,920	2,820	2,890	2,970	3,170
9	3,120	3,110	3,390	3,550	3,760	3,730	3,120	2,920	2,840	2,830	2,940	3,200
10	3,100	3,100	3,470	3,560	3,770	3,730	3,050	2,940	2,890	2,800	2,930	3,250
11	3,110	3,140	3,710	3,560	3,710	3,720	3,020	2,930	2,940	2,780	2,930	3,350
12	3,090	3,140	4,020	3,590	3,690	3,770	3,020	2,920	2,940	2,780	2,930	3,370
13	3,110	3,140	3,920	3,640	3,600	3,840	3,050	2,870	2,920	2,780	2,930	3,370
14	3,060	3,140	3,720	3,670	3,540	3,800	3,020	2,820	2,870	2,760	2,910	3,260
15	3,030	3,150	3,490	3,640	3,540	3,780	3,010	2,860	2,870	2,730	2,880	3,040
16	3,010	3,170	3,650	3,660	3,550	3,760	3,020	2,890	2,860	2,700	2,880	2,880
17	3,000	3,180	3,730	3,730	3,630	3,800	3,020	2,890	2,830	2,700	2,900	2,840
18	3,000	3,180	3,700	3,860	3,730	3,830	3,010	2,900	2,770	2,740	2,920	2,840
19	3,010	3,120	3,680	3,840	3,770	3,840	3,010	3,010	2,790	2,730	2,950	2,870
20	3,020	3,060	3,580	3,710	3,730	3,850	3,010	3,060	2,790	2,730	3,020	2,990
21	3,020	3,040	3,500	3,770	3,680	3,850	3,030	3,150	2,800	2,780	3,160	3,070
22	3,020	3,200	3,530	3,810	3,620	3,850	3,050	3,170	2,820	2,680	3,260	3,030
23	3,040	3,300	3,590	3,800	3,610	3,820	3,040	3,130	2,800	2,660	3,410	2,990
24	3,070	3,310	3,620	3,790	3,650	3,740	3,020	3,180	2,800	2,700	3,520	2,960
25	3,060	3,270	3,630	3,800	3,710	3,680	3,030	3,110	2,750	2,730	3,340	2,910
26	3,060	3,150	3,560	3,800	3,780	3,640	3,030	3,000	2,750	2,710	3,190	2,850
27	3,060	3,120	3,550	3,800	3,820	3,600	3,020	3,010	2,770	2,670	3,090	2,860
28	3,090	3,130	3,610	3,780	3,740	3,600	3,160	3,050	2,760	2,660	3,010	2,880
29	3,090	3,120	3,650	3,770	3,620	3,620	3,450	3,080	2,760	2,700	2,970	2,880
30	3,040	3,130	3,660	3,720	---	3,640	3,380	3,070	2,790	2,700	2,970	2,900
31	3,060	---	3,630	3,730	---	3,650	---	3,070	---	2,710	2,990	---
TOTAL	94,690	94,060	108,240	114,450	107,200	115,970	97,740	92,960	85,580	85,730	92,780	90,670
MEAN	3,055	3,135	3,492	3,692	3,697	3,741	3,258	2,999	2,853	2,765	2,993	3,022
MAX	3,130	3,310	4,020	3,860	3,820	3,850	3,930	3,180	3,050	2,940	3,520	3,370
MIN	3,000	3,040	3,010	3,550	3,540	3,600	3,010	2,820	2,750	2,660	2,730	2,840
AC-FT	187,800	186,600	214,700	227,000	212,600	230,000	193,900	184,400	169,700	170,000	184,000	179,800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2004, BY WATER YEAR (WY)

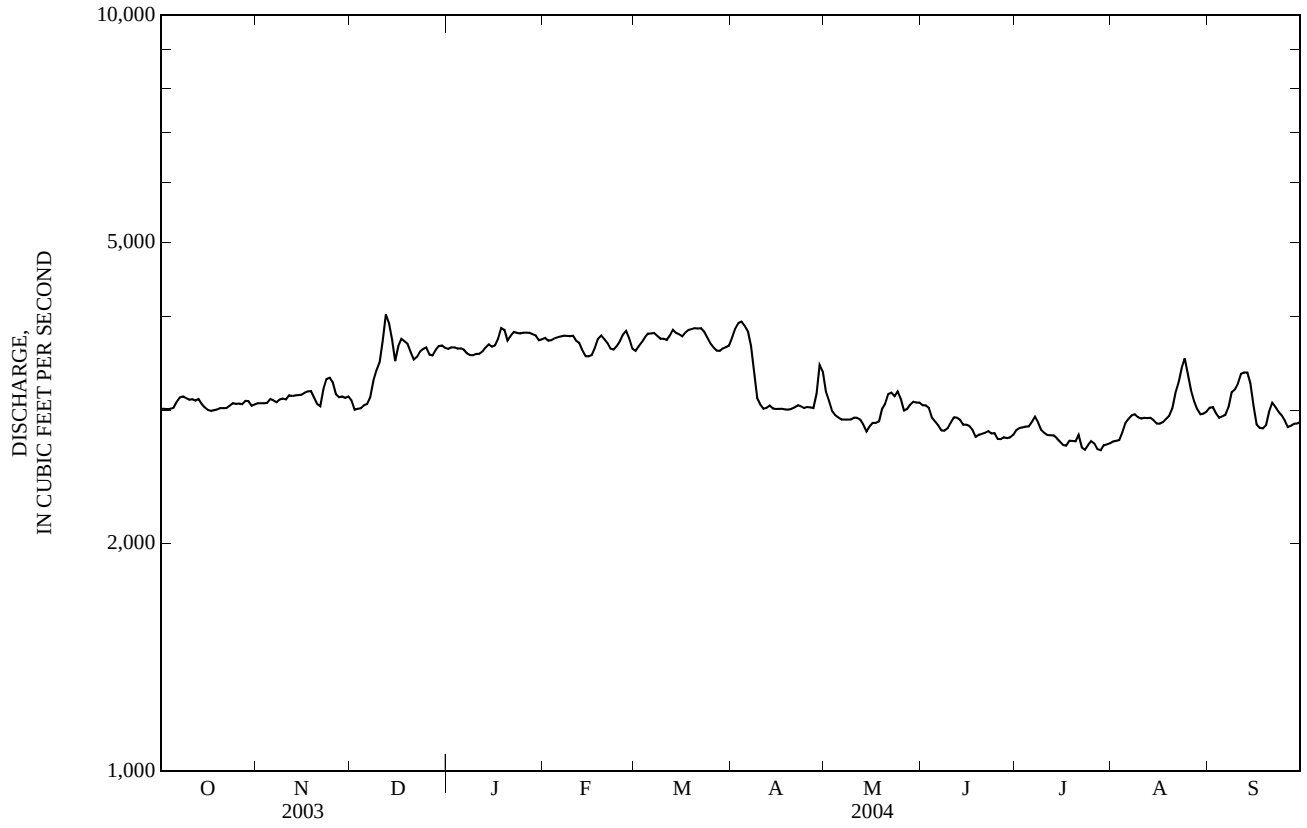
MEAN	4,469	4,772	4,974	5,020	4,975	5,098	5,531	6,744	8,917	5,865	4,249	4,193
MAX	10,140	8,500	9,645	6,637	7,954	9,186	11,130	15,710	23,370	16,580	7,590	10,010
(WY)	(1966)	(1966)	(1960)	(1997)	(1997)	(1968)	(1976)	(1948)	(1948)	(1975)	(1984)	(1984)
MIN	2,710	2,968	3,024	3,068	3,036	2,757	2,489	2,063	1,533	2,454	1,969	2,077
(WY)	(1954)	(1989)	(2002)	(2002)	(2002)	(1959)	(1959)	(1955)	(1955)	(1954)	(1954)	(1959)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1946 - 2004	
ANNUAL TOTAL	1,458,790		1,180,070			
ANNUAL MEAN	3,997		3,224		5,399	
HIGHEST ANNUAL MEAN					8,497	1984
LOWEST ANNUAL MEAN					3,008	2002
HIGHEST DAILY MEAN	9,940	Jun 4	4,020	Dec 12	34,000	Jun 8, 1948
LOWEST DAILY MEAN	2,890	Aug 15	2,660	Jul 23	747	May 27, 1962
ANNUAL SEVEN-DAY MINIMUM	3,010	Oct 16	2,690	Jul 22	1,040	May 16, 1957
MAXIMUM PEAK FLOW			a4,070	Dec 12	34,800	Jun 8, 1948
MAXIMUM PEAK STAGE			2.96	Aug 23	11.70	Jun 8, 1948
INSTANTANEOUS LOW FLOW					b250	Jul 26, 1968
ANNUAL RUNOFF (AC-FT)	2,894,000		2,341,000		3,911,000	
10 PERCENT EXCEEDS	5,960		3,770		8,030	
50 PERCENT EXCEEDS	3,720		3,080		4,690	
90 PERCENT EXCEEDS	3,060		2,800		3,030	

06066500 MISSOURI RIVER BELOW HOLTER DAM, NEAR WOLF CREEK, MT—Continued

SUMMARY STATISTICS	WATER YEARS 1946 - 1952*		WATER YEARS 1953 - 2004**	
ANNUAL MEAN	5,882		5,334	
HIGHEST ANNUAL MEAN	7,787	1948	8,497	1984
LOWEST ANNUAL MEAN	4,651	1946	3,008	2002
HIGHEST DAILY MEAN	34,000	Jun 8, 1948	25,600	Jun 20, 1964
LOWEST DAILY MEAN	1,560	Aug 31, 1946	747	May 27, 1962
ANNUAL SEVEN-DAY MINIMUM	2,310	Aug 2, 1949	1,040	May 16, 1957
MAXIMUM PEAK FLOW	34,800	Jun 8, 1948	27,100	Jun 19, 1964
MAXIMUM PEAK STAGE	11.70	Jun 8, 1948	10.04	Jun 19, 1964
INSTANTANEOUS LOW FLOW	c742	Nov 25, 1949	b250	Jul 26, 1968
ANNUAL RUNOFF (AC-FT)	4,261,000		3,864,000	
10 PERCENT EXCEEDS	10,800		7,830	
50 PERCENT EXCEEDS	4,520		4,730	
90 PERCENT EXCEEDS	3,350		3,020	

*--Before Canyon Ferry Dam completion.
**--After Canyon Ferry Dam completion.
a--Gage height, 2.87 ft.
b--Gage height, 0.18 ft.
c--Probably less than; during power plant operation.



WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--October 1999 to current year.
WATER TEMPERATURE: October 1999 to current year.

INSTRUMENTATION.--Temperature probe installed Sept. 30, 1999.

REMARKS--Daily water temperature records rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE : Maximum, 21.0°C, July 25, 2002; minimum, 1.0°C, many days during winter period.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 20.0°C, July 20, 25, 26, and Aug. 3; minimum, 1.0°C, many days December through February.

06066500 MISSOURI RIVER BELOW HOLTER DAM, NEAR WOLF CREEK, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.5	14.0	14.5	10.0	9.5	10.0	3.5	3.0	3.5	1.0	1.0	1.0
2	14.5	13.5	14.0	9.5	9.5	9.5	3.5	3.0	3.5	1.0	1.0	1.0
3	14.5	13.5	14.0	9.5	9.0	9.5	3.5	3.0	3.0	1.5	1.0	1.0
4	14.5	14.0	14.0	9.5	9.0	9.0	3.5	3.0	3.5	1.0	1.0	1.0
5	14.5	14.0	14.0	9.0	8.5	8.5	3.0	3.0	3.0	1.0	1.0	1.0
6	14.5	14.0	14.0	8.5	8.0	8.0	3.0	3.0	3.0	1.0	1.0	1.0
7	14.5	14.0	14.0	8.0	7.5	7.5	3.0	3.0	3.0	1.0	1.0	1.0
8	14.5	14.0	14.0	7.5	7.0	7.5	3.0	3.0	3.0	1.5	1.0	1.0
9	14.0	13.5	14.0	7.5	7.0	7.0	3.0	2.5	2.5	1.5	1.0	1.0
10	14.0	13.5	13.5	7.0	7.0	7.0	3.0	2.5	2.5	1.5	1.0	1.0
11	13.5	13.0	13.5	7.0	7.0	7.0	3.0	2.0	2.5	1.5	1.0	1.0
12	13.5	13.0	13.0	7.0	6.5	7.0	2.5	2.0	2.0	1.5	1.0	1.0
13	13.0	13.0	13.0	7.0	6.5	6.5	2.5	2.0	2.0	1.5	1.0	1.0
14	13.0	12.5	13.0	6.5	6.5	6.5	2.5	2.0	2.0	1.0	1.0	1.0
15	13.0	12.5	12.5	6.5	6.0	6.5	2.0	2.0	2.0	1.0	1.0	1.0
16	12.5	12.5	12.5	6.5	6.0	6.5	2.0	2.0	2.0	1.0	1.0	1.0
17	12.5	12.5	12.5	6.5	6.0	6.0	2.0	2.0	2.0	1.0	1.0	1.0
18	13.0	12.5	12.5	6.0	6.0	6.0	2.0	2.0	2.0	1.0	1.0	1.0
19	13.0	12.5	12.5	6.0	5.5	6.0	2.0	1.5	2.0	1.5	1.0	1.0
20	13.0	12.5	12.5	6.0	5.5	5.5	2.0	1.5	2.0	1.5	1.0	1.0
21	13.0	12.5	12.5	5.5	5.0	5.5	2.0	1.5	2.0	1.5	1.0	1.0
22	13.0	12.5	13.0	5.0	4.5	5.0	1.5	1.5	1.5	1.5	1.0	1.0
23	12.5	12.0	12.5	5.0	4.5	4.5	1.5	1.5	1.5	1.5	1.0	1.0
24	12.5	12.0	12.0	4.5	4.0	4.5	1.5	1.5	1.5	1.5	1.0	1.0
25	12.0	12.0	12.0	4.0	4.0	4.0	1.5	1.5	1.5	1.0	1.0	1.0
26	12.0	11.5	12.0	4.0	3.5	3.5	1.5	1.5	1.5	1.5	1.0	1.0
27	12.0	11.5	11.5	3.5	3.0	3.5	1.5	1.5	1.5	1.0	1.0	1.0
28	11.5	11.5	11.5	3.5	3.5	3.5	1.5	1.0	1.0	1.5	1.0	1.0
29	11.5	11.0	11.0	3.5	3.0	3.5	1.0	1.0	1.0	1.5	1.0	1.0
30	11.0	10.5	10.5	3.5	3.0	3.5	1.5	1.0	1.0	1.5	1.0	1.0
31	10.5	10.0	10.5	---	---	---	1.5	1.0	1.0	1.5	1.0	1.0
MONTH	14.5	10.0	13.0	10.0	3.0	6.5	3.5	1.0	2.0	1.5	1.0	1.0
		FEBRUARY			MARCH			APRIL			MAY	
1	1.5	1.0	1.0	2.0	1.5	2.0	4.5	4.0	4.0	10.5	8.0	9.0
2	1.5	1.0	1.0	2.0	1.5	2.0	4.5	4.0	4.0	10.5	8.5	9.5
3	1.5	1.0	1.0	2.0	1.5	2.0	5.0	4.0	4.5	9.5	8.5	9.0
4	1.0	1.0	1.0	2.0	2.0	2.0	5.0	4.5	5.0	10.5	8.5	9.5
5	1.0	1.0	1.0	2.0	2.0	2.0	6.0	5.0	5.5	9.5	8.0	9.0
6	1.0	1.0	1.0	2.0	1.5	2.0	6.0	4.5	5.5	9.5	8.0	9.0
7	1.0	1.0	1.0	2.0	2.0	2.0	5.5	4.5	5.0	10.5	8.5	10.0
8	1.0	1.0	1.0	2.5	2.0	2.0	6.0	5.0	5.5	11.0	9.0	10.0
9	1.0	1.0	1.0	2.5	2.0	2.0	5.0	4.5	5.0	11.5	9.0	10.0
10	1.0	1.0	1.0	2.5	2.0	2.5	6.0	5.0	5.5	10.0	8.5	9.0
11	1.0	1.0	1.0	2.5	2.0	2.5	7.0	5.5	6.0	9.0	7.5	8.0
12	1.5	1.0	1.0	2.5	2.5	2.5	7.5	6.5	7.0	9.5	7.5	8.5
13	1.5	1.0	1.0	2.5	2.5	2.5	7.5	6.5	7.0	11.0	9.0	10.0
14	1.0	1.0	1.0	2.5	2.5	2.5	6.5	6.0	6.5	11.0	10.0	10.5
15	1.5	1.0	1.0	2.5	2.5	2.5	7.0	6.0	6.5	11.0	9.5	10.0
16	1.5	1.0	1.0	2.5	2.5	2.5	7.5	6.5	7.0	10.0	9.0	9.5
17	1.5	1.0	1.5	2.5	2.5	2.5	7.5	6.5	7.0	10.5	9.5	10.0
18	1.5	1.0	1.5	3.0	2.5	2.5	7.0	6.5	6.5	10.5	9.5	10.0
19	1.5	1.0	1.5	3.0	2.5	2.5	8.5	7.0	8.0	11.5	9.5	10.5
20	1.5	1.5	1.5	3.0	2.5	2.5	8.5	7.5	8.0	11.0	10.0	10.5
21	1.5	1.0	1.5	3.0	2.5	3.0	8.5	7.5	8.0	10.0	9.5	10.0
22	1.5	1.5	1.5	3.0	2.5	3.0	8.0	7.5	7.5	10.5	9.0	10.0
23	2.0	1.5	1.5	3.0	3.0	3.0	9.0	7.5	8.5	9.0	8.5	8.5
24	2.0	1.5	1.5	3.5	3.0	3.0	8.5	7.5	8.0	10.5	9.0	9.5
25	2.0	1.5	1.5	3.5	3.0	3.0	8.5	7.5	8.0	11.0	10.0	10.5
26	2.0	1.5	1.5	3.5	3.0	3.5	10.0	7.5	9.0	11.0	10.5	10.5
27	2.0	1.5	1.5	3.5	3.0	3.5	10.0	7.5	9.0	11.5	10.5	11.0
28	2.0	1.5	1.5	4.0	3.0	3.5	7.5	6.0	6.5	11.0	10.5	11.0
29	2.0	1.5	1.5	4.0	3.5	3.5	9.0	6.5	8.0	11.5	10.0	11.0
30	---	---	---	4.0	3.5	4.0	9.0	8.5	8.5	11.5	10.0	10.5
31	---	---	---	5.0	4.0	4.5	---	---	---	11.5	10.5	11.0
MONTH	2.0	1.0	1.0	5.0	1.5	2.5	10.0	4.0	6.5	11.5	7.5	10.0

06066500 MISSOURI RIVER BELOW HOLTER DAM, NEAR WOLF CREEK, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.5	11.0	11.5	17.5	15.0	16.0	19.0	17.0	18.0	17.5	16.5	17.0
2	13.0	11.0	12.0	17.0	16.0	17.0	18.5	17.0	18.0	17.0	15.5	16.5
3	12.5	11.5	12.0	17.5	16.0	16.5	20.0	18.0	19.0	17.0	16.0	16.5
4	13.5	12.0	12.5	17.5	15.0	16.0	19.5	18.0	18.5	17.0	16.0	16.5
5	15.0	11.5	13.0	17.0	15.0	16.0	19.0	18.0	18.5	16.5	16.0	16.5
6	13.0	11.0	12.0	18.0	16.0	17.0	19.5	18.5	19.0	16.5	16.0	16.5
7	13.5	10.5	12.0	17.0	15.5	16.5	18.5	17.0	18.0	16.5	16.0	16.5
8	12.0	10.5	11.5	17.0	15.5	16.5	18.5	18.0	18.5	17.0	15.5	16.0
9	11.5	11.0	11.5	18.0	16.0	17.0	18.0	17.5	18.0	16.5	16.0	16.0
10	13.0	11.0	12.5	17.0	16.5	17.0	18.5	17.5	18.0	16.5	15.5	16.0
11	13.0	11.5	12.5	17.5	16.0	16.5	18.5	18.0	18.0	17.0	16.0	16.5
12	13.5	11.5	12.5	17.5	16.5	17.0	18.5	18.0	18.0	16.5	15.5	16.0
13	13.5	11.0	12.5	17.5	16.5	17.0	18.5	17.5	18.0	16.5	15.5	16.0
14	13.5	11.0	12.5	18.0	17.0	17.5	18.5	17.5	18.0	16.0	15.5	16.0
15	13.0	10.5	12.0	18.5	17.0	17.5	18.0	17.5	18.0	16.0	15.5	16.0
16	13.5	12.0	13.0	18.5	17.5	18.0	18.0	17.5	18.0	16.0	15.5	15.5
17	13.0	11.5	12.5	19.0	17.5	18.0	19.0	17.5	18.5	16.0	15.5	15.5
18	13.0	12.5	12.5	18.5	17.0	18.0	18.5	17.0	18.0	15.5	15.0	15.5
19	13.0	12.5	12.5	19.5	17.5	18.5	19.5	17.5	18.5	15.5	14.5	15.0
20	14.0	12.0	13.0	20.0	17.5	18.5	19.5	17.5	18.5	15.0	14.5	14.5
21	14.0	12.5	13.5	19.0	17.5	18.5	19.5	17.5	18.5	15.0	14.5	14.5
22	14.5	13.0	13.5	18.5	16.5	17.5	18.5	17.5	18.0	14.5	14.5	14.5
23	15.5	13.0	14.0	19.0	17.5	18.0	18.5	17.5	18.0	14.5	14.5	14.5
24	14.0	13.0	13.5	19.5	18.0	18.5	18.5	17.5	18.0	15.0	14.5	14.5
25	14.5	13.0	14.0	20.0	18.0	19.0	18.5	17.5	18.0	15.0	14.5	14.5
26	14.5	13.5	14.0	20.0	17.5	19.0	17.5	17.0	17.5	14.5	14.0	14.5
27	15.0	13.5	14.0	18.5	16.5	17.5	18.0	17.0	17.5	14.5	14.0	14.0
28	16.0	14.5	15.0	19.0	18.0	18.5	17.5	17.0	17.0	15.0	14.0	14.5
29	17.0	15.0	15.5	19.0	18.0	18.5	17.5	16.5	17.0	14.5	13.5	14.0
30	16.0	14.5	15.0	19.5	18.0	18.5	17.5	17.0	17.0	14.0	13.5	13.5
31	---	---	---	19.5	18.0	18.5	18.0	16.5	17.0	---	---	---
MONTH	17.0	10.5	13.0	20.0	15.0	17.5	20.0	16.5	18.0	17.5	13.5	15.5

06071300 LITTLE PRICKLY PEAR CREEK AT WOLF CREEK, MT

LOCATION.--Lat 47°00'19", long 112°04'10" (NAD 27), in NE¼NW¼NE¼ sec.2, T.14N., R.4W., Lewis and Clark County, Hydrologic Unit 10030102, on right bank 30 ft downstream from Interstate 15 access road bridge, 500 ft southwest of Wolf Creek Post Office, 0.5 mi downstream from Wolf Creek, and at river mile 3.2.

DRAINAGE AREA.--381 mi^2.

PERIOD OF RECORD.--May 1962 to September 1967, October 1991 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,547.38 ft (NGVD 29). May 10, 1962 to July 6, 1965, water-stage recorder on left bank at present elevation. July 7, 1965 to Apr. 11, 1966, non-recording gage on bridge 0.25 mi upstream at elevation 3.27 ft higher. Apr. 12, 1966 to Sept. 30, 1967, water-stage recorder on right bank 23 ft upstream at present elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 2,500 acres upstream from station. U.S.Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 7, 1975, reached a stage of 7.45 ft, present elevation, from floodmarks, discharge, 4,500 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	34	51	e32	e35	48	90	54	137	69	23	27
2	26	41	50	e25	39	47	94	53	129	61	24	26
3	26	39	51	e22	39	48	87	53	118	58	25	25
4	25	35	50	e20	36	48	88	53	104	61	26	25
5	25	33	46	e20	38	49	91	55	98	65	29	25
6	25	40	48	e30	35	47	96	55	95	59	36	25
7	26	42	51	e40	39	47	106	56	94	56	34	25
8	27	43	48	e42	40	77	99	58	99	54	29	25
9	26	50	45	44	40	146	107	60	103	52	29	24
10	26	53	41	44	39	104	107	61	98	50	27	24
11	27	58	35	45	38	80	106	68	95	51	25	23
12	28	57	41	42	26	74	103	71	88	47	22	24
13	28	53	50	41	28	77	97	69	84	46	21	30
14	28	51	48	42	34	72	94	68	80	42	22	29
15	29	51	45	39	43	68	97	67	76	41	23	28
16	32	50	44	40	42	65	99	66	74	41	21	27
17	31	51	45	38	41	68	89	67	76	39	20	27
18	28	52	41	34	45	73	79	64	75	37	24	27
19	28	58	33	38	48	78	75	68	76	37	31	32
20	28	57	37	39	50	76	70	67	74	35	36	45
21	28	46	46	38	49	72	67	74	68	33	30	39
22	28	28	43	38	46	69	65	92	66	29	27	35
23	29	33	36	39	44	70	63	128	66	27	42	33
24	29	47	40	39	45	74	55	159	63	27	41	32
25	30	51	45	e20	48	78	54	166	61	26	35	30
26	31	52	42	e20	51	79	54	207	62	23	34	29
27	32	51	41	e18	50	76	54	218	60	23	35	29
28	32	50	e38	e20	50	73	57	205	60	24	33	29
29	39	51	e35	e30	47	70	56	184	58	23	33	29
30	41	53	e30	e40	---	69	55	163	57	23	31	29
31	35	---	e35	e37	---	71	---	148	---	22	29	---
TOTAL	899	1,410	1,331	1,056	1,205	2,193	2,454	2,977	2,494	1,281	897	857
MEAN	29.0	47.0	42.9	34.1	41.6	70.7	81.8	96.0	83.1	41.3	28.9	28.6
MAX	41	58	51	45	51	146	107	218	137	69	42	45
MIN	25	28	30	18	26	47	54	53	57	22	20	23
AC-FT	1,780	2,800	2,640	2,090	2,390	4,350	4,870	5,900	4,950	2,540	1,780	1,700

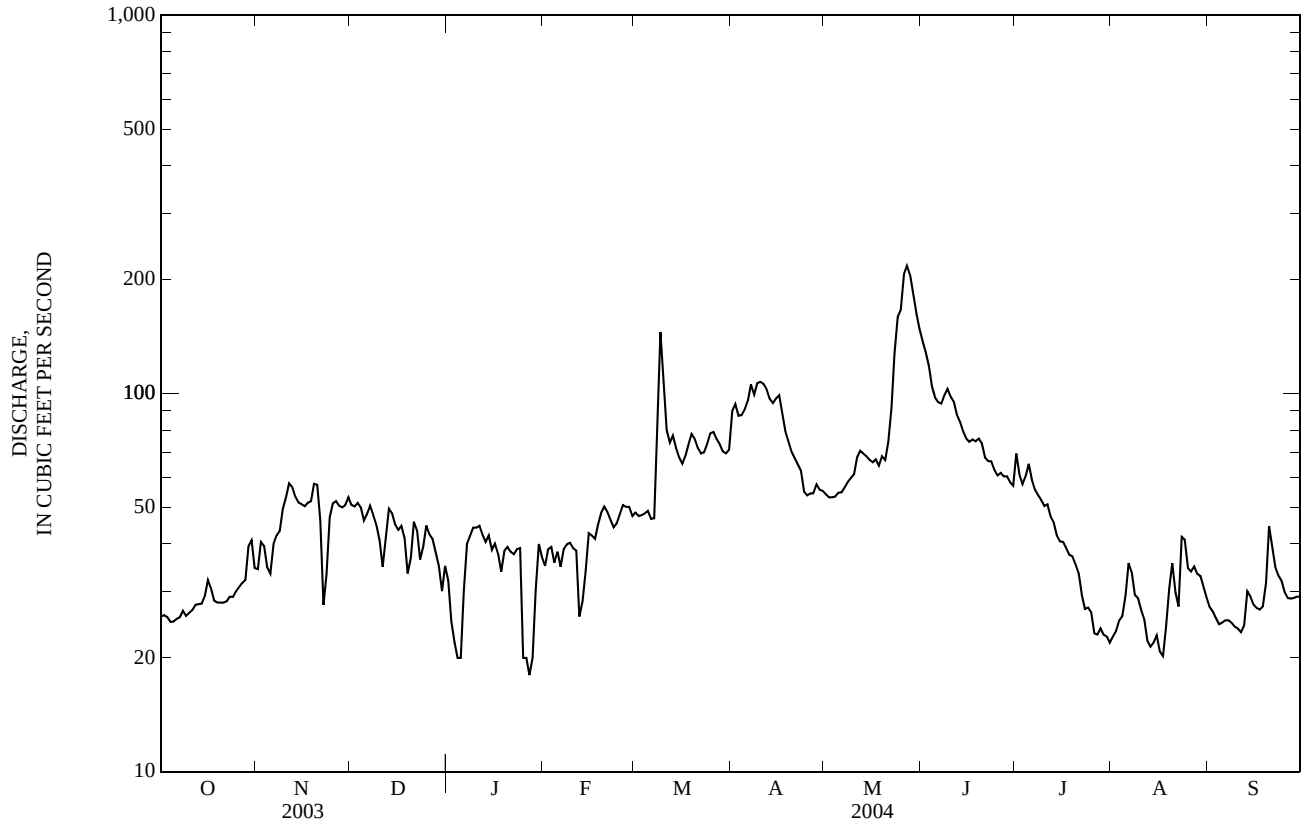
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2004, BY WATER YEAR (WY)*

MEAN	50.3	53.1	49.0	43.5	59.2	68.4	132	224	197	78.9	44.4	47.7
MAX	131	98.5	74.9	69.1	190	109	372	580	684	175	95.4	127
(WY)	(1966)	(1966)	(1966)	(1965)	(1996)	(2003)	(1965)	(1965)	(1967)	(1965)	(1993)	(1965)
MIN	29.0	31.5	26.0	30.8	29.3	42.0	64.8	35.5	25.5	17.7	14.2	18.5
(WY)	(2004)	(1993)	(2002)	(1993)	(2001)	(2002)	(2000)	(1992)	(1992)	(2000)	(2000)	(2000)

06071300 LITTLE PRICKLY PEAR CREEK AT WOLF CREEK, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1962 - 2004*	
ANNUAL TOTAL	24,534		19,054			
ANNUAL MEAN	67.2		52.1		86.4	
HIGHEST ANNUAL MEAN					179	1965
LOWEST ANNUAL MEAN					35.2	2000
HIGHEST DAILY MEAN	506	Mar 14	218	May 27	2,440	Jun 9, 1964
LOWEST DAILY MEAN	18	Jan 10	18	Jan 27	10	Aug 13, 1992
ANNUAL SEVEN-DAY MINIMUM	21	Aug 15	22	Aug 12	11	Jul 29, 2000
MAXIMUM PEAK FLOW			a225	May 27	3,110	Jun 9, 1964
MAXIMUM PEAK STAGE			b4.11	Jan 28	7.65	Jun 9, 1964
INSTANTANEOUS LOW FLOW					c9.6	Aug 2, 2000
ANNUAL RUNOFF (AC-FT)	48,660		37,790		62,620	
10 PERCENT EXCEEDS	155		90		166	
50 PERCENT EXCEEDS	43		44		53	
90 PERCENT EXCEEDS	25		25		27	

*--During period of operation (May 1962 to September 1967, October 1991 to current year).
a--Gage height, 3.76 ft.
b--Backwater from ice.
c--Gage height, 2.54 ft.
e--Estimated.



06073500 DEARBORN RIVER NEAR CRAIG, MT

LOCATION.--Lat 47°11'57", long 112°05'44" (NAD 27), in NW¼ NW¼ SE¼ sec.27, T. 17 N., R. 4 W., Lewis and Clark County, Hydrologic Unit 10030102, on left bank at upstream side of bridge on U.S. Highway 287, 7.0 mi downstream from South Fork Dearborn River, 10.5 mi northwest of Craig, 13.5 mi north of Wolf Creek, and at river mile 19.0.

DRAINAGE AREA.--325 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to September 1969, October 1993 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,800 ft (NGVD 29). Oct. 1, 1945 to Sept. 30, 1946, nonrecording gage; Oct. 1, 1946 to June 9, 1964, water-stage recorder on upstream side of bridge; June 10, 1964 to May 31, 1965, nonrecording gage; June 1, 1965 to Sept. 30 1969, water-stage recorder on downstream side of abandoned bridge 0.2 mi downstream, all at same previous elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	e25	e40	e25	e30	35	99	247	531	180	54	27
2	31	e35	44	e20	e30	35	101	250	461	171	56	26
3	31	e33	42	e17	e30	e28	98	273	437	170	61	26
4	31	e30	40	e15	e30	e30	108	320	415	181	58	26
5	31	e28	40	e15	e32	e30	120	370	430	212	55	25
6	30	e30	45	e20	e33	33	133	385	477	184	54	25
7	28	e32	41	e30	e35	36	152	375	424	166	52	24
8	29	e35	34	e35	e35	45	172	325	392	157	54	24
9	29	e40	30	e40	e35	51	207	318	377	146	51	23
10	29	e45	e25	e45	e35	54	196	300	346	148	46	22
11	31	50	e22	e45	e30	50	188	308	318	151	46	21
12	31	48	e25	e43	e25	47	187	270	290	136	43	22
13	30	45	e30	e40	e27	51	199	235	274	129	42	23
14	31	43	e35	e42	e30	49	225	218	263	125	39	23
15	32	41	e38	e45	e32	48	243	205	252	120	39	22
16	35	40	e40	e45	e34	48	234	189	236	113	39	21
17	31	39	e40	e42	e36	49	220	181	262	108	38	21
18	30	38	e38	e40	e38	51	211	177	245	105	45	21
19	30	41	e40	e42	e40	55	197	211	228	105	38	26
20	29	41	e45	e40	e39	57	195	237	222	98	36	38
21	29	e30	e42	e40	e38	57	181	312	207	92	33	41
22	29	e17	e40	e45	37	57	173	404	195	87	30	44
23	28	e20	e40	e45	38	58	168	543	196	84	45	45
24	29	e30	e45	e40	40	61	171	561	191	80	43	45
25	29	e35	e40	e30	40	66	176	595	190	70	38	44
26	29	e35	e35	e25	38	70	176	690	197	66	36	45
27	28	e35	e30	e20	37	70	189	785	191	64	37	46
28	29	e40	e23	e25	35	69	266	820	182	66	33	47
29	34	e45	e20	e30	35	68	276	774	181	64	33	47
30	34	e40	e22	e35	---	69	262	672	189	62	31	48
31	e28	---	e30	e32	---	72	---	575	---	58	29	---
TOTAL	937	1,086	1,101	1,053	994	1,599	5,523	12,125	8,799	3,698	1,334	938
MEAN	30.2	36.2	35.5	34.0	34.3	51.6	184	391	293	119	43.0	31.3
MAX	35	50	45	45	40	72	276	820	531	212	61	48
MIN	28	17	20	15	25	28	98	177	181	58	29	21
AC-FT	1,860	2,150	2,180	2,090	1,970	3,170	10,950	24,050	17,450	7,330	2,650	1,860

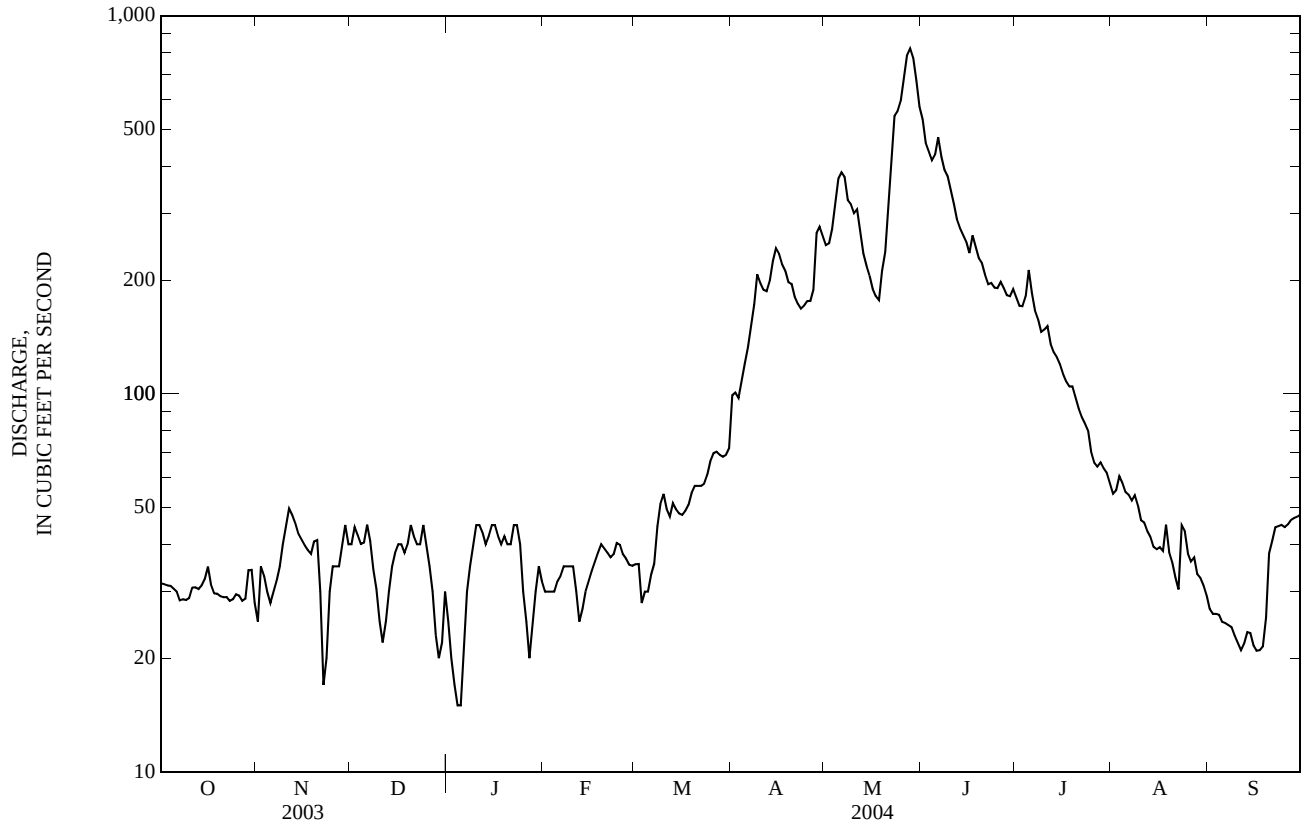
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2004, BY WATER YEAR (WY)*

MEAN	72.4	73.3	65.1	55.2	59.7	85.0	235	676	754	206	66.7	56.2
MAX	187	165	155	104	184	187	519	1,337	2,104	583	163	230
(WY)	(1966)	(1947)	(1947)	(1947)	(1996)	(1947)	(1969)	(1995)	(1964)	(1951)	(1951)	(1993)
MIN	17.0	33.8	23.9	22.2	22.5	33.8	51.0	135	113	27.2	13.1	18.8
(WY)	(1957)	(2002)	(2002)	(2002)	(2002)	(2002)	(1961)	(2000)	(2000)	(2000)	(2000)	(1956)

06073500 DEARBORN RIVER NEAR CRAIG, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1946 - 2004*	
ANNUAL TOTAL	41,259		39,187			
ANNUAL MEAN	113		107		200	
HIGHEST ANNUAL MEAN					363	1948
LOWEST ANNUAL MEAN					58.3	2000
HIGHEST DAILY MEAN	905	Mar 13	820	May 28	12,500	Jun 9, 1964
LOWEST DAILY MEAN	15	Jan 10	15	Jan 4	8.5	Aug 17, 1961
ANNUAL SEVEN-DAY MINIMUM	18	Sep 2	20	Dec 31	11	Aug 14, 1961
MAXIMUM PEAK FLOW			860	May 29	a15,400	Jun 9, 1964
MAXIMUM PEAK STAGE			4.72	May 29	b13.50	Jun 9, 1964
INSTANTANEOUS LOW FLOW					c8.0	Aug 17, 1961
ANNUAL RUNOFF (AC-FT)	81,840		77,730		145,000	
10 PERCENT EXCEEDS	319		264		540	
50 PERCENT EXCEEDS	40		44		74	
90 PERCENT EXCEEDS	23		26		34	

*--During periods of operation (October 1945 to September 1969, October 1993 to current year).
a--From rating curve extended above 7,000 ft3/s on basis of slope-area measurement of peak flow.
b--From floodmark.
c--Site and datum then in use.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1999 to to current year.

PERIOD OF DAILY RECORD.--August to September 1991, November 1993 to current year.

INSTRUMENTATION.--Temperature recorder installed Nov. 3, 1993.

REMARKS.--Daily water temperature record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 28.5°C, Aug. 1, 2, 2000; minimum, 0.0°C on many days during winter.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 26.0°C, July 16; minimum, 0.0°C on many days October through March.

06073500 DEARBORN RIVER NEAR CRAIG, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.5	7.0	11.0	1.0	0.5	0.5	2.5	0.5	1.0	0.0	0.0	0.0
2	15.5	7.5	11.5	1.0	0.5	0.5	4.5	2.0	3.0	0.0	0.0	0.0
3	15.0	7.0	11.0	1.5	0.0	0.5	4.5	1.0	3.0	0.0	0.0	0.0
4	15.5	7.0	11.0	0.5	0.0	0.5	2.5	0.5	1.0	0.0	0.0	0.0
5	16.5	7.5	12.0	0.5	0.0	0.0	2.0	0.0	1.0	0.5	0.0	0.0
6	16.5	8.5	12.0	0.5	0.0	0.0	5.0	2.0	3.0	0.5	0.0	0.0
7	13.5	10.5	12.0	0.5	0.0	0.5	4.0	0.5	2.5	0.5	0.0	0.5
8	16.0	10.0	12.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5
9	13.5	9.5	11.5	0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.0	0.0
10	11.5	6.5	9.0	3.0	0.5	1.5	0.5	0.5	0.5	0.5	0.0	0.0
11	9.0	5.0	7.0	3.5	1.5	2.5	1.0	0.0	0.5	0.5	0.0	0.0
12	13.0	6.5	9.0	3.0	0.5	1.5	1.0	0.5	0.5	0.5	0.0	0.0
13	12.5	6.5	9.0	4.5	0.5	2.5	1.0	0.5	0.5	0.5	0.0	0.0
14	9.5	5.5	7.5	5.0	0.5	2.5	0.5	0.5	0.5	0.5	0.0	0.0
15	10.0	6.0	8.0	5.0	1.0	3.0	1.0	0.5	0.5	0.5	0.0	0.0
16	9.5	6.0	7.5	4.5	2.0	3.0	0.5	0.5	0.5	0.5	0.0	0.0
17	14.5	8.5	11.0	4.5	2.0	3.0	0.5	0.5	0.5	0.5	0.0	0.0
18	14.5	8.0	11.0	5.5	1.5	3.5	1.0	0.5	0.5	0.5	0.0	0.0
19	14.0	8.0	10.5	7.0	4.0	5.5	1.0	0.5	0.5	0.5	0.0	0.0
20	13.5	9.0	11.0	4.5	1.0	2.5	1.0	0.5	0.5	0.5	0.0	0.0
21	15.0	11.0	12.5	1.0	0.0	0.5	1.0	0.5	0.5	0.5	0.0	0.5
22	14.5	8.5	11.0	1.0	0.5	0.5	1.0	0.5	0.5	0.5	0.0	0.5
23	12.0	7.5	9.5	1.0	0.5	0.5	1.0	0.5	0.5	0.5	0.0	0.0
24	9.5	4.5	6.5	0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.0	0.0
25	9.0	2.5	5.5	0.5	0.5	0.5	1.0	0.5	0.5	0.0	0.0	0.0
26	11.5	5.5	8.0	0.5	0.0	0.5	0.5	0.0	0.5	0.0	0.0	0.0
27	9.5	7.5	9.0	0.5	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0
28	10.0	6.0	8.0	1.0	0.5	0.5	1.0	0.0	0.5	0.0	0.0	0.0
29	9.5	0.5	4.5	1.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
30	0.5	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5	0.0	0.0
31	1.0	0.5	0.5	---	---	---	0.0	0.0	0.0	0.5	0.0	0.0
MONTH	16.5	0.0	9.0	7.0	0.0	1.5	5.0	0.0	1.0	0.5	0.0	0.0
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	3.5	1.5	2.5	9.0	3.0	5.5	15.5	6.0	10.5
2	0.5	0.0	0.0	3.0	0.0	1.5	8.0	2.5	5.5	12.5	8.0	10.5
3	0.5	0.0	0.0	0.5	0.0	0.5	11.5	3.5	7.5	14.0	8.0	11.0
4	0.5	0.0	0.0	1.5	0.0	0.5	11.5	6.0	8.5	14.5	7.5	11.0
5	0.5	0.0	0.0	3.5	0.0	1.5	13.0	4.5	8.5	14.0	9.0	11.5
6	0.5	0.0	0.0	4.5	0.0	1.5	14.5	7.0	10.0	12.5	7.0	10.0
7	0.5	0.0	0.0	6.0	0.0	3.0	13.5	5.5	9.0	14.0	8.0	11.0
8	0.5	0.0	0.0	11.0	4.0	7.0	9.5	6.0	8.0	14.0	9.0	11.5
9	0.5	0.0	0.0	10.0	4.0	6.5	9.0	4.0	6.5	14.0	7.5	10.5
10	0.5	0.0	0.0	8.0	2.5	5.0	10.5	4.0	7.0	11.0	6.0	7.5
11	0.5	0.0	0.0	8.5	1.0	4.5	13.0	4.5	8.5	6.5	4.0	5.0
12	0.5	0.0	0.0	10.0	3.0	5.5	14.0	5.5	9.5	7.5	3.5	5.5
13	0.5	0.0	0.0	8.0	2.0	5.0	13.5	6.5	10.0	10.5	4.5	7.5
14	0.5	0.0	0.0	7.0	1.5	4.0	13.0	7.5	10.0	12.5	6.0	9.0
15	0.5	0.0	0.0	4.0	1.5	3.5	9.5	6.0	7.5	14.0	6.5	10.5
16	0.5	0.0	0.0	5.0	2.5	4.0	11.0	4.5	7.5	11.5	9.0	9.5
17	0.5	0.0	0.0	8.0	4.0	5.5	9.0	6.0	7.0	15.5	6.5	10.5
18	0.5	0.0	0.0	11.0	4.5	7.0	11.0	4.5	7.5	12.5	8.5	9.5
19	0.5	0.0	0.0	9.5	4.0	6.5	11.5	5.0	8.5	13.5	8.0	10.0
20	2.5	0.0	1.0	9.0	1.0	5.0	11.0	6.5	8.5	13.5	8.5	11.0
21	3.5	0.0	1.5	7.5	3.0	5.0	12.5	5.0	8.5	12.5	8.5	10.0
22	4.0	0.0	1.5	11.5	3.5	7.0	13.0	4.5	8.5	8.5	7.0	7.5
23	4.5	0.5	2.0	12.5	4.0	8.0	14.5	6.0	10.0	7.0	4.5	5.5
24	6.0	0.5	3.0	10.5	4.5	7.5	14.0	7.0	10.0	10.5	4.5	7.0
25	6.5	1.5	4.0	9.0	3.0	6.0	14.0	5.5	10.0	12.5	5.5	9.0
26	6.0	2.0	4.0	7.5	4.0	5.5	16.0	6.5	11.0	12.5	7.5	10.0
27	8.0	1.0	4.0	6.5	2.0	4.0	15.5	9.0	12.0	12.5	8.0	10.0
28	3.5	1.0	2.5	11.0	1.5	6.0	12.0	4.5	6.5	11.0	8.0	9.5
29	6.0	1.0	3.0	12.5	2.5	7.5	11.5	2.0	6.5	13.0	6.5	9.5
30	---	---	---	13.5	5.0	9.0	13.0	5.5	9.5	13.5	6.0	10.0
31	---	---	---	14.0	6.0	9.5	---	---	---	13.0	7.5	10.5
MONTH	8.0	0.0	1.0	14.0	0.0	5.0	16.0	2.0	8.5	15.5	3.5	9.5

06073500 DEARBORN RIVER NEAR CRAIG, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.0	7.5	11.0	21.5	14.5	18.0	24.5	14.5	19.5	20.5	14.0	17.0
2	16.0	8.0	12.0	19.5	14.5	17.0	21.5	15.5	18.5	18.5	11.5	15.0
3	17.0	9.5	13.0	19.5	13.0	16.5	22.5	15.0	18.0	18.5	9.5	13.5
4	16.5	10.5	14.0	15.5	13.0	14.5	24.5	15.0	19.0	19.0	10.0	14.0
5	17.0	10.0	13.5	20.0	11.5	15.5	22.0	15.5	18.5	18.0	11.0	14.0
6	15.5	10.0	13.0	18.5	12.5	16.0	22.5	14.0	18.0	19.5	10.0	14.5
7	12.0	8.0	9.5	18.5	13.5	15.5	21.0	15.0	18.0	17.0	11.5	14.0
8	9.5	7.5	8.0	18.5	10.5	14.0	21.0	12.5	16.5	19.0	10.0	14.5
9	8.5	7.5	8.0	20.5	10.5	15.5	22.0	14.0	17.5	17.5	11.5	14.5
10	10.0	8.5	9.0	20.0	13.5	16.5	23.0	13.0	17.5	19.5	11.5	15.0
11	16.5	8.5	12.5	20.5	12.5	16.5	23.0	12.5	18.0	18.0	12.0	15.0
12	14.5	9.0	12.0	21.5	11.5	16.5	23.5	12.5	18.0	15.0	12.5	13.5
13	16.5	10.0	13.0	23.0	13.5	18.0	24.0	13.0	18.0	16.0	11.5	13.0
14	17.0	10.0	13.0	24.0	15.5	19.5	24.0	13.5	18.5	16.0	10.0	12.5
15	13.5	9.0	11.0	25.0	16.0	20.5	24.0	14.0	19.0	13.5	9.0	11.5
16	16.5	8.0	12.0	26.0	17.0	21.0	22.0	15.5	18.5	16.0	9.5	12.5
17	13.5	10.0	12.0	25.5	16.5	21.0	24.5	15.5	19.5	15.0	9.0	12.5
18	11.5	8.5	10.0	23.0	17.0	20.0	21.5	16.0	18.5	14.5	11.0	12.5
19	12.5	8.5	10.0	24.5	17.0	20.0	22.5	14.0	17.5	11.5	8.0	10.0
20	15.5	8.0	11.5	23.5	16.5	19.5	23.5	14.0	18.5	13.0	7.5	9.5
21	19.0	10.0	14.0	22.5	14.5	18.5	23.0	16.0	19.0	12.5	7.0	9.5
22	16.5	12.0	14.5	21.5	14.5	17.5	20.0	15.0	17.5	15.0	8.0	11.0
23	19.0	11.0	15.0	22.0	13.5	17.0	16.0	13.0	14.5	15.5	9.5	12.0
24	17.5	12.5	14.5	23.5	13.0	18.0	15.0	11.5	13.5	17.0	9.0	13.0
25	17.5	11.5	14.5	25.0	15.0	19.5	14.5	12.0	13.0	17.5	10.5	13.5
26	14.5	11.5	13.0	24.5	16.0	20.0	15.0	11.0	13.0	16.5	10.0	13.0
27	17.5	10.0	13.5	22.5	15.5	18.5	19.5	11.5	15.0	17.0	9.5	13.0
28	20.5	11.0	15.5	23.0	14.5	18.0	14.5	11.5	13.5	17.0	10.0	13.0
29	21.0	13.5	17.0	23.5	14.0	18.5	19.5	11.0	15.0	16.5	9.5	12.5
30	20.5	13.5	16.5	23.0	14.5	19.0	21.5	12.0	16.5	12.5	9.5	11.0
31	---	---	---	24.0	14.5	19.0	22.0	12.0	17.0	---	---	---
MONTH	21.0	7.5	12.5	26.0	10.5	18.0	24.5	11.0	17.0	20.5	7.0	13.0

06077200 SMITH RIVER BELOW EAGLE CREEK, NEAR FORT LOGAN, MT

LOCATION.--Lat 46°49'41", long 111°11'29" (NAD 27), in SW¼NW¼SE¼ sec. 2, T.12 S., R.4 E., Meagher County, Hydrologic Unit 10030103, on right bank at downstream side of private bridge, 0.6 mi downstream from Eagle Creek, 11.3 mi north of Fort Logan, and at river mile 80.8.

DRAINAGE AREA.--1,088 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,350 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow slightly regulated by Smith River Reservoir (station number 06075000) and Newlan Creek Reservoir. Diversion for irrigation of about 19,300 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	e75	e75	e50	e75	e75	223	309	577	277	108	103
2	88	e110	e80	e45	e75	e70	202	297	511	277	100	101
3	88	e110	e75	e40	e75	e65	181	325	474	274	100	102
4	86	e80	e70	e35	e70	e70	190	363	440	286	105	103
5	86	e90	e75	e30	e75	e70	213	392	432	294	103	104
6	85	e90	e80	e35	e75	e80	232	398	482	294	99	106
7	85	e90	e70	e50	e80	86	247	392	492	270	89	107
8	92	e90	e65	e70	e80	153	265	381	491	254	83	104
9	90	e95	e60	e80	e80	211	299	354	470	235	80	103
10	87	e110	e60	e80	e70	201	265	334	485	222	76	100
11	87	e110	e55	e80	e60	178	234	320	1,370	211	74	97
12	88	e100	e55	e80	e60	169	224	291	1,650	200	74	97
13	88	e100	e70	e80	e60	151	238	262	1,330	187	77	112
14	88	e100	e70	e85	e60	132	270	235	1,120	177	70	128
15	92	e110	e65	e80	e70	128	308	217	918	175	71	137
16	101	e110	e70	e80	e80	125	298	199	792	176	73	129
17	103	e110	e70	e75	e85	134	276	216	684	162	72	125
18	98	e120	e70	e75	e90	149	273	219	614	147	81	117
19	96	e130	e70	e80	e80	161	258	294	559	167	83	121
20	96	e90	e70	e75	e75	151	249	291	520	164	82	172
21	94	e70	e70	e70	e70	143	249	308	466	152	75	168
22	94	e60	e70	e75	e65	139	236	403	414	140	75	146
23	95	e60	e70	e90	e65	147	223	661	383	139	112	135
24	93	e70	e70	e80	e70	162	233	662	381	143	159	132
25	94	e70	e70	e60	e90	174	235	641	357	138	131	128
26	98	e70	e65	e60	e85	169	239	670	336	134	131	123
27	100	e65	e60	e55	e80	151	273	712	324	122	122	118
28	102	e75	e50	e60	e80	145	357	731	304	122	117	118
29	118	e80	e45	e70	e80	140	351	762	296	117	118	119
30	110	e75	e45	e90	---	155	338	719	292	117	117	121
31	76	---	e50	e80	---	187	---	643	---	111	109	---
TOTAL	2,887	2,715	2,040	2,095	2,160	4,271	7,679	13,001	17,964	5,884	2,966	3,576
MEAN	93.1	90.5	65.8	67.6	74.5	138	256	419	599	190	95.7	119
MAX	118	130	80	90	90	211	357	762	1,650	294	159	172
MIN	76	60	45	30	60	65	181	199	292	111	70	97
AC-FT	5,730	5,390	4,050	4,160	4,280	8,470	15,230	25,790	35,630	11,670	5,880	7,090

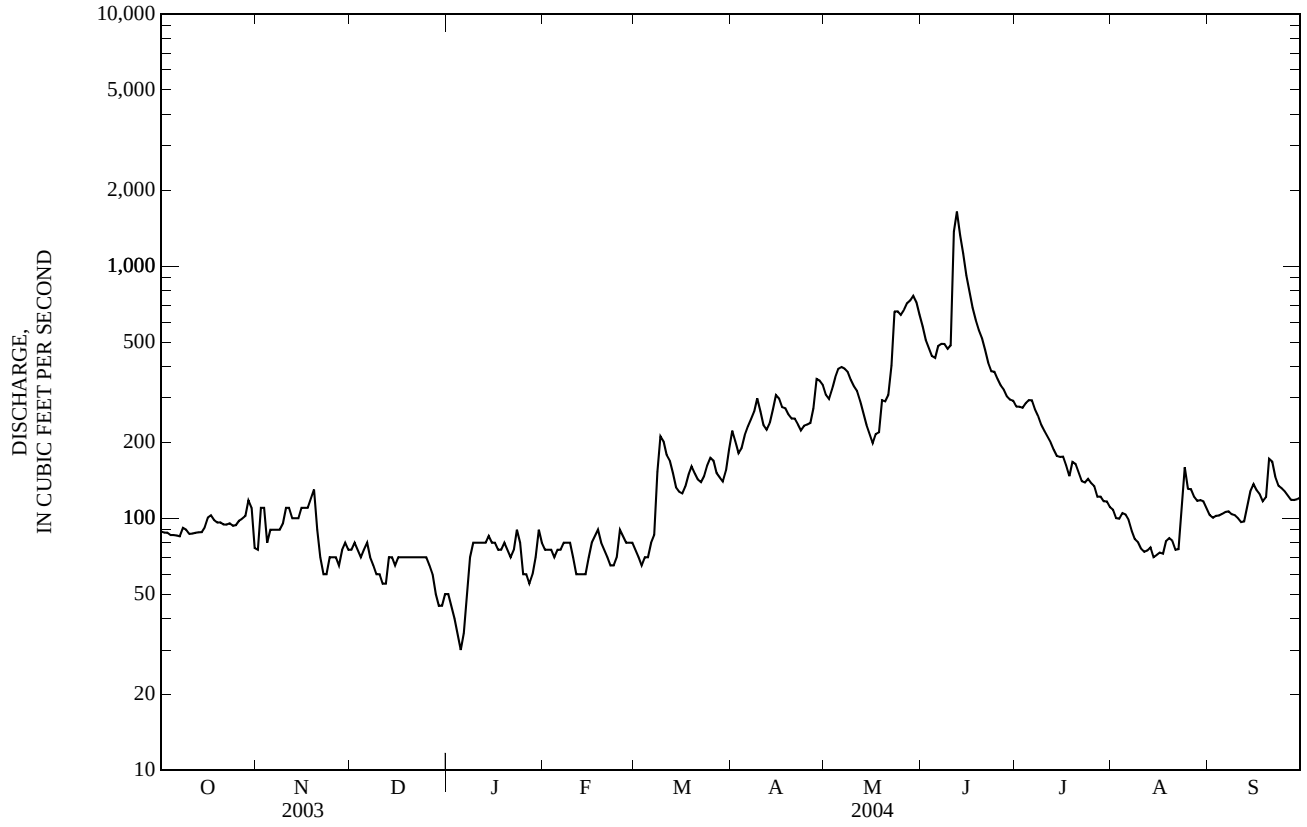
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2004, BY WATER YEAR (WY)

MEAN	122	122	106	118	106	166	247	458	588	248	113	107
MAX	213	185	167	249	145	281	432	1,119	1,893	607	276	219
(WY)	(1998)	(1999)	(1998)	(1997)	(1997)	(2003)	(2003)	(1997)	(1997)	(1998)	(1997)	(1997)
MIN	67.0	73.6	65.8	66.9	65.8	71.5	134	249	152	83.6	43.7	53.6
(WY)	(2002)	(2002)	(2004)	(2002)	(2002)	(2002)	(2002)	(2002)	(2001)	(2003)	(2000)	(2001)

06077200 SMITH RIVER BELOW EAGLE CREEK, NEAR FORT LOGAN, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1997 - 2004	
ANNUAL TOTAL	71,402		67,238			
ANNUAL MEAN	196		184		209	
HIGHEST ANNUAL MEAN					458	1997
LOWEST ANNUAL MEAN					109	2001
HIGHEST DAILY MEAN	2,000	Mar 14	1,650	Jun 12	3,510	Jun 12, 1997
LOWEST DAILY MEAN	43	Aug 25	30	Jan 5	30	Jan 5, 2004
ANNUAL SEVEN-DAY MINIMUM	45	Aug 21	41	Dec 31	32	Aug 25, 2000
MAXIMUM PEAK FLOW			1,760	Jun 11	a3,900	Jun 12, 1997
MAXIMUM PEAK STAGE			5.72	Jun 11	b9.30	Jan 1, 1997
INSTANTANEOUS LOW FLOW					28	Aug 26, 2000
ANNUAL RUNOFF (AC-FT)	141,600		133,400		151,200	
10 PERCENT EXCEEDS	528		382		413	
50 PERCENT EXCEEDS	90		110		128	
90 PERCENT EXCEEDS	55		70		65	

a--Gage height, 7.00 ft.
b--Backwater from ice.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--Water years 1997 to present. Data for water years 1997 to 2001 not published.

INSTRUMENTATION.--Water temperature recorder installed Nov. 4, 1997.

REMARKS.--Daily water temperature record good except for ice-affected days in March and April, which are fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 27.5°C, July 14, 2002; minimum 0.0°C, many days during winter months.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 25.0°C, July 17; minimum 0.0°C, many days October through February.

06077200 SMITH RIVER BELOW EAGLE CREEK, NEAR FORT LOGAN, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	12.5	6.0	9.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	12.0	6.5	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	12.0	6.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	12.5	6.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	12.5	6.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	12.5	7.0	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	13.5	8.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	14.5	10.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	12.0	8.5	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	10.5	7.5	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	7.5	5.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	10.0	6.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	10.0	6.5	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	6.5	4.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	8.5	4.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	8.0	4.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	12.0	6.5	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	11.5	6.5	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	11.0	6.0	8.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	10.0	7.0	8.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	13.5	8.5	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	11.5	7.0	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	10.0	6.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	6.0	3.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	5.0	1.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	7.5	2.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	7.5	5.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	6.0	4.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	6.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.5	0.0	0.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	14.5	0.0	7.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	1.0	1.0	1.0	6.0	4.0	5.0	11.5	5.0	8.5
2	0.0	0.0	0.0	1.5	1.0	1.0	6.0	3.0	4.5	13.0	7.0	10.0
3	0.0	0.0	0.0	1.5	1.0	1.0	8.5	3.0	5.5	13.0	9.0	11.0
4	0.0	0.0	0.0	2.5	1.0	1.5	8.5	4.5	6.5	14.0	8.0	11.0
5	0.0	0.0	0.0	3.0	1.5	1.5	10.0	4.0	7.0	13.5	9.0	11.5
6	0.0	0.0	0.0	2.5	1.0	1.5	10.0	6.0	8.0	12.5	8.5	11.0
7	0.0	0.0	0.0	3.0	0.5	1.5	9.5	4.5	7.0	13.0	8.5	11.0
8	0.0	0.0	0.0	4.0	1.5	2.5	10.0	6.0	7.5	13.0	8.5	11.0
9	0.0	0.0	0.0	4.5	1.0	2.5	7.5	4.5	6.0	12.0	8.0	10.0
10	0.0	0.0	0.0	4.5	1.0	2.5	7.5	3.0	5.0	10.0	6.5	7.5
11	0.0	0.0	0.0	4.5	1.0	2.0	10.0	3.0	6.5	7.0	4.5	6.0
12	0.0	0.0	0.0	5.0	1.0	2.5	11.5	4.5	8.0	6.0	3.0	4.5
13	0.0	0.0	0.0	5.0	2.0	3.5	11.5	6.0	8.5	7.5	3.5	5.5
14	0.0	0.0	0.0	5.0	2.5	3.5	12.0	7.5	9.5	9.0	4.0	6.5
15	0.0	0.0	0.0	5.5	2.5	4.0	9.0	6.5	7.5	11.0	4.5	8.0
16	0.0	0.0	0.0	5.5	3.5	4.5	8.5	4.0	6.5	9.5	7.0	8.0
17	0.0	0.0	0.0	7.5	4.0	5.0	7.0	5.0	6.0	11.0	6.0	8.5
18	0.0	0.0	0.0	8.5	5.0	6.5	7.0	4.0	5.5	9.0	7.5	8.0
19	0.0	0.0	0.0	8.0	5.0	6.0	8.5	4.5	6.5	11.0	7.0	8.5
20	0.0	0.0	0.0	6.0	2.5	4.5	9.0	5.5	7.0	12.0	7.5	9.5
21	0.0	0.0	0.0	6.5	3.0	5.0	8.5	4.5	7.0	12.5	9.5	10.5
22	0.0	0.0	0.0	7.5	3.0	5.0	11.0	5.0	8.0	10.0	8.5	9.0
23	1.0	0.0	0.0	9.5	3.5	6.0	12.0	5.0	8.5	8.5	5.5	6.5
24	1.0	1.0	1.0	9.0	4.0	6.5	10.5	7.0	8.5	8.5	4.5	6.5
25	1.0	1.0	1.0	7.0	3.5	5.5	11.0	5.0	8.0	10.5	4.5	7.5
26	1.0	1.0	1.0	5.0	3.0	4.0	13.0	6.0	9.5	9.5	7.5	8.5
27	1.0	1.0	1.0	5.5	1.5	3.5	12.5	7.5	10.0	11.0	7.5	9.5
28	1.0	1.0	1.0	7.5	1.5	4.0	10.5	5.5	7.0	10.5	9.0	9.5
29	1.0	1.0	1.0	9.5	1.5	5.0	8.5	3.0	5.5	10.5	7.0	8.5
30	---	---	---	10.5	2.5	6.0	10.5	4.5	7.5	10.5	6.5	8.5
31	---	---	---	11.0	3.5	6.5	---	---	---	10.5	7.0	8.5
MONTH	1.0	0.0	0.0	11.0	0.5	3.5	13.0	3.0	7.0	14.0	3.0	8.5

06077200 SMITH RIVER BELOW EAGLE CREEK, NEAR FORT LOGAN, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.5	6.5	9.5	21.5	16.0	18.5	22.0	13.5	17.5	18.5	13.0	15.5
2	14.0	8.0	11.5	19.5	15.5	17.5	21.5	16.0	18.5	18.0	12.5	15.0
3	16.0	9.5	13.0	18.5	14.0	16.5	22.0	16.0	19.0	15.0	9.0	12.0
4	16.0	11.5	14.0	18.5	14.0	16.5	23.5	15.0	19.0	16.0	8.5	12.0
5	17.0	11.5	14.5	18.0	13.5	16.0	22.5	16.0	19.0	14.5	9.5	12.0
6	15.5	12.0	14.0	18.5	13.0	16.0	22.0	15.0	18.5	15.5	9.0	12.0
7	13.0	9.0	11.0	18.5	15.5	16.5	20.5	15.0	17.5	15.0	10.5	12.5
8	12.0	9.0	10.0	17.0	12.0	14.5	20.5	12.0	16.0	17.0	9.5	13.0
9	14.0	8.5	11.0	19.0	11.5	15.5	20.5	12.0	16.5	16.0	11.0	13.5
10	12.5	10.5	11.5	20.0	15.0	17.5	21.5	13.0	17.0	18.0	11.5	14.0
11	12.5	9.0	10.5	21.0	14.0	17.5	21.0	12.0	16.5	17.5	11.0	14.0
12	12.5	8.5	10.5	21.0	13.5	17.5	21.5	11.5	16.5	15.0	12.5	13.5
13	12.5	9.5	11.0	22.0	14.5	18.5	22.0	12.5	17.0	13.5	10.5	12.0
14	13.5	9.5	11.5	24.0	16.5	20.0	23.0	13.5	18.0	13.5	10.0	11.5
15	12.5	9.0	10.5	24.5	17.5	21.0	22.5	13.5	18.0	11.0	8.5	10.0
16	12.5	8.0	10.5	24.5	17.5	21.0	20.0	15.0	17.5	13.0	9.0	11.0
17	13.0	9.0	11.0	25.0	17.5	21.5	22.5	15.5	18.5	13.5	9.5	11.5
18	11.0	9.0	10.0	23.0	18.5	20.5	20.5	15.5	18.0	14.5	9.5	11.5
19	11.5	8.0	9.5	23.0	18.0	20.5	21.0	13.5	17.0	12.0	7.5	10.0
20	13.5	8.5	11.0	22.5	18.0	20.0	21.5	15.0	18.0	9.5	6.0	7.5
21	16.5	10.5	13.0	22.0	15.5	18.5	22.5	14.5	18.0	9.5	6.0	7.5
22	15.5	11.5	14.0	21.0	15.0	18.0	18.5	15.0	17.0	10.5	5.5	8.0
23	17.5	11.5	14.5	19.0	15.0	17.0	16.0	12.0	14.0	11.5	7.0	9.5
24	18.0	13.0	15.5	22.0	13.5	17.5	14.5	10.5	12.5	14.0	8.0	10.5
25	18.0	13.5	15.5	23.0	15.5	19.5	15.0	12.0	13.0	14.5	8.0	11.0
26	18.5	13.0	15.5	23.5	17.0	20.0	13.0	11.5	12.0	13.5	8.5	11.0
27	18.0	13.5	15.5	21.0	15.5	18.0	14.5	10.0	12.0	14.5	8.5	11.5
28	20.0	13.5	16.5	20.5	14.0	17.5	13.0	9.5	11.5	14.0	8.5	11.0
29	20.0	14.5	17.5	21.5	14.5	18.0	16.5	9.5	12.5	13.5	7.5	10.5
30	20.5	15.5	18.0	21.0	14.5	17.5	18.5	11.0	14.5	11.5	8.0	10.0
31	---	---	---	21.0	14.0	17.5	19.5	11.5	15.5	---	---	---
MONTH	20.5	6.5	12.5	25.0	11.5	18.0	23.5	9.5	16.5	18.5	5.5	11.5

06078200 MISSOURI RIVER NEAR ULM, MT

LOCATION.--Lat 47°26'09", long 111°23'12" (NAD 27), in NE¼NW¼NW¼ sec.5, T.19 N., R.3 E., Cascade County, Hydrologic Unit 10030102, on left bank 5.6 mi east of Ulm, 9.1 mi downstream from Smith River, and at river mile 2,140.4.

DRAINAGE AREA.--20,941 mi^2.

PERIOD OF RECORD.--August 1957 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,313.27 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by 10 smaller irrigation reservoirs and power plants, Clark Canyon Reservoir (station number 06015300), and Canyon Ferry Lake (station number 06058500). Diversions for irrigation of about 630,400 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1953 reached a stage of about 17 ft; discharge, 35,000 ft^3/s. Flood in June 1948 reached a stage of about 16 ft; discharge, 32,000 ft^3/s, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,080	3,260	3,410	e3,800	e3,900	3,930	4,030	4,170	5,100	3,590	2,730	2,900
2	3,080	3,240	3,420	e3,800	e3,900	3,890	4,230	3,970	4,880	3,560	2,720	2,920
3	3,080	3,250	3,330	e3,700	e3,900	3,910	4,330	3,870	4,660	3,520	2,740	2,900
4	3,080	3,240	3,270	e3,600	e3,900	3,930	4,350	3,860	4,480	3,520	2,760	2,900
5	3,070	3,230	3,280	e3,600	e3,900	4,010	4,340	3,860	4,310	3,530	2,830	2,820
6	3,070	3,250	3,320	e3,700	e3,900	4,030	4,320	3,920	4,290	3,630	2,870	2,810
7	3,080	3,250	3,330	e3,800	e4,000	4,090	4,320	3,940	4,220	3,610	2,930	2,830
8	3,130	3,250	3,340	e3,800	e4,000	4,020	4,220	3,920	4,200	3,560	2,940	2,890
9	3,160	3,280	3,420	e3,800	e4,000	4,010	4,070	3,890	4,210	3,450	2,970	3,020
10	3,160	3,350	3,560	e3,800	e4,000	4,050	3,870	3,830	4,230	3,350	2,920	3,070
11	3,160	3,320	3,670	e3,800	e3,900	4,100	3,800	3,860	4,320	3,270	2,870	3,120
12	3,170	3,370	4,030	e3,800	e3,900	4,090	3,710	3,950	5,070	3,210	2,880	3,200
13	3,170	3,380	e4,200	e3,900	e3,800	4,050	3,650	3,870	5,540	3,180	2,870	3,280
14	3,160	3,370	e4,000	e3,900	e3,700	4,140	3,660	3,720	5,230	3,150	2,870	3,290
15	3,170	3,350	e3,900	e3,900	e3,700	4,130	3,670	3,580	4,900	3,080	2,870	3,240
16	3,180	3,370	3,850	e3,900	e3,700	4,090	3,730	3,560	4,650	3,000	2,850	3,080
17	3,180	3,390	3,800	e3,900	e3,800	4,040	3,760	3,530	4,530	2,960	2,830	2,880
18	3,070	3,460	3,950	e4,000	e3,900	4,100	3,730	3,510	4,430	2,910	2,870	2,800
19	3,090	3,470	3,920	e4,100	e4,000	4,080	3,720	3,560	4,220	2,930	2,920	2,820
20	3,080	3,340	3,880	e4,000	e4,000	4,070	3,660	3,700	4,140	2,920	2,920	2,990
21	3,120	3,310	3,800	e4,000	e3,900	4,130	3,620	3,850	4,080	2,890	2,920	3,110
22	3,070	e3,300	3,730	e4,000	e3,900	4,140	3,610	4,020	3,970	2,920	2,980	3,220
23	3,110	e3,500	3,700	e4,000	e3,900	4,140	3,620	4,460	3,890	2,880	3,240	3,170
24	3,090	e3,600	3,760	e4,000	3,930	4,110	3,540	5,080	3,850	2,820	3,410	3,100
25	3,170	e3,600	3,810	e3,900	3,940	4,040	3,520	5,400	3,800	2,820	3,540	3,040
26	3,210	e3,500	3,810	e3,900	3,960	4,020	3,550	5,410	3,680	2,850	3,420	2,980
27	3,180	e3,400	3,770	e3,800	4,030	4,020	3,570	5,690	3,630	2,790	3,280	2,910
28	3,180	e3,400	3,710	e3,900	4,060	3,950	3,520	5,820	3,600	2,760	3,160	2,920
29	3,170	e3,400	e3,600	e3,900	4,020	3,940	3,890	5,780	3,540	2,730	3,020	2,940
30	3,240	3,420	e3,700	e4,000	---	3,960	4,170	5,650	3,530	2,770	2,960	2,930
31	3,280	---	e3,800	e4,000	---	3,930	---	5,360	---	2,760	2,910	---
TOTAL	97,240	100,850	114,070	120,000	113,440	125,140	115,780	132,590	129,180	96,920	92,000	90,080
MEAN	3,137	3,362	3,680	3,871	3,912	4,037	3,859	4,277	4,306	3,126	2,968	3,003
MAX	3,280	3,600	4,200	4,100	4,060	4,140	4,350	5,820	5,540	3,630	3,540	3,290
MIN	3,070	3,230	3,270	3,600	3,700	3,890	3,520	3,510	3,530	2,730	2,720	2,800
AC-FT	192,900	200,000	226,300	238,000	225,000	248,200	229,600	263,000	256,200	192,200	182,500	178,700

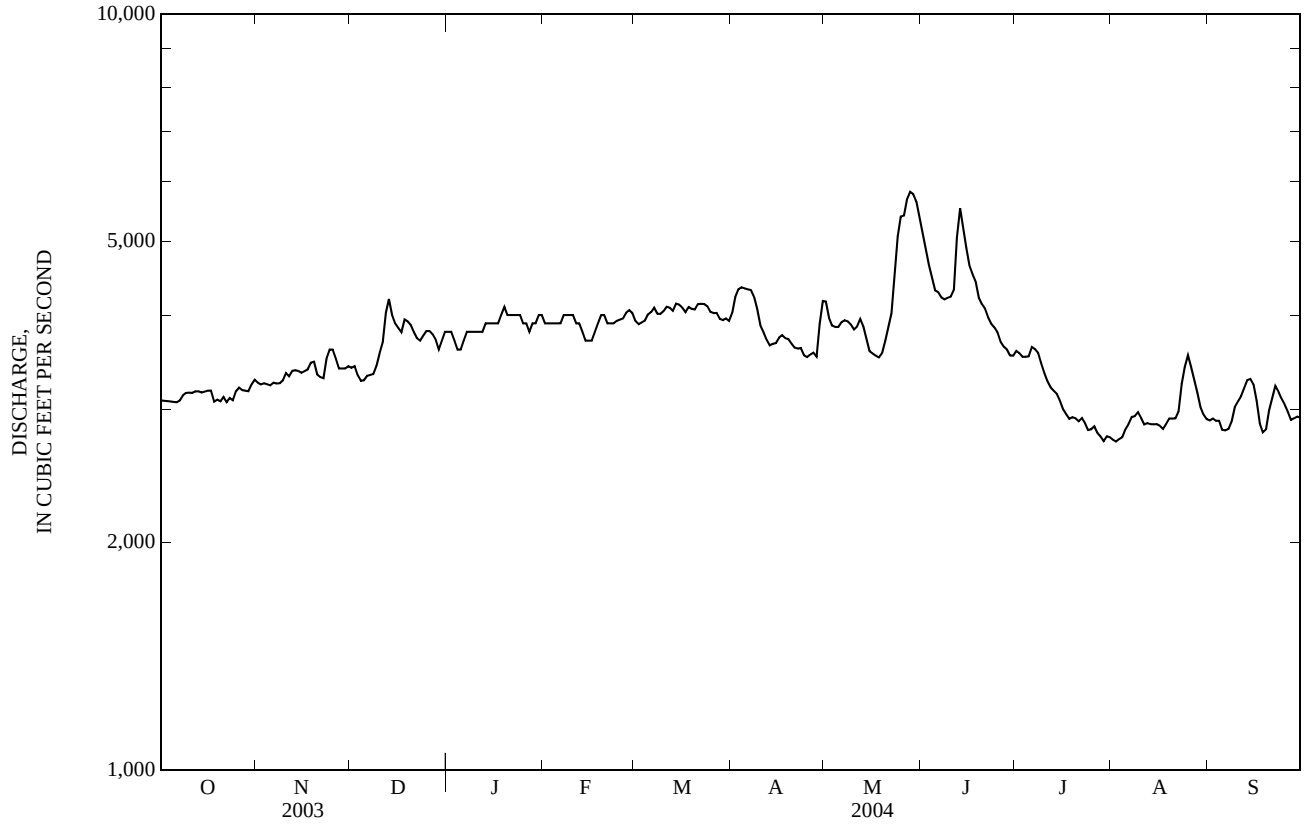
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2004, BY WATER YEAR (WY)

MEAN	4,892	5,262	5,490	5,600	5,716	5,847	6,475	8,857	10,730	7,285	4,814	4,574
MAX	11,230	9,497	10,690	7,213	9,501	9,652	12,070	19,800	24,260	19,480	8,741	9,990
(WY)	(1966)	(1966)	(1960)	(1984)	(1996)	(1968)	(1976)	(1976)	(1981)	(1975)	(1993)	(1984)
MIN	2,977	3,090	3,095	3,129	3,096	3,152	3,070	3,501	2,965	2,868	2,968	2,283
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(1961)	(1961)	(1961)	(1985)	(2004)	(1959)

06078200 MISSOURI RIVER NEAR ULM, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1957 - 2004	
ANNUAL TOTAL	1,569,510		1,327,290			
ANNUAL MEAN	4,300		3,626		6,295	
HIGHEST ANNUAL MEAN					9,653	1976
LOWEST ANNUAL MEAN					3,479	2002
HIGHEST DAILY MEAN	11,100	Jun 5	5,820	May 28	28,200	May 24, 1981
LOWEST DAILY MEAN	2,830	Aug 17	2,720	Aug 2	1,700	Jun 17, 1961
ANNUAL SEVEN-DAY MINIMUM	2,920	Sep 2	2,740	Jul 28	2,150	Sep 4, 1959
MAXIMUM PEAK FLOW			a5,840	May 28	c28,500	May 24, 1981
MAXIMUM PEAK STAGE			b6.75	Jan 1	15.20	Jun 17, 1997
ANNUAL RUNOFF (AC-FT)	3,113,000		2,633,000		4,560,000	
10 PERCENT EXCEEDS	6,200		4,180		9,880	
50 PERCENT EXCEEDS	3,800		3,640		5,500	
90 PERCENT EXCEEDS	3,090		2,910		3,370	

a--Gage height, 4.90 ft.
b--Backwater from ice.
c--Gage height, 14.99 ft.
e--Estimated.



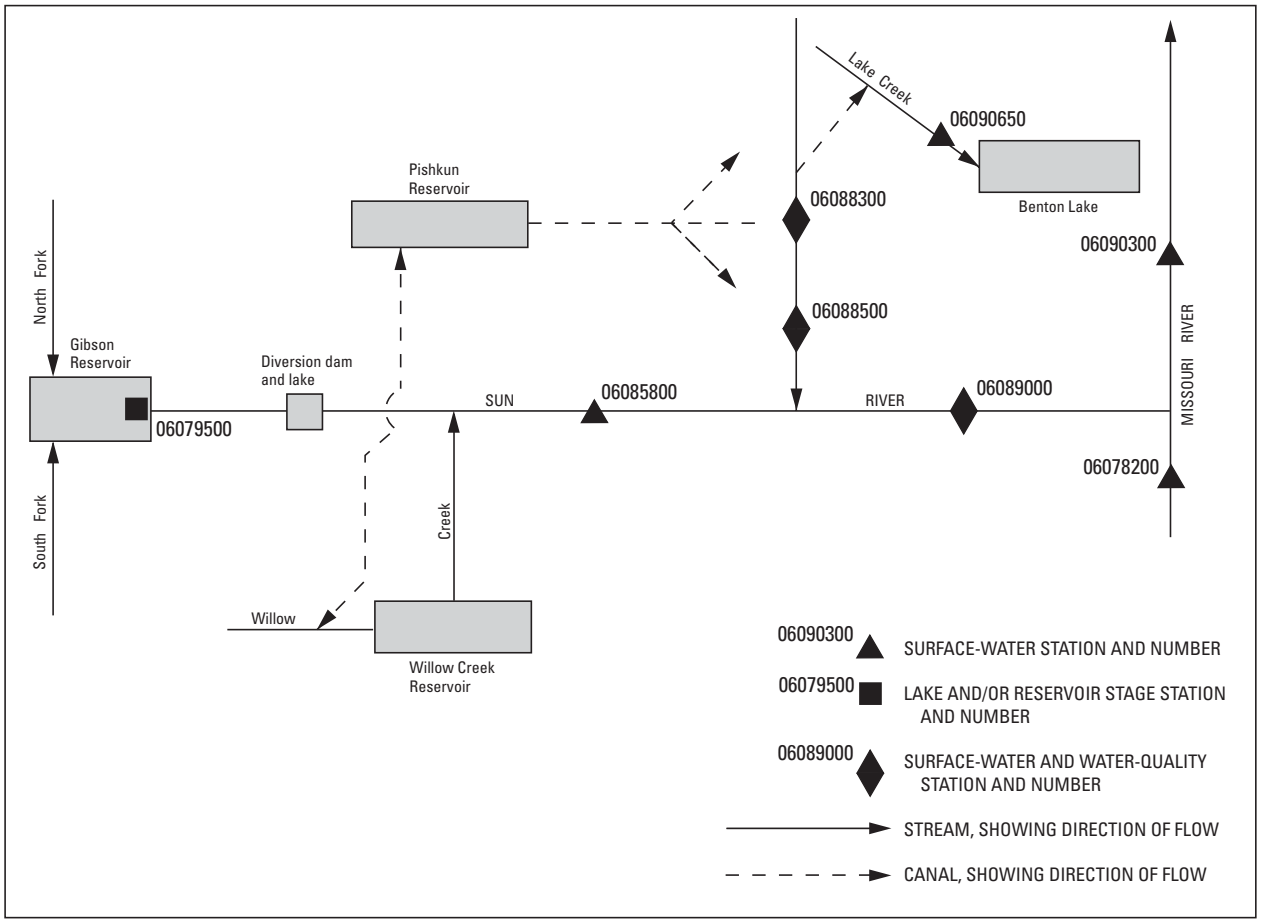


Figure 10. Schematic diagram showing diversions and storage in Sun River basin.

06085800 SUN RIVER AT SIMMS, MT

LOCATION (REVISED).--Lat 47°30'09", long 111°55'54" (NAD 27), in NW¼NW¼SE¼ sec. 12, T. 20 N., R.3 W., Cascade County, Hydrologic Unit 10030104, on left bank on downstream side of Montana Secondary Highway 565 bridge, 0.7 mi downstream from Simms Creek, 0.7 mi north of Simms, and at river mile 45.0.

DRAINAGE AREA.--1,320 mi^2.

PERIOD OF RECORD.--May to June 1953 (in WSP 1320-B), May to June 1964 (in WSP 1840-B), April 1966 to September 1979, April 1997 to current year.

REVISED RECORDS.--WDR MT-75-1: 1964 (M).

GAGE.--Water-stage recorder. Elevation of gage is 3,570 ft (NGVD 29). May 1941 to October 1965, nonrecording gage at different elevation. April 1966 to September 1979, water-stage recorder at site about 500 ft downstream at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Gibson, Pishkun, Willow Creek, and Nilan Reservoirs. Diversions for irrigation of about 105,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	109	e110	e110	e85	e90	e130	136	58	1,120	167	45	149
2	101	e120	e120	e80	e95	e110	141	45	747	121	52	146
3	101	e110	e110	e75	e100	e120	125	51	472	73	68	149
4	106	e100	e100	e70	e110	e120	117	49	181	59	144	144
5	106	e100	e110	e75	e110	e120	115	46	145	58	88	137
6	104	e100	e120	e80	e120	125	107	60	1,010	59	66	127
7	106	e100	e100	e100	e130	127	89	47	1,360	41	67	124
8	107	e100	e95	e120	e140	158	81	56	1,030	36	73	128
9	103	e110	e95	e130	e150	144	99	99	675	41	77	121
10	89	e120	e90	e140	e140	137	96	806	325	38	81	108
11	95	e120	e90	e140	e120	127	87	1,380	153	43	76	95
12	97	e120	e100	e145	e130	124	83	1,290	143	59	59	95
13	93	e130	e100	e150	e140	125	77	849	269	56	49	108
14	122	e140	e100	e155	e140	121	74	636	210	52	47	122
15	151	e150	e100	e150	e150	120	73	571	140	38	42	124
16	185	e150	e100	e150	e150	119	85	534	128	33	35	135
17	181	153	e100	e140	e160	117	91	261	129	40	33	147
18	166	152	e100	e140	e140	118	79	73	97	52	73	137
19	163	e150	e100	e150	e130	117	94	101	62	63	101	142
20	161	e140	e110	e140	e130	116	61	108	55	56	87	162
21	160	e120	e100	e140	e130	116	40	141	59	53	95	150
22	155	e100	e100	e150	e130	117	42	134	66	54	97	138
23	149	e110	e100	e160	e130	117	57	185	63	53	203	129
24	138	e110	e110	e140	e130	115	59	259	80	53	311	125
25	135	e110	e100	e120	e140	115	57	397	83	55	283	118
26	133	e110	e95	e100	e140	114	e30	575	105	58	325	108
27	138	e120	e95	e80	e130	113	e20	650	117	58	309	109
28	144	e130	e90	e85	e130	111	e25	835	122	65	218	118
29	148	e140	e85	e90	e130	111	44	1,060	111	56	203	115
30	143	e110	e80	e100	---	112	44	1,270	103	43	192	106
31	e120	---	e90	e95	---	112	---	1,400	---	38	181	---
TOTAL	4,009	3,635	3,095	3,675	3,765	3,748	2,328	14,026	9,360	1,771	3,780	3,816
MEAN	129	121	99.8	119	130	121	77.6	452	312	57.1	122	127
MAX	185	153	120	160	160	158	141	1,400	1,360	167	325	162
MIN	89	100	80	70	90	110	20	45	55	33	33	95
AC-FT	7,950	7,210	6,140	7,290	7,470	7,430	4,620	27,820	18,570	3,510	7,500	7,570

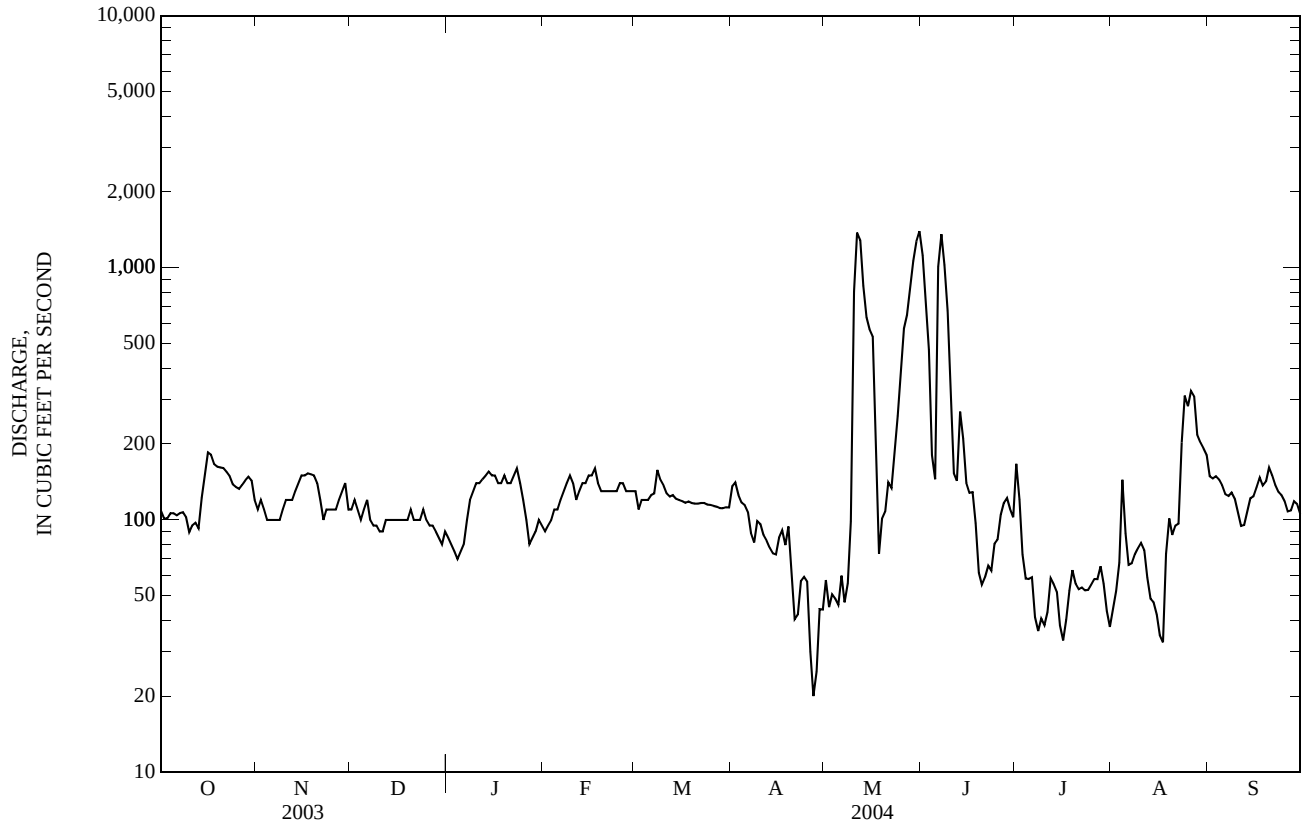
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2004, BY WATER YEAR (WY)*

MEAN	204	217	192	191	188	216	313	1,129	2,142	385	161	147
MAX	519	596	456	314	291	473	1,125	4,123	8,558	2,165	383	422
(WY)	(1972)	(1976)	(1976)	(1976)	(1976)	(1969)	(1969)	(1976)	(1975)	(1975)	(1972)	(1972)
MIN	89.0	120	99.8	119	96.3	104	77.6	72.1	109	44.3	48.8	49.3
(WY)	(1978)	(1978)	(2004)	(2004)	(1977)	(1977)	(2004)	(2001)	(1977)	(2003)	(2000)	(1977)

06085800 SUN RIVER AT SIMMS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1966 - 2004*	
ANNUAL TOTAL	77,961		57,008			
ANNUAL MEAN	214		156		449	
HIGHEST ANNUAL MEAN					1,177	1975
LOWEST ANNUAL MEAN					123	2001
HIGHEST DAILY MEAN	3,520	May 30	1,400	May 31	35,000	Jun 20, 1975
LOWEST DAILY MEAN	26	Jul 12	20	Apr 27	19	Sep 29, 1977
ANNUAL SEVEN-DAY MINIMUM	32	Jul 7	38	Apr 26	26	Sep 19, 1977
MAXIMUM PEAK FLOW			1,480	May 11	50,000	Jun 9, 1964
MAXIMUM PEAK STAGE			3.73	May 11	a13.70	Jun 9, 1964
ANNUAL RUNOFF (AC-FT)	154,600		113,100		325,400	
10 PERCENT EXCEEDS	278		182		811	
50 PERCENT EXCEEDS	130		112		179	
90 PERCENT EXCEEDS	43		55		80	

*--During period of operation (April 1966 to September 1979, April 1997 to current year).
a--About, from floodmark.
e--Estimated.



06088300 MUDDY CREEK NEAR VAUGHN, MT

LOCATION.--Lat 47°37'30", long 111°38'05" (NAD 27), in NE¼NE¼NW¼ sec. 32, T. 22 N., R.1 E., Cascade County, Hydrologic Unit 10030104, on left bank 200 ft downstream from bridge on county road 6.2 mi northwest of Vaughn and at river mile 14.6

DRAINAGE AREA.--282 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1968 to September 1987, March 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,441.79 ft (NGVD 29) (levels by U.S. Army Corps of Engineers).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Natural flow increased by wastage from Greenfield Irrigation Project. Diversions for irrigation of about 400 acres upstream from station and pumped diversions from Muddy Creek upstream from station in SW¼ sec. 2, T. 22 N., R.1 W, to supplement water supply for Benton Lake Wildlife Refuge. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	e30	e45	e22	e22	30	31	25	102	169	201	163
2	50	e35	e48	e20	e23	28	33	20	110	190	180	151
3	50	e32	e40	e18	e24	e26	32	19	102	243	185	158
4	50	e30	e35	e16	e25	e27	32	18	81	219	253	148
5	46	e30	e35	e17	e25	e28	26	16	124	363	261	143
6	48	e30	e40	e18	e26	28	23	16	124	272	236	139
7	47	e32	e30	e20	e30	29	22	16	198	242	183	134
8	47	e35	e25	e26	e30	45	22	16	241	224	165	137
9	45	e40	e25	e29	e32	43	22	15	276	262	176	126
10	44	e50	e22	e30	e30	39	22	15	265	280	162	141
11	43	e55	e22	e30	e28	29	21	19	260	230	174	162
12	42	e50	e23	e28	e29	30	21	76	238	268	162	162
13	40	e50	e25	e28	e31	30	21	76	197	269	177	160
14	40	e50	e25	e33	e30	26	20	87	191	258	184	157
15	41	e50	e25	e35	e33	25	21	66	186	250	197	203
16	46	49	e27	e35	e32	25	30	58	189	243	179	204
17	39	47	e27	e32	e36	24	25	93	238	235	175	156
18	34	46	e27	e30	e34	24	23	65	279	255	255	142
19	37	48	e28	e35	e32	24	21	133	234	282	219	120
20	36	e40	e30	e32	e30	24	21	113	244	248	222	113
21	35	e35	e28	e30	e29	26	22	121	290	251	216	81
22	35	e30	e27	e32	e29	24	20	140	264	234	205	79
23	35	e32	e27	e35	e30	23	20	192	204	249	378	71
24	32	e35	e30	e30	e31	22	18	272	204	195	386	66
25	33	e35	e25	e25	e37	21	19	174	206	197	275	64
26	33	e35	e24	e22	e40	21	19	148	223	204	226	61
27	37	e38	e23	e20	e35	21	18	103	232	179	225	60
28	50	e42	e21	e21	e32	20	23	100	308	174	198	55
29	54	e50	e20	e23	30	23	25	121	189	210	183	54
30	33	e45	e20	e25	---	22	30	153	226	248	179	56
31	e32	---	e23	e25	---	20	---	124	---	224	173	---
TOTAL	1,270	1,206	872	822	875	827	703	2,610	6,225	7,367	6,590	3,666
MEAN	41.0	40.2	28.1	26.5	30.2	26.7	23.4	84.2	208	238	213	122
MAX	54	55	48	35	40	45	33	272	308	363	386	204
MIN	32	30	20	16	22	20	18	15	81	169	162	54
AC-FT	2,520	2,390	1,730	1,630	1,740	1,640	1,390	5,180	12,350	14,610	13,070	7,270

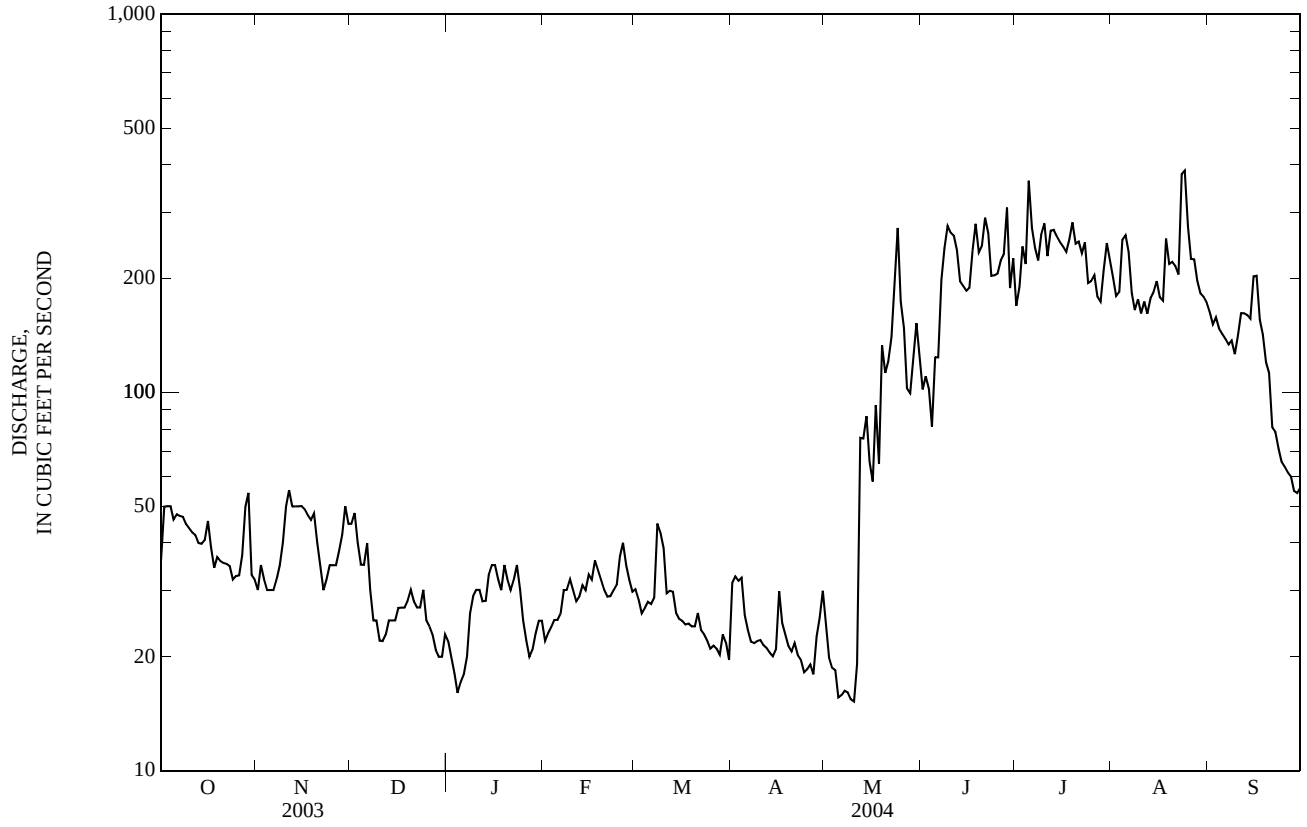
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2004, BY WATER YEAR (WY)*

MEAN	74.9	53.8	41.1	33.0	35.3	57.7	39.8	112	202	257	240	132
MAX	145	71.4	58.5	59.8	65.1	238	162	264	455	367	402	218
(WY)	(1976)	(1986)	(1986)	(1997)	(1986)	(1978)	(1975)	(1975)	(1969)	(1970)	(1975)	(1972)
MIN	40.8	34.9	21.7	19.3	17.5	23.4	21.3	56.3	101	137	123	42.1
(WY)	(2002)	(2002)	(1973)	(1973)	(1985)	(2002)	(2000)	(2001)	(1985)	(1980)	(2003)	(2003)

06088300 MUDDY CREEK NEAR VAUGHN, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1968 - 2004*	
ANNUAL TOTAL	27,970		33,033			
ANNUAL MEAN	76.6		90.3		107	
HIGHEST ANNUAL MEAN					160	1969
LOWEST ANNUAL MEAN					77.2	1985
HIGHEST DAILY MEAN	336	Jun 21	386	Aug 24	2,250	May 7, 1975
LOWEST DAILY MEAN	15	Feb 22	15	May 9	8.0	Dec 8, 1972
ANNUAL SEVEN-DAY MINIMUM	18	Feb 20	16	May 4	13	Dec 8, 1972
MAXIMUM PEAK FLOW			520	Aug 23	3,560	May 22, 1981
MAXIMUM PEAK STAGE			5.20	Aug 23	b14.72	May 22, 1981
INSTANTANEOUS LOW FLOW			a4.8	Mar 7	c4.8	Mar 7, 2004
ANNUAL RUNOFF (AC-FT)	55,480		65,520		77,860	
10 PERCENT EXCEEDS	225		235		254	
50 PERCENT EXCEEDS	37		38		59	
90 PERCENT EXCEEDS	22		21		27	

*--During periods of operation (July 1968 to September 1987, March 1996 to current year).
a--Gage height, 1.62 ft, result of freezeup.
b--From floodmark.
c--May have been lower during a period of ice effect.
e--Estimated.



06088300 MUDDY CREEK NEAR VAUGHN, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to September 1982, March 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to September 1982.
SUSPENDED-SEDIMENT DISCHARGE: July 1968 to September 1982.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,400 microsiemens per centimeter (μS/cm) at 25°C, Apr. 29, 1976; minimum daily, 365 μS/cm at 25°C, Feb. 20, 1969.
SEDIMENT CONCENTRATION: Maximum daily mean, 13,000 mg/L, Mar. 18, 1978; minimum daily mean observed, 11 mg/L, Oct. 19, 1968, Oct. 19, 1972, Oct. 30, 1973.
SEDIMENT LOAD: Maximum daily, 63,900 tons, May 22, 1981; minimum daily, 0.84 ton, Jan. 8, 1973.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instan-taneous dis-charge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water unfltrd uS/cm 25 degC (00095)	Temper-ature, air, deg C (00020)	Temper-ature, water, deg C (00010)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, water unfltrd mg/L (62855)
OCT										
22...	1100	35	8.4	856	17.0	10.0	E.005	1.83	.012	1.83
JAN										
14...	0800	33	8.4	940	6.0	.0	.070	3.11	.018	3.69
MAR										
24...	0930	23	8.6	1,110	11.0	6.0	<.010	2.22	.017	2.75
APR										
21...	0800	23	8.5	1,170	4.5	7.5	E.007	2.01	.017	2.54
MAY										
18...	1500	77	8.7	719	18.0	13.0	.025	.747	.012	1.77
JUN										
24...	0930	210	8.4	606	12.5	14.0	E.006	.863	.007	1.54
JUL										
21...	1600	274	8.6	587	25.0	20.0	E.007	.956	.008	1.49
AUG										
18...	1640	253	8.6	670	27.0	19.0	E.009	.839	.011	1.49
SEP										
07...	1630	136	8.9	602	22.0	15.0	E.007	.982	.007	1.15

Date	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Selen-ium, water, unfltrd ug/L (01147)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
OCT						
22...	<.006	.013	1.5	70	20	1.9
JAN						
14...	E.005	.040	3.0	48	103	9.2
MAR						
24...	<.006	.049	3.1	94	47	2.9
APR						
21...	<.006	.063	3.1	91	86	5.3
MAY						
18...	.008	.25	1.7	96	223	46
JUN						
24...	.041	.26	1.5	84	279	158
JUL						
21...	.072	.194	1.6	71	166	123
AUG						
18...	.013	.113	1.4	92	96	66
SEP						
07...	<.006	.019	1.3	97	62	23

E--Estimated.

06088500 MUDDY CREEK AT VAUGHN, MT

LOCATION (REVISED).--Lat 47°33'39", long 111°32'26" (NAD 27), in SW¼SE¼NE¼ sec.24, T.21 N., R.1 E., Cascade County, Hydrologic Unit 10030104, on left bank at Vaughn, and at river mile 1.1.

DRAINAGE AREA.--314 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1925 to January 1926, April 1934 to September 1968, July 1971 to current year.

REVISED RECORDS.--WSP 856: 1937. WSP 1509: 1934-35, 1941(M). WSP 1559: 1956. WSP 1629: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,330 ft (NGVD 29). May 21, 1925 to Feb. 8, 1926, nonrecording gage at site 500 ft downstream at different elevation. Apr. 19, 1934 to Sept. 30, 1955, at previous site at elevation. May 18, 1955 to Apr. 25, 1960 and Sept. 24, 1962 to Sept. 30, 1968, auxiliary crest-stage gage. Oct. 1, 1955 to Sept. 30, 1968, nonrecording gage at bridge 670 ft upstream at previous elevation. July 1, 1971 to May 9, 1996, 700 ft upstream at previous elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Natural flow increased by wastage from Sun River Canal and by return flow from irrigation. Diversions for irrigation of about 700 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1908 reached a stage of about 24 ft, previous elevation (discharge not determined); flood in June 1932 reached a stage of about 19 ft, previous elevation (discharge not determined); from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	e33	e50	e24	e24	e32	29	25	179	213	292	238
2	101	e38	e52	e22	e25	e30	35	21	165	216	275	230
3	99	e35	e45	e20	e26	e28	31	18	167	259	269	232
4	100	e33	e40	e18	e27	e30	32	18	145	260	330	226
5	98	e33	e40	e19	e27	e32	27	16	159	362	334	223
6	97	e33	e45	e20	e29	e32	25	37	178	325	323	220
7	96	e35	e35	e22	e32	e33	23	47	253	294	291	215
8	94	e38	e28	e28	e33	51	23	42	304	281	264	215
9	90	e45	e28	e31	e35	48	23	35	313	299	273	212
10	93	54	e25	e33	e33	e45	23	54	310	315	250	225
11	90	60	e25	e33	e31	e35	23	85	304	284	260	239
12	91	53	e26	e30	e32	31	22	134	292	307	240	234
13	87	52	e27	e30	e34	30	22	138	264	324	261	239
14	74	52	e27	e34	e33	26	21	146	260	312	266	228
15	46	52	e27	e37	e36	26	21	99	253	296	276	243
16	46	51	e29	e37	e35	25	28	118	257	286	261	266
17	45	51	e29	e34	e39	24	27	134	279	282	241	234
18	37	50	e29	e34	e37	24	24	113	318	297	295	225
19	38	54	e31	e37	e35	24	23	166	290	318	286	194
20	38	e50	e32	e35	e33	22	22	165	289	304	284	196
21	38	e40	e30	e33	e32	27	23	171	332	310	279	150
22	38	e33	e30	e35	e32	24	22	198	312	286	281	140
23	38	e34	e30	e37	e33	23	21	240	261	290	364	133
24	36	e38	e32	e32	e34	23	20	309	252	269	383	126
25	35	e38	e28	e27	e40	21	19	238	252	260	324	123
26	36	e39	e27	e24	e45	21	20	218	275	277	294	120
27	36	e41	e26	e23	e40	21	19	181	269	255	295	118
28	49	44	e23	e24	e35	20	21	176	339	256	281	112
29	58	e55	e22	e25	e33	21	24	193	248	268	269	109
30	e40	e50	e22	e27	---	23	28	225	246	314	256	111
31	e35	---	e25	e27	---	21	---	209	---	301	253	---
TOTAL	1,991	1,314	965	892	960	873	721	3,969	7,765	8,920	8,850	5,776
MEAN	64.2	43.8	31.1	28.8	33.1	28.2	24.0	128	259	288	285	193
MAX	101	60	52	37	45	51	35	309	339	362	383	266
MIN	35	33	22	18	24	20	19	16	145	213	240	109
AC-FT	3,950	2,610	1,910	1,770	1,900	1,730	1,430	7,870	15,400	17,690	17,550	11,460

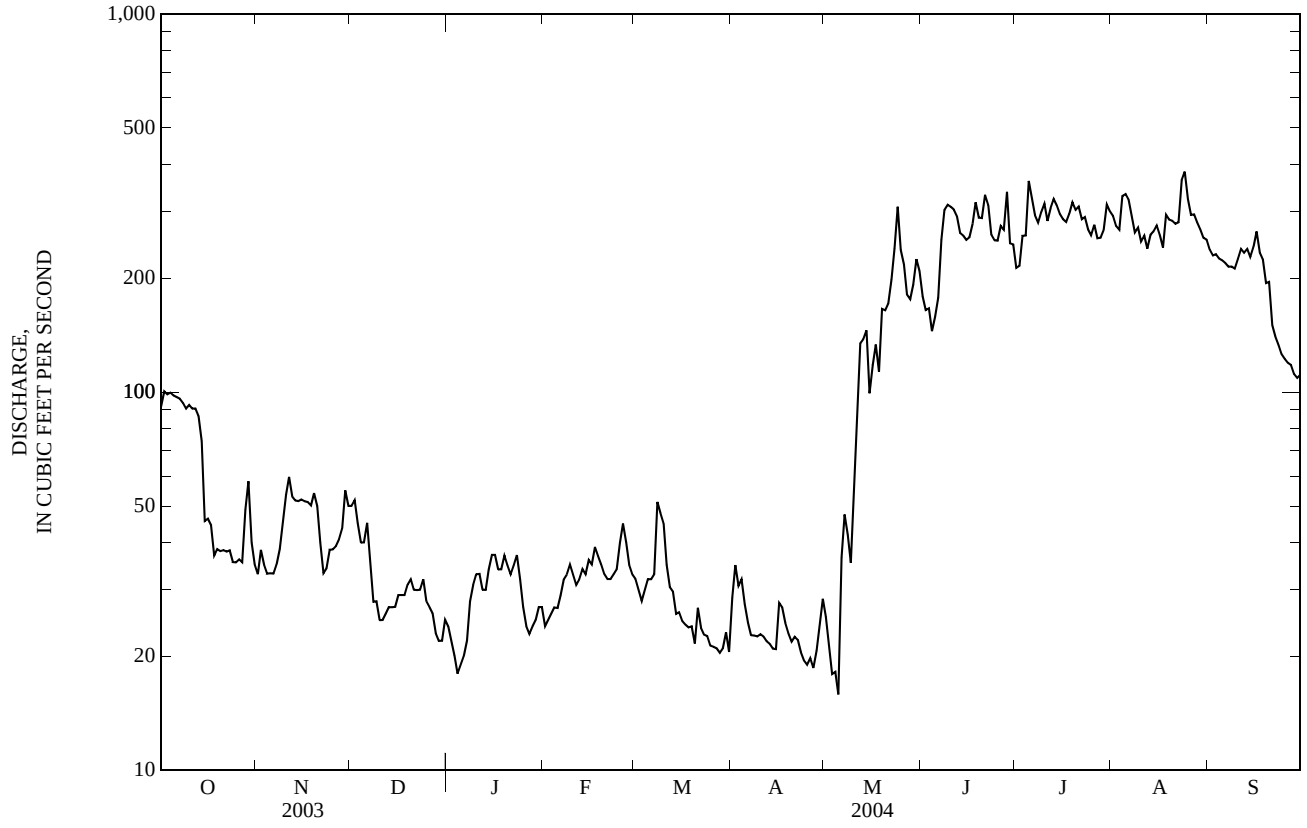
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2004, BY WATER YEAR (WY)*

MEAN	99.2	59.8	44.0	34.3	37.2	54.3	41.3	137	238	275	283	175
MAX	200	113	131	68.5	96.9	283	182	305	480	416	488	270
(WY)	(1963)	(1964)	(1957)	(1997)	(1952)	(1978)	(1975)	(1953)	(1953)	(1966)	(1975)	(1972)
MIN	26.3	30.7	16.8	17.3	10.0	22.4	18.3	52.6	86.0	52.1	44.0	40.2
(WY)	(1926)	(1926)	(1926)	(1936)	(1936)	(1988)	(1968)	(1935)	(1936)	(1925)	(1925)	(1925)

06088500 MUDDY CREEK AT VAUGHN, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1925 - 2004*	
ANNUAL TOTAL	35,532		42,996			
ANNUAL MEAN	97.3		117		124	
HIGHEST ANNUAL MEAN					185	1975
LOWEST ANNUAL MEAN					61.2	1936
HIGHEST DAILY MEAN	419	Jun 21	383	Aug 24	3,500	Jun 4, 1953
LOWEST DAILY MEAN	17	Feb 23	16	May 5	4.8	Mar 29, 1977
ANNUAL SEVEN-DAY MINIMUM	21	Feb 21	20	Apr 22	7.0	Jan 24, 1936
MAXIMUM PEAK FLOW			486	Aug 23	b7,600	Jun 4, 1953
MAXIMUM PEAK STAGE			5.62	Aug 23	c17.70	Jun 4, 1953
INSTANTANEOUS LOW FLOW			a14	May 6	d2.0	Mar 16, 1972
ANNUAL RUNOFF (AC-FT)	70,480		85,280		90,180	
10 PERCENT EXCEEDS	258		290		293	
50 PERCENT EXCEEDS	45		45		70	
90 PERCENT EXCEEDS	26		23		26	

*--During periods of operation (June 1925 to January 1926, May 1934 to September 1968, July 1971 to current year).
a--Gage height, 2.05 ft.
b--From rating curve extended above 3,000 ft^3/s on basis of slope-area measurement of peak flow.
c--From floodmark, site and datum then in use.
d--Gage height, 1.20 ft, result of freezeup.
e--Estimated.



06088500 MUDDY CREEK AT VAUGHN, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968, 1971-82, October 1991 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to September 1968, July 1972 to September 1982.
WATER TEMPERATURE: October 1967 to September 1968, July 1971 to September 1979.
SUSPENDED-SEDIMENT DISCHARGE: July 1971 to September 1982.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,400 microsiemens per centimeter (μS/cm) at 25.0°C, Apr. 30, 1976; minimum daily, 470 μS/cm at 25.0°C, June 8, 1974. WATER TEMPERATURE : Maximum daily, 25.5°C, June 18, 1974, June 28, 1979; minimum daily, 0.0°C, on many days during winters.
SEDIMENT CONCENTRATION: Maximum daily, 21,100 mg/L, May 22, 1981; minimum daily, 10 mg/L, Feb. 10, 1973.
SEDIMENT LOAD: Maximum daily, 127,000 tons, May 22, 1981; minimum daily, 0.68 ton, Feb. 10, 1973.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water unfltrd mg/L (62855)
OCT										
22...	1330	38	8.6	851	22.0	12.5	E.005	1.60	.009	2.05
JAN										
14...	0930	34	8.4	963	6.0	.0	.061	3.16	.020	3.69
MAR										
24...	1010	24	8.8	1,090	13.0	7.0	E.009	1.86	.015	2.27
APR										
21...	1010	22	8.9	1,280	9.0	9.5	.015	1.56	.014	1.97
MAY										
18...	1645	104	8.5	596	15.0	14.0	.035	.323	.009	.98
JUN										
24...	1145	257	8.5	594	16.0	14.5	<.010	.719	.005	1.40
JUL										
22...	1000	285	8.5	581	20.0	17.0	E.006	.868	.004	1.43
AUG										
16...	1400	266	8.5	605	23.0	19.0	.010	.634	.005	.98
SEP										
08...	0820	213	8.6	603	10.0	12.5	E.009	.663	.004	.87

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Selenium, water, unfltrd ug/L (01147)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT						
22...	<.006	.011	1.5	65	42	4.3
JAN						
14...	<.006	.033	2.8	58	42	3.9
MAR						
24...	<.006	.031	2.9	96	49	3.2
APR						
21...	<.006	.030	2.9	96	73	4.3
MAY						
18...	E.004	.158	.9	93	179	50
JUN						
24...	.029	.24	1.4	79	277	192
JUL						
22...	.049	.194	1.2	77	229	176
AUG						
16...	E.005	.059	1.4	78	75	54
SEP						
08...	<.006	.052	1.2	80	91	52

E--Estimated.

06089000 SUN RIVER NEAR VAUGHN, MT

LOCATION.--Lat 47°31'33", long 111°30'43" (NAD 27), in SE¼SW¼SW¼ sec.32, T.21 N., R.2 E., Cascade County, Hydrologic Unit 10030104, on right bank 2.3 mi downstream from Muddy Creek, 2.8 mi southeast of Vaughn, and at river mile 15.0.

DRAINAGE AREA.--1,849 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to October 1897 (gage heights and discharge measurements only, published as "near Great Falls"), April 1934 to current year. Monthly discharge only for April 1934, published in WSP 1309.

REVISED RECORDS.--WSP 786: 1934. WSP 1729: Drainage area. WDR MT-03-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,340 ft (NGVD 29). July 11 to Oct. 30, 1897, nonrecording gage at site 0.6 mi downstream at different elevation. Apr. 19 to Aug. 3, 1934, non-recording gage 1.4 mi downstream at different elevation. Aug. 4, 1934 to Oct. 15, 2002, water-stage recorder 1.4 mi downstream at different elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated by Gibson, Pishkun, Willow Creek, and Nilan Reservoirs. Diversion for irrigation of about 110,000 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1964 exceeded the stage of the June 1908 flood by about 3 ft and is the highest since 1908, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	240	e220	e250	e170	e170	206	181	130	1,410	401	386	584
2	240	e240	e250	e160	e180	203	208	130	1,070	466	398	541
3	238	e230	e240	e140	e180	e180	197	122	748	433	389	554
4	244	e220	e230	e130	e190	188	185	122	480	404	577	533
5	240	e220	e240	e140	e190	e190	176	111	331	555	622	524
6	241	e220	e250	e150	e200	e190	168	97	742	515	515	509
7	242	e230	e230	e170	e210	192	156	102	1,560	454	441	501
8	250	e240	e210	e200	e210	222	143	103	1,690	374	393	474
9	237	e250	e190	e220	e220	237	142	100	1,220	399	438	463
10	231	e270	e180	e240	e210	219	152	281	995	419	423	455
11	226	e260	e180	e260	e200	202	147	1,300	713	372	452	452
12	229	e240	e190	e240	e210	194	139	1,480	595	429	416	452
13	231	e240	e200	e230	e220	191	136	1,240	571	448	444	497
14	231	e240	e210	e240	e210	184	130	856	638	426	428	522
15	270	e250	e220	e240	e220	178	127	698	515	402	447	534
16	290	253	e220	e230	e230	173	134	634	487	411	448	563
17	291	250	e210	e220	e240	178	142	590	517	408	405	521
18	270	242	e220	e220	e230	174	141	372	573	432	495	505
19	255	258	e220	e230	e220	171	133	384	480	489	605	476
20	255	264	e230	e220	e210	173	140	417	458	471	577	542
21	251	e210	e220	e230	e210	171	132	405	519	475	559	483
22	258	e200	e210	e230	e210	170	132	454	501	449	559	431
23	247	e210	e210	228	e220	168	131	535	432	476	764	399
24	229	e220	e220	e190	e230	164	128	751	418	441	1,190	376
25	225	e230	e200	e170	241	162	127	664	436	421	915	367
26	223	e240	e190	e160	239	162	124	733	456	456	858	344
27	227	e250	e190	e150	235	159	105	812	458	427	861	330
28	242	e270	e180	e160	221	159	102	933	576	446	731	331
29	259	e290	e170	e170	210	159	131	1,160	466	462	678	337
30	254	e270	e160	e190	---	159	137	1,430	433	477	647	326
31	e230	---	e180	e180	---	157	---	1,590	---	420	625	---
TOTAL	7,596	7,227	6,500	6,108	6,166	5,635	4,326	18,736	20,488	13,658	17,686	13,926
MEAN	245	241	210	197	213	182	144	604	683	441	571	464
MAX	291	290	250	260	241	237	208	1,590	1,690	555	1,190	584
MIN	223	200	160	130	170	157	102	97	331	372	386	326
AC-FT	15,070	14,330	12,890	12,120	12,230	11,180	8,580	37,160	40,640	27,090	35,080	27,620

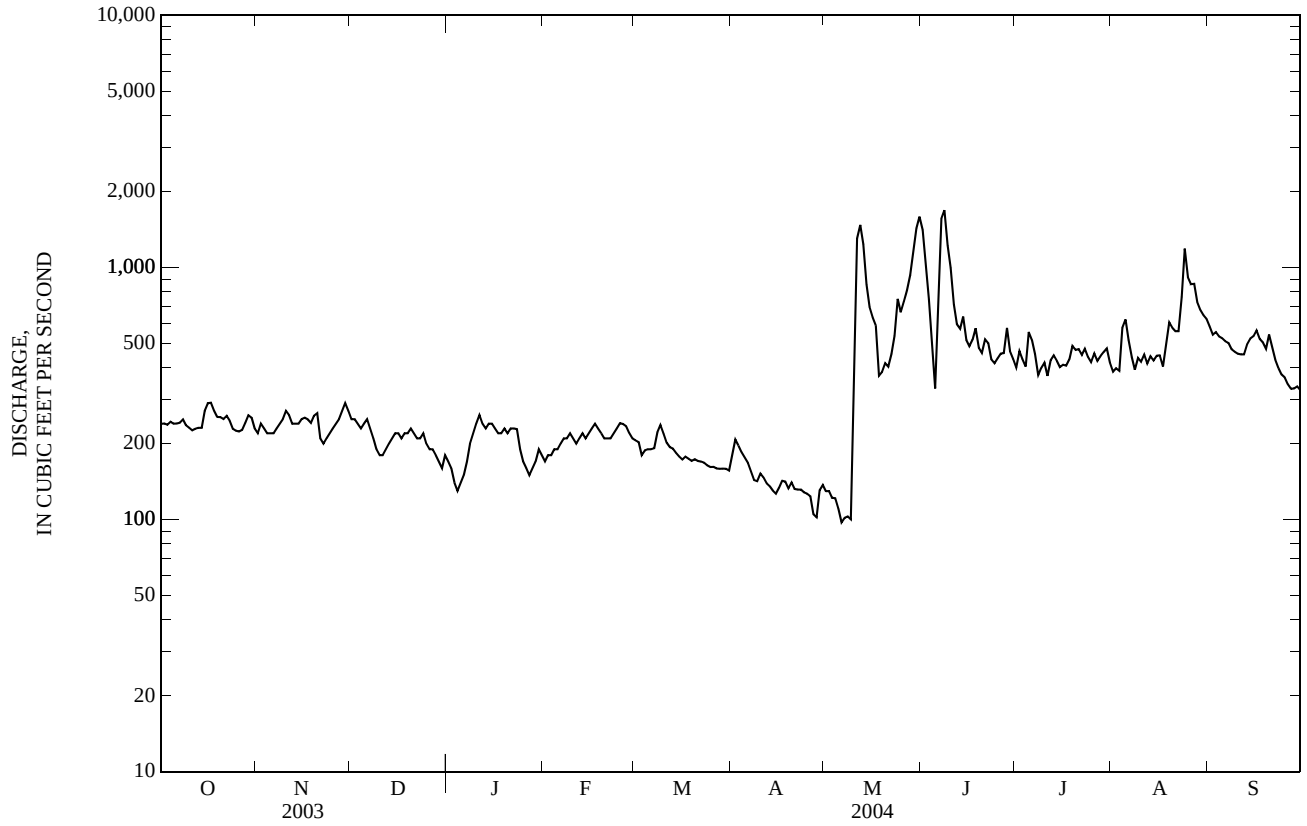
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2004, BY WATER YEAR (WY)

MEAN	379	337	300	255	264	323	494	1,557	2,512	777	562	441
MAX	779	908	896	656	601	868	3,000	4,333	8,014	2,508	1,025	1,040
(WY)	(1952)	(1990)	(1996)	(1986)	(1986)	(1969)	(1934)	(1976)	(1964)	(1975)	(1975)	(1993)
MIN	143	149	114	66.5	82.4	133	93.3	87.1	280	265	250	164
(WY)	(1937)	(1937)	(1936)	(1937)	(1936)	(1941)	(1941)	(1941)	(1941)	(1939)	(1940)	(1936)

06089000 SUN RIVER NEAR VAUGHN, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1934 - 2004	
ANNUAL TOTAL	137,672		128,052			
ANNUAL MEAN	377		350		678	
HIGHEST ANNUAL MEAN					1,307	1943
LOWEST ANNUAL MEAN					210	1941
HIGHEST DAILY MEAN	3,510	May 31	1,690	Jun 8	37,000	Jun 10, 1964
LOWEST DAILY MEAN	160	Dec 30	97	May 6	23	May 26, 1941
ANNUAL SEVEN-DAY MINIMUM	181	Dec 25	108	May 3	38	May 21, 1941
MAXIMUM PEAK FLOW			1,800	Jun 8	b53,500	Jun 9, 1964
MAXIMUM PEAK STAGE			3.29	Jun 8	c23.40	Jun 9, 1964
INSTANTANEOUS LOW FLOW			a87	May 6	d20	Apr 24, 1944
ANNUAL RUNOFF (AC-FT)	273,100		254,000		491,100	
10 PERCENT EXCEEDS	578		592		1,370	
50 PERCENT EXCEEDS	250		240		360	
90 PERCENT EXCEEDS	200		151		178	

a--Gage height, 1.80 ft.
b--42,200 ft^3/s in main channel, plus 11,300 ft^3/s in bypass channel.
c--From floodmark.
d--Gage height, 0.52 ft, result of irrigation.
e--Estimated.



06089000 SUN RIVER NEAR VAUGHN, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to September 2003.
WATER TEMPERATURE: October 1968 to September 1979, August 1999 to September 2003.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,610 microsiemens per centimeter (μS/cm) at 25°C, Apr. 8, 1977; minimum daily, 214 μS/cm at 25°C, June 8, 1970.
WATER TEMPERATURE: Maximum daily, 29.5°C, July 14, 18, 2002; minimum daily, 0.0°C on many days during winter.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd by analysis, mg/L (62855)
OCT										
22...	1530	254	8.5	692	22.0	13.5	.013	.450	.005	.66
JAN										
14...	1130	242	8.4	714	7.0	0.0	.026	.980	.006	1.12
MAR										
24...	1200	165	8.6	721	17.0	10.0	.031	.340	.004	.63
APR										
21...	1200	138	8.8	799	12.0	12.5	.035	.296	.005	.60
MAY										
19...	0930	328	8.6	610	10.0	12.0	.029	.157	.004	.53
JUN										
24...	1415	433	8.5	643	17.0	20.0	<.010	.405	.004	.79
JUL										
20...	1230	483	8.5	613	28.0	22.0	.024	.508	.004	1.08
AUG										
16...	1640	453	8.5	623	25.0	22.0	E.007	.350	.003	.67
SEP										
08...	0950	463	8.6	620	16.5	14.0	.016	.386	.004	.62

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Selenium, water, unfltrd ug/L (01147)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT						
22...	<.006	.021	.6	76	44	30
JAN						
14...	<.006	.008	1.2	62	11	7.2
MAR						
24...	<.006	.019	1.0	93	27	12
APR						
21...	<.006	.028	.9	87	56	21
MAY						
19...	.009	.064	.8	99	54	48
JUN						
24...	.010	.080	1.1	93	72	84
JUL						
20...	.033	.139	1.0	99	99	129
AUG						
16...	E.004	.050	.9	94	47	57
SEP						
08...	<.006	.036	1.0	97	64	80

E--Estimated.

06090300 MISSOURI RIVER NEAR GREAT FALLS, MT

LOCATION.--Lat 47°35'04", long 111°03'35" (NAD 27), in SW¼SE¼SW¼ sec.11, T.21 N., R.5 E., Cascade County, Hydrologic Unit 10030102, on left bank 700 ft downstream from Morony Dam, 12.6 mi northeast of Great Falls, and at river mile 2,105.4.
DRAINAGE AREA.--23,292 mi^2.

PERIOD OF RECORD.--May to July 1953 (in WSP 1320-B), October 1956 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,807.21 ft (NGVD 29). Prior to July 27, 1977, nonrecording gage at same site at elevation 2.00 ft higher. July 27, 1977 to May 26, 1987, at site 600 ft upstream at elevation 2.00 ft higher. October 1971 to July 27, 1977, discharges were obtained from the Montana Power Company at Rainbow Dam 7.05 mi upstream. Prior to October 1971, Foxboro meters were used for determining discharge through powerplant. Water-stage recorder on Morony Reservoir was used for determining head on taintor gates with elevation of gage at sea level (level by Montana Power Company).

REMARKS.--Records good. Flow regulated by 18 smaller irrigation reservoirs and powerplants upstream, Clark Canyon Reservoir (station number 06015300), and Canyon Ferry Lake (station number 06058500). Diversion for irrigation of about 750,400 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,010	4,060	4,290	2,780	5,050	4,790	4,700	5,130	7,600	4,800	3,810	4,240
2	4,040	4,060	4,200	4,110	5,030	4,730	4,800	4,890	7,060	4,830	3,640	4,280
3	3,860	4,210	4,220	4,020	4,980	4,580	5,050	4,560	6,450	4,810	3,690	4,050
4	3,840	4,200	4,150	3,680	4,890	4,670	5,080	4,550	5,880	4,820	3,980	4,130
5	3,840	3,980	4,030	3,630	4,990	4,640	5,150	4,620	5,330	4,790	4,250	4,110
6	4,200	4,000	3,960	3,790	4,920	4,820	5,090	4,620	5,340	4,950	4,150	3,980
7	4,610	4,240	4,250	4,040	4,980	4,760	4,910	4,690	6,370	5,130	4,270	4,100
8	4,200	4,070	4,150	4,150	5,080	4,710	4,990	4,770	6,610	4,720	4,120	3,920
9	3,540	4,180	4,080	4,500	5,040	4,860	4,790	4,710	6,310	4,660	4,080	4,620
10	3,460	4,300	4,200	4,820	5,030	4,830	4,610	4,670	6,020	4,750	4,210	4,460
11	3,550	4,140	4,000	4,940	4,940	4,860	4,410	5,360	5,990	4,570	4,080	4,090
12	4,010	4,340	3,930	5,100	4,820	4,930	4,340	6,200	5,880	4,460	4,040	4,540
13	4,040	4,320	4,220	5,220	4,760	4,840	4,350	6,070	6,920	4,420	4,020	4,440
14	3,970	4,110	5,010	5,130	4,680	4,890	4,170	5,490	6,930	4,530	4,090	4,600
15	3,980	4,260	5,350	5,100	4,590	4,870	4,220	5,060	6,570	4,190	4,010	4,550
16	4,110	4,310	5,130	5,240	4,470	4,880	4,310	4,800	5,930	4,150	4,030	4,280
17	4,180	4,310	4,640	5,330	4,620	4,740	4,360	4,890	5,900	4,100	3,960	4,320
18	3,990	4,300	4,310	5,330	4,670	4,760	4,350	4,860	5,730	4,310	4,010	3,930
19	3,750	4,350	4,830	5,080	5,020	4,800	4,380	4,690	5,640	4,010	4,340	3,680
20	4,080	4,270	4,880	5,090	5,320	4,690	4,390	4,660	5,250	4,230	4,350	4,350
21	3,980	4,220	4,770	5,110	5,320	4,740	4,320	5,030	5,170	4,150	4,090	4,050
22	3,910	3,940	4,560	4,840	5,130	4,790	4,160	5,230	5,420	4,040	4,290	4,380
23	4,050	3,210	4,460	4,730	5,070	4,850	4,310	5,750	5,160	4,130	4,890	4,280
24	3,980	3,260	4,540	5,030	5,070	4,750	4,200	6,220	4,960	4,270	5,380	4,280
25	3,660	4,230	4,400	4,710	4,800	4,780	4,210	6,920	4,970	3,890	5,240	4,150
26	4,100	4,590	4,730	3,010	4,620	4,650	4,090	6,950	4,810	3,770	5,150	4,110
27	4,030	4,800	4,580	2,650	4,830	4,650	4,310	7,160	4,610	4,130	4,970	4,000
28	3,880	4,380	4,210	3,860	4,890	4,630	4,380	7,740	4,640	3,960	4,810	3,790
29	4,240	4,570	3,310	3,520	4,960	4,500	4,210	7,770	4,800	3,840	4,660	4,000
30	4,060	4,660	2,700	3,810	---	4,580	4,650	7,720	4,770	3,760	4,340	4,030
31	4,050	---	2,530	4,550	---	4,600	---	7,770	---	3,960	3,930	---
TOTAL	123,200	125,870	132,620	136,900	142,570	147,170	135,290	173,550	173,020	135,130	132,880	125,740
MEAN	3,974	4,196	4,278	4,416	4,916	4,747	4,510	5,598	5,767	4,359	4,286	4,191
MAX	4,610	4,800	5,350	5,330	5,320	4,930	5,150	7,770	7,600	5,130	5,380	4,620
MIN	3,460	3,210	2,530	2,650	4,470	4,500	4,090	4,550	4,610	3,760	3,640	3,680
AC-FT	244,400	249,700	263,100	271,500	282,800	291,900	268,300	344,200	343,200	268,000	263,600	249,400

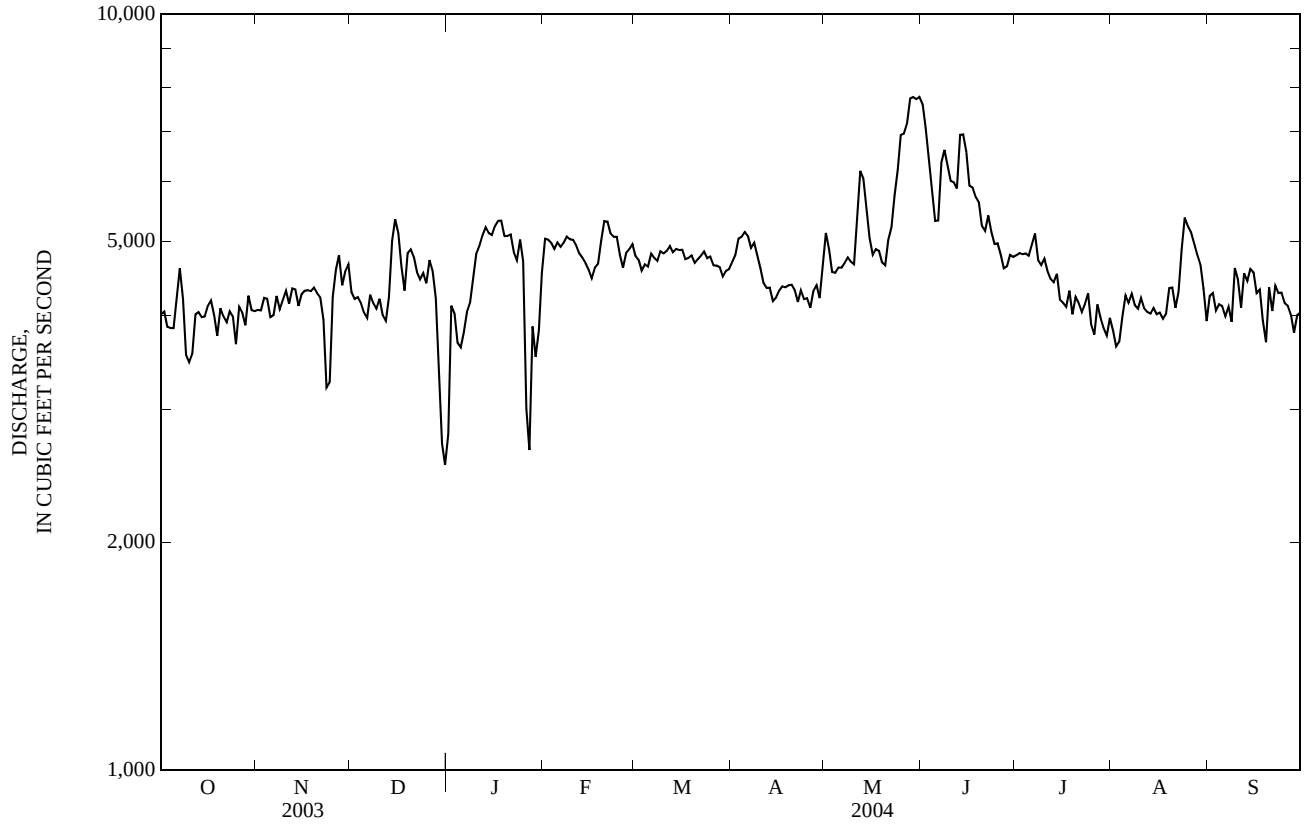
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2004, BY WATER YEAR (WY)

MEAN	5,770	6,119	6,104	6,257	6,461	6,762	7,404	10,830	13,570	8,537	5,894	5,524
MAX	11,940	10,430	11,520	8,232	9,252	10,820	13,200	24,780	30,160	23,560	9,946	9,992
(WY)	(1966)	(1966)	(1960)	(1971)	(1997)	(1968)	(1976)	(1976)	(1964)	(1975)	(1993)	(1984)
MIN	3,829	3,950	3,773	3,869	4,030	4,021	3,526	4,454	3,758	3,817	3,719	3,109
(WY)	(1989)	(1993)	(2002)	(2002)	(2002)	(1961)	(1961)	(1961)	(1977)	(1977)	(1988)	(1959)

06090300 MISSOURI RIVER NEAR GREAT FALLS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1957 - 2004	
ANNUAL TOTAL	1,962,110		1,683,940			
ANNUAL MEAN	5,376		4,601		7,435	
HIGHEST ANNUAL MEAN					11,490	1975
LOWEST ANNUAL MEAN					4,349	2001
HIGHEST DAILY MEAN	13,300	May 31	7,770	May 29	63,400	Jun 10, 1964
LOWEST DAILY MEAN	2,530	Dec 31	2,530	Dec 31	1,760	Apr 16, 1961
ANNUAL SEVEN-DAY MINIMUM	3,670	Sep 3	3,300	Dec 29	2,740	Sep 5, 1959
MAXIMUM PEAK FLOW			8,180	May 28	a72,000	Jun 10, 1964
MAXIMUM PEAK STAGE			3.92	May 28	b9.02	May 24, 1981
INSTANTANEOUS LOW FLOW					c1.0	Apr 16, 1962
ANNUAL RUNOFF (AC-FT)	3,892,000		3,340,000		5,387,000	
10 PERCENT EXCEEDS	7,890		5,330		11,800	
50 PERCENT EXCEEDS	4,850		4,540		6,330	
90 PERCENT EXCEEDS	3,880		3,930		4,210	

a--From hydrographic comparison with nearby stations.
b--site and datum then in use.
c--About, powerplant shutdown.



06090650 LAKE CREEK NEAR POWER, MT

LOCATION.--Lat 47°41'55", long 111°23'23" (NAD 27), in SE¼SE¼sE¼ sec.31, T.23 N., R.3 E., Chouteau County, Hydrologic Unit 10030102, on left bank 1.9 mi downstream from county bridge, 1.5 mi upstream from Benton Lake, and 14 mi east of Power.

DRAINAGE AREA.--83.8 mi^2, of which 11.4 mi^2 is noncontributing.

PERIOD OF RECORD.--July 1990 to current year (seasonal records only).

GAGE.--Water-stage recorder. Parshall flume since Apr. 1, 1997. Prior to Apr. 1, 1997 water-stage recorder located at site 1.9 mi upstream. Elevation of gage is 3,620 ft (NGVD 29).

REMARKS.--Seasonal records fair. Seasonal flows from Muddy Creek diverted into Lake Creek, most years. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				0.04	0.17	0.03	0.00	0.00	33	26		
2				0.05	0.17	0.00	0.00	0.00	34	27		
3				0.05	0.11	0.00	0.00	0.00	37	27		
4				0.07	0.06	0.00	0.00	0.00	37	27		
5				0.17	0.06	0.00	0.00	0.00	36	27		
6				0.13	0.04	0.00	0.00	0.00	37	22		
7				0.07	0.00	0.15	0.00	0.00	37	27		
8				0.06	0.00	0.18	0.00	0.00	36	27		
9				0.06	0.00	0.17	0.00	0.00	37	27		
10				0.04	0.00	0.17	0.00	0.00	36	27		
11				0.01	0.00	0.19	0.00	0.00	36	27		
12				0.03	0.00	0.17	0.00	0.00	36	27		
13				0.01	0.00	0.16	0.00	0.00	37	6.4		
14				0.00	0.00	0.07	0.00	0.00	37	18		
15				0.01	0.00	0.00	0.00	0.00	36	27		
16				0.09	0.00	0.00	0.00	0.00	35	27		
17				0.06	0.00	0.00	0.00	0.00	35	27		
18				0.06	0.00	0.00	0.00	6.9	35	27		
19				0.06	0.00	0.00	0.00	25	36	22		
20				0.03	0.00	0.00	0.00	34	38	22		
21				0.06	0.03	0.00	0.00	35	38	5.0		
22				0.06	0.06	0.11	0.00	36	38	2.0		
23				0.02	0.15	0.15	0.00	39	38	0.88		
24				0.00	3.4	0.06	0.00	52	37	0.43		
25				0.00	2.4	0.00	0.00	40	31	0.30		
26				0.00	0.62	0.00	0.00	35	29	0.21		
27				0.00	0.25	0.00	0.00	35	32	0.19		
28				0.00	0.19	0.00	0.00	34	35	0.16		
29				0.05	0.19	0.00	0.00	34	34	0.13		
30				0.17	0.15	0.00	0.00	33	27	0.14		
31				---	0.06	---	0.00	33	---	0.12		
TOTAL				1.46	8.11	1.61	0.00	471.90	1,060	503.96		
MEAN				0.05	0.26	0.05	0.00	15.2	35.3	16.3		
MAX				0.17	3.4	0.19	0.00	52	38	27		
MIN				0.00	0.00	0.00	0.00	0.00	27	0.12		
AC-FT				2.9	16	3.2	0.00	936	2,100	1,000		

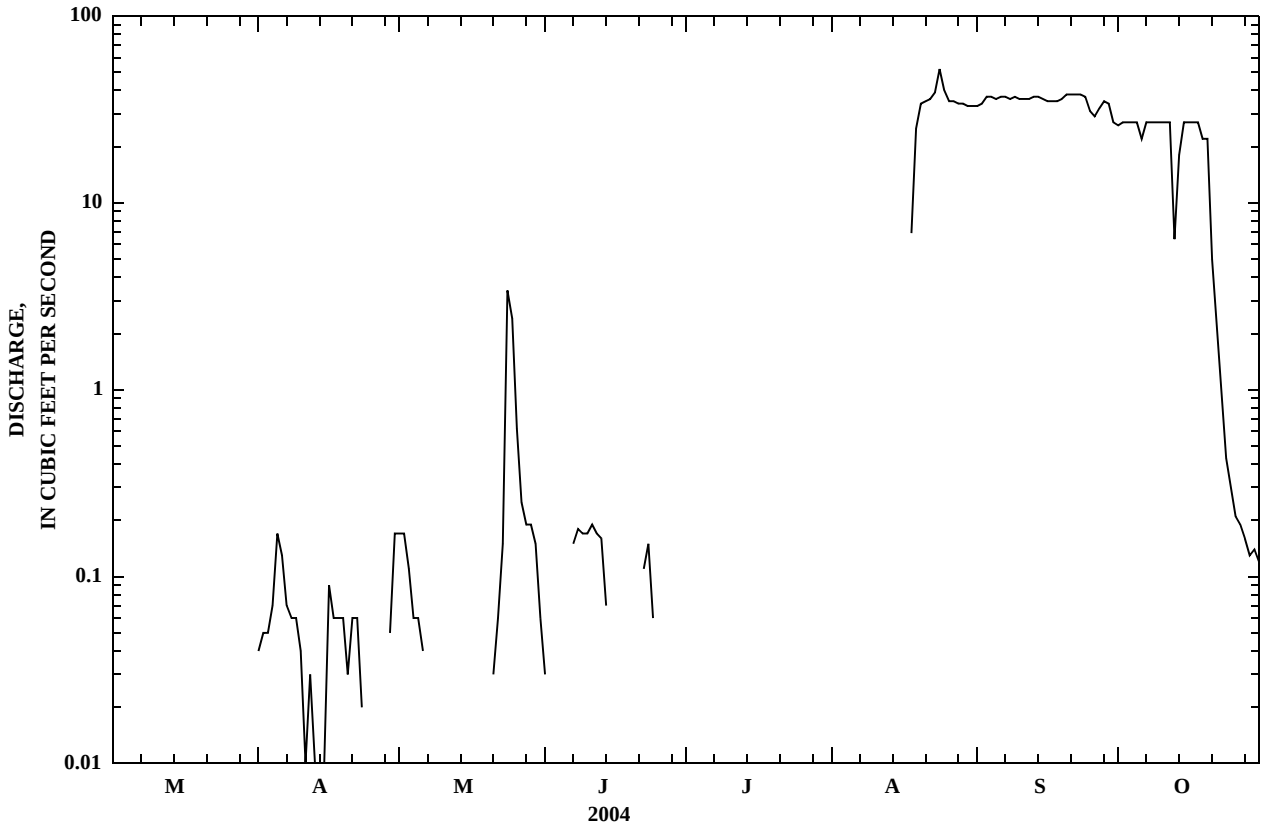
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1990 - 2004

MEAN	3.64	3.04	12.7	12.4	1.29	12.2	26.1	16.4	3.85
MAX	24.8	8.56	30.9	29.8	9.51	35.5	38.1	30.1	10.2
(WY)	(1993)	(1993)	(1992)	(1991)	(1993)	(1990)	(1990)	(2000)	(1999)
MIN	0.05	0.01	0.26	0.05	0.00	0.35	11.3	0.19	0.22
(WY)	(2000)	(2003)	(2004)	(2004)	(1992)	(2002)	(2003)	(1994)	(2002)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1990 - 2004	
HIGHEST DAILY MEAN	52	Aug 24	300	Mar 6, 1993
LOWEST DAILY MEAN	.00	Many days	0.00	Jul 1, 1990
MAXIMUM PEAK FLOW	57	Aug 24	a300	Mar 6, 1993
MAXIMUM PEAK STAGE	2.30	Aug 24	b7.30	Mar 6, 1993

a--Estimated daily discharge during period of ice effect.
b--From floodmarks, site and datum then in use.

06090650 LAKE CREEK NEAR POWER, MT—Continued



06090800 MISSOURI RIVER AT FORT BENTON, MT

LOCATION.--Lat 47°49'03", long 110°39'59" (NAD 27), in NW¼SE¼SE¼ sec.23, T.24 N., R.8 E., Chouteau County, Hydrologic Unit 10030102, on left bank at downstream side of Old Fort Benton Bridge at Fort Benton, 3.8 mi upstream from Shonkin Creek, and at river mile 2,073.2.

DRAINAGE AREA.--24,749 mi^2.

PERIOD OF RECORD.--October 1890 to current year. Records for June 1881 to September 1890, published in WSP 546 and 761, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 746: 1932. WSP 1146: 1891-1907, 1908(M), 1909-18, 1937-38. WSP 1209: 1948(P). WSP 1309: 1929(M). WSP 1629: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Elevation of gage is 2,614.05 ft (NGVD 1929). Prior to Oct. 11, 1920, nonrecording gages, and Oct. 11, 1920, to Apr. 25, 1924, water-stage recorder, all at present site at elevation 1.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by 18 smaller irrigation reservoirs and powerplants, Clark Canyon Reservoir (station number 06015300), and Canyon Ferry Lake (station number 06058500). Diversions for irrigation of about 751,000 acres upstream from station. Extreme diurnal fluctuation caused by powerplant at Morony Dam. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,580	3,990	4,470	e2,580	e4,850	4,660	4,640	5,110	8,500	5,150	3,610	3,870
2	3,730	4,040	4,240	e3,550	e5,000	4,490	4,790	5,120	7,970	5,220	3,490	4,100
3	3,550	4,140	4,290	e3,980	e4,980	4,440	4,990	4,750	7,270	5,140	3,290	3,930
4	3,510	4,200	4,190	e3,710	e4,880	4,390	5,030	4,650	6,570	5,270	3,610	3,940
5	3,490	4,080	4,180	e3,570	e4,930	4,430	5,120	4,730	6,060	5,230	3,870	3,970
6	3,670	3,950	3,920	e3,670	e4,920	4,480	5,130	4,790	5,570	5,370	3,830	3,820
7	3,820	4,200	4,220	e3,910	e4,930	4,700	4,920	4,870	6,420	5,640	3,950	3,910
8	4,400	4,210	4,280	e4,070	e5,010	4,520	4,980	4,970	7,150	5,240	3,760	3,780
9	3,300	4,100	4,090	e4,340	e5,010	4,580	4,870	4,940	6,990	5,070	3,800	4,110
10	3,220	4,270	4,150	e4,690	e4,990	4,790	4,800	4,880	6,430	5,070	3,740	4,520
11	3,260	4,170	4,110	e4,880	e4,930	4,720	4,530	5,050	7,240	4,980	3,870	3,970
12	3,480	4,280	4,140	e5,000	e4,820	4,810	4,420	6,630	8,170	4,740	3,610	4,240
13	3,800	4,350	4,060	e5,140	e4,740	4,780	4,400	6,360	8,520	4,590	3,800	4,320
14	3,700	4,180	4,670	e5,130	e4,660	4,720	4,240	5,870	8,500	4,820	3,660	4,410
15	3,720	4,270	5,400	e5,080	e4,590	4,760	4,240	5,330	7,880	4,570	3,720	4,360
16	3,810	4,330	5,350	e5,160	e4,460	4,780	4,270	4,890	7,210	4,330	3,780	4,290
17	3,880	4,360	4,810	e5,240	e4,550	4,740	4,380	4,840	6,750	4,270	3,660	4,100
18	3,860	4,370	4,510	e5,290	e4,630	4,610	4,410	4,910	6,460	4,270	3,740	3,810
19	3,580	4,380	4,580	e5,120	e4,870	4,650	4,380	4,750	6,360	4,180	3,980	3,590
20	3,780	4,330	5,110	e5,030	e5,170	4,750	4,400	4,590	5,900	4,180	4,210	3,840
21	3,840	4,330	4,830	e5,060	e5,270	4,690	4,340	4,970	5,570	4,270	4,200	4,090
22	3,730	4,170	4,670	e4,910	e5,140	4,740	4,160	5,280	5,790	4,150	4,100	4,010
23	3,790	3,740	4,530	e4,700	e5,030	4,770	4,190	5,820	5,580	4,150	4,610	3,990
24	3,920	3,060	4,540	e4,950	5,000	4,760	4,170	6,880	5,350	4,250	5,500	4,090
25	3,670	4,100	4,460	e4,740	4,820	4,680	4,130	7,390	5,240	4,000	5,280	3,940
26	3,810	4,480	4,650	e3,460	4,530	4,690	4,050	7,780	5,300	3,650	5,200	3,910
27	3,970	5,030	4,640	e2,620	4,560	4,540	4,170	7,810	5,070	3,920	5,010	3,830
28	3,880	4,390	4,560	e3,380	4,680	4,630	4,360	8,530	5,060	3,790	4,750	3,610
29	4,060	4,470	3,990	e3,580	4,700	4,460	4,270	8,800	5,120	3,750	4,660	3,700
30	4,100	4,710	3,230	e3,660	---	4,540	4,540	8,770	5,260	3,440	4,340	3,760
31	3,970	---	e2,550	e4,250	---	4,550	---	8,670	---	3,740	3,940	---
TOTAL	115,880	126,680	135,420	134,450	140,650	143,850	135,320	182,730	195,260	140,440	126,570	119,810
MEAN	3,738	4,223	4,368	4,337	4,850	4,640	4,511	5,895	6,509	4,530	4,083	3,994
MAX	4,400	5,030	5,400	5,290	5,270	4,810	5,130	8,800	8,520	5,640	5,500	4,520
MIN	3,220	3,060	2,550	2,580	4,460	4,390	4,050	4,590	5,060	3,440	3,290	3,590
AC-FT	229,800	251,300	268,600	266,700	279,000	285,300	268,400	362,400	387,300	278,600	251,100	237,600

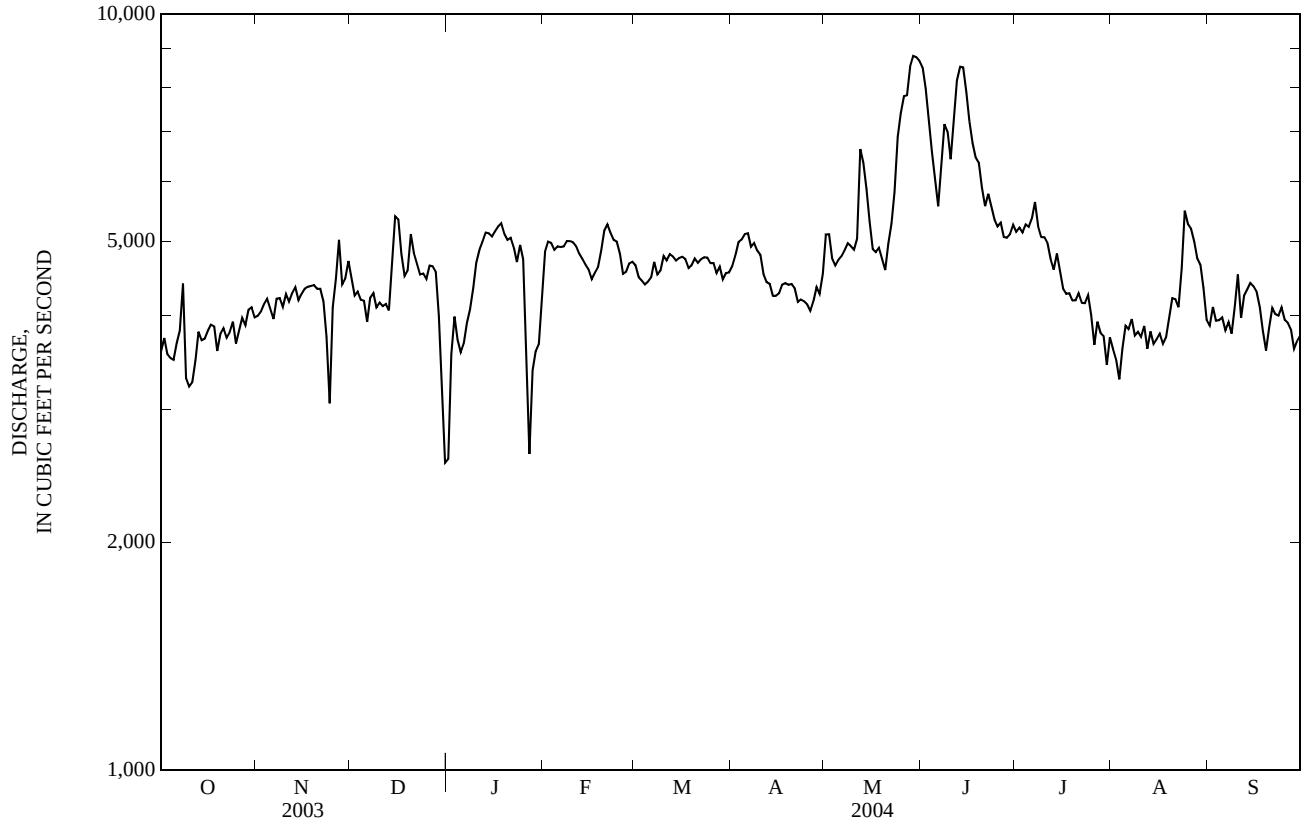
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1891 - 2004, BY WATER YEAR (WY)

MEAN	5,293	5,474	5,186	5,055	5,350	6,244	8,076	13,520	18,280	9,089	5,060	4,842
MAX	12,610	10,850	11,640	8,380	9,327	11,800	15,540	28,600	53,620	26,580	10,550	10,240
(WY)	(1966)	(1966)	(1960)	(1997)	(1997)	(1910)	(1910)	(1894)	(1908)	(1907)	(1993)	(1984)
MIN	2,441	2,789	2,446	2,377	2,492	2,986	3,574	4,144	4,055	2,433	1,576	1,890
(WY)	(1920)	(1920)	(1932)	(1932)	(1937)	(1938)	(1961)	(1941)	(1977)	(1919)	(1934)	(1934)

06090800 MISSOURI RIVER AT FORT BENTON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1891 - 2004	
ANNUAL TOTAL	1,965,460		1,697,060			
ANNUAL MEAN	5,385		4,637		7,623	
HIGHEST ANNUAL MEAN					11,850	1894
LOWEST ANNUAL MEAN					3,619	1937
HIGHEST DAILY MEAN	13,900	May 31	8,800	May 29	107,000	Jun 7, 1908
LOWEST DAILY MEAN	2,550	Dec 31	2,550	Dec 31	627	Jul 5, 1936
ANNUAL SEVEN-DAY MINIMUM	3,500	Oct 9	3,310	Dec 30	1,190	Jan 10, 1932
MAXIMUM PEAK FLOW			a9,100	May 28	c140,000	Jun 6, 1908
MAXIMUM PEAK STAGE			b9.18	Feb 2	d18.50	Jun 6, 1908
INSTANTANEOUS LOW FLOW					f320	Jul 5, 1936
ANNUAL RUNOFF (AC-FT)	3,898,000		3,366,000		5,523,000	
10 PERCENT EXCEEDS	8,070		5,520		14,300	
50 PERCENT EXCEEDS	4,740		4,480		5,630	
90 PERCENT EXCEEDS	3,630		3,710		3,520	

a--Gage height, 3.39 ft.
b--Backwater from ice.
c--About, observed, from rating table extended above 63,000 ft^3/s.
d--Present datum.
e--Estimated.
f--Gage height, -0.05 ft.



06091700 TWO MEDICINE RIVER BELOW SOUTH FORK, NEAR BROWNING, MT

LOCATION.--Lat 48°25'36", long 112°59'20" (NAD 27), in SE¼SE¼SE¼ sec. 23, T.31 N., R.11 W., Glacier County, Hydrologic Unit 10030201, Blackfeet Indian Reservation, on left bank 15 ft downstream from bridge on Blackfeet Secondary Highway No. 1, 9.7 mi south of Browning, and 12.3 mi northwest of Heart Butte.

DRAINAGE AREA.--250 mi^2.

PERIOD OF RECORD.--May 1977 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,180 ft (NGVD 29). May 1977 to September 1997 at elevation 1.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Lower Two Medicine Lake (station number 06090900). Diversions for irrigation of about 64 acres upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water discharge and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 100,000 ft^3/s, June 8, 1964, as determined at Two Medicine River near Browning (station number 06092000) located about 10 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	e22	e35	e30	e24	e40	221	686	579	528	230	167
2	31	e23	e41	e24	e23	e31	172	714	502	500	229	155
3	30	e22	e36	e22	e25	e30	152	820	512	472	226	153
4	24	e21	e34	e18	e27	e41	173	919	555	491	221	148
5	20	e21	e36	e19	e38	e54	240	1,010	580	512	218	145
6	20	e29	e38	e25	e40	e52	287	953	612	456	217	146
7	18	e27	e35	e30	e42	e72	340	899	1,030	462	222	143
8	18	e27	e33	e33	e37	e120	350	938	1,070	452	220	140
9	20	e33	e31	e33	e40	e140	317	939	866	422	219	138
10	24	e44	e32	e34	e37	e110	275	878	779	384	217	136
11	22	e37	e28	e36	e33	104	268	903	661	358	212	134
12	21	e36	e32	e35	e36	93	310	925	649	317	209	136
13	22	e41	e36	e36	e35	82	418	1,000	650	294	206	138
14	23	e40	e41	e35	e33	68	542	1,050	640	284	202	133
15	23	e39	e44	e35	e50	65	507	1,060	670	287	201	134
16	24	e39	e42	e33	e48	58	387	1,050	606	290	202	136
17	22	e41	e41	e33	e47	64	322	1,040	564	289	198	128
18	26	e43	e42	e33	e48	80	284	974	501	270	233	53
19	24	e31	e43	e33	e50	141	273	875	465	274	186	47
20	23	e24	e44	e32	e48	114	284	811	438	314	180	53
21	23	e21	e40	e29	e46	94	329	781	425	278	178	50
22	24	e20	e38	e32	e44	92	396	788	426	271	170	48
23	22	e34	e40	e33	e43	107	473	853	463	283	179	46
24	23	e36	e41	e28	e43	155	522	751	511	308	173	46
25	24	e38	e35	e24	e44	154	486	700	593	298	173	44
26	23	e40	e33	e21	e43	142	527	781	657	294	186	43
27	23	e39	e34	e20	e42	122	684	990	639	277	181	43
28	25	e37	e30	e21	e39	106	787	938	583	245	177	43
29	e24	e41	e29	e23	e38	107	648	839	556	239	176	43
30	e23	e37	e24	e28	---	135	647	714	533	236	174	44
31	e21	---	e34	e24	---	209	---	641	---	232	171	---
TOTAL	720	983	1,122	892	1,143	2,982	11,621	27,220	18,315	10,617	6,186	3,013
MEAN	23.2	32.8	36.2	28.8	39.4	96.2	387	878	610	342	200	100
MAX	31	44	44	36	50	209	787	1,060	1,070	528	233	167
MIN	18	20	24	18	23	30	152	641	425	232	170	43
AC-FT	1,430	1,950	2,230	1,770	2,270	5,910	23,050	53,990	36,330	21,060	12,270	5,980
*	0	0	0	0	0	0	0	3,770	8,670	9,890	7,770	2,440

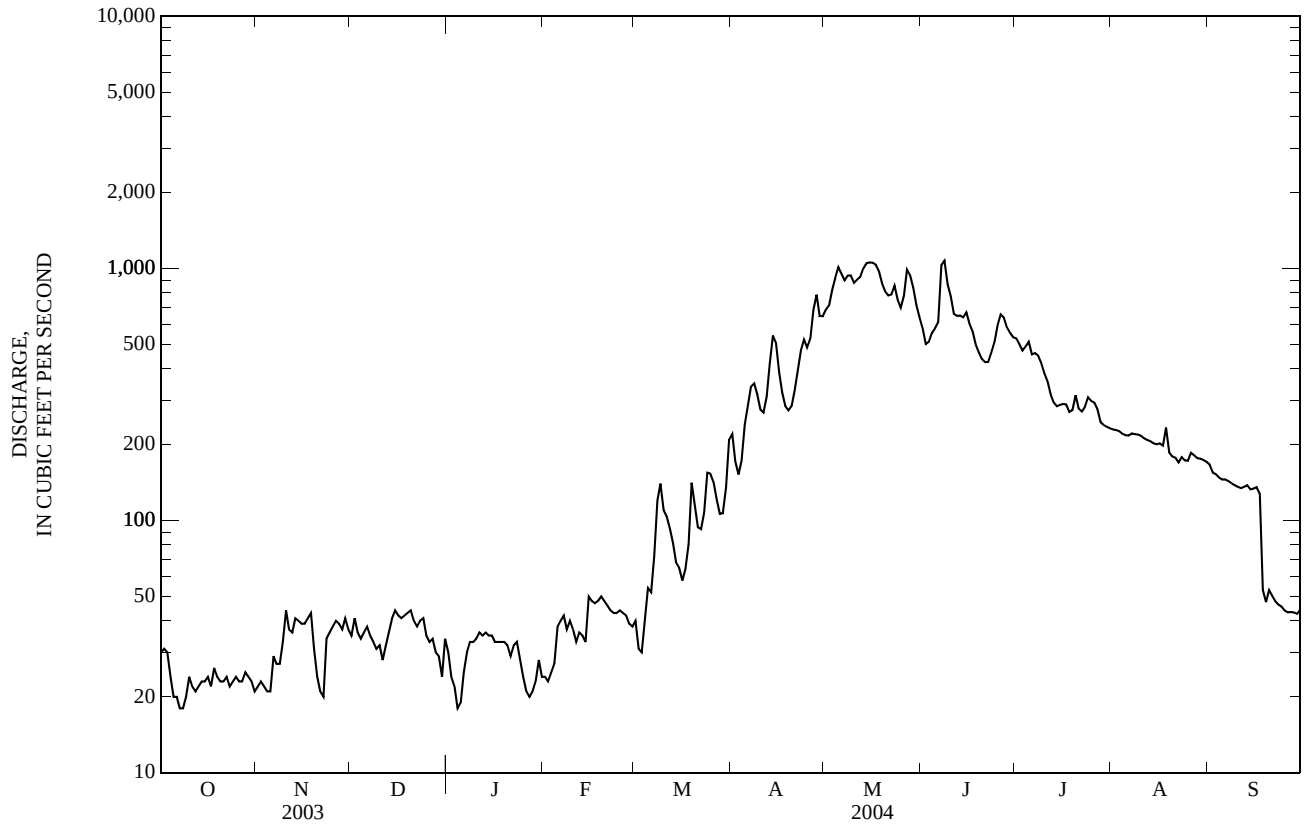
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2004, BY WATER YEAR (WY)

MEAN	92.7	124	76.6	59.7	88.5	144	497	1,160	1,040	361	162	102
MAX	533	558	394	180	394	474	923	2,040	2,922	656	265	240
(WY)	(1986)	(1996)	(1996)	(1981)	(1996)	(1986)	(1990)	(1991)	(2002)	(2002)	(2002)	(1985)
MIN	23.2	18.8	19.7	17.9	26.4	40.5	140	439	282	173	41.2	24.4
(WY)	(2004)	(1980)	(1999)	(1982)	(1980)	(1980)	(2001)	(1977)	(1977)	(1994)	(1994)	(1988)

06091700 TWO MEDICINE RIVER BELOW SOUTH FORK, NEAR BROWNING, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1977 - 2004	
ANNUAL TOTAL	94,274		84,814			
ANNUAL MEAN	258		232		331	
HIGHEST ANNUAL MEAN					542	1991
LOWEST ANNUAL MEAN					199	2001
HIGHEST DAILY MEAN	1,760	May 31	1,070	Jun 8	8,600	Jun 7, 1995
LOWEST DAILY MEAN	18	Oct 7	18	Oct 7	10	Jan 29, 1980
ANNUAL SEVEN-DAY MINIMUM	20	Oct 5	20	Oct 5	13	Feb 3, 1982
MAXIMUM PEAK FLOW			a1,270	Jun 7	b11,700	May 19, 1991
MAXIMUM PEAK STAGE			4.20	May 5	c8.25	Jun 7, 1995
ANNUAL RUNOFF (AC-FT)	187,000		168,200		240,000	
10 PERCENT EXCEEDS	814		674		953	
50 PERCENT EXCEEDS	53		106		120	
90 PERCENT EXCEEDS	24		24		32	

*--Flows, in acre-ft, in Two Medicine Canal.
a--Gage height, 4.13 ft.
b--Gage height, 7.78 ft, previous datum; from rating curve extended above 5,500 ft^3/s.
c--Previous datum.
e--Estimated.



06093200 BADGER CREEK BELOW FOUR HORNS CANAL, NEAR BROWNING, MT

LOCATION.--Lat 48°22'12", long 112°48'07" (NAD 27), in NW¼SW¼SE¼ sec.8, T.30 N., R.9 W., Glacier County, Hydrologic Unit 10030201, Blackfeet Indian Reservation, on left bank, 3.4 mi downstream from point of diversion to Four Horns Canal, 15.5 mi southeast of Browning, and at river mile 11.6.

DRAINAGE AREA.--152 mi^2.

PERIOD OF RECORD.--October 1973 to current year. Records equivalent to those published as Badger Creek near Browning (station number 06092500) if diversion to Four Horns Canal is added to flow past station.

GAGE.--Water-stage recorder. Elevation of gage is 4,140 ft (NGVD 29). May 1951 to September 1973, water-stage recorder at site 3.4 mi upstream (station number 06092500) at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Four Horns Canal diverts water from right bank in NE¼ sec.24, T.30 N., R.10 W., at diversion dam 3.4 mi upstream for irrigation of about 6,000 acres downstream from station. Recorded diversions by Four Horns Canal are listed in daily table below. Several observations of water temperature and specific conductance were made during the year. Bureau of Reclamation satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 49,700 ft^3/s, June 8, 1964, gage height, 10.37 ft, from rating curve extended above 2,000 ft^3/s on basis of slope-area measurement of peak flow, as determined at Badger Creek near Browning site (station number 06092500) 3.4 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	e80	e80	e62	e66	67	119	162	297	142	34	28
2	89	e82	e86	e60	e64	66	112	191	292	129	33	27
3	89	e86	e86	e54	e70	60	108	264	315	119	33	28
4	88	e70	83	e46	e76	69	113	319	361	122	33	27
5	87	e70	83	e48	e80	67	122	390	412	130	32	27
6	87	e80	85	e54	e82	63	124	336	451	109	32	27
7	86	e86	83	e64	87	69	106	317	397	109	33	27
8	86	e88	79	e76	81	77	121	354	338	114	33	26
9	92	90	e74	e76	77	80	117	341	276	100	32	26
10	92	93	e66	e80	72	83	104	298	262	92	32	26
11	90	89	e62	e80	75	80	97	287	253	88	32	26
12	90	89	80	81	72	79	103	231	249	81	32	26
13	90	85	86	79	69	79	120	199	235	77	31	26
14	90	83	89	83	74	76	143	179	229	68	31	27
15	90	82	85	81	72	74	149	175	214	60	30	27
16	91	82	81	77	71	73	128	172	184	59	31	27
17	90	82	80	74	71	73	108	184	181	56	30	27
18	95	e82	78	74	78	74	95	196	165	53	49	27
19	92	e80	82	73	78	87	86	211	152	51	38	27
20	90	e70	82	72	73	83	81	234	145	56	32	28
21	87	e60	78	68	71	82	79	281	143	51	31	27
22	87	e52	76	69	71	80	75	302	150	47	31	27
23	86	e48	74	73	73	83	75	290	163	45	32	26
24	87	e60	75	e66	73	90	92	249	170	43	32	26
25	86	e64	74	e62	74	96	99	229	173	40	31	26
26	84	e64	74	e58	72	96	105	256	173	36	31	27
27	82	e66	74	e54	69	95	147	325	162	33	31	27
28	e82	e66	64	e56	67	91	259	385	146	34	29	27
29	e80	e74	e64	e58	66	89	208	395	142	34	29	27
30	e78	e80	e56	e62	---	90	177	356	156	34	29	27
31	e76	---	e64	e70	---	103	---	314	---	33	29	---
TOTAL	2,708	2,283	2,383	2,090	2,124	2,474	3,572	8,422	6,986	2,245	998	804
MEAN	87.4	76.1	76.9	67.4	73.2	79.8	119	272	233	72.4	32.2	26.8
MAX	95	93	89	83	87	103	259	395	451	142	49	28
MIN	76	48	56	46	64	60	75	162	142	33	29	26
AC-FT	5,370	4,530	4,730	4,150	4,210	4,910	7,090	16,710	13,860	4,450	1,980	1,590
DIVERSION BY FOUR HORNS CANAL												
AC-FT	0	0	0	0	0	0	3,560	5,460	6,220	6,220	5,160	4,380

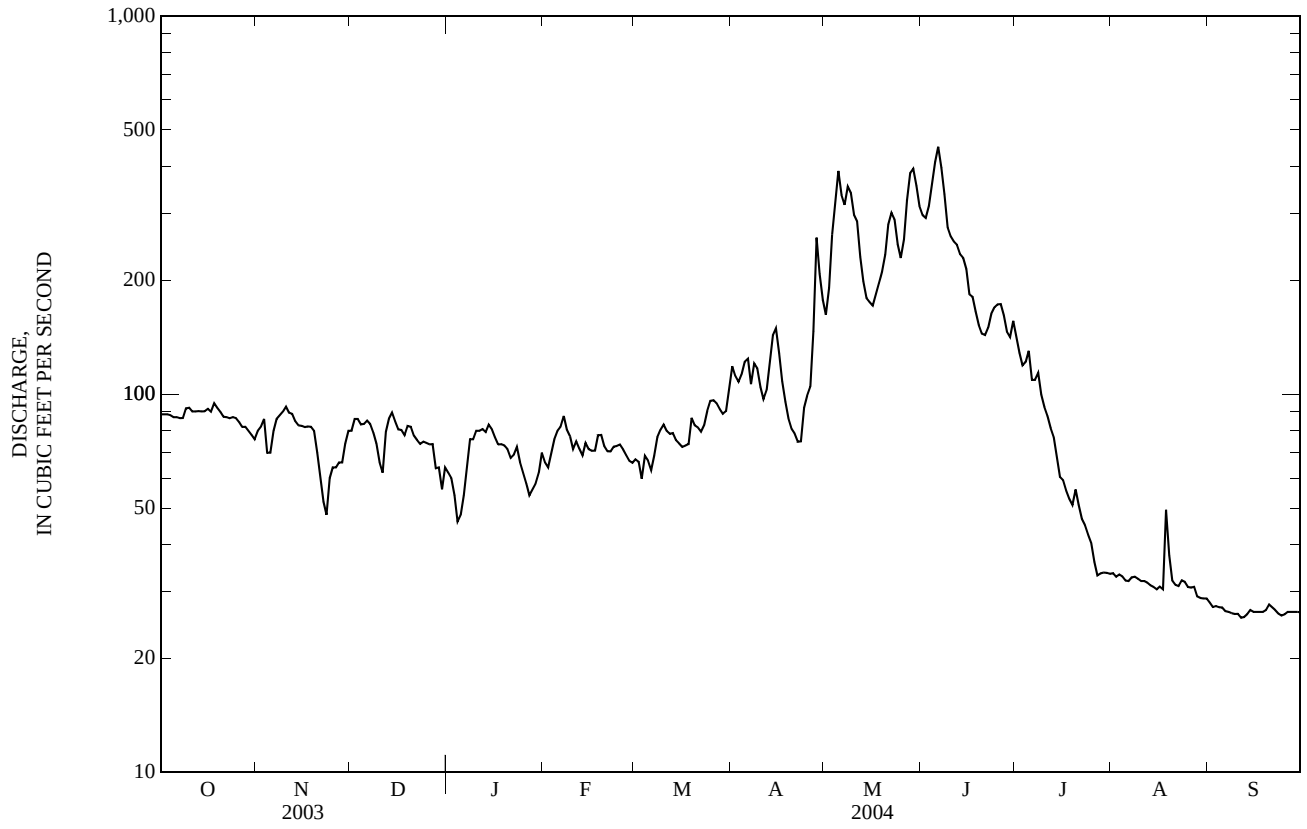
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2004, BY WATER YEAR (WY)

MEAN	83.9	111	96.5	88.7	89.5	94.1	172	492	565	164	74.1	67.1
MAX	316	295	184	160	198	205	321	899	2,240	568	184	199
(WY)	(1986)	(1990)	(1976)	(1976)	(1996)	(1986)	(1990)	(1976)	(1975)	(1975)	(1975)	(1993)
MIN	9.13	40.9	42.9	57.0	52.5	44.6	62.3	140	58.9	17.5	16.4	15.6
(WY)	(1978)	(2002)	(1984)	(2001)	(2001)	(1977)	(1977)	(1977)	(1977)	(1977)	(1984)	(1988)

06093200 BADGER CREEK BELOW FOUR HORNS CANAL, NEAR BROWNING, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1974 - 2004	
ANNUAL TOTAL	49,167		37,089			
ANNUAL MEAN	135		101*		175**	
HIGHEST ANNUAL MEAN					350	1975
LOWEST ANNUAL MEAN					68.1	1977
HIGHEST DAILY MEAN	1,260	May 26	451	Jun 6	14,000	Jun 19, 1975
LOWEST DAILY MEAN	37	Sep 19	26	Sep 8	6.5	Sep 17, 1984
ANNUAL SEVEN-DAY MINIMUM	38	Sep 1	26	Sep 7	7.7	Oct 25, 1977
MAXIMUM PEAK FLOW			475	Jun 6	a20,700	Jun 19, 1975
MAXIMUM PEAK STAGE			5.63	Jun 6	13.58	Jun 19, 1975
ANNUAL RUNOFF (AC-FT)	97,520		73,570		126,600	
10 PERCENT EXCEEDS	277		229		387	
50 PERCENT EXCEEDS	89		80		96	
90 PERCENT EXCEEDS	45		31		41	

*--144 ft^3/s, adjusted flow by Four Horns Canal.
**--215 ft^3/s, adjusted flow by Four Horns Canal.
a--From rating curve extended above 7,700 ft^3/s, based on comparison with previous site, 3.4 miles upstream.
e--Estimated.



06098500 CUT BANK CREEK NEAR BROWNING, MT

LOCATION--Lat 48°37'00", long 113°02'06" (NAD 27), in NE¼NW¼SW¼ sec. 15, T.33 N., R.11 W., Glacier County, Hydrologic Unit 10030202, Blackfeet Indian Reservation, on right bank 20 ft downstream from bridge on Montana Secondary Highway 464, 4.0 mile north of Browning, and at river mile 73.3.
DRAINAGE AREA.--123 mi^2.

PERIOD OF RECORD.--April 1918 to October 1925 (seasonal records only), April 1991 to current year.

REVISED RECORDS.--WDR MT-93-1: 1992(M).

GAGE.--Water-stage recorder. Elevation of gage is 4,380 ft (NGVD 29). April 1918 to October 1925, water-stage recorder at site about 120 ft upstream at different elevation. April 1991 to September 1995 at elevation 1.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 1,200 acres upstream from station. Several observations of water temperature and specific conductance were made during the year. Bureau of Reclamation satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	e40	46	e30	e23	e28	69	241	324	317	61	75
2	18	e45	38	e26	e22	e26	69	233	312	318	62	72
3	18	e42	40	e22	e21	e29	67	322	345	307	59	67
4	17	e38	40	e19	e21	30	67	420	411	299	56	62
5	17	e37	37	e17	e21	31	73	428	498	329	51	56
6	17	e39	39	e16	e26	29	85	394	551	311	47	54
7	17	e41	40	e17	e28	30	101	324	532	286	52	53
8	17	e42	e46	e18	e30	41	121	320	425	305	55	50
9	21	e46	e44	e19	e30	56	132	356	345	276	55	47
10	21	50	e43	e23	e28	56	123	329	295	241	50	46
11	21	50	e42	e30	e24	48	112	325	272	218	45	43
12	23	46	36	e36	e25	47	112	276	307	202	41	42
13	24	42	34	e31	e25	44	134	236	306	185	38	46
14	24	41	36	34	e24	40	180	225	294	172	35	47
15	25	40	39	33	e25	39	221	234	284	165	33	46
16	29	39	38	31	e27	39	208	224	258	162	35	49
17	29	39	37	30	e27	41	176	210	249	155	36	62
18	29	41	39	30	e28	41	152	213	239	148	62	70
19	27	64	33	29	e28	47	132	227	219	140	55	73
20	29	62	33	31	e26	48	121	259	205	141	54	79
21	31	e54	33	43	e24	44	e120	326	202	139	60	74
22	34	e40	32	36	e23	44	e115	374	208	131	57	70
23	36	e44	31	28	e22	46	e110	376	243	117	62	68
24	38	e46	31	e38	e21	51	e120	318	301	101	59	65
25	38	e46	e42	e26	e23	54	e130	283	320	88	58	61
26	37	41	e38	e25	e27	54	e150	276	373	79	84	59
27	37	39	e34	e24	e28	50	e190	360	380	77	112	59
28	38	38	e32	e25	e30	49	310	441	330	77	110	56
29	46	41	e30	e26	e30	51	347	446	301	72	98	58
30	49	41	e27	e27	---	50	291	409	313	65	91	56
31	e42	---	e31	e26	---	55	---	361	---	60	81	---
TOTAL	872	1,314	1,141	846	737	1,338	4,338	9,766	9,642	5,683	1,854	1,765
MEAN	28.1	43.8	36.8	27.3	25.4	43.2	145	315	321	183	59.8	58.8
MAX	49	64	46	43	30	56	347	446	551	329	112	79
MIN	17	37	27	16	21	26	67	210	202	60	33	42
AC-FT	1,730	2,610	2,260	1,680	1,460	2,650	8,600	19,370	19,120	11,270	3,680	3,500

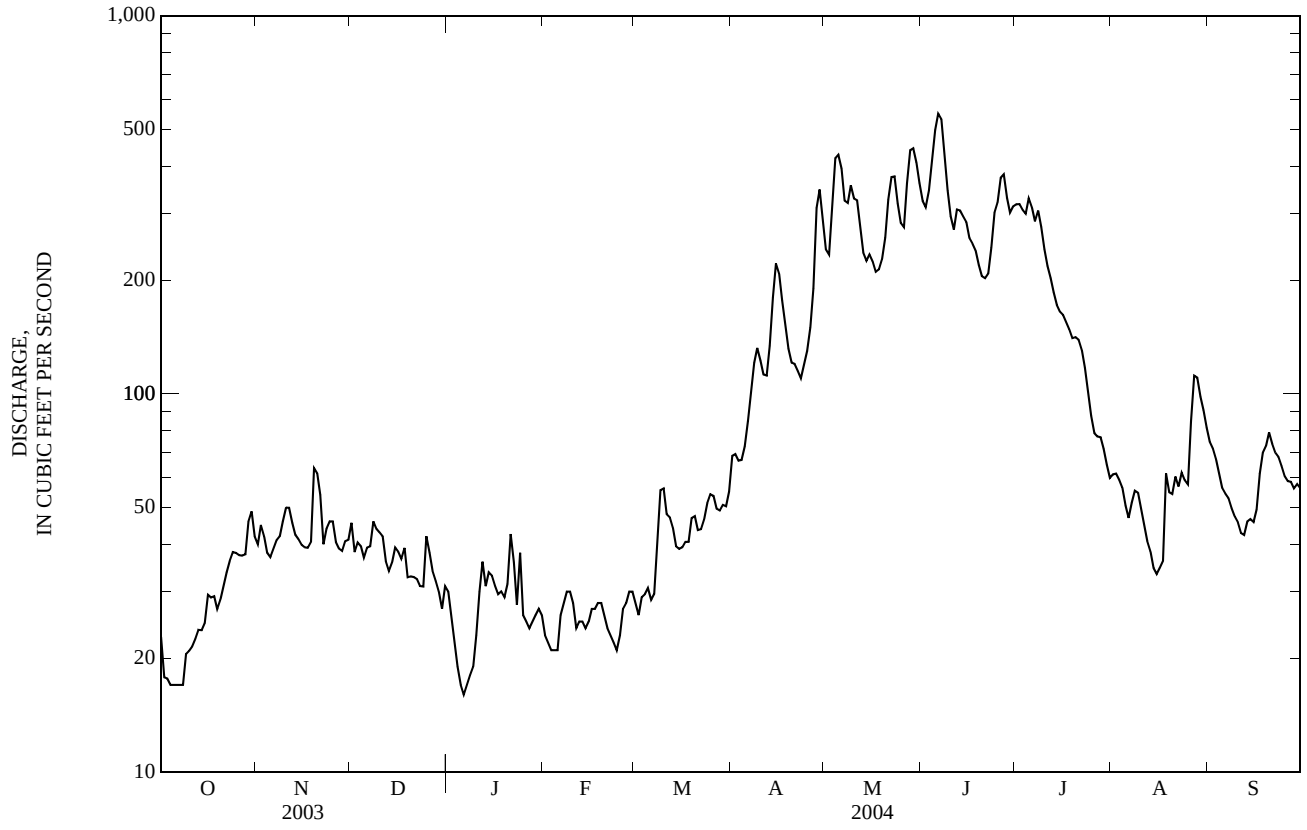
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918 - 2004, BY WATER YEAR (WY)*

MEAN	53.8	59.7	41.1	31.2	38.2	52.9	137	411	494	185	65.7	42.8
MAX	136	216	157	73.8	139	110	217	740	955	344	140	81.8
(WY)	(1996)	(1996)	(1996)	(1996)	(1996)	(1997)	(1996)	(1991)	(2002)	(2002)	(1923)	(1993)
MIN	15.2	25.4	17.3	18.5	15.4	17.8	57.1	248	184	57.9	15.6	11.7
(WY)	(2002)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(1992)	(1992)	(2001)	(2001)	(2001)

06098500 CUT BANK CREEK NEAR BROWNING, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1918 - 2004*	
ANNUAL TOTAL	35,988		39,296			
ANNUAL MEAN	98.6		107		128	
HIGHEST ANNUAL MEAN					201	1996
LOWEST ANNUAL MEAN					69.0	2001
HIGHEST DAILY MEAN	970	May 27	551	Jun 6	3,400	Jun 7, 1995
LOWEST DAILY MEAN	14	Feb 23	16	Jan 6	9.1	Sep 3, 2001
ANNUAL SEVEN-DAY MINIMUM	16	Feb 18	17	Oct 2	9.8	Aug 30, 2001
MAXIMUM PEAK FLOW			577	Jun 6	a5,480	Jun 7, 1995
MAXIMUM PEAK STAGE			3.45	Jun 6	b5.59	Jun 7, 1995
INSTANTANEOUS LOW FLOW			16	Oct 4	c4.9	Nov 22, 1994
ANNUAL RUNOFF (AC-FT)	71,380		77,940		92,930	
10 PERCENT EXCEEDS	269		311		333	
50 PERCENT EXCEEDS	39		49		51	
90 PERCENT EXCEEDS	21		25		21	

*--During periods of operation (April 1918 to October 1925, seasonal records only; April 1991 to current year).
a--From rating curve extended above 2,500 ft^3/s.
b--Previous datum.
c--Gage height, 0.60 ft, result of freezeup.
e--Estimated.



06099000 CUT BANK CREEK AT CUT BANK, MT

LOCATION.--Lat 48°38'00", long 112°20'46" (NAD 27), in SW¼SE¼NE¼ sec.11, T.33 N., R.6 W., Glacier County, Hydrologic Unit 10030202, Blackfeet Indian Reservation, on right bank, 0.1 mi downstream from bridge on U.S. Highway 2, 0.7 mi west of Cut Bank, 0.8 mi downstream from Old Maids Coulee, and at river mile 17.7.

DRAINAGE AREA.--1,041 mi^2.

PERIOD OF RECORD.--August 1905 to October 1919, May to July 1920, May 1922 to October 1924, May 1951 to September 1973, October 1981 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309; 1907-8, 1910-11, 1924-25. WSP 1509: 1911, 1916(M). WSP 1559: 1905(M), 1908(M). WSP 1709: 1959. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,561.42 ft (NGVD 29). Prior to May 12, 1922, nonrecording gage at several sites 0.5 mi upstream at various elevations. May 12, 1922 to Nov. 1, 1924, nonrecording gage at present site and different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Few minor diversions for irrigation upstream from station. Natural flow of stream may be affected by return flow from Two Medicine Canal which irrigates lands upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 20, 1975 reached a discharge of 5,200 ft^3/s, gage height, 8.2 ft, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	e34	e54	e20	e17	e35	70	274	372	315	57	109
2	22	e38	e54	e18	e16	e32	80	248	339	312	56	105
3	22	e40	e54	e17	e16	e28	85	241	331	300	62	99
4	22	e38	e54	e16	e16	e30	85	328	363	301	64	95
5	22	e36	e56	e14	e17	e35	85	393	419	325	61	92
6	23	e40	e56	e13	e27	e42	84	414	482	330	55	89
7	24	e42	e58	e15	e33	e46	88	369	525	305	62	87
8	22	e43	e54	e16	e36	e54	100	298	514	283	72	88
9	22	e46	e50	e16	e36	e46	115	295	422	293	76	85
10	22	e50	e47	e17	e33	e43	131	325	358	270	80	82
11	22	e56	e43	e18	e26	e40	127	352	322	236	74	83
12	22	e58	e43	e17	e27	e46	120	347	298	204	69	80
13	23	e56	e44	e17	e28	e46	118	312	319	187	65	82
14	24	e58	e46	e18	e29	e46	133	293	316	169	54	87
15	24	e60	e48	e19	e34	e44	176	280	311	154	48	90
16	26	e62	e50	e19	e34	e58	215	280	310	147	48	87
17	26	e64	e50	e23	e38	e56	208	261	306	139	46	77
18	26	e66	e50	e26	e39	e56	188	255	294	127	47	83
19	26	e66	e49	e26	e40	e62	169	278	264	124	58	90
20	25	e60	e49	e27	e40	e66	151	268	248	116	77	95
21	25	e42	e50	e28	e36	e74	139	303	246	111	89	94
22	26	e32	e52	e28	e36	89	130	376	234	125	99	89
23	26	e35	e52	e27	e38	69	122	470	231	114	104	84
24	26	e42	e53	e26	e41	68	116	465	268	104	113	78
25	27	e46	e50	e23	e42	68	117	416	312	88	103	74
26	30	e50	e47	e18	e42	71	127	348	334	79	91	69
27	30	e54	e42	e14	e40	72	132	326	374	71	102	67
28	32	e56	e35	e16	e40	68	161	389	391	70	120	66
29	40	e56	e25	e17	e38	66	291	453	346	71	125	63
30	29	e56	e20	e18	---	66	314	456	307	70	120	65
31	e30	---	e21	e17	---	67	---	419	---	64	114	---
TOTAL	787	1,482	1,456	604	935	1,689	4,177	10,532	10,156	5,604	2,411	2,534
MEAN	25.4	49.4	47.0	19.5	32.2	54.5	139	340	339	181	77.8	84.5
MAX	40	66	58	28	42	89	314	470	525	330	125	109
MIN	21	32	20	13	16	28	70	241	231	64	46	63
AC-FT	1,560	2,940	2,890	1,200	1,850	3,350	8,290	20,890	20,140	11,120	4,780	5,030

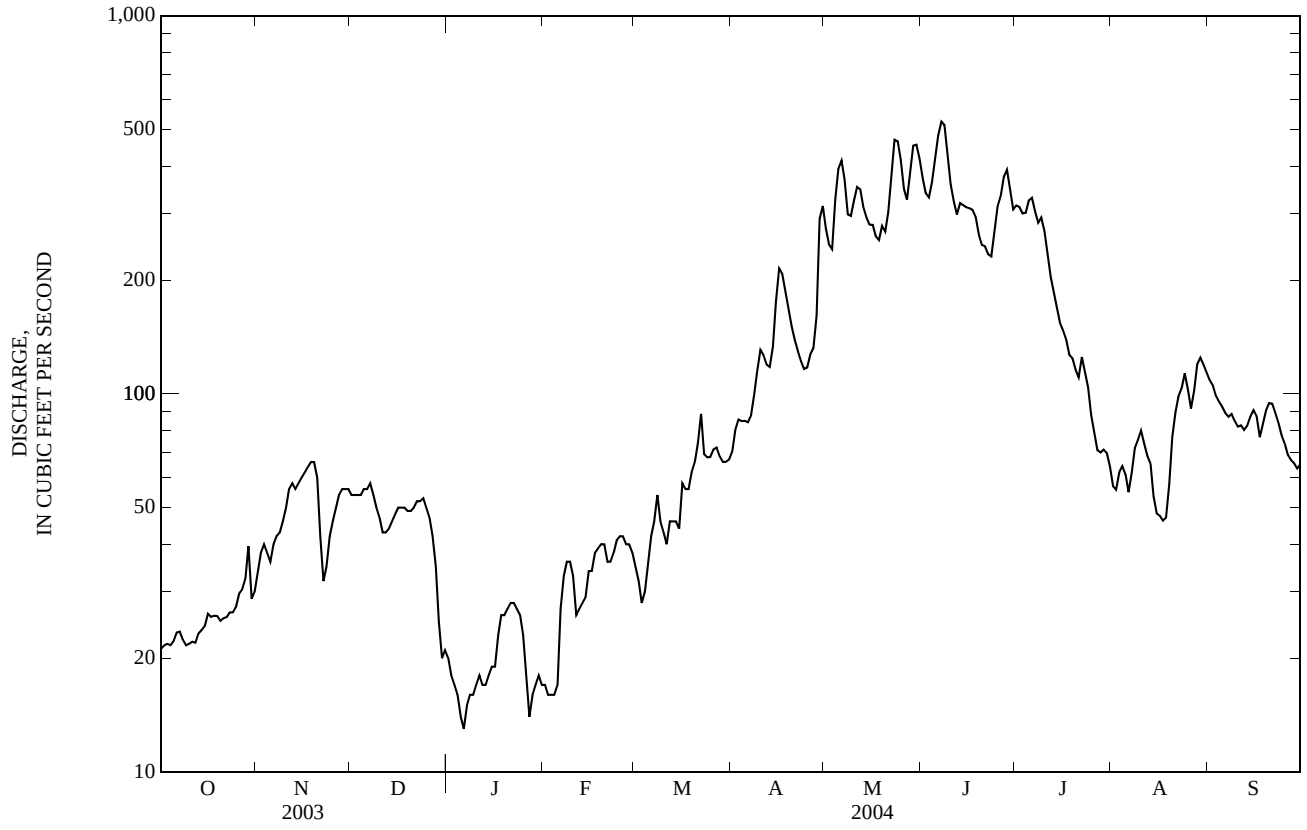
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 2004, BY WATER YEAR (WY)*

MEAN	83.2	76.0	47.0	34.4	56.8	148	240	481	626	240	88.9	75.1
MAX	268	271	185	115	414	1,053	664	894	1,781	605	233	298
(WY)	(1952)	(1990)	(1996)	(1990)	(1986)	(1972)	(1952)	(1954)	(2002)	(1951)	(1972)	(1911)
MIN	11.2	19.1	15.0	1.61	11.1	6.90	79.4	198	174	17.0	5.56	5.92
(WY)	(2002)	(2002)	(1984)	(1982)	(1985)	(1907)	(1984)	(1984)	(1992)	(1988)	(1988)	(1988)

06099000 CUT BANK CREEK AT CUT BANK, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1905 - 2004*	
ANNUAL TOTAL	42,795.3		42,367			
ANNUAL MEAN	117		116		182	
HIGHEST ANNUAL MEAN					317	1972
LOWEST ANNUAL MEAN					73.9	1988
HIGHEST DAILY MEAN	1,000	Mar 15	525	Jun 7	11,200	Jun 9, 1964
LOWEST DAILY MEAN	8.7	Sep 7	13	Jan 6	1.0	Jan 22, 1982
ANNUAL SEVEN-DAY MINIMUM	11	Sep 3	15	Jan 3	1.1	Jan 20, 1982
MAXIMUM PEAK FLOW			554	Jun 7	a16,600	Jun 9, 1964
MAXIMUM PEAK STAGE			3.44	Jun 7	13.93	Jun 9, 1964
INSTANTANEOUS LOW FLOW					b0.92	Sep 10, 1988
ANNUAL RUNOFF (AC-FT)	84,880		84,030		131,600	
10 PERCENT EXCEEDS	323		315		480	
50 PERCENT EXCEEDS	45		64		80	
90 PERCENT EXCEEDS	16		22		24	

*--During periods of operation (August 1905 to October 1919, May to July 1920, May 1922 to October 1924, May 1951 to September 1973, October 1981 to current year.
a--From rating curve extended above 12,000 ft^3/s on basis of slope-area measurement of peak flow.
b--Gage height, 0.59 ft.
e--Estimated.



06099500 MARIAS RIVER NEAR SHELBY, MT

LOCATION.--Lat 48°25'38", long 111°53'20" (NAD 27), in SE¼NW¼SE¼ sec.20, T.31 N., R.2 W., Toole County, Hydrologic Unit 10030203, on left bank 20 ft downstream from bridge on old U.S. Highway 91, 5.1 mi south of Shelby, 24 mi downstream from Cut Bank Creek, and at river mile 140.6.

DRAINAGE AREA.--3,242 mi^2, of which 518 mi^2 is probably noncontributing.

PERIOD OF RECORD.--April 1902 to December 1904, May 1905 to December 1906, May 1907 to January 1908, April 1911 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1903-4, 1918, 1921, 1933, 1935, 1947. WSP 1509: 1902, 1912(M), 1916, 1943(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,087.72 ft (NGVD 29). Prior to Dec. 23, 1947, nonrecording gage or water-stage recorder at several sites within 1,000 ft of present site at approximately the same elevation. Dec. 23, 1947, to Apr. 6, 1976, water-stage recorder at site 150 ft downstream at same elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by Lower Two Medicine Lake (station number 06090900), Four Horns Reservoir (station number 06093000) Swift Reservoir (station number 06094000), and Lake Frances (station number 06095500), having a combined capacity of 172,630 acre-ft. Diversions for irrigation of about 50,000 acres upstream from station and about 15,000 acres downstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	141	e140	e310	e125	e90	e280	356	1,210	1,360	870	214	292
2	136	e155	e320	e115	e88	e270	442	1,180	1,230	843	212	283
3	133	e150	e320	e105	e86	e250	430	1,240	1,100	794	213	265
4	133	e130	e300	e105	e88	e280	406	1,470	1,100	748	229	252
5	136	e120	e300	e100	e90	e320	396	1,650	1,210	809	235	246
6	137	e125	e300	e95	e98	e340	434	1,790	1,320	858	216	240
7	136	e130	e300	e125	e120	e380	489	1,690	1,460	761	210	233
8	138	e140	e285	e140	e130	e440	534	1,580	1,770	703	212	232
9	140	e160	e235	e150	e140	e480	577	1,590	1,710	718	223	228
10	144	e210	e200	e150	e150	e460	602	1,620	1,480	694	228	225
11	151	e250	e180	e150	e150	e450	571	1,680	1,300	642	220	217
12	156	e230	e150	e150	e150	e400	539	1,710	1,190	568	212	216
13	168	e220	e160	e155	e160	e410	547	1,630	1,140	523	206	213
14	167	e225	e170	e160	e160	e350	630	1,620	1,100	461	214	218
15	172	e235	e180	e170	e180	e330	758	1,610	1,070	407	200	223
16	184	e240	e180	e160	e180	331	862	1,600	1,070	379	187	224
17	193	e270	e163	e140	e200	313	813	1,530	1,040	364	185	234
18	186	e280	e170	e140	e210	279	747	1,440	981	357	181	232
19	177	e270	e180	e150	e210	302	654	1,380	891	329	204	265
20	174	e230	e180	e150	e230	300	590	1,300	820	306	259	268
21	169	e200	e190	e140	e230	337	565	1,320	775	300	251	271
22	162	e170	e190	e150	e230	322	585	1,430	741	322	250	261
23	157	e145	e180	e150	e230	301	599	1,650	710	331	273	251
24	154	e130	e170	e120	e250	292	673	1,750	746	311	286	235
25	163	e160	e170	e100	e270	310	702	1,550	829	307	303	216
26	165	e190	e160	e90	e290	349	710	1,360	910	296	297	206
27	162	e210	e160	e86	e300	352	722	1,380	996	265	297	202
28	163	e240	e140	e88	e300	340	921	1,540	1,020	253	307	202
29	e160	e310	e130	e90	e300	323	1,300	1,640	950	251	313	198
30	e140	e320	e130	e92	---	306	1,280	1,620	868	243	302	186
31	e130	---	e130	e92	---	301	---	1,490	---	228	294	---
TOTAL	4,827	5,985	6,333	3,933	5,310	10,498	19,434	47,250	32,887	15,241	7,433	7,034
MEAN	156	200	204	127	183	339	648	1,524	1,096	492	240	234
MAX	193	320	320	170	300	480	1,300	1,790	1,770	870	313	292
MIN	130	120	130	86	86	250	356	1,180	710	228	181	186
AC-FT	9,570	11,870	12,560	7,800	10,530	20,820	38,550	93,720	65,230	30,230	14,740	13,950

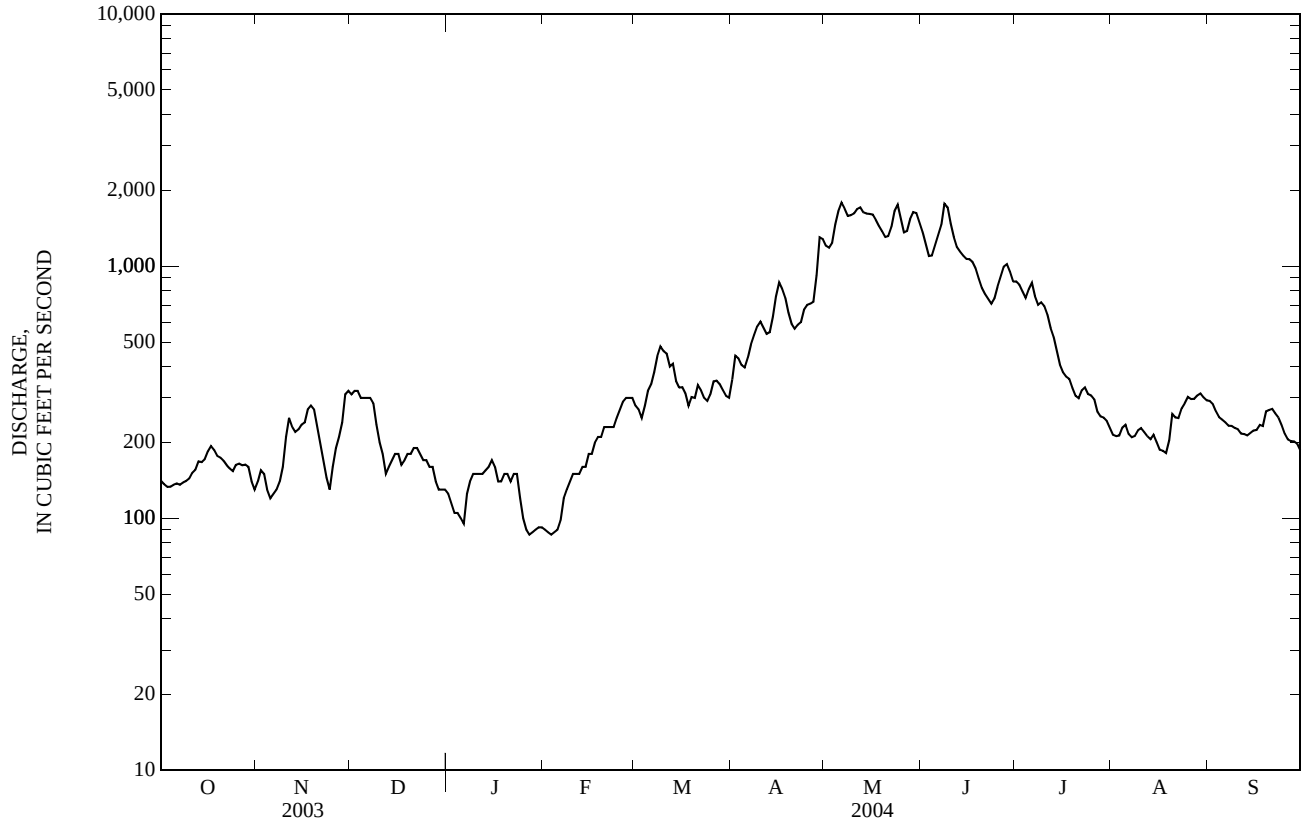
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 2004, BY WATER YEAR (WY)*

MEAN	401	392	303	253	317	578	1,132	2,693	3,054	1,045	385	354
MAX	1,448	1,485	1,135	700	1,173	2,300	3,149	5,300	10,190	3,982	1,100	1,853
(WY)	(1952)	(1990)	(1996)	(1918)	(1986)	(1947)	(1934)	(1927)	(1948)	(1902)	(1927)	(1911)
MIN	73.8	116	103	41.9	58.7	139	280	711	409	147	67.1	66.4
(WY)	(2002)	(2002)	(1937)	(1937)	(1936)	(2002)	(1931)	(1977)	(1977)	(1940)	(1988)	(1988)

06099500 MARIAS RIVER NEAR SHELBY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1902 - 2004*	
ANNUAL TOTAL	202,833		166,165			
ANNUAL MEAN	556		454		898	
HIGHEST ANNUAL MEAN					1,929	1927
LOWEST ANNUAL MEAN					302	1977
HIGHEST DAILY MEAN	3,110	May 27	1,790	May 6	109,000	Jun 9, 1964
LOWEST DAILY MEAN	70	Sep 4	86	Jan 27	10	Aug 20, 1919
ANNUAL SEVEN-DAY MINIMUM	71	Sep 3	89	Jan 27	21	Jan 25, 1937
MAXIMUM PEAK FLOW			1,840	Jun 8	a241,000	Jun 9, 1964
MAXIMUM PEAK STAGE			5.15	Jun 8	b23.64	Jun 9, 1964
INSTANTANEOUS LOW FLOW					c10	Aug 20, 1919
ANNUAL RUNOFF (AC-FT)	402,300		329,600		650,500	
10 PERCENT EXCEEDS	1,530		1,290		2,300	
50 PERCENT EXCEEDS	240		256		399	
90 PERCENT EXCEEDS	118		136		156	

*--During periods of operation (1903-04, 1906, 1912 to current year).
a--Largely due to the failure of Swift Dam, from slope-area measurement of peak flow. Maximum unaffected by dam failure, 75,000 ft3/s, June 20, 1975, gage height, 18.21 ft.
b--From floodmark.
c--Observed, site and datum in use.
e--Estimated.



06101500 MARIAS RIVER NEAR CHESTER, MT

LOCATION.--Lat 48°18'23", long 111°04'47" (NAD 27), in SW¼SW¼SW¼ sec.34, T.30 N., R.5 E., Liberty County, Hydrologic Unit 10030203, on left bank 2.0 mi downstream from Tiber Dam, 4.4 mi upstream from Pondera Coulee, 15 mi southwest of Chester, and at river mile 78.3.
DRAINAGE AREA.--4,927 mi^2, of which 518 mi^2 is probably noncontributing.
PERIOD OF RECORD.--April to September 1921, October 1945 to September 1947, October 1955 to current year. Monthly discharge only for some periods, published in WSP 1309.
REVISED RECORDS.--WSP 1629: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 2,814.03 ft (NGVD) (Bureau of Reclamation bench mark). Prior to Oct. 1, 1921, nonrecording gage at bridge 2.5 mi downstream at different elevation. Oct. 4, 1945, to Sept. 30, 1946, nonrecording gage at site 3 mi downstream at different elevation.
REMARKS.--Records good. Flow completely regulated by Lake Elwell since Oct. 28, 1955 (see preceding page). Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1948 reached a stage of 16 ft, present elevation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	503	492	514	e514	e505	503	502	508	547	503	487	498
2	503	492	514	e514	e505	502	503	508	659	502	488	503
3	503	495	512	e514	e400	503	505	501	526	503	491	503
4	503	497	513	e514	e320	503	503	506	533	503	482	503
5	503	497	515	e514	502	503	503	502	507	503	484	503
6	503	495	516	e514	503	498	502	499	505	503	485	503
7	503	499	515	e514	503	502	503	507	509	502	487	503
8	503	497	515	e514	503	502	503	509	509	503	487	503
9	502	497	515	e514	505	500	501	509	511	503	487	503
10	502	497	515	e514	504	502	503	514	524	497	487	503
11	502	496	514	e510	505	503	503	512	507	491	487	503
12	501	496	514	e510	504	501	503	512	508	492	488	503
13	501	495	520	e510	503	500	503	514	506	493	488	503
14	499	497	519	e510	503	502	503	514	504	492	489	505
15	497	497	519	e510	503	502	503	514	504	492	494	503
16	497	497	519	e510	503	502	503	517	507	492	489	503
17	496	497	516	e510	503	501	503	514	513	492	487	503
18	495	500	515	e510	503	502	503	518	507	492	489	503
19	496	504	514	e510	503	499	503	516	508	492	494	504
20	454	503	514	e510	503	503	503	515	507	491	489	507
21	310	507	514	e510	503	503	503	518	507	492	495	508
22	487	511	514	e510	503	503	504	518	503	492	499	508
23	483	508	514	e510	503	502	505	517	493	494	502	508
24	481	508	514	e510	503	501	503	518	495	494	498	508
25	482	508	514	e510	503	503	503	519	501	492	498	508
26	481	508	514	e505	503	502	503	520	502	492	497	508
27	481	508	514	e505	503	502	504	520	504	490	497	509
28	490	511	514	e505	503	501	504	526	503	487	497	508
29	492	514	514	e505	503	503	506	531	503	487	497	508
30	490	514	514	e505	---	503	505	545	504	480	497	508
31	492	---	e514	e505	---	501	---	549	---	483	498	---
TOTAL	15,135	15,037	15,962	15,820	14,310	15,557	15,098	15,990	15,416	15,324	15,234	15,143
MEAN	488	501	515	510	493	502	503	516	514	494	491	505
MAX	503	514	520	514	505	503	506	549	659	503	502	509
MIN	310	492	512	505	320	498	501	499	493	480	482	498
AC-FT	30,020	29,830	31,660	31,380	28,380	30,860	29,950	31,720	30,580	30,400	30,220	30,040

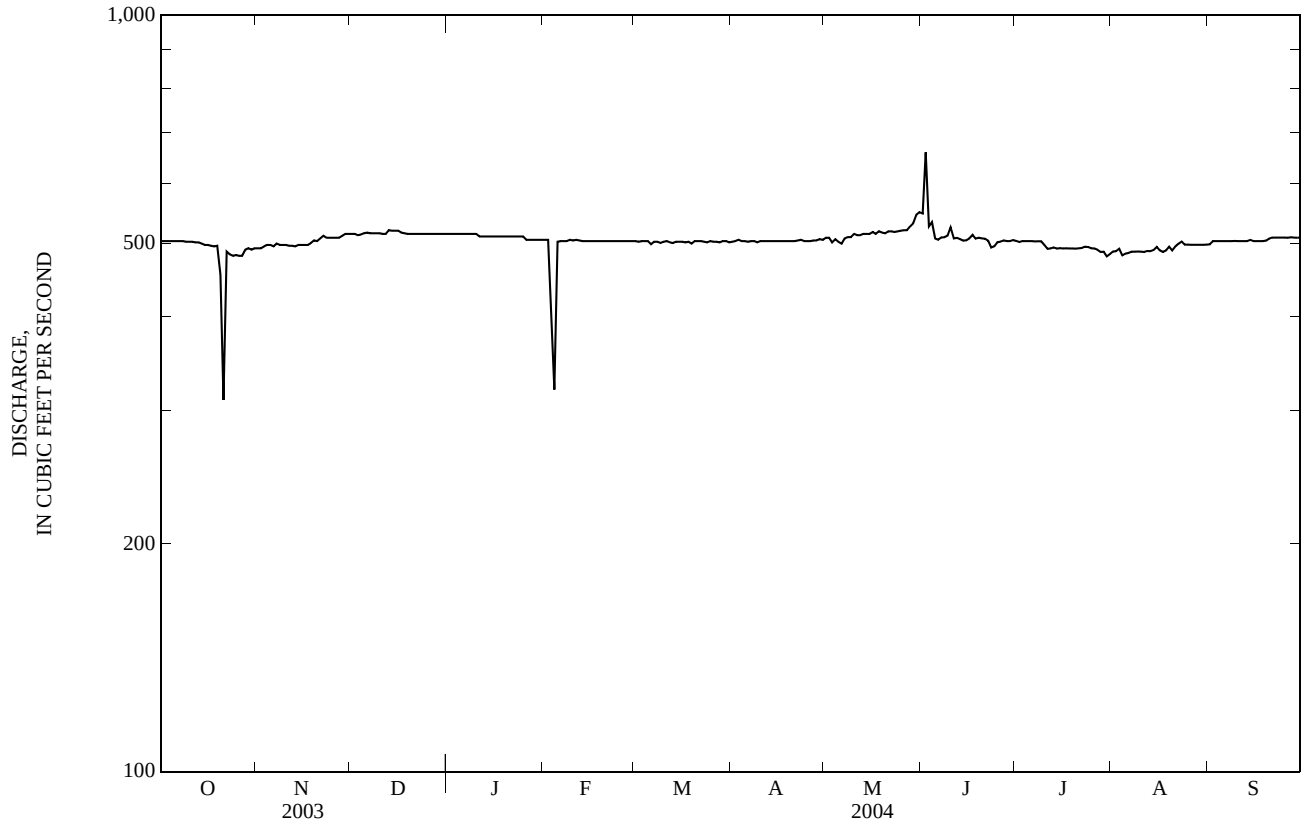
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2004, BY WATER YEAR (WY)*

MEAN	729	588	445	406	441	600	804	1,207	1,678	1,219	916	843
MAX	2,758	1,733	1,050	1,079	1,068	2,400	2,343	3,541	6,254	5,325	2,909	3,063
(WY)	(1966)	(1986)	(1990)	(1990)	(1990)	(1947)	(1996)	(1947)	(1964)	(1975)	(1964)	(1965)
MIN	208	0.40	15.7	35.0	35.0	47.7	46.1	51.0	58.9	57.5	82.5	173
(WY)	(1983)	(1956)	(1956)	(1956)	(1956)	(1956)	(1956)	(1956)	(1956)	(1956)	(1956)	(1921)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1921 - 2004*	
ANNUAL TOTAL	190,901		184,026			
ANNUAL MEAN	523		503		822	
HIGHEST ANNUAL MEAN					1,488	1959
LOWEST ANNUAL MEAN					97.5	1956
HIGHEST DAILY MEAN	649	Jun 20	659	Jun 2	10,100	Jun 12, 1964
LOWEST DAILY MEAN	310	Oct 21	310	Oct 21	0.20	Oct 29, 1955
ANNUAL SEVEN-DAY MINIMUM	454	Oct 20	454	Oct 20	0.20	Oct 29, 1955
MAXIMUM PEAK FLOW			1,100	Jun 2	a10,400	Jun 16, 1964
MAXIMUM PEAK STAGE			4.26	Jun 2	10.63	Jun 16, 1964
INSTANTANEOUS LOW FLOW					b0.20	Nov 10, 1955
ANNUAL RUNOFF (AC-FT)	378,700		365,000		595,700	
10 PERCENT EXCEEDS	633		514		1,610	
50 PERCENT EXCEEDS	503		503		540	
90 PERCENT EXCEEDS	486		491		222	

*--During period of operation (April to September 1921, October 1945 to September 1947, October 1955 to current year).
a--Since dam completion. Maximum discharge not determined; occurred about March 20, 1947.
b--Probably less than; during Tiber Dam shutdown.
e--Estimated.

06101500 MARIAS RIVER NEAR CHESTER, MT—Continued



06102050 MARIAS RIVER NEAR LOMA, MT

LOCATION.--Lat 47°55'59", long 111°31'02" (NAD 27) , in SW¼NE¼SE¼ sec.12, T.25 N., R.9 E., Choteau County, Hydrologic Unit 10030203, on left bank 600 ft upstream from Teton River, 800 ft upstream from highway bridge, 0.2 mi southwest of Loma, and at river mile 2.5.

DRAINAGE AREA.--7,137 mi^2, of which 518 mi^2 is probably noncontributing.

PERIOD OF RECORD.--October 1959 to September 1972, June 2001 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 2,570 ft (NGVD 29). Prior to June 2001, water-stage recorder at site 4.5 mi upstream at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow completely regulated by Lake Elwell. Numerous diversions for irrigation upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				493	519	536	475	445	490	e510		
2				502	520	517	464	454	483	e510		
3				490	523	546	450	459	479	e510		
4				497	516	562	457	473	467	e510		
5				497	504	497	470	473	479	e510		
6				496	496	557	453	448	486	e510		
7				494	485	503	443	453	482	e510		
8				481	493	492	446	467	491	e510		
9				483	509	497	456	468	493	e510		
10				489	498	495	466	470	491	e515		
11				489	495	506	464	473	489	e515		
12				490	512	503	469	464	493	e515		
13				491	532	490	466	458	e495	e515		
14				489	530	466	459	464	e495	e515		
15				488	528	462	456	461	e495	518		
16				492	505	465	456	472	e500	518		
17				495	498	514	446	466	e500	504		
18				492	493	491	441	458	e500	503		
19				495	505	481	438	454	e500	501		
20				495	527	474	441	462	e500	498		
21				492	524	485	438	466	e500	506		
22				492	511	481	433	457	e505	499		
23				497	526	463	442	497	e505	502		
24				500	633	453	432	546	e505	503		
25				499	609	457	433	491	e505	498		
26				502	532	463	457	482	e510	499		
27				509	532	461	442	495	e510	497		
28				514	534	461	437	489	e510	496		
29				519	537	467	447	480	e510	496		
30				518	536	473	452	491	e510	495		
31				---	522	---	450	483	---	497		
TOTAL				14,880	16,184	14,718	13,979	14,619	14,878	15,695		
MEAN				496	522	491	451	472	496	506		
MAX				519	633	562	475	546	510	518		
MIN				481	485	453	432	445	467	495		
AC-FT				29,510	32,100	29,190	27,730	29,000	29,510	31,130		

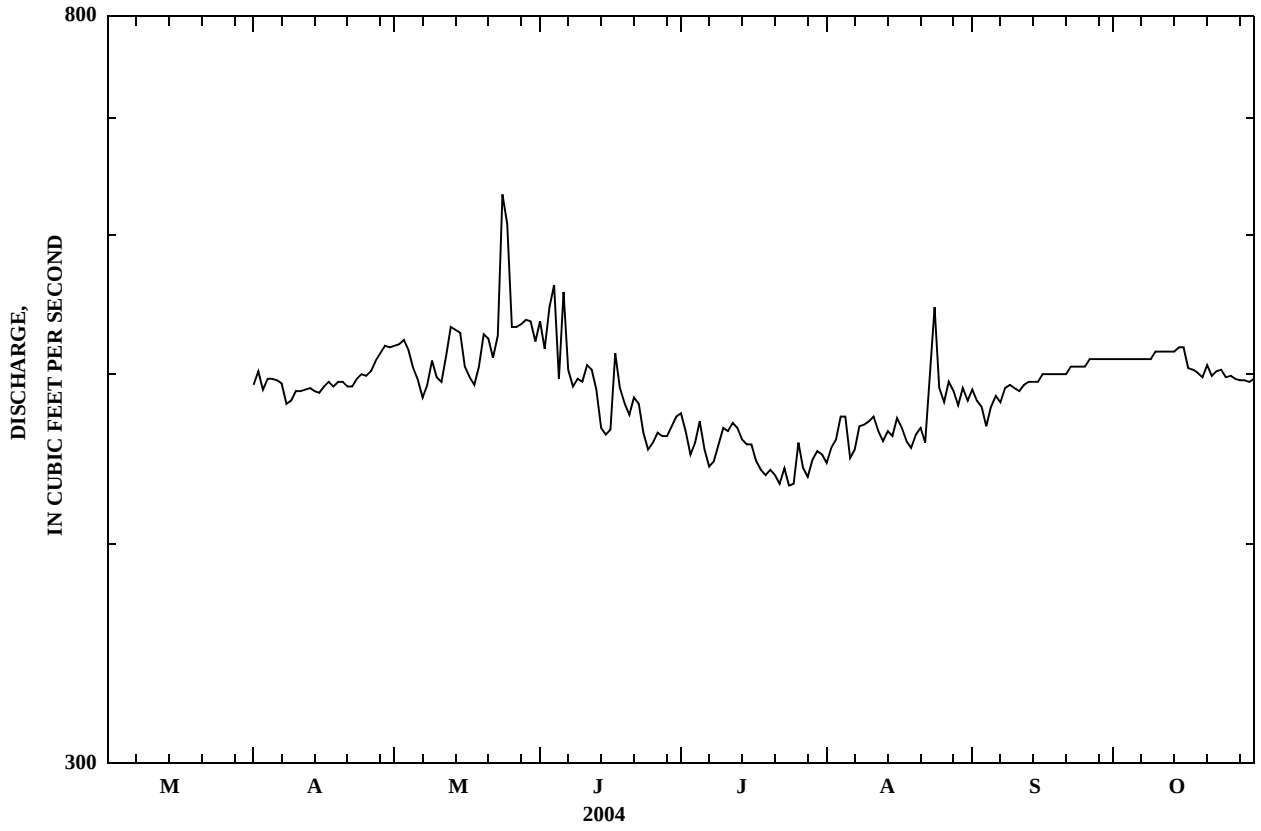
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1972, AND 2001 - 2004 SEASONS

MEAN	298	434	568	830	1,226	2,047	1,293	1,114	1,038	878	723	402
MAX	517	910	1,290	2,184	2,175	6,018	2,990	3,040	3,258	2,750	1,580	908
(WY)	(1968)	(1968)	(1967)	(1972)	(1972)	(1964)	(2002)	(1965)	(1965)	(1966)	(1966)	(1968)
MIN	105	110	117	180	441	491	250	137	296	292	78.5	107
(WY)	(1964)	(1964)	(1964)	(1961)	(2002)	(2004)	(1962)	(1961)	(2001)	(1964)	(1963)	(1963)

SUMMARY STATISTICS	FOR THE 2004 SEASON		WATER YEARS 1960 - 1972		SEASONS 2001 - 2004	
ANNUAL MEAN			977			
HIGHEST ANNUAL MEAN			1,330	1967		
LOWEST ANNUAL MEAN			522	1963		
HIGHEST DAILY MEAN	633	May 24	10,300	Jun 16, 1964	5,250	Jun 23, 2002
LOWEST DAILY MEAN	432	Jul 24	45	Dec 11, 1962	220	Apr 1, 2002
ANNUAL SEVEN-DAY MAXIMUM			49	Dec 5, 1962		
MAXIMUM PEAK FLOW	741	Jun 3	10,800	Jun 16, 1964	5,250	Jun 23, 2002
MAXIMUM PEAK STAGE	1.61	Jun 3	a8.72	Jun 16, 1964	b5.29	Jun 24, 2002
ANNUAL RUNOFF (AC-FT)			707,900			
10 PERCENT EXCEEDS			1,940			
50 PERCENT EXCEEDS			800			
90 PERCENT EXCEEDS			180			

a--Site and datum then in use.
b--From highwater mark.
e--Estimated.

06102050 MARIAS RIVER NEAR LOMA, MT—Continued



06102500 TETON RIVER BELOW SOUTH FORK, NEAR CHOTEAU, MT

LOCATION.--Lat 47°52'59", long 112°36'40" (NAD 27), in NE¼NE¼NE¼ sec.34, T.25 N., R.8 W., Teton County, Hydrologic Unit 10030205, on right bank at county road bridge, 1.1 mi downstream from South Fork, 7.6 mi southwest of Bynum Reservoir, 20 mi northwest of Choteau, and at river mile 194.7.

DRAINAGE AREA.--105 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1947 to October 1954 (published as "near Farmington"), June 1998 to current year, seasonal records only.

GAGE.--Water-stage recorder. Elevation of gage is 4,770 ft (NGVD 29). June 1947 to October 1954, water-stage recorder 300 ft downstream at different elevation.

REMARKS.--Seasonal water-discharge records good except those for estimated daily discharges, which are poor. Negligible diversion for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 8, 1964 reached a discharge of 54,600 ft^3/s, from slope-area measurement of peak flow.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				51	e130	229	177	88	78	68		
2				50	e150	232	170	89	78	64		
3				50	173	248	167	91	77	64		
4				51	208	278	166	96	76	64		
5				53	e280	309	166	93	75	63		
6				56	e260	351	155	91	75	63		
7				63	e240	330	156	92	75	62		
8				72	e250	292	156	91	74	63		
9				71	e240	257	146	89	73	62		
10				69	e220	237	140	87	73	62		
11				68	e210	228	146	85	73	62		
12				70	e190	227	135	84	73	60		
13				79	e175	222	129	83	73	60		
14				90	e160	217	123	82	72	60		
15				96	e155	204	120	81	72	66		
16				92	e150	193	118	81	72	65		
17				91	e160	187	114	80	71	67		
18				87	e170	178	117	93	72	65		
19				86	e180	171	114	86	73	64		
20				84	e200	163	110	83	74	64		
21				83	221	158	107	80	72	63		
22				84	234	161	106	80	70	62		
23				88	234	171	102	85	70	62		
24				93	227	187	99	84	69	62		
25				95	224	193	96	81	69	61		
26				99	228	202	94	82	69	61		
27				116	237	191	96	80	68	60		
28				149	251	179	95	79	68	60		
29				135	252	176	93	78	68	60		
30				134	241	179	91	78	68	59		
31				---	234	---	89	77	---	60		
TOTAL				2,505	6,484	6,550	3,893	2,629	2,170	1,938		
MEAN				83.5	209	218	126	84.8	72.3	62.5		
MAX				149	280	351	177	96	78	68		
MIN				50	130	158	89	77	68	59		
AC-FT				4,970	12,860	12,990	7,720	5,210	4,300	3,840		

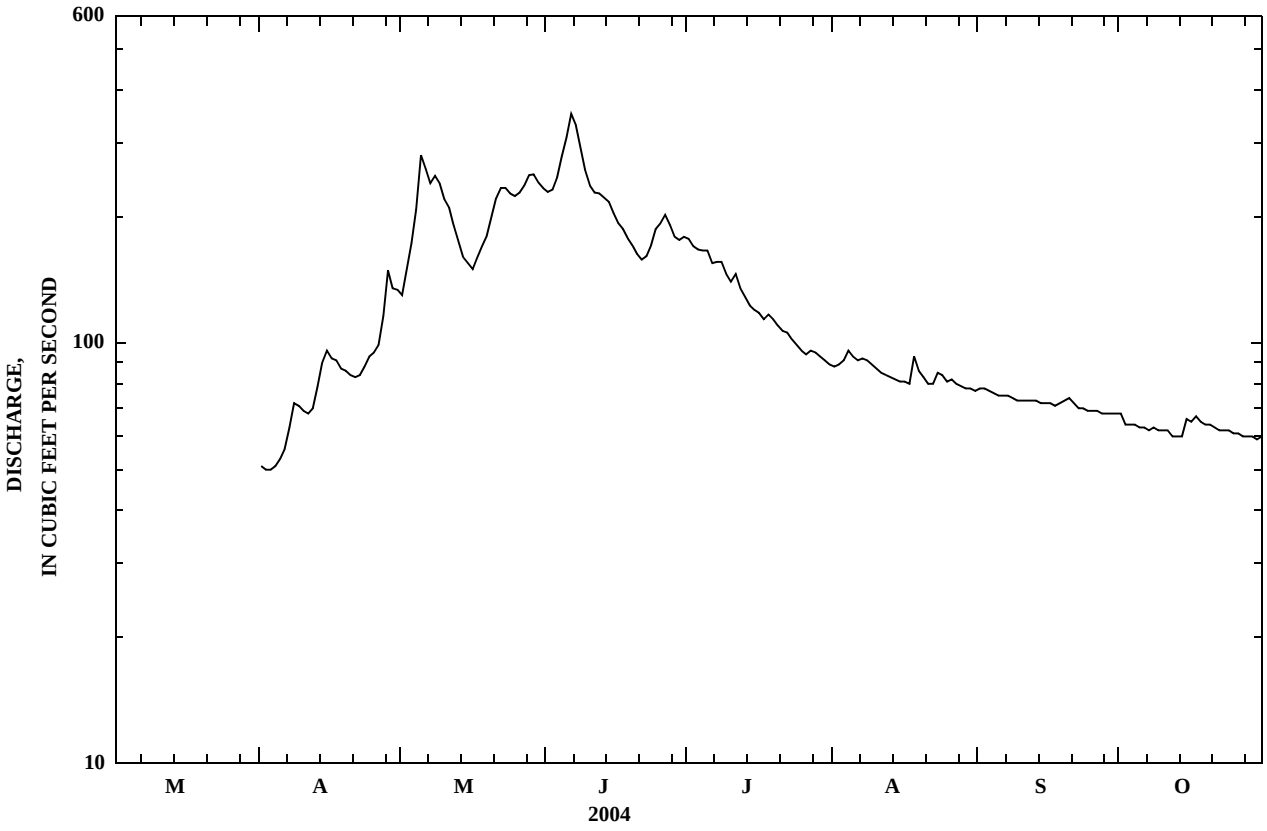
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1954 AND SEASONS 1998 - 2004*

MEAN	47.9	46.3	45.1	81.6	306	475	222	108	83.7	78.0	68.6	56.9
MAX	59.0	59.0	48.9	142	516	1,178	468	182	134	133	89.8	68.2
(WY)	(1952)	(1952)	(1952)	(1952)	(1951)	(1953)	(1951)	(1951)	(1951)	(1952)	(1952)	(1951)
MIN	24.9	25.1	36.5	45.0	195	218	92.9	61.8	57.3	54.6	44.0	40.7
(WY)	(1950)	(1949)	(1950)	(2001)	(2001)	(2004)	(2003)	(1949)	(1949)	(1950)	(1950)	(1950)

06102500 TETON RIVER BELOW SOUTH FORK, NEAR CHOTEAU, MT—Continued

SUMMARY STATISTICS	FOR 2004 SEASON		WATER YEARS 1947 - 1954*		SEASONS 1998 - 2004*	
ANNUAL MEAN			166			
HIGHEST ANNUAL MEAN			225	1953		
LOWEST ANNUAL MEAN			92.9	1949		
HIGHEST DAILY MEAN	351	Jun 6	2,380	Jun 5, 1948	1,160	Jun 17, 2002
LOWEST DAILY MEAN	50	Apr 2	20	Jan 24, 1949	36	Apr 13, 2001
ANNUAL SEVEN-DAY MINIMUM			22	Jan 24, 1949		
MAXIMUM PEAK FLOW	379	Jun 6	b2,780	Jun 3, 1948	1,280	Jun 17, 2002
MAXIMUM PEAK STAGE	4.87	Jun 6	c7.34	Jan 6, 1950	5.78	Jun 17, 2002
INSTANTANEOUS LOW FLOW	a48	Apr 1	d12	Mar 28, 1951	f35	Apr 15, 2001
ANNUAL RUNOFF (AC-FT)			119,900			
10 PERCENT EXCEEDS			418			
50 PERCENT EXCEEDS			80			
90 PERCENT EXCEEDS			43			

*--During periods of operation (June 1947 to October 1954, June 1998 to current year; seasonal records beginning 1998).
a--Gage height, 3.65 ft.
b--From rating curve extended above 1,100 ft3/s, gage height, 5.32 ft, previous site and datum.
c--Backwater from ice, previous site and datum.
d--Gage height, 2.82 ft, previous site and datum.
e--Estimated.
f--Gage height, 3.71 ft.



06102500 TETON RIVER BELOW SOUTH FORK, NEAR CHOTEAU, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1998 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water unfltrd mg/L (62855)
OCT										
21...	1500	55	8.4	378	22.0	11.0	E.005	.031	<.002	<.03
JAN										
13...	0945	44	8.3	394	5.0	2.5	.011	.058	<.002	.07
MAR										
23...	1145	47	8.4	378	13.0	5.5	E.008	.044	<.002	.06
APR										
19...	1650	83	8.4	353	11.0	8.5	E.008	.028	E.001	.07
MAY										
17...	1400	160	8.4	320	14.0	9.5	E.005	.024	E.001	.07
JUN										
22...	1210	164	8.4	332	16.0	8.5	<.010	.024	E.001	.05
JUL										
21...	1030	110	8.5	352	20.0	11.0	<.010	.049	<.002	.04
AUG										
17...	1250	80	8.4	370	26.0	14.0	E.005	E.015	<.002	<.03
SEP										
07...	1130	77	8.4	372	17.0	8.0	.013	.075	E.001	.04

E--Estimated.

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Selenium, water, unfltrd ug/L (01147)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT						
21...	<.006	<.004	.5	35	20	3.0
JAN						
13...	<.006	<.004	.7	81	8	.95
MAR						
23...	<.006	<.004	.7	89	8	1.0
APR						
19...	<.006	<.004	.7	67	15	3.4
MAY						
17...	<.006	<.004	E.4	60	6	2.6
JUN						
22...	<.006	E.002	.4	82	16	7.1
JUL						
21...	<.006	<.004	.4	89	4	1.2
AUG						
17...	<.006	.004	.7	82	15	3.2
SEP						
07...	<.006	<.004	.8	82	13	2.7

E--Estimated.

06108000 TETON RIVER NEAR DUTTON, MT

LOCATION.--Lat 47°55'49", long 111°33'07" (NAD 27), in SE¼SW¼SW¼ sec.12, T.25 N., R.1 E., Teton County, Hydrologic Unit 10030205, on right bank 150 ft upstream from Kerr Bridge, 0.9 mi downstream from Hunt Coulee, 9.5 mi northeast of Dutton, and at river mile 100.9.

DRAINAGE AREA.--1,307 mi^2. Area at site used prior to July 17, 1965, 1,308 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1954 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,235 ft (NGVD 29). Prior to July 17, 1965, water-stage recorder at site 1,800 ft downstream at elevation 1.97 ft lower.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Water is diverted on left bank in sec.34, T.25 N., R.7 W., for storage in Bynum Reservoir (usable capacity, 75,000 acre-ft). Diversions for irrigation of about 44,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	e17	e22	e15	e18	e60	40	30	47	28	3.7	20
2	12	e18	e23	e14	e20	e55	43	31	44	28	2.6	21
3	13	e16	e22	e12	e20	e50	42	29	37	26	3.5	20
4	13	e15	e22	e10	e22	e55	44	26	33	27	9.9	20
5	13	e15	e25	e10	e26	e60	45	25	27	33	9.1	20
6	13	e16	e30	e12	e30	e65	45	25	24	31	8.3	18
7	13	e18	e28	e15	e33	68	44	22	21	29	6.5	18
8	13	e20	e26	e18	e35	73	43	20	22	29	5.1	18
9	12	e22	e24	e20	e35	69	42	20	28	25	5.3	18
10	11	e25	e19	e22	e35	72	39	18	41	20	6.2	20
11	12	e23	e17	e23	e32	80	37	20	45	17	6.4	19
12	11	e22	e18	e22	e35	87	36	30	45	15	4.8	18
13	12	e22	e20	e20	e40	58	34	36	42	15	2.8	19
14	13	e23	e20	e21	e40	50	31	39	38	14	1.8	20
15	15	e24	e20	e23	e42	43	31	42	30	12	1.6	20
16	18	e25	e20	e22	e45	41	34	43	26	9.5	3.5	20
17	19	e26	e20	e20	e50	38	34	42	26	6.4	3.9	19
18	20	e28	e21	e20	e48	37	31	43	27	7.3	6.5	19
19	20	e30	e23	e22	e45	38	30	45	30	4.3	9.2	19
20	19	e25	e25	e20	e42	37	27	42	35	2.5	12	21
21	18	e20	e22	e20	e40	36	25	44	40	3.7	13	22
22	19	e17	e20	e22	e40	36	24	45	43	2.7	11	24
23	19	e20	e20	e24	e42	36	23	55	45	3.9	21	26
24	18	e20	e23	e20	e45	36	22	74	43	4.0	25	24
25	17	e20	e20	e17	e50	36	22	121	43	3.0	22	22
26	23	e21	e19	e15	e56	36	20	155	41	3.1	21	21
27	21	e22	e18	e13	e60	35	19	126	40	2.7	23	18
28	18	e23	e17	e15	e65	35	23	96	36	1.4	22	17
29	e16	e25	e16	e18	e60	34	26	75	36	2.8	21	17
30	e15	e22	e14	e20	---	33	28	63	30	3.6	21	17
31	e15	---	e16	e18	---	34	---	51	---	4.1	20	---
TOTAL	482	640	650	563	1,151	1,523	984	1,533	1,065	414.0	332.7	595
MEAN	15.5	21.3	21.0	18.2	39.7	49.1	32.8	49.5	35.5	13.4	10.7	19.8
MAX	23	30	30	24	65	87	45	155	47	33	25	26
MIN	11	15	14	10	18	33	19	18	21	1.4	1.6	17
AC-FT	956	1,270	1,290	1,120	2,280	3,020	1,950	3,040	2,110	821	660	1,180

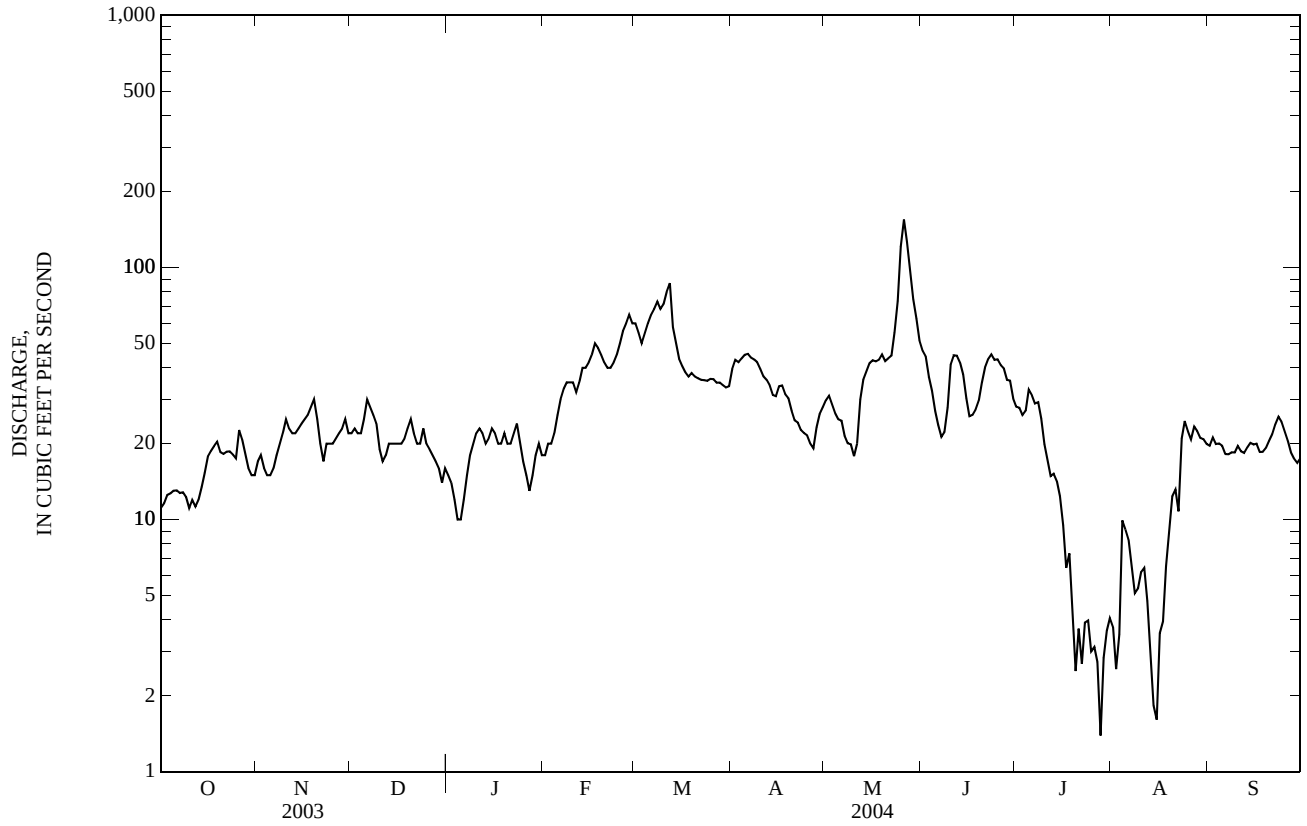
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2004, BY WATER YEAR (WY)

MEAN	68.7	69.6	63.2	54.4	84.6	180	156	241	378	154	71.5	64.0
MAX	223	176	209	167	388	819	495	957	2,727	551	263	211
(WY)	(1966)	(1976)	(1960)	(1976)	(1986)	(1969)	(1965)	(1976)	(1964)	(1958)	(1972)	(1993)
MIN	15.4	18.5	14.8	13.2	15.2	28.8	32.8	20.1	16.9	1.30	0.00	7.39
(WY)	(2002)	(2002)	(2001)	(1985)	(1985)	(2002)	(2004)	(2000)	(1988)	(1985)	(1988)	(2001)

06108000 TETON RIVER NEAR DUTTON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1954 - 2004	
ANNUAL TOTAL	16,194.96		9,932.7			
ANNUAL MEAN	44.4		27.1		132	
HIGHEST ANNUAL MEAN					350	1964
LOWEST ANNUAL MEAN					26.9	2001
HIGHEST DAILY MEAN	504	Mar 16	155	May 26	20,000	Jun 9, 1964
LOWEST DAILY MEAN	0.00	Jul 26	1.4	Jul 28	0.00	Jul 21, 1984
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 26	2.9	Jul 24	0.00	Jul 21, 1984
MAXIMUM PEAK FLOW			168	May 25	b71,300	Jun 9, 1964
MAXIMUM PEAK STAGE			2.22	May 25	c20.48	Jun 9, 1964
INSTANTANEOUS LOW FLOW			a0.66	Jul 28	d0.00	Jul 21, 1984
ANNUAL RUNOFF (AC-FT)	32,120		19,700		95,650	
10 PERCENT EXCEEDS	106		45		262	
50 PERCENT EXCEEDS	25		22		69	
90 PERCENT EXCEEDS	2.1		10		21	

a--Gage height, 0.56 ft.
b--From slope-area measurement of peak flow.
c--From floodmark.
d--No flow at times on many years.
e--Estimated.



06108000 TETON RIVER NEAR DUTTON, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1998 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water unfltrd mg/L (62855)
OCT										
22...	0845	18	8.5	976	7.0	10.5	E.007	<.016	E.001	.23
JAN										
13...	1230	21	8.4	910	7.0	.0	.040	.805	.006	.98
MAR										
23...	1440	36	8.5	797	20.0	9.5	E.008	.106	.002	.33
APR										
20...	0850	28	8.6	822	11.5	8.5	E.006	<.016	E.001	.21
MAY										
17...	1820	43	8.5	885	18.0	19.0	E.006	<.016	E.001	.50
JUN										
22...	1600	43	8.5	810	21.0	21.5	<.010	<.016	<.002	.41
JUL										
20...	1600	2.7	8.6	820	30.0	25.0	E.009	E.010	<.002	.46
AUG										
17...	1710	4.3	8.5	860	29.0	25.0	<.010	.028	E.001	.34
SEP										
07...	1400	18	8.5	788	18.0	16.0	.010	.060	<.002	.31

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Selenium, water, unfltrd ug/L (01147)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT						
22...	<.006	.023	.7	92	51	2.5
JAN						
13...	<.006	.007	1.0	58	25	1.4
MAR						
23...	<.006	.019	.8	96	33	3.2
APR						
20...	<.006	.019	.6	85	42	3.2
MAY						
17...	<.006	.031	.7	94	73	8.5
JUN						
22...	<.006	.036	.7	99	83	9.6
JUL						
20...	<.006	.048	.7	99	45	.33
AUG						
17...	E.003	.032	.6	100	26	.30
SEP						
07...	<.006	.024	.8	94	54	2.6

E--Estimated.

06108800 TETON RIVER AT LOMA, MT

LOCATION.--Lat 47°55'57", long 110°30'49" (NAD 27), in NW¼SW¼SE¼ sec.12, T.25 N., R.9 E., Choteau County, Hydrologic Unit 10030205, on left bank 25 ft downstream from county bridge, 0.5 mi southwest of Loma, and at river mile 0.3.

DRAINAGE AREA.--2,010 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1998 to current year. Prior to October 1, 1999, seasonal records only.

GAGE.--Water-stage recorder. Elevation of gage is 2,560 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. U. S. Geological Survey satellite telemeter at station. Numerous diversions upstream from station for irrigation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	e12	e5.0	e3.5	e40	37	5.3	52	13	0.00	0.00
2	0.00	0.00	e12	e4.0	e3.5	e38	40	5.8	46	9.0	0.00	0.00
3	0.00	0.00	e12	e3.0	e3.5	e35	38	12	42	7.6	0.00	0.00
4	0.00	0.00	e12	e2.0	e3.5	e38	39	15	39	6.6	0.00	0.00
5	0.00	0.00	e12	e2.5	e4.0	e40	39	17	36	9.4	0.00	0.00
6	0.00	0.00	e13	e2.5	e4.0	e45	38	14	33	5.2	0.00	0.00
7	0.00	0.00	e14	e2.5	e4.0	e50	39	11	32	3.3	0.00	0.00
8	0.00	0.00	e13	e3.0	e5.0	e55	40	10	30	3.0	0.00	0.00
9	0.00	0.00	e12	e3.0	e5.0	e60	40	10	25	5.0	0.00	0.00
10	0.00	0.00	e11	e3.0	e5.0	e65	39	9.7	27	4.7	0.00	0.00
11	0.00	0.00	e10	e3.0	e5.0	e70	38	11	31	4.2	0.00	0.00
12	0.00	0.00	e9.0	e3.5	e6.0	71	36	14	32	3.7	0.00	0.00
13	0.00	0.07	e10	e3.5	e6.0	76	32	14	39	1.6	0.00	0.00
14	0.00	5.1	e10	e3.5	e6.0	84	22	13	38	0.73	0.00	0.00
15	0.00	7.5	e10	e3.5	e7.0	70	19	12	35	0.44	0.00	0.00
16	0.00	9.0	e10	e3.5	e8.0	62	20	19	31	0.33	0.00	0.00
17	0.00	10	e10	e3.5	e10	56	17	21	30	0.27	0.00	0.00
18	0.00	15	e10	e3.5	e20	51	15	19	27	0.15	0.00	0.00
19	0.00	20	e10	e3.5	e30	47	16	21	24	0.02	0.00	0.00
20	0.00	19	e10	e3.5	e28	43	19	20	24	0.00	0.00	0.00
21	0.00	7.3	e11	e3.5	e25	42	16	26	23	0.00	0.00	0.00
22	0.00	e7.0	e10	e3.5	e25	41	13	33	26	0.00	0.00	0.76
23	0.00	e10	e10	e3.5	e28	40	10	41	28	0.00	0.00	2.5
24	0.00	e11	e10	e3.0	e30	39	7.8	53	32	0.00	0.00	1.7
25	0.00	e11	e10	e3.0	e30	37	6.0	52	31	0.00	0.00	1.9
26	0.00	e11	e9.0	e3.0	e35	37	4.9	56	34	0.00	0.00	3.1
27	0.00	e12	e8.0	e3.0	e35	35	4.5	75	31	0.00	0.00	4.1
28	0.00	e12	e7.0	e3.0	e35	34	6.6	93	31	0.00	0.00	4.9
29	0.00	e12	e6.0	e3.0	e35	33	8.3	86	27	0.00	0.00	6.0
30	0.00	e13	e5.0	e3.5	---	33	5.4	74	18	0.00	0.00	5.9
31	0.00	---	e5.5	e3.5	---	32	---	61	---	0.00	0.00	---
TOTAL	0.00	191.97	313.5	100.5	445.0	1,499	705.5	923.8	954	78.24	0.00	30.86
MEAN	0.00	6.40	10.1	3.24	15.3	48.4	23.5	29.8	31.8	2.52	0.00	1.03
MAX	0.00	20	14	5.0	35	84	40	93	52	13	0.00	6.0
MIN	0.00	0.00	5.0	2.0	3.5	32	4.5	5.3	18	0.00	0.00	0.00
AC-FT	0.00	381	622	199	883	2,970	1,400	1,830	1,890	155	0.00	61

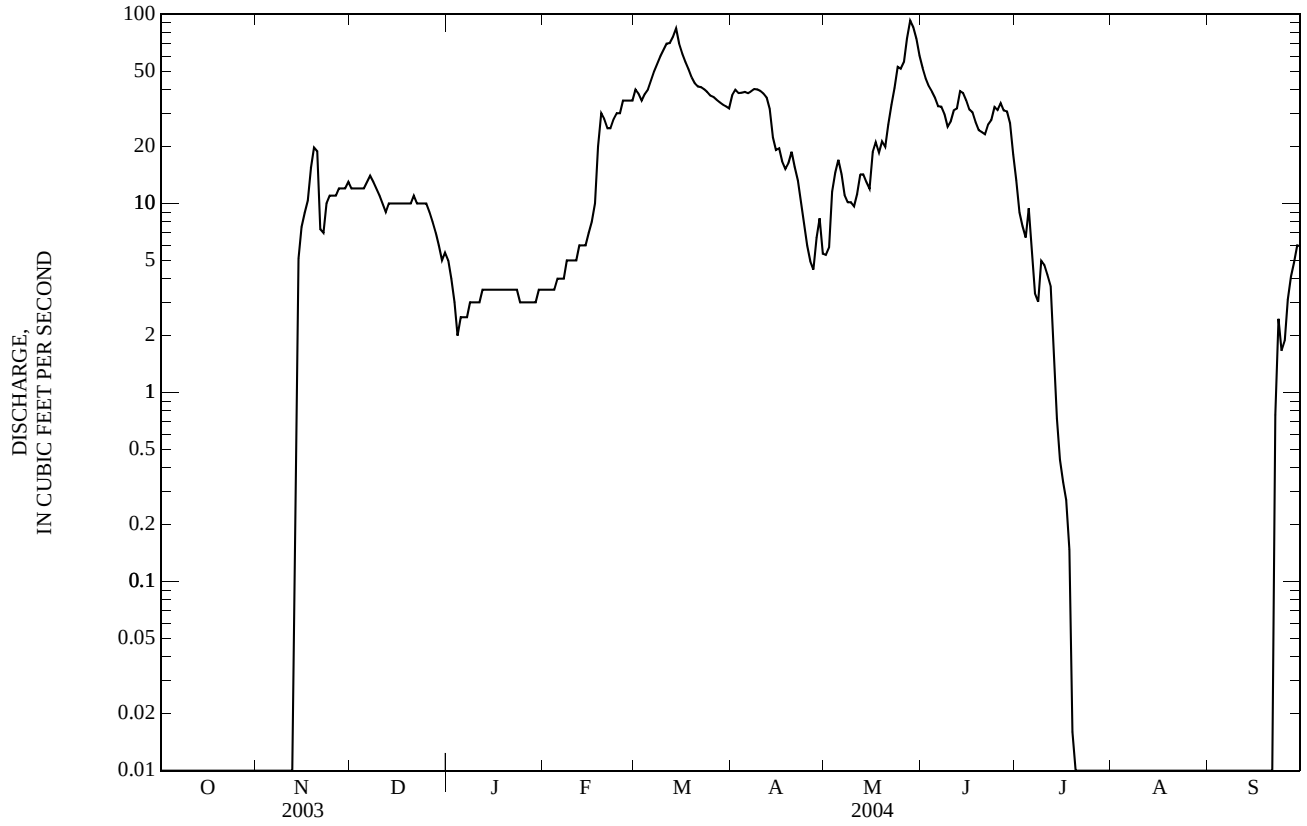
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2004, BY WATER YEAR (WY)

MEAN	14.8	19.7	18.1	14.6	21.8	65.2	64.5	39.8	113	33.1	11.7	8.52
MAX	30.6	44.0	39.5	35.0	31.6	109	109	74.8	304	151	62.6	24.8
(WY)	(2003)	(2003)	(2000)	(2000)	(2000)	(2003)	(2003)	(1999)	(2002)	(1998)	(1998)	(1999)
MIN	0.00	0.00	0.82	3.24	14.8	20.2	23.5	10.2	4.98	2.48	0.00	0.00
(WY)	(2002)	(2002)	(2002)	(2004)	(2001)	(2002)	(2004)	(2000)	(2001)	(2000)	(2000)	(2000)

06108800 TETON RIVER AT LOMA, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1998 - 2004	
ANNUAL TOTAL	12,673.73		5,242.37			
ANNUAL MEAN	34.7		14.3		28.7	
HIGHEST ANNUAL MEAN					42.6	2003
LOWEST ANNUAL MEAN					14.3	2004
HIGHEST DAILY MEAN	430	Mar 17	93	May 28	1,740	Jun 13, 2002
LOWEST DAILY MEAN	0.00	Jul 11	0.00	Oct 1	0.00	Jul 30, 1999
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 11	0.00	Oct 1	0.00	Jul 30, 1999
MAXIMUM PEAK FLOW			a98	Mar 14	c2,000	Jun 13, 2002
MAXIMUM PEAK STAGE			b3.42	Feb 23	d6.98	Mar 16, 2003
ANNUAL RUNOFF (AC-FT)	25,140		10,400		20,790	
10 PERCENT EXCEEDS	102		39		66	
50 PERCENT EXCEEDS	17		6.0		14	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a--Gage height, 2.28 ft.
b--Backwater from ice.
c--Gage height, 5.87 ft.
d--Backwater from ice, from floodmarks.
e--Estimated.



06108800 TETON RIVER AT LOMA, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1965, May 1998 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1999 to September 2003.

REMARKS.--No samples collected during July through September due to no flow.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE (October 1999 to current year): Maximum, 35.5°C, July 13, 2002; minimum, 0.0°C on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat er unfltrd mg/L (62855)
JAN										
13...	1510	3.4	8.1	1,410	8.0	.0	.016	.473	.003	.59
MAR										
23...	1715	39	8.5	920	28.0	9.0	E.005	<.016	E.001	.23
APR										
20...	1530	21	8.5	1,100	16.0	18.0	E.009	<.016	E.001	.25
MAY										
18...	0920	18	8.6	1,110	12.0	13.0	<.010	<.016	E.001	.25
JUN										
23...	1030	29	8.5	1,060	22.0	19.0	<.010	<.016	<.002	.34

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Selenium, water, unfltrd ug/L (01147)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
JAN						
13...	<.006	.006	1.9	37	9	.08
MAR						
23...	<.006	.028	.9	99	49	5.2
APR						
20...	<.006	.014	.9	90	50	2.8
MAY						
18...	<.006	.011	.7	89	40	1.9
JUN						
23...	<.006	.029	.8	99	65	5.1

E--Estimated.

06109500 MISSOURI RIVER AT VIRGELLE, MT

LOCATION.--Lat 48°00'18", long 110°15'25" (NAD 27), in SW¼SW¼SE¼ sec.13, T.26 N., R.11 E., Chouteau County, Hydrologic Unit 10040101, on left bank 0.2 mi upstream from Virgelle ferry, 0.6 mi southwest of Virgelle, 1.8 mi downstream from Spring Coulee, and at river mile 2,034.2.

DRAINAGE AREA.--34,379 mi^2.

PERIOD OF RECORD.--February 1935 to current year. Prior to October 1953, published as "at Loma."

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,507.50 ft (NGVD 29). Prior to Sept. 30, 1953, water-stage recorder at Loma, 18 mi upstream, 2,543.40 ft.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by 23 smaller irrigation reservoirs and powerplants, Clark Canyon Reservoir (station number 06015300), Canyon Ferry Lake (station number 06058500), and Lake Elwell (station number 06101300). Diversions for irrigation of about 850,400 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1908 reached a stage about 2 ft higher than that of June 5, 1953, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,990	4,330	5,110	e2,890	e5,050	e5,390	5,450	5,450	9,420	5,510	4,280	4,300
2	4,090	4,450	4,800	e3,210	e5,520	5,310	5,580	5,840	8,990	5,390	4,170	4,580
3	4,060	4,480	4,800	e4,380	e5,550	5,250	5,640	5,570	8,220	5,340	4,000	4,560
4	3,910	4,600	4,740	e4,310	e5,520	5,160	5,840	5,260	7,690	5,380	4,110	4,390
5	3,870	4,710	4,650	e4,060	e5,450	5,230	5,850	5,310	7,020	5,530	4,360	4,450
6	3,900	4,650	4,490	e4,030	e5,520	5,240	5,920	5,350	6,400	5,450	4,580	4,430
7	4,210	4,810	4,590	e4,220	e5,470	5,460	5,820	5,380	6,610	5,640	4,490	4,330
8	4,720	4,960	4,740	e4,470	e5,540	5,520	5,700	5,490	7,690	5,600	4,510	4,410
9	4,030	4,820	4,610	e4,640	e5,600	5,570	5,740	5,540	7,680	5,260	4,420	4,310
10	3,600	5,080	4,510	e5,010	e5,570	5,760	5,620	5,450	7,290	5,200	4,350	4,990
11	3,560	4,790	e4,650	e5,340	e5,550	5,530	5,390	5,480	7,510	5,230	4,500	4,670
12	3,660	4,690	e4,530	e5,490	e5,460	5,620	5,250	6,690	8,720	5,070	4,320	4,550
13	4,120	4,850	e4,460	e5,640	e5,340	5,600	5,180	6,990	9,330	4,910	4,300	4,970
14	4,100	4,770	4,830	e5,750	e5,260	5,500	5,100	6,800	9,640	4,880	4,210	4,880
15	4,070	4,620	5,680	e5,680	e5,180	5,540	5,030	6,120	8,910	5,000	4,290	4,990
16	4,160	4,740	5,940	e5,690	e5,070	5,550	5,050	5,610	8,270	4,710	4,220	4,940
17	4,250	4,830	5,460	e5,800	e5,000	5,530	5,110	5,430	7,540	4,630	4,240	4,630
18	4,300	4,850	5,150	e5,880	e5,140	5,370	5,160	5,480	7,390	4,490	4,150	4,680
19	4,110	4,860	5,190	e5,850	e5,240	5,410	5,140	5,540	7,170	4,650	4,190	4,360
20	3,950	4,850	5,900	e5,680	e5,580	5,470	5,160	5,330	6,860	4,460	4,520	4,280
21	4,240	4,770	5,300	e5,680	e5,840	5,390	5,110	5,410	6,360	4,630	4,570	4,850
22	4,090	4,670	5,280	e5,650	e5,830	5,490	5,020	5,820	6,310	4,560	4,390	4,510
23	3,970	4,400	5,150	e5,340	e5,660	5,520	4,880	6,200	6,370	4,510	4,680	4,740
24	4,230	3,710	5,150	e5,200	e5,610	5,590	4,970	7,560	6,050	4,580	5,570	4,680
25	4,170	3,960	5,020	e5,370	e5,570	5,470	4,830	7,760	5,790	4,630	5,670	4,630
26	3,970	5,000	5,000	e4,870	e5,280	5,510	4,860	8,370	5,820	4,330	5,590	4,560
27	4,370	5,770	5,210	e3,320	e5,130	5,360	4,800	8,360	5,650	4,230	5,470	4,520
28	4,300	5,790	e5,080	e3,140	e5,300	5,380	5,010	9,060	5,460	4,450	5,250	4,400
29	4,430	5,040	e4,690	e4,140	e5,330	5,330	5,080	9,730	5,470	4,300	5,120	4,250
30	4,600	5,120	e3,810	e3,920	---	5,270	5,030	9,690	5,500	4,220	4,970	4,410
31	4,370	---	e3,110	e4,330	---	5,320	---	9,540	---	4,150	4,640	---
TOTAL	127,400	142,970	151,630	148,980	157,160	168,640	158,320	201,610	217,130	150,920	142,130	137,250
MEAN	4,110	4,766	4,891	4,806	5,419	5,440	5,277	6,504	7,238	4,868	4,585	4,575
MAX	4,720	5,790	5,940	5,880	5,840	5,760	5,920	9,730	9,640	5,640	5,670	4,990
MIN	3,560	3,710	3,110	2,890	5,000	5,160	4,800	5,260	5,460	4,150	4,000	4,250
AC-FT	252,700	283,600	300,800	295,500	311,700	334,500	314,000	399,900	430,700	299,300	281,900	272,200

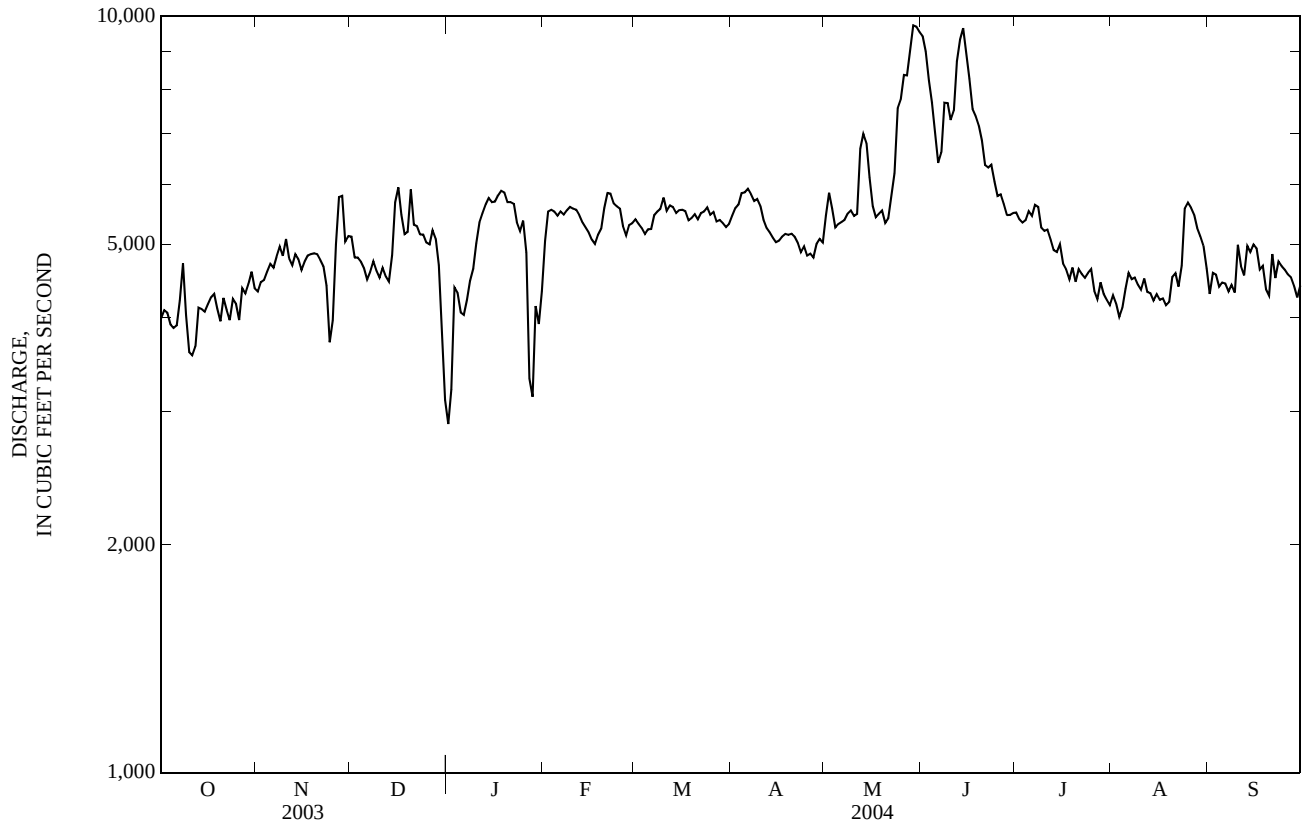
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2004, BY WATER YEAR (WY)

MEAN	6,131	6,307	6,235	6,232	6,561	7,316	8,623	13,240	17,710	9,679	6,120	5,808
MAX	15,340	12,470	12,220	8,997	10,240	14,490	17,720	28,260	51,960	29,670	11,950	11,590
(WY)	(1966)	(1966)	(1960)	(1976)	(1971)	(1978)	(1943)	(1976)	(1948)	(1975)	(1993)	(1965)
MIN	3,533	3,207	3,221	2,716	2,600	3,784	4,062	4,819	4,646	3,704	2,821	2,818
(WY)	(1938)	(1938)	(1937)	(1936)	(1937)	(1938)	(1961)	(1992)	(1977)	(1940)	(1937)	(1937)

06109500 MISSOURI RIVER AT VIRGELLE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1935 - 2004	
ANNUAL TOTAL	2,166,380		1,904,140			
ANNUAL MEAN	5,935		5,203		8,356	
HIGHEST ANNUAL MEAN					13,660	1975
LOWEST ANNUAL MEAN					4,152	1937
HIGHEST DAILY MEAN	15,100	Jun 1	9,730	May 29	119,000	Jun 5, 1953
LOWEST DAILY MEAN	3,110	Dec 31	2,890	Jan 1	638	Jul 5, 1936
ANNUAL SEVEN-DAY MINIMUM	3,880	Oct 9	3,680	Dec 30	2,020	Feb 2, 1937
MAXIMUM PEAK FLOW			a10,000	May 29	c122,000	Jun 5, 1953
MAXIMUM PEAK STAGE			b7.25	Jan 10	d23.40	Jun 5, 1953
ANNUAL RUNOFF (AC-FT)	4,297,000		3,777,000		6,054,000	
10 PERCENT EXCEEDS	8,920		6,070		14,500	
50 PERCENT EXCEEDS	5,300		5,100		6,700	
90 PERCENT EXCEEDS	4,080		4,170		4,220	

a--Gage height, 4.76 ft.
b--Backwater from ice.
c--From rating curve for former site at Loma, extended above 66,000 ft^3/s.
d--From floodmark.
e--Estimated.



06114700 JUDITH RIVER NEAR MOUTH, NEAR WINIFRED, MT

LOCATION.--Lat 47°40'06", long 109°39'09" (NAD 27), in SW¼NW¼NE¼ sec.22, T.22 N., R.16 E., Fergus County, Hydrologic Unit 10040103, on right bank 0.2 mi downstream from private road bridge, 5.3 mi south of Judith Landing, 15 mi northwest of Winifred, and at river mile 7.7.

DRAINAGE AREA.--2,731 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 2000 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,490 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Numerous diversions for irrigation upstream from station. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	218	e200	e260	e200	e160	e400	302	230	364	319	116	175
2	218	e210	e260	e180	e170	e370	304	220	337	339	109	175
3	219	e210	268	e180	e170	e350	305	222	306	339	127	177
4	222	e190	264	e170	e190	324	305	203	281	320	133	176
5	224	e200	e240	e150	e190	318	302	211	275	330	143	173
6	220	e210	246	e170	e210	316	298	185	290	336	150	157
7	221	e210	262	e170	e210	377	292	174	311	330	162	163
8	220	e220	271	e180	e210	1,060	290	168	312	305	145	163
9	221	e220	e240	e180	e210	1,190	285	160	321	291	163	164
10	222	e220	e220	e190	e210	1,190	278	156	339	268	172	165
11	223	e230	e210	e190	e190	766	274	170	507	254	179	167
12	227	e250	e210	e200	e190	580	272	208	834	253	154	167
13	232	266	e220	e200	e210	557	268	219	1,180	240	148	168
14	233	262	e220	e200	e210	508	263	221	907	229	145	189
15	236	261	e220	e200	e240	449	263	217	748	207	143	189
16	249	260	e230	e200	e270	434	283	210	665	182	149	186
17	243	261	e230	e200	e300	430	277	214	577	150	134	184
18	236	259	e230	e200	e300	423	271	213	526	160	134	190
19	238	260	e230	e200	e280	427	268	215	490	163	136	217
20	236	266	e240	e210	e280	405	265	202	489	155	141	244
21	238	266	e240	e210	e270	382	260	206	468	150	145	259
22	236	e250	e240	e230	e270	361	258	257	426	119	152	250
23	238	e240	e240	e230	e260	350	250	364	398	103	192	242
24	237	e240	e250	e210	e280	345	240	405	357	84	187	233
25	232	e240	e260	e200	e310	342	228	390	345	98	189	228
26	238	e250	e250	e190	e400	347	218	357	360	93	182	227
27	240	e250	e220	e180	e460	347	216	336	354	98	187	224
28	246	e250	e220	e180	e500	335	234	332	334	119	184	225
29	e230	e270	e200	e190	e460	321	251	351	319	122	179	224
30	e210	e260	e200	e190	---	311	248	364	316	112	177	225
31	e200	---	e200	e170	---	305	---	380	---	118	175	---
TOTAL	7,103	7,181	7,291	5,950	7,610	14,620	8,068	7,760	13,736	6,386	4,832	5,926
MEAN	229	239	235	192	262	472	269	250	458	206	156	198
MAX	249	270	271	230	500	1,190	305	405	1,180	339	192	259
MIN	200	190	200	150	160	305	216	156	275	84	109	157
AC-FT	14,090	14,240	14,460	11,800	15,090	29,000	16,000	15,390	27,250	12,670	9,580	11,750

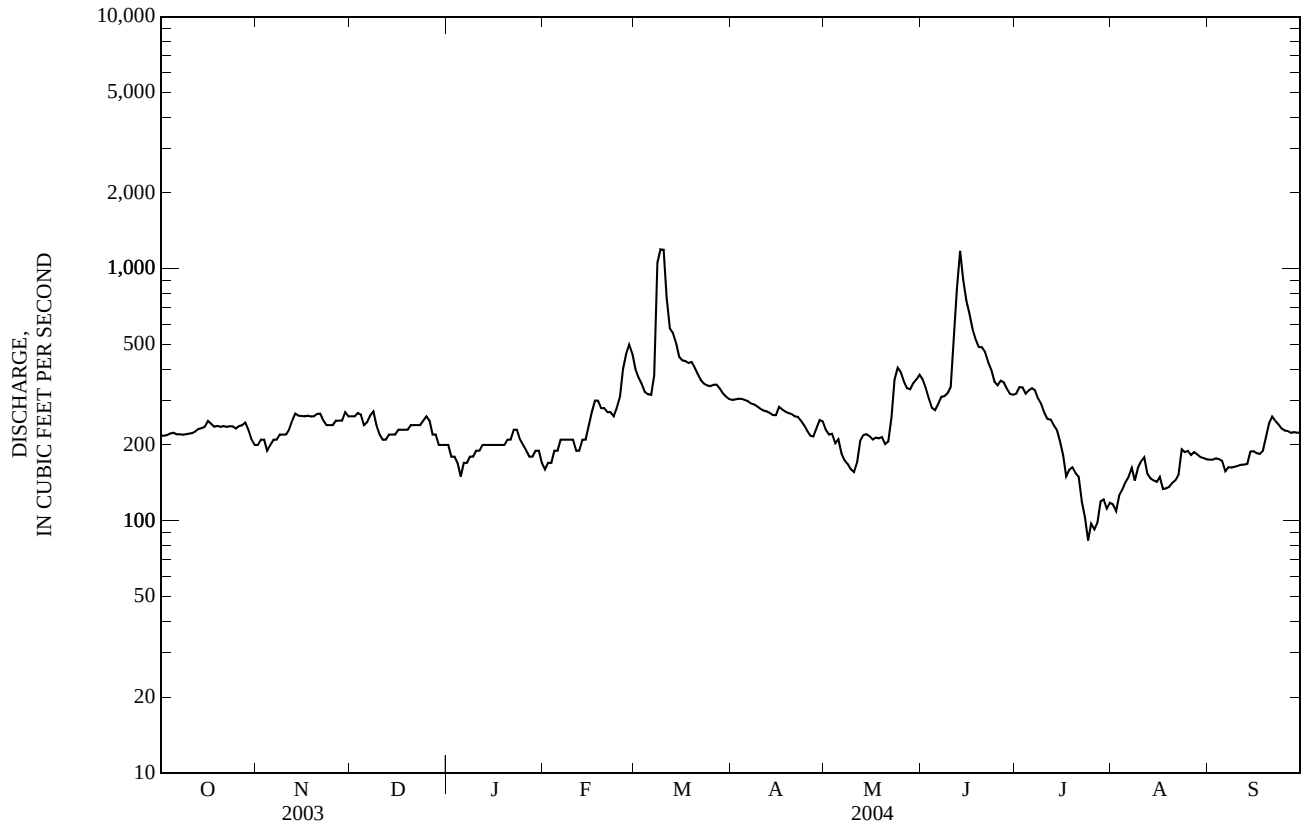
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2004, BY WATER YEAR (WY)

MEAN	243	253	231	243	259	487	309	311	404	184	174	200
MAX	272	268	242	278	287	867	380	599	511	226	236	217
(WY)	(2001)	(2001)	(2003)	(2002)	(2002)	(2003)	(2003)	(2003)	(2003)	(2001)	(2002)	(2002)
MIN	229	239	223	192	234	293	269	157	318	112	143	192
(WY)	(2004)	(2004)	(2001)	(2004)	(2001)	(2002)	(2004)	(2001)	(2001)	(2003)	(2003)	(2003)

06114700 JUDITH RIVER NEAR MOUTH, NEAR WINIFRED, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2001 - 2004	
ANNUAL TOTAL	122,170		96,463			
ANNUAL MEAN	335		264		275	
HIGHEST ANNUAL MEAN					336	2003
LOWEST ANNUAL MEAN					243	2001
HIGHEST DAILY MEAN	6,860	Mar 14	1,190	Mar 9	6,860	Mar 14, 2003
LOWEST DAILY MEAN	58	Jul 24	84	Jul 24	58	Jul 24, 2003
ANNUAL SEVEN-DAY MINIMUM	64	Jul 19	102	Jul 22	64	Jul 19, 2003
MAXIMUM PEAK FLOW			a1,550	Mar 8	c7,600	Mar 14, 2003
MAXIMUM PEAK STAGE			Unknown		d11.00	Mar 13, 2003
INSTANTANEOUS LOW FLOW			b79	Jul 24	f54	Jul 24, 2003
ANNUAL RUNOFF (AC-FT)	242,300		191,300		199,200	
10 PERCENT EXCEEDS	572		372		366	
50 PERCENT EXCEEDS	249		230		250	
90 PERCENT EXCEEDS	137		160		151	

a--Gage height, 4.32 ft.
b--Gage height, 2.39 ft.
c--Gage height, 9.06 ft.
d--From floodmarks, backwater from ice.
e--Estimated.
f--Gage height, 2.26 ft.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 2001 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE (seasonal records): April 2002 to current year.

INSTRUMENTATION.--Temperature recorder installed Sept. 9, 2000.

REMARKS.--Seasonal daily water temperature record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE (seasonal records): Maximum, 32.0°C, July 13, 2002; minimum, 0.0°C, many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: During period of seasonal operation, maximum 30.5°C, July 17, minimum, 0.0°C, many days October through March.

06114700 JUDITH RIVER NEAR MOUTH, NEAR WINIFRED, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	14.5	9.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	14.0	9.0	12.0	0.5	0.0	0.0	2.0	0.0	0.5	0.0	0.0	0.0
3	14.5	9.5	12.0	0.5	0.0	0.0	4.0	2.0	3.0	0.0	0.0	0.0
4	14.5	9.5	12.0	0.0	0.0	0.0	3.0	0.5	1.5	0.0	0.0	0.0
5	15.0	10.0	12.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
6	15.0	10.5	13.0	0.0	0.0	0.0	3.5	0.0	1.5	0.0	0.0	0.0
7	16.0	12.0	14.0	0.0	0.0	0.0	4.0	3.0	3.5	0.0	0.0	0.0
8	16.5	12.0	14.5	0.0	0.0	0.0	3.0	0.5	1.5	0.0	0.0	0.0
9	15.5	12.5	14.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
10	13.5	10.5	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	11.5	8.5	10.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	11.5	9.0	10.5	3.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
13	10.5	8.0	9.5	3.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
14	10.0	7.0	8.5	3.5	1.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
15	10.5	7.5	9.0	3.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
16	11.0	7.5	9.0	3.5	1.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
17	14.5	10.5	12.0	4.0	3.0	3.5	1.0	0.0	0.5	0.0	0.0	0.0
18	14.0	10.0	12.0	5.0	3.0	4.0	0.5	0.0	0.0	0.0	0.0	0.0
19	13.5	10.0	12.0	6.0	3.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0
20	13.5	10.5	12.0	5.5	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
21	16.5	11.5	14.0	3.0	0.0	0.5	1.0	0.0	0.5	0.0	0.0	0.0
22	15.0	12.0	14.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
23	14.0	10.0	12.0	2.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
24	10.0	7.5	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	8.5	5.0	7.0	0.0	0.0	0.0	2.0	0.0	1.0	0.0	0.0	0.0
26	11.0	8.0	9.5	0.0	0.0	0.0	2.0	0.0	1.0	0.0	0.0	0.0
27	11.0	9.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	9.0	8.5	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	8.5	3.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	3.5	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	2.0	0.0	0.5	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	16.5	0.0	10.5	6.0	0.0	0.9	4.0	0.0	0.5	0.0	0.0	0.0
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	0.0	0.0	0.0	12.5	9.5	11.0	17.0	9.0	13.0
2	0.0	0.0	0.0	2.0	0.0	1.0	12.5	8.5	10.0	18.5	11.5	15.0
3	0.0	0.0	0.0	3.5	0.0	2.0	13.0	6.5	10.0	18.5	14.0	16.0
4	0.0	0.0	0.0	5.0	2.0	3.5	13.5	9.0	11.5	19.0	12.5	16.0
5	0.0	0.0	0.0	5.0	2.0	3.5	15.5	9.0	12.5	18.5	14.5	16.5
6	0.0	0.0	0.0	4.5	2.0	3.5	16.0	11.5	14.0	19.0	13.0	16.0
7	0.0	0.0	0.0	4.5	0.5	2.5	15.5	9.5	12.5	21.0	13.5	17.5
8	0.0	0.0	0.0	4.5	2.5	3.5	15.0	10.5	12.5	20.0	15.0	17.5
9	0.0	0.0	0.0	7.5	3.5	5.0	14.0	8.5	11.5	17.5	12.5	15.5
10	0.0	0.0	0.0	6.5	4.0	5.0	12.5	7.5	10.0	15.0	11.0	12.0
11	0.0	0.0	0.0	6.5	2.5	4.5	12.5	7.0	9.5	11.0	7.0	8.5
12	0.0	0.0	0.0	7.5	3.5	5.5	15.0	7.5	11.0	9.5	5.5	7.5
13	0.0	0.0	0.0	7.0	4.5	5.5	16.5	10.5	13.5	12.5	6.0	9.5
14	0.0	0.0	0.0	5.5	3.0	4.5	14.5	10.5	13.0	14.5	8.0	11.0
15	0.0	0.0	0.0	6.5	3.5	5.0	14.5	11.0	12.5	16.5	9.0	12.5
16	0.0	0.0	0.0	7.5	5.0	6.5	15.5	9.5	12.0	14.5	10.5	12.5
17	0.0	0.0	0.0	7.0	5.5	6.5	13.0	9.5	11.0	18.5	9.5	14.0
18	0.0	0.0	0.0	10.0	5.0	7.0	14.0	9.0	11.0	16.0	12.0	13.5
19	0.0	0.0	0.0	9.5	6.5	8.0	13.0	9.5	11.5	17.5	12.0	14.0
20	1.5	0.0	0.0	9.0	4.5	6.5	15.0	9.5	12.0	19.0	13.0	16.5
21	0.0	0.0	0.0	8.5	4.0	6.5	15.0	10.0	12.5	16.5	14.0	15.0
22	0.0	0.0	0.0	10.0	5.0	7.5	15.5	9.0	12.5	14.0	11.0	12.5
23	0.0	0.0	0.0	11.5	6.0	9.0	17.0	9.5	13.5	11.0	8.5	9.5
24	0.0	0.0	0.0	12.0	8.5	10.5	16.0	10.5	13.5	11.0	7.0	8.5
25	0.0	0.0	0.0	11.0	8.0	9.5	16.5	10.0	13.0	16.0	7.5	11.5
26	0.0	0.0	0.0	10.0	8.0	9.0	18.0	10.5	14.5	15.5	12.0	13.5
27	0.0	0.0	0.0	11.5	6.5	9.0	18.5	12.5	15.5	18.5	12.0	15.0
28	0.0	0.0	0.0	11.0	6.5	8.5	15.5	9.5	11.5	18.0	14.5	16.0
29	0.0	0.0	0.0	12.0	5.5	9.0	14.5	7.0	11.0	18.0	13.0	15.5
30	---	---	---	14.0	7.5	11.0	15.0	9.5	12.0	18.0	13.5	15.5
31	---	---	---	13.5	9.5	11.5	---	---	---	17.0	12.5	14.5
MONTH	1.5	0.0	0.0	14.0	0.0	6.1	18.5	6.5	12.1	21.0	5.5	13.6

06114700 JUDITH RIVER NEAR MOUTH, NEAR WINIFRED, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.5	12.5	16.0	25.5	19.5	22.5	28.0	21.5	24.5	23.0	18.5	20.5
2	22.0	14.0	18.0	26.0	20.0	23.0	26.5	22.0	24.5	20.5	17.0	19.0
3	23.5	16.0	20.0	26.0	20.5	23.0	25.0	21.0	23.0	18.0	13.5	15.5
4	24.0	18.0	21.0	23.5	20.5	21.5	27.0	20.5	23.5	19.5	13.5	16.5
5	25.0	18.0	21.5	21.0	17.5	19.5	26.5	21.5	23.5	18.5	15.5	17.0
6	22.0	17.5	20.0	23.0	17.0	20.0	26.5	20.5	23.5	19.0	14.5	16.5
7	17.5	14.5	15.5	23.0	19.5	21.0	22.5	19.5	21.0	17.5	14.5	16.0
8	15.0	13.0	14.0	21.5	16.5	19.0	22.0	18.0	20.0	19.5	13.5	16.5
9	16.5	12.0	14.0	24.0	15.5	19.5	23.0	17.5	20.0	19.0	15.0	17.5
10	15.0	14.0	14.5	26.5	19.5	22.5	23.0	17.5	20.5	20.0	15.5	18.0
11	14.5	13.0	13.5	25.0	20.0	22.5	23.5	17.5	20.5	19.5	15.0	17.5
12	15.5	11.5	13.5	25.0	18.0	21.5	24.5	18.0	21.5	18.5	16.0	17.5
13	17.0	13.0	15.0	25.5	19.0	22.5	25.5	19.0	22.5	16.0	14.5	15.5
14	17.5	13.5	15.5	27.5	20.5	24.0	26.0	19.5	23.0	15.0	12.5	14.0
15	18.0	14.0	16.0	28.5	22.0	25.0	25.5	19.5	23.0	16.5	12.5	14.5
16	18.0	13.5	16.0	29.5	22.0	25.5	24.0	20.5	22.0	17.0	13.0	15.0
17	17.5	14.5	16.0	30.5	23.0	27.0	25.0	19.0	21.5	17.0	13.0	15.5
18	17.0	13.5	15.5	28.0	23.0	26.0	23.5	20.0	22.0	18.0	14.0	16.0
19	15.5	12.5	14.0	28.0	23.5	26.0	23.0	17.5	20.5	16.5	13.5	15.0
20	17.5	11.5	14.5	27.0	22.0	24.5	24.5	20.0	22.0	13.5	11.5	12.5
21	19.5	14.0	17.0	25.0	20.0	22.5	24.0	20.5	22.5	13.5	9.5	11.5
22	20.0	15.5	17.5	25.0	19.5	22.5	22.5	19.0	20.5	13.0	9.5	11.5
23	22.0	15.5	18.5	24.5	19.0	22.0	20.0	16.5	18.5	15.5	11.0	13.0
24	22.5	17.0	19.5	26.0	18.0	22.0	20.5	15.5	18.0	17.0	12.5	15.0
25	23.5	16.5	20.0	27.5	19.5	23.5	19.5	16.5	18.0	17.5	13.0	15.5
26	20.5	17.5	19.0	27.0	21.0	24.0	18.0	16.0	16.5	17.0	14.0	15.5
27	22.0	15.5	19.0	24.5	21.0	22.5	20.0	15.0	17.5	17.0	14.0	15.5
28	24.0	16.5	20.5	24.5	18.0	21.0	19.0	15.5	17.5	17.0	13.0	15.0
29	26.0	19.0	22.5	25.5	20.0	22.5	19.5	16.0	17.5	16.5	13.0	15.0
30	24.5	21.5	23.0	25.0	20.0	23.0	22.0	16.0	19.0	15.5	13.0	14.0
31	---	---	---	27.0	20.0	23.5	23.0	17.0	20.0	---	---	---
MONTH	26.0	11.5	17.4	30.5	15.5	22.7	28.0	15.0	20.9	23.0	9.5	15.6

06115200 MISSOURI RIVER NEAR LANDUSKY, MT

LOCATION.--Lat 47°37'51", long 108°41'13" (NAD 27), in NW¼NE¼ sec.31, T.22 N., R.24 E., Fergus County, Hydrologic Unit 10040104, C.M. Russel National Wildlife Refuge, on right bank 380 ft upstream from bridge on U.S. Highway 191, 0.9 mi upstream from Armells Creek, 20 mi south of Landusky, and at river mile 1,921.61.

DRAINAGE AREA.--40,987 mi^2. Area at site used prior to Dec. 13, 1968, 40,763 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1934 to current year. Prior to October 1968, published as "at powerplant ferry, near Zortman."

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,239.96 ft (NGVD 29) (State Highway bench mark). Prior to Feb. 7, 1935, nonrecording gage, and Feb. 7, 1935, to Dec. 12, 1968, water-stage recorder, at site 16.5 mi upstream at elevation 33.06 ft higher.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Flow regulated by 24 smaller irrigation reservoirs and powerplants, Clark Canyon Reservoir (station number 06015300), Canyon Ferry Lake (station number 06058500), and Lake Elwell (station number 06101300). Diversions for irrigation of about 870,400 acres upstream from station. U. S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,700	e4,500	e5,200	e3,800	e5,200	e5,600	5,590	4,890	9,770	5,860	4,110	5,000
2	4,130	e4,600	e4,900	e3,400	e5,600	e5,400	5,640	5,110	9,640	5,840	4,230	4,690
3	4,070	e4,600	e4,900	e4,600	e5,600	e5,400	5,700	5,640	9,190	5,810	4,200	4,520
4	4,200	e4,700	e4,800	e4,500	e5,600	e5,200	5,730	5,640	8,610	5,950	4,170	4,760
5	4,090	e4,700	e4,700	e4,200	e5,600	e5,200	5,920	5,320	7,550	5,820	4,120	4,660
6	4,050	e4,800	e4,600	e4,200	e5,600	e5,200	5,930	5,270	6,580	5,730	4,310	4,630
7	4,020	e5,000	e4,700	e4,400	e5,600	e5,400	5,990	5,280	6,560	5,610	4,630	4,640
8	4,130	e5,000	e4,800	e4,700	e5,600	e5,500	5,970	5,300	6,460	5,560	4,590	4,560
9	4,350	e4,900	e4,700	e4,900	e5,800	e5,600	5,770	5,390	7,170	5,660	4,640	4,570
10	5,450	e5,200	e4,600	e5,200	e5,800	e5,600	5,790	5,430	7,630	5,300	4,540	4,510
11	4,030	e4,900	e5,200	e5,600	e5,700	e5,600	5,660	5,260	9,120	5,230	4,580	4,640
12	3,880	e4,800	e5,000	e5,600	e5,600	e5,500	5,580	5,340	8,420	5,210	4,520	5,030
13	3,750	e4,900	e4,800	e5,800	e5,400	e5,900	5,370	5,840	9,050	5,170	4,630	4,700
14	3,930	e4,900	e5,000	e5,800	e5,400	e6,900	5,280	7,150	9,780	4,950	4,370	4,880
15	4,240	e4,700	e5,800	e5,800	e5,400	e6,400	5,230	6,760	9,740	4,820	4,470	4,990
16	4,270	e4,800	e6,000	e5,900	e5,300	6,250	5,110	6,390	9,200	4,860	4,300	4,950
17	4,880	e4,900	e5,600	e6,000	e5,200	5,830	5,180	5,800	8,490	4,710	4,350	4,910
18	5,020	e4,900	e5,200	e6,000	e5,400	6,130	5,160	5,550	7,870	4,470	4,350	4,860
19	5,240	e4,900	e5,400	e6,000	e5,400	6,070	5,220	5,560	7,550	4,410	4,230	4,660
20	5,330	e4,900	e6,000	e5,800	e5,800	6,080	5,240	5,730	7,240	4,340	4,250	4,600
21	4,860	e4,800	e5,400	e5,800	e6,000	6,080	5,190	5,580	7,490	4,440	4,410	4,390
22	5,110	e4,700	e5,200	e5,800	e6,000	6,030	5,180	5,660	7,360	e4,400	4,640	4,480
23	5,240	e4,600	e5,200	e5,600	e5,800	5,990	5,100	6,770	7,100	4,390	4,680	4,690
24	5,030	e3,800	e5,200	e5,400	e5,800	6,030	4,910	7,850	7,200	4,350	4,660	4,530
25	5,470	e4,200	e5,100	e5,600	e5,800	6,040	4,910	7,810	6,920	4,370	5,140	4,530
26	5,330	e5,200	e5,100	e5,200	e5,400	5,940	4,850	8,110	6,520	4,350	5,860	4,580
27	4,970	e5,800	e5,200	e3,500	e5,400	5,930	4,800	8,420	6,450	e4,350	5,690	4,410
28	5,030	e5,800	e5,600	e3,400	e5,400	5,840	4,700	8,430	6,240	e4,300	5,690	4,330
29	5,940	e5,200	e5,000	e4,300	e5,400	5,670	4,790	9,050	5,980	4,380	5,510	4,250
30	e4,200	e5,200	e4,200	e4,500	---	5,750	4,990	10,100	5,980	4,310	5,310	4,090
31	e4,600	---	e3,500	e5,200	---	5,550	---	9,900	---	4,270	5,240	---
TOTAL	143,540	145,900	156,600	156,500	161,600	179,610	160,480	200,330	232,860	153,220	144,420	139,040
MEAN	4,630	4,863	5,052	5,048	5,572	5,794	5,349	6,462	7,762	4,943	4,659	4,635
MAX	5,940	5,800	6,000	6,000	6,000	6,900	5,990	10,100	9,780	5,950	5,860	5,030
MIN	3,750	3,800	3,500	3,400	5,200	5,200	4,700	4,890	5,980	4,270	4,110	4,090
AC-FT	284,700	289,400	310,600	310,400	320,500	356,300	318,300	397,400	461,900	303,900	286,500	275,800

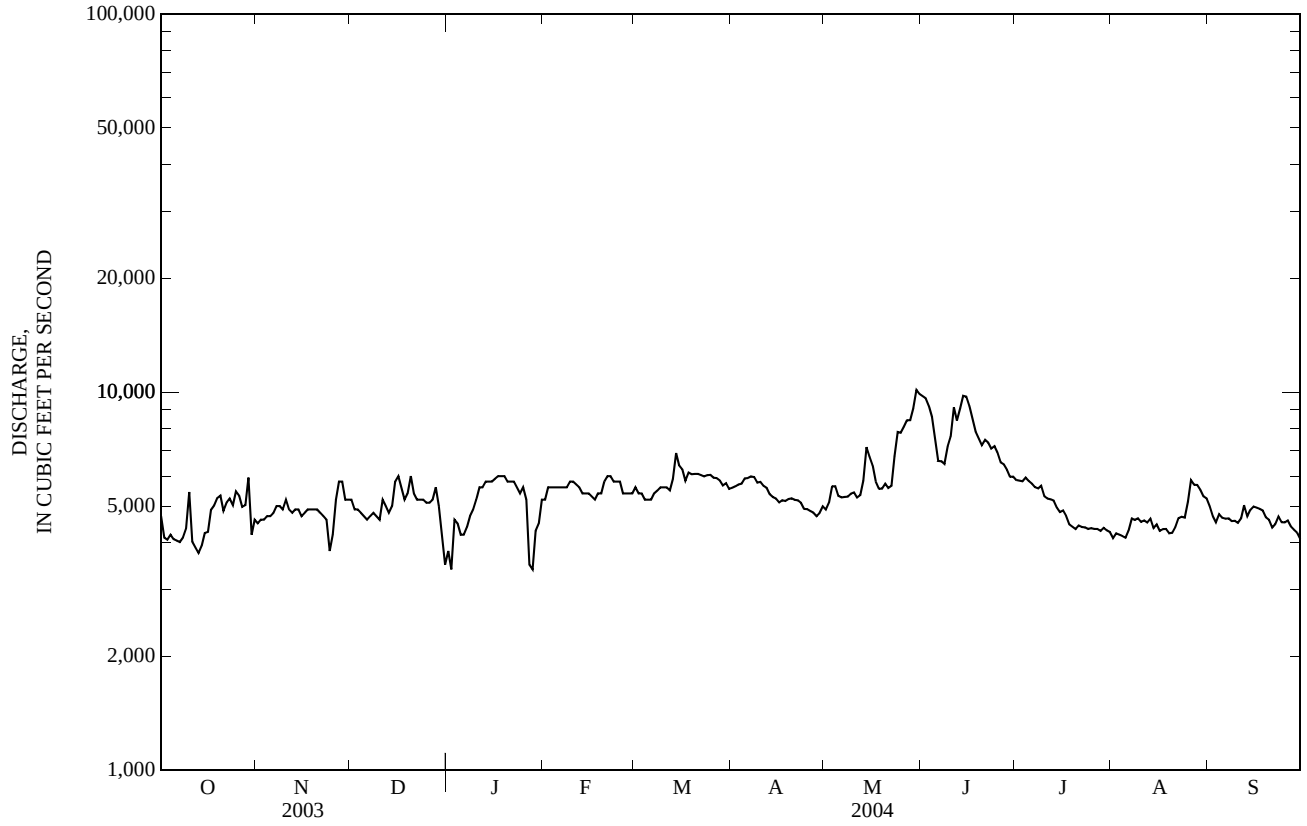
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2004, BY WATER YEAR (WY)

MEAN	6,498	6,705	6,590	6,583	7,097	8,489	9,474	14,110	19,230	10,620	6,539	6,165
MAX	16,480	13,920	13,180	10,840	11,380	19,700	19,240	30,510	55,270	33,590	12,620	12,310
(WY)	(1966)	(1966)	(1960)	(1979)	(1965)	(1978)	(1952)	(1975)	(1948)	(1975)	(1975)	(1965)
MIN	3,270	3,581	3,121	2,805	2,511	4,313	4,338	4,860	4,939	3,956	2,075	2,501
(WY)	(1935)	(1938)	(1937)	(1937)	(1936)	(2002)	(1961)	(1992)	(1977)	(1940)	(1934)	(1934)

06115200 MISSOURI RIVER NEAR LANDUSKY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1934 - 2004	
ANNUAL TOTAL	2,264,870		1,974,100			
ANNUAL MEAN	6,205		5,394		9,032	
HIGHEST ANNUAL MEAN					15,280	1975
LOWEST ANNUAL MEAN					4,438	1937
HIGHEST DAILY MEAN	18,000	Mar 16	10,100	May 30	136,000	Jun 6, 1953
LOWEST DAILY MEAN	3,500	Dec 31	3,400	Jan 2	1,220	Dec 13, 1936
ANNUAL SEVEN-DAY MINIMUM	3,710	Sep 5	4,030	Dec 30	1,620	Dec 9, 1936
MAXIMUM PEAK FLOW			a10,700	May 30	c137,000	Jun 3, 1953
MAXIMUM PEAK STAGE			b20.30	Mar 9	b34.17	Mar 22, 1978
INSTANTANEOUS LOW FLOW					1,120	Jul 8, 1936
ANNUAL RUNOFF (AC-FT)	4,492,000		3,916,000		6,543,000	
10 PERCENT EXCEEDS	9,560		6,530		15,900	
50 PERCENT EXCEEDS	5,500		5,200		7,250	
90 PERCENT EXCEEDS	4,000		4,300		4,400	

a--Gage height, 16.55 ft.
b--Backwater from ice.
c--Gage height, 22.20 ft, from graph based on gage readings; site and datum then in use.
e--Estimated.



06115200 MISSOURI RIVER NEAR LANDUSKY, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March 1979 to September 1981.
WATER TEMPERATURE: March to September 1979.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to September 1991, October 1991 to current year (seasonal records only, March through October).

REMARKS.--Daily sediment records rated good to fair. Daily sediment data not available from Nov. 1 to Mar. 15 due to ice cover. No bed sediment sample analysis for Mar. 16 due to problems with sampling equipment.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1979-81): Maximum daily, 1,240 microsiemens per centimeter (μS/cm), June 20, 1979; minimum daily, 410 μS/cm, July 3, 1980.
WATER TEMPERATURE (water year 1979): Maximum, 24.0°C, on several days during June to August 1979; minimum, 0.5°C, on several days during March 1979.
SEDIMENT CONCENTRATION: Maximum daily mean, 27,400 mg/L, June 22, 1976; minimum daily mean, 2 mg/L, Dec. 21, 1983.
SEDIMENT LOAD: Maximum daily, 1,680,000 tons, June 22, 1976; minimum daily, 33 tons, Dec. 21, 1983.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: During seasonal period of collection, maximum daily mean, 9,900 mg/L, May 24; minimum daily mean, 62 mg/L, Sept. 9-10.

SEDIMENT LOAD: During seasonal period of collection, maximum daily, 212,000 tons, May 24; minimum daily, 635 tons, Aug. 3.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT								
15...	1245	4,220	451	12.5	9.5	24	97	1,110
MAR								
16...	1230	6,090	630	--	5.5	68	715	11,800
APR								
29...	1300	4,810	419	4.0	12.0	56	106	1,380
JUN								
15...	1100	9,890	525	21.0	16.0	77	859	22,900
SEP								
08...	1315	4,570	487	--	17.0	44	70	864
28...	1730	4,320	490	--	15.0	51	69	805

Date	Bed sediment, percent <.063mm (80164)	Bed sediment, percent <.125mm (80165)	Bed sediment, percent <.25mm (80166)	Bed sediment, percent <.5 mm (80167)	Bed sediment, percent <1 mm (80168)	Bed sediment, percent <2 mm (80169)	Bed sediment, percent <4 mm (80170)	Bed sediment, percent <8 mm (80171)	Bed sediment, percent <16 mm (80172)
OCT									
15...	<1	2	88	96	98	99	100	--	--
MAR									
16...	--	--	--	--	--	--	--	--	--
APR									
29...	--	<1	1	50	92	98	99	100	--
JUN									
15...	1	6	20	28	37	47	67	94	100
SEP									
08...	<1	3	74	96	99	100	100	--	--
28...	<1	2	71	91	98	100	100	--	--

06115200 MISSOURI RIVER NEAR LANDUSKY, MT—Continued

SUSPENDED-SEDIMENT (SEASONAL)
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Day	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	140	1,780									---	---
2	127	1,420									---	---
3	122	1,340									---	---
4	137	1,550									---	---
5	117	1,290									---	---
6	94	1,030									---	---
7	98	1,060									---	---
8	105	1,170									---	---
9	120	1,410									---	---
10	3,800	55,900									---	---
11	2,240	24,400									---	---
12	133	1,390									---	---
13	98	992									---	---
14	118	1,250									---	---
15	108	1,240									---	---
16	68	784									725	12,200
17	98	1,290									600	9,440
18	114	1,550									654	10,800
19	109	1,540									780	12,800
20	96	1,380									499	8,190
21	84	1,100									276	4,530
22	111	1,530									241	3,920
23	122	1,730									205	3,320
24	110	1,490									216	3,520
25	99	1,460									202	3,290
26	90	1,300									192	3,080
27	84	1,130									192	3,070
28	88	1,200									178	2,810
29	145	2,330									146	2,240
30	163	1,850									148	2,300
31	198	2,460									146	2,190
TOTAL	---	121,346									---	87,700
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	159	2,400	89	1,180	731	19,300	200	3,160	60	666	125	1,690
2	171	2,600	99	1,370	670	17,400	228	3,600	57	651	83	1,050
3	183	2,820	157	2,390	598	14,800	250	3,920	56	635	90	1,100
4	195	3,020	155	2,360	465	10,800	280	4,500	57	642	111	1,430
5	206	3,290	122	1,750	321	6,540	305	4,790	61	679	106	1,330
6	211	3,380	105	1,490	387	6,880	330	5,110	73	850	116	1,450
7	200	3,230	103	1,470	490	8,680	330	5,000	88	1,100	105	1,320
8	183	2,950	113	1,620	529	9,230	300	4,500	99	1,230	77	948
9	184	2,870	122	1,780	570	11,000	265	4,050	110	1,380	62	765
10	187	2,920	131	1,920	650	13,400	225	3,220	118	1,450	62	755
11	180	2,750	118	1,680	4,880	120,000	188	2,650	123	1,520	80	1,000
12	151	2,270	100	1,440	7,180	163,000	148	2,080	126	1,540	139	1,890
13	118	1,710	135	2,130	2,180	53,300	130	1,810	126	1,580	132	1,680
14	129	1,840	263	5,080	2,050	54,100	124	1,660	120	1,420	133	1,750
15	118	1,670	272	4,960	1,070	28,100	119	1,550	107	1,290	134	1,810
16	108	1,490	225	3,880	802	19,900	114	1,500	96	1,110	121	1,620
17	100	1,400	172	2,690	595	13,600	108	1,370	89	1,050	112	1,480
18	98	1,370	142	2,130	562	11,900	101	1,220	82	963	106	1,390
19	111	1,560	124	1,860	520	10,600	94	1,120	78	891	98	1,230
20	121	1,710	123	1,900	460	8,990	88	1,030	82	941	91	1,130
21	111	1,560	131	1,970	380	7,680	82	983	110	1,310	86	1,020
22	102	1,430	146	2,230	314	6,240	80	950	222	2,780	91	1,100
23	111	1,530	1,210	22,100	390	7,480	80	948	278	3,510	92	1,160
24	100	1,330	9,990	212,000	480	9,330	80	940	230	2,890	89	1,090
25	99	1,310	3,400	71,700	450	8,410	80	944	258	3,580	90	1,100
26	84	1,100	1,940	42,500	418	7,360	79	928	350	5,540	98	1,210
27	96	1,240	940	21,400	382	6,650	79	928	280	4,300	86	1,020
28	110	1,400	862	19,600	328	5,530	74	859	232	3,560	74	865
29	117	1,510	940	23,000	232	3,750	71	840	203	3,020	66	757
30	110	1,480	1,050	28,600	190	3,070	68	791	168	2,410	64	707
31	---	---	922	24,600	---	---	64	738	142	2,010	---	---
TOTAL	---	61,140	---	514,780	---	667,020	---	67,689	---	56,498	---	36,847

06115270 ARMELLS CREEK NEAR LANDUSKY, MT

LOCATION.--Lat 47°36'38", long 108°41'41" (NAD 27), in NE¼NW¼SW¼ sec.6, T.21 N., R.24 E., Fergus County, Hydrologic Unit 10040104, on right bank at downstream side of bridge on U.S. Highway 191, 1.5 mi south of Fred Robinson Bridge, 22 mi south of Landusky, and at river mile 1.1.

DRAINAGE AREA.--397 mi^2.

PERIOD OF RECORD.--February 2000 to September 2004, (discontinued).

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,280 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. U. S.Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	e0.00	e80	2.5	0.00	13	0.59	0.00	0.00
2	0.00	0.00	0.00	0.00	e0.00	e40	2.0	0.00	7.8	0.44	0.00	0.00
3	0.00	0.00	0.00	0.00	e0.00	e30	1.9	0.00	5.1	0.29	0.00	0.00
4	0.00	0.00	0.00	0.00	e0.00	25	1.5	0.00	3.6	0.18	0.00	0.00
5	0.00	0.00	0.00	0.00	e0.00	23	1.2	0.00	2.5	0.20	0.00	0.00
6	0.00	0.00	0.00	0.00	e0.00	24	1.1	0.00	2.5	0.15	0.00	0.00
7	0.00	0.00	0.00	0.00	e0.00	35	0.91	0.00	1.8	0.08	0.00	0.00
8	0.00	0.00	0.00	0.00	e0.00	562	0.63	0.00	1.7	0.01	0.00	0.00
9	0.00	0.00	0.00	0.00	e0.00	870	0.41	0.00	1.5	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	e0.00	702	0.12	0.00	33	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	e0.00	134	0.00	0.00	697	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	e0.00	56	0.00	0.00	561	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	e0.00	77	0.00	0.00	117	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	e0.00	49	0.00	0.00	71	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	e0.00	33	0.00	0.00	38	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	e0.00	35	0.00	0.00	23	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	e0.00	39	0.00	0.00	14	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	e0.00	42	0.00	0.00	9.8	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	e0.50	48	0.00	0.00	7.8	0.00	0.00	0.00
20	0.00	0.00	0.00	e0.00	e10	33	0.00	0.00	6.1	0.00	0.00	0.00
21	0.00	0.00	0.00	e0.00	e130	18	0.00	0.00	4.8	0.00	0.00	0.00
22	0.00	0.00	0.00	e0.00	e120	13	0.00	0.01	4.0	0.00	0.00	0.00
23	0.00	0.00	0.00	e0.00	e110	11	0.00	66	3.5	0.00	0.00	0.00
24	0.00	0.00	0.00	e0.00	e100	11	0.00	396	3.1	0.00	0.00	0.00
25	0.00	0.00	0.00	e0.00	e120	14	0.00	105	2.5	0.00	0.00	0.00
26	0.00	0.00	0.00	e0.00	e180	14	0.00	39	1.8	0.00	0.00	0.00
27	0.00	0.00	0.00	e0.00	e250	11	0.00	20	1.4	0.00	0.00	0.00
28	0.00	0.00	0.00	e0.00	700	7.8	0.00	13	1.2	0.00	0.00	0.00
29	0.00	0.00	0.00	e0.00	198	5.4	0.00	43	0.89	0.00	0.00	0.00
30	0.00	0.00	0.00	e0.00	---	3.9	0.00	68	0.71	0.00	0.00	0.00
31	0.00	---	0.00	e0.00	---	3.2	---	25	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	1,918.50	3,049.3	12.27	775.01	1,641.10	1.94	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	66.2	98.4	0.41	25.0	54.7	0.063	0.000	0.000
MAX	0.00	0.00	0.00	0.00	700	870	2.5	396	697	0.59	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	3.2	0.00	0.00	0.71	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	3,810	6,050	24	1,540	3,260	3.8	0.00	0.00

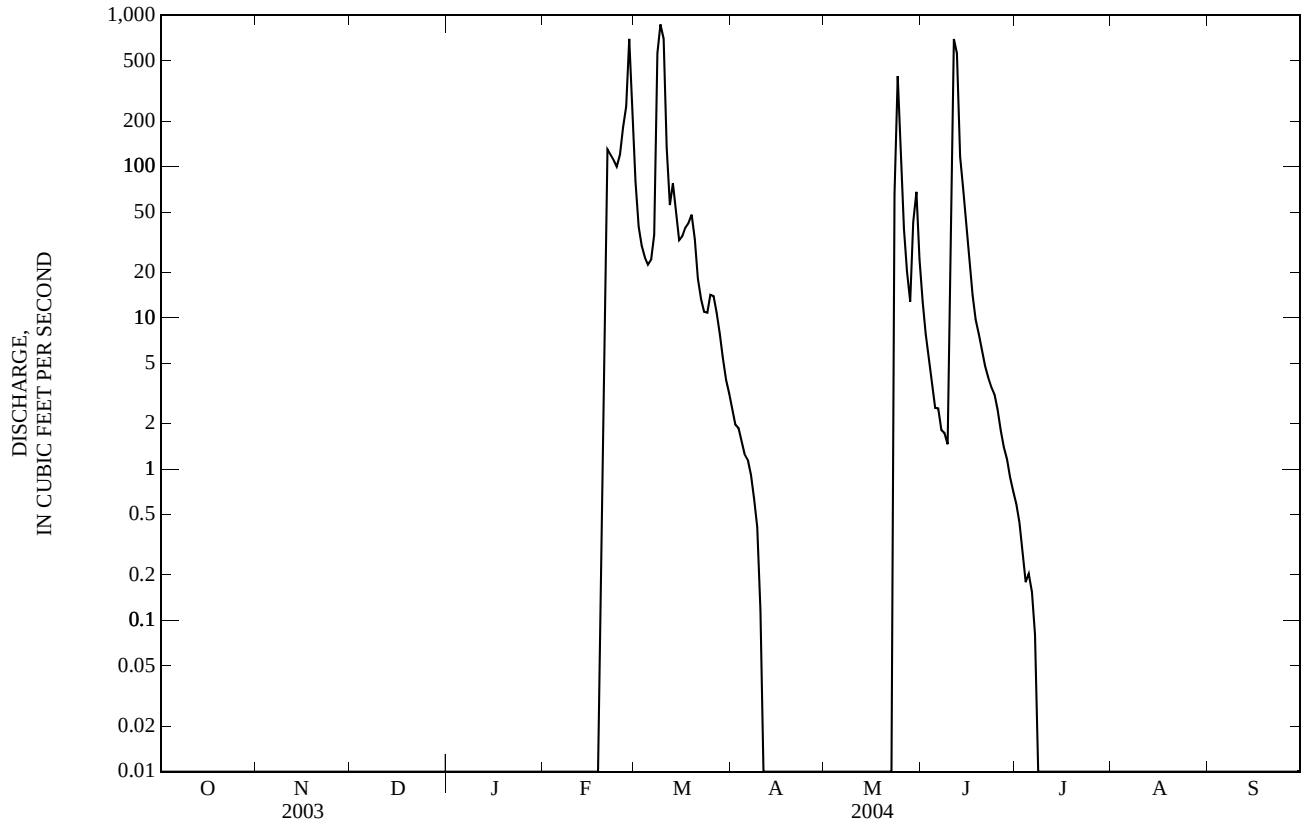
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2004, BY WATER YEAR (WY)

MEAN	0.000	0.000	0.001	0.002	14.0	36.2	2.03	9.11	14.2	7.18	0.62	0.000
MAX	0.000	0.000	0.003	0.010	66.2	98.4	7.52	25.0	54.7	32.1	2.17	0.000
(WY)	(2001)	(2001)	(2003)	(2003)	(2004)	(2004)	(2003)	(2004)	(2004)	(2001)	(2002)	(2000)
MIN	0.000	0.000	0.000	0.000	0.000	0.53	0.000	0.000	0.003	0.000	0.000	0.000
(WY)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2000)	(2003)	(2000)	(2000)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2000 - 2004	
ANNUAL TOTAL	3,295.72		7,398.12			
ANNUAL MEAN	9.03		20.2		8.47	
HIGHEST ANNUAL MEAN					20.2	2004
LOWEST ANNUAL MEAN					1.05	2002
HIGHEST DAILY MEAN	1,380	Mar 14	870	Mar 9	1,380	Mar 14, 2003
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Feb 1, 2000
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Feb 1, 2000
MAXIMUM PEAK FLOW			1,440	Mar 9	a2,910	Mar 14, 2003
MAXIMUM PEAK STAGE			9.78	Mar 9	12.85	Mar 14, 2003
ANNUAL RUNOFF (AC-FT)	6,540		14,670		6,140	
10 PERCENT EXCEEDS	4.2		33		4.0	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a--On the basis of slope-area measurement of peak flow.
e--Estimated.

06115270 ARMELLS CREEK NEAR LANDUSKY, MT—Continued



06115300 DUVAL CREEK NEAR LANDUSKY, MT

LOCATION.--Lat 47°45'17", long 108°42'23" (NAD 27), in SW¼NW¼ SE¼ sec.13, T.23 N., R.23 E., Phillips County, Hydrologic Unit 10040104, at culvert on U.S. Highway 191 at milepost 98, 10.0 miles north of Fred Robinson Bridge, and 11 mi southwest of Landusky.

DRAINAGE AREA.--3.3 mi^2.

PERIOD OF RECORD.--February 2000 to September 2004 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 2,900 ft (NGVD 29), from topographic map. Prior to Jan. 19, 2000, peak flow gage only at present site and elevation.

REMARKS.--Records good except those days with flow, which are fair and those for estimated daily discharges, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 660 ft^3/s, June 29, 1991, gage height, 13.83 ft, present site and elevation. Site operated as crest-stage gage from May 1963 to January 2000.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

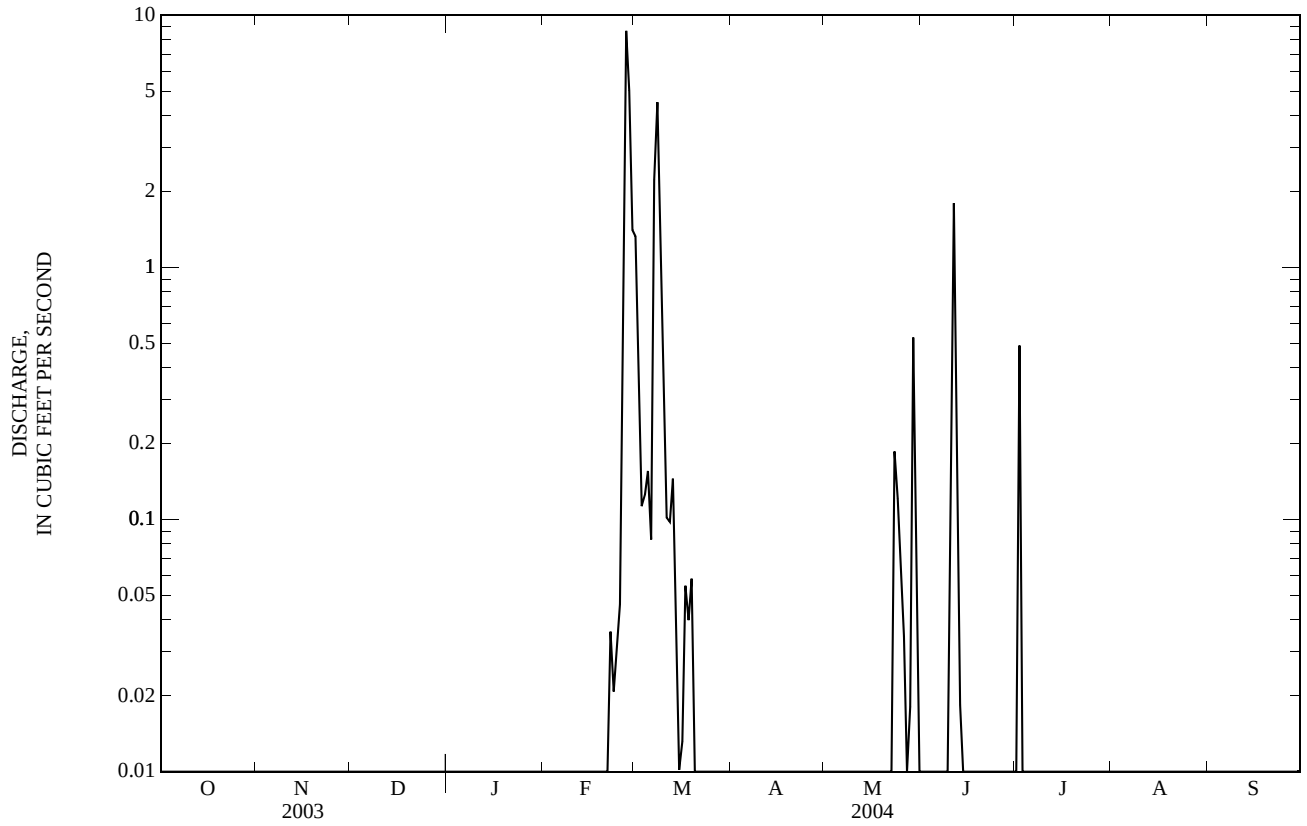
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	1.3	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.49	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.01	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	2.2	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	4.5	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	1.3	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.53	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	1.8	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.13	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.02	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.19	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.12	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.07	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.03	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	8.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	5.0	0.00	0.00	0.02	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	1.4	0.00	0.00	0.53	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.04	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	15.47	11.20	0.00	1.00	2.48	0.50	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.53	0.36	0.000	0.032	0.083	0.016	0.000	0.000
MAX	0.00	0.00	0.00	0.00	8.7	4.5	0.00	0.53	1.8	0.49	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	31	22	0.00	2.0	4.9	1.0	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2004, BY WATER YEAR (WY)

MEAN	0.000	0.000	0.000	0.000	0.16	0.43	0.000	0.007	0.057	0.13	0.11	0.000
MAX	0.000	0.000	0.000	0.000	0.53	1.78	0.000	0.032	0.17	0.63	0.56	0.000
(WY)	(2001)	(2001)	(2001)	(2001)	(2004)	(2003)	(2000)	(2004)	(2002)	(2002)	(2002)	(2000)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(2001)	(2001)	(2001)	(2001)	(2001)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2000 - 2004	
ANNUAL TOTAL	60.39		30.65			
ANNUAL MEAN	0.17		0.084		0.092	
HIGHEST ANNUAL MEAN					0.17	2003
LOWEST ANNUAL MEAN					0.003	2001
HIGHEST DAILY MEAN	20	Mar 14	8.7	Feb 27	20	Mar 14, 2003
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Feb 1, 2000
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Feb 1, 2000
MAXIMUM PEAK FLOW			38	Feb 27	238	Jul 8, 2002
MAXIMUM PEAK STAGE			2.85	Feb 27	6.55	Jul 8, 2002
ANNUAL RUNOFF (AC-FT)	120		61		67	
10 PERCENT EXCEEDS	0.00		0.02		0.00	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

06115300 DUVAL CREEK NEAR LANDUSKY, MT—Continued



06115350 ROCK CREEK NEAR LANDUSKY, MT

LOCATION.--Lat 47°42'17", long 108°32'49" (NAD 27), in NW¼NW¼ NW¼ sec.5, T.22 N., R.25 E., Phillips County, Hydrologic Unit 10040104, on left bank at Charles M. Russell National Wildlife Refuge boundary and 14 mi southeast of Landusky.

DRAINAGE AREA.--72.9 mi^2.

PERIOD OF RECORD.--November 1999 to September 2004 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 2,670 ft (NGVD 29), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	e1.0	e0.60	e0.50	e6.0	1.8	0.05	0.17	0.00	e0.00	e0.00
2	0.00	0.00	e1.0	e0.50	e0.50	e4.0	1.9	0.04	0.00	0.00	e0.00	e0.00
3	0.00	0.00	e1.0	e0.40	e0.60	e2.0	2.1	0.00	0.00	0.25	e0.00	0.00
4	0.00	0.00	e1.0	e0.40	e0.70	e4.0	2.1	0.06	0.00	0.00	e0.00	0.00
5	0.00	0.00	e1.0	e0.30	e0.90	e6.0	2.0	0.06	0.00	0.00	e0.00	0.00
6	0.00	0.00	e1.0	e0.40	e1.0	e4.0	2.1	0.01	0.00	0.00	e0.00	0.00
7	0.00	0.00	e1.0	e0.50	e1.0	e15	1.6	0.00	0.00	0.00	e0.00	0.00
8	0.00	0.00	e1.0	e0.60	e1.0	e40	1.7	0.00	0.00	0.00	e0.00	0.00
9	0.00	0.00	e1.0	e0.70	e1.0	e15	1.6	0.00	0.00	0.00	e0.00	0.00
10	0.00	0.00	e0.90	e0.80	e1.0	e10	1.4	0.00	0.00	0.23	e0.00	0.00
11	0.00	0.00	e0.90	e1.0	e1.0	e8.0	1.2	0.08	1.7	0.00	e0.00	0.00
12	0.00	0.00	e0.80	e1.0	e1.0	e6.0	1.4	0.31	1.6	0.00	e0.00	0.00
13	0.00	e0.50	e0.90	e1.0	e1.0	e6.0	1.3	0.39	1.6	0.00	e0.00	0.00
14	0.00	e1.0	e1.0	e1.0	e1.0	e5.0	1.3	0.33	0.71	0.00	e0.00	0.00
15	0.00	e1.0	e1.0	e1.0	e1.0	e5.0	1.2	0.24	0.06	0.00	e0.00	0.00
16	0.00	e1.0	e1.0	e1.0	e1.0	e5.0	1.2	0.11	0.00	0.00	e0.00	0.00
17	0.00	e1.0	e1.0	e1.0	e1.5	4.0	1.2	0.00	0.00	0.00	e0.00	0.00
18	0.00	e1.0	e1.0	e1.0	e2.0	4.0	1.2	0.01	0.00	0.00	e0.00	0.00
19	0.00	e1.0	e1.0	e1.0	e1.5	3.5	1.1	0.05	0.00	e0.00	e0.00	0.00
20	0.00	e1.0	e1.0	e1.0	e1.5	3.1	1.1	0.08	0.00	e0.00	e0.00	0.00
21	0.00	e0.80	e1.0	e1.0	e1.5	2.9	0.89	0.47	0.00	e0.00	e0.00	0.00
22	0.00	e0.70	e1.0	e1.0	e2.0	2.8	0.69	0.99	0.00	e0.00	e0.00	0.00
23	0.00	e0.60	e1.0	e1.0	e2.0	2.8	0.59	2.1	0.00	e0.00	e0.00	0.00
24	0.00	e0.80	e1.0	e0.80	e2.0	2.7	0.41	2.7	0.00	e0.00	e0.00	0.00
25	0.00	e1.0	e0.90	e0.60	e2.0	2.5	0.15	2.0	0.00	e0.00	e0.00	0.00
26	0.00	e1.0	e0.70	e0.50	e4.0	2.4	0.08	1.3	0.00	e0.00	e0.00	0.00
27	0.00	e1.0	e0.60	e0.50	e20	2.1	0.08	1.0	0.00	e0.00	e0.00	0.00
28	0.00	e1.0	e0.60	e0.50	e60	1.8	0.08	1.1	0.00	e0.00	e0.00	0.00
29	0.00	e1.0	e0.50	e0.50	e10	1.6	0.03	1.8	0.00	e0.00	e0.00	0.00
30	0.00	e1.0	e0.50	e0.70	---	1.7	0.02	0.83	0.00	e0.00	e0.00	0.00
31	0.00	---	e0.50	e0.50	---	1.7	---	0.53	---	e0.00	e0.00	---
TOTAL	0.00	16.40	27.80	22.80	124.20	180.6	33.52	16.64	5.84	0.48	0.00	0.00
MEAN	0.000	0.55	0.90	0.74	4.28	5.83	1.12	0.54	0.19	0.015	0.000	0.000
MAX	0.00	1.0	1.0	1.0	60	40	2.1	2.7	1.7	0.25	0.00	0.00
MIN	0.00	0.00	0.50	0.30	0.50	1.6	0.02	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	33	55	45	246	358	66	33	12	1.0	0.00	0.00

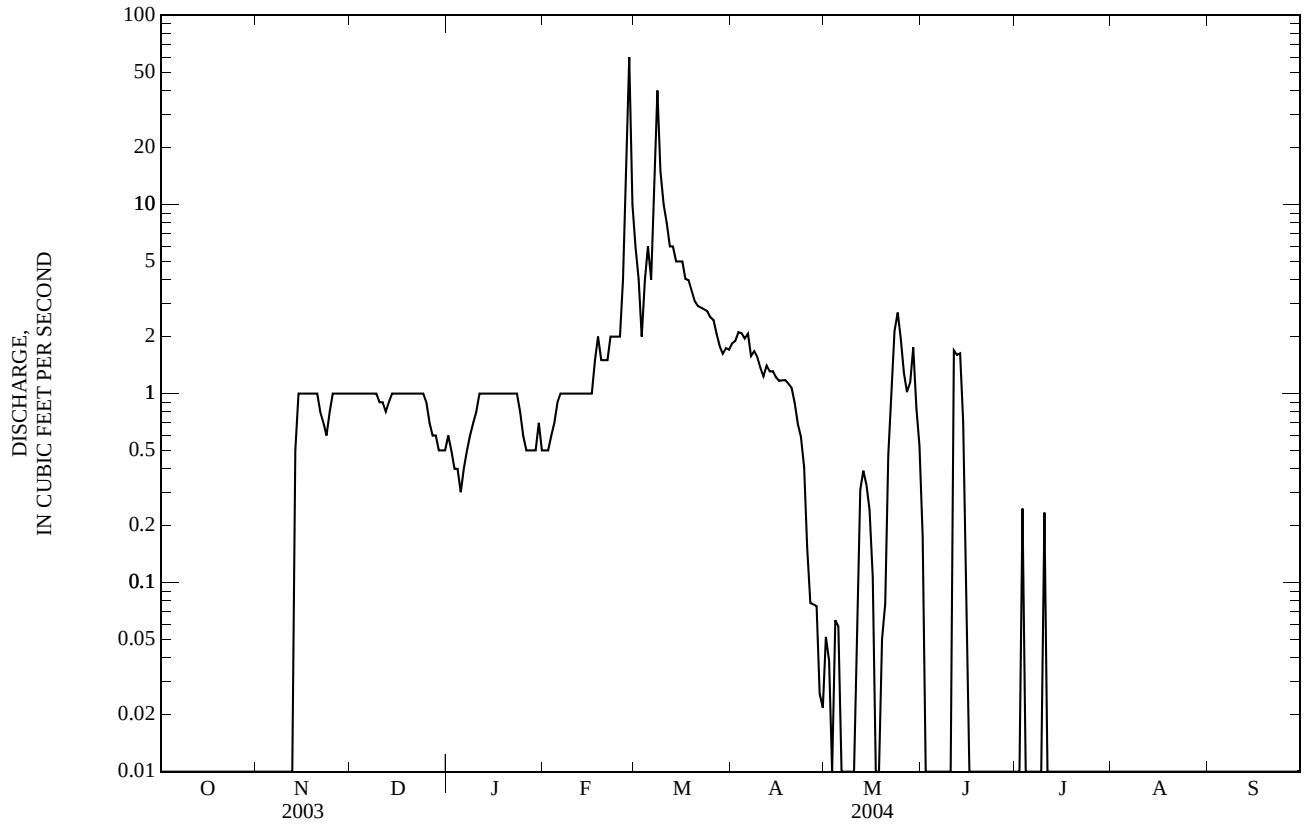
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2004, BY WATER YEAR (WY)

MEAN	0.39	1.20	1.10	1.01	2.05	13.4	2.66	1.57	1.25	4.22	0.20	0.000
MAX	1.43	2.78	2.45	1.97	4.28	51.9	3.38	3.27	3.52	13.6	0.79	0.000
(WY)	(2003)	(2000)	(2003)	(2000)	(2004)	(2003)	(2000)	(2003)	(2002)	(2000)	(2002)	(2000)
MIN	0.000	0.000	0.000	0.000	0.66	0.90	1.12	0.48	0.19	0.000	0.000	0.000
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2004)	(2001)	(2004)	(2003)	(2003)	(2000)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2000 - 2004	
ANNUAL TOTAL	1,968.68		428.28			
ANNUAL MEAN	5.39		1.17		2.36	
HIGHEST ANNUAL MEAN					5.82	2003
LOWEST ANNUAL MEAN					1.00	2001
HIGHEST DAILY MEAN	567	Mar 14	60	Feb 28	567	Mar 14, 2003
LOWEST DAILY MEAN	0.00	Jun 17	0.00	Oct 1	0.00	Jun 19, 2000
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 17	0.00	Oct 1	0.00	Jun 19, 2000
MAXIMUM PEAK FLOW			unknown		a1,660	Jul 8, 2000
MAXIMUM PEAK STAGE					6.99	Jul 8, 2000
ANNUAL RUNOFF (AC-FT)	3,900		849		1,710	
10 PERCENT EXCEEDS	3.4		2.0		3.0	
50 PERCENT EXCEEDS	0.94		0.25		0.43	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a--On the basis of slope-area measurement of peak flow.
e--Estimated.

06115350 ROCK CREEK NEAR LANDUSKY, MT—Continued



06119600 MUSSELSHELL RIVER NEAR MARTINSDALE, MT

LOCATION.--Lat 46°28'37", long 110°14'54" (NAD 27), in SW¼SW¼SE¼ sec. 5, T.8N., R.12E., Wheatland County, Hydrologic Unit 10040201, on right bank at private road bridge, 1.7 mi downstream from confluence of North and South Forks, 3.2 mi northeast of Martinsdale, and at river mile 362.5.

DRAINAGE AREA.--538 mi^2.

PERIOD OF RECORD.--April 2003 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 4,660 ft (NGVD 29) .

REMARKS.-Seasonal records good. Some regulation by Bair and Martinsdale Reservoirs. Diversions for irrigation of about 21,900 acres upstream from station of which about 21,400 acres are flood irrigated. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

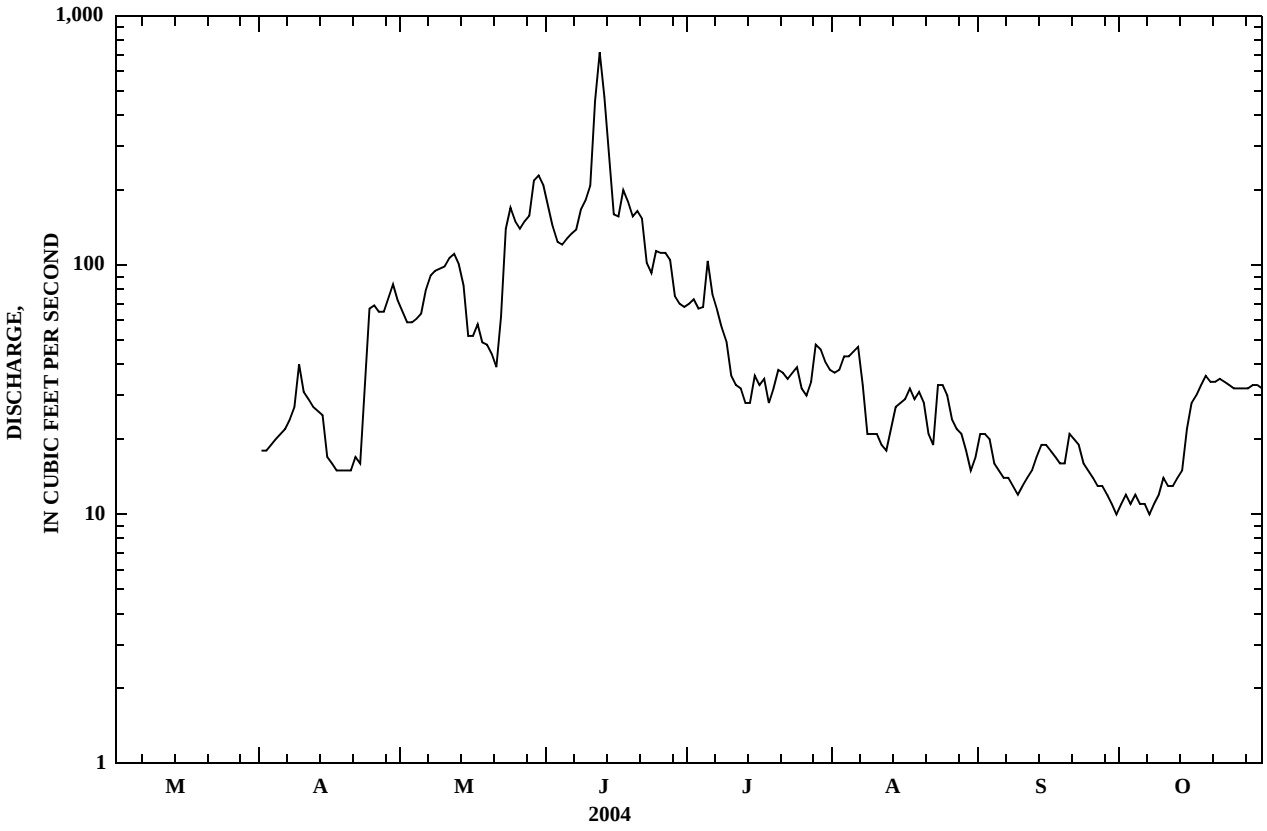
DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				18	65	172	70	37	21	11		
2				18	59	143	73	38	21	12		
3				19	59	124	67	43	20	11		
4				20	61	121	68	43	16	12		
5				21	64	128	104	45	15	11		
6				22	80	134	76	47	14	11		
7				24	91	139	66	33	14	10		
8				27	95	168	56	21	13	11		
9				40	97	183	49	21	12	12		
10				31	99	209	36	21	13	14		
11				29	107	457	33	19	14	13		
12				27	111	715	32	18	15	13		
13				26	101	475	28	22	17	14		
14				25	83	262	28	27	19	15		
15				17	52	160	36	28	19	22		
16				16	52	157	33	29	18	28		
17				15	58	200	35	32	17	30		
18				15	49	180	28	29	16	33		
19				15	48	157	32	31	16	36		
20				15	44	165	38	28	21	34		
21				17	39	154	37	21	20	34		
22				16	62	102	35	19	19	35		
23				34	140	93	37	33	16	34		
24				67	170	114	39	33	15	33		
25				69	150	112	32	30	14	32		
26				65	140	112	30	24	13	32		
27				65	150	105	34	22	13	32		
28				74	158	75	48	21	12	32		
29				84	219	70	46	18	11	33		
30				72	229	68	41	15	10	33		
31				---	209	---	38	17	---	32		
TOTAL				1,003	3,141	5,454	1,405	865	474	715		
MEAN				33.4	101	182	45.3	27.9	15.8	23.1		
MAX				84	229	715	104	47	21	36		
MIN				15	39	68	28	15	10	10		
AC-FT				1,990	6,230	10,820	2,790	1,720	940	1,420		

STATISTICS OF MONTHLY MEAN DATA FOR 2003 - 2004 SEASONS*

MEAN	68.3	147	142	46.6	22.3	15.0	21.1
MAX	103	194	182	47.9	27.9	15.8	23.1
(WY)	(2003)	(2003)	(2004)	(2003)	(2004)	(2004)	(2005)
MIN	33.4	101	103	45.3	16.6	14.3	19.2
(WY)	(2004)	(2004)	(2003)	(2004)	(2003)	(2003)	(2004)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 2003 - 2004*	
HIGHEST DAILY MEAN	715	Jun 12	715	Jun 12, 2004
LOWEST DAILY MEAN	10	Sep 30	7.1	Sep 7, 2003
MAXIMUM PEAK FLOW	810	Jun 12	810	Jun 12, 2004
MAXIMUM PEAK STAGE	4.35	Jun 12	4.35	Jun 12, 2004
INSTANTANEOUS LOW FLOW			6.4	Sep 3, 2003

06119600 MUSSELSHELL RIVER NEAR MARTINSDALE, MT—Continued



06120500 MUSSELSHELL RIVER AT HARLOWTON, MT

LOCATION.--Lat 46°25'48", long 109°50'24" (NAD 27), in SW¼NW¼ NW¼ sec.27, T.8 N., R.15 E., Wheatland County, Hydrologic Unit 10040201, on right bank at downstream of bridge on U.S. Highway 191, 1.0 mi southwest of Harlowton, 9.6 mi upstream from American Fork, and at river mile 327.8.

DRAINAGE AREA.--1,125 mi^2.

PERIOD OF RECORD.--July 1907 to November 1929, March 1930 to December 1932, April to August 1933, February 1934 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1912, 1915(M), 1918, 1925. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,171.46 ft (NGVD 29) (levels by Morrison and Maierle, Inc.). Prior to Dec. 8, 1937, nonrecording gages at site 1.2 mi downstream at different elevations. Dec. 8, 1937 to Aug. 26, 1955, nonrecording gage at previous bridge 50 ft downstream at elevation 2.0 ft higher. Aug. 27, 1955 to Apr. 9, 2003, water-stage recorder 350 ft downstream at same elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by Bair and Martinsdale Reservoirs. Diversions for irrigation of about 21,900 acres upstream from station of which about 21,400 acres are flood irrigated. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	e35	60	e45	e55	e40	28	78	181	101	31	7.9
2	17	e40	43	e35	e50	e38	25	71	155	106	28	6.7
3	14	44	36	e25	e47	e33	25	64	131	100	30	9.5
4	14	e43	e30	e25	e45	e35	26	59	122	93	31	11
5	16	e42	e30	e27	e48	e35	26	61	117	109	30	12
6	16	e43	e35	e30	e48	e37	24	68	117	134	37	11
7	16	e46	e38	e40	e50	41	23	83	119	103	49	10
8	14	e48	e40	e45	e50	46	21	82	131	80	35	9.6
9	11	e50	e40	e47	e50	54	23	74	172	67	26	8.8
10	10	e52	e38	e45	e50	51	19	85	201	62	32	8.9
11	12	52	e35	e43	e45	47	18	111	312	50	32	9.4
12	14	52	e40	e43	e40	44	12	111	551	52	29	11
13	14	61	e50	e45	e42	43	11	99	604	51	34	14
14	16	54	57	e47	e45	43	13	90	386	50	33	17
15	19	47	59	e47	e50	39	16	71	230	50	32	19
16	25	53	61	e47	e50	38	14	49	160	48	31	21
17	26	52	74	e45	e52	41	12	53	194	41	29	21
18	25	43	74	e43	e55	44	11	56	236	40	24	19
19	24	61	72	e45	e55	43	9.9	60	218	42	24	21
20	23	53	69	e45	e52	45	11	55	214	42	23	25
21	23	46	64	e45	e50	42	11	52	225	43	22	30
22	24	e45	63	e45	e48	36	11	61	176	41	20	31
23	24	e47	62	e45	e45	35	14	98	148	39	19	28
24	24	e50	60	e40	e47	34	30	142	148	44	22	26
25	23	e52	58	e35	e50	34	65	146	152	46	29	23
26	25	e52	54	e32	e48	33	69	132	156	38	36	21
27	25	e54	50	e30	e45	32	67	128	152	30	36	21
28	23	e56	e47	e35	e42	30	68	126	133	31	30	21
29	31	e58	e45	e40	e40	30	77	152	103	41	20	21
30	33	59	e43	e50	---	29	84	196	105	39	17	21
31	e30	---	e45	e60	---	29	---	191	---	32	11	---
TOTAL	631	1,490	1,572	1,271	1,394	1,201	863.9	2,904	6,049	1,845	882	515.8
MEAN	20.4	49.7	50.7	41.0	48.1	38.7	28.8	93.7	202	59.5	28.5	17.2
MAX	33	61	74	60	55	54	84	196	604	134	49	31
MIN	10	35	30	25	40	29	9.9	49	103	30	11	6.7
AC-FT	1,250	2,960	3,120	2,520	2,760	2,380	1,710	5,760	12,000	3,660	1,750	1,020

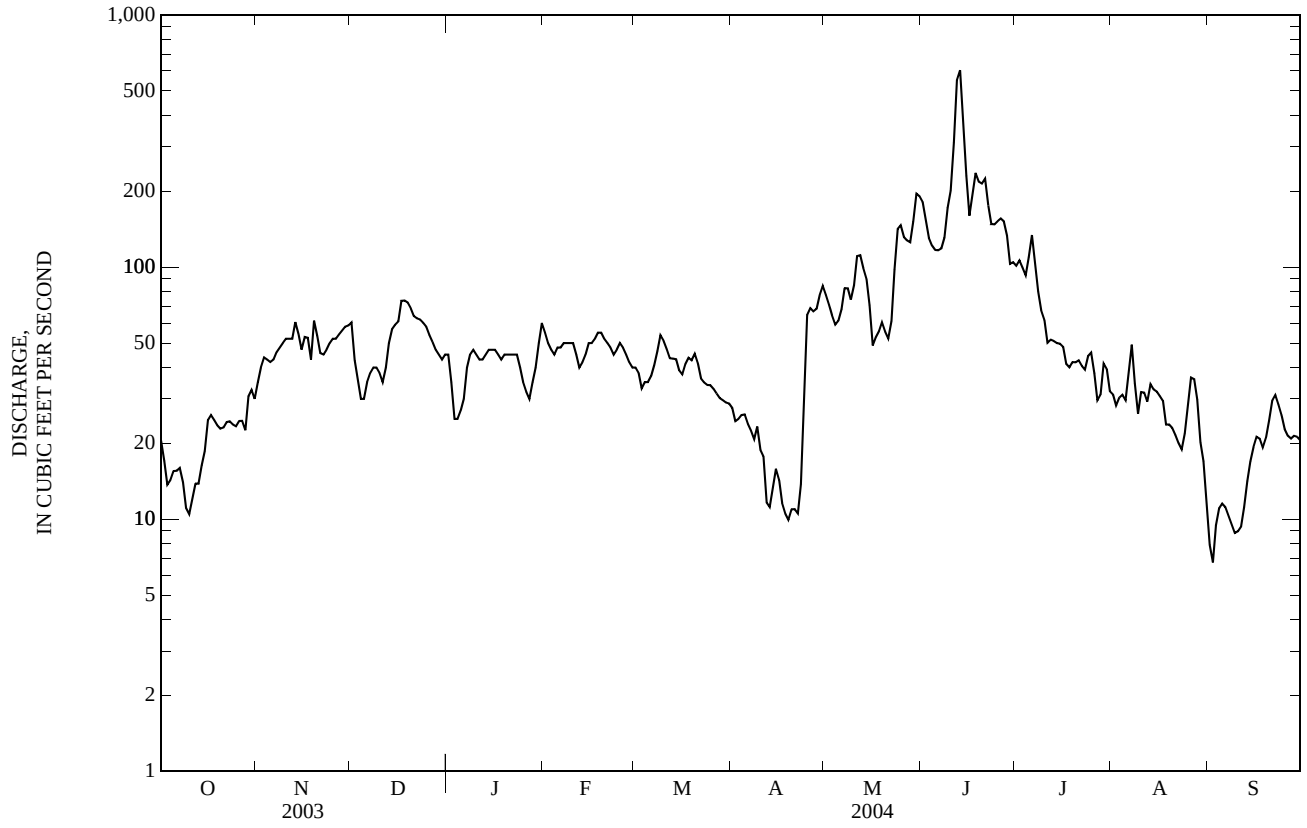
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1907 - 2004, BY WATER YEAR (WY)*

MEAN	73.2	77.4	67.0	58.6	65.3	112	174	401	500	160	74.9	62.4
MAX	226	176	206	250	190	500	632	1,957	2,467	751	292	290
(WY)	(1919)	(1942)	(1976)	(1918)	(1996)	(1918)	(1943)	(1917)	(1917)	(1975)	(1993)	(1993)
MIN	0.00	0.00	0.00	0.00	10.0	20.4	22.1	11.8	27.9	0.84	0.00	0.00
(WY)	(1932)	(1932)	(1932)	(1932)	(1936)	(1935)	(1931)	(1931)	(1930)	(1936)	(1931)	(1931)

06120500 MUSSELSHELL RIVER AT HARLOWTON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1907 - 2004*	
ANNUAL TOTAL	25,135.3		20,618.7			
ANNUAL MEAN	68.9		56.3		154	
HIGHEST ANNUAL MEAN					483	1917
LOWEST ANNUAL MEAN					21.1	1935
HIGHEST DAILY MEAN	400	Apr 27	604	Jun 13	6,200	Jun 20, 1975
LOWEST DAILY MEAN	1.9	Sep 8	6.7	Sep 2	0.00	Aug 4, 1910
ANNUAL SEVEN-DAY MINIMUM	3.6	Sep 5	9.7	Sep 1	0.00	Aug 4, 1910
MAXIMUM PEAK FLOW			694	Jun 13	7,270	Jun 20, 1975
MAXIMUM PEAK STAGE			4.57	Jun 13	b10.01	Jun 20, 1975
INSTANTANEOUS LOW FLOW			a6.2	Sep 1	0.01	Aug 29, 2001
ANNUAL RUNOFF (AC-FT)	49,860		40,900		111,600	
10 PERCENT EXCEEDS	156		117		354	
50 PERCENT EXCEEDS	43		43		75	
90 PERCENT EXCEEDS	16		16		25	

*--During periods of operation (July 1907 to November 1929, March 1930 to December 1932, April to August 1933, February 1934 to current year).
a--Gage height, 2.42 ft.
b--Previous site and same datum.
e--Estimated.



06123030 MUSSELSHELL RIVER ABOVE MUD CREEK, NEAR SHAWMUT, MT

LOCATION.--Lat 46°19'07", long 109°27'35" (NAD 27), in NE¼SW¼SW¼ sec.34, T.7 N., R.18 E., Wheatland County, Hydrologic Unit 10040201, on left bank at private road bridge, 14.1 mi downstream from diversion to Deadmans Basin Reservoir, 3.5 mi southeast of Shawmut, 3.7 mi west of Barber, and at river mile 294.8.

DRAINAGE AREA.--1,513 mi^2.

PERIOD OF RECORD.--June 1998 to current season (seasonal records only).

REVISED RECORDS.--WDR MT-03-1: 2002-02 (M).

GAGE.--Water-stage recorder. Elevation of gage is 3,780 ft (NGVD 29).

REMARKS.--Seasonal records good. Diversions for irrigation of about 27,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

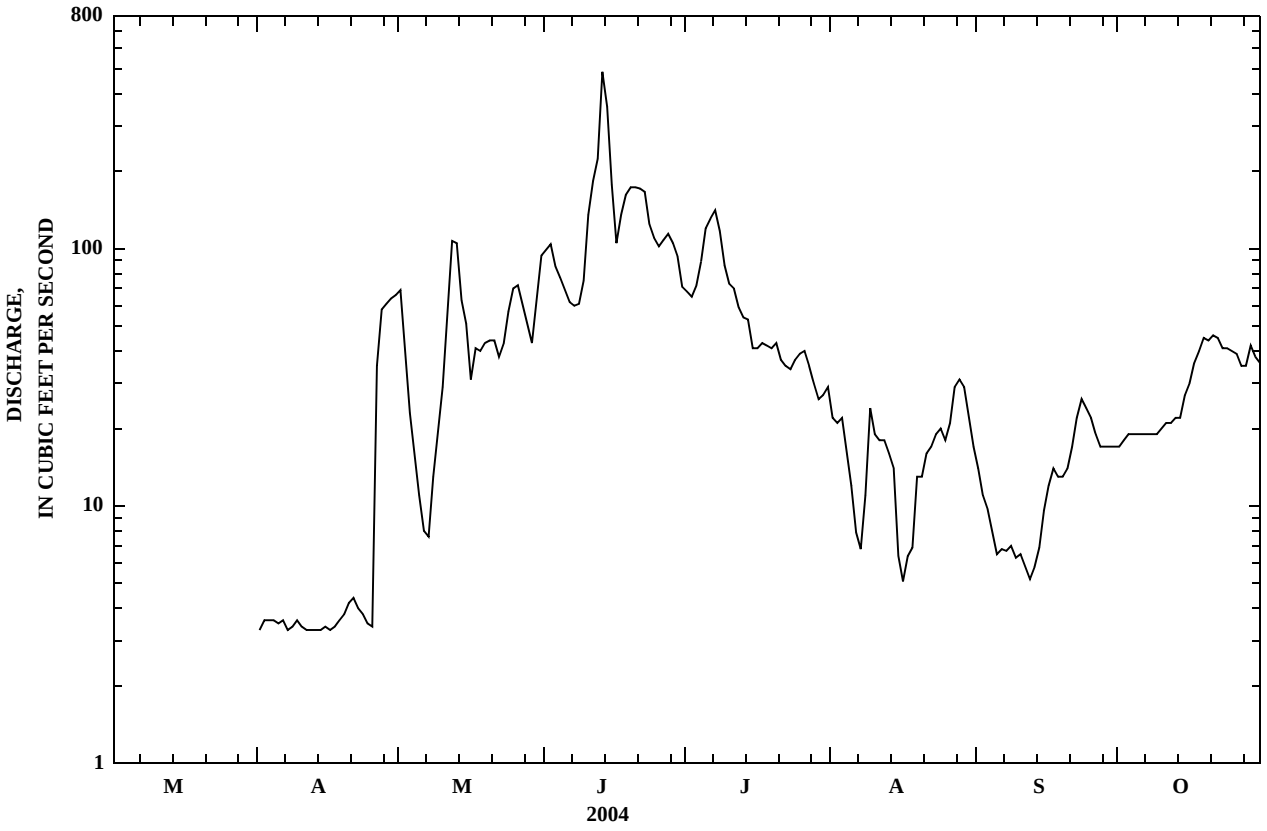
DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				3.3	69	99	68	22	14	17		
2				3.6	40	104	65	21	11	18		
3				3.6	23	85	72	22	9.7	19		
4				3.6	16	77	89	16	7.9	19		
5				3.5	11	69	120	12	6.5	19		
6				3.6	8.0	62	131	7.9	6.8	19		
7				3.3	7.6	60	141	6.8	6.7	19		
8				3.4	13	61	117	11	7.0	19		
9				3.6	20	75	86	24	6.3	19		
10				3.4	29	135	73	19	6.5	20		
11				3.3	61	183	70	18	5.8	21		
12				3.3	107	223	59	18	5.2	21		
13				3.3	105	486	54	16	5.8	22		
14				3.3	63	355	53	14	6.9	22		
15				3.4	51	177	41	6.4	9.6	27		
16				3.3	31	105	41	5.1	12	30		
17				3.4	41	136	43	6.4	14	36		
18				3.6	40	162	42	6.9	13	40		
19				3.8	43	173	41	13	13	45		
20				4.2	44	173	43	13	14	44		
21				4.4	44	171	37	16	17	46		
22				4.0	38	166	35	17	22	45		
23				3.8	43	124	34	19	26	41		
24				3.5	57	110	37	20	24	41		
25				3.4	70	102	39	18	22	40		
26				35	72	108	40	21	19	39		
27				58	61	114	35	29	17	35		
28				61	51	105	30	31	17	35		
29				64	43	93	26	29	17	42		
30				66	62	71	27	22	17	38		
31				---	94	---	29	17	---	36		
TOTAL				372.9	1,457.6	4,164	1,818	517.5	379.7	934		
MEAN				12.4	47.0	139	58.6	16.7	12.7	30.1		
MAX				66	107	486	141	31	26	46		
MIN				3.3	7.6	60	26	5.1	5.2	17		
AC-FT				740	2,890	8,260	3,610	1,030	753	1,850		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1998 - 2004

MEAN	23.6	55.6	128	61.2	26.4	23.9	27.6
MAX	57.6	121	279	201	97.8	70.8	65.4
(WY)	(2003)	(2003)	(1998)	(1998)	(1998)	(1998)	(1999)
MIN	3.91	8.96	14.4	9.88	1.68	1.38	3.48
(WY)	(2002)	(2001)	(2000)	(2000)	(2000)	(2000)	(2002)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1998 - 2004	
HIGHEST DAILY MEAN	486	Jun 13	661	Jun 22, 1998
LOWEST DAILY MEAN	3.3	Apr 1	0.18	Sep 28, 2001
MAXIMUM PEAK FLOW	512	Jun 13	672	Jun 22, 1998
MAXIMUM PEAK STAGE	4.18	Jun 13	4.57	Jun 22, 1998

06123030 MUSSELSHELL RIVER ABOVE MUD CREEK, NEAR SHAWMUT, MT—Continued



06126050 MUSSELSHELL RIVER NEAR LAVINA, MT

LOCATION.--Lat 46°17'34", long 108°53'31" (NAD 27), in SW¼SW¼SE¼ sec. 6, T.6 N., R.23 E., Golden Valley County, Hydrologic Unit 10040201, on left bank, at private bridge 2.2 mi east of Lavina, 4.4 mi downstream from Big Coulee Creek, and at river mile 245.7.

DRAINAGE AREA.--2,970 mi^2.

PERIOD OF RECORD.--April 1992 to current year (seasonal record only).

GAGE.--Water-stage recorder. Elevation of gage is 3,400 ft (NGVD 29).

REMARKS.--Seasonal records fair except those for estimated daily discharges, which are poor. Some regulation by Bair (station number 06116500), Martinsdale (station number 06119000), and Deadman's Basin (station number 06122500) Reservoirs. Diversions for irrigation of about 31,900 acres upstream from station, of which about 29,700 acres is flood irrigated. Several observations of water temperature and specific conductance were made during the year. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				1.3	33	88	89	e25	13	11		
2				1.7	36	80	79	e25	15	13		
3				2.0	21	72	64	e25	11	14		
4				2.1	9.5	e60	e60	e20	8.7	12		
5				2.6	24	e50	e70	e20	7.1	11		
6				2.4	119	e45	e100	e20	5.2	11		
7				2.9	172	e40	e120	20	4.2	11		
8				2.5	191	40	e120	25	3.3	12		
9				2.3	187	43	e110	24	2.3	13		
10				1.6	182	120	e85	20	1.7	15		
11				1.5	194	227	e75	19	1.00	16		
12				1.4	186	192	e50	14	0.73	18		
13				1.0	194	251	e40	14	0.55	17		
14				0.68	177	409	e35	31	0.41	18		
15				0.59	172	262	e30	30	0.36	26		
16				0.45	200	151	e25	27	0.26	26		
17				0.59	201	107	e35	23	0.27	25		
18				0.88	200	130	e40	21	0.19	31		
19				1.9	190	157	e60	19	0.22	37		
20				2.3	152	158	e50	18	4.1	41		
21				2.0	118	161	e50	17	6.2	43		
22				0.86	106	160	e50	14	7.2	43		
23				1.3	111	155	e40	8.9	9.6	45		
24				1.00	91	127	e35	10	14	44		
25				0.79	60	112	e25	10	17	43		
26				0.65	58	e100	e35	11	16	43		
27				0.48	48	e80	e35	11	15	42		
28				4.0	45	e90	e35	11	14	41		
29				42	37	106	e30	17	13	55		
30				46	33	100	e30	18	11	57		
31				---	56	---	e25	17	---	50		
TOTAL				131.77	3,603.5	3,873	1,727	584.9	202.59	884		
MEAN				4.39	116	129	55.7	18.9	6.75	28.5		
MAX				46	201	409	120	31	17	57		
MIN				0.45	9.5	40	25	8.9	0.19	11		
AC-FT				261	7,150	7,680	3,430	1,160	402	1,750		

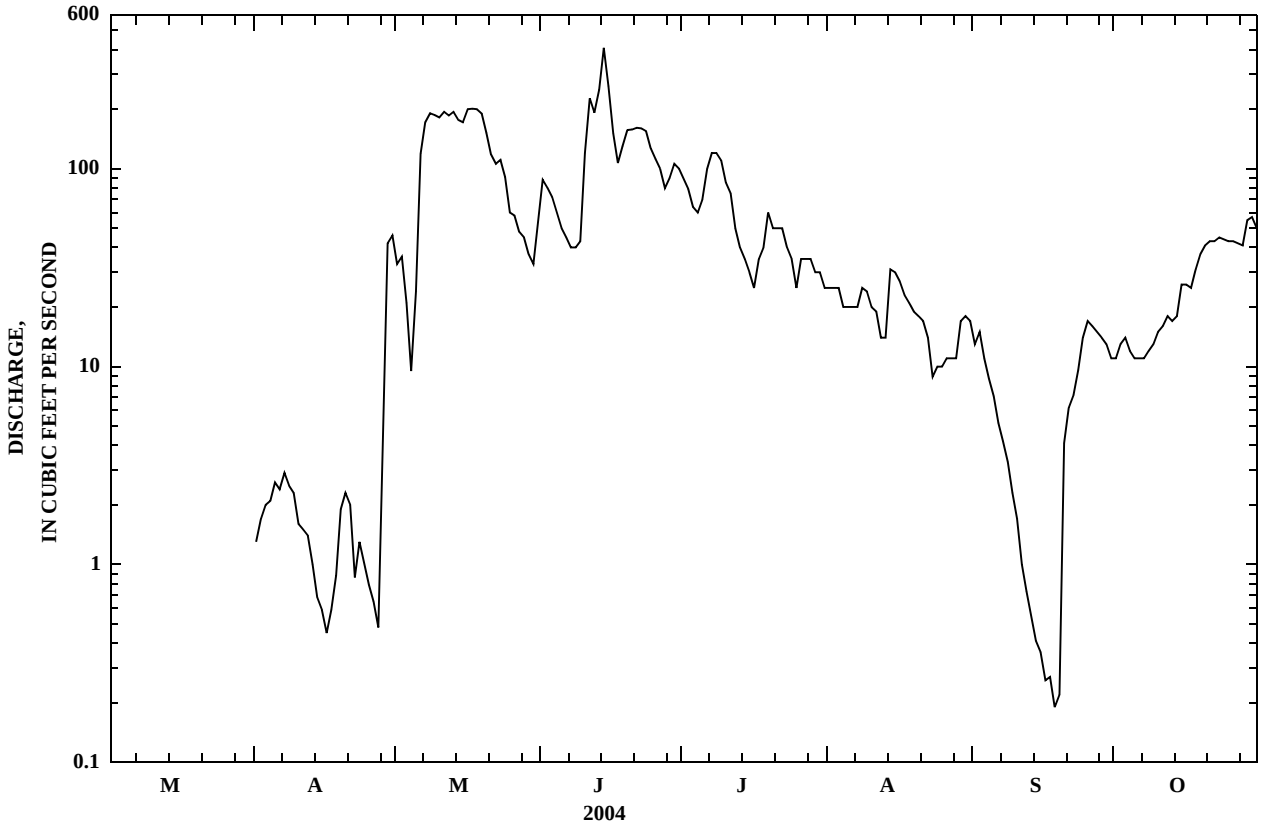
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1992 - 2004

MEAN	101	293	495	295	173	123	81.6
MAX	466	919	2,733	1,061	507	525	335
(WY)	(1996)	(1997)	(1997)	(1997)	(1993)	(1993)	(1994)
MIN	4.39	36.7	67.8	35.8	3.00	2.22	0.87
(WY)	(2004)	(2002)	(2001)	(2002)	(2002)	(2000)	(2002)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1992 - 2004	
HIGHEST DAILY MEAN	409	Jun 14	5,850	Jun 14 1997
LOWEST DAILY MEAN	0.19	Sep 18	0.00	Sep 26 ,001
MAXIMUM PEAK FLOW	427	Jun 14	6,220	Jun 14 1997
MAXIMUM PEAK STAGE	3.86	Jun 14	11.13	Jun 14 1997

e--Estimated.

06126050 MUSSELSHELL RIVER NEAR LAVINA, MT—Continued



06126500 MUSSELSHELL RIVER NEAR ROUNDUP, MT

LOCATION.--Lat 46°25'41", long 108°34'19" (NAD 27), in NW¼SE¼SE¼ sec. 22, T.8 N., R.25 E., Musselshell County, Hydrologic Unit 10040202, on left bank 20 ft downstream from Halfbreed Creek, 0.1 mi upstream from bridge on U.S. Highway 87, 2.0 mi southwest of Roundup, and at river mile 211.6.
DRAINAGE AREA.--4,023 mi^2.

PERIOD OF RECORD.--May 1946 to current year. Monthly discharge only from October 1947 to September 1949, published in WSP 1309.

REVISED RECORDS.--WSP 1086: 1946. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,188.15 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to Sept. 26, 1949, nonrecording gage at present site and elevation.

REMARKS.--Records good except those for estimated daily discharge, which are poor. Some regulation by Bair (station number 06116500), Martinsdale (station number 06119000) and Deadmans Basin (station number 06122500) Reservoirs. Diversions for irrigation of about 39,100 acres upstream from station, of which about 35,900 acres are flood irrigated. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	e65	e9.0	e10	e9.0	e9.0	1.8	39	35	73	13	12
2	6.6	e60	e9.0	e10	e9.0	e11	1.9	31	54	55	14	11
3	7.2	e55	e10	e9.0	e10	e12	2.0	33	49	44	15	13
4	7.1	e50	e9.0	e8.0	e10	e13	1.6	23	43	38	8.4	10
5	6.7	e45	e8.0	e5.0	e10	e15	1.6	14	33	52	9.7	7.8
6	6.9	e40	e9.0	e5.0	e10	e18	1.7	23	27	77	8.3	6.3
7	6.0	e40	e9.0	e7.0	e11	e24	1.6	127	29	88	12	5.1
8	8.1	e37	e9.0	e7.0	e12	e28	1.6	179	32	104	13	4.0
9	8.9	e37	e9.0	e8.0	e12	e25	1.6	175	31	96	16	3.2
10	9.6	e35	e8.0	e9.0	e10	e28	1.5	160	43	78	16	2.7
11	9.2	e30	e9.0	e9.0	e10	28	1.5	165	161	56	14	2.4
12	12	e28	e8.0	e10	e9.0	32	1.5	172	130	41	12	2.2
13	16	e25	e9.0	e10	e10	28	1.4	153	118	35	10	2.0
14	20	e22	e9.0	e11	e10	23	1.4	158	260	30	9.0	1.9
15	25	e20	e9.0	e11	e10	21	1.4	136	271	22	15	1.6
16	28	e17	e9.0	e10	e10	17	1.4	159	116	19	22	1.3
17	29	e14	e9.0	e10	e10	15	1.4	181	63	29	21	1.0
18	32	e12	e9.0	e10	e12	9.0	1.5	176	36	32	19	0.82
19	37	e15	e10	e10	e12	7.9	1.4	170	55	50	17	0.71
20	47	e10	e10	e10	e10	5.8	1.6	155	76	44	16	0.72
21	53	e9.0	e10	e10	e10	3.8	1.4	109	77	44	13	0.59
22	52	e8.0	e10	e12	e10	3.1	1.4	92	70	44	12	0.56
23	64	e9.0	e10	e14	e10	3.0	1.3	99	68	37	12	0.54
24	62	e9.0	e11	e11	e10	2.7	1.2	92	66	29	9.2	0.48
25	63	e9.0	e11	e10	e10	2.0	1.2	62	60	21	6.9	0.38
26	68	e9.0	e12	e8.0	e10	2.0	1.2	46	51	27	6.8	4.0
27	66	e9.0	e10	e7.0	e10	1.9	0.97	24	40	29	7.4	12
28	71	e9.0	e9.0	e7.0	e9.0	2.0	1.4	9.4	54	28	7.1	12
29	77	e9.0	e8.0	e8.0	e8.0	1.9	1.3	8.7	64	24	7.0	12
30	75	e9.0	e9.0	e9.0	---	1.8	11	20	74	20	7.1	11
31	75	---	e10	e10	---	1.6	---	21	---	15	12	---
TOTAL	1,054.5	746.0	290.0	285.0	293.0	395.5	53.77	3,012.1	2,286	1,381	380.9	143.30
MEAN	34.0	24.9	9.35	9.19	10.1	12.8	1.79	97.2	76.2	44.5	12.3	4.78
MAX	77	65	12	14	12	32	11	181	271	104	22	13
MIN	6.0	8.0	8.0	5.0	8.0	1.6	0.97	8.7	27	15	6.8	0.38
MED	28	18	9.0	10	10	11	1.5	99	57	38	12	2.6
AC-FT	2,090	1,480	575	565	581	784	107	5,970	4,530	2,740	756	284

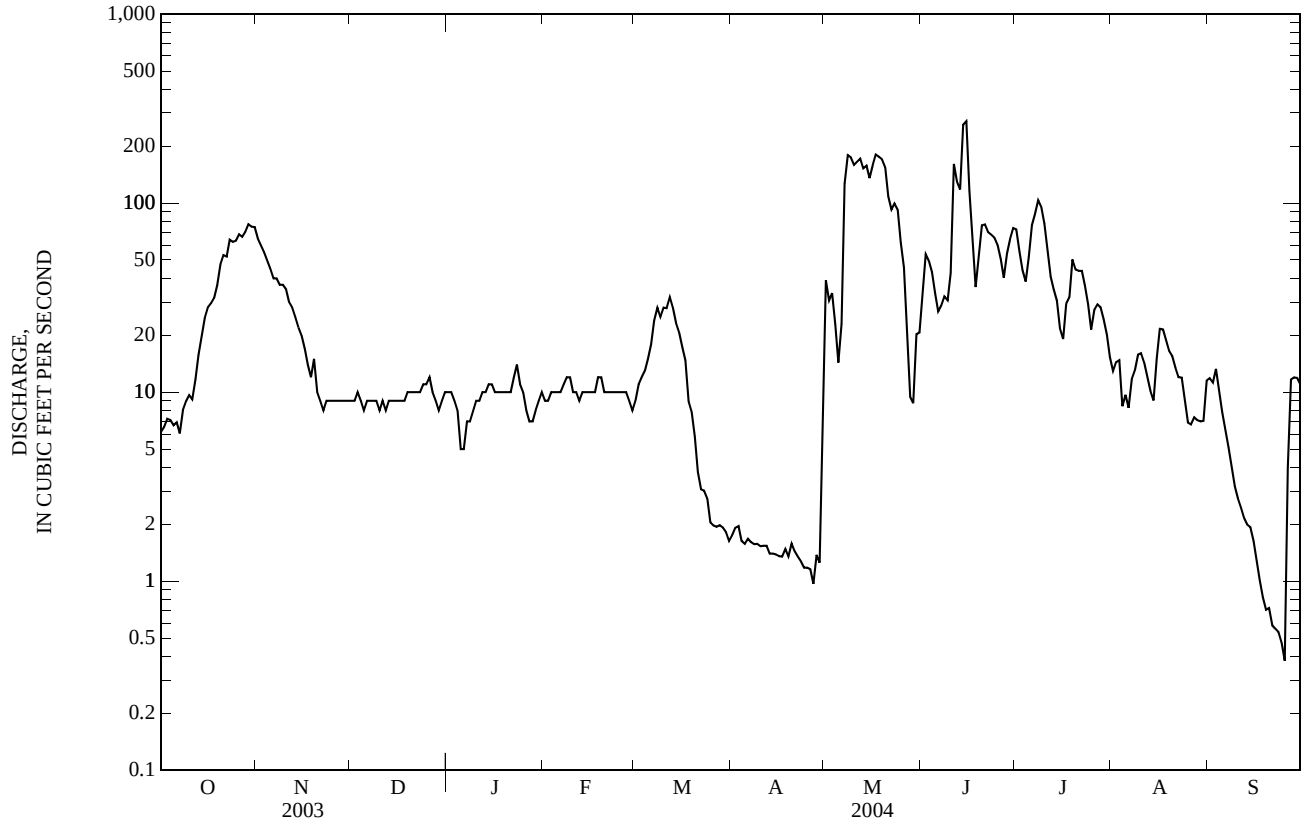
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2004, BY WATER YEAR (WY)

MEAN	77.1	72.9	66.0	63.4	93.5	192	178	410	654	292	185	124
MAX	335	242	283	222	414	1,281	788	1,811	4,315	1,308	563	504
(WY)	(1994)	(1994)	(1976)	(1976)	(1971)	(1978)	(1975)	(1976)	(1967)	(1975)	(1993)	(1993)
MIN	1.43	3.99	3.65	5.29	5.82	6.81	1.77	30.0	36.6	14.5	2.11	0.01
(WY)	(2002)	(2002)	(2002)	(2002)	(1985)	(2002)	(2002)	(2002)	(2001)	(2002)	(2001)	(2002)

06126500 MUSSELSHELL RIVER NEAR ROUNDUP, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1947 - 2004	
ANNUAL TOTAL	17,897.1		10,321.07			
ANNUAL MEAN	49.0		28.2		a201	
HIGHEST ANNUAL MEAN					608	1975
LOWEST ANNUAL MEAN					17.6	2002
HIGHEST DAILY MEAN	435	Jun 12	271	Jun 15	8,180	Jun 8, 1967
LOWEST DAILY MEAN	2.7	Apr 5	0.38	Sep 25	0.00	Sep 4, 2002
ANNUAL SEVEN-DAY MINIMUM	3.7	Apr 2	0.57	Sep 19	0.00	Sep 11, 2002
MAXIMUM PEAK FLOW			338	Jun 14	b9,610	Jun 18, 1967
MAXIMUM PEAK STAGE			2.47	Jun 14	c13.73	Mar 9, 1979
ANNUAL RUNOFF (AC-FT)	35,500		20,470		145,400	
10 PERCENT EXCEEDS	144		72		430	
50 PERCENT EXCEEDS	12		11		96	
90 PERCENT EXCEEDS	5.0		1.6		17	

a--Median of yearly mean discharges, 182 ft^3/s, 132, 100 ac-ft/yr.
b--Gage height, 12.45 ft.
c--Ice jam.
e--Estimated.



06127020 WILLOW CREEK ABOVE LMGA RESERVOIR, NEAR ROUNDUP, MT

LOCATION.--Lat 46°36'52", long 108°41'40" (NAD 27), in NW¼NW¼SW¼ sec. 27, T.10 N., R.24 E., Musselshell County, Hydrologic Unit 10040202, on right bank, 0.8 mi upstream from Lake Mason Grazing Association Reservoir, and 12 mi northwest of Roundup.

DRAINAGE AREA.--124 mi^2.

PERIOD OF RECORD.--September 1995 to October 2004 (seasonal records only), (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 3,660 ft (NGVD 29).

REMARKS.--Seasonal records good. Numerous diversions upstream for irrigation. U. S. Geological Survey satellite telemeter at station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
3				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
4				0.00	0.00	0.00	0.01	0.00	0.00	0.00		
5				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
6				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
7				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
9				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
11				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
12				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
14				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
16				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
17				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
21				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
22				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
24				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
25				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
27				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
29				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
30				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31				---	0.00	---	0.00	0.00	---	0.00		
TOTAL				0.00	0.00	0.00	0.01	0.00	0.00	0.00		
MEAN				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
MAX				0.00	0.00	0.00	0.01	0.00	0.00	0.00		
MIN				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT				0.00	0.00	0.00	0.02	0.00	0.00	0.00		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1995 - 2004

MEAN	0.79	0.73	2.12	1.10	0.15	0.04	0.37
MAX	3.33	4.25	13.1	6.04	1.36	0.20	1.82
(WY)	(1996)	(1996)	(1997)	(1997)	(1997)	(1996)	(1998)
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(2000)	(2000)	(2000)	(1999)	(1998)	(1998)	(1999)

SUMMARY STATISTICS	FOR 2004 SEASON		WATER YEARS 1995 - 2004	
HIGHEST DAILY MEAN	0.00	Apr 1	150	Jun 6, 1997
LOWEST DAILY MEAN	0.00	Apr 1	a0.00	Aug 7, 1996
MAXIMUM PEAK FLOW			b607	Jun 6, 1997
MAXIMUM PEAK STAGE			5.84	Jun 6, 1997

a--No flow many days most years.
b--From rating curve extended above 18 ft^3/s on basis of slope-area measurement of peak flow.

06127060 WILLOW CREEK AT U.S. CANAL, NEAR ROUNDUP, MT

LOCATION.--Lat 46°33'17", long 108°40'42" (NAD 27), in SW¼SE¼NE¼ sec. 10, T.9 N., R.24 E., Musselshell County, Hydrologic Unit 10040202, on right bank, 12 mi northwest of Roundup.

DRAINAGE AREA.--141 mi^2.

PERIOD OF RECORD.--September 1995 to October 2004 (seasonal records only), (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 3,610 ft (NGVD 29).

REMARKS.--Seasonal records good. Regulation by Lake Mason Grazing Association Reservoir upstream from the gage. Numerous diversions upstream from station for irrigation. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
3				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
4				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
6				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
7				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
9				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
11				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
12				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
14				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
16				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
17				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
21				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
22				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
24				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
25				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
27				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
29				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
30				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31				---	0.00	---	0.00	0.00	---	0.00		
TOTAL				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
MEAN				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
MAX				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
MIN				0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT				0.00	0.00	0.00	0.00	0.00	0.00	0.00		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2004, BY WATER YEAR (WY)

MEAN	0.46	0.40	1.49	0.28	0.05	0.00	0.06
MAX	2.03	2.95	9.55	1.44	0.48	0.00	0.64
(WY)	(1996)	(1996)	(1997)	(1997)	(1997)	(1995)	(1998)
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1999)	(1998)	(1998)	(1998)	(1996)	(1995)	(1996)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1995 - 2004	
HIGHEST DAILY MEAN	0.00	Apr 1	33	Jun 7, 1997
LOWEST DAILY MEAN	0.00	Apr 1	a0.00	Aug 26, 1995
MAXIMUM PEAK FLOW			39	Jun 7, 1997
MAXIMUM PEAK STAGE			2.78	Jun 7, 1997

a--No flow many days most years.

06127500 MUSSELSHELL RIVER AT MUSSELSHELL, MT

LOCATION.--Lat 46°31'23", long 108°06'30" (NAD 27), in SE¼SW¼SW¼ sec.20, T.9 N., R.29 E., Musselshell County, Hydrologic Unit 10040202, on left bank 0.9 mi upstream from Hawk Creek, 1 mi west of Musselshell, and at river mile 164.5.

DRAINAGE AREA.--4,568 mi^2.

PERIOD OF RECORD.--August 1928 to September 1932 (no records December to February for the water years 1930-31), August 1945 to September 1979, October 1982 to September 1983, October 1983 to current season (seasonal record only). Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,984.72 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to Oct. 8, 1949, nonrecording gage at site 1 mi downstream at different elevations.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by Bair (station number 06116500), Martinsdale (station number 06119000), and Deadmans Basin (station number 06122500) Reservoirs. Diversions for irrigation of about 44,600 acres upstream from station, of which about 39,400 acres is flood irrigated. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				1.9	1.3	9.1	40	15	0.62	0.00		
2				1.6	1.3	11	42	12	0.39	0.00		
3				1.6	6.2	17	38	13	1.5	0.00		
4				1.3	6.4	11	21	17	7.9	0.00		
5				1.3	8.0	6.5	11	17	8.9	3.0		
6				1.4	7.1	8.2	11	12	10	9.1		
7				1.5	4.8	4.8	34	8.5	6.1	13		
8				1.5	74	8.8	53	6.6	2.8	15		
9				1.4	113	5.3	54	5.6	2.0	14		
10				1.3	101	7.2	37	3.6	2.0	14		
11				1.3	88	50	e30	1.0	1.7	16		
12				1.3	95	125	e30	0.25	1.5	15		
13				1.3	98	74	e25	0.01	1.4	18		
14				1.1	70	56	e20	0.00	1.1	23		
15				1.1	76	158	e15	0.00	1.0	26		
16				1.0	76	149	e15	0.00	1.2	26		
17				0.81	122	52	e15	0.00	1.1	39		
18				0.77	132	23	e20	0.00	0.67	43		
19				0.66	137	8.6	e30	0.00	0.28	42		
20				0.95	131	27	e30	0.00	0.11	39		
21				0.71	130	47	e30	0.00	0.09	49		
22				0.66	104	42	32	0.00	0.00	41		
23				0.65	98	29	33	0.00	0.00	44		
24				0.60	82	32	32	0.00	0.00	44		
25				0.38	68	37	28	0.00	0.00	48		
26				0.36	46	31	22	3.0	0.00	44		
27				0.38	28	25	18	4.2	0.00	41		
28				0.62	20	12	24	3.0	0.00	42		
29				0.88	13	12	25	2.6	0.00	46		
30				1.2	14	30	22	2.1	0.00	50		
31				---	9.5	---	19	1.2	---	52		
TOTAL				31.53	1,960.6	1,108.5	856	127.66	52.36	856.10		
MEAN				1.05	63.2	37.0	27.6	4.12	1.75	27.6		
MAX				1.9	137	158	54	17	10	52		
MIN				0.36	1.3	4.8	11	0.00	0.00	0.00		
AC-FT				63	3,890	2,200	1,700	253	104	1,700		

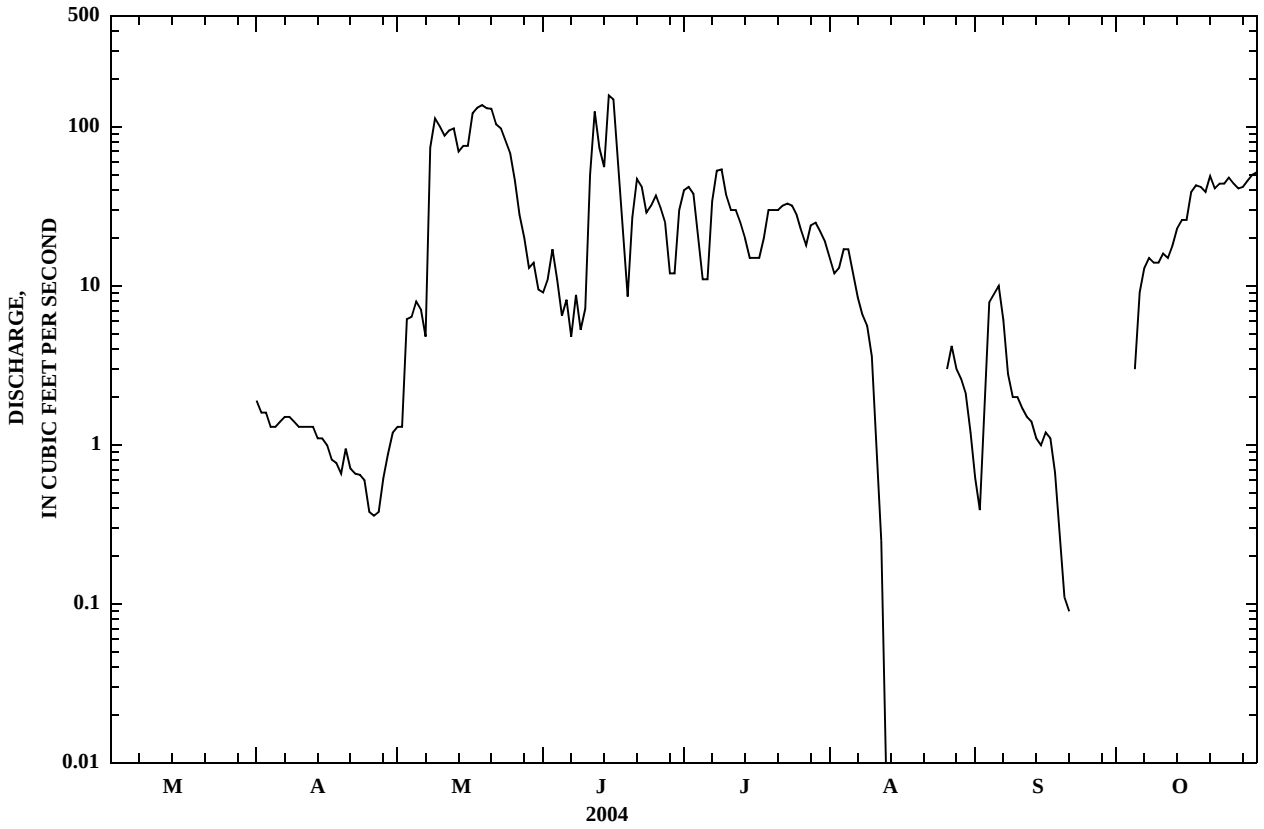
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1983 AND SEASONS 1984 - 2004*

MEAN	71.0	108	273	185	346	562	232	136	105	73.7	76.5	77.5
MAX	222	460	1,356	859	1,670	4,223	1,376	534	477	328	236	269
(WY)	(1976)	(1971)	(1979)	(1975)	(1976)	(1967)	(1975)	(1993)	(1993)	(1994)	(1976)	(1976)
MIN	0.00	0.04	12.7	1.05	0.36	0.49	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1932)	(1932)	(1932)	(2004)	(1931)	(1931)	(1930)	(1931)	(1931)	(1932)	(1932)	(1932)

06127500 MUSSELSHELL RIVER AT MUSSELSHELL, MT—Continued

SUMMARY STATISTICS	FOR 2004 SEASON		WATER YEARS 1929 - 1983**		SEASONS 1984 - 2004***	
ANNUAL MEAN			215			
HIGHEST ANNUAL MEAN			609	1975		
LOWEST ANNUAL MEAN			34.1	1961		
HIGHEST DAILY MEAN	158	Jun 15	8,600	Jun 19, 1967	6,270	Jun 16, 1997
LOWEST DAILY MEAN	.00	Aug 14	0.00	Sep 1, 1929	0.00	Aug 14, 2001
ANNUAL SEVEN-DAY MINIMUM			0.00	Sep 8, 1929		
MAXIMUM PEAK FLOW	200	Jun 15	a9,850	Jun 19, 1997	6,420	Jun 16, 1997
MAXIMUM PEAK STAGE	3.51	Jun 15	b12.96	Mar19, 1979	11.25	Jun 16, 1997
ANNUAL RUNOFF (AC-FT)			155,800			
10 PERCENT EXCEEDS			464			
50 PERCENT EXCEEDS			105			
90 PERCENT EXCEEDS			17			

*--During period of operation.
**--During period of continuous operation 1928-29, 1931-32, 1945-79, 1982-83.
***--Seasonal records October 1983 to current season.
a--Gage height, 11.57 ft.
b--Ice jam.
e--Estimated.



06130500 MUSSELSHELL RIVER AT MOSBY, MT

LOCATION.--Lat 46°59'41", long 107°53'18" (NAD 27), in SW¼NW¼NW¼ sec.11, T.14 N., R.30 E., Petroleum County, Hydrologic Unit 10040205, on right bank, downstream side of bridge on State Highway 20, 0.3 mi west of Mosby, 10.9 mi downstream from Flatwillow Creek, and at river mile 60.0.

DRAINAGE AREA.--7,846 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to November 1929, March 1930 to September 1932, February 1934 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1559: 1935-36. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,493.23 ft (NGVD 29). Dec. 6, 1962 to Mar. 14, 1966, water-stage recorder at site 900 ft downstream at different elevation. Mar. 15, 1966 to Dec. 11, 1973, water-stage recorder and nonrecording gages at site 400 ft downstream at same elevation. Dec. 12, 1973 to Oct. 1, 1981, nonrecording gage at site 400 ft downstream at same elevation. Oct. 1, 1981 to July 25, 1995, water-stage recorder at site 400 ft upstream from bridge at elevation 2.67 ft higher. See WSP 2116 for history of changes prior to 1962.

REMARKS.--Water-discharge records fair except those for estimated daily discharges, which are poor. Some regulation by Bair (station number 06116500), Martinsdale (station number 06119000) and Deadman's Basin (station number 06122500) Reservoirs. Diversions for irrigation of about 47,000 acres upstream from station. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	e1.0	e1.5	e1.0	e4.0	7.6	0.58	5.6	1.0	0.00	0.00
2	0.00	0.00	e1.0	e1.5	e1.0	e4.0	5.4	0.29	5.5	0.64	0.00	0.00
3	0.00	0.00	e1.0	e1.5	e1.0	e5.0	4.1	0.16	5.6	0.83	0.00	0.00
4	0.00	0.00	e1.0	e1.0	e1.0	e5.0	3.0	0.01	3.8	0.59	0.00	0.00
5	0.00	0.00	e1.0	e0.50	e1.0	e6.0	3.0	0.14	2.4	0.17	9.0	0.00
6	0.00	0.00	e1.0	e1.0	e1.0	e10	3.6	0.02	1.7	1.5	8.4	0.00
7	0.00	0.00	e1.0	e1.5	e1.5	e50	2.3	0.00	0.85	5.0	6.0	0.00
8	0.00	0.00	e1.0	e1.5	e1.5	e150	3.0	0.01	2.0	5.6	6.7	0.00
9	0.00	0.00	e1.0	e1.5	e1.5	e500	1.8	0.00	1.3	6.5	3.8	0.00
10	0.00	0.00	e1.0	e2.0	e1.5	1,640	1.7	0.00	0.98	5.9	2.7	0.00
11	0.00	0.00	e0.50	e2.0	e1.0	880	1.3	0.09	3.1	7.0	1.6	0.00
12	0.00	0.00	e0.50	e2.0	e1.0	418	1.1	8.5	4.3	4.1	0.96	0.00
13	0.00	0.00	e1.0	e2.0	e1.0	300	1.0	11	11	2.2	0.37	0.00
14	0.00	e0.50	e1.0	e2.0	e1.0	224	3.0	4.9	32	1.7	0.05	0.00
15	0.00	e0.50	e1.0	e2.0	e1.5	149	4.2	1.3	52	1.1	0.00	0.00
16	0.00	e1.0	e1.0	e2.0	e1.5	114	3.1	1.1	26	1.4	0.00	0.00
17	0.00	e1.0	e1.0	e2.0	e1.5	136	2.7	4.3	25	1.4	0.00	0.00
18	0.00	e1.0	e1.0	e2.0	e2.0	173	1.9	4.8	41	1.2	0.00	0.00
19	0.00	e1.0	e1.0	e2.0	e2.0	169	1.4	7.7	48	0.98	0.00	0.00
20	0.00	e1.0	e1.0	e2.0	e2.0	162	2.4	7.9	26	0.72	0.00	0.00
21	0.00	e1.0	e1.0	e2.0	e3.0	77	2.4	8.9	16	0.17	0.00	0.00
22	0.00	e0.50	e1.0	e2.0	e3.0	53	2.2	7.4	7.7	0.00	0.00	0.00
23	0.00	e0.50	e1.0	e4.0	e4.0	41	1.7	15	3.5	0.00	0.00	0.00
24	0.00	e1.0	e1.0	e2.0	e4.0	35	2.6	30	1.8	0.00	0.00	0.00
25	0.00	e1.0	e1.0	e1.5	e5.0	30	0.84	36	3.5	0.00	0.00	0.00
26	0.00	e1.0	e1.0	e1.0	e5.0	28	1.2	44	9.4	0.00	0.00	0.00
27	0.00	e1.0	e1.0	e1.0	e5.0	26	0.75	30	3.8	0.00	0.00	0.00
28	0.00	e1.0	e0.50	e1.0	e5.0	21	1.5	17	1.1	0.00	0.00	0.00
29	0.00	e1.0	e0.50	e1.0	e5.0	15	1.2	15	0.96	0.00	0.00	0.00
30	0.00	e1.0	e1.0	e1.5	---	12	1.5	7.7	3.3	0.00	0.00	0.00
31	0.00	---	e1.0	e1.0	---	9.0	---	8.0	---	0.00	0.00	---
TOTAL	0.00	15.00	29.00	51.50	65.5	5,446.0	73.49	271.80	349.19	49.70	39.58	0.00
MEAN	0.00	0.50	0.94	1.66	2.26	176	2.45	8.77	11.6	1.60	1.28	0.00
MAX	0.00	1.0	1.0	4.0	5.0	1,640	7.6	44	52	7.0	9.0	0.00
MIN	0.00	0.00	0.50	0.50	1.0	4.0	0.75	0.00	0.85	0.00	0.00	0.00
AC-FT	0.00	30	58	102	130	10,800	146	539	693	99	79	0.00

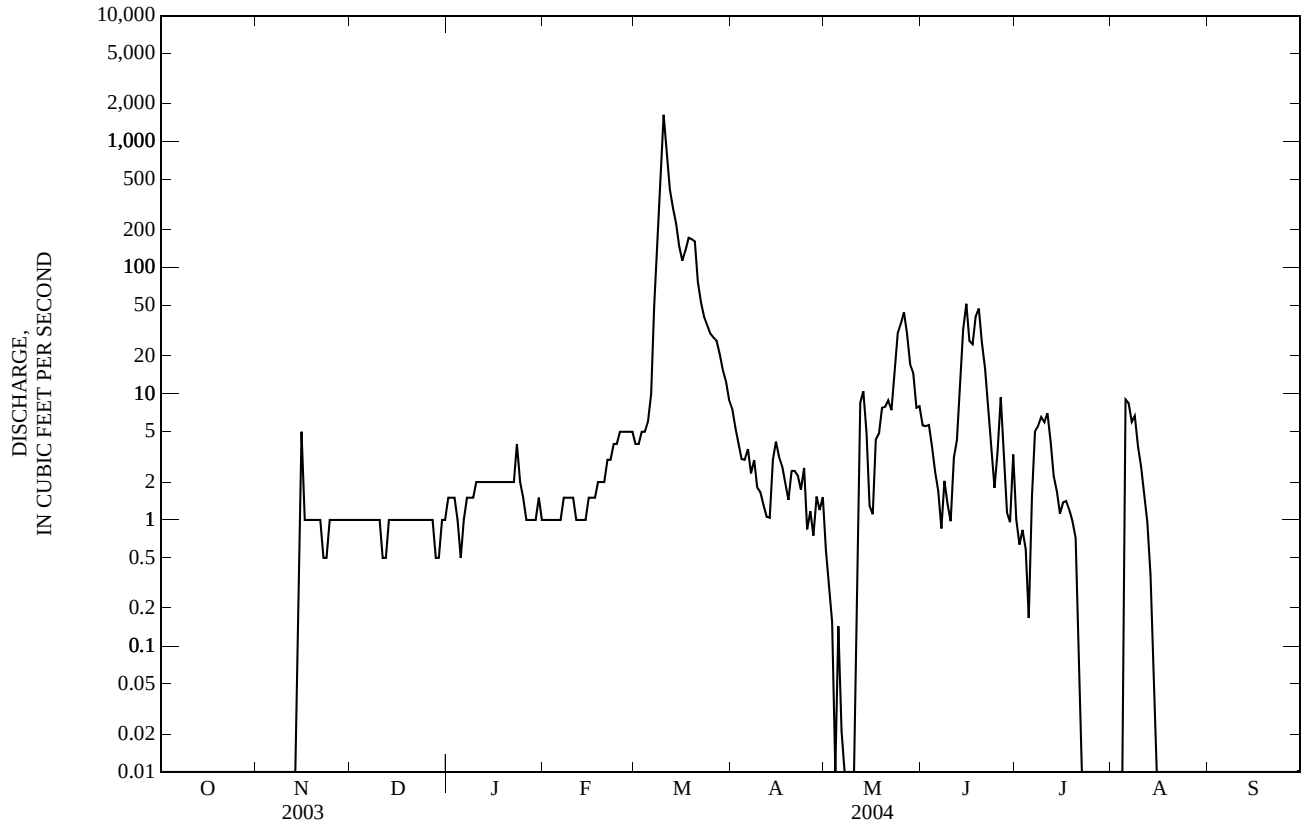
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2004, BY WATER YEAR (WY)*

MEAN	78.6	78.0	70.0	75.4	170	450	279	514	858	314	111	111
MAX	478	337	278	376	1,858	4,658	1,917	3,772	4,967	2,153	870	787
(WY)	(1994)	(1994)	(1979)	(1997)	(1971)	(1978)	(1979)	(1975)	(1967)	(1975)	(1993)	(1986)
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.00	0.00	0.00
(WY)	(1932)	(1932)	(1931)	(1932)	(1932)	(1932)	(2003)	(1931)	(1935)	(1961)	(1934)	(1934)

06130500 MUSSELSHELL RIVER AT MOSBY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1931 - 2004*	
ANNUAL TOTAL	4,857.36		6,395.26			
ANNUAL MEAN	13.3		17.5		c261	
HIGHEST ANNUAL MEAN					1,089	1978
LOWEST ANNUAL MEAN					8.12	2002
HIGHEST DAILY MEAN	400	Mar 15	1,640	Mar 10	15,700	Jun 18, 1944
LOWEST DAILY MEAN	0.00	Jan 16	0.00	Oct 1	0.00	Oct 1, 1930
ANNUAL SEVEN-DAY MINIMUM	0.00	Apr 1	0.00	Oct 1	0.00	Oct 1, 1930
MAXIMUM PEAK FLOW			a1,910	Mar 10	d18,000	Jun 18, 1944
MAXIMUM PEAK STAGE			b6.35	Mar 9	f15.10	Mar 12, 1979
ANNUAL RUNOFF (AC-FT)	9,630		12,680		189,100	
10 PERCENT EXCEEDS	43		15		567	
50 PERCENT EXCEEDS	0.01		1.0		80	
90 PERCENT EXCEEDS	0.00		0.00		0.05	

*--During period of operation (1931-32, 1935 to current year).
a--Gage height, 5.97 ft.
b--Backwater from ice.
c--Median of yearly mean discharge, 190 ft^3/s.
d--Gage height 14.43 ft, from rating extension above 10,000 ft^3/s.
e--Estimated.
f--From floodmark, backwater from ice.



06130500 MUSSELSHELL RIVER AT MOSBY, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to June 2004 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1981.
WATER TEMPERATURE: October 1974 to September 1979, May 2000 to September 2003 (seasonal records only).

SUSPENDED-SEDIMENT DISCHARGE: October 1982 to September 1991, October 1991 to 1995 (seasonal records only).

INSTRUMENTATION.--Temperature recorder installed March 20, 2000.

REMARKS.--Unable to collect samples in October, November and July through September due to no flow.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,900 microsiemens per centimeter (μS/cm) at 25°C, Aug. 14, 1977; minimum daily, 678 μS/cm at 25°C, Mar. 23, 1978.
WATER TEMPERATURE: Maximum daily, 33.0°C, July 13, 2000, July 3 and Aug. 6, 2001; minimum daily, 0.0°C on many days during winters.
SEDIMENT CONCENTRATION: Maximum daily mean, 25,800 mg/L, Aug. 3, 1985; minimum daily mean, 7 mg/L Oct. 30, 1989.
SEDIMENT LOAD: Maximum daily, 242,000 tons, Sep. 26, 1986; minimum daily, no load, 1985, 1988 during periods of no flow.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)	Bed sediment, percent <.063mm (80164)	Bed sediment, percent <.125mm (80165)
MAR										
30...	1105	13	2,860	17.0	11.5	88	48	1.7	4	5
MAY										
12...	1230	.30	5,650	2.0	11.0	78	45	.04	2	4
JUN										
15...	1020	53	2,290	21.0	18.0	99	126	18	1	1

Date	Bed sediment, percent <.25mm (80166)	Bed sediment, percent <.5 mm (80167)	Bed sediment, percent <1 mm (80168)	Bed sediment, percent <2 mm (80169)	Bed sediment, percent <4 mm (80170)	Bed sediment, percent <8 mm (80171)	Bed sediment, percent <16 mm (80172)	Bed sediment, percent <32 mm (80173)	Bed sediment, percent <64 mm (80174)
MAR									
30...	8	12	17	24	39	100	--	--	--
MAY									
12...	7	10	14	28	53	100	--	--	--
JUN									
15...	2	3	4	7	11	18	54	79	100

06130650 HELL CREEK NEAR JORDAN, MT

LOCATION.--Lat 47°34'44", long 106°55'37" (NAD 27), in NW¼ NE¼ SE¼ sec.14, T.21 N., R.37 E., Garfield County, Hydrologic Unit 10040104, on left bank 1.5 mi upstream from Fort Peck Lake, and 19 mi north of Jordan.

DRAINAGE AREA.--70.6 mi^2.

PERIOD OF RECORD.--February 2000 to September 2004, (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 2,270 ft (NGVD 29). Prior to Oct. 1, 2000, at elevation 1.0 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.12	0.08	e0.00	e0.00	e2.0	e0.10	0.07	0.41	e0.20	0.00	0.04
2	0.00	0.07	0.10	e0.00	e0.00	e2.0	e0.10	0.06	0.35	e0.20	0.00	0.00
3	0.00	0.06	0.08	e0.00	e0.00	e2.0	e0.10	0.06	0.34	e0.20	0.00	0.00
4	0.00	0.06	e0.10	e0.00	e0.00	e2.0	e0.10	0.05	0.33	e0.20	0.00	0.00
5	0.00	0.06	e0.10	e0.00	e0.00	e10	e0.10	0.05	0.32	e0.20	0.00	0.00
6	0.00	0.06	e0.20	e0.00	e0.10	e8.0	e0.10	0.06	0.32	e0.20	0.17	0.00
7	0.00	0.06	e0.50	e0.00	e0.10	e20	e0.10	0.07	0.31	e0.20	0.56	0.00
8	0.00	0.06	e0.10	e0.00	e0.10	e70	e0.10	0.07	0.32	0.15	0.26	0.00
9	0.00	0.06	e0.10	e0.10	e0.10	e40	e0.10	0.06	0.34	0.13	0.18	0.00
10	0.00	0.08	e0.10	e0.20	e0.10	e20	e0.10	0.05	11	0.11	0.14	0.00
11	0.00	1.2	e0.10	e0.30	e0.10	e15	e0.10	0.10	40	0.09	0.11	0.00
12	0.00	e3.0	e0.10	e0.30	e0.10	e18	e0.10	0.78	9.4	0.08	0.09	0.00
13	0.00	e1.0	e0.10	e0.30	e0.10	e22	e0.10	1.3	2.0	0.07	0.07	0.00
14	0.00	e0.50	e0.10	e0.30	e0.10	e15	e0.10	0.40	1.2	0.03	0.03	0.00
15	0.00	e0.10	e0.10	e0.30	e0.10	e7.0	e0.10	0.27	e1.0	0.00	0.00	0.00
16	0.00	0.08	e0.10	e0.30	e0.10	e5.0	e0.10	0.18	e0.80	0.00	0.00	0.00
17	0.00	0.07	e0.10	e0.30	e0.10	e4.0	e0.10	0.12	e0.60	0.00	0.00	0.00
18	0.00	0.08	e0.10	e0.30	e7.0	e3.0	e0.10	0.10	e0.40	0.00	0.00	0.00
19	0.01	0.14	e0.10	e0.30	e20	e2.0	e0.10	0.12	e0.20	0.00	0.00	0.00
20	0.01	0.12	e0.10	e0.30	e18	e1.0	0.09	0.14	e0.20	0.00	0.00	0.00
21	0.01	0.08	e0.10	e0.30	e17	e1.0	0.09	0.11	e0.20	0.00	0.00	0.00
22	0.01	0.06	e0.10	e0.30	e16	e0.50	0.10	0.09	e0.20	0.00	0.00	0.00
23	0.01	0.07	e0.10	e1.0	e15	e0.40	0.08	8.0	e0.20	0.00	0.26	0.00
24	0.01	0.07	e0.10	e0.50	e14	e0.30	0.07	19	e0.20	0.00	0.92	0.00
25	0.01	0.07	e0.10	e0.00	e13	e0.20	0.06	2.9	e0.20	0.00	0.30	0.00
26	0.01	0.07	e0.05	e0.00	e10	e0.10	0.05	0.98	e0.20	0.00	0.17	0.00
27	0.01	0.07	e0.00	e0.00	e7.0	e0.10	0.05	0.73	e0.20	0.00	0.12	0.00
28	0.01	0.06	e0.00	e0.00	e5.0	e0.10	0.06	0.63	e0.20	0.00	0.10	0.00
29	28	0.08	e0.00	e0.00	e4.0	e0.10	0.09	0.58	e0.20	0.00	0.08	0.00
30	0.76	0.08	e0.00	e0.00	---	e0.10	0.09	0.54	e0.20	0.00	0.07	0.00
31	0.23	---	e0.00	e0.00	---	e0.10	---	0.48	---	0.00	0.06	---
TOTAL	29.09	7.69	3.01	5.40	147.20	271.00	2.73	38.15	71.84	2.06	3.69	0.04
MEAN	0.94	0.26	0.097	0.17	5.08	8.74	0.091	1.23	2.39	0.066	0.12	0.001
MAX	28	3.0	0.50	1.0	20	70	0.10	19	40	0.20	0.92	0.04
MIN	0.00	0.06	0.00	0.00	0.00	0.10	0.05	0.05	0.20	0.00	0.00	0.00
MED	0.00	0.07	0.10	0.10	0.10	2.0	0.10	0.12	0.32	0.00	0.07	0.00
AC-FT	58	15	6.0	11	292	538	5.4	76	142	4.1	7.3	0.08

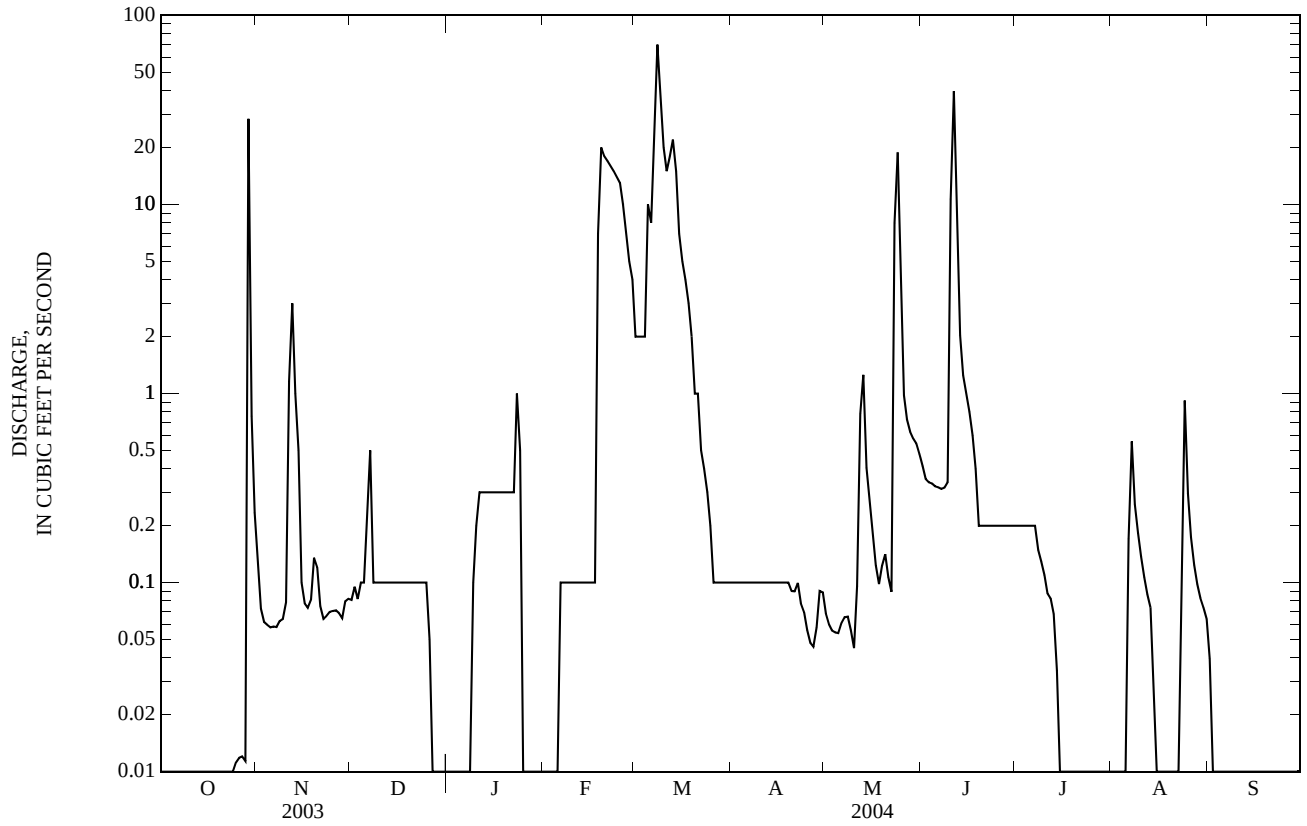
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2004, BY WATER YEAR (WY)

MEAN	0.33	0.090	0.025	0.19	1.47	5.81	0.47	2.42	7.80	6.86	1.62	0.49
MAX	0.94	0.26	0.097	0.58	5.08	16.2	1.10	9.04	24.2	18.6	6.19	2.44
(WY)	(2004)	(2004)	(2004)	(2001)	(2004)	(2003)	(2003)	(2003)	(2001)	(2000)	(2003)	(2000)
MIN	0.000	0.000	0.000	0.000	0.000	0.90	0.012	0.000	1.05	0.066	0.000	0.000
(WY)	(2002)	(2002)	(2001)	(2002)	(2002)	(2000)	(2001)	(2001)	(2003)	(2004)	(2000)	(2002)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2000 - 2004	
ANNUAL TOTAL	1,165.16		581.90			
ANNUAL MEAN	3.19		1.59		2.23	
HIGHEST ANNUAL MEAN					3.09	2003
LOWEST ANNUAL MEAN					1.16	2002
HIGHEST DAILY MEAN	318	Mar 13	70	Mar 8	581	Jun 13, 2001
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Feb 1, 2000
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 10	0.00	Oct 1	0.00	Feb 1, 2000
MAXIMUM PEAK FLOW			a120	Jun 11	c1,700	Jul 13, 2001
MAXIMUM PEAK STAGE			b4.24	Mar 9	7.64	Jul 13, 2001
ANNUAL RUNOFF (AC-FT)	2,310		1,150		1,620	
10 PERCENT EXCEEDS	0.96		2.0		1.4	
50 PERCENT EXCEEDS	0.00		0.10		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a--Gage height, 1.80 ft.
b--Backwater from ice.
c--From slope-area measurement of peak flow.
e--Estimated.

06130650 HELL CREEK NEAR JORDAN, MT—Continued



06131000 BIG DRY CREEK NEAR VAN NORMAN, MT

LOCATION.--Lat 47°20'58", long 106°21'26" (NAD 27), in NE¼SW¼NW¼ sec.3, T.18 N., R.42 E., Garfield County, Hydrologic Unit 10040105, on left bank 900 ft downstream from Little Dry Creek, 3.2 mi northeast of Van Norman Post Office, 26 mi east of Jordan, and at river mile 55.1.

DRAINAGE AREA.--2,554 mi^2.

PERIOD OF RECORD.--October 1939 to July 1969, July 1970 to current year (discharge measurements only, October 1947 to March 1949). Prior to July 1970, published as "Dry Creek near Van Norman."

REVISED RECORDS.--WSP 1309: 1947(M). WSP 1559: 1944(M), 1947. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,330 ft (NGVD 29). Prior to July 24, 1978, at site 400 ft upstream at same elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Few small diversions for irrigation of hay meadows upstream from station. U.S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.05	1.9	3.8	e1.0	e0.50	e1.5	7.0	3.1	3.2	1.4	0.20	0.45
2	0.15	1.6	2.2	e0.50	e0.50	e1.5	7.3	2.9	3.0	1.4	0.17	0.38
3	0.22	e1.0	2.2	e1.0	e0.50	e2.0	6.8	2.8	3.0	1.4	8.8	0.52
4	0.27	e1.5	e1.5	e1.0	e1.0	e2.0	6.1	2.9	2.8	3.2	12	0.54
5	0.26	e1.0	e2.0	e1.0	e1.0	e2.0	5.7	2.8	2.6	3.4	3.0	0.46
6	0.28	e1.5	2.0	e1.0	e1.0	e2.0	5.2	2.7	2.2	13	7.9	0.50
7	0.30	e1.5	e2.0	e1.0	e0.50	e10	4.9	2.7	1.9	29	2.4	0.56
8	0.30	e1.5	e1.5	e1.0	e1.0	e25	4.7	2.7	1.9	21	0.97	0.50
9	0.30	1.6	e2.0	e1.0	e1.0	e250	4.3	2.6	1.7	17	0.75	0.47
10	0.40	1.6	e1.5	e1.0	e1.0	1,270	4.2	2.3	2.4	12	0.63	0.49
11	0.44	2.2	e2.0	e0.50	e0.50	648	4.1	2.5	3.9	8.4	0.50	0.48
12	0.42	e2.0	e2.0	e1.0	e0.50	495	4.1	3.2	4.2	6.6	0.61	0.45
13	0.45	2.2	e2.0	e1.0	e1.0	420	4.4	3.2	3.3	5.1	0.73	0.49
14	0.47	2.1	e2.0	e1.0	e1.0	259	4.3	3.2	3.1	4.2	0.65	0.58
15	0.51	2.1	e2.0	e1.0	e1.0	188	4.4	3.2	2.9	3.5	2.8	0.55
16	0.56	2.0	e2.0	e1.0	e1.0	153	4.4	3.5	3.3	3.7	2.4	0.55
17	0.52	2.0	e2.0	e1.0	e1.0	91	4.4	3.3	3.1	5.9	2.0	0.57
18	0.53	1.9	e1.5	e1.0	e1.0	61	4.3	3.4	3.0	3.5	1.5	0.56
19	0.52	2.0	e2.0	e1.0	e1.0	66	4.3	4.2	2.8	3.0	1.2	0.54
20	0.51	1.9	e2.0	e1.0	e1.5	46	4.3	4.9	2.9	4.0	1.1	0.60
21	0.47	e1.5	e2.0	e1.0	e1.5	29	4.2	4.1	3.3	3.2	0.84	0.68
22	0.51	e2.0	e1.5	e1.0	e1.5	23	4.1	3.6	3.0	2.4	0.80	0.63
23	0.46	e1.5	e2.0	e1.0	e1.5	19	3.9	5.0	2.8	1.7	0.71	0.63
24	0.38	e2.0	e2.0	e1.0	e1.5	17	3.5	9.0	2.5	1.3	0.63	0.66
25	0.47	e1.5	e2.0	e1.0	e2.0	15	3.2	6.6	2.3	0.95	0.76	0.64
26	0.41	e2.0	e2.0	e1.0	e2.0	14	3.2	5.0	2.2	0.72	0.73	0.57
27	0.35	e2.0	e1.5	e1.0	e2.0	13	3.2	5.0	1.9	0.51	0.56	0.57
28	0.53	e2.5	e1.0	e0.50	e2.0	11	3.2	4.8	1.7	0.33	0.51	0.54
29	20	3.4	e1.0	e0.50	e1.5	9.8	3.3	4.4	1.5	0.33	0.53	0.52
30	5.5	2.4	e1.0	e1.0	---	8.3	3.1	3.9	1.3	0.31	0.52	0.56
31	2.9	---	e1.0	e1.0	---	7.5	---	3.4	---	0.26	0.51	---
TOTAL	39.44	55.9	57.2	29.00	33.00	4,159.6	134.1	116.9	79.7	162.71	57.41	16.24
MEAN	1.27	1.86	1.85	0.94	1.14	134	4.47	3.77	2.66	5.25	1.85	0.54
MAX	20	3.4	3.8	1.0	2.0	1,270	7.3	9.0	4.2	29	12	0.68
MIN	0.05	1.0	1.0	0.50	0.50	1.5	3.1	2.3	1.3	0.26	0.17	0.38
AC-FT	78	111	113	58	65	8,250	266	232	158	323	114	32

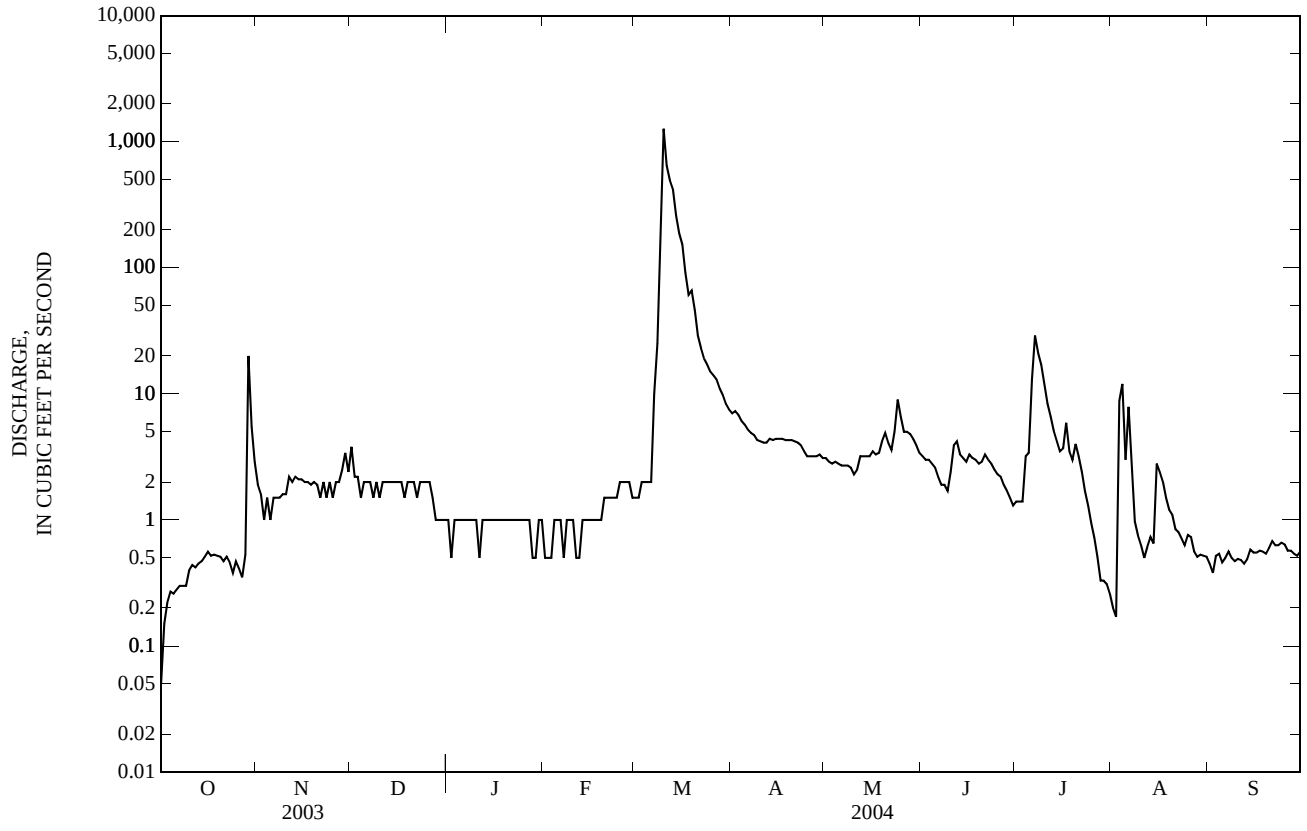
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)*

MEAN	6.22	2.98	2.64	6.38	71.6	254	82.7	28.5	57.4	43.2	15.9	16.2
MAX	97.5	14.2	33.7	192	1,004	1,760	2,043	300	552	458	367	391
(WY)	(1987)	(1987)	(1976)	(1997)	(1997)	(1959)	(1952)	(1975)	(1944)	(1993)	(1954)	(1986)
MIN	0.00	0.00	0.00	0.00	0.00	2.75	1.05	0.21	0.07	0.00	0.00	0.00
(WY)	(1940)	(1961)	(1961)	(1940)	(1940)	(1961)	(1961)	(1958)	(1988)	(1961)	(1959)	(1940)

06131000 BIG DRY CREEK NEAR VAN NORMAN, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004*	
ANNUAL TOTAL	9,162.32		4,941.20			
ANNUAL MEAN	25.1		13.5		49.1**	
HIGHEST ANNUAL MEAN					243	1978
LOWEST ANNUAL MEAN					1.18	1985
HIGHEST DAILY MEAN	2,300	Mar 14	1,270	Mar 10	21,300	Mar 22, 1947
LOWEST DAILY MEAN	0.00	Jul 29	0.05	Oct 1	0.00	Oct 1, 1939
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 17	0.22	Oct 1	0.00	Oct 1, 1939
MAXIMUM PEAK FLOW			2,240	Mar 10	a24,600	Mar 21, 1947
MAXIMUM PEAK STAGE			5.62	Mar 10	b15.26	Mar 21, 1947
INSTANTANEOUS LOW FLOW			0.05	Oct 1	c0.00	Oct 1, 1940
ANNUAL RUNOFF (AC-FT)	18,170		9,800		35,560	
10 PERCENT EXCEEDS	17		7.4		40	
50 PERCENT EXCEEDS	2.0		2.0		2.5	
90 PERCENT EXCEEDS	0.01		0.50		0.00	

*--During period of operation (1940-47, 1949-68, 1970 to current year).
**--Median of yearly mean discharges, 27.1 ft^3/s.
a--Gage height, 13.39 ft, at different site and datum.
b--Backwater from ice.
c--No flow at times most years.
e--Estimated.



06131200 NELSON CREEK NEAR VAN NORMAN, MT

LOCATION.--Lat 47°32'08", long 106°09'11" (NAD 27), in SW¼ NW¼ sec.36, T.21 N., R.43 E., McCone County, Hydrologic Unit 10040104, on left bank at upstream side of bridge on State Highway 24, 1.5 mi upstream from Fort Peck Lake, and 19 mi northeast of Van Norman.

DRAINAGE AREA.--100 mi^2.

PERIOD OF RECORD.--October 1975 to September 1985, February 2000 to September 2004, (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 2,300 ft (NGVD 29).

REMARKS.--Records fair except those for estimated discharges, which are poor. Diversions for irrigation of about 163 acres upstream from station of which about 158 acres are flood irrigated. Some storage in stock ponds upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.01	e0.00	e0.00	0.00	e2.0	0.47	0.05	0.15	0.00	0.00	0.00
2	0.00	0.00	e0.00	e0.00	0.00	e1.0	0.45	0.05	0.12	0.00	0.00	0.00
3	0.00	0.00	e0.00	e0.00	0.00	e0.60	0.43	0.04	0.09	0.00	0.00	0.00
4	0.00	e0.00	e0.00	e0.00	0.00	e0.20	0.40	0.04	0.08	0.00	0.00	0.00
5	0.00	e0.00	e0.00	e0.00	0.00	e0.10	0.34	0.07	0.06	0.00	0.00	0.00
6	0.00	e0.00	e0.00	e0.00	0.00	e0.10	0.29	0.06	0.04	0.00	0.00	0.00
7	0.00	e0.00	e0.00	e0.00	0.00	e1.0	0.25	0.06	0.01	1.7	0.00	0.00
8	0.00	e0.00	e0.00	e0.00	0.00	e4.0	0.23	0.05	0.01	0.69	0.00	0.00
9	0.00	e0.00	0.00	e0.00	0.00	e40	0.20	0.05	0.01	0.05	0.00	0.00
10	0.00	e0.00	0.00	e0.00	0.00	e80	0.18	0.04	0.07	0.01	0.00	0.00
11	0.00	e0.00	0.00	e0.00	0.00	e20	0.16	0.06	0.31	0.00	0.00	0.00
12	0.00	e0.00	0.00	0.00	0.00	e40	0.16	0.12	0.21	0.00	0.00	0.00
13	0.00	e0.00	0.00	0.00	0.00	e30	0.15	0.11	0.27	0.00	0.00	0.00
14	0.00	e0.00	0.00	0.00	0.00	e12	0.13	0.09	0.21	0.00	0.00	0.00
15	0.00	e0.00	0.00	0.00	0.00	e10	0.13	0.07	0.13	0.00	0.00	0.00
16	0.00	e0.00	0.00	0.00	0.00	e10	0.13	0.05	0.08	0.00	0.00	0.00
17	0.00	e0.00	0.00	0.00	0.00	e8.0	0.13	0.05	0.21	0.00	0.00	0.00
18	0.00	e0.00	0.00	0.00	e0.05	e15	0.13	0.05	0.18	0.00	0.00	0.00
19	0.00	e0.00	0.00	0.00	e0.10	18	0.12	0.14	0.17	0.00	0.00	0.00
20	0.00	e0.00	0.00	0.00	e0.00	13	0.12	0.17	0.12	0.00	0.00	0.00
21	0.00	e0.00	0.00	0.00	e0.00	7.1	0.12	0.12	0.08	0.00	0.00	0.00
22	0.00	e0.00	0.00	0.00	e0.00	4.4	0.12	0.10	0.07	0.00	0.00	0.00
23	0.00	e0.00	0.00	0.00	e0.00	3.1	0.13	0.16	0.08	0.00	0.00	0.00
24	0.00	e0.00	0.00	0.00	e0.00	3.7	0.10	0.44	0.06	0.00	0.00	0.00
25	0.00	e0.00	0.00	0.00	e0.00	4.3	0.09	0.60	0.04	0.00	0.00	0.00
26	0.00	e0.00	0.00	0.00	e0.00	3.4	0.08	0.43	0.01	0.00	0.00	0.00
27	0.00	e0.00	e0.00	0.00	e10	3.0	0.07	0.44	0.00	0.00	0.00	0.00
28	0.00	e0.00	e0.00	0.00	e20	2.1	0.06	0.31	0.00	0.00	0.00	0.00
29	0.00	e0.00	e0.00	0.00	e4.0	1.1	0.07	0.28	0.00	0.00	0.00	0.00
30	0.00	e0.00	e0.00	0.00	---	0.81	0.06	0.22	0.00	0.00	0.00	0.00
31	0.00	---	e0.00	0.00	---	0.63	---	0.20	---	0.00	0.00	---
TOTAL	0.00	0.01	0.00	0.00	34.15	338.64	5.50	4.72	2.87	2.45	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	1.18	10.9	0.18	0.15	0.096	0.079	0.000	0.000
MAX	0.00	0.01	0.00	0.00	20	80	0.47	0.60	0.31	1.7	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.10	0.06	0.04	0.00	0.00	0.00	0.00
AC-FT	0.00	0.02	0.00	0.00	68	672	11	9.4	5.7	4.9	0.00	0.00

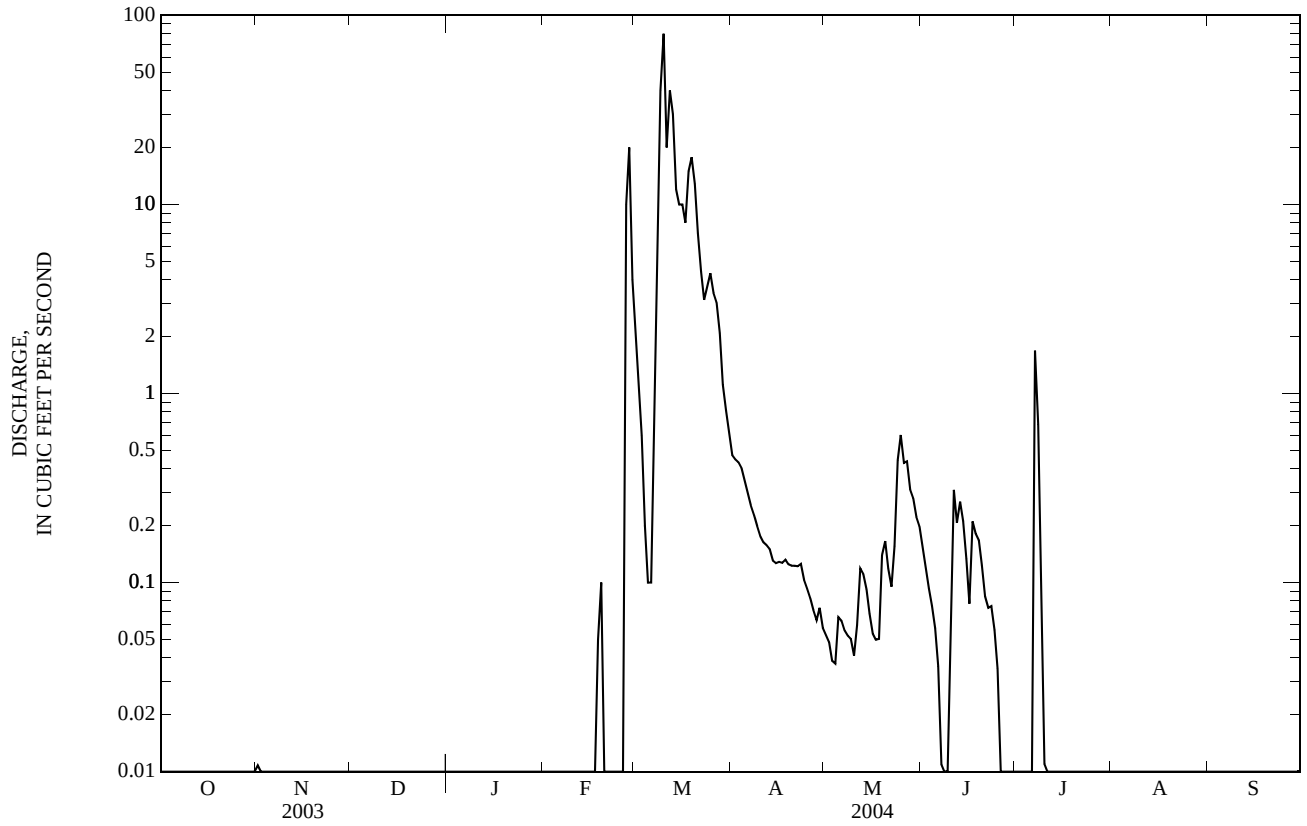
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2004, BY WATER YEAR (WY)*

MEAN	0.16	0.016	0.019	0.35	2.19	5.49	3.08	1.38	1.61	2.41	1.23	1.08
MAX	1.47	0.14	0.15	2.90	19.0	37.4	39.9	13.1	5.64	16.0	9.37	15.4
(WY)	(1982)	(1979)	(1976)	(1983)	(1982)	(1978)	(1979)	(1978)	(1977)	(1978)	(1981)	(1978)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.072	0.001	0.000	0.000	0.000	0.000
(WY)	(1977)	(1977)	(1977)	(1977)	(1978)	(2002)	(2000)	(2001)	(1981)	(1980)	(1977)	(1976)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1976 - 2004*	
ANNUAL TOTAL	429.86		388.34			
ANNUAL MEAN	1.18		1.06		1.64	
HIGHEST ANNUAL MEAN					7.57	1978
LOWEST ANNUAL MEAN					0.14	1980
HIGHEST DAILY MEAN	174	Mar 14	80	Mar 10	445	Jul 4, 1978
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	b0.00	Oct 1, 1975
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1, 1975
MAXIMUM PEAK FLOW			unknown		1,750	Jul 4, 1978
MAXIMUM PEAK STAGE			a5.85	Feb 28	9.30	Jul 4, 1978
ANNUAL RUNOFF (AC-FT)	853		770		1,190	
10 PERCENT EXCEEDS	0.32		0.44		1.0	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

*--During period of operation (1975-1985, February 2000 to September 2004).
a--Backwater from ice.
b--No flow at times most years.
c--Estimated.

06131200 NELSON CREEK NEAR VAN NORMAN, MT—Continued



06131500 FORT PECK LAKE AT FORT PECK, MT

LOCATION.--Lat 48°00'26", long 106°23'49" (NAD 27), in sec. 14, T.26 N., R.41 E., McCone County, Hydrologic Unit 10040104, in No. 4 emergency gate shaft of Fort Peck Dam on Missouri River at Fort Peck, 2 mi downstream from Bear Creek, 9.5 mi southwest of Nashua, 9.5 mi upstream from Milk River, and at river mile 1,771.6.

DRAINAGE AREA.--57,500 mi^2.

PERIOD OF RECORD.--October 1937 to current year. (Monthend contents only, except October 1938 to September 1940, when elevations were included.) Monthend contents for October 1937 to August 1938, published only in WSP 1309. Daily elevations and contents for May to June 1964, published in WSP 1840-B. Prior to October 1970, published as "Fort Peck Reservoir." Daily elevations on file in Helena district office.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Prior to May 1, 1941, nonrecording gage at same site and elevation. Elevation of gage is 2095.00 (NGVD 29).

REMARKS.--Reservoir is formed by earthfill dam completed in 1939; storage began in 1937. The following capacity figures are from capacity table effective July 1, 1973; see previous reports for superseded figures. All elevations are referenced to the National Geodetic Vertical Datum of 1929. Total capacity, 18,910,000 acre-ft between elevation 2,095.00 ft, invert of lower ring gates, and 2,250.00 ft, top of 25 ft gates. Elevation of spillway crest, 2,225.00 ft. Normal operating level, 17,930,000 acre-ft, elevation, 2,246.00 ft. Dead storage, 542,800 acre-ft below elevation 2,095.00 ft. Minimum operating level, 4,283,000 acre-ft, elevation, 2,160.00 ft, for on-site power generation. Figures given herein represent total contents; usable contents published in previous water-supply papers for October 1950 to September 1955. Water is used for navigation, recreation, flood control, and power generation. Elevations materially affected by wind.

COOPERATION.--Elevations and capacity table furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 19,310,000 acre-ft, July 15-17, 1975, elevation, 2,251.6 ft; minimum since first filling, 5,061,000 acre-ft, Jan. 25, 26, 1956, elevation, 2,167.67 ft, by capacity table used Mar. 1, 1940, to Dec. 31, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 10,650,000 acre-ft, Oct. 1, elevation, 2,209.50 ft; minimum, 8,964,000 acre-ft, Sept. 30, elevation, 2,199.80 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, SEPTEMBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
September 30	2,209.53	10,490,000	--
October 31	2,209.26	10,440,000	-50,000
November 30	2,208.35	10,300,000	-140,000
December 31	2,206.83	10,050,000	-250,000
Calendar Year 2003	--	--	-290,000
January 31	2,205.29	9,807,000	-243,000
February 29	2,204.00	9,605,000	-202,000
March 31	2,205.49	9,833,000	+228,000
April 30	2,204.87	9,741,000	-92,000
May 31	2,203.38	9,508,000	-233,000
June 30	2,203.76	9,567,000	+59,000
July 31	2,202.41	9,669,000	+102,000
August 31	2,200.86	9,123,000	-546,000
September 30	2,199.80	8,964,000	-159,000
Water Year 2004	--	--	-1,526,000

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT

LOCATION.--Lat 48°02'39" (NAD 27), long 106°21'21", in NW$^1/_4$ sec.6, T.26 N., R.42 E., McCone County, Hydrologic Unit 10060001, on right bank 2 mi upstream from Milk River, 6 mi south of Nashua, 8 mi downstream from Fort Peck Dam, and at river mile 1,763.5.

DRAINAGE AREA.--57,556 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--March 1934 to current year.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,018 ft (NGVD 29) (U.S. Army Corps of Engineers bench mark). Prior to Apr. 14, 1938, at site 0.7 mi upstream at different elevation; Apr. 14, 1938, to Sept. 30, 1963, at present site at elevation 2.00 ft higher, all water-stage recorders. Since Oct. 1, 1969, published discharge is determined by flowmeters and spillway discharge at Fort Peck Dam.

REMARKS.--Flow completely regulated by Fort Peck Lake. Diversions for irrigation of about 880,400 acres upstream from station. Operational level in Fort Peck Lake was reached beginning 1944 water year.

COOPERATION.--Records since Oct. 1, 1969, furnished by U.S. Army Corps of Engineers; 2 to 4 discharge measurements are made each year and the records are reviewed by Geological Survey. Records for March 1934 to September 1969 collected and computed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,000 ft^3/s including 32,000 ft^3/s inflow from spillway 1 mi downstream from station, Aug. 8, 1946; maximum gage height observed, 12.30 ft, Mar. 10, 1936 (ice jam), site and elevation then in use; maximum daily reverse flow, 400 ft^3/s, Mar. 29, 1943, backwater from Milk River.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,400	4,800	8,800	9,000	9,000	7,100	5,500	10,900	6,700	7,400	8,000	7,000
2	4,400	4,800	8,300	9,000	9,000	6,600	5,500	10,700	7,500	7,200	8,100	6,900
3	4,800	4,800	9,000	8,800	8,900	6,400	5,500	10,800	7,600	7,300	7,100	7,100
4	4,800	4,600	8,900	8,800	9,100	6,200	5,230	10,600	7,400	7,300	6,600	7,500
5	4,700	4,700	8,900	8,700	9,000	6,400	4,900	10,800	7,100	7,400	7,400	7,000
6	4,700	4,700	8,900	8,500	9,300	6,100	4,500	10,600	7,100	7,800	7,200	7,100
7	4,700	4,600	8,800	8,600	9,400	6,400	4,600	10,500	7,400	7,300	7,200	7,200
8	4,800	4,600	8,800	8,800	9,300	6,400	4,800	10,800	6,800	7,200	7,300	7,100
9	4,500	4,700	8,900	8,900	9,100	6,100	4,500	10,700	6,800	7,300	6,500	6,900
10	4,600	4,600	8,940	8,800	8,900	6,100	4,900	10,800	7,200	7,000	6,600	6,600
11	4,600	4,700	8,940	8,800	8,700	6,000	4,800	10,900	7,200	7,100	6,700	6,600
12	4,600	4,700	8,930	9,000	8,900	5,600	4,900	10,900	7,000	7,100	6,700	6,900
13	4,600	4,700	8,910	9,000	8,900	5,500	6,600	10,700	7,200	7,000	6,600	6,600
14	4,600	4,600	8,910	8,600	8,700	5,300	6,500	10,700	7,300	7,400	7,300	6,300
15	4,700	4,800	8,900	8,800	8,700	5,500	6,300	10,600	6,400	7,300	6,500	6,700
16	4,500	4,800	8,900	9,000	8,800	5,800	6,300	10,800	6,000	7,200	6,400	6,700
17	4,500	4,600	8,900	9,200	8,700	5,300	6,300	10,700	6,200	7,200	7,400	6,300
18	4,400	4,700	8,900	9,400	8,400	5,400	6,200	10,900	6,000	6,900	6,300	5,500
19	4,400	4,900	9,000	9,100	8,200	4,900	6,400	10,600	6,300	7,000	7,200	5,600
20	4,900	4,700	8,900	9,100	8,400	5,000	7,100	10,700	6,500	6,900	7,300	5,200
21	4,700	4,600	8,900	9,100	8,800	4,900	7,300	10,700	6,500	6,900	6,300	5,200
22	4,700	6,300	9,300	8,900	9,500	5,100	7,200	10,700	6,000	7,100	6,300	3,900
23	4,600	6,500	8,800	9,000	9,300	5,100	6,200	10,400	6,100	6,900	6,500	4,300
24	4,400	7,000	8,800	8,800	9,000	5,400	8,800	10,800	5,600	6,400	6,700	5,000
25	4,600	7,900	8,600	9,000	9,100	5,600	8,700	10,400	5,600	6,600	6,700	5,200
26	4,700	8,700	8,900	9,100	9,100	5,500	10,600	10,600	5,800	6,800	6,700	5,100
27	4,700	9,000	9,000	8,900	8,900	5,700	11,200	9,300	6,100	7,100	7,000	5,100
28	4,600	8,500	9,200	8,900	7,600	5,700	10,600	6,900	6,100	7,500	7,100	5,200
29	4,700	8,800	9,100	8,900	7,600	5,600	10,500	7,300	6,200	7,600	7,100	5,100
30	4,500	8,800	8,800	8,800	---	5,400	10,600	6,700	6,200	7,400	7,200	4,900
31	4,700	---	8,900	8,800	---	5,400	---	6,600	---	7,500	6,900	---
TOTAL	143,100	170,200	275,730	276,100	256,300	177,500	203,030	315,100	197,900	222,100	214,900	181,800
MEAN	4,616	5,673	8,895	8,906	8,838	5,726	6,768	10,160	6,597	7,165	6,932	6,060
MAX	4,900	9,000	9,300	9,400	9,500	7,100	11,200	10,900	7,600	7,800	8,100	7,500
MIN	4,400	4,600	8,300	8,500	7,600	4,900	4,500	6,600	5,600	6,400	6,300	3,900
AC-FT	283,800	337,600	546,900	547,600	508,400	352,100	402,700	625,000	392,500	440,500	426,300	360,600

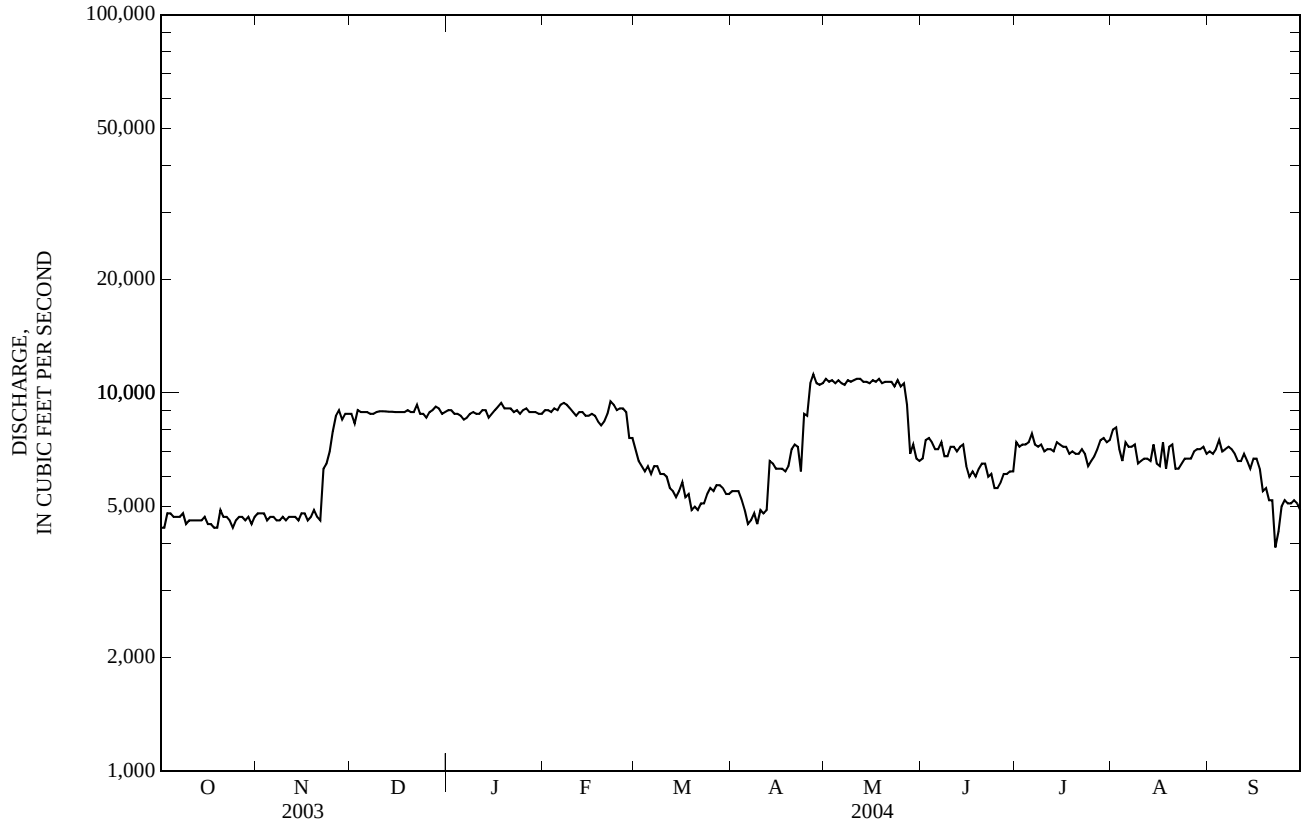
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2004, BY WATER YEAR (WY)*

MEAN	11,120	8,994	9,171	9,810	9,754	7,388	7,232	8,519	8,675	9,911	11,790	11,410
MAX	28,800	21,150	13,330	14,010	15,240	13,390	17,230	18,830	26,190	35,030	26,180	27,120
(WY)	(1956)	(1998)	(1944)	(1971)	(1979)	(1982)	(1979)	(1979)	(1975)	(1975)	(1955)	(1948)
MIN	3,016	2,085	1,490	1,390	1,180	1,050	856	950	832	1,163	3,449	2,997
(WY)	(1994)	(1947)	(1946)	(1946)	(1945)	(1944)	(1945)	(1944)	(1944)	(1945)	(1963)	(1992)

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1944 - 2004*	
ANNUAL TOTAL	2,744,130		2,633,760			
ANNUAL MEAN	7,518		7,196		9,484	
HIGHEST ANNUAL MEAN					14,950	1975
LOWEST ANNUAL MEAN					5,313	1963
HIGHEST DAILY MEAN	10,800	May 22	11,200	Apr 27	35,400	Jul 7, 1975
LOWEST DAILY MEAN	3,700	Mar 14	3,900	Sep 22	16	Apr 6, 1978
ANNUAL SEVEN-DAY MINIMUM	3,890	Mar 13	4,530	Oct 13	161	Mar 26, 1944
INSTANTANEOUS LOW FLOW					161	Mar 26, 1944
ANNUAL RUNOFF (AC-FT)	5,443,000		5,224,000		6,871,000	
10 PERCENT EXCEEDS	10,000		9,300		14,700	
50 PERCENT EXCEEDS	8,100		7,100		8,400	
90 PERCENT EXCEEDS	4,500		4,700		4,100	

*--Period of record after operational level in Fort Peck Lake was reached.



06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964, 1975 to 1987, May 2002 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Water years 1974 to 1981.
WATER TEMPERATURE: Water years, 1974 to 1979; seasonal records, July 2002 to current year.

INSTRUMENTATION.--Temperature recorder installed July 31, 2002.

REMARKS.--Daily water temperature record rated excellent except for Apr. 1-26 when equipment problems affected data transmission. .

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1975-81): Maximum daily, 1,080 microsiemens per centimeter (µS/cm), Nov. 30, 1976; minimum daily, 520 µS/cm, June 29, 1978.
WATER TEMPERATURE: Maximum, 19.0°C, Aug. 31 and Sept. 1, 2004; minimum, 0.0°C, on several days from December 1977 to January 1978.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: During period of seasonal operation, maximum, 19.0°C, Aug. 31 and Sept. 1; minimum, 3.0°C, Apr. 1.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
MAR													
24...	1015	5,400	712	12.8	105	8.6	555	10.0	4.0	220	54.0	21.0	4.00
MAY													
18...	0900	10,900	719	11.0	97	7.5	549	11.0	7.5	210	52.6	18.8	3.55
AUG													
05...	1015	7,400	718	8.3	90	8.4	554	24.0	16.5	220	54.1	20.1	3.85
30...	1115	7,200	716	9.5	111	8.2	553	22.0	19.5	210	50.7	19.6	3.71

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MAR													
24...	1	41.1	28	160	9.31	.9	6.6	122	355	.48	5,170	<.010	<.016
MAY													
18...	1	32.3	25	157	9.30	.9	5.9	112	330	.45	9,710	<.010	<.016
AUG													
05...	1	35.6	26	157	8.91	.9	6.6	114	338	.46	6,750	<.010	E.015
30...	1	36.9	27	157	8.88	.9	6.9	115	336	.46	6,540	<.010	<.016

Date	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, fltrd, ug/L (01030)	Chromium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)
MAR													
24...	<.002	.20	<.006	.010	3.7	4	37	35	<.04	<.04	<.8	<.8	1.5
MAY													
18...	<.002	.23	<.006	.007	3.7	3	32	35	<.04	<.04	<.8	<.8	1.7
AUG													
05...	<.002	.20	E.004	.013	3.8	4	36	37	<.04	<.04	<.8	<.8	1.7
30...	<.002	.15	E.005	.014	4.0	4	38	34	<.04	<.04	<.8	<.8	1.5

E--Estimated.

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recover-able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)
MAR											
24...	2.0	<6	20	<.08	E.05	2.7	5	<.02	<.02	1.98	2.11
MAY											
18...	2.1	<6	110	<.08	.11	.6	6	<.02	<.02	2.15	2.20
AUG											
05...	2.9	<6	90	<.08	.09	1.5	6	<.02	<.02	1.63	2.54
30...	2.3	<6	150	<.08	.10	1.8	9	<.02	<.02	2.37	3.02

Date	Selenium, water, fltrd, ug/L (01145)	Selenium, water, unfltrd ug/L (01147)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR							
24...	.7	.7	E.4	<2	80	2	29
MAY							
18...	.5	.5	.8	<2	69	11	324
AUG							
05...	.7	.8	E.3	E1	80	4	80
30...	.8	.6	<.6	E1	73	8	156

E--Estimated.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		APRIL			MAY			JUNE			JULY	
1	4.5	3.0	3.5	8.5	5.0	6.5	14.5	9.0	11.5	14.5	12.5	13.5
2	6.5	4.0	5.5	9.0	5.0	7.0	15.5	9.5	12.5	17.0	12.0	14.5
3	8.0	4.0	6.5	9.0	6.5	7.5	16.0	10.5	13.0	17.5	13.0	15.0
4	8.5	5.0	7.0	10.0	6.0	8.0	15.0	11.0	13.0	13.5	12.0	13.0
5	9.0	5.0	7.5	10.5	7.0	8.5	16.0	11.0	13.0	13.0	11.5	12.5
6	5.0	5.0	5.0	9.5	6.0	7.5	16.0	11.5	13.5	16.5	11.5	14.0
7	8.5	5.5	7.5	11.0	7.0	9.0	14.0	11.0	12.5	16.5	13.0	14.5
8	8.0	5.5	7.0	9.5	7.0	8.5	11.5	10.5	11.0	16.5	12.5	14.5
9	7.5	4.5	6.5	10.5	7.0	8.5	14.0	10.0	12.0	17.0	12.5	14.5
10	---	---	---	9.5	6.5	8.0	11.5	11.0	11.0	17.0	12.5	14.5
11	---	---	---	7.0	6.0	6.5	12.0	11.0	11.5	17.5	13.5	15.5
12	8.5	7.5	8.0	7.5	6.0	7.0	13.5	11.0	12.0	17.5	13.5	15.0
13	9.5	6.0	7.5	10.0	6.5	8.0	15.0	11.0	12.5	18.0	13.0	15.5
14	---	---	---	11.0	6.5	8.5	15.5	11.0	13.5	18.0	13.5	15.5
15	9.5	7.5	8.5	10.0	7.0	8.5	15.5	11.5	13.5	18.0	13.5	15.5
16	---	---	---	9.5	7.0	8.0	16.5	11.5	14.0	17.5	13.5	15.0
17	---	---	---	11.5	7.0	9.0	14.5	12.0	13.0	18.5	13.5	15.5
18	---	---	---	11.0	7.5	9.0	16.5	10.5	13.5	18.0	13.5	15.5
19	---	---	---	11.0	8.5	9.5	16.5	11.5	14.0	16.5	14.0	15.0
20	8.5	5.5	7.5	11.5	8.0	10.0	16.0	12.0	14.0	16.5	13.0	15.0
21	9.5	6.5	8.5	11.5	9.0	10.0	16.5	12.0	14.0	17.0	13.0	15.0
22	9.0	6.5	8.0	9.5	8.0	9.0	16.5	12.5	14.0	16.5	12.5	14.5
23	10.0	6.0	8.5	8.5	8.0	8.0	14.5	12.0	13.0	17.5	12.5	15.0
24	9.0	6.5	8.0	8.5	7.5	8.0	16.5	11.5	14.0	18.0	13.0	15.5
25	8.5	6.0	7.5	11.5	7.0	9.5	17.5	12.0	14.5	18.0	13.0	15.5
26	8.5	6.0	7.0	11.0	8.5	9.5	14.5	13.0	13.5	16.0	12.5	14.5
27	9.5	6.0	7.5	13.5	8.5	11.0	17.5	12.0	14.5	15.5	12.5	13.5
28	7.0	5.0	5.5	13.5	9.5	11.0	18.0	12.5	15.0	15.5	12.0	13.5
29	8.5	4.5	6.0	14.0	10.0	12.0	18.0	13.0	15.5	16.0	12.0	14.0
30	7.5	5.0	6.0	12.0	9.5	10.5	17.0	13.5	14.5	17.5	13.0	15.0
31	---	---	---	13.5	8.5	11.0	---	---	---	17.5	14.0	15.5
MONTH	10.0	3.0	7.0	14.0	5.0	9.0	18.0	9.0	13.0	18.5	11.5	14.5

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS--CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN
		AUGUST			SEPTEMBER	
1	17.5	13.5	15.0	19.0	14.5	16.5
2	17.5	13.0	15.0	16.5	14.5	15.5
3	15.0	13.5	14.0	15.0	13.5	14.0
4	17.0	13.0	14.5	18.5	13.5	15.5
5	18.0	13.0	15.5	18.5	15.0	16.5
6	18.5	14.0	16.0	17.0	14.0	15.0
7	17.0	14.0	15.5	15.5	13.0	14.0
8	15.5	13.5	14.5	18.5	13.5	15.5
9	17.5	14.0	15.5	18.0	14.5	16.0
10	18.0	14.5	16.0	17.0	14.0	15.5
11	17.0	13.5	15.5	16.0	12.0	14.0
12	17.5	13.5	15.5	16.0	13.5	14.5
13	17.5	13.0	15.0	15.0	13.5	14.0
14	18.0	13.0	15.5	16.5	13.0	14.5
15	18.0	13.0	15.5	17.5	14.0	15.5
16	16.0	13.0	14.5	18.0	14.5	16.0
17	17.5	12.5	14.5	18.0	14.0	16.0
18	16.0	12.5	14.0	18.0	14.0	16.0
19	17.0	12.0	14.5	15.5	14.0	14.5
20	16.5	13.0	15.0	14.0	12.0	13.0
21	17.5	13.5	15.5	16.0	11.5	13.5
22	15.5	13.5	14.5	17.0	12.5	14.5
23	15.5	12.5	13.5	18.0	14.0	15.5
24	17.5	12.5	15.0	18.5	14.5	16.0
25	16.5	13.5	15.0	18.5	14.0	16.0
26	15.0	14.0	14.5	18.0	14.0	15.5
27	18.0	13.5	15.5	16.5	13.5	15.0
28	17.0	14.0	15.5	17.0	12.5	14.5
29	18.5	14.5	16.5	18.0	14.5	15.5
30	18.5	14.5	16.5	15.5	12.0	14.0
31	19.0	15.0	17.0	---	---	---
MONTH	19.0	12.0	15.0	19.0	11.5	15.0

06132200 SOUTH FORK MILK RIVER NEAR BABB, MT

LOCATION.--Lat 48°45'14", long 113°10'00" (NAD 27), in NE¼NW¼NW¼ sec.34, T.35 N., R.12 W., Glacier County, Hydrologic Unit 10050001, Blackfeet Indian Reservation, on right bank 0.4 mi upstream from bridge on FAS 464 ("Duck Lake Road"), 14.4 mi southeast of Babb, 15.2 mi northwest of Browning, and at river mile 17.3.

DRAINAGE AREA.--70.4 mi^2.

PERIOD OF RECORD.--May 1961 to current season (seasonal records only).

REVISED RECORDS.--W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,731.6 ft (NGVD 29).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Many small diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e7.5	27	66	25	42	6.3	6.7	8.3		
2			e7.0	21	50	23	32	7.1	6.5	6.3		
3			e7.0	19	50	21	25	8.5	6.6	6.8		
4			e7.0	23	56	20	27	8.5	6.1	7.4		
5			e7.4	25	39	20	44	7.5	5.9	7.2		
6			e7.8	23	31	21	33	6.4	5.7	6.9		
7			e8.0	22	28	27	26	7.1	5.7	5.9		
8			e11	22	21	34	24	9.0	6.3	6.3		
9			e12	28	19	30	22	9.7	6.1	7.1		
10			e11	26	18	31	18	9.7	5.4	6.2		
11			e12	22	25	29	17	8.3	5.6	6.6		
12			e13	20	33	25	15	7.6	5.1	6.3		
13			e12	18	34	22	13	6.2	5.8	7.0		
14			e14	22	37	21	12	6.1	7.5	7.0		
15			e13	27	59	22	11	5.3	7.1	12		
16			e15	30	68	23	11	5.2	6.6	20		
17			e14	33	48	32	10	5.8	6.8	17		
18			e15	31	39	30	8.6	21	7.0	15		
19			e15	25	31	25	8.5	21	6.7	13		
20			e13	19	27	22	8.6	14	7.9	11		
21			e14	15	39	24	8.6	21	8.8	8.9		
22			e14	14	60	23	9.2	21	8.1	10		
23			e14	14	86	20	9.2	17	7.3	10		
24			e15	12	74	33	8.1	21	6.8	9.3		
25			e15	11	66	29	7.4	14	6.4	8.9		
26			e20	10	51	27	6.7	12	6.4	8.5		
27			e17	10	43	31	6.4	12	6.5	8.7		
28			14	18	37	26	6.6	11	6.5	9.1		
29			18	34	33	22	7.5	9.4	5.6	9.8		
30			20	50	29	35	7.5	8.2	6.7	10		
31			26	---	26	---	6.6	7.6	---	10		
TOTAL			408.7	671	1,323	773	491.5	334.5	196.2	286.5		
MEAN			13.2	22.4	42.7	25.8	15.9	10.8	6.54	9.24		
MAX			26	50	86	35	44	21	8.8	20		
MIN			7.0	10	18	20	6.4	5.2	5.1	5.9		
AC-FT			811	1,330	2,620	1,530	975	663	389	568		

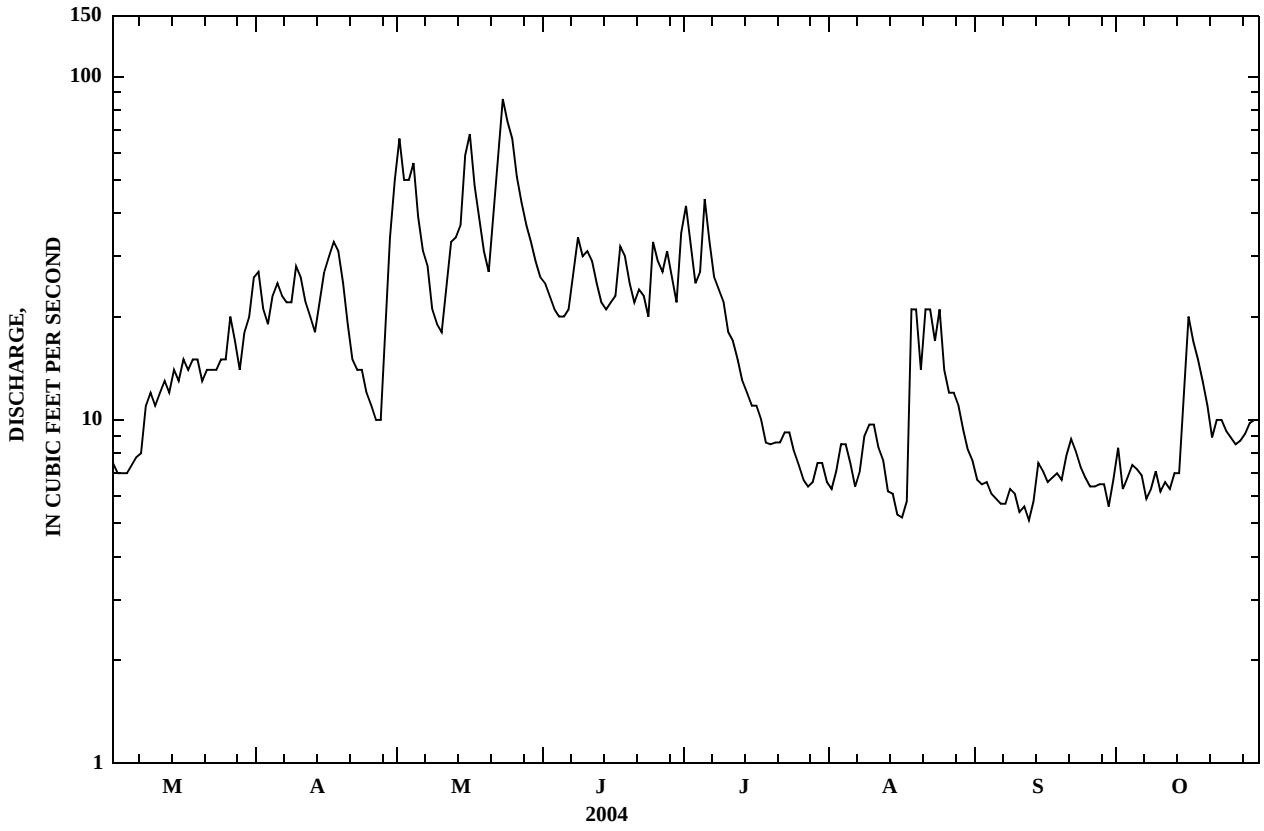
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1961 - 2004

MEAN	46.0	31.6	65.3	85.6	89.3	36.6	17.2	14.8	16.4
MAX	46.0	136	153	239	465	96.6	42.6	43.8	37.0
(WY)	(1963)	(1972)	(1969)	(1967)	(1975)	(1975)	(1993)	(1993)	(1986)
MIN	46.0	5.76	20.7	10.2	0.89	0.00	0.38	0.22	5.07
(WY)	(1963)	(2001)	(1984)	(1977)	(1977)	(1977)	(2001)	(2001)	(1964)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1961 - 2004	
HIGHEST DAILY MEAN	86	May 23	5,590	Jun 20, 1975
LOWEST DAILY MEAN	5.1	Sep 12	0.00	Aug 23, 1973
MAXIMUM PEAK FLOW	a108	May 1	c12,000	Jun 8, 1964
MAXIMUM PEAK STAGE	b3.43	Mar 9	7.17	Feb 24, 1986
INSTANTANEOUS LOW FLOW			0.00	Aug 23, 1973

a--Gage height, 3.23 ft.
b--Backwater from ice.
c--Gage height, 6.61 ft, from rating curve extended above 400 ft^3/s, on basis of slope-area measurement of peak flow.
e--Estimated.

06132200 SOUTH FORK MILK RIVER NEAR BABB, MT—Continued



06133000 MILK RIVER AT WESTERN CROSSING OF INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 49°00'27", long 112°32'42" (NAD 27), in NE¼ sec.1, T.1, R.20 W., fourth meridian, in Alberta, Hydrologic Unit 10050001, on left bank 0.8 mi north of international boundary, 22 mi upstream from North Milk River, 23 mi southwest of Milk River, Alberta, and at river mile 656.4.

DRAINAGE AREA.--401 mi^2.

PERIOD OF RECORD.--March 1931 to current season (seasonal records only). Prior to October 1961, published as South Fork Milk River near international boundary.

REVISED RECORDS.--WSP 1389: 1934(M), 1935, 1936(M), 1937, 1942(M), 1947-48(M). W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,820 ft (NGVD 29). Prior to Aug. 9, 1948, and Aug. 9, 1948, to Oct. 31, 1958, water-stage recorders at sites 0.4 mi and 0.5 mi downstream, respectively, at different elevations.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Several diversions for irrigation upstream from station. Environment Canada satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e23	45	80	53	44	0.18	7.7	3.9		
2			e23	53	100	47	39	0.11	7.0	3.7		
3			e22	52	108	43	51	0.04	5.0	4.8		
4			e21	47	100	39	45	0.11	4.2	5.4		
5			e23	45	97	35	33	0.04	3.4	5.5		
6			e27	47	87	38	25	0.11	2.9	6.4		
7			e33	48	70	36	42	0.42	2.6	6.6		
8			e39	48	59	39	42	0.49	2.4	6.5		
9			e40	48	51	49	30	0.46	2.0	6.1		
10			e42	49	44	63	23	0.57	1.7	5.8		
11			e99	52	53	58	22	0.57	1.4	5.9		
12			e90	49	59	52	16	0.35	1.1	5.6		
13			e87	45	69	46	13	0.21	1.1	6.1		
14			e85	43	81	38	13	0.07	1.1	7.4		
15			e83	44	93	32	11	0.00	0.92	13		
16			e81	51	123	32	9.0	0.00	0.85	12		
17			e77	57	126	47	7.3	0.00	0.74	15		
18			e71	60	109	64	5.7	0.00	0.60	24		
19			e67	58	89	69	4.4	0.00	0.60	30		
20			e64	53	76	58	3.5	0.00	1.2	29		
21			e61	46	79	49	2.6	0.00	6.0	26		
22			e60	41	80	40	6.0	0.00	5.3	23		
23			58	35	131	37	3.6	0.00	4.6	21		
24			53	33	183	36	2.2	0.00	4.3	e22		
25			55	31	167	32	1.6	18	5.3	e23		
26			61	29	125	44	1.2	21	5.8	e23		
27			61	27	109	50	0.78	21	5.6	e23		
28			50	33	91	43	0.60	17	4.8	e23		
29			44	38	79	42	0.53	13	4.5	e23		
30			36	53	70	39	0.39	10	4.2	e22		
31			40	---	59	---	0.25	8.5	---	e21		
TOTAL			1,676	1,360	2,847	1,350	498.65	112.23	98.91	452.7		
MEAN			54.1	45.3	91.8	45.0	16.1	3.62	3.30	14.6		
MAX			99	60	183	69	51	21	7.7	30		
MIN			21	27	44	32	0.25	0.00	0.60	3.7		
AC-FT			3,320	2,700	5,650	2,680	989	223	196	898		

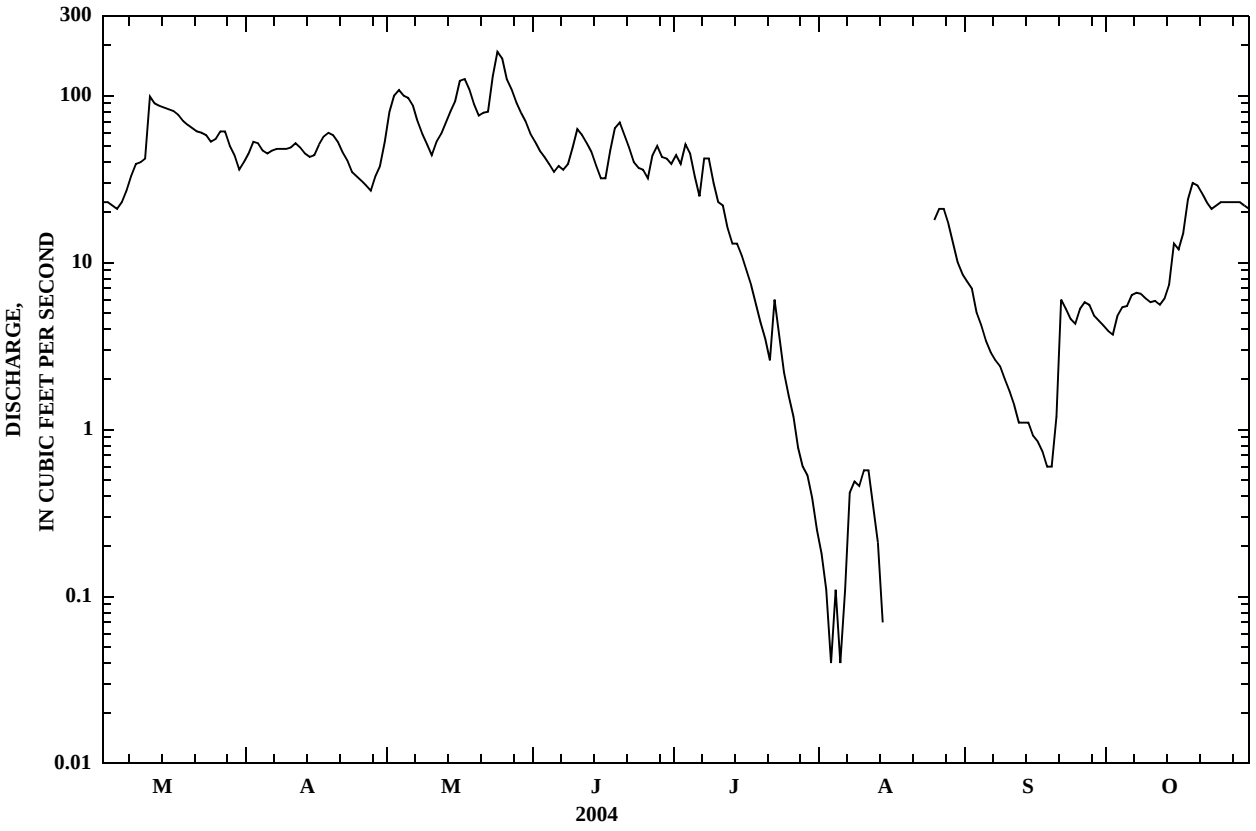
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1931 - 2004

MEAN	104	206	206	179	57.5	20.3	20.4	24.9
MAX	717	615	679	907	348	142	168	133
(WY)	(1972)	(1969)	(1967)	(2002)	(1951)	(1951)	(1951)	(1952)
MIN	1.95	41.5	13.3	3.07	0.01	0.00	0.00	0.00
(WY)	(2002)	(1941)	(1941)	(1977)	(1977)	(1939)	(1939)	(1964)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1931 - 2004	
HIGHEST DAILY MEAN	183	May 24	5,410	Jun 9, 1964
LOWEST DAILY MEAN	0.00	Aug 15	0.00	Jul 31, 1931
MAXIMUM PEAK FLOW	a188	May 24	c7,930	Jun 9, 1964
MAXIMUM PEAK STAGE	b6.43	Mar 04	b12.55	Mar 18, 1976

a--Gage height, 3.16 ft.
b--Backwater from ice.
c--Gage height, 9.77 ft.
e--Estimated.

06133000 MILK RIVER AT WESTERN CROSSING OF INTERNATIONAL BOUNDARY—Continued



06133500 NORTH FORK MILK RIVER ABOVE ST. MARY CANAL, NEAR BROWNING, MT
(International gaging station)

LOCATION.--Lat 48°57'48", long 113°03'43" (NAD 27), in NE¼NE¼SW¼ sec.16, T.37 N., R.11 W., Glacier County, Hydrologic Unit 10050001, Blackfeet Indian Reservation, on left bank 2.3 mi upstream from outlet of canal, 2.3 mi south of international boundary, 29 mi north of Browning, and at river mile 58.3.

DRAINAGE AREA.--59.0 mi^2.

PERIOD OF RECORD.--May 1911 to July 1912 and June to July 1918 (published as "near Browning"), May 1919 to current season (seasonal records only). Monthly discharge only for some periods published in WSP 1309.

REVISED RECORDS.--W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,240 ft (NGVD 29). Prior to June 20, 1921, nonrecording gages at several sites within 1 mi of present site at different elevations. June 20, 1921 to Mar. 19, 1997 water-stage recorder at site 0.5 mile downstream from current site at elevation 15 ft lower.

REMARKS.--Records fair. Many small diversions for irrigation upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e15	15	23	11	15	7.7	9.3	11		
2			e13	16	21	11	12	8.6	10	10		
3			e14	17	19	11	12	9.0	10	10		
4			e15	17	17	11	12	8.8	10	9.9		
5			e15	18	16	10	17	8.0	10	9.7		
6			e17	18	16	13	14	7.6	10	9.3		
7			e18	17	14	15	12	8.5	11	9.5		
8			e20	17	13	15	12	9.6	13	9.6		
9			e20	17	13	12	11	10	12	9.6		
10			e18	17	12	13	10	9.8	13	9.2		
11			17	17	17	12	10	9.2	12	9.4		
12			16	16	17	11	9.6	8.4	11	8.5		
13			15	16	17	11	9.4	7.8	12	9.2		
14			14	17	19	10	9.0	7.3	15	9.5		
15			13	18	23	11	8.7	7.2	13	13		
16			13	18	20	11	8.1	7.2	12	12		
17			13	18	16	29	8.0	7.4	13	13		
18			13	18	14	16	8.0	10	12	11		
19			12	17	13	13	8.0	11	12	11		
20			10	15	14	13	8.1	14	13	10		
21			11	15	16	15	8.6	13	13	10		
22			10	15	21	13	9.6	19	12	10		
23			9.9	15	31	12	9.4	16	11	9.8		
24			10	14	26	12	8.9	16	11	9.5		
25			9.1	14	23	13	8.3	12	10	e9.0		
26			8.7	14	18	13	8.4	13	9.9	8.7		
27			7.8	14	15	13	8.0	13	10	8.5		
28			7.2	21	13	12	8.2	11	10	8.5		
29			7.2	18	13	12	8.6	9.7	10	8.4		
30			10	21	12	15	8.1	9.3	11	8.4		
31			12	---	12	---	7.4	8.8	---	8.2		
TOTAL			403.9	500	534	389	307.4	317.9	341.2	303.4		
MEAN			13.0	16.7	17.2	13.0	9.92	10.3	11.4	9.79		
MAX			20	21	31	29	17	19	15	13		
MIN			7.2	14	12	10	7.4	7.2	9.3	8.2		
AC-FT			801	992	1,060	772	610	631	677	602		

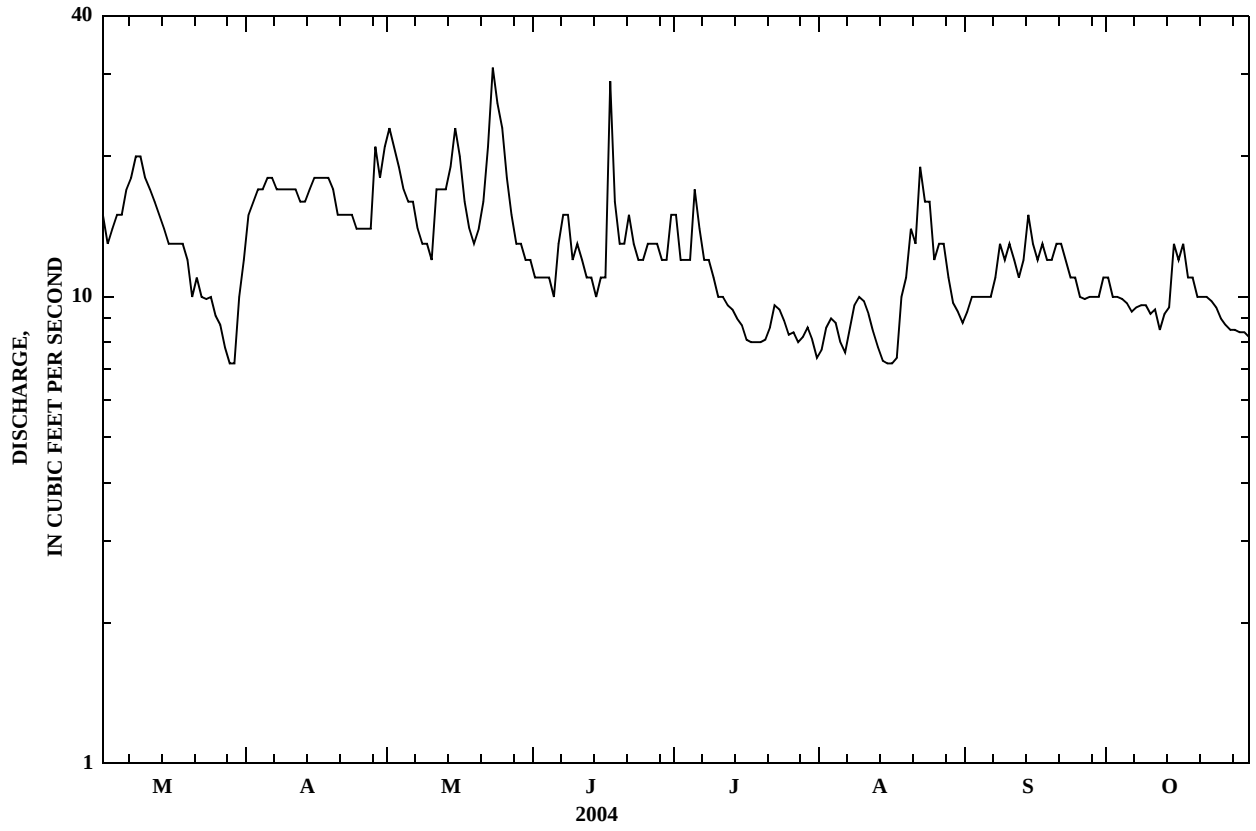
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1911 - 2004*

MEAN	23.9	37.5	34.0	30.1	19.6	16.5	18.2	17.7
MAX	72.1	167	164	147	101	65.5	86.8	55.0
(WY)	(1997)	(1948)	(1967)	(1995)	(1995)	(1951)	(1911)	(1996)
MIN	8.14	9.47	7.14	6.95	4.12	3.30	3.90	4.95
(WY)	(2001)	(2002)	(1941)	(1988)	(1985)	(1940)	(1940)	(1941)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1911 - 2004*	
HIGHEST DAILY MEAN	31	Jun 23	1,320	Apr 22, 1953
LOWEST DAILY MEAN	7.2	Mar 28	1.7	Sep 17, 1940
MAXIMUM PEAK FLOW	a44	Jun 17	c3,090	May 8, 1967
MAXIMUM PEAK STAGE	b3.31	Mar 7	d10.50	Mar 19, 1997

*--During periods of operation (May 1911 to July 1912, June to July 1918, May 1919 to current season).
a--Gag height, 2.84 ft.
b--Backwater from ice.
c--Gage height, 7.95 ft, from rating curve extended above 130 ft^3/s, on basis of slope-area measurements at gage heights 7.55 ft and 7.95 ft, at previous site and datum.
d--Backwater from ice, gage height, 9.07 ft, from floodmarks at previous site, which was destroyed.
e--Estimated.

06133500 NORTH FORK MILK RIVER ABOVE ST. MARY CANAL, NEAR BROWNING, MT—Continued



06134000 NORTH MILK RIVER NEAR INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 49°01'19", long 112°58'16" (NAD 27), in SW$^1/_4$NE$^1/_4$ sec.11, T.1, R.23 W., fourth meridian, in Alberta, Hydrologic Unit 10050001, on right bank 0.4 mi upstream from highway bridge, 1.6 mi north of international boundary, 2.8 mi east of Whiskey Gap, Alberta, 11 mi southeast of Kimball, Alberta, and at river mile 49.9.

DRAINAGE AREA.--91.8 mi^2. Area at site used Apr. 12, 1930, to Aug. 15, 1962, 97.4 mi^2.

PERIOD OF RECORD.--July 1909 to October 1912 (seasonal records only), January 1913 to October 1922, March 1923 to current season (seasonal records only). Records for November and December 1912, published in WSP 1309, have been found to be unreliable and should not be used. Published as "near Kimball, Alberta" 1913-16. Prior to February 1962, published as North Fork Milk River near international boundary.

REVISED RECORDS.--WSP 1309: 1909-13, 1915(M), 1920(M), 1937(M). WSP 1559: 1948(M). WSP 1729: 1944(M). W 1983: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Elevation of gage is 4,112.16 ft, Canadian Geodetic Vertical Datum 1928. Prior to May 1913, nonrecording gage at site 2 mi downstream at different elevation. May 1, 1913, to Apr. 11, 1930, water-stage recorder 700 ft downstream at different elevation. Apr. 12, 1930, to Aug. 15, 1962, water-stage recorder 1,500 ft downstream at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since 1917, flow increased during irrigation season by water from St. Mary Canal (station number 05018500). Several small diversions for irrigation upstream from station. Water Survey of Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e16	93	519	523	622	494	576	9.2		
2			e16	133	523	526	614	516	569	8.7		
3			e16	211	512	565	614	530	561	8.5		
4			e16	339	519	597	618	537	561	8.3		
5			e16	406	551	607	618	544	558	8.3		
6			e16	420	579	614	614	544	554	8.2		
7			e20	420	576	622	611	551	554	8.2		
8			e23	420	576	622	579	554	551	8.1		
9			e30	424	561	618	544	554	558	8.1		
10			e30	424	558	618	540	551	569	8.0		
11			e31	424	579	614	540	540	572	7.9		
12			e27	427	576	604	526	540	565	7.9		
13			e25	441	561	604	523	551	572	8.2		
14			e23	470	558	597	519	554	554	9.2		
15			e22	470	558	593	519	558	487	12		
16			e21	477	544	604	519	554	403	12		
17			e20	491	533	625	516	551	334	11		
18			e21	516	526	597	516	558	304	11		
19			e20	523	526	607	516	551	227	10		
20			e21	533	533	607	509	544	148	10		
21			e21	554	526	604	509	551	96	10		
22			e21	558	565	600	477	558	43	9.9		
23			e21	561	618	600	261	551	21	9.6		
24			e20	551	600	607	111	554	16	e9.2		
25			e20	551	583	611	37	558	15	e8.8		
26			e20	554	572	614	20	565	14	e8.1		
27			e20	561	569	614	19	572	11	e7.4		
28			e20	551	569	618	17	579	9.8	e6.8		
29			20	512	551	622	173	586	11	e6.5		
30			20	516	523	625	427	583	10	e6.4		
31			21	---	523	---	473	579	---	e6.2		
TOTAL			654	13,531	17,167	18,079	13,701	17,112	10,023.8	271.7		
MEAN			21.1	451	554	603	442	552	334	8.76		
MAX			31	561	618	625	622	586	576	12		
MIN			16	93	512	523	17	494	9.8	6.2		
AC-FT			1,300	26,840	34,050	35,860	27,180	33,940	19,880	539		

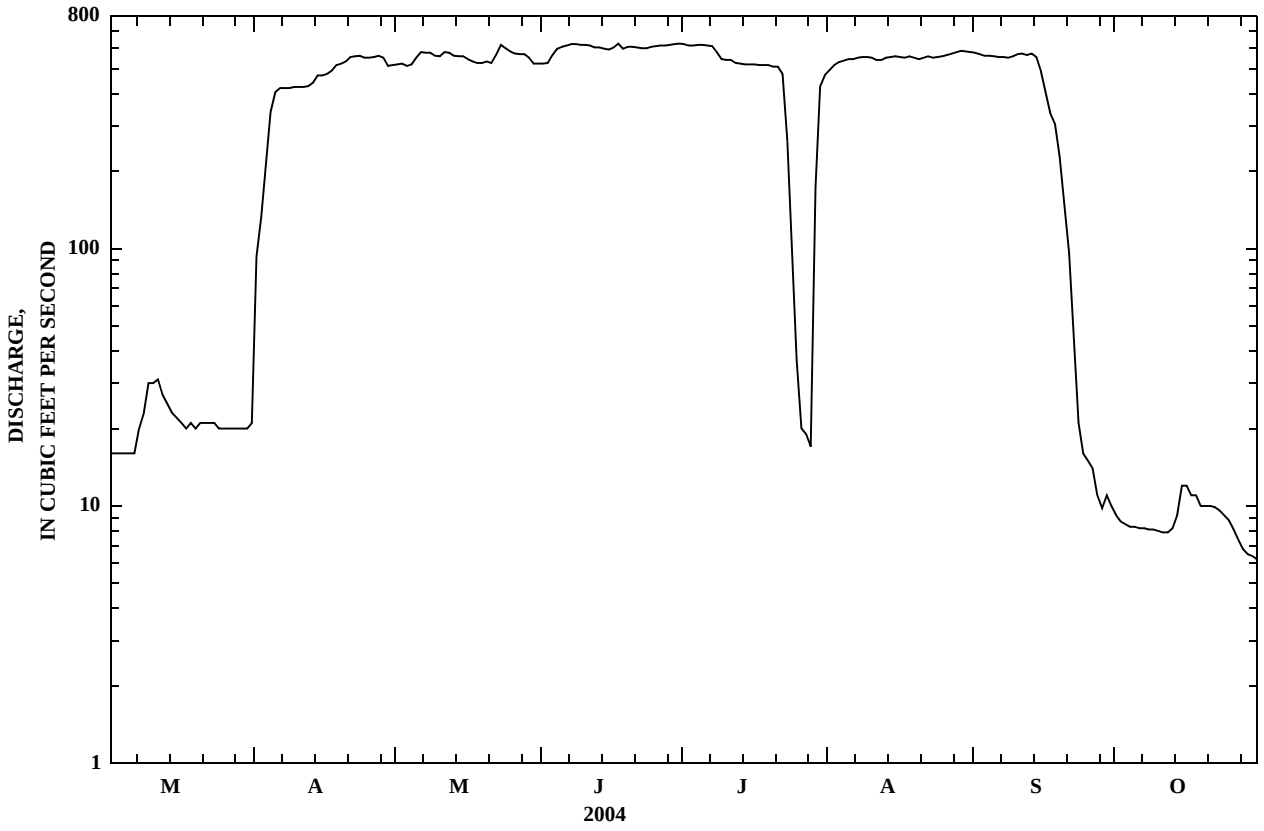
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1917 - 2004

MEAN	65.8	197	424	522	558	529	308	58.5
MAX	402	633	732	745	727	721	702	524
(WY)	(1981)	(1991)	(2001)	(1976)	(1936)	(1969)	(2002)	(1951)
MIN	9.67	23.6	38.6	43.5	84.3	16.0	5.57	6.06
(WY)	(2002)	(1940)	(1918)	(1952)	(2002)	(1982)	(1988)	(1942)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1917 - 2004	
HIGHEST DAILY MEAN	625	Jun 30	2,170	June 7, 1995
LOWEST DAILY MEAN	6.2	Oct 31	0.00	Mar 1, 1940
MAXIMUM PEAK FLOW	657	Jun 5	a3,670	Jun 6, 1995
MAXIMUM PEAK STAGE	3.22	Jun 5	6.89	Jun 6, 1995

a--From rating curve extended above 1,500 ft^3/s.
e--Estimated.

06134000 NORTH MILK RIVER NEAR INTERNATIONAL BOUNDARY—Continued



06134500 MILK RIVER AT MILK RIVER, ALBERTA
(International gaging station)

LOCATION.--Lat 49°08'37", long 112°04'44" (NAD 27), in NE¼ sec.21, T.2, R.16 W., fourth meridian, in Alberta, Hydrologic Unit 10050002, on right bank 5 ft downstream from highway bridge at Milk River, Alberta, 22 mi downstream from North Milk River, and at river mile 613.4.

DRAINAGE AREA.--1,050 mi^2.

PERIOD OF RECORD.--June 1909 to October 1910 (no winter records), April 1911 to current year. Monthly discharge only for June 1909, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1912. WSP 1599: 1916, 1927(M), 1947(M). W 1983: Drainage area. W 1984: 1983 (M).

GAGE.--Water-stage recorder. Elevation of gage is 3,402.78 ft, Canadian Geodetic Vertical Datum 1928. Prior to June 17, 1919, nonrecording gages, and June 17, 1919, to Nov. 2, 1921, water-stage recorder at several sites 300 ft upstream at elevation 0.61 ft higher. Nov. 3, 1921, to Aug. 28, 1947, water-stage recorder at site 60 ft upstream at present elevation. Aug. 29, 1947, to Nov. 10, 1976, water-stage recorder located 700 ft downstream on left bank at present elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since 1917, flow increased during irrigation season by water from St. Mary Canal (station number 05018500). Several diversions for irrigation upstream from station. Environment Canada satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	e14	e37	e7.8	e9.1	e41	63	586	604	706	480	604
2	25	e16	e38	e7.7	e9.3	e41	67	611	597	692	505	593
3	23	e17	e37	e7.1	e9.7	e40	150	625	590	671	526	593
4	23	e19	e38	e6.2	e10	e40	232	625	622	685	544	586
5	23	e19	e37	e5.3	e11	e41	374	622	650	692	551	579
6	21	e19	e34	e4.6	e11	e62	456	653	682	678	551	576
7	21	e18	e31	e4.1	e12	e102	473	664	685	664	576	576
8	20	e18	e28	e4.2	e13	e155	487	653	689	678	579	579
9	19	e17	e25	e5.5	e14	e221	494	639	678	643	554	572
10	18	e17	e22	e6.7	e15	e215	487	629	696	604	540	579
11	18	e19	e21	e6.5	e15	e208	487	667	703	597	533	586
12	18	e22	e22	e6.4	e15	e184	484	678	685	583	530	593
13	18	e22	e25	e6.5	e15	e168	484	675	664	561	526	597
14	19	e23	e27	e7.1	e15	e152	505	671	650	558	526	600
15	20	e24	e29	e9.5	e16	e136	530	682	636	558	523	583
16	21	e31	e29	e12	e17	e124	533	692	639	558	526	530
17	20	e34	e29	e13	e19	e117	544	713	660	554	523	448
18	19	e36	e30	e13	e20	e109	565	699	675	554	523	381
19	18	e38	e29	e12	e23	e104	583	675	667	551	519	352
20	17	e38	e29	e12	e26	e100	579	660	675	544	526	298
21	17	e35	e29	e12	e30	e96	593	699	664	537	547	215
22	17	e34	e29	e12	e34	e102	604	692	653	544	565	167
23	17	e32	e29	e13	e36	e106	600	759	653	512	572	110
24	16	e34	e29	e12	e40	106	597	833	646	324	561	77
25	16	e35	e28	e11	e42	95	590	830	646	180	572	59
26	17	e35	e25	e9.9	e42	91	590	773	653	103	593	48
27	16	e35	e20	e9.1	e42	92	586	731	667	66	600	41
28	17	e36	e15	e8.8	e42	89	636	703	667	44	607	39
29	e15	e38	e13	e8.8	e41	77	607	689	664	30	604	36
30	e14	e37	e10	e8.8	---	72	572	671	678	23	607	34
31	e14	---	e8.5	e8.9	---	64	---	614	---	388	607	---
TOTAL	582	812	832.5	271.5	644.1	3,350	14,552	21,113	19,738	15,082	17,096	11,631
MEAN	18.8	27.1	26.9	8.76	22.2	108	485	681	658	487	551	388
MAX	25	38	38	13	42	221	636	833	703	706	607	604
MIN	14	14	8.5	4.1	9.1	40	63	586	590	23	480	34
AC-FT	1,150	1,610	1,650	539	1,280	6,640	28,860	41,880	39,150	29,920	33,910	23,070

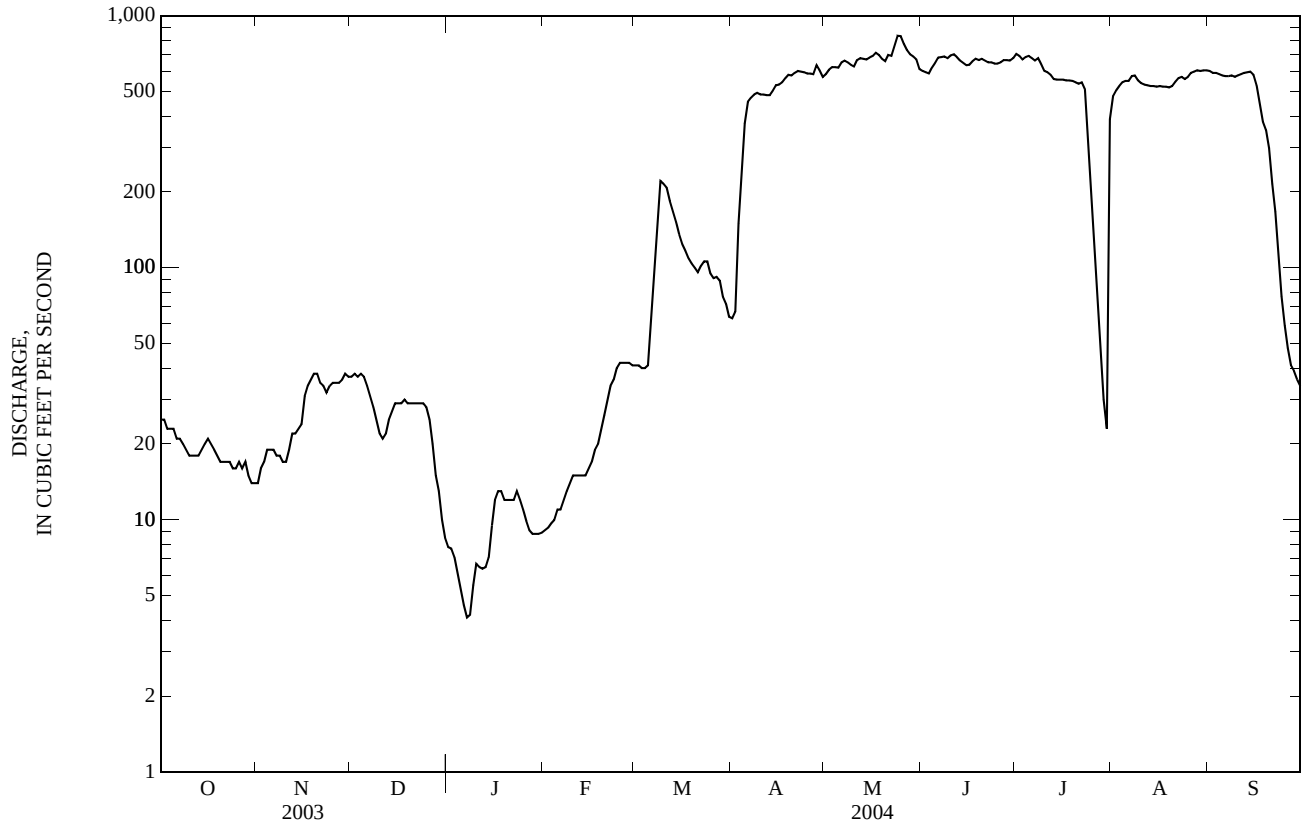
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 2004, BY WATER YEAR (WY)*

MEAN	102	56.6	33.9	30.3	61.1	228	496	659	719	615	552	352
MAX	555	216	133	268	616	1,025	1,384	1,179	1,633	965	795	713
(WY)	(1951)	(1952)	(1952)	(1928)	(1986)	(1972)	(1917)	(1967)	(1953)	(1951)	(1976)	(1959)
MIN	7.83	8.74	2.06	0.00	0.00	3.44	94.5	236	162	192	29.2	3.65
(WY)	(1989)	(2002)	(1923)	(1923)	(1922)	(1922)	(1945)	(1918)	(1952)	(2002)	(1982)	(2001)

06134500 MILK RIVER AT MILK RIVER, ALBERTA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1917 - 2004*	
ANNUAL TOTAL	113,414.5		105,704.1			
ANNUAL MEAN	311		289		326	
HIGHEST ANNUAL MEAN					489	1953
LOWEST ANNUAL MEAN					157	1921
HIGHEST DAILY MEAN	2,650	Mar 16	833	May 24	7,840	Jun 11, 2002
LOWEST DAILY MEAN	8.5	Dec 31	4.1	Jan 7	0.00	Jan 19, 1922
ANNUAL SEVEN-DAY MINIMUM	15	Oct 27	5.2	Jan 4	0.00	Jan 19, 1922
MAXIMUM PEAK FLOW			858	May 24	9,850	Feb 25, 1986
MAXIMUM PEAK STAGE			3.28	May 24	a12.46	Feb 25, 1986
ANNUAL RUNOFF (AC-FT)	225,000		209,700		236,500	
10 PERCENT EXCEEDS	682		667		739	
50 PERCENT EXCEEDS	168		104		158	
90 PERCENT EXCEEDS	20		12		13	

*--Flow increased during irrigation season by water from St. Mary Canal since 1917.
a--From floodmarks, backwater from ice.
e--Estimated.



06134700 VERDIGRIS COULEE NEAR THE MOUTH, NEAR MILK RIVER, ALBERTA
(International gaging station)

LOCATION.--Lat 49°06'39", long 111°45'31" (NAD 27), in NW$^1/_4$ sec.12, T.2, R.14 W., fourth meridian, in Alberta, Hydrologic Unit 10050002, on left bank, 0.6 mi upstream from mouth, 5 mi downstream from culvert on provincial highway 501, and 15 mi east of Milk River, Alberta.

DRAINAGE AREA.--137 mi^2, of which 130 mi^2 is probably noncontributing.

PERIOD OF RECORD.--May 1985 to current season (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 3,040 ft (NGVD 29).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Nearly all flow is the result of interbasin diversion from St. Mary River into Weston Lake 25 miles upstream. Environment Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2			e0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
3			e0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
4			e0.04	0.00	0.00	0.00	0.14	0.00	0.00	0.00		
5			e0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
6			e0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
7			e0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8			e0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
9			e0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10			e0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
11			e0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
12			e0.11	0.00	0.28	0.00	0.00	0.00	0.00	0.00		
13			e0.11	0.00	0.21	0.00	0.00	0.00	0.00	0.00		
14			e0.11	0.00	0.07	0.00	0.00	0.00	0.00	0.00		
15			e0.07	0.00	0.04	0.00	0.00	0.00	0.00	0.00		
16			e0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
17			e0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18			e0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19			e0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20			0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
21			0.04	0.00	0.00	0.00	0.00	0.00	0.04	0.00		
22			0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23			0.04	0.00	1.3	0.00	0.00	0.00	0.00	0.00		
24			0.04	0.00	0.53	0.00	0.00	0.00	0.00	0.00		
25			0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00		
26			0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00		
27			0.00	0.00	0.04	0.00	0.00	0.00	0.00	e0.00		
28			0.00	0.00	0.04	0.00	0.00	0.00	0.00	e0.00		
29			0.00	0.00	0.04	0.00	0.00	0.00	0.00	e0.00		
30			0.00	0.00	0.07	0.00	0.00	0.00	0.00	e0.00		
31			0.00	---	0.04	---	0.00	0.00	---	e0.00		
TOTAL			2.17	0.00	2.95	0.00	0.14	0.00	0.04	0.00		
MEAN			0.07	0.00	0.10	0.00	0.00	0.00	0.00	0.00		
MAX			0.21	0.00	1.3	0.00	0.14	0.00	0.04	0.00		
MIN			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT			4.3	0.00	5.9	0.00	0.3	0.00	0.08	0.00		

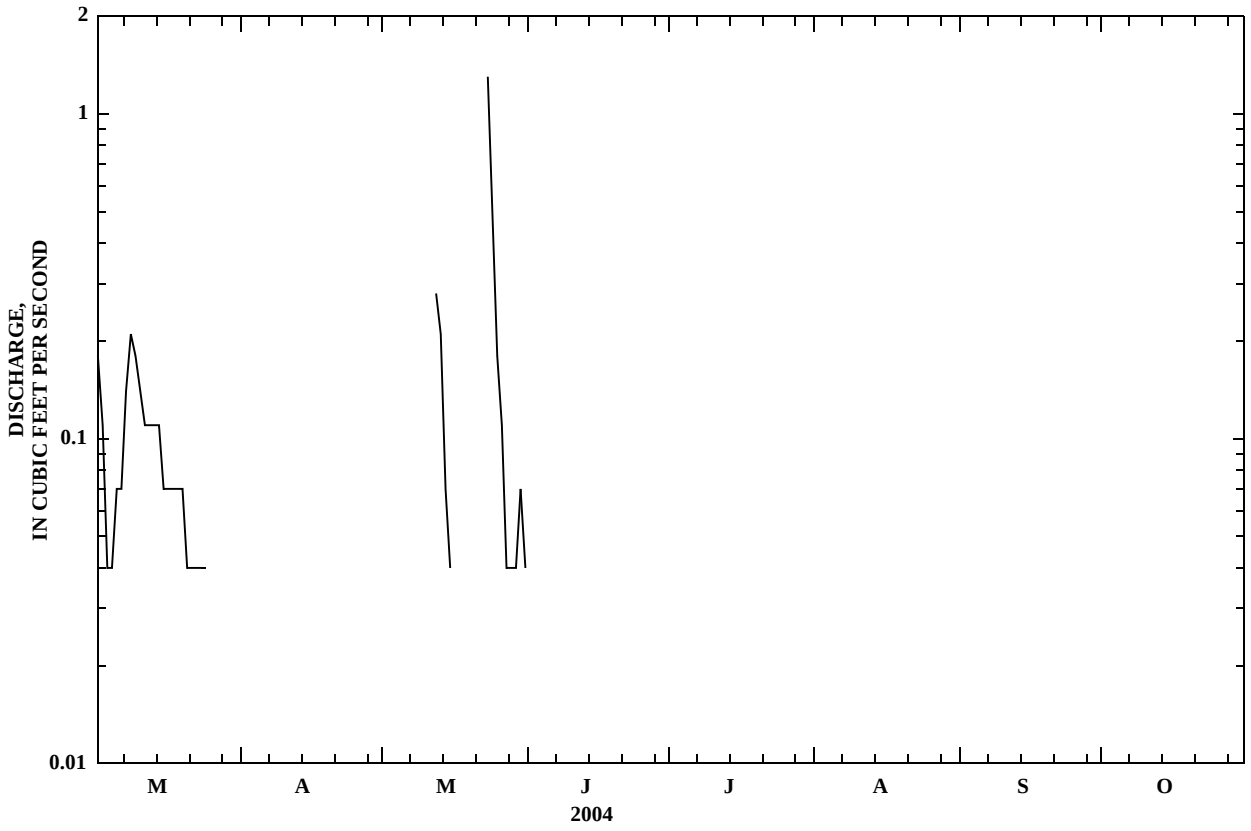
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1985 - 2004

MEAN	5.53	5.73	6.26	7.09	4.91	5.66	6.53	5.94
MAX	43.9	29.6	20.8	18.1	16.4	24.1	25.5	26.2
(WY)	(1996)	(1996)	(1994)	(1989)	(1991)	(1993)	(1985)	(1986)
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(2001)	(2004)	(1998)	(2000)	(1999)	(1998)	(1999)	(2000)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1985-2004	
HIGHEST DAILY MEAN	1.3	May 23	264	Mar 11, 1996
LOWEST DAILY MEAN	0.00	many day	0.00	Nov 19, 1985
MAXIMUM PEAK FLOW	2.44	May 23	a280	Mar 11, 1996
MAXIMUM PEAK STAGE	3.48	May 23	6.51	Mar 2, 1994

a--About, gage height not determined (backwater from ice).
e--Estimated.

06134700 VERDIGRIS COULEE NEAR THE MOUTH, NEAR MILK RIVER, ALBERTA—Continued



06135000 MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 48°58'30", long 110°25'19" (NAD 27), in NW¼SW¼SE¼ sec.9, T.37 N., R.9 E., Hill County, Hydrologic Unit 10050002, on left bank 1.6 mi south of international boundary, 1.7 mi upstream from Lost River, 10 mi northwest of Simpson, 35.5 mi north of Rudyard, and at river mile 479.6.
DRAINAGE AREA.--2,506 mi^2.
PERIOD OF RECORD.--August 1909 to current season (seasonal records only). A few winter records were collected and are on file in the Helena District office. Monthly discharge only for April 1912, published in WSP 1309.
REVISED RECORDS.--WSP 1086: 1927, 1935. WSP 1559: 1920(M), 1922(M), 1926, 1928(M), 1929, 1930(M), 1932(M). WSP 1729: 1912-13, 1921-22, 1929(M). WRD MT-94-1(M). W 1983: Drainage area. WRD MT-98-1: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 2,660 ft (NGVD 29). Prior to Mar. 1, 1998, water-stage recorder or nonrecording gages at several sites within 15 mi upstream at different elevation.
REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since 1917, flow increased during irrigation season by water from St. Mary Canal (station number 05018500). Many diversions for irrigation upstream from station. Bureau of Reclamation satellite telemeter at station.
COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e110	97	626	584	686	113	616	82		
2			e110	96	591	644	673	97	628	75		
3			e100	92	562	683	684	86	611	68		
4			e100	88	575	798	690	342	598	62		
5			e100	80	591	715	720	455	581	58		
6			e110	74	603	765	660	467	591	55		
7			e150	86	569	729	671	513	591	52		
8			e400	215	561	749	677	555	585	47		
9			e800	396	579	732	637	560	593	44		
10			e691	425	591	785	599	579	596	41		
11			e478	423	611	734	591	586	589	38		
12			e396	421	685	749	552	580	586	36		
13			e351	419	705	736	518	585	592	35		
14			e290	418	640	734	493	550	616	34		
15			e270	399	618	700	489	543	620	35		
16			e255	411	602	709	540	534	593	39		
17			240	432	600	720	552	531	582	43		
18			205	464	619	666	494	525	569	46		
19			195	469	646	618	479	518	524	46		
20			165	495	654	647	471	513	496	48		
21			136	510	660	711	463	527	416	49		
22			125	535	674	704	443	546	385	51		
23			126	544	855	624	437	692	328	51		
24			114	557	870	618	440	823	265	49		
25			106	585	723	603	444	591	239	49		
26			115	557	801	607	427	567	200	52		
27			116	544	857	607	e300	604	158	52		
28			105	547	810	599	e230	660	129	52		
29			100	568	668	616	184	613	110	50		
30			95	597	771	646	161	596	95	48		
31			95	---	618	---	132	611	---	45		
TOTAL			6,749	11,544	20,535	20,532	15,537	16,062	14,082	1,532		
MEAN			218	385	662	684	501	518	469	49.4		
MAX			800	597	870	798	720	823	628	82		
MIN			95	74	561	584	132	86	95	34		
AC-FT			13,390	22,900	40,730	40,730	30,820	31,860	27,930	3,040		

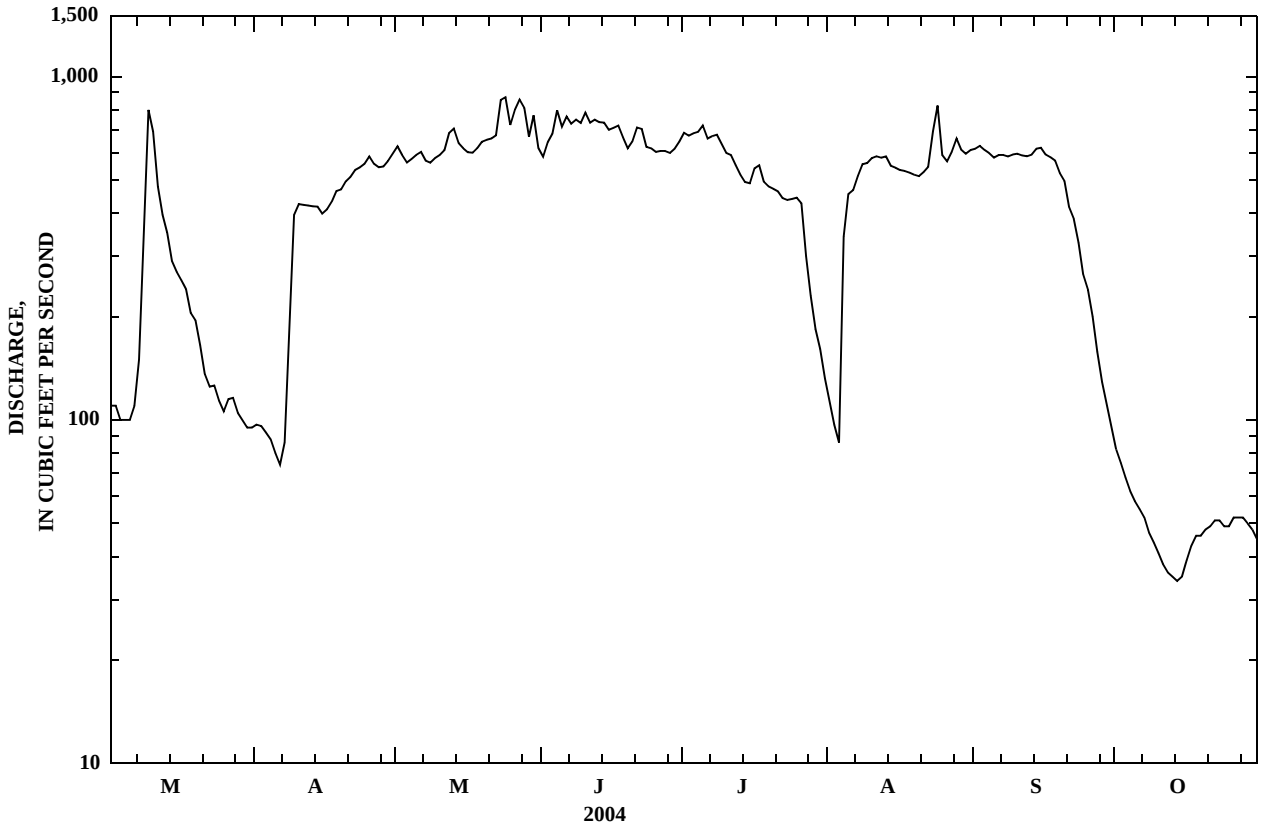
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1917 - 2004*

MEAN	372	564	711	780	617	543	382	126
MAX	1,522	1,691	1,943	2,561	1,046	886	740	566
(WY)	(1978)	(1965)	(1927)	(2002)	(1951)	(1927)	(1972)	(1990)
MIN	9.88	80.1	257	200	262	77.4	2.21	0.16
(WY)	(2002)	(1945)	(1918)	(1952)	(1977)	(1982)	(2001)	(2002)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1917 - 2004*	
HIGHEST DAILY MEAN	870	May 24	12,400	Jun 12, 2002
LOWEST DAILY MEAN	34	Oct. 14	0.00	Feb 1, 1922
MAXIMUM PEAK FLOW	a1,140	May 23	c14,440	Jun 12, 2002
MAXIMUM PEAK STAGE	b5.03	Mar 8	15.03	Mar 13, 1996

*--Flow increased during irrigation season by water from St. Mary Canal since 1917.
a--Gage height, 4.23 ft.
b--Backwater from ice.
c--Gage height, 10.78 ft, from floodmarks.
e--Estimated.

06135000 MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY—Continued



06137400 BIG SANDY CREEK AT RESERVATION BOUNDARY, NEAR ROCKY BOY, MT

LOCATION.--Lat 48°10'27", long 109°49'23" (NAD 27), in SW¼NW¼NE¼ sec. 20, T.28 N., R.15 E., Chouteau County, Hydrologic Unit 10050005, on left bank 0.9 mi downstream from Muddy Creek, 6.0 mi south of Rocky Boy Agency, and at river mile 90.6.

DRAINAGE AREA.--24.7 mi^2.

PERIOD OF RECORD.--May 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,830 ft (NGVD 29). Prior to Sept. 6, 2001, water-stage recorder at site 0.1 mi downstream at different elevation.

REMARKS.--Records good except those for flows over 15 ft^3/s, which are fair and those for estimated daily discharges, which are poor. No known regulation or diversions upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperatures and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	e2.1	e2.2	e1.6	1.9	e2.2	8.3	4.9	20	18	6.4	4.9
2	1.7	e2.3	2.1	e1.5	1.9	2.3	6.6	4.5	18	18	6.3	4.9
3	1.6	e2.3	2.0	e1.5	1.9	e2.3	6.2	4.3	17	17	7.9	4.8
4	1.7	e2.3	e1.9	e1.5	1.9	2.3	7.0	4.2	16	18	8.0	4.7
5	1.6	e2.2	e2.0	e1.4	1.9	e2.3	7.8	4.0	15	19	6.7	4.6
6	1.6	2.3	2.2	e1.5	1.9	2.3	7.5	3.8	20	16	6.5	4.5
7	1.7	2.3	2.1	e1.5	2.0	e2.4	7.2	3.7	19	14	6.9	4.4
8	1.7	2.3	2.0	e1.6	2.2	2.6	6.6	3.6	18	13	7.2	4.4
9	1.7	2.3	e2.0	e1.6	2.3	3.5	6.1	3.6	16	13	6.6	4.3
10	1.6	2.4	e1.8	e1.7	2.3	4.4	5.6	3.5	16	13	6.3	4.2
11	1.7	2.4	e1.7	e1.7	2.2	5.7	5.5	3.9	22	12	6.0	4.0
12	1.7	2.3	e1.6	e1.7	2.3	4.4	5.3	4.4	40	12	5.7	4.5
13	1.9	2.3	1.7	e1.7	2.3	4.4	5.3	4.0	37	11	5.6	5.1
14	1.9	2.3	2.0	1.7	2.3	4.9	5.3	3.9	34	10	5.5	5.4
15	2.1	2.2	e2.0	1.7	2.3	3.5	5.3	3.8	33	10	5.3	5.1
16	2.0	2.2	e2.1	1.7	2.2	3.5	5.4	3.8	31	9.7	5.2	4.6
17	2.0	2.2	1.9	1.7	2.2	3.6	5.3	3.5	29	9.5	5.2	4.5
18	1.9	2.3	e1.8	1.8	2.2	4.4	5.1	3.7	27	9.0	5.1	4.4
19	1.9	2.8	1.8	1.8	2.3	7.5	4.9	8.8	26	9.1	5.1	4.9
20	1.9	3.1	1.9	1.8	e2.7	6.4	4.6	6.5	25	8.9	4.9	7.3
21	1.9	e2.5	1.9	1.8	e4.0	5.0	4.4	5.7	24	8.5	5.0	6.6
22	1.9	e2.1	e1.8	1.9	e4.5	5.3	4.4	8.1	23	8.2	5.3	5.4
23	1.9	1.9	1.8	1.9	2.5	6.4	4.3	11	23	8.1	12	5.1
24	1.9	2.1	1.8	1.8	2.6	7.8	4.1	13	23	7.8	18	4.7
25	1.9	2.2	1.8	1.9	2.2	7.3	4.1	13	22	7.4	8.2	4.6
26	2.0	2.2	1.9	1.8	2.2	7.3	3.9	19	24	7.0	8.3	4.5
27	2.0	e2.0	e1.7	1.9	2.4	7.4	3.7	17	23	7.1	7.1	4.4
28	2.6	2.1	e1.7	1.9	2.2	6.6	4.7	16	21	7.1	6.3	4.4
29	5.7	2.2	e1.7	2.0	2.2	6.1	5.1	17	20	7.1	6.2	4.6
30	3.4	2.2	e1.6	2.0	---	7.0	5.4	35	20	7.0	5.8	4.5
31	2.6	---	e1.6	1.9	---	8.1	---	23	---	6.5	5.2	---
TOTAL	63.3	68.4	58.1	53.5	68.0	149.2	165.0	264.2	702	342.0	209.8	144.3
MEAN	2.04	2.28	1.87	1.73	2.34	4.81	5.50	8.52	23.4	11.0	6.77	4.81
MAX	5.7	3.1	2.2	2.0	4.5	8.1	8.3	35	40	19	18	7.3
MIN	1.6	1.9	1.6	1.4	1.9	2.2	3.7	3.5	15	6.5	4.9	4.0
AC-FT	126	136	115	106	135	296	327	524	1,390	678	416	286

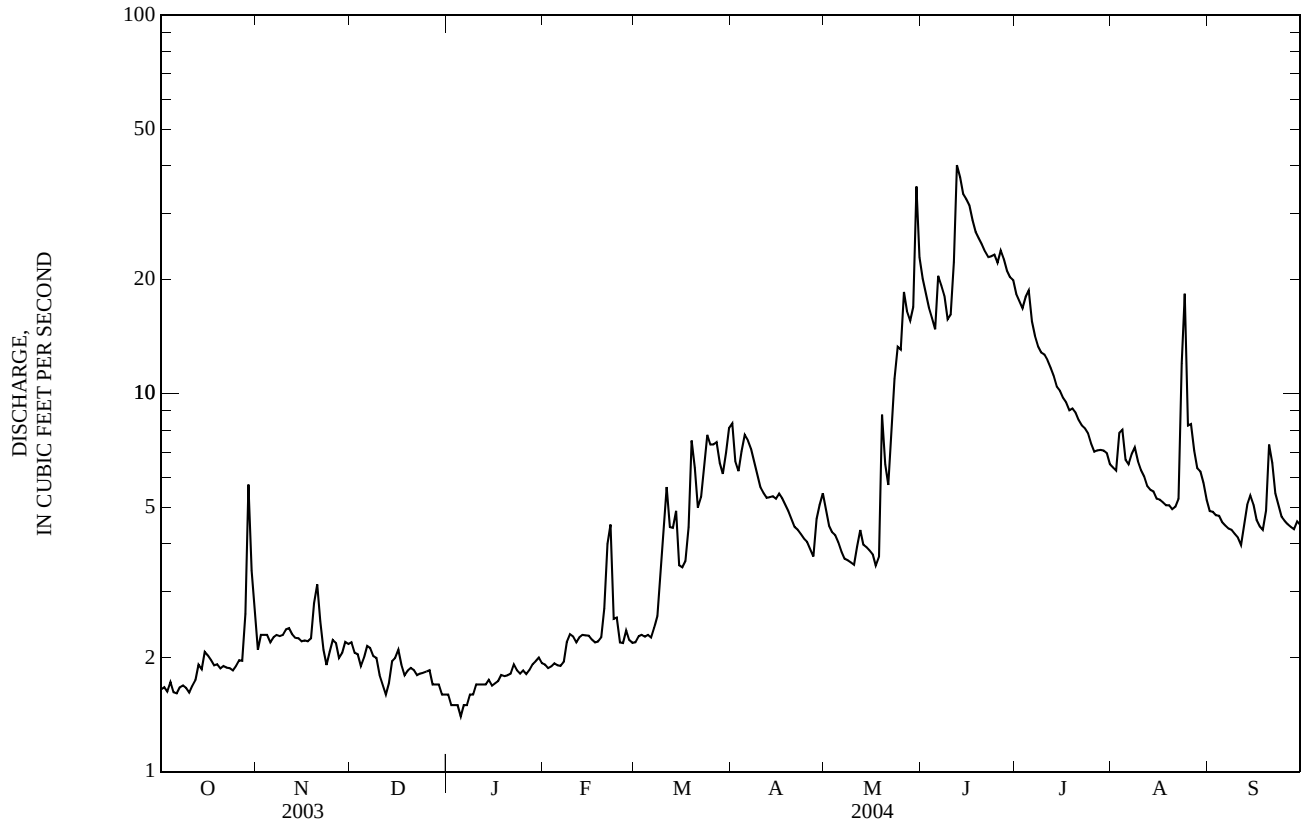
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2004, BY WATER YEAR (WY)

MEAN	5.18	4.57	4.07	3.45	4.21	6.43	10.4	13.5	16.8	12.7	6.38	5.26
MAX	14.0	11.1	11.8	9.44	21.7	28.0	32.6	68.3	50.0	53.7	29.3	18.8
(WY)	(1986)	(1994)	(1996)	(1996)	(1996)	(1996)	(1994)	(1986)	(1982)	(1993)	(1993)	(1993)
MIN	0.66	0.92	0.81	0.71	0.76	0.90	3.67	1.84	1.42	1.01	0.50	0.65
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(1988)	(1988)	(2001)	(1988)	(2001)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1982 - 2004	
ANNUAL TOTAL	1,351.99		2,287.8			
ANNUAL MEAN	3.70		6.25		7.60	
HIGHEST ANNUAL MEAN					18.1	1986
LOWEST ANNUAL MEAN					1.79	2001
HIGHEST DAILY MEAN	50	Mar 14	40	Jun 12	298	Jun 27, 1998
LOWEST DAILY MEAN	0.60	Feb 23	1.4	Jan 5	0.42	Aug 10, 1988
ANNUAL SEVEN-DAY MINIMUM	0.74	Feb 22	1.5	Jan 1	0.45	Aug 9, 1988
MAXIMUM PEAK FLOW			51	May 30	a510	Jun 27, 1998
MAXIMUM PEAK STAGE			2.05	May 30	6.07	Jun 27, 1998
INSTANTANEOUS LOW FLOW					b0.03	Jun 26, 1992
ANNUAL RUNOFF (AC-FT)	2,680		4,540		5,510	
10 PERCENT EXCEEDS	7.8		17		16	
50 PERCENT EXCEEDS	1.9		4.3		4.5	
90 PERCENT EXCEEDS	0.93		1.7		1.5	

a--On basis of slope-area measurement of peak flow.
b--Gage height, 2.32 ft, site and datum then in use.
e--Estimated.

06137400 BIG SANDY CREEK AT RESERVATION BOUNDARY, NEAR ROCKY BOY, MT—Continued



06139500 BIG SANDY CREEK NEAR HAVRE, MT

LOCATION.--Lat 48°31'36", long 109°50'27" (NAD 27), in SW¼SW¼SW¼ sec.18, T.32 N., R.15 E., Hill County, Hydrologic Unit 10050005, on right bank, 6 mi upstream from mouth, 7.7 mi west southwest of Havre post office, and 22 mi downstream from Sage Creek.

DRAINAGE AREA.--1,805 mi^2.

PERIOD OF RECORD.--February 1946 to November 1953 (monthly discharge only for February 1946, published in WSP 1309 as "Big Sandy Creek near Assinniboine"), annual maximum, water years 1955-67 (published as "Big Sandy Creek near Assinniboine"), and May 1984 to current year (seasonal records only).

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,510 ft (NGVD 29).

REMARKS.--Records fair. Diversions for irrigation of about 1,000 acres upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 30, 1978, reached a stage of 15.15 ft, from floodmarks, discharge, about 6,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				7.9	1.5	20	30	3.0	1.5			
2				8.1	1.3	37	24	2.4	1.5			
3				7.2	1.5	29	19	2.4	2.1			
4				6.5	1.3	23	22	0.91	2.0			
5				6.3	1.2	19	21	0.61	1.6			
6				6.0	1.3	21	16	0.58	1.4			
7				4.8	1.1	21	13	0.50	1.2			
8				3.7	1.0	20	10	0.41	1.0			
9				3.2	1.0	24	9.2	0.38	0.83			
10				2.5	1.0	26	8.7	0.30	0.87			
11				1.8	1.2	24	8.3	0.29	0.88			
12				4.7	1.5	21	7.9	0.30	0.98			
13				5.0	1.8	18	7.3	0.26	1.1			
14				3.4	1.7	17	6.8	0.27	1.3			
15				1.9	1.6	24	8.0	0.26	1.4			
16				2.0	1.3	35	8.9	0.24	1.3			
17				2.0	1.1	30	9.0	0.22	1.2			
18				2.6	1.0	26	8.7	0.19	1.2			
19				3.5	1.6	27	7.5	0.18	1.1			
20				2.2	2.0	26	6.8	0.18	1.2			
21				1.9	2.3	23	5.8	0.19	1.2			
22				3.4	2.3	21	5.3	0.19	1.0			
23				3.0	5.3	20	5.1	0.21	1.00			
24				3.2	26	18	5.1	0.37	0.88			
25				2.9	23	15	4.7	0.77	1.8			
26				2.6	45	12	4.3	0.91	e2.4			
27				2.3	47	11	4.0	0.82	e1.9			
28				2.2	29	10	3.8	0.82	e1.3			
29				2.1	28	12	3.5	1.1	e0.90			
30				2.0	26	27	3.5	2.4	e1.0			
31				---	21	---	3.0	1.9	---			
TOTAL				110.9	281.9	657	300.2	23.56	39.04			
MEAN				3.70	9.09	21.9	9.68	0.76	1.30			
MAX				8.1	47	37	30	3.0	2.4			
MIN				1.8	1.0	10	3.0	0.18	0.83			
AC-FT				220	559	1,300	595	47	77			

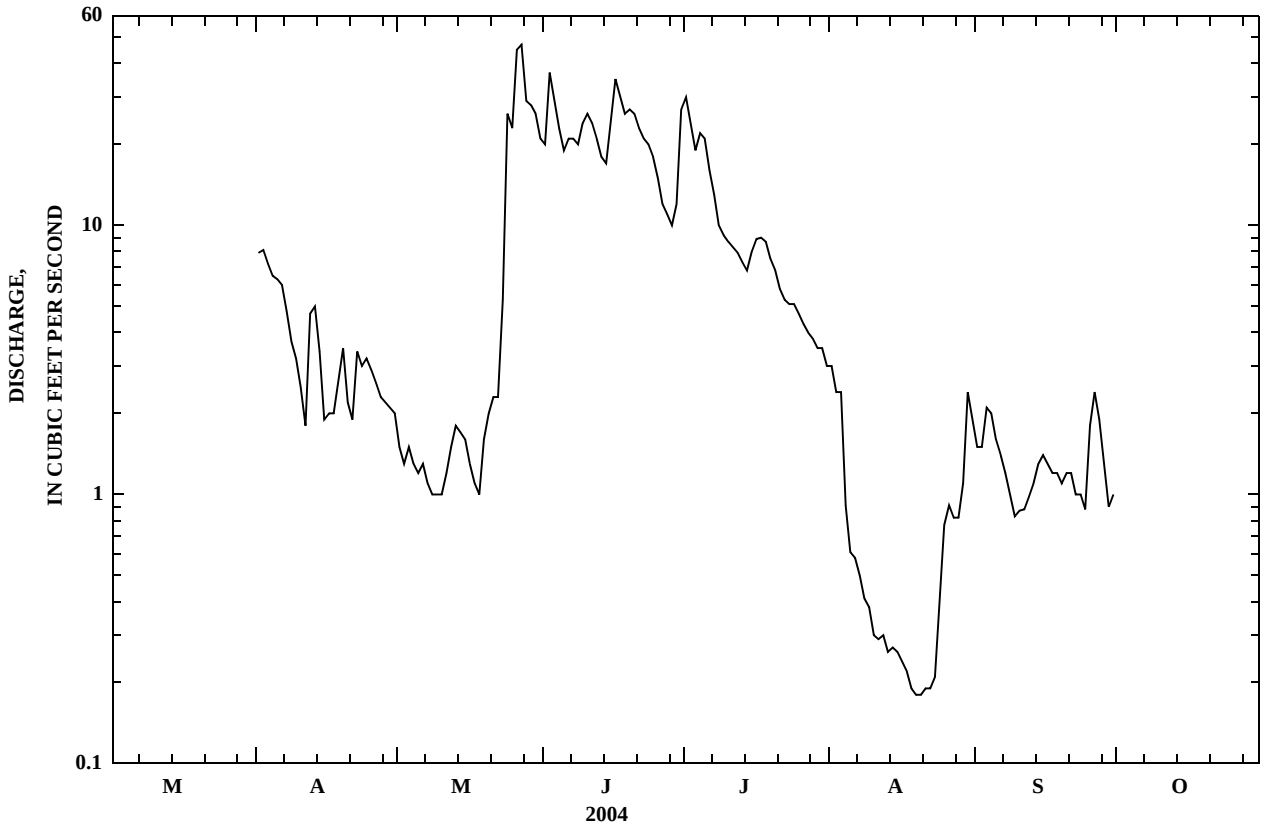
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2004*

MEAN	0.48	6.68	61.3	60.5	14.1	26.1	17.7	5.43	4.17	7.96	0.04	0.02
MAX	3.39	19.5	343	1,218	108	222	137	85.9	54.4	54.5	0.31	0.14
(WY)	(1947)	(1947)	(1947)	(1952)	(1986)	(1953)	(1993)	(1993)	(1993)	(1987)	(1953)	(1953)
MIN	0.00	0.00	0.63	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1948)	(1948)	(1949)	(2002)	(1949)	(1949)	(1946)	(1946)	(1946)	(1947)	(1947)	(1947)

SUMMARY STATISTICS	FOR THE 2004 SEASON		SEASONS 1946 - 2004*	
HIGHEST DAILY MEAN	47	May 27	5,100	Apr 3, 1952
LOWEST DAILY MEAN	0.18	Aug 19	0.00	many days
MAXIMUM PEAK FLOW	498	Mar 10	5,570	Apr 3, 1952
MAXIMUM PEAK STAGE	7.09	Mar 10	a14.70	Apr 3, 1952

*--During period of operation.
a--From floodmarks.
e--Estimated.

06139500 BIG SANDY CREEK NEAR HAVRE, MT—Continued



06139900 BEAVER CREEK AT RESERVATION BOUNDARY, NEAR ROCKY BOY, MT

LOCATION.--Lat 48°13'17", long 109°39'01" (NAD 27), in NW¼NW¼NE¼ sec. 3, T.28 N., R.16 E., Hill County, Hydrologic Unit 10050004, in Rocky Boy.s Indian Reservation, on left bank, 20 ft upstream from reservation boundary, 0.4 mi upstream from Blackie Coulee, 6.7 mi southeast of Rocky Boy, 25 mi south of Havre, and at river mile 39.9.

DRAINAGE AREA.--16.1 mi^2.

PERIOD OF RECORD.--July 2001 to September 2004, (discontinued). Miscellaneous measurements and water-quality samples were obtained at this site between 1982 and 1991.

GAGE.--Water-stage recorder. Elevation of gage is 4,200 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.77	2.2	1.4	e0.70	1.1	1.5	8.4	5.2	55	20	4.0	2.6
2	0.76	2.2	1.4	e0.70	1.1	1.5	6.8	4.6	50	19	3.9	2.7
3	0.71	2.1	1.4	e0.60	1.1	1.3	6.6	4.6	35	17	4.3	2.7
4	0.72	e1.7	1.3	e0.60	0.98	1.5	8.2	4.5	20	18	4.1	2.6
5	0.70	1.3	1.1	e0.50	0.95	1.2	10	4.3	14	19	4.2	2.5
6	0.70	e1.7	1.4	e0.60	0.93	1.4	10	4.1	16	13	4.2	2.5
7	0.70	e1.5	1.4	e0.70	0.92	1.4	10	3.8	16	12	4.2	2.5
8	0.65	e1.4	1.3	e0.90	0.91	3.2	8.9	3.5	18	12	4.6	2.4
9	0.69	1.4	1.3	1.0	0.89	6.6	8.0	3.3	15	14	4.1	2.4
10	0.73	1.5	1.0	1.2	0.91	8.0	7.1	3.0	13	11	3.7	2.4
11	0.76	1.6	0.85	1.2	0.91	6.2	6.7	3.3	21	7.0	3.4	2.3
12	0.82	1.5	0.93	1.2	1.1	5.5	6.3	3.4	58	7.6	3.0	2.7
13	0.92	1.5	1.0	1.2	1.1	5.0	6.6	3.7	67	6.3	2.8	3.6
14	1.1	1.5	1.0	1.2	1.0	4.3	7.1	3.8	53	6.1	2.6	3.8
15	e1.3	1.5	0.98	1.2	1.00	4.0	7.6	3.6	49	5.9	2.5	3.3
16	1.4	1.5	0.98	1.3	0.98	4.0	8.2	3.3	35	5.7	2.4	3.1
17	1.3	1.5	0.90	1.3	1.0	5.9	7.7	2.9	29	5.5	2.4	2.9
18	1.2	1.6	0.92	1.3	1.3	6.5	7.5	2.9	25	5.3	2.3	2.8
19	1.1	2.4	0.94	1.2	1.6	8.3	6.7	6.4	22	5.3	2.5	3.4
20	1.0	2.9	0.96	1.2	1.5	7.2	5.9	5.7	21	5.4	2.3	6.7
21	0.92	1.9	0.98	1.2	1.3	6.8	5.6	5.2	18	5.1	2.3	5.3
22	0.91	1.5	1.0	1.2	1.3	6.2	5.2	9.0	18	4.9	2.5	3.9
23	0.89	1.4	1.0	1.2	1.4	5.5	4.9	15	16	4.9	4.7	3.5
24	0.89	1.8	0.98	1.1	1.4	6.5	4.8	17	15	4.9	9.5	3.1
25	0.87	1.8	0.94	0.71	1.5	6.5	4.3	19	18	4.5	5.1	2.8
26	0.88	1.6	0.94	e0.70	1.5	6.3	4.3	31	30	4.4	5.0	2.7
27	0.93	1.5	0.52	e0.60	1.7	6.8	4.2	29	22	4.4	4.2	2.5
28	1.2	1.5	e0.80	e0.80	1.7	6.4	5.1	24	20	4.3	3.8	2.4
29	5.0	1.5	e0.80	e1.0	1.6	6.2	5.4	21	23	4.4	3.9	2.5
30	3.2	1.6	e0.70	1.2	---	7.0	5.7	64	21	4.3	3.4	2.4
31	e3.0	---	e0.70	1.2	---	8.4	---	67	---	4.1	3.0	---
TOTAL	36.72	50.6	31.82	30.71	34.68	157.1	203.8	381.1	833	265.3	114.9	91.0
MEAN	1.18	1.69	1.03	0.99	1.20	5.07	6.79	12.3	27.8	8.56	3.71	3.03
MAX	5.0	2.9	1.4	1.3	1.7	8.4	10	67	67	20	9.5	6.7
MIN	0.65	1.3	0.52	0.50	0.89	1.2	4.2	2.9	13	4.1	2.3	2.3
AC-FT	73	100	63	61	69	312	404	756	1,650	526	228	180

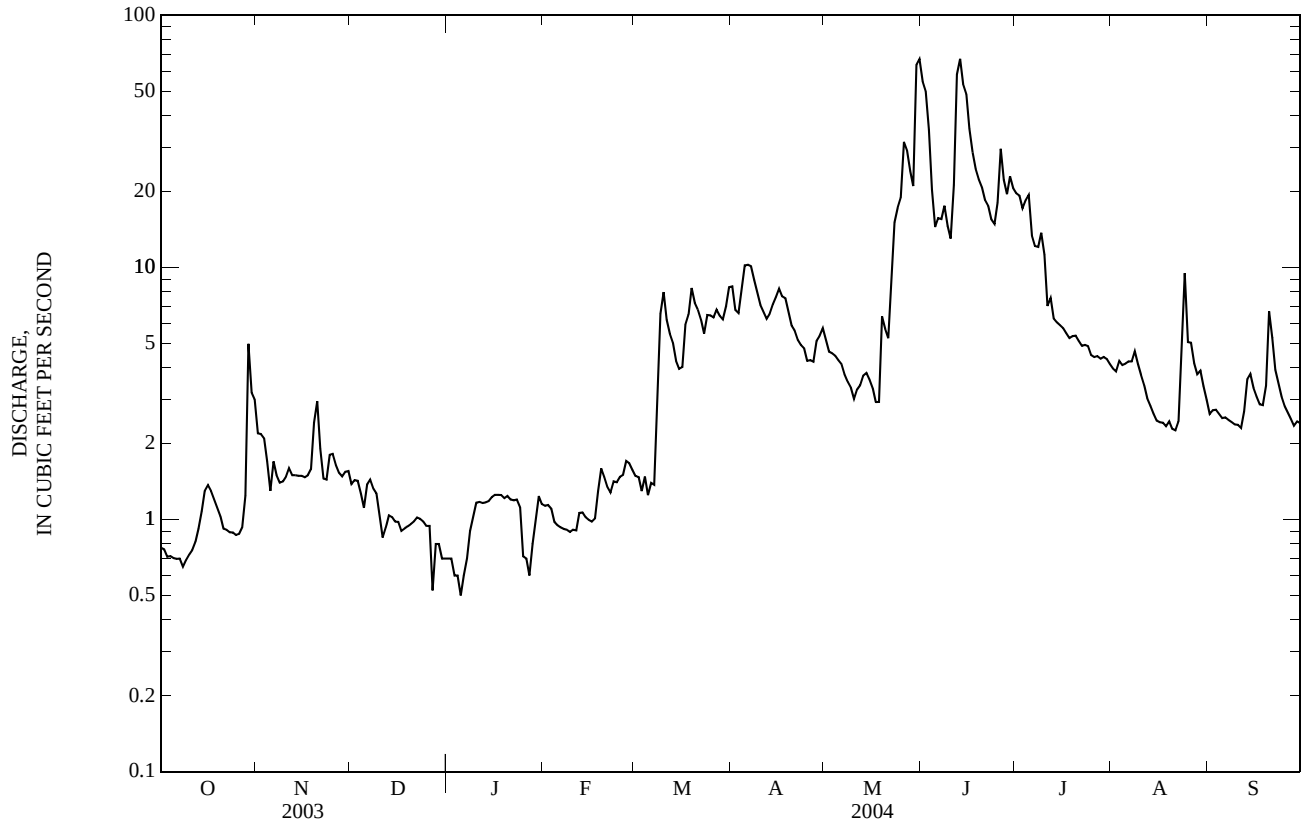
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2004, BY WATER YEAR (WY)

MEAN	1.75	1.56	0.86	0.76	0.97	4.88	6.74	8.07	20.0	4.19	2.28	1.55
MAX	3.50	2.35	1.24	1.13	1.20	9.06	9.00	12.3	27.9	8.56	4.61	3.03
(WY)	(2003)	(2003)	(2003)	(2003)	(2004)	(2003)	(2003)	(2004)	(2002)	(2004)	(2002)	(2004)
MIN	0.58	0.63	0.33	0.16	0.55	0.50	4.44	5.25	4.40	0.59	0.31	0.20
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2003)	(2001)	(2003)	(2001)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2001 - 2004	
ANNUAL TOTAL	1,134.87		2,230.73			
ANNUAL MEAN	3.11		6.09		4.65	
HIGHEST ANNUAL MEAN					6.09	2004
LOWEST ANNUAL MEAN					3.38	2003
HIGHEST DAILY MEAN	41	Mar 14	67	May 31	101	Jun 12, 2002
LOWEST DAILY MEAN	0.19	Aug 16	0.50	Jan 5	0.00	Sep 6, 2001
ANNUAL SEVEN-DAY MINIMUM	0.22	Sep 2	0.63	Dec 31	0.03	Sep 1, 2001
MAXIMUM PEAK FLOW			105	May 30	134	Jun 12, 2002
MAXIMUM PEAK STAGE			3.36	May 30	3.64	Jun 12, 2002
INSTANTANEOUS LOW FLOW					0.00	Sep 5, 2001
ANNUAL RUNOFF (AC-FT)	2,250		4,420		3,370	
10 PERCENT EXCEEDS	7.9		16		9.6	
50 PERCENT EXCEEDS	1.3		2.8		1.9	
90 PERCENT EXCEEDS	0.36		0.91		0.38	

e--Estimated.

06139900 BEAVER CREEK AT RESERVATION BOUNDARY, NEAR ROCKY BOY, MT—Continued



06140500 MILK RIVER AT HAVRE, MT

LOCATION.--Lat 48°33'50", long 109°41'42" (NAD 27), in SE¼NE¼NE¼ sec.6, T.32 N., R.16 E., Hill County, Hydrologic Unit 10050004, on left bank, 1.25 mi upstream from Bullhook Creek and 7th Avenue East highway bridge in Havre, 8.2 mi downstream from Big Sandy Creek, 15.8 mi downstream from Fresno Dam, and at river mile 419.2.

DRAINAGE AREA.--5,785 mi^2, of which 670 mi^2 is probably noncontributing.

PERIOD OF RECORD.--May to November 1898, April 1899 to November 1922, March, April 1923, March, April 1952 (gage heights only, in WSP 1260-B), June 1953 (in WSP 1320-B), September 1954 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1899-1900, 1902-4, 1907-8, 1909(M), 1912, 1917(M), 1920(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,465.24 ft (NGVD 29). Prior to Nov. 4, 1902, nonrecording gage at site 0.75 mi downstream at different elevation. Nov. 4, 1902, to Aug. 6, 1980, nonrecording gages 1.25 mi downstream on 7th Avenue East highway bridges, all at elevations then in use.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 6,000 acres upstream from station. Since 1917, flow increased during irrigation season by water from St. Mary Canal (station number 05018500). Since 1939, flow regulated by Fresno Reservoir (station number 06136500). U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	e50	e45	e50	e45	e40	78	74	194	570	1,080	519
2	74	e45	e45	e50	e45	e40	76	77	205	579	1,060	518
3	78	e40	e45	e50	e45	e45	73	76	295	636	1,010	456
4	80	e40	e45	e50	e45	e50	74	452	295	643	956	459
5	83	e40	e45	e50	e45	e60	72	771	424	642	932	459
6	85	e45	e45	e50	e45	e80	72	863	474	627	879	459
7	87	e45	e45	e50	e50	e110	71	1,240	434	553	864	459
8	87	e45	e45	e45	e50	e200	70	1,150	426	487	856	462
9	85	e45	e45	e40	e50	e400	69	1,130	420	360	844	457
10	82	e45	e45	e40	e50	e1,000	68	1,120	421	284	789	458
11	85	e45	e45	e45	e50	e800	68	1,060	285	276	705	462
12	88	e45	e45	e50	e50	e580	69	857	276	270	563	464
13	80	e45	e50	e50	e50	e460	70	646	274	311	555	472
14	82	e45	e50	e50	e50	e320	70	645	280	338	544	472
15	84	e45	e50	e50	e50	224	72	780	287	451	593	470
16	86	e45	e50	e50	e50	165	70	828	264	465	591	466
17	85	e45	e50	e50	e50	135	71	860	217	621	593	427
18	79	e45	e50	e50	e50	114	73	910	211	639	580	427
19	79	e45	e50	e50	e45	101	74	953	208	643	527	428
20	72	e45	e50	e50	e45	86	71	859	210	700	523	432
21	65	e45	e50	e50	e45	85	71	846	209	694	575	430
22	60	e45	e50	e50	e45	82	71	859	213	694	587	345
23	65	e45	e50	e50	e45	81	71	898	219	709	614	319
24	57	e45	e50	e50	e40	80	71	888	231	817	595	214
25	58	e45	e50	e50	e40	76	70	529	237	822	555	202
26	61	e45	e50	e50	e40	76	71	398	301	849	555	202
27	59	e45	e50	e50	e40	77	72	369	321	957	526	199
28	60	e45	e50	e50	e40	72	72	219	322	971	519	141
29	70	e45	e50	e45	e40	71	73	205	334	1,050	518	90
30	63	e45	e45	e45	---	72	72	204	404	1,100	518	88
31	51	---	e45	e45	---	72	---	198	---	1,100	520	---
TOTAL	2,294	1,340	1,480	1,505	1,335	5,854	2,145	20,964	8,891	19,858	21,126	11,456
MEAN	74.0	44.7	47.7	48.5	46.0	189	71.5	676	296	641	681	382
MAX	88	50	50	50	50	1,000	78	1,240	474	1,100	1,080	519
MIN	51	40	45	40	40	40	68	74	194	270	518	88
AC-FT	4,550	2,660	2,940	2,990	2,650	11,610	4,250	41,580	17,640	39,390	41,900	22,720

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2004, BY WATER YEAR (WY)*

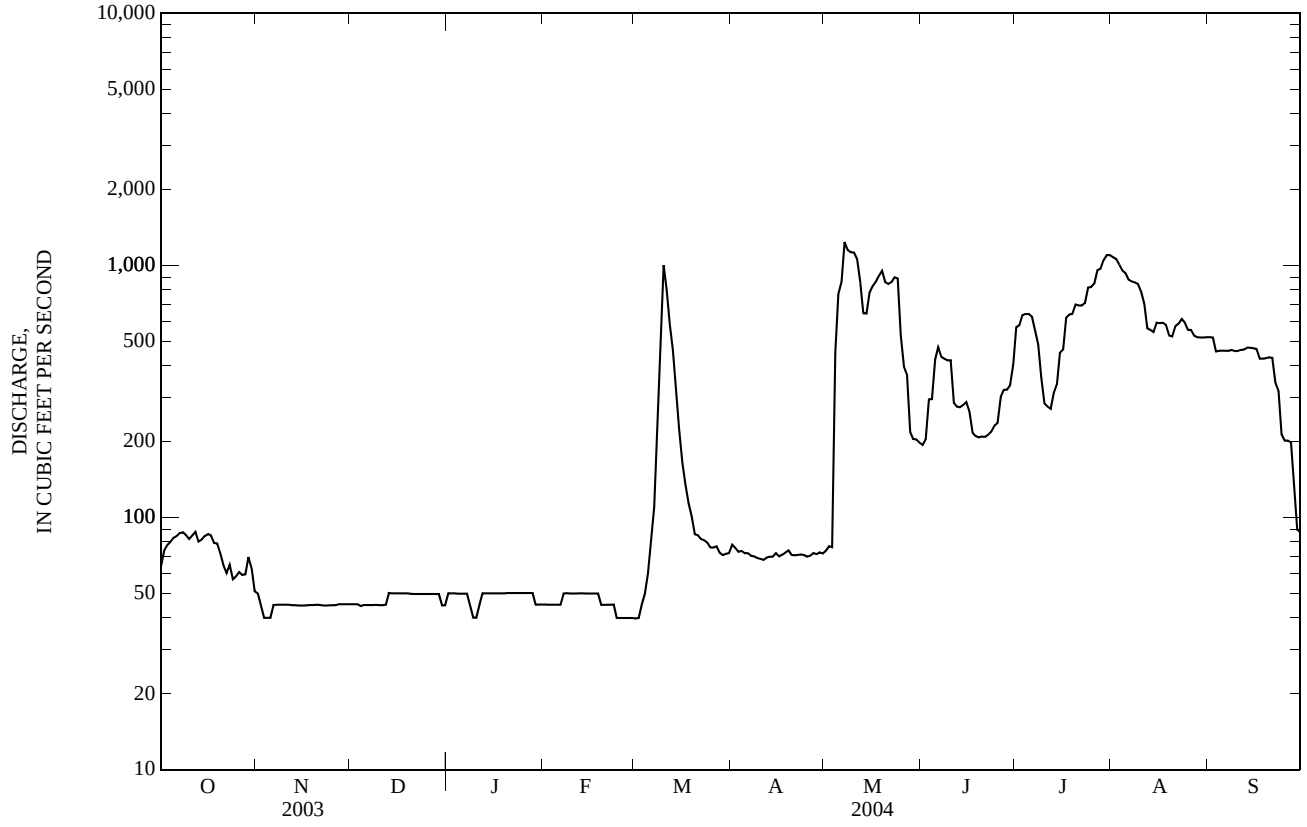
MEAN	145	75.7	53.1	56.9	90.1	315	514	807	819	772	566	324
MAX	628	325	160	780	1,400	2,106	2,700	2,191	2,188	2,045	1,303	956
(WY)	(1994)	(1976)	(1900)	(1918)	(1916)	(1918)	(1899)	(1967)	(1908)	(1902)	(1978)	(1993)
MIN	0.00	0.00	0.00	0.00	0.00	5.00	25.0	61.4	35.2	15.3	0.00	0.00
(WY)	(1906)	(1906)	(1906)	(1906)	(1922)	(1919)	(1983)	(1905)	(1905)	(1910)	(1910)	(1905)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1898 - 2004*	
ANNUAL TOTAL	120,172		98,248			
ANNUAL MEAN	329		268		379	
HIGHEST ANNUAL MEAN					727	1965
LOWEST ANNUAL MEAN					39.2	1905
HIGHEST DAILY MEAN	1,240	May 31	1,240	May 7	a16,000	Apr 12, 1899
LOWEST DAILY MEAN	40	Nov 3	40	Nov 3	b0.00	Jul 11, 1898
ANNUAL SEVEN-DAY MINIMUM	43	Nov 2	40	Feb 24	0.00	Aug 15, 1905
MAXIMUM PEAK FLOW			1,300	May 7	c20,000	Apr 12, 1899
MAXIMUM PEAK STAGE			4.85	May 7	d19.30	Apr 12, 1899
ANNUAL RUNOFF (AC-FT)	238,400		194,900		274,600	
10 PERCENT EXCEEDS	992		783		1,050	
50 PERCENT EXCEEDS	79		80		132	
90 PERCENT EXCEEDS	45		45		27	

06140500 MILK RIVER AT HAVRE, MT—Continued

SUMMARY STATISTICS	WATER YEARS 1900 - 1916**		WATER YEARS 1917 - 2004***	
ANNUAL MEAN	273.7		411	
HIGHEST ANNUAL MEAN	517	1916	727	1965
LOWEST ANNUAL MEAN	39.2	1905	160	1919
HIGHEST DAILY MEAN	9,600	Jun 9, 1908	9,150	Mar 20, 1918
LOWEST DAILY MEAN	a0.00	Aug 16, 1904	0.00	Jan 1, 1922
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 15, 1905	0.00	Jan 1, 1922
MAXIMUM PEAK FLOW	11,000	Jun 9, 1908	f11,400	Apr 3, 1952
MAXIMUM PEAK STAGE	16.5	Jun 9, 1908	18.60	Apr 3, 1952
ANNUAL RUNOFF (AC-FT)	198,300		297,800	
10 PERCENT EXCEEDS	640		1,080	
50 PERCENT EXCEEDS	110		162	
90 PERCENT EXCEEDS	5.0		30	

*--During periods of operation (May 1898 to November 1898, April 1898 to November 1922, March 1923 to April 1923, September 1954 to current year).
**--Prior to operation of St. Mary Canal.
***--Post operation of St. Mary Canal.
a--Observed.
b--Observed, no flow at times in several years.
c--Observed from rating curve extended above 5,200 ft^3/s.
d--Site and datum then in use, from floomarks.
e--Estimated.
f--Observed, about.



06142400 CLEAR CREEK NEAR CHINOOK, MT

LOCATION.--Lat 48°34'44", long 109°23'26" (NAD 27), in SE¼NW¼NW¼ sec.33, T.33 N., R.18 E., Blaine County, Hydrologic Unit 10050004, on right bank, 7 mi west of Chinook, and at river mile 2.5.

DRAINAGE AREA.--135 mi^2.

PERIOD OF RECORD.--June 1984 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 2,470 ft (NGVD 29).

REMARKS.--Records good. Diversions for irrigation of about 2,000 acres upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperatures and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				3.1	3.0	57	28	0.00	1.4			
2				3.1	2.5	55	25	0.00	1.2			
3				4.6	2.2	54	24	0.00	0.93			
4				5.8	2.1	48	32	0.00	0.62			
5				5.7	1.5	42	26	0.05	0.54			
6				4.4	0.86	44	31	0.12	0.47			
7				3.0	0.16	43	31	0.22	0.49			
8				2.4	0.00	43	23	0.64	0.52			
9				2.8	0.00	43	18	0.87	0.44			
10				2.8	0.00	40	16	1.2	0.41			
11				2.6	0.05	45	12	1.4	0.46			
12				2.4	1.3	49	12	1.2	0.43			
13				2.8	5.4	61	9.6	0.81	0.82			
14				2.4	8.4	64	5.2	0.43	1.4			
15				1.6	8.5	57	3.0	0.14	2.1			
16				1.2	7.1	55	2.1	0.00	2.2			
17				1.3	5.3	55	1.5	0.00	1.8			
18				1.1	4.5	51	1.1	0.00	1.6			
19				1.6	14	47	1.0	0.00	1.6			
20				2.2	19	44	0.62	0.00	2.3			
21				1.9	15	42	0.26	0.00	3.2			
22				1.8	17	40	0.13	0.00	4.3			
23				2.2	36	38	0.01	0.06	3.7			
24				1.9	68	36	0.00	0.04	2.9			
25				1.4	74	34	0.00	0.45	2.6			
26				0.79	55	32	0.00	1.9	2.4			
27				0.25	51	34	0.00	2.2	2.0			
28				0.39	52	32	0.00	2.7	1.9			
29				1.0	54	30	0.00	2.5	1.8			
30				2.2	57	28	0.00	2.1	1.7			
31				---	59	---	0.00	1.6	---			
TOTAL				70.73	623.87	1,343	302.52	20.63	48.23			
MEAN				2.36	20.1	44.8	9.76	0.67	1.61			
MAX				5.8	74	64	32	2.7	4.3			
MIN				0.25	0.00	28	0.00	0.00	0.41			
AC-FT				140	1,240	2,660	600	41	96			

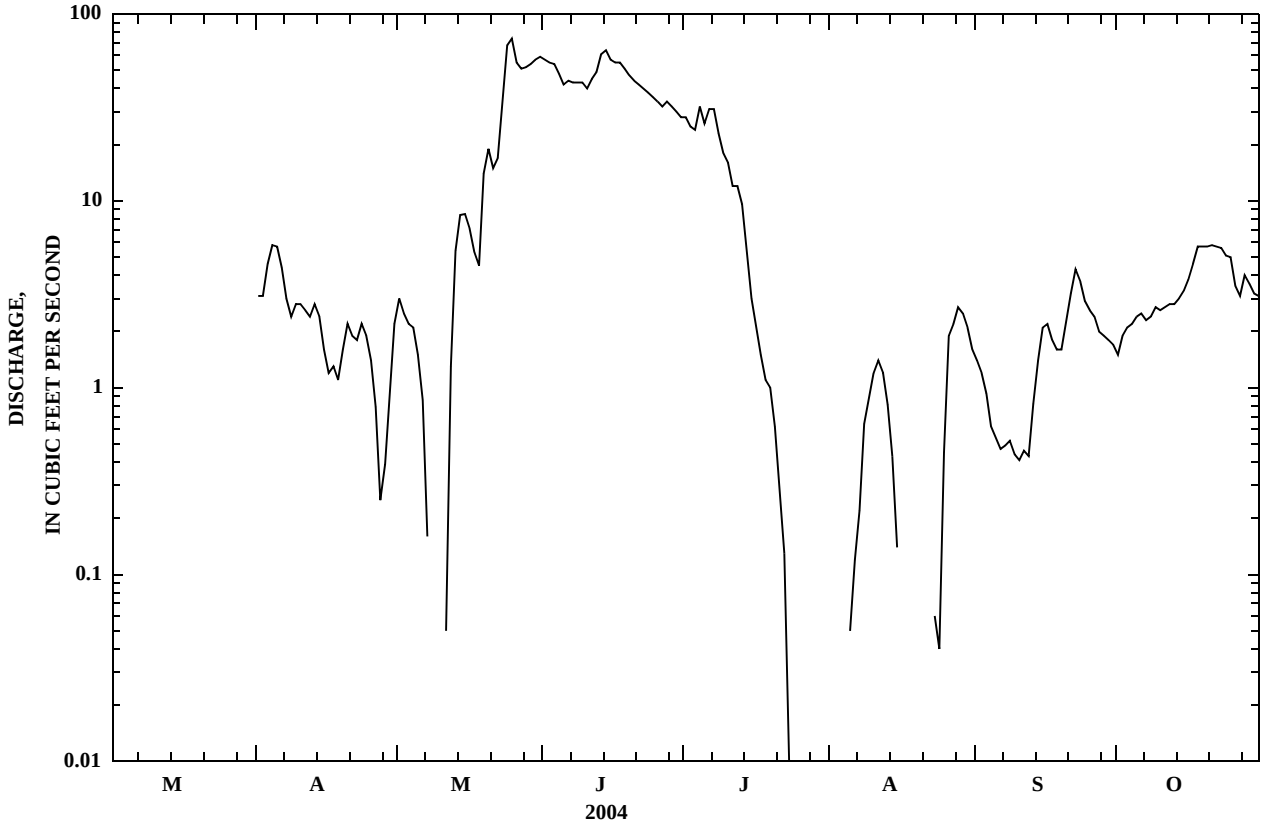
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1984 - 2004

MEAN	10.9	19.6	17.0	8.88	2.68	3.93
MAX	46.0	137	74.0	51.4	34.9	47.4
(WY)	(1994)	(1986)	(1986)	(1993)	(1993)	(1986)
MIN	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(2002)	(2001)	(2001)	(1985)	(1984)	(1984)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1984 - 2004	
HIGHEST DAILY MEAN	74	May 25	360	Sep 25 1986
LOWEST DAILY MEAN	0.00	May 8	a0.00	Jul 5 1984
MAXIMUM PEAK FLOW	83	May 25	571	Sep 25 186
MAXIMUM PEAK STAGE	3.61	May 25	8.23	Sep 25 1986

a--No flow at times most seasons.

06142400 CLEAR CREEK NEAR CHINOOK, MT—Continued



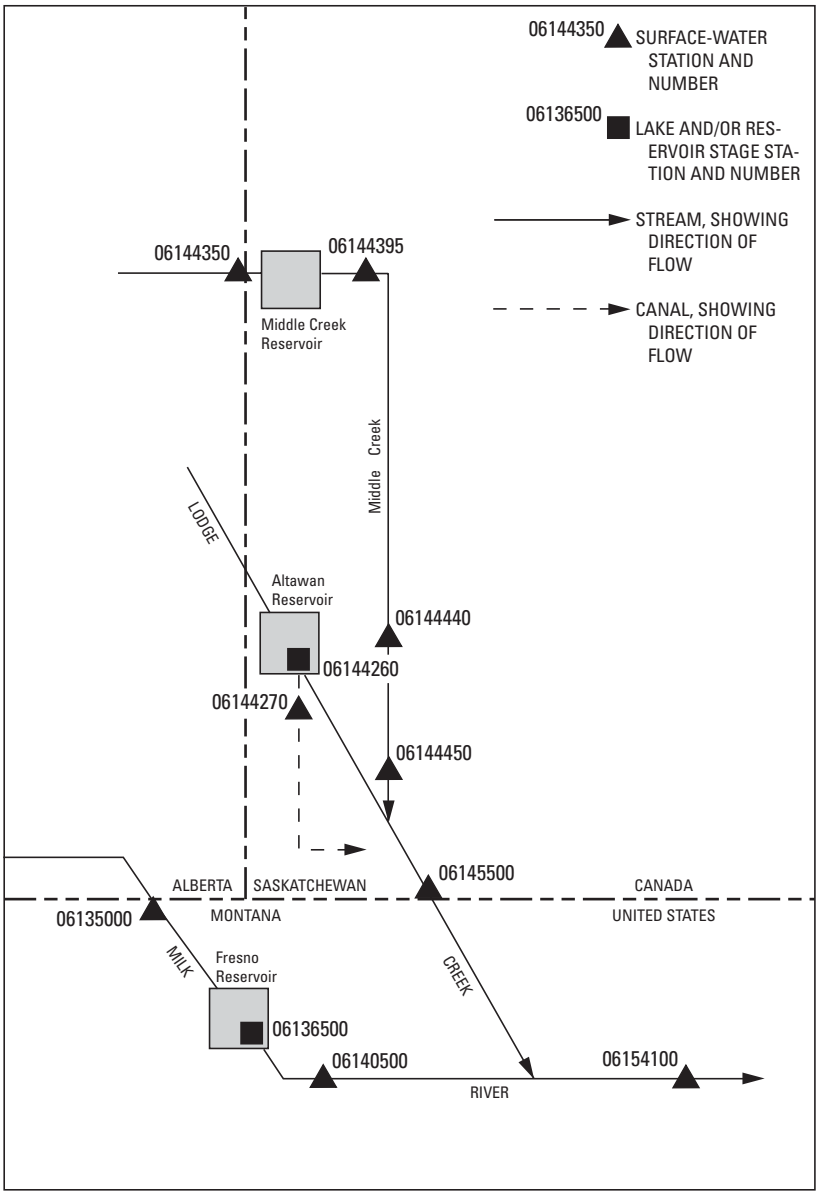


Figure 11. Schematic diagram showing diversions and storage in Lodge Creek basin.

06144260 ALTAWAN RESERVOIR NEAR GOVENLOCK, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°10'00", long 109°55'00" (NAD 27), in SW$^1/_4$ sec.35, T.2, R.30 W., third meridian, Hydrologic Unit 10050007, at dam on Lodge Creek, 6.3 mi southwest of Govenlock, and at river mile 113.5.

DRAINAGE AREA.-- 373 mi^2.

PERIOD OF RECORD.--February 1966 to current season (seasonal records only). February 1960 to current season in reports of Department of the Environment, Canada. Water-stage recorder. Elevation of gage is 2,918.0 (Geodetic Survey of Canada datum). Prior to July 7, 1967, nonrecording gage in gate read every ten days during irrigation season.

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway and control works as well as an emergency earthen spillway, completed in 1959. The following capacity figures are from revised capacity table effective Jan. 1, 1983. All elevations are referenced to the Geodetic Survey of Canada datum. Usable capacity is 5,440 acre-ft between elevation 2,918.0 ft, bottom of outlet works, and 2,952.0 ft, maximum design level. No dead storage. Water is used for irrigation. Water Survey of Canada satellite telemeter at station. This is one of a number of stations which are maintained jointly by Canada and the United States.

REVISED RECORDS.--W 1983, drainage area.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,300 acre-ft, Sept. 26, 1986, elevation, 2,958.10 ft; no contents Mar. 1, 1960, Oct. 6-31, 1984, Mar. 1-18, and Oct. 3-31, 1985.

EXTREMES FOR CURRENT SEASON.--Maximum contents, 5,760 acre-ft, Apr. 8, elevation, 2,952.73 ft; minimum, 2,300 acre-ft, Oct. 31, elevation, 2,943.32 ft.

SEASONAL MONTHEND CONTENTS, IN ACRE-FT, FEBRUARY 2004 TO OCTOBER 2004

Date	Contents (acre-feet)
February 29	2,450
March 31	5,250
April 30	5,510
May 31	4,210
June 30	3,410
July 31	3,250
August 31	2,420
September 30	2,350
October 31	2,300

06144270 SPANGLER DITCH NEAR GOVENLOCK, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°09'16", long 109°54'58" (NAD 27), in NW¼ sec.26, T.2, R.30 W., third meridian, Hydrologic Unit 10050007, on right bank 0.9 mi south of Altawan Dam, and 6.8 mi southwest of Govenlock.

PERIOD OF RECORD.--March 1966 to current season (seasonal records only). March 1950 to current season, in reports of Department of the Environment, Canada. Some estimates of monthly diversion in several years prior to 1932.

GAGE.--Water-stage recorder. Elevation of gage is 2,920 ft (NGVD 29). Prior to March 1950, nonrecording gages at several sites within 2 mi of present site at different elevations. March 1950 to July 8, 1960, water-stage recorder at site 350 ft downstream at different elevation.

REMARKS.--Records good. Canal diverts water from right bank of Lodge Creek in SW¼ sec.35, T.2, R.30 W., third meridian, for irrigation of 1,320 acres in Spangler irrigation project. Water Survey of Canada satellite telemeter at station.

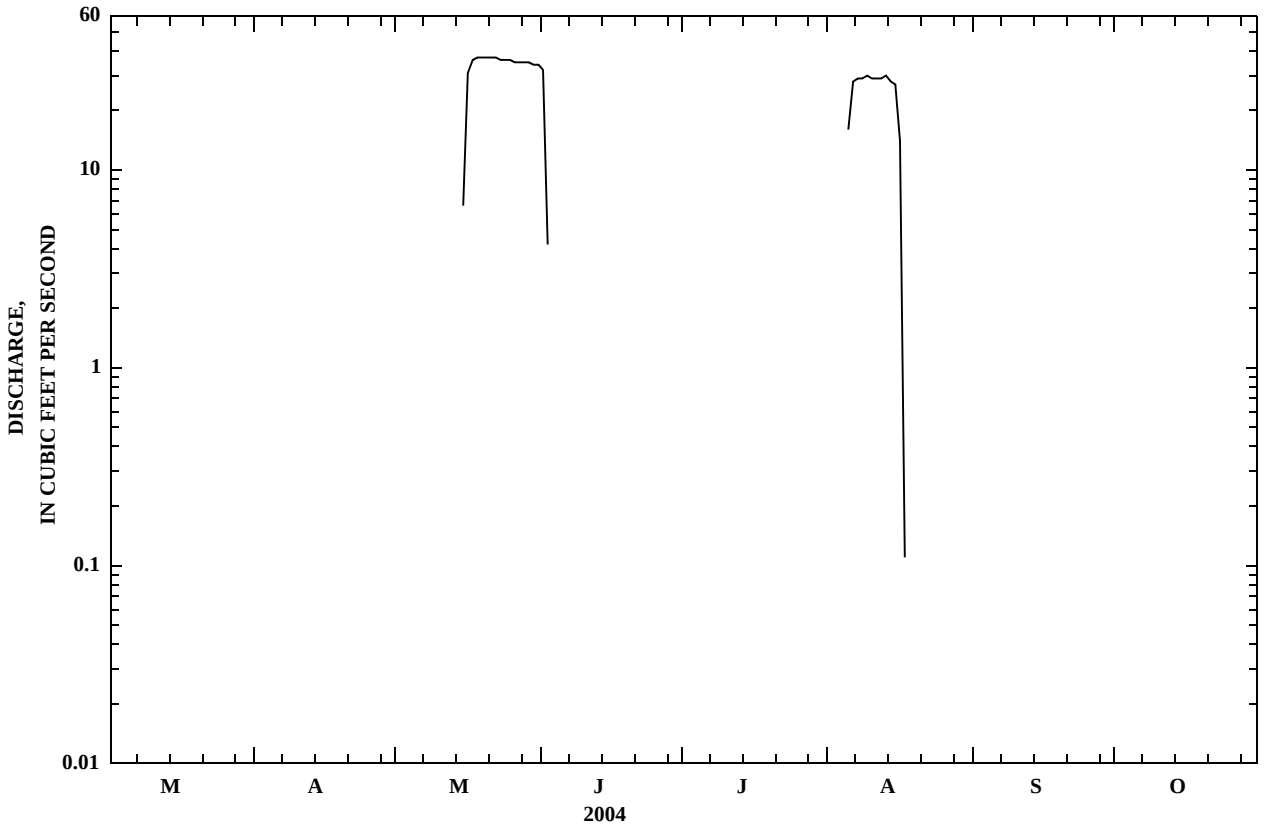
COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 65 ft^3/s, Apr. 22, 1950, July 9, 1985; no flow most of each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0.00	0.00	0.00	32	0.00	0.00	0.00	0.00		
2			0.00	0.00	0.00	4.2	0.00	0.00	0.00	0.00		
3			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
4			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5			0.00	0.00	0.00	0.00	0.00	16	0.00	0.00		
6			0.00	0.00	0.00	0.00	0.00	28	0.00	0.00		
7			0.00	0.00	0.00	0.00	0.00	29	0.00	0.00		
8			0.00	0.00	0.00	0.00	0.00	29	0.00	0.00		
9			0.00	0.00	0.00	0.00	0.00	30	0.00	0.00		
10			0.00	0.00	0.00	0.00	0.00	29	0.00	0.00		
11			0.00	0.00	0.00	0.00	0.00	29	0.00	0.00		
12			0.00	0.00	0.00	0.00	0.00	29	0.00	0.00		
13			0.00	0.00	0.00	0.00	0.00	30	0.00	0.00		
14			0.00	0.00	0.00	0.00	0.00	28	0.00	0.00		
15			0.00	0.00	6.6	0.00	0.00	27	0.00	0.00		
16			0.00	0.00	31	0.00	0.00	14	0.00	0.00		
17			0.00	0.00	36	0.00	0.00	0.11	0.00	0.00		
18			0.00	0.00	37	0.00	0.00	0.00	0.00	0.00		
19			0.00	0.00	37	0.00	0.00	0.00	0.00	0.00		
20			0.00	0.00	37	0.00	0.00	0.00	0.00	0.00		
21			0.00	0.00	37	0.00	0.00	0.00	0.00	0.00		
22			0.00	0.00	37	0.00	0.00	0.00	0.00	0.00		
23			0.00	0.00	36	0.00	0.00	0.00	0.00	0.00		
24			0.00	0.00	36	0.00	0.00	0.00	0.00	0.00		
25			0.00	0.00	36	0.00	0.00	0.00	0.00	0.00		
26			0.00	0.00	35	0.00	0.00	0.00	0.00	0.00		
27			0.00	0.00	35	0.00	0.00	0.00	0.00	0.00		
28			0.00	0.00	35	0.00	0.00	0.00	0.00	0.00		
29			0.00	0.00	35	0.00	0.00	0.00	0.00	0.00		
30			0.00	0.00	34	0.00	0.00	0.00	0.00	0.00		
31			0.00	---	34	---	0.00	0.00	---	0.00		
TOTAL			0.00	0.00	574.60	36.20	0.00	318.11	0.00	0.00		
MEAN			0.00	0.00	18.5	1.21	0.00	10.3	0.00	0.00		
MAX			0.00	0.00	37	32	0.00	30	0.00	0.00		
MIN			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT			0.00	0.00	1,140	72	0.00	631	0.00	0.00		

06144270 SPANGLER DITCH NEAR GOVENLOCK, SASKATCHEWAN—Continued



06144350 MIDDLE CREEK NEAR SASKATCHEWAN BOUNDARY
(International gaging station)

LOCATION.--Lat 49°25'30", long 110°03'08" (NAD 27), in SW$^1/_4$ sec.34, T.5, R.1 W., fourth meridian, in Alberta, Hydrologic Unit 10050007, on left bank 2 mi upstream from Middle Creek Reservoir, 2 mi west of Saskatchewan boundary, 18 mi northwest of Govenlock, Saskatchewan, and at river mile 65.7.

DRAINAGE AREA.--118 mi^2.

PERIOD OF RECORD.--March 1963 to current season (seasonal records only). Prior to March 1982, published as "Middle Creek near Alberta boundary". June 1910 to April 1915, published as "at McKinnon's Ranch" and September 1949 to current season in reports of Department of the Environment, Canada.

REVISED RECORDS.--W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,381.13 ft (Geodetic Survey of Canada datum). Prior to Mar. 1, 1951, nonrecording gages, and Mar. 1, 1951, to July 5, 1961, water-stage recorder, at site 0.3 mi downstream at different elevations. Water Survey of Canada satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Minor diversions for irrigation upstream from station. Water Survey of Canada telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.04	49	e0.35	0.21	0.25	0.14	0.11	e0.07		
2			e0.04	27	e0.32	0.21	0.21	0.11	0.14	e0.07		
3			e0.04	7.7	e0.28	0.25	0.21	0.11	0.18	e0.07		
4			e0.04	14	e0.25	0.25	0.21	0.07	0.14	e0.07		
5			e0.04	28	e0.25	0.25	0.18	0.07	0.14	e0.07		
6			e0.04	23	e0.21	0.64	0.18	0.07	0.14	0.07		
7			e0.04	15	e0.21	0.46	0.14	0.11	0.14	0.07		
8			e0.04	11	e0.21	0.35	0.11	0.11	0.14	0.07		
9			e0.04	6.6	e0.21	0.25	0.11	0.11	0.14	0.07		
10			e0.04	3.7	e0.21	0.21	0.11	0.11	0.14	0.07		
11			e0.07	2.9	e0.21	0.21	0.11	0.11	0.14	0.07		
12			e0.07	1.3	e0.21	0.21	0.21	0.11	0.14	0.11		
13			e0.07	1.3	e0.21	0.21	0.25	0.07	0.14	0.11		
14			e0.07	0.81	e0.21	0.21	0.21	0.07	0.14	0.14		
15			e0.07	0.64	e0.25	0.21	0.21	0.07	0.18	0.14		
16			e0.11	0.88	e0.25	0.21	0.25	0.11	0.14	0.14		
17			e0.11	1.1	0.25	0.25	0.18	0.11	e0.14	0.18		
18			e0.14	0.95	0.28	0.25	0.18	0.11	e0.14	0.18		
19			e0.21	0.64	0.25	0.25	0.18	0.11	e0.14	0.18		
20			e0.21	0.49	0.28	0.35	0.14	0.11	e0.14	0.21		
21			e0.25	0.42	0.28	0.64	0.14	0.14	e0.14	0.21		
22			e0.28	0.42	0.28	0.60	0.11	0.14	e0.11	0.21		
23			e0.46	0.42	0.35	0.57	0.11	0.18	e0.11	0.25		
24			e0.78	0.39	0.32	0.53	0.11	0.18	e0.11	0.25		
25			e0.74	0.35	0.28	0.49	0.07	0.14	e0.11	0.28		
26			e0.46	0.35	0.25	0.46	0.07	0.18	e0.11	0.28		
27			e0.39	0.35	0.25	0.42	0.07	0.14	e0.11	0.25		
28			e2.4	0.39	0.25	0.35	0.07	0.14	e0.11	0.21		
29			e2.5	0.39	0.39	0.28	0.07	0.14	e0.11	0.18		
30			e22	0.46	0.25	0.25	0.07	0.11	e0.07	0.18		
31			e25	---	0.21	---	0.11	0.11	---	0.18		
TOTAL			56.79	199.95	8.01	10.03	4.63	3.59	3.94	4.64		
MEAN			1.83	6.67	0.26	0.33	0.15	0.12	0.13	0.15		
MAX			25	49	0.39	0.64	0.25	0.18	0.18	0.28		
MIN			0.04	0.35	0.21	0.21	0.07	0.07	0.07	0.07		
AC-FT			113	397	16	20	9.2	7.1	7.8	9.2		

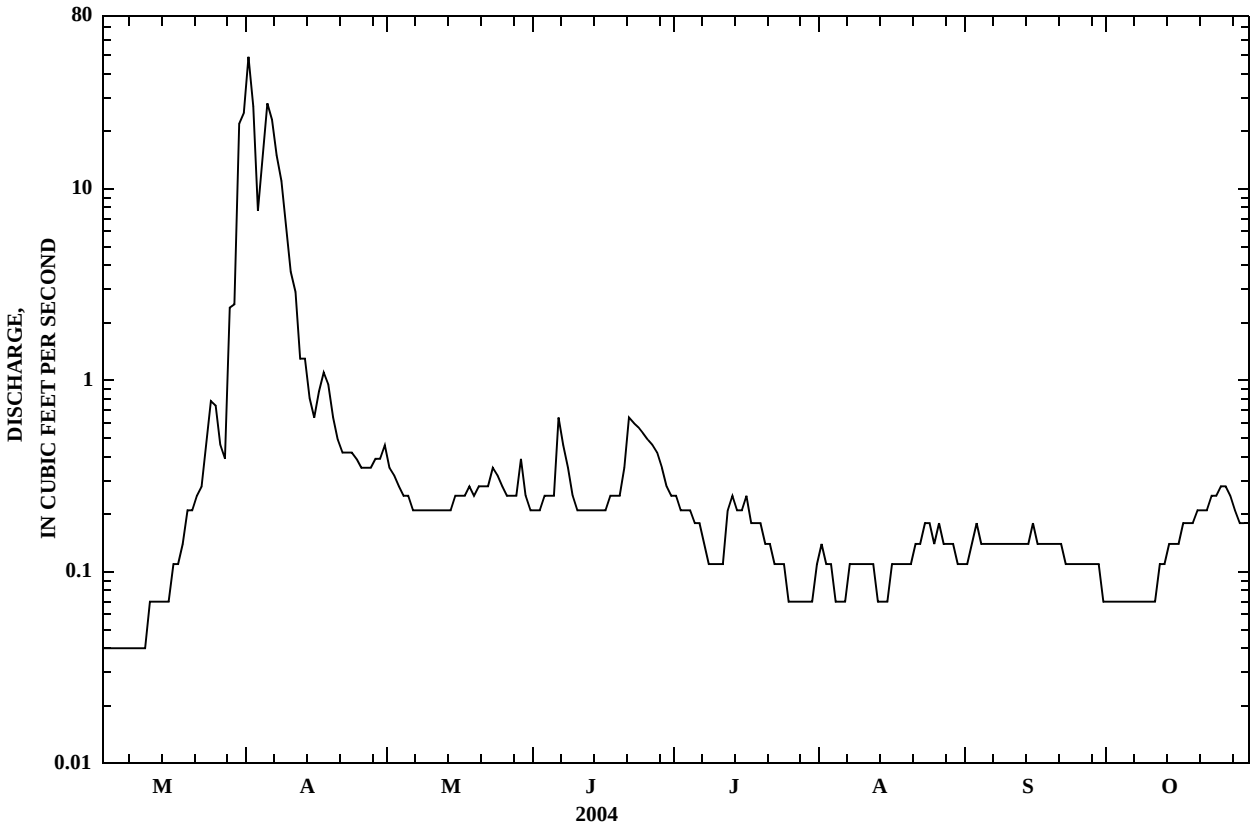
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1910 - 2004*

MEAN	13.9	36.8	11.2	3.84	1.80	0.72	0.98	0.45
MAX	74.2	330	136	45.1	20.0	6.99	24.8	2.38
(WY)	(1960)	(1952)	(1967)	(1953)	(1963)	(1993)	(1986)	(1966)
MIN	0.00	0.04	0.08	0.08	0.02	0.00	0.00	0.05
(WY)	(1950)	(2001)	(2001)	(2000)	(2001)	(2001)	(1962)	(1999)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1910 - 2004*	
HIGHEST DAILY MEAN	49	Apr 1	2,560	Apr 15, 1952
LOWEST DAILY MEAN	0.04	Mar 1	0.00	Mar 1, 1950
MAXIMUM PEAK FLOW	61	Apr 1	a4,980	Apr 15, 1952
MAXIMUM PEAK STAGE	5.14	Apr 1	b10.27	Apr 15, 1952

*--For periods of operation.
a--From rating curve extended above 600 ft^3/s on basis of slope-area measurement of peak flow.
b--Previous site and datum.
e--Estimated.

06144350 MIDDLE CREEK NEAR SASKATCHEWAN BOUNDARY—Continued



06144395 MIDDLE CREEK BELOW MIDDLE CREEK RESERVOIR, NEAR GOVENLOCK, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°24'44", long 109°55'06" (NAD 27), in SW$^1/_4$ sec.25, T.5, R.30 W., third meridian, Hydrologic Unit 10050007, on right bank 9.1 mi downstream from Middle Creek Reservoir, 14 mi northwest of Govenlock, and at river mile 57.6.

DRAINAGE AREA.--149 mi^2.

PERIOD OF RECORD.--April 1972 to current season (seasonal records only). July 1909 to May 1931, September 1935 to October 1936, and April 1972 to current season in reports of Department of the Environment, Canada. Published as "at Ross Ranch" 1909-20, "at Downes and Robert's Ranch" 1920-23, and "at Wright's Ranch" 1920-31, 1935-36. Discharge measurements only during 1928 season.

REVISED RECORDS.--W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,300 ft (NGVD 29). Prior to April 1972, non recording gages at two sites within 2 mi of present site, at different elevations.

REMARKS.--Records good. Flow completely regulated by Middle Creek Reservoir (station number 06144360). Many diversions for irrigation upstream from station. At high reservoir levels flow may be diverted to Lodge Creek through Middle Creek Reservoir. Diversions for irrigation of 920 acres between Middle Creek Reservoir and station. Water Survey of Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

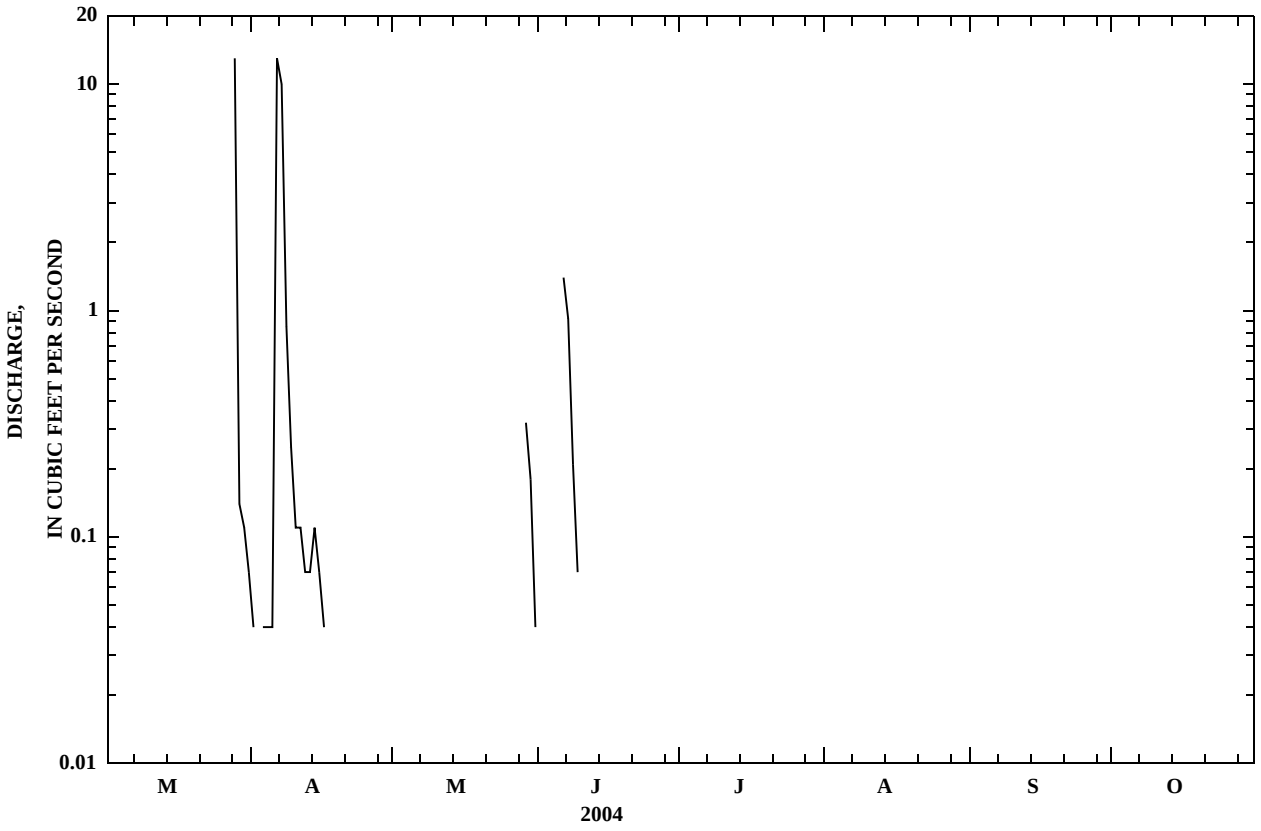
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 77 ft^3/s, May 3, 1985; no flow at times most seasons.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00		
2			e0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
3			e0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00		
4			e0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00		
5			e0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00		
6			e0.00	13	0.00	1.4	0.00	0.00	0.00	0.00		
7			e0.00	10	0.00	0.92	0.00	0.00	0.00	0.00		
8			e0.00	0.85	0.00	0.21	0.00	0.00	0.00	0.00		
9			e0.00	0.25	0.00	0.07	0.00	0.00	0.00	0.00		
10			0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00		
11			0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00		
12			0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00		
13			0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00		
14			0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00		
15			0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00		
16			0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00		
17			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
21			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
22			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
24			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
25			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
27			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28			13	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
29			0.14	0.00	0.32	0.00	0.00	0.00	0.00	0.00		
30			0.11	0.00	0.18	0.00	0.00	0.00	0.00	0.00		
31			0.07	---	0.04	---	0.00	0.00	---	0.00		
TOTAL			13.32	24.84	0.54	2.60	0.00	0.00	0.00	0.00		
MEAN			0.43	0.83	0.02	0.09	0.00	0.00	0.00	0.00		
MAX			13	13	0.32	1.4	0.00	0.00	0.00	0.00		
MIN			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT			26	49	1.1	5.2	0.00	0.00	0.00	0.00		

e--Estimated.

06144395 MIDDLE CREEK BELOW MIDDLE CREEK RESERVOIR, NEAR GOVENLOCK, SASKATCHEWAN—Continued



06144440 MIDDLE CREEK NEAR GOVENLOCK, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°13'42", long 109°48'57" (NAD 27), in NW¼ sec.23, T.3, R.29 W., third meridian, Hydrologic Unit 10050007, on left bank 43.9 mi downstream from Middle Creek Reservoir, 0.3 mi northwest of Govenlock, and at river mile 22.8.

DRAINAGE AREA.--253 mi^2.

PERIOD OF RECORD.--February 1986 to current season (seasonal records only). March 1968 to current season in reports of Department of the Environment, Canada.

GAGE.--Water-stage recorder. Elevation of gage is 3,010 ft (NGVD 29).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow of stream is affected by Middle Creek Reservoir (station 06144360), several smaller reservoirs, diversions for irrigation, and return flow from irrigated areas. At high reservoir levels flow may be diverted to Lodge Creek through Middle Creek Reservoir. Water Survey of Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	13	0.32	5.0	0.25	0.04	0.00	0.00		
2			e0.00	9.4	0.28	5.6	0.18	0.04	0.00	0.00		
3			e0.00	8.4	0.25	4.4	0.11	0.00	0.00	0.00		
4			e0.00	7.8	0.25	3.5	0.11	0.00	0.00	0.00		
5			e0.00	11	0.21	2.8	0.11	0.00	0.00	0.00		
6			e0.00	8.1	0.18	2.9	0.07	0.00	0.00	0.00		
7			e0.00	19	0.14	3.0	0.07	0.00	0.00	0.04		
8			e0.00	12	0.14	2.8	0.07	0.00	0.00	0.07		
9			e0.00	24	0.11	2.4	0.04	0.00	0.00	0.21		
10			e0.74	10	0.07	2.1	0.04	0.00	0.00	0.25		
11			e2.2	6.7	0.42	2.5	0.04	0.00	0.00	0.25		
12			e3.3	5.4	0.60	4.2	0.04	0.00	0.00	0.25		
13			e2.5	4.6	0.67	3.6	0.04	0.00	0.00	0.21		
14			e6.9	3.9	0.78	3.2	0.00	0.00	0.00	0.28		
15			e5.3	3.5	0.85	2.7	0.00	0.00	e0.00	0.28		
16			e4.9	3.1	0.71	2.2	0.00	0.00	0.00	0.49		
17			e4.4	2.9	3.2	1.8	0.00	0.00	0.00	0.46		
18			e4.3	2.7	2.6	1.5	0.00	0.00	0.00	0.53		
19			e6.8	2.4	2.2	1.3	0.00	0.00	0.00	0.57		
20			e14	1.6	2.0	1.2	0.00	0.00	0.00	0.64		
21			e12	3.7	1.9	1.1	0.00	0.00	0.00	0.67		
22			e5.8	4.0	2.2	1.1	0.00	0.00	0.00	0.67		
23			e5.5	2.4	2.9	0.95	0.00	0.00	0.00	0.67		
24			e21	1.4	4.0	0.85	0.00	0.00	0.00	0.67		
25			e21	0.95	3.7	0.74	0.00	0.00	0.00	0.71		
26			e13	0.74	3.4	0.64	0.00	0.00	0.00	0.60		
27			e7.1	0.60	2.9	0.53	0.00	0.00	0.00	0.57		
28			e7.3	0.53	3.3	0.46	0.00	0.00	0.00	0.57		
29			e12	0.49	4.1	0.35	0.00	0.00	0.00	0.57		
30			11	0.42	3.5	0.28	0.00	0.00	0.00	0.60		
31			13	---	2.9	---	0.00	0.00	---	0.60		
TOTAL			184.04	174.73	50.78	65.70	1.17	0.08	0.00	11.43		
MEAN			5.94	5.82	1.64	2.19	0.04	0.00	0.00	0.37		
MAX			21	24	4.1	5.6	0.25	0.04	0.00	0.71		
MIN			0.00	0.42	0.07	0.28	0.00	0.00	0.00	0.00		
AC-FT			365	347	101	130	2.3	0.2	0.00	23		

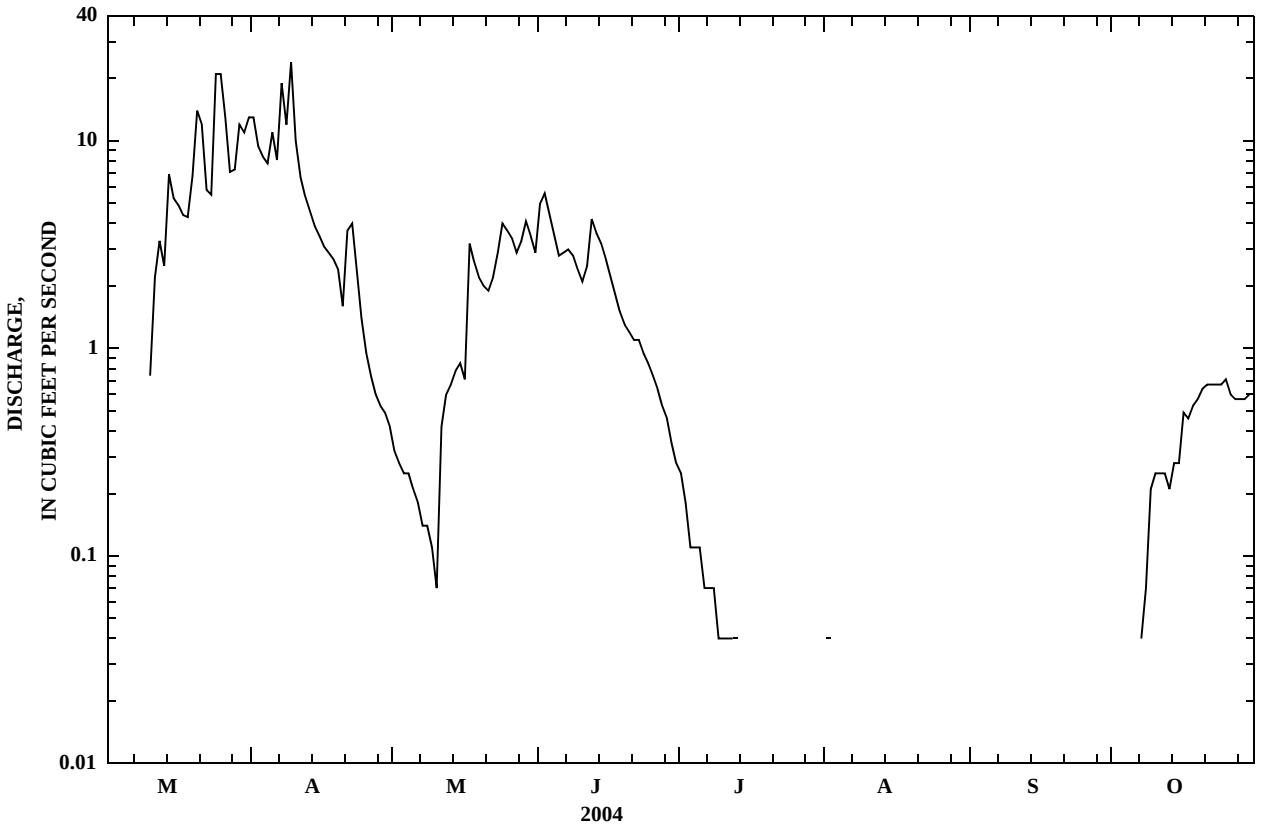
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1986 - 2004*

MEAN	11.3	5.36	2.56	3.53	0.62	0.14	3.07	0.57
MAX	53.2	36.4	6.79	14.3	5.45	2.20	56.9	4.04
(WY)	(1997)	(1996)	(1997)	(1988)	(1993)	(1993)	(1986)	(1987)
MIN	0.00	0.83	0.27	0.00	0.00	0.00	0.00	0.00
(WY)	(2002)	(1992)	(1992)	(1992)	(1990)	(1986)	(1987)	(1991)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1986 - 2004*	
HIGHEST DAILY MEAN	24	Apr 9	724	Sep 26, 1986
LOWEST DAILY MEAN	0.00	Mar 1	0.00	Feb 19, 1986
MAXIMUM PEAK FLOW	a32	Mar 24	1,190	Sep 25, 1986
MAXIMUM PEAK STAGE	b5.00	Mar 24	9.81	Sep 25, 1986

*--During periods of operation.
a--Gage height, 4.79 ft.
b--Backwater from ice.
e--Estimated.

06144440 MIDDLE CREEK NEAR GOVENLOCK, SASKATCHEWAN—Continued



06144450 MIDDLE CREEK ABOVE LODGE CREEK, NEAR GOVENLOCK, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°06'01", long 109°49'02" (NAD 27), in NE¼ sec.4, T.2, R.29 W., third meridian, Hydrologic Unit 10050007, on left bank, 0.7 mi upstream from Lodge Creek, and 9 mi south of Govenlock.

DRAINAGE AREA.--276 mi^2.

PERIOD OF RECORD.--March 1962 to October 1966 and February 1986 to current season. Seasonal records only. March 1911 to May 1931 and March 1962 to current season in reports of Department of the Environment, Canada. Published as "at Hammond's Ranch" 1911-31.

GAGE.--Water-stage recorder. Elevation of gage is 2,830 ft (NGVD 29). Prior to Mar. 1, 1962, nonrecording gage at site 1,000 ft downstream at different elevation.

REMARKS.--Records fair. Natural flow of stream affected by Middle Creek Reservoir (station 06144360), several smaller reservoirs, diversions for irrigation, and return flow from irrigated areas. At high reservoir levels flow may be diverted to Lodge Creek through Middle Creek Reservoir. Water Survey of Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	0.07	3.0	2.7	3.0	0.00	0.00	0.00		
2			e0.00	0.04	1.2	5.0	2.1	0.39	0.00	0.00		
3			e0.00	0.04	0.88	4.9	1.1	0.14	0.00	0.00		
4			e0.00	0.04	0.92	3.9	0.67	0.04	0.00	0.00		
5			e0.00	0.00	0.88	1.6	0.49	0.00	0.00	0.00		
6			e0.00	0.00	0.81	1.2	1.2	0.00	0.00	0.00		
7			e0.00	0.00	0.78	1.1	2.2	0.00	0.00	0.00		
8			e0.00	0.00	0.67	0.99	0.81	0.00	0.00	0.00		
9			e0.00	0.00	0.57	0.74	0.28	0.00	0.00	0.00		
10			e0.00	0.00	0.46	0.64	0.14	0.00	0.00	0.00		
11			e0.00	0.00	1.2	0.53	0.07	0.00	0.00	0.00		
12			e0.00	0.00	1.6	0.49	0.04	0.00	0.00	0.00		
13			e0.00	0.00	4.7	0.46	0.04	0.00	0.00	0.00		
14			0.71	0.00	2.5	0.42	0.00	0.00	0.00	0.00		
15			2.3	0.00	1.0	0.32	0.00	0.00	0.00	0.00		
16			3.9	0.00	0.53	0.25	0.00	0.00	0.00	0.00		
17			9.7	0.53	0.18	0.21	0.00	0.00	0.00	0.00		
18			8.7	0.81	0.07	0.21	0.00	0.00	0.00	0.00		
19			9.9	1.6	0.11	0.18	0.00	0.00	0.00	0.00		
20			11	1.4	0.07	0.14	0.00	0.00	0.00	0.00		
21			9.6	1.6	0.07	0.07	0.00	0.00	0.00	0.00		
22			6.0	1.1	0.04	0.04	0.00	0.00	0.00	0.00		
23			2.9	1.2	1.2	0.04	0.00	0.00	0.00	0.00		
24			3.7	0.53	1.9	0.00	0.00	0.00	0.00	0.00		
25			3.7	0.25	1.0	0.00	0.00	0.00	0.00	0.00		
26			2.4	4.2	0.74	0.00	0.00	0.00	0.00	0.00		
27			1.3	4.7	1.5	0.00	0.00	0.00	0.00	0.00		
28			0.67	4.6	2.4	0.00	0.00	0.00	0.00	0.00		
29			0.32	4.5	2.9	0.95	0.00	0.00	0.00	0.00		
30			0.21	4.4	2.4	2.2	0.00	0.00	0.00	0.00		
31			0.11	---	2.0	---	0.00	0.00	---	0.00		
TOTAL			77.12	31.61	38.28	29.28	12.14	0.57	0.00	0.00		
MEAN			2.49	1.05	1.23	0.98	0.39	0.02	0.00	0.00		
MAX			11	4.7	4.7	5.0	3.0	0.39	0.00	0.00		
MIN			0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00		
AC-FT			153	63	76	58	24	1.1	0.00	0.00		

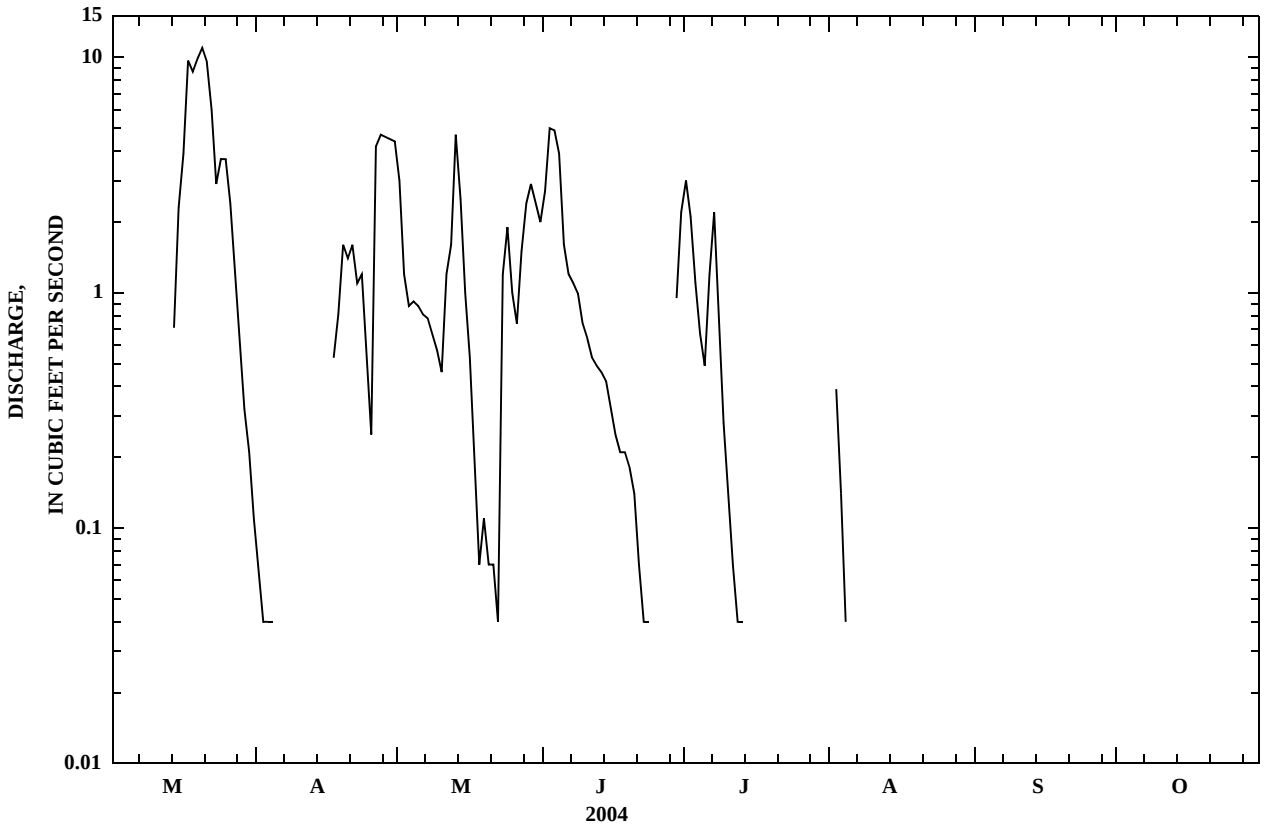
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1911 - 2004*

MEAN	12.7	51.9	12.9	6.59	3.84	0.52	2.54	0.56
MAX	71.8	457	222	61.1	35.1	9.76	63.3	8.35
(WY)	(1997)	(1917)	(1927)	(1965)	(1923)	(1915)	(1986)	(1987)
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1919)	(1991)	(1989)	(1926)	(1914)	(1911)	(1912)	(1913)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1911 - 2004*	
HIGHEST DAILY MEAN	11	Mar 20	a1,170	Apr 24, 1922
LOWEST DAILY MEAN	0.00	Mar 1	0.00	Mar 13, 1911
MAXIMUM PEAK FLOW	19	Mar 20	738	Sep 26, 1986
MAXIMUM PEAK STAGE	4.89	Mar 20	13.84	Sep 26, 1986

*--During periods of operation.
a--Maximum peak flow not determined.
e--Estimated.

06144450 MIDDLE CREEK ABOVE LODGE CREEK, NEAR GOVENLOCK, SASKATCHEWAN—Continued



06145500 LODGE CREEK BELOW MCRAE CREEK, AT INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 49°00'19", long 109°43'02" (NAD 27), in SW$^1/_4$ sec.5, T.1, R.28 W., third meridian, in Saskatchewan, Hydrologic Unit 10050007, on right bank 0.3 mi downstream from McRae Creek, 0.4 mi north of international boundary, 0.8 mi northeast of Willow Creek Port of Entry, 31 mi north of Havre, MT, and at river mile 84.3.

DRAINAGE AREA.--825 mi^2, of which 88 mi^2 are noncontributing.

PERIOD OF RECORD.--October 1951 to current season (seasonal records only). Prior to October 1951, records were collected on both McRae Coulee (1927-51) and Lodge Creek above McRae Coulee (1910-51). Summations are equivalent to records at this site. Prior to March 1965, published as "below McRae Coulee."

REVISED RECORDS.--W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,731.0 ft (International Boundary Survey datum).

REMARKS.--Records good. Natural flow affected by numerous storage reservoirs, diversions for irrigation of about 3,000 acres, and return flow from irrigated areas. Water Survey of Canada satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0.04	3.5	9.1	8.5	0.14	0.04	0.04	0.00		
2			0.04	3.0	6.1	6.1	0.18	0.04	0.04	0.00		
3			0.04	2.5	4.3	5.0	0.14	0.04	0.04	0.00		
4			0.04	2.3	3.0	7.6	0.14	0.04	0.04	0.00		
5			0.04	2.1	2.1	5.6	0.14	0.04	0.04	0.00		
6			0.04	17	1.5	44	0.78	0.04	0.04	0.00		
7			0.04	27	1.2	102	1.6	0.04	0.04	0.00		
8			0.07	34	0.99	100	1.2	0.04	0.04	0.00		
9			0.18	43	0.78	100	0.81	0.04	0.04	0.00		
10			0.53	46	0.53	79	0.53	0.04	0.04	0.00		
11			6.6	38	0.85	25	0.42	0.04	0.04	0.00		
12			16	30	1.3	11	0.78	0.04	0.00	0.00		
13			45	25	1.3	6.6	0.60	0.04	0.00	0.00		
14			161	21	1.4	4.6	0.39	0.04	0.00	0.00		
15			71	16	1.9	3.4	0.25	0.04	0.00	0.00		
16			97	12	4.1	2.6	0.28	0.04	0.00	0.00		
17			91	11	2.8	2.0	0.25	0.04	0.00	0.00		
18			86	9.9	2.0	1.6	0.14	0.04	0.00	0.00		
19			138	8.4	2.4	1.2	0.11	0.04	0.00	0.00		
20			108	7.9	1.9	1.0	0.11	0.04	0.00	0.04		
21			65	8.3	1.9	0.81	0.07	0.04	0.00	0.04		
22			48	8.0	3.2	0.71	0.04	0.04	0.00	0.04		
23			36	7.1	3.6	0.60	0.04	0.04	0.00	0.04		
24			32	5.7	8.6	0.49	0.04	0.04	0.00	0.04		
25			27	5.6	30	0.39	0.04	0.04	0.00	0.04		
26			23	4.4	26	0.35	0.04	0.04	0.00	0.04		
27			18	4.5	14	0.28	0.04	0.04	0.00	0.04		
28			11	5.3	11	0.25	0.04	0.04	0.00	0.04		
29			6.7	5.5	8.5	0.18	0.04	0.04	0.00	0.04		
30			5.0	5.9	8.7	0.14	0.04	0.04	0.00	0.00		
31			4.1	---	9.0	---	0.04	0.04	---	0.00		
TOTAL			1,096.46	419.9	174.05	521.00	9.46	1.24	0.44	0.40		
MEAN			35.4	14.0	5.61	17.4	0.31	0.04	0.01	0.01		
MAX			161	46	30	102	1.6	0.04	0.04	0.04		
MIN			0.04	2.1	0.53	0.14	0.04	0.04	0.00	0.00		
AC-FT			2,170	833	345	1,030	19	2.5	0.9	0.8		

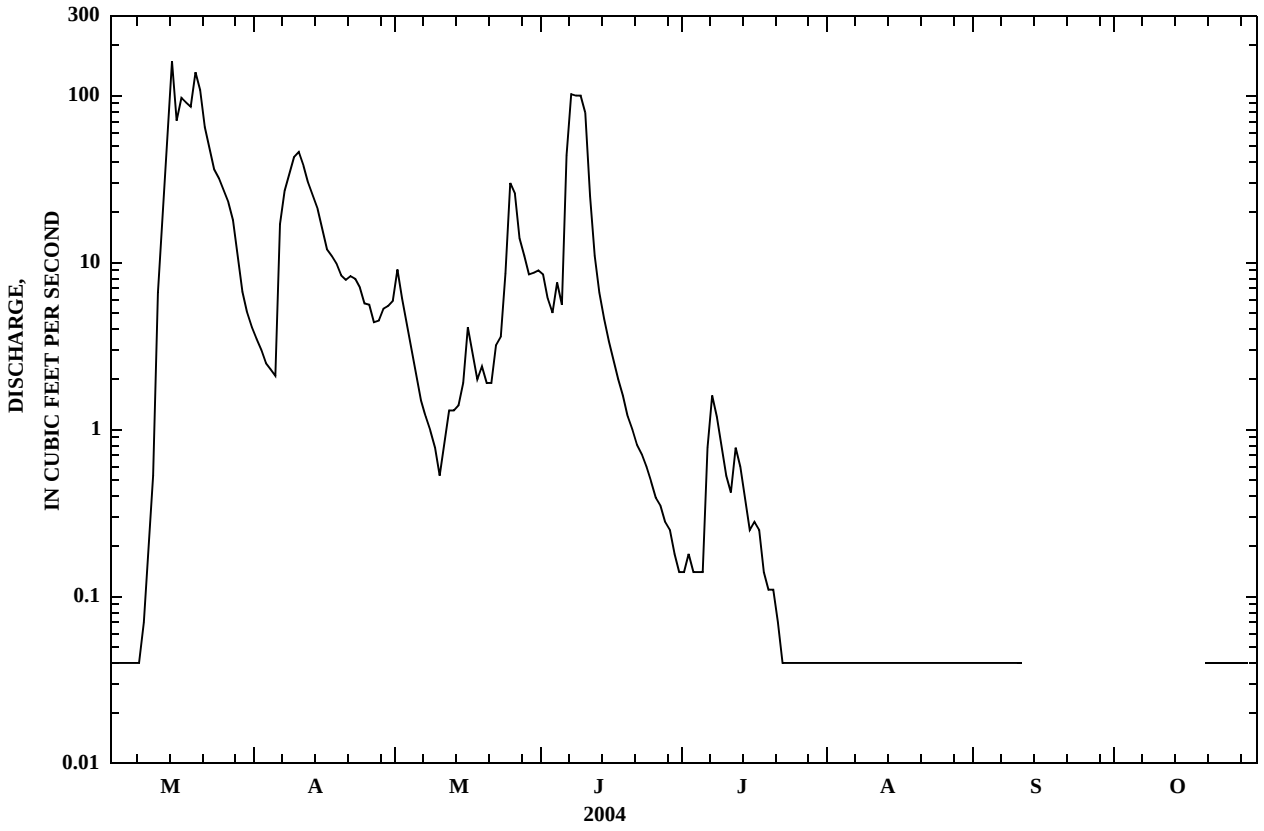
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1952 - 2004

MEAN	54.9	135	39.2	24.2	9.68	2.22	13.4	1.42
MAX	374	1,899	500	294	174	33.1	678	52.3
(WY)	(1997)	(1952)	(1967)	(1965)	(1955)	(1993)	(1986)	(1987)
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1953)	(1992)	(1992)	(1963)	(1958)	(1954)	(1952)	(1953)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1952 - 2004	
HIGHEST DAILY MEAN	161	Mar 14	7,770	Sep 26, 1986
LOWEST DAILY MEAN	0.00	many days	0.00	Mar 1, 1952
MAXIMUM PEAK FLOW	223	Mar 14	a9,890	Sep 25, 1986
MAXIMUM PEAK STAGE	4.50	Mar 14	16.36	Sep 25, 1986

a--From rating curve extended above 4,000 ft^3/s on basis of slope-area measurement of peak flow.

06145500 LODGE CREEK BELOW MCRAE CREEK, AT INTERNATIONAL BOUNDARY—Continued



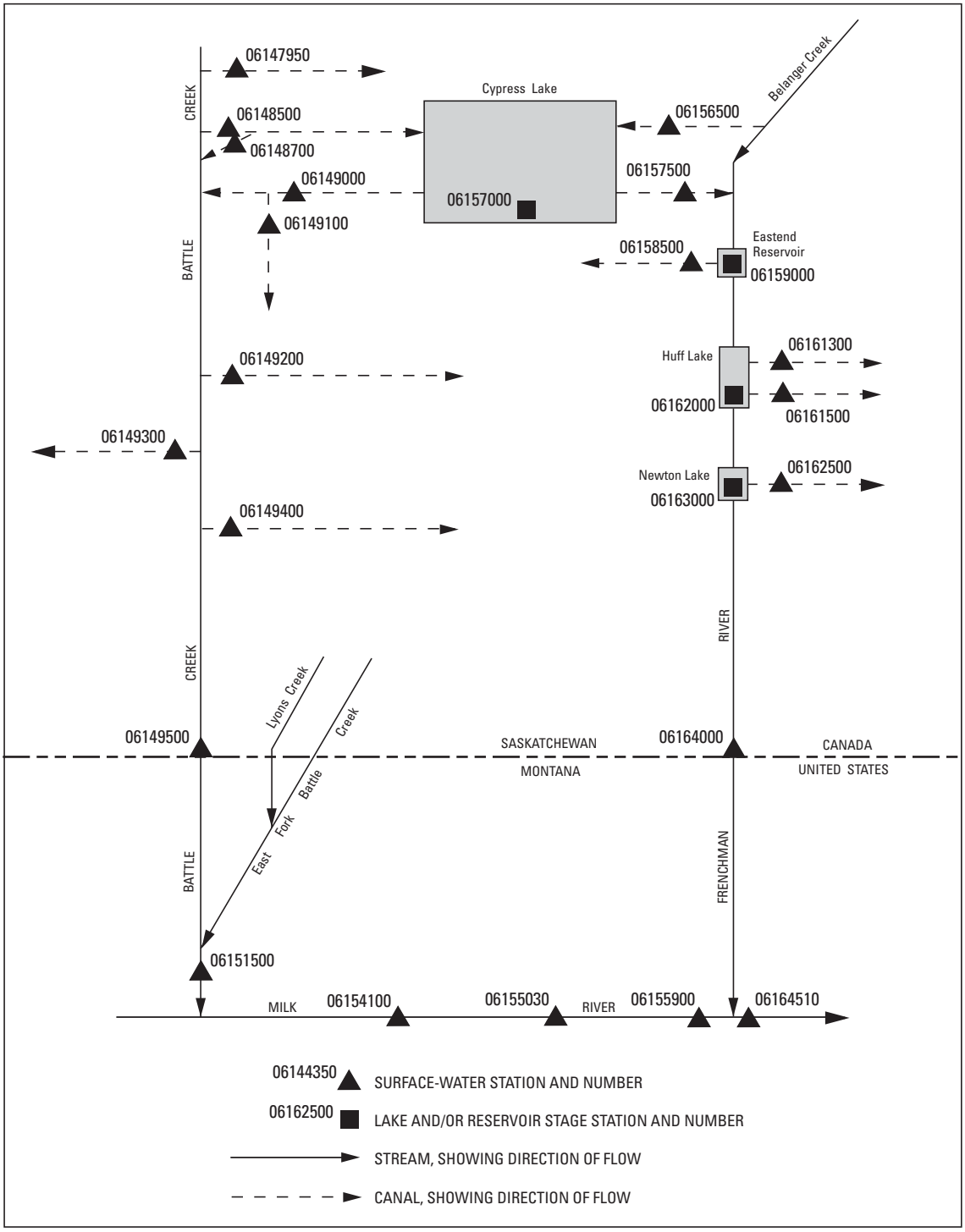


Figure 12. Schematic diagram showing diversions and storage in Battle Creek and Frenchman River basins.

06147950 GAFF DITCH NEAR MERRYFLAT, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°26'05", long 109°50'07" (NAD 27), in NW$^1/_4$ sec.34, T.5, R.29 W., third meridian, Hydrologic Unit 10050008, on left bank about 200 ft downstream from headgates, and 4 mi southwest of Merryflat.

PERIOD OF RECORD.--March 1972 to current season (seasonal record only). March 1964 to current season in reports of Department of the Environment, Canada.

GAGE.--Water-stage recorder. Elevation of gage is 3,350 ft (NGVD 29).

REMARKS.--Records poor. Water is diverted from left bank of Battle Creek in NW$^1/_4$ sec.34, T.5. R.29 W., third meridian, for irrigation of about 890 acres along Battle Creek. Water Survey of Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

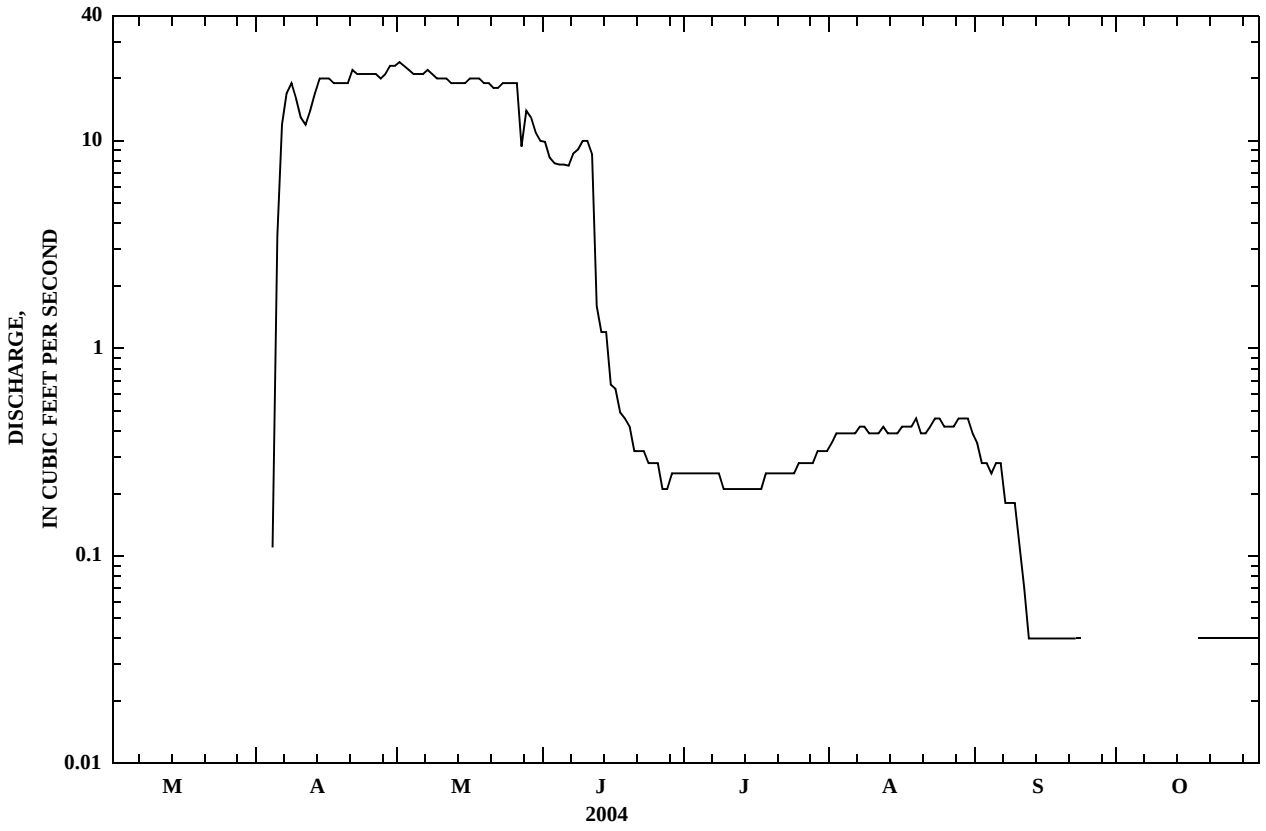
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 42 ft^3/s, Apr. 22, 1971; no flows at times each season.

DISCHARGE, CUBIC FEET PER SECOND CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	e0.00	24	9.9	0.25	0.35	0.35	0.00		
2			e0.00	e0.00	23	8.3	0.25	0.39	0.28	0.00		
3			e0.00	e0.00	22	7.8	0.25	0.39	0.28	0.00		
4			e0.00	e0.11	21	7.7	0.25	0.39	0.25	0.00		
5			e0.00	e3.5	21	7.7	0.25	0.39	0.28	0.00		
6			e0.00	12	21	7.6	0.25	0.39	0.28	0.00		
7			e0.00	17	22	8.7	0.25	0.42	0.18	0.00		
8			e0.00	19	21	9.1	0.25	0.42	0.18	0.00		
9			e0.00	16	20	10	0.21	0.39	0.18	0.00		
10			e0.00	13	20	10	0.21	0.39	0.11	0.00		
11			e0.00	12	20	8.6	0.21	0.39	0.07	0.00		
12			e0.00	14	19	1.6	0.21	0.42	0.04	0.00		
13			e0.00	17	19	1.2	0.21	0.39	0.04	0.00		
14			e0.00	20	19	1.2	0.21	0.39	0.04	0.00		
15			e0.00	20	19	0.67	0.21	0.39	0.04	0.00		
16			e0.00	20	20	0.64	0.21	0.42	0.04	0.00		
17			e0.00	19	20	0.49	0.21	0.42	0.04	0.00		
18			e0.00	19	20	0.46	0.25	0.42	0.04	0.04		
19			e0.00	19	19	0.42	0.25	0.46	0.04	0.04		
20			e0.00	19	19	0.32	0.25	0.39	0.04	0.04		
21			e0.00	22	18	0.32	0.25	0.39	0.04	0.04		
22			e0.00	21	18	0.32	0.25	0.42	0.04	0.04		
23			e0.00	21	19	0.28	0.25	0.46	0.04	0.04		
24			e0.00	21	19	0.28	0.25	0.46	0.00	0.04		
25			e0.00	21	19	0.28	0.28	0.42	0.00	0.04		
26			e0.00	21	19	0.21	0.28	0.42	0.00	0.04		
27			e0.00	20	9.4	0.21	0.28	0.42	0.00	0.04		
28			e0.00	21	14	0.25	0.28	0.46	0.00	0.04		
29			e0.00	23	13	0.25	0.32	0.46	0.00	0.04		
30			e0.00	23	11	0.25	0.32	0.46	0.00	0.04		
31			e0.00	---	10	---	0.32	0.39	---	0.04		
TOTAL			0.00	473.61	578.4	105.05	7.72	12.77	2.92	0.56		
MEAN			0.00	15.8	18.7	3.50	0.25	0.41	0.10	0.02		
MAX			0.00	23	24	10	0.32	0.46	0.35	0.04		
MIN			0.00	0.00	9.4	0.21	0.21	0.35	0.00	0.00		
AC-FT			0.00	939	1,150	208	15	25	5.8	1.1		

e--Estimated.

06147950 GAFF DITCH NEAR MERRYFLAT, SASKATCHEWAN—Continued



06148500 CYPRESS LAKE WEST INFLOW CANAL NEAR WEST PLAINS, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°28'18", long 109°37'08" (NAD 27), in SE$^1/_4$ sec.18, T.6, R.27 W., third meridian, Hydrologic Unit 10050008, on left bank 2.5 mi downstream from canal headgates, 5.5 mi northeast of West Plains, and 13 mi northwest of Consul.

PERIOD OF RECORD.--March 1939 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 3,210 ft (NGVD 29). Prior to Oct. 16, 1956, at site 2.3 mi upstream at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Canal diverts water from Battle Creek in NW$^1/_4$ sec.1, T.6, R.28 W., third meridian, for storage in Cypress Lake. Part or all of flow may be returned to Battle Creek via Cypress Lake West Inflow Canal Drain (station 06148700) 0.4 mi downstream. Water Survey of Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

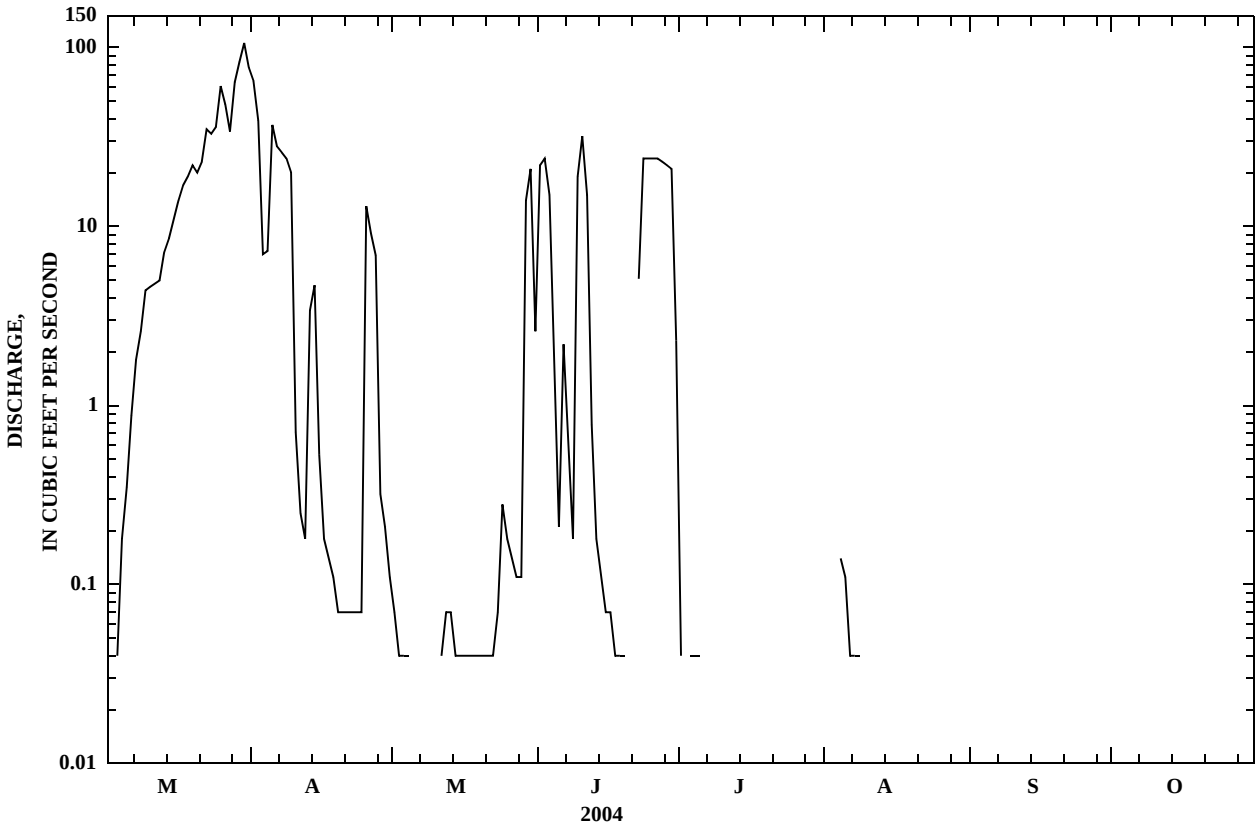
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 884 ft^3/s, Apr. 27, 1965; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	65	0.07	22	0.04	0.00	0.00	0.00		
2			e0.00	39	0.04	24	0.00	0.00	0.00	0.00		
3			e0.04	7.0	0.04	15	0.04	0.00	0.00	0.00		
4			e0.18	7.3	0.04	1.2	0.04	0.14	0.00	0.00		
5			e0.35	37	0.00	0.21	0.04	0.11	0.00	0.00		
6			e0.88	28	0.00	2.2	0.00	0.04	0.00	0.00		
7			e1.8	26	0.00	0.60	0.00	0.04	0.00	0.00		
8			e2.6	24	0.00	0.18	0.00	0.04	0.00	0.00		
9			e4.4	20	0.00	19	0.00	0.00	0.00	0.00		
10			e4.6	0.71	0.00	32	0.00	0.00	0.00	0.00		
11			e4.8	0.25	0.04	15	0.00	0.00	0.00	0.00		
12			e5.0	0.18	0.07	0.78	0.00	0.00	0.00	0.00		
13			e7.2	3.4	0.07	0.18	0.00	0.00	0.00	0.00		
14			e8.6	4.7	0.04	0.11	0.00	0.00	0.00	0.00		
15			e11	0.53	0.04	0.07	0.00	0.00	0.00	0.00		
16			e14	0.18	0.04	0.07	0.00	0.00	0.00	0.00		
17			e17	0.14	0.04	0.04	0.00	0.00	0.00	0.00		
18			e19	0.11	0.04	0.04	0.00	0.00	0.00	0.00		
19			e22	0.07	0.04	0.04	0.00	0.00	0.00	0.00		
20			e20	0.07	0.04	0.00	0.00	0.00	0.00	0.00		
21			e23	0.07	0.04	0.00	0.00	0.00	0.00	0.00		
22			e35	0.07	0.04	5.1	0.00	0.00	0.00	0.00		
23			e33	0.07	0.07	24	0.00	0.00	0.00	0.00		
24			e36	0.07	0.28	24	0.00	0.00	0.00	0.00		
25			e61	13	0.18	24	0.00	0.00	0.00	0.00		
26			e48	9.2	0.14	24	0.00	0.00	0.00	0.00		
27			e34	6.9	0.11	23	0.00	0.00	0.00	0.00		
28			e64	0.32	0.11	22	0.00	0.00	0.00	0.00		
29			e83	0.21	14	21	0.00	0.00	0.00	0.00		
30			e106	0.11	21	2.3	0.00	0.00	0.00	0.00		
31			e77	---	2.6	---	0.00	0.00	---	0.00		
TOTAL			743.45	293.66	39.22	302.12	0.16	0.37	0.00	0.00		
MEAN			24.0	9.79	1.27	10.1	0.01	0.01	0.00	0.00		
MAX			106	65	21	32	0.04	0.14	0.00	0.00		
MIN			0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT			1,470	582	78	599	0.3	0.7	0.00	0.00		

e--Estimated.

06148500 CYPRESS LAKE WEST INFLOW CANAL NEAR WEST PLAINS, SASKATCHEWAN—Continued



06148700 CYPRESS LAKE WEST INFLOW CANAL DRAIN NEAR OXARAT, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°28'25", long 109°36'38" (NAD 27), in NW$^1/_4$ sec.17, T.6, R.27 W., third meridian, Hydrologic Unit 10050008, on left bank about 500 ft downstream from drain gate on Cypress Lake west inflow canal, 0.5 mi upstream from Battle Creek, and 4 mi northwest of Oxarat.

PERIOD OF RECORD.--March 1963 to current season (seasonal records only). March 1955 to current season in reports of Department of the Environment, Canada.

GAGE.--Water-stage recorder. Elevation of gage is 3,200 ft (NGVD 29).

REMARKS.--Records poor. Drain used as an emergency bypass to return diverted water to Battle Creek. It may also be used to return stored water from Cypress Lake when lake stage is high.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

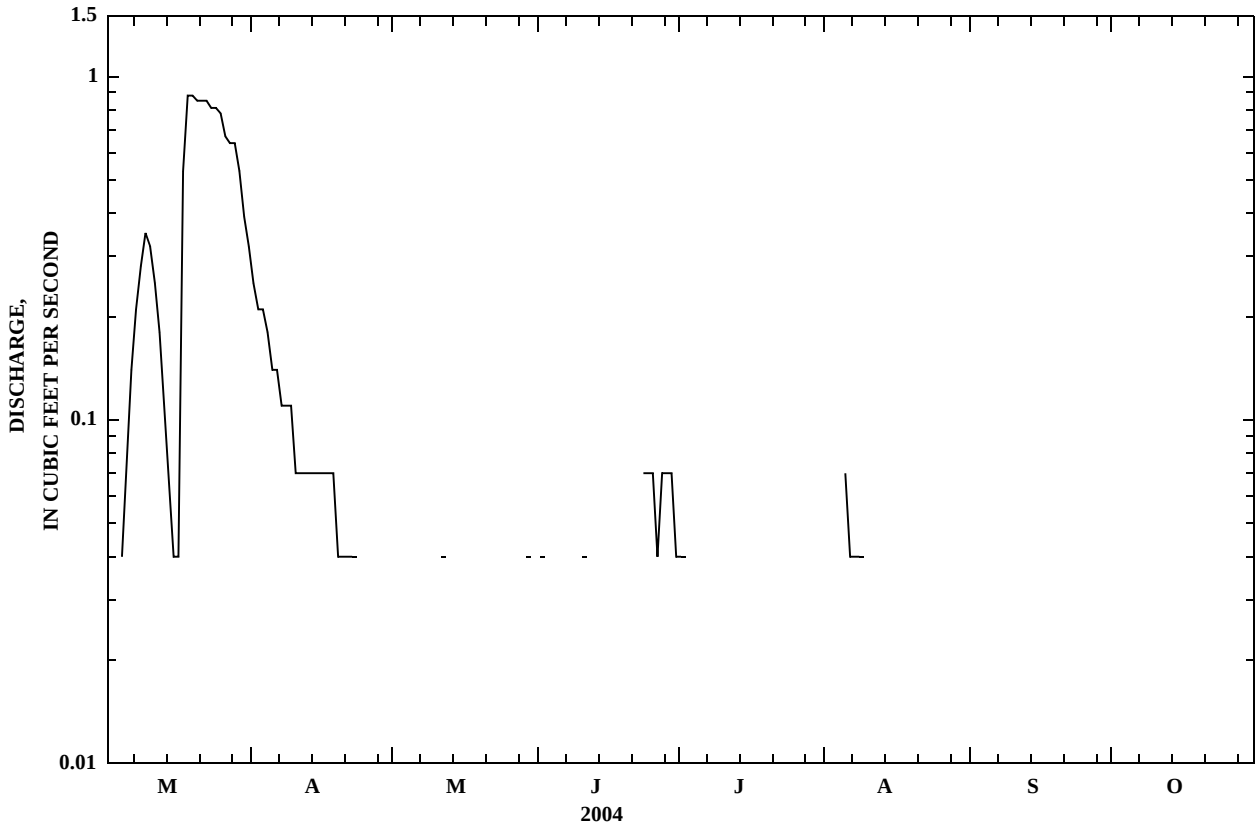
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 450 ft^3/s, Apr. 20, 1955; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	0.25	0.00	0.04	0.04	0.00	0.00	0.00		
2			e0.00	0.21	0.00	0.04	0.04	0.00	0.00	0.00		
3			e0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00		
4			e0.04	0.18	0.00	0.00	0.00	0.00	0.00	0.00		
5			e0.07	0.14	0.00	0.00	0.00	0.07	0.00	0.00		
6			e0.14	0.14	0.00	0.00	0.00	0.04	0.00	0.00		
7			e0.21	0.11	0.00	0.00	0.00	0.04	0.00	0.00		
8			e0.28	0.11	0.00	0.00	0.00	0.04	0.00	0.00		
9			e0.35	0.11	0.00	0.00	0.00	0.04	0.00	0.00		
10			e0.32	0.07	0.00	0.04	0.00	0.00	0.00	0.00		
11			e0.25	0.07	0.04	0.04	0.00	0.00	0.00	0.00		
12			e0.18	0.07	0.04	0.00	0.00	0.00	0.00	0.00		
13			e0.11	0.07	0.00	0.00	0.00	0.00	0.00	0.00		
14			e0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00		
15			e0.04	0.07	0.00	0.00	0.00	0.00	0.00	0.00		
16			e0.04	0.07	0.00	0.00	0.00	0.00	0.00	0.00		
17			e0.53	0.07	0.00	0.00	0.00	0.00	0.00	0.00		
18			e0.88	0.07	0.00	0.00	0.00	0.00	0.00	0.00		
19			e0.88	0.04	0.00	0.00	0.00	0.00	0.00	0.00		
20			e0.85	0.04	0.00	0.00	0.00	0.00	0.00	0.00		
21			e0.85	0.04	0.00	0.00	0.00	0.00	0.00	0.00		
22			e0.85	0.04	0.00	0.00	0.00	0.00	0.00	0.00		
23			e0.81	0.04	0.04	0.07	0.00	0.00	0.00	0.00		
24			e0.81	0.00	0.00	0.07	0.00	0.00	0.00	0.00		
25			e0.78	0.00	0.00	0.07	0.00	0.00	0.00	0.00		
26			e0.67	0.04	0.04	0.04	0.00	0.00	0.00	0.00		
27			e0.64	0.00	0.00	0.07	0.00	0.00	0.00	0.00		
28			e0.64	0.00	0.00	0.07	0.00	0.00	0.00	0.00		
29			e0.53	0.00	0.04	0.07	0.00	0.00	0.00	0.00		
30			0.39	0.00	0.04	0.04	0.00	0.00	0.00	0.00		
31			0.32	---	0.00	---	0.00	0.00	---	0.00		
TOTAL			12.53	2.33	0.24	0.66	0.08	0.23	0.00	0.00		
MEAN			0.40	0.08	0.01	0.02	0.00	0.01	0.00	0.00		
MAX			0.88	0.25	0.04	0.07	0.04	0.07	0.00	0.00		
MIN			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT			25	4.6	0.5	1.3	0.2	0.5	0.00	0.00		

e--Estimated.

06148700 CYPRESS LAKE WEST INFLOW CANAL DRAIN NEAR OXARAT, SASKATCHEWAN—Continued



06149000 CYPRESS LAKE WEST OUTFLOW CANAL NEAR WEST PLAINS, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°28'14", long 109°35'18" (NAD 27), in SW$^1/_4$ sec.16, T.6, R.27 W., third meridian, Hydrologic Unit 10050008, on left bank 1.1 mi downstream from Cypress Lake West Dam, 6 mi northeast of West Plains, and 13 mi north of Consul.

PERIOD OF RECORD.--March 1940 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 3,180 ft (NGVD 29). Prior to Sept. 18, 1952, at site 1 mi upstream and 300 ft downstream from Cypress Lake West Dam at different elevation.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Canal diverts water from Cypress Lake in NW$^1/_4$ sec.15, T.6, R.27 W., third meridian, for irrigation of 5,500 acres in Battle Creek basin in Saskatchewan. Water may be delivered to Battle Creek or diverted into Vidora Ditch at gate structure near lower end of canal. Water Survey of Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

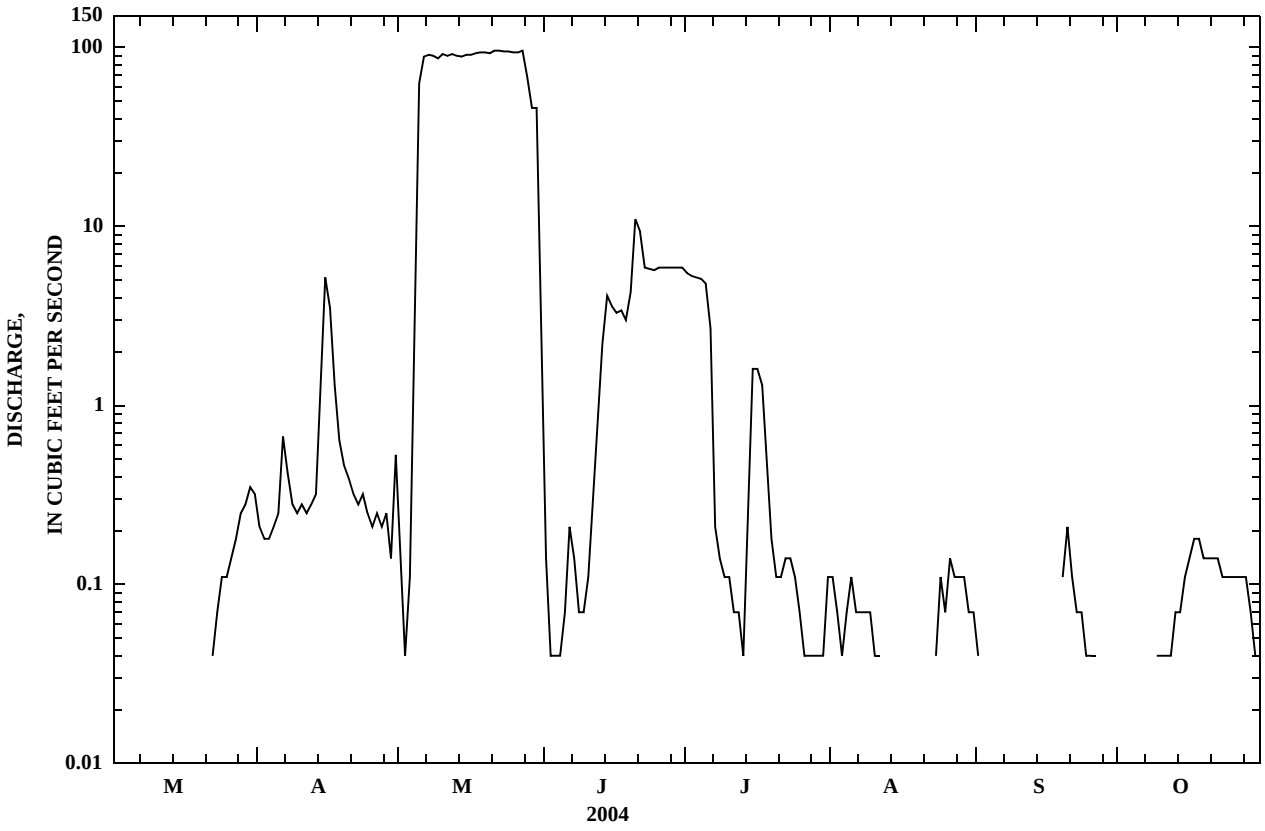
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 304 ft^3/s, May 4, 1951; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	e0.21	0.14	0.14	5.5	0.11	0.04	0.00		
2			e0.00	e0.18	0.04	0.04	5.3	0.07	0.00	0.00		
3			e0.00	e0.18	0.11	0.04	5.2	0.04	0.00	0.00		
4			e0.00	e0.21	3.0	0.04	5.1	0.07	0.00	0.00		
5			e0.00	e0.25	63	0.07	4.8	0.11	0.00	0.00		
6			e0.00	e0.67	89	0.21	2.7	0.07	0.00	0.00		
7			e0.00	e0.42	91	0.14	0.21	0.07	0.00	0.00		
8			e0.00	0.28	90	0.07	0.14	0.07	0.00	0.00		
9			e0.00	0.25	87	0.07	0.11	0.07	0.00	0.04		
10			e0.00	0.28	92	0.11	0.11	0.04	0.00	0.04		
11			e0.00	0.25	90	0.35	0.07	0.04	0.00	0.04		
12			e0.00	0.28	92	0.85	0.07	0.00	0.00	0.04		
13			e0.00	0.32	90	2.2	0.04	0.00	0.00	0.07		
14			e0.00	1.6	89	4.1	0.21	0.00	0.00	0.07		
15			e0.00	5.2	91	3.6	1.6	0.00	0.00	0.11		
16			e0.00	e3.5	91	3.3	1.6	0.00	0.00	0.14		
17			e0.00	1.3	93	3.4	1.3	0.00	0.00	0.18		
18			e0.00	0.64	94	3.0	0.49	0.00	0.00	0.18		
19			e0.00	0.46	94	4.3	0.18	0.00	0.11	0.14		
20			e0.00	0.39	93	11	0.11	0.00	0.21	0.14		
21			e0.00	0.32	96	9.4	0.11	0.00	0.11	0.14		
22			e0.04	0.28	96	5.9	0.14	0.00	0.07	0.14		
23			e0.07	0.32	95	5.8	0.14	0.04	0.07	0.11		
24			e0.11	0.25	95	5.7	0.11	0.11	0.04	0.11		
25			e0.11	0.21	94	5.9	0.07	0.07	0.04	0.11		
26			e0.14	0.25	94	5.9	0.04	0.14	0.04	0.11		
27			e0.18	0.21	96	5.9	0.04	0.11	0.00	0.11		
28			e0.25	0.25	68	5.9	0.04	0.11	0.00	0.11		
29			e0.28	0.14	46	5.9	0.04	0.11	0.00	0.07		
30			e0.35	0.53	46	5.9	0.04	0.07	0.00	0.04		
31			e0.32	---	6.0	---	0.11	0.07	---	0.04		
TOTAL			1.85	19.63	2,264.29	99.23	35.72	1.59	0.73	2.28		
MEAN			0.06	0.65	73.0	3.31	1.15	0.05	0.02	0.07		
MAX			0.35	5.2	96	11	5.5	0.14	0.21	0.18		
MIN			0.00	0.14	0.04	0.04	0.04	0.00	0.00	0.00		
AC-FT			3.7	39	4,490	197	71	3.2	1.4	4.5		

e--Estimated.

06149000 CYPRESS LAKE WEST OUTFLOW CANAL NEAR WEST PLAINS, SASKATCHEWAN—Continued



06149100 VIDORA DITCH NEAR CONSUL, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°27'27", long 109°35'30" (NAD 27), in SW¼ sec.9, T.6, R.27 W., third meridian, Hydrologic Unit 10050008, on left bank 0.5 mi downstream from headgate near lower end of Cypress Lake west outflow canal, 12 mi north of Consul.

PERIOD OF RECORD.--March 1963 to current season (seasonal records only). March 1952 to current season in reports of Department of the Environment, Canada.

GAGE.--Water-stage recorder. Elevation of gage is 3,200 ft (NGVD 29). Prior to Aug. 1, 1963, at elevation 1.0 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Canal diverts water from Cypress Lake west outflow canal in NE¼ sec.8, T.6, R.27 W., third meridian, for irrigation of about 2,140 acres in the Battle Creek basin. Water may be delivered either to this canal or returned to Battle Creek from Cypress Lake. Water Survey of Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

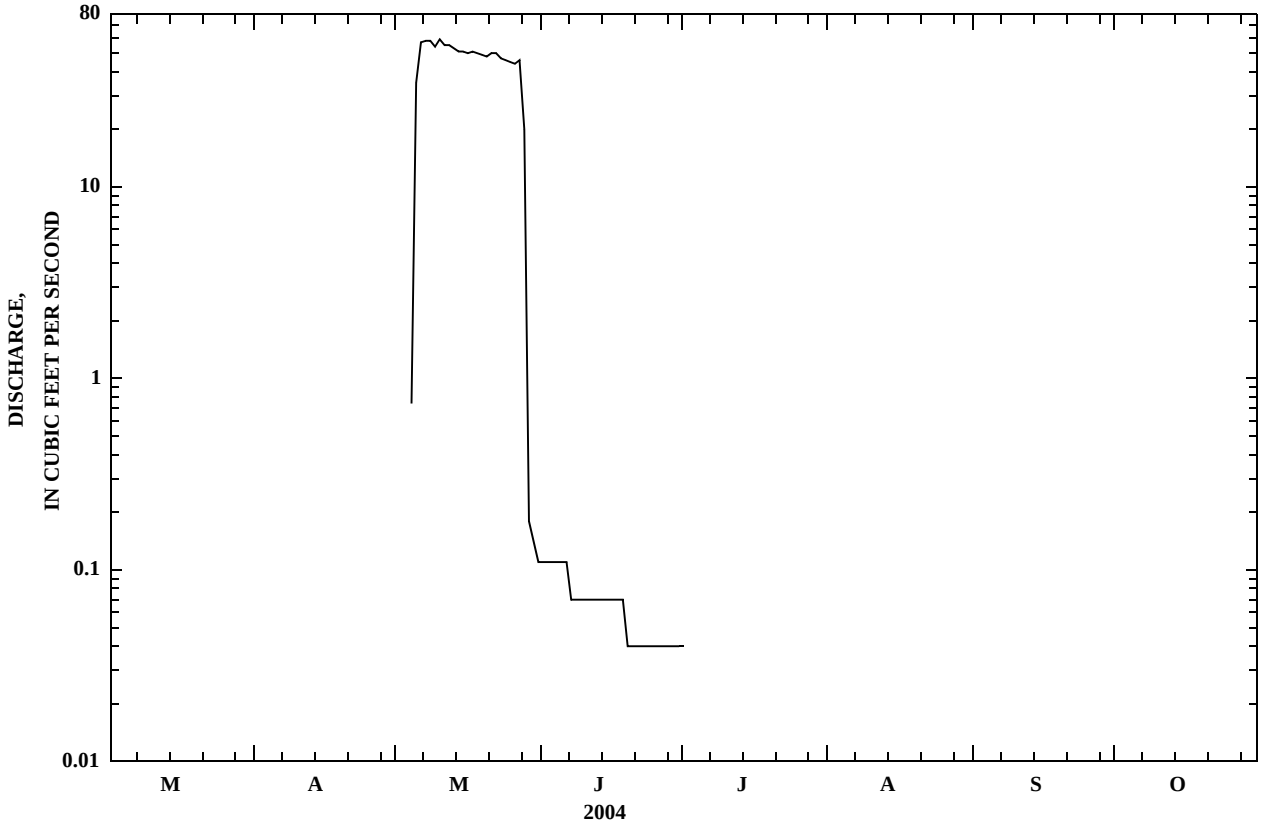
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 101 ft³/s, May 26, 1988; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0.00	0.00	0.00	e0.11	e0.04	0.00	0.00	0.00		
2			0.00	0.00	0.00	e0.11	0.00	0.00	0.00	0.00		
3			0.00	0.00	0.00	e0.11	0.00	0.00	0.00	0.00		
4			0.00	0.00	0.74	e0.11	0.00	0.00	0.00	0.00		
5			0.00	0.00	35	e0.11	0.00	0.00	0.00	0.00		
6			0.00	0.00	57	e0.11	0.00	0.00	0.00	0.00		
7			0.00	0.00	58	e0.07	0.00	0.00	0.00	0.00		
8			0.00	0.00	58	e0.07	0.00	0.00	0.00	0.00		
9			0.00	0.00	54	e0.07	0.00	0.00	0.00	0.00		
10			0.00	0.00	59	e0.07	0.00	0.00	0.00	0.00		
11			0.00	0.00	55	e0.07	0.00	0.00	0.00	0.00		
12			0.00	0.00	55	e0.07	0.00	0.00	0.00	0.00		
13			0.00	0.00	53	e0.07	0.00	0.00	0.00	0.00		
14			0.00	0.00	51	e0.07	0.00	0.00	0.00	0.00		
15			0.00	0.00	51	e0.07	0.00	0.00	0.00	0.00		
16			0.00	0.00	50	e0.07	0.00	0.00	0.00	0.00		
17			0.00	0.00	51	e0.07	0.00	0.00	0.00	0.00		
18			0.00	0.00	50	e0.07	0.00	0.00	0.00	0.00		
19			0.00	0.00	49	e0.04	0.00	0.00	0.00	0.00		
20			0.00	0.00	48	e0.04	0.00	0.00	0.00	0.00		
21			0.00	0.00	50	e0.04	0.00	0.00	0.00	0.00		
22			0.00	0.00	50	e0.04	0.00	0.00	0.00	0.00		
23			0.00	0.00	47	e0.04	0.00	0.00	0.00	0.00		
24			0.00	0.00	46	e0.04	0.00	0.00	0.00	0.00		
25			0.00	0.00	45	e0.04	0.00	0.00	0.00	0.00		
26			0.00	0.00	44	e0.04	0.00	0.00	0.00	0.00		
27			0.00	0.00	46	e0.04	0.00	0.00	0.00	0.00		
28			0.00	0.00	20	e0.04	0.00	0.00	0.00	0.00		
29			0.00	0.00	e0.18	e0.04	0.00	0.00	0.00	0.00		
30			0.00	0.00	e0.14	e0.04	0.00	0.00	0.00	0.00		
31			0.00	---	e0.11	---	0.00	0.00	---	0.00		
TOTAL			0.00	0.00	1,183.17	1.98	0.04	0.00	0.00	0.00		
MEAN			0.00	0.00	38.2	0.07	0.00	0.00	0.00	0.00		
MAX			0.00	0.00	59	0.11	0.04	0.00	0.00	0.00		
MIN			0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00		
AC-FT			0.00	0.00	2,350	3.9	0.08	0.00	0.00	0.00		

e--Estimated.

06149100 VIDORA DITCH NEAR CONSUL, SASKATCHEWAN—Continued



06149200 RICHARDSON DITCH NEAR CONSUL, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°21'50", long 109°32'12" (NAD 27), near center of south line of sec.11, T.5, R.27 W., third meridian, Hydrologic Unit 10050008, on left bank 420 ft downstream from headgate, 4.8 mi north of Consul.

PERIOD OF RECORD.--March 1963 to current season (seasonal records only). 1910-12, 1914, 1916-20, 1922-33, 1935, July 1946 to current season in reports of Department of the Environment, Canada. Estimates of seasonal diversion only in most seasons prior to 1946.

GAGE.--Water-stage recorder. Prior to June 26, 1949, nonrecording gages at different sites and elevations. June 26, 1949, to Aug. 28, 1963, water-stage recorder at present site at elevation 1.00 ft higher.

REMARKS.--Records good. Ditch diverts from left bank of Battle Creek in SW$^{1}/_{4}$ sec.11, T.5, R.27 W., third meridian, for irrigation of about 1,330 acres along Battle Creek. Water Survey of Canada satellite telemeter at station.

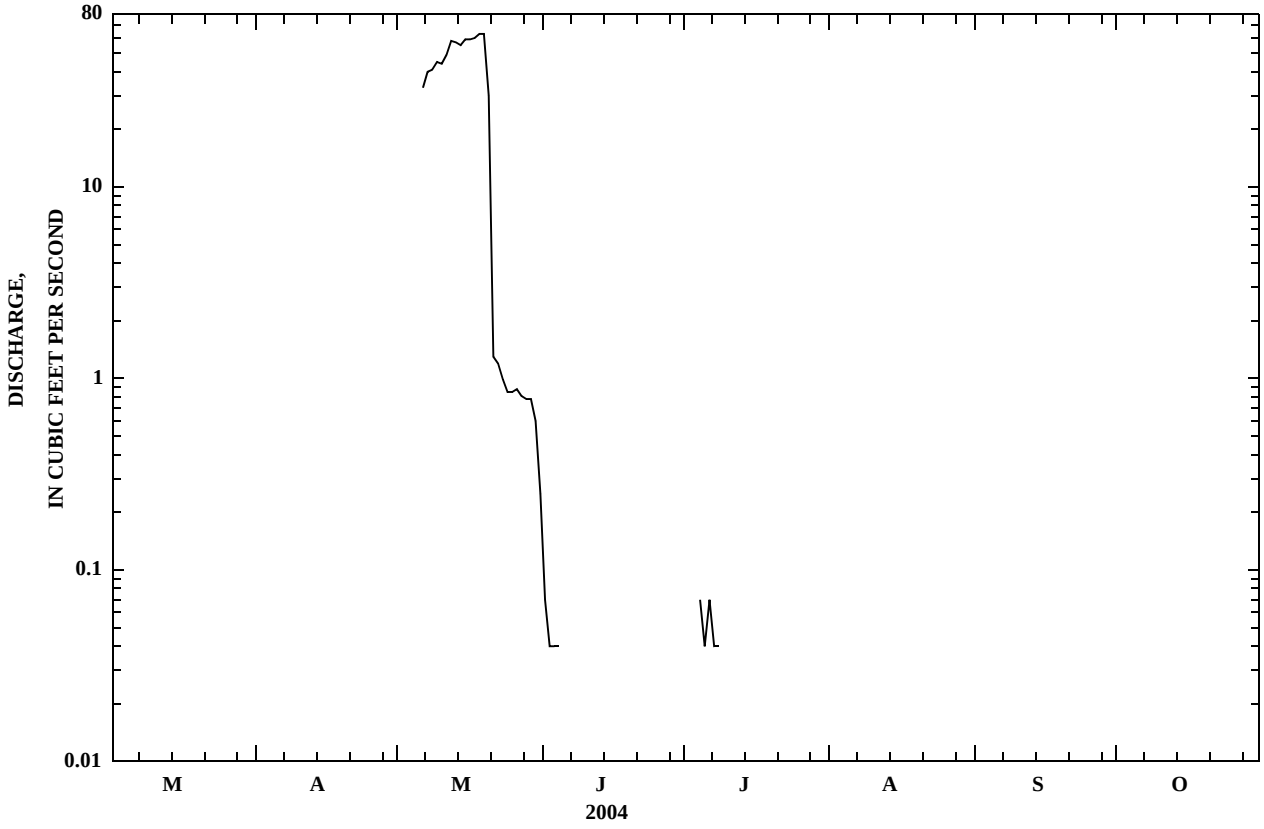
COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 72 ft^3/s, June 15, 1974; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00		
2			0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00		
3			0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00		
4			0.00	0.00	0.00	0.04	0.07	0.11	0.00	0.00		
5			0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00		
6			0.00	0.00	33	0.28	0.07	0.00	0.00	0.00		
7			0.00	0.00	40	0.00	0.04	0.00	0.00	0.00		
8			0.00	0.00	41	0.00	0.04	0.00	0.00	0.00		
9			0.00	0.00	45	0.00	0.00	0.00	0.00	0.00		
10			0.00	0.00	44	0.00	0.00	0.00	0.00	0.00		
11			0.00	0.00	49	0.00	0.00	0.00	0.00	0.00		
12			0.00	0.00	58	0.00	0.00	0.00	0.00	0.00		
13			0.00	0.00	57	0.00	0.00	0.00	0.00	0.00		
14			0.00	0.00	55	0.00	0.00	0.00	0.00	0.00		
15			0.00	0.00	59	0.00	0.00	0.00	0.00	0.00		
16			0.00	0.00	59	0.00	0.00	0.00	0.00	0.00		
17			0.00	0.00	60	0.00	0.00	0.00	0.00	0.00		
18			0.00	0.00	63	0.00	0.00	0.00	0.00	0.00		
19			0.00	0.00	63	0.00	0.00	0.00	0.00	0.00		
20			0.00	0.00	30	0.00	0.00	0.00	0.00	0.00		
21			0.00	0.00	1.3	0.00	0.00	0.00	0.00	0.00		
22			0.00	0.00	1.2	0.00	0.00	0.00	0.00	0.00		
23			0.00	0.00	0.99	0.00	0.00	0.00	0.00	0.00		
24			0.00	0.00	0.85	0.00	0.00	0.00	0.00	0.00		
25			0.00	0.00	0.85	0.00	0.00	0.00	0.00	0.00		
26			0.00	0.00	0.88	0.00	0.00	0.00	0.00	0.00		
27			0.00	0.00	0.81	0.00	0.00	0.00	0.00	0.00		
28			0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00		
29			0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00		
30			0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00		
31			0.00	---	0.25	---	0.00	0.00	---	0.00		
TOTAL			0.00	0.00	765.29	0.47	0.26	0.11	0.00	0.00		
MEAN			0.00	0.00	24.7	0.02	0.01	0.00	0.00	0.00		
MAX			0.00	0.00	63	0.28	0.07	0.11	0.00	0.00		
MIN			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT			0.00	0.00	1,520	0.9	0.5	0.2	0.00	0.00		

06149200 RICHARDSON DITCH NEAR CONSUL, SASKATCHEWAN—Continued



06149300 MCKINNON DITCH NEAR CONSUL, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°20'00", long 109°29'40" (NAD 27), in NW¼ sec.30, T.4, R.26 W., third meridian, Hydrologic Unit 10050008, on right bank 1.0 mi downstream from headgate on Battle Creek, and 2.7 mi northeast of Consul.

PERIOD OF RECORD.--March 1963 to current season (seasonal records only). 1911-26, 1929-31, and March 1938 to current season in reports of Department of the Environment, Canada. Estimates of seasonal diversions only in many years prior to 1947.

GAGE.--Water-stage recorder. Prior to September 1949, nonrecording gages at various sites and elevations. Sept. 4, 1949, to Aug. 29, 1963, water-stage recorder at present site at elevation 1.00 ft higher.

REMARKS.--Records good. Ditch diverts from right bank of Battle Creek in NE¼ sec.30, T.4, R.26 W., third meridian, for irrigation of about 1,320 acres along Battle Creek. Water Survey of Canada satellite telemeter at station.

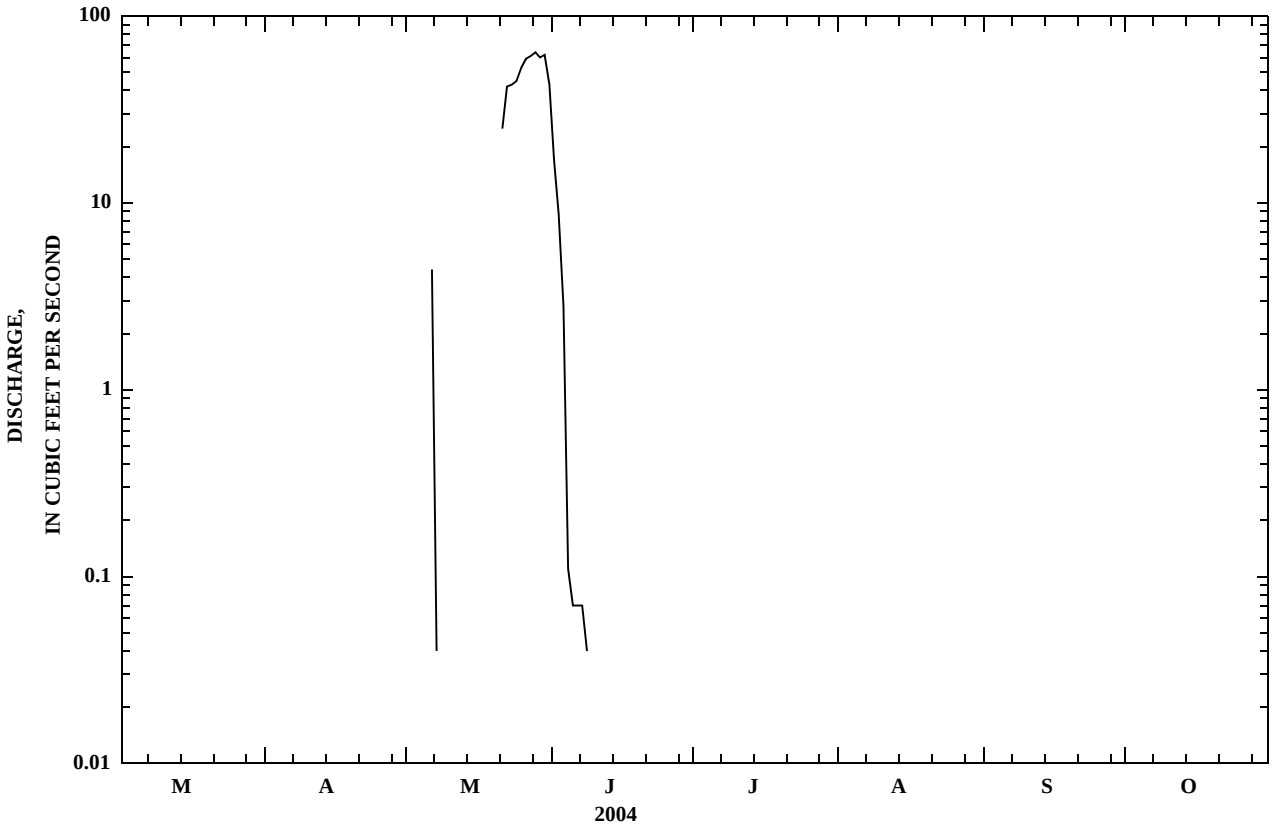
COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 68 ft^3/s, June 18, 1975; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0.00	0.00	0.00	17	0.00	0.00	0.00	0.00		
2			0.00	0.00	0.00	8.7	0.00	0.00	0.00	0.00		
3			0.00	0.00	0.00	2.8	0.00	0.00	0.00	0.00		
4			0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00		
5			0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00		
6			0.00	0.00	4.4	0.07	0.00	0.00	0.00	0.00		
7			0.00	0.00	0.04	0.07	0.00	0.00	0.00	0.00		
8			0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00		
9			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
11			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
12			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
14			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
16			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
17			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
21			0.00	0.00	25	0.00	0.00	0.00	0.00	0.00		
22			0.00	0.00	42	0.00	0.00	0.00	0.00	0.00		
23			0.00	0.00	43	0.00	0.00	0.00	0.00	0.00		
24			0.00	0.00	45	0.00	0.00	0.00	0.00	0.00		
25			0.00	0.00	53	0.00	0.00	0.00	0.00	0.00		
26			0.00	0.00	59	0.00	0.00	0.00	0.00	0.00		
27			0.00	0.00	61	0.00	0.00	0.00	0.00	0.00		
28			0.00	0.00	64	0.00	0.00	0.00	0.00	0.00		
29			0.00	0.00	60	0.00	0.00	0.00	0.00	0.00		
30			0.00	0.00	62	0.00	0.00	0.00	0.00	0.00		
31			0.00	---	43	---	0.00	0.00	---	0.00		
TOTAL			0.00	0.00	561.44	28.86	0.00	0.00	0.00	0.00		
MEAN			0.00	0.00	18.1	0.96	0.00	0.00	0.00	0.00		
MAX			0.00	0.00	64	17	0.00	0.00	0.00	0.00		
MIN			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT			0.00	0.00	1,110	57	0.00	0.00	0.00	0.00		

06149300 MCKINNON DITCH NEAR CONSUL, SASKATCHEWAN—Continued



06149400 NASHLYN CANAL NEAR CONSUL, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°13'57", long 109°33'27" (NAD 27), in NE$^1/_4$ sec.22, T.3, T.27 W., third meridian, Hydrologic Unit 10050008, on left bank 0.8 mi downstream from headgate on Battle Creek, and 5.9 mi south of Consul.

PERIOD OF RECORD.--March 1963 to current season (seasonal records only); 1912, 1914-35, 1938 to current season in reports of Department of the Environment, Canada. Prior to March 1950, estimates of seasonal diversions only in many seasons. Prior to Mar. 1, 1971, published as "Stirling and Nash Ditch".

GAGE.--Water-stage recorder. Prior to Sept. 21, 1949, water-stage recorder at present site or nonrecording gages at site 0.5 mi downstream at different elevations.

REMARKS.--Records good. Ditch diverts water from left bank of Battle Creek in SW$^1/_4$ sec.27, T.3, R.27 W., third meridian, for irrigation of about 1,880 acres along Battle Creek. Water Survey of Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

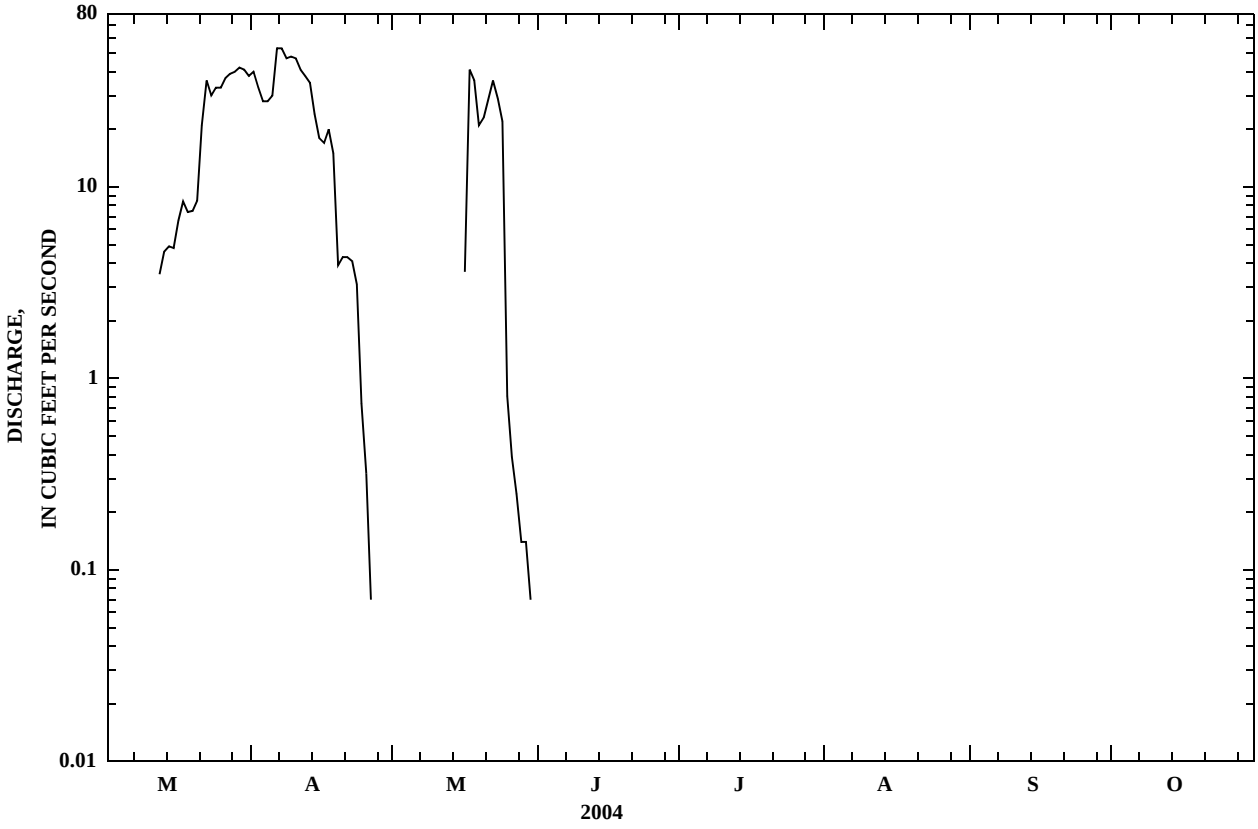
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 85 ft^3/s, Apr. 14, 1952; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	40	0.00	0.00	0.00	0.00	0.00	0.00		
2			e0.00	33	0.00	0.00	0.00	0.00	0.00	0.00		
3			e0.00	28	0.00	0.00	0.00	0.00	0.00	0.00		
4			e0.00	28	0.00	0.00	0.00	0.00	0.00	0.00		
5			e0.00	30	0.00	0.00	0.00	0.00	0.00	0.00		
6			e0.00	53	0.00	0.00	0.00	0.00	0.00	0.00		
7			e0.00	53	0.00	0.00	0.00	0.00	0.00	0.00		
8			e0.00	47	0.00	0.00	0.00	0.00	0.00	0.00		
9			e0.00	48	0.00	0.00	0.00	0.00	0.00	0.00		
10			e0.00	47	0.00	0.00	0.00	0.00	0.00	0.00		
11			e0.00	41	0.00	0.00	0.00	0.00	0.00	0.00		
12			e3.5	38	0.00	0.00	0.00	0.00	0.00	0.00		
13			4.6	35	0.00	0.00	0.00	0.00	0.00	0.00		
14			4.9	24	0.00	0.00	0.00	0.00	0.00	0.00		
15			4.8	18	0.00	0.00	0.00	0.00	0.00	0.00		
16			6.7	17	3.6	0.00	0.00	0.00	0.00	0.00		
17			8.4	20	41	0.00	0.00	0.00	0.00	0.00		
18			7.4	15	36	0.00	0.00	0.00	0.00	0.00		
19			7.5	3.9	21	0.00	0.00	0.00	0.00	0.00		
20			8.5	4.3	23	0.00	0.00	0.00	0.00	0.00		
21			21	4.3	29	0.00	0.00	0.00	0.00	0.00		
22			36	4.1	36	0.00	0.00	0.00	0.00	0.00		
23			30	3.1	29	0.00	0.00	0.00	0.00	0.00		
24			33	0.74	22	0.00	0.00	0.00	0.00	0.00		
25			33	0.32	0.81	0.00	0.00	0.00	0.00	0.00		
26			37	0.07	0.39	0.00	0.00	0.00	0.00	0.00		
27			39	0.00	0.25	0.00	0.00	0.00	0.00	0.00		
28			40	0.00	0.14	0.00	0.00	0.00	0.00	0.00		
29			42	0.00	0.14	0.00	0.00	0.00	0.00	0.00		
30			41	0.00	0.07	0.00	0.00	0.00	0.00	0.00		
31			38	---	0.00	---	0.00	0.00	---	0.00		
TOTAL			446.30	635.83	242.40	0.00	0.00	0.00	0.00	0.00		
MEAN			14.4	21.2	7.82	0.00	0.00	0.00	0.00	0.00		
MAX			42	53	41	0.00	0.00	0.00	0.00	0.00		
MIN			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT			885	1,260	481	0.00	0.00	0.00	0.00	0.00		

e--Estimated.

06149400 NASHLYN CANAL NEAR CONSUL, SASKATCHEWAN—Continued



06149500 BATTLE CREEK AT INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 49°00'07", long 109°25'18" (NAD 27), in SE¼ sec.4, T.1, R.26 W., third meridian, Hydrologic Unit 10050008, on left bank 600 ft north of international boundary, in Saskatchewan, 8 mi upstream from Woodpile Coulee, 30 mi north of Chinook, MT, and at mile 69.8.

DRAINAGE AREA.--997 mi^2, of which 378 mi^2 is probably noncontributing.

PERIOD OF RECORD.--April 1917 to current season (seasonal records only most seasons). Monthly discharge only for March 1918 and March 1928, published in WSP 1309.

REVISED RECORDS.--WSP 1389: 1935(M), 1936, 1937-38(M). WSP 1729: 1924, 1926, 1932 (monthly discharge only). W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,729.8 ft (International Boundary Commission Survey Datum).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs, diversions for irrigation of about 9,500 acres, and return flow from irrigated areas. Water may be diverted into or from Frenchman River basin through Cypress Lake. Water Survey of Canada satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e4.2	24	10	56	9.0	8.3	14	17		
2			e4.9	18	7.7	34	7.8	7.9	21	15		
3			e5.7	14	6.3	43	6.4	8.1	23	14		
4			e6.2	10	5.8	34	6.0	8.6	22	14		
5			e6.8	17	9.4	23	5.2	16	19	13		
6			e7.4	22	8.0	26	4.8	19	17	13		
7			e8.7	30	7.2	23	8.1	27	15	13		
8			e11	41	6.8	40	17	38	15	13		
9			e22	22	6.5	46	19	46	13	14		
10			e68	12	10	55	20	41	13	14		
11			e51	9.5	8.9	59	18	28	13	14		
12			e63	13	8.1	79	17	20	12	14		
13			e149	21	7.7	64	15	16	12	15		
14			e195	26	9.6	46	14	15	12	15		
15			e102	32	12	45	14	14	13	14		
16			e109	27	13	49	15	14	12	15		
17			e89	21	29	48	15	15	12	16		
18			e87	24	26	49	13	14	13	17		
19			e300	21	18	48	13	13	13	17		
20			e265	11	16	43	12	12	15	17		
21			126	12	13	41	11	11	14	17		
22			129	22	14	40	10	10	14	19		
23			133	18	10	39	9.9	11	14	19		
24			e116	16	42	44	9.1	11	14	19		
25			117	16	94	43	9.2	11	15	20		
26			106	17	82	37	9.0	11	15	20		
27			119	15	81	25	9.2	12	15	20		
28			87	13	71	17	8.5	12	19	19		
29			59	14	55	13	8.5	13	19	19		
30			37	13	47	11	8.3	13	18	19		
31			34	---	57	---	8.2	12	---	20		
TOTAL			2,617.9	571.5	792.0	1,220	350.2	507.9	456	505		
MEAN			84.4	19.1	25.5	40.7	11.3	16.4	15.2	16.3		
MAX			300	41	94	79	20	46	23	20		
MIN			4.2	9.5	5.8	11	4.8	7.9	12	13		
AC-FT			5,190	1,130	1,570	2,420	695	1,010	904	1,000		

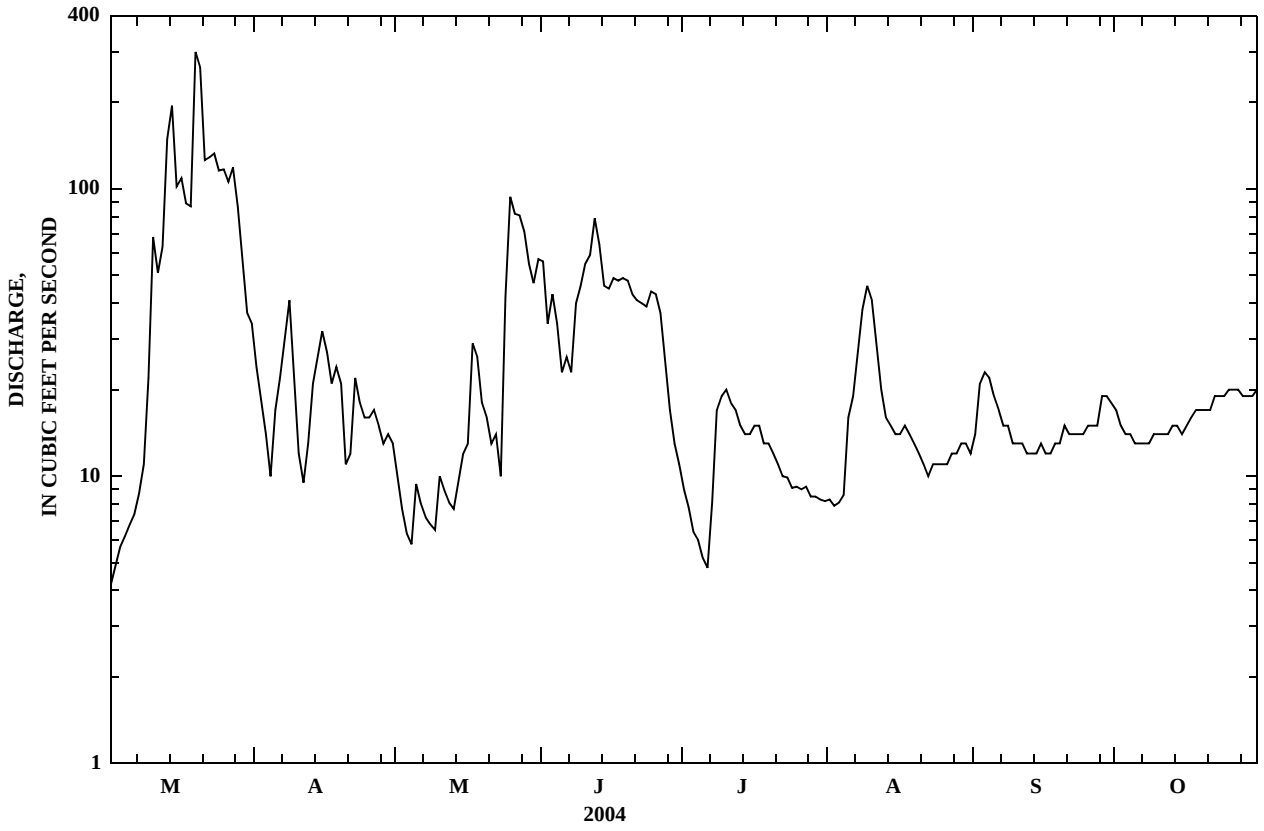
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1917 - 2004

MEAN	50.3	125	57.3	32.6	16.6	7.06	8.07	8.05
MAX	353	1,526	538	261	250	50.7	332	57.7
(WY)	(1997)	(1952)	(1927)	(1927)	(1955)	(1975)	(1986)	(1987)
MIN	0.00	4.34	0.77	0.00	0.00	0.00	0.00	0.00
(WY)	(1936)	(1981)	(1937)	(1937)	(1919)	(1919)	(1919)	(1920)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1917 - 2004	
HIGHEST DAILY MEAN	300	Mar 19	5,590	Apr 15, 1952
LOWEST DAILY MEAN	4.2	Mar 1	0.00	Mar 1, 1918
MAXIMUM PEAK FLOW	a424	Mar 19	c9,780	Sep 25, 1986
MAXIMUM PEAK STAGE	b6.26	Mar 19	11.57	Sep 25 1986

a--About, occurred during period affected by backwater from ice.
b--Backwater from ice.
c--From rating table extended above 4,400 ft^3/s on basis of slope-area measurement of peak flow.
e--Estimated.

06149500 BATTLE CREEK AT INTERNATIONAL BOUNDARY—Continued



06151500 BATTLE CREEK NEAR CHINOOK, MT

LOCATION.--Lat 48°39'05", long 109°13'47" (NAD 27), in NW¼SW¼NE¼ sec.3, T.33 N., R.19 E., Blaine County, Hydrologic Unit 10050008, on left bank, 4 mi north of Chinook, and at river mile 14.

DRAINAGE AREA.--1,539 mi^2.

PERIOD OF RECORD.--April 1905 to September 1921 (monthly discharge only, published in WSP 1309), June 1984 to current year (seasonal records only). Published as North Fork Milk River near Chinook prior to 1913.

GAGE.--Water-stage recorder. Elevation of gage is 2,410 ft (NGVD 29). Apr. 22, 1905 to Apr. 8, 1918, chain gage 100 ft downstream, and Apr. 9, 1918 to Sept. 30, 1921, chain gage on bridge 600 ft downstream at same elevation but different from present elevation.

REMARKS.--Records fair. Diversions for irrigation of about 11,000 acres upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

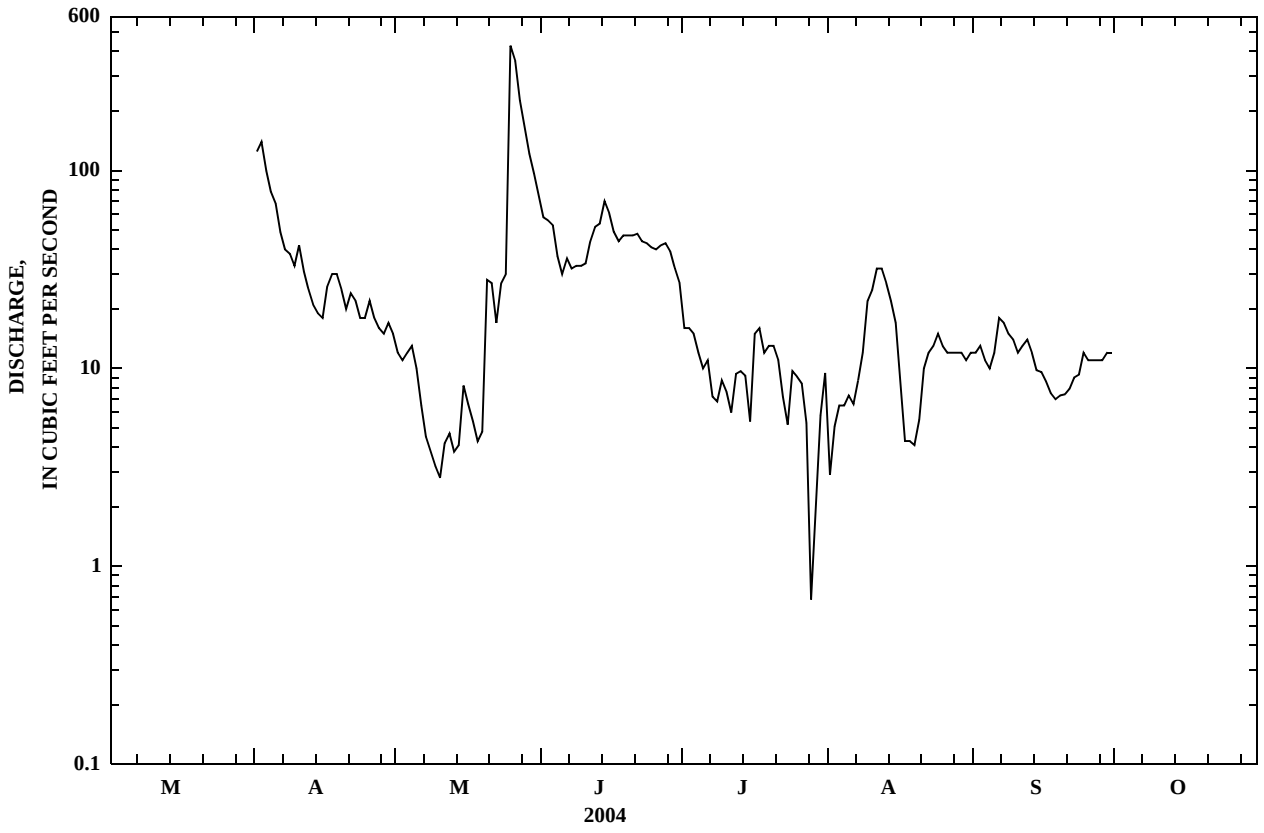
DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				125	12	58	16	2.9	12			
2				140	11	56	16	5.1	13			
3				100	12	53	15	6.5	11			
4				78	13	37	12	6.5	10			
5				68	10	30	10	7.3	12			
6				49	6.5	36	11	6.6	18			
7				40	4.5	32	7.2	8.7	17			
8				38	3.8	33	6.8	12	15			
9				33	3.2	33	8.7	22	14			
10				42	2.8	34	7.6	25	12			
11				31	4.2	44	6.0	32	13			
12				25	4.7	52	9.4	32	14			
13				21	3.8	54	9.7	27	12			
14				19	4.1	70	9.2	22	9.8			
15				18	8.2	61	5.4	17	9.6			
16				26	6.6	49	15	8.6	8.6			
17				30	5.4	44	16	4.3	7.5			
18				30	4.3	47	12	4.3	7.0			
19				25	4.8	47	13	4.1	7.3			
20				20	28	47	13	5.5	7.4			
21				24	27	48	11	10	7.9			
22				22	17	44	7.2	12	9.0			
23				18	27	43	5.2	13	9.3			
24				18	30	41	9.7	15	12			
25				22	428	40	9.1	13	11			
26				18	358	42	8.4	12	11			
27				16	227	43	5.3	12	11			
28				15	167	39	0.68	12	11			
29				17	122	32	2.3	12	12			
30				15	97	27	5.8	11	12			
31				---	74	---	9.5	12	---			
TOTAL				1,143	1,726.9	1,316	293.18	393.4	336.4			
MEAN				38.1	55.7	43.9	9.46	12.7	11.2			
MAX				140	428	70	16	32	18			
MIN				15	2.8	27	0.68	2.9	7.0			
AC-FT				2,270	3,430	2,610	582	780	667			

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1984 - 2004

MEAN	58.8	26.2	22.0	12.8	3.06	47.5
MAX	539	101	48.3	57.6	15.3	910
(WY)	(1996)	(1986)	(2002)	(2000)	(2002)	(1986)
MIN	0.031	0.000	0.085	0.016	0.000	0.000
(WY)	(2002)	(2002)	(1984)	(1984)	(1984)	(1984)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1984 - 2004	
HIGHEST DAILY MEAN	428	May 25	12,000	Sep 26 1986
LOWEST DAILY MEAN	0.68	Jul 28	0.00	Jul 12 1984
MAXIMUM PEAK FLOW	640	May 25	19,400	Sep 26 1986
MAXIMUM PEAK STAGE	5.49	May 25	22.91	Sep 26 1986

06151500 BATTLE CREEK NEAR CHINOOK, MT—Continued



06154100 MILK RIVER NEAR HARLEM, MT

LOCATION.--Lat 48°29'22", long 108°45'28" (NAD 27), in NE¼SE¼NE¼ sec.32, T.32 N., R.23 E., Blaine County, Hydrologic Unit 10050004, Fort Belknap Indian Reservation, on right bank 30 ft downstream from U.S. Highway 2 bridge, 0.6 mi northeast of unincorporated community of Fort Belknap Agency, 3.5 mi southeast of Harlem, and at river mile 332.2.

DRAINAGE AREA.--9,822 mi^2.

PERIOD OF RECORD.--October 1959 to September 1969, October 1982 to current year (seasonal record beginning 1994 water year). Gage heights only for period Apr. 3-25, 1952, published as "at Fort Belknap" in 1260-B.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,319.48 ft (NGVD 29). Apr. 3-25, 1952, nonrecording gage on old bridge 200 ft downstream at different elevation. Nov. 1, 1959, to Mar. 12, 1968, nonrecording gage or water-stage recorder at several sites within 0.5 mi of present site at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow increased during irrigation season by water from St. Mary Canal (station number 05018500). Flow mainly regulated by Fresno Reservoir (station number 06136500) since 1939. Diversions for irrigation of about 60,000 acres of which about 13,000 acres lie downstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 1952 reached a stage of about 23.5 ft, present site and elevation.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e110	e190	25	213	159	453	400	151		
2			e110	e170	30	178	266	436	392	116		
3			e120	e200	31	154	394	446	377	120		
4			e120	e195	28	145	387	455	372	148		
5			e120	150	28	173	550	441	335	146		
6			e130	130	186	234	557	396	325	149		
7			e160	111	544	338	487	389	324	151		
8			e200	107	688	378	461	378	325	151		
9			e600	e100	890	360	412	365	337	148		
10			e2,000	e80	754	368	369	391	320	141		
11			e2,500	e60	626	377	309	e340	307	140		
12			e2,000	e60	628	392	253	e300	310	139		
13			e1,800	e40	484	348	224	e290	328	137		
14			e1,600	37	346	335	190	e280	358	147		
15			e1,400	30	207	347	188	e300	373	142		
16			e1,200	24	185	342	193	e300	369	131		
17			e1,000	28	248	330	254	e300	380	128		
18			1,000	36	264	338	275	329	378	135		
19			652	39	302	320	324	307	365	135		
20			751	37	371	313	337	274	365	137		
21			1,170	34	370	295	329	239	346	135		
22			994	33	353	280	324	234	384	136		
23			777	31	423	253	320	281	379	134		
24			e580	32	712	223	294	369	322	132		
25			e600	26	926	198	262	395	285	129		
26			e650	27	990	201	298	384	257	126		
27			e600	32	692	202	318	374	206	125		
28			e400	31	453	184	315	379	185	127		
29			e290	20	394	205	350	372	149	125		
30			e240	16	314	177	384	361	182	125		
31			e235	---	264	---	419	380	---	125		
TOTAL			24,109	2,106	12,756	8,201	10,202	10,938	9,735	4,211		
MEAN			778	70.2	411	273	329	353	324	136		
MAX			2,500	200	990	392	557	455	400	151		
MIN			110	16	25	145	159	234	149	116		
AC-FT			47,820	4,180	25,300	16,270	20,240	21,700	19,310	8,350		

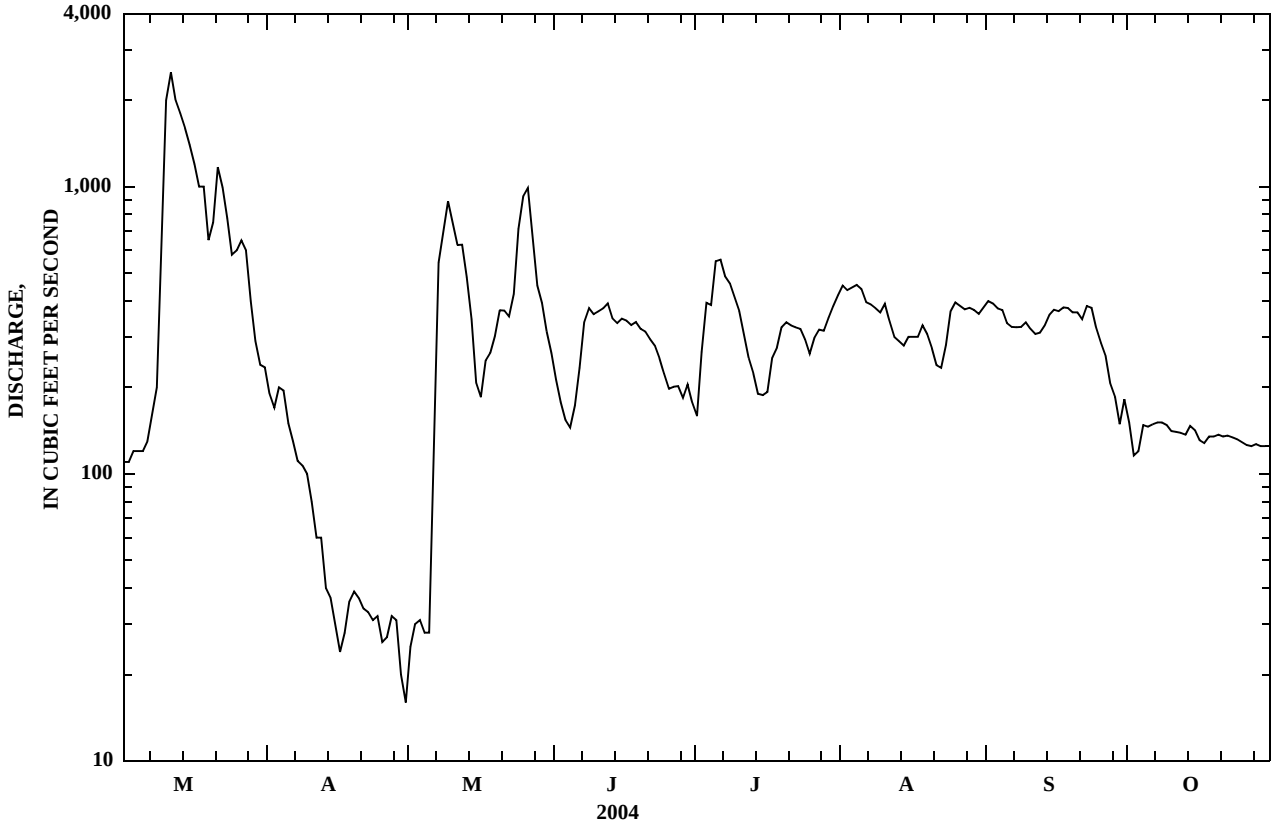
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1993 AND SEASONS 1994 - 2004*

MEAN	69.4	84.5	454	554	655	583	564	394	344	205	94.4	71.8
MAX	139	200	2,287	2,935	3,506	1,506	2,484	726	1,913	949	289	198
(WY)	(1990)	(1987)	(1996)	(1965)	(1967)	(1965)	(1965)	(1965)	(1986)	(1987)	(1987)	(1987)
MIN	19.0	26.5	37.1	54.4	129	232	138	10.3	20.9	37.4	31.2	25.9
(WY)	(1985)	(1985)	(2002)	(1961)	(2001)	(1985)	(2001)	(1988)	(1988)	(1989)	(1964)	(1985)

06154100 MILK RIVER NEAR HARLEM, MT—Continued

SUMMARY STATISTICS	FOR 2004 SEASON		WATER YEARS 1960 - 2004		SEASONS 1994 - 2004*	
ANNUAL MEAN			349			
HIGHEST ANNUAL MEAN			857	1965		
LOWEST ANNUAL MEAN			139	1984		
HIGHEST DAILY MEAN	2,500	Mar 11	12,900	Sep 29, 1986	6,190	Mar 18, 1996
LOWEST DAILY MEAN	16	Apr 30	b0.00	Aug 10, 1988	2.5	Apr 6, 2001
ANNUAL SEVEN-DAY MINIMUM			0.00	Aug 24, 1988		
MAXIMUM PEAK FLOW	Unknown		13,900	Sep 29, 1986	6,450	Mar 18, 1996
MAXIMUM PEAK STAGE	a17.83	Mar 10	25.73	Sep 29, 1986	23.88	Mar 18, 1996
INSTANTANEOUS LOW FLOW			0.00	Aug 1, 1988		
ANNUAL RUNOFF (AC-FT)			253,200			
10 PERCENT EXCEEDS			682			
50 PERCENT EXCEEDS			180			
90 PERCENT EXCEEDS			39			

*--During period of operation (1960-69, 1983 to current year. Seasonal records beginning water year 1994).
a--Backwater from ice, from outside gage reading. May have been higher during period of no gage-height record.
b--No flow on many days in August and September 1988.
e--Estimated.



06154400 PEOPLES CREEK NEAR HAYS, MT

LOCATION.--Lat 48°13'25", long 108°42'48" (NAD 27), in SW$^1/_4$ sec.35, T.29 N., R.23 E., Blaine County, Hydrologic Unit 10050009, on right bank 45 ft downstream from bridge on State Highway 66, 2.5 mi downstream from Myrtle Creek, 16.4 mi north of Hays, and at river mile 47.2.

DRAINAGE AREA.--220 mi^2.

PERIOD OF RECORD.--December 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,714.10 ft (NGVD 29).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Some storage in numerous stock and beaver ponds and diversions for irrigation of about 1,300 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.08	e0.05	e0.05	e0.00	e0.05	6.6	1.9	21	5.3	0.00	0.00
2	0.00	e0.05	e0.05	e0.05	e0.00	e0.05	6.6	4.0	19	5.2	0.00	0.00
3	0.00	e0.05	e0.05	e0.05	e0.00	e0.05	6.4	3.8	16	6.6	0.00	0.00
4	0.00	e0.05	e0.05	e0.05	e0.00	e0.05	7.2	2.7	14	8.3	0.00	0.00
5	0.00	e0.05	e0.05	e0.05	e0.00	e0.05	7.3	1.7	13	6.0	0.00	0.00
6	0.00	e0.05	e0.05	e0.05	e0.00	e0.05	6.7	1.4	12	5.7	0.00	0.00
7	0.00	e0.05	e0.05	e0.05	e0.00	e15	6.2	1.0	10	6.1	0.00	0.00
8	0.00	e0.05	e0.05	e0.05	e0.00	e110	7.0	1.1	11	5.8	0.00	0.01
9	0.00	e0.05	e0.05	e0.05	e0.00	209	6.5	1.1	10	5.7	0.00	0.01
10	0.00	e0.05	e0.05	e0.05	e0.00	85	5.9	1.1	11	5.6	0.00	0.02
11	0.00	e0.05	e0.05	e0.05	e0.00	44	4.7	1.4	13	5.2	0.00	0.03
12	0.00	e0.05	e0.05	e0.05	e0.05	52	4.1	3.2	16	5.2	0.00	0.04
13	0.00	e0.05	e0.05	e0.05	e0.05	41	3.9	3.9	18	4.6	0.00	0.05
14	0.00	e0.05	e0.05	e0.05	e0.05	21	3.4	4.0	19	4.0	0.00	0.05
15	0.00	e0.05	e0.05	e0.05	e0.05	21	2.4	3.5	20	2.7	0.00	0.03
16	0.00	e0.05	e0.05	e0.05	e0.05	13	2.5	3.7	17	1.3	0.00	0.04
17	0.00	e0.05	e0.05	e0.05	e0.05	10	2.1	3.7	14	0.70	0.00	0.02
18	0.00	e0.05	e0.05	e0.05	e0.10	8.8	2.4	3.8	12	0.43	0.00	0.03
19	0.00	e0.05	e0.05	e0.05	e0.10	8.4	2.5	6.3	11	0.46	0.00	0.02
20	0.00	e0.05	e0.05	e0.05	e0.10	7.5	2.6	6.9	10	0.24	0.00	0.01
21	0.00	e0.05	e0.05	e0.05	e0.10	9.7	2.3	6.3	8.3	0.03	0.00	0.00
22	0.01	e0.05	e0.05	e0.05	e0.10	9.4	1.7	8.9	6.4	0.00	0.00	0.00
23	0.02	e0.05	e0.05	e0.05	e0.05	8.8	1.3	15	5.9	0.00	0.00	0.00
24	0.03	e0.05	e0.05	e0.05	e0.05	8.2	0.95	32	6.1	0.00	0.00	0.00
25	0.00	e0.05	e0.05	e0.05	e0.10	7.9	0.66	64	5.8	0.00	0.00	0.00
26	0.04	e0.05	e0.05	e0.05	e0.10	7.4	0.38	68	5.5	0.00	0.00	0.00
27	0.02	e0.05	e0.05	e0.05	e0.10	7.1	0.29	50	5.4	0.00	0.00	0.00
28	0.00	e0.05	e0.05	e0.05	e0.05	7.1	0.21	38	5.5	0.00	0.00	0.00
29	0.05	e0.05	e0.05	e0.05	e0.05	7.2	0.42	30	5.4	0.00	0.00	0.00
30	0.05	e0.05	e0.05	e0.05	---	7.1	1.3	25	5.3	0.00	0.00	0.00
31	0.06	---	e0.05	e0.00	---	6.7	---	22	---	0.00	0.00	---
TOTAL	0.28	1.53	1.55	1.50	1.30	732.60	106.51	419.4	346.6	85.16	0.00	0.36
MEAN	0.01	0.05	0.05	0.05	0.04	23.6	3.55	13.5	11.6	2.75	0.00	0.01
MAX	0.06	0.08	0.05	0.05	0.10	209	7.3	68	21	8.3	0.00	0.05
MIN	0.00	0.05	0.05	0.00	0.00	0.05	0.21	1.0	5.3	0.00	0.00	0.00
AC-FT	0.6	3.0	3.1	3.0	2.6	1,450	211	832	687	169	0.00	0.7

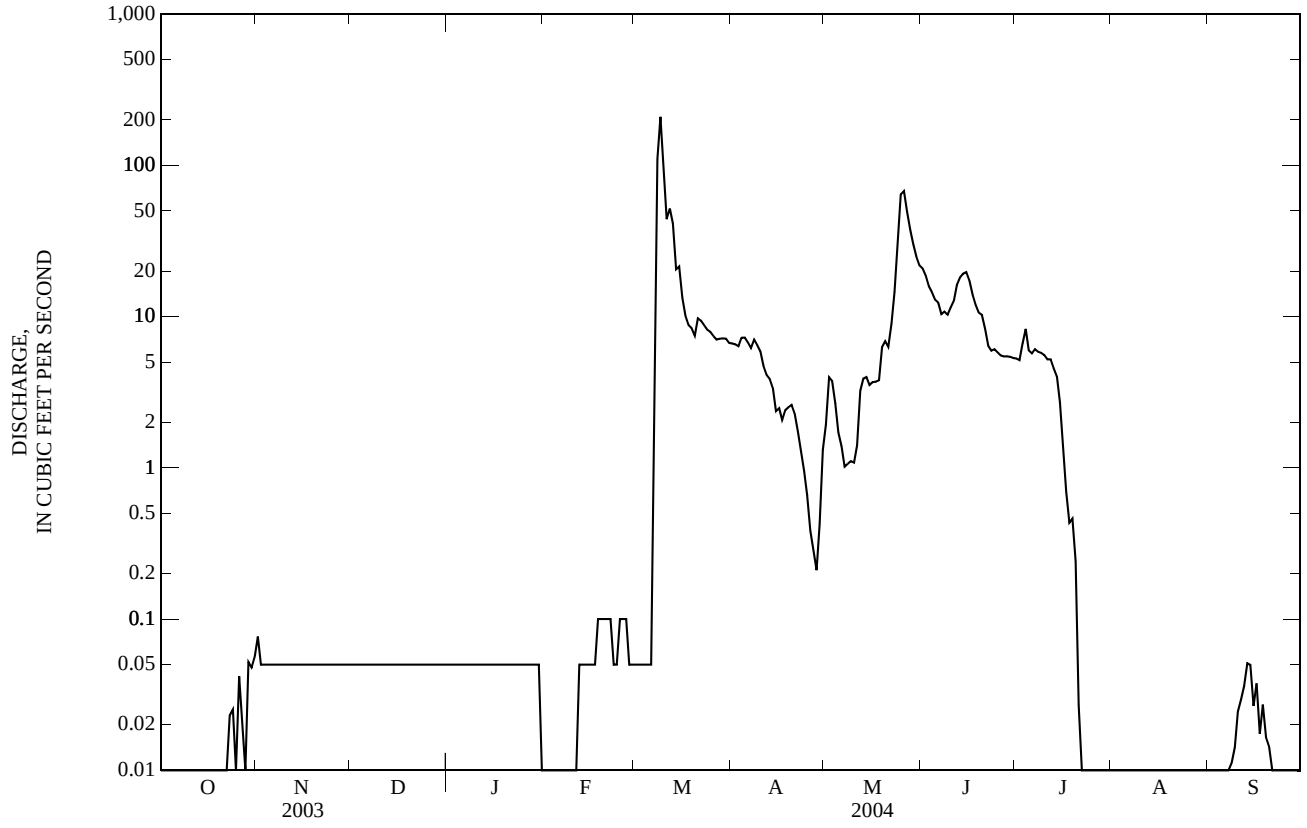
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2004, BY WATER YEAR (WY)

MEAN	3.33	3.23	2.64	3.38	8.78	28.7	17.2	29.3	20.4	8.07	2.30	3.51
MAX	37.1	20.5	12.9	30.0	74.9	285	122	190	123	51.5	21.3	57.6
(WY)	(1987)	(1987)	(1987)	(1971)	(1971)	(1979)	(1979)	(1975)	(1982)	(1975)	(1975)	(1986)
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.01	0.03	0.00	0.00	0.00
(WY)	(1972)	(1972)	(1972)	(1972)	(1998)	(2002)	(2002)	(2001)	(2001)	(1972)	(1967)	(1969)

06154400 PEOPLES CREEK NEAR HAYS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1967 - 2004	
ANNUAL TOTAL	1,088.57		1,696.79			
ANNUAL MEAN	2.98		4.64		10.8*	
HIGHEST ANNUAL MEAN					47.8	1979
LOWEST ANNUAL MEAN					0.10	2001
HIGHEST DAILY MEAN	309	Mar 14	209	Mar 9	1,000	Mar 7, 1979
LOWEST DAILY MEAN	0.00	Aug 6	0.00	Oct 1	c0.00	Dec 1, 1966
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 9	0.00	Oct 1	0.00	Dec 1, 1966
MAXIMUM PEAK FLOW			a238	Mar 9	d8,460	Jun 8, 1972
MAXIMUM PEAK STAGE			b7.18	Mar 8	15.03	Jun 8, 1972
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	Jan 2, 1995
ANNUAL RUNOFF (AC-FT)	2,160		3,370		7,790	
10 PERCENT EXCEEDS	1.4		10		20	
50 PERCENT EXCEEDS	0.05		0.05		1.0	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

*--Median of yearly mean discharge, 4.68 ft^3/s, 3,390 ac-ft/yr.
a--Gage height, 5.78 ft.
b--Backwater from ice.
c--No flow at times most years.
d--From floodmark, from rating curve extended above 490 ft3/s on basis of slope-area measurement of peak flow.
e--Estimated.



06154410 LITTLE PEOPLES CREEK NEAR HAYS, MT

LOCATION.--Lat 47°57'58", long 108°39'36" (NAD 27), in SE¼SE¼NW¼ sec.32, T.26 N., R.24 E., Blaine County, Hydrologic Unit 10050009, on right bank 0.5 mi upstream from west entrance to Mission Canyon, 2 mi southeast of Hays, and at river mile 23.1.

DRAINAGE AREA.--13.0 mi^2.

PERIOD OF RECORD.--August 1972 to current year.

REVISED RECORDS.--WDR MT-81-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,769.72 ft (NGVD 29). August 1972 to June 24, 1976, gage at former site at elevation 10.00 ft higher. Prior to Apr. 22, 1987, gage located 330 ft downstream.

REMARKS.--Records fair. No known regulation or diversion upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	1.1	1.1	e1.0	e1.0	1.1	e1.5	2.2	11	4.1	1.9	1.4
2	1.2	1.1	1.1	e1.0	e1.0	1.1	1.8	2.1	10	4.1	1.9	1.3
3	1.2	1.1	1.1	e1.0	e1.0	1.1	2.0	2.1	9.3	4.0	2.0	1.3
4	1.2	1.1	1.1	e1.0	e1.0	1.1	2.2	2.1	8.3	4.9	1.9	1.3
5	1.2	1.0	1.1	e1.0	e1.0	1.1	2.8	2.0	7.3	5.0	1.8	1.3
6	1.2	1.0	1.1	e1.0	e1.0	1.1	3.6	1.9	8.1	4.3	1.7	1.3
7	1.2	1.1	1.0	e1.0	1.0	1.1	3.7	1.9	7.0	4.0	1.8	1.3
8	1.2	1.0	1.1	e1.0	1.0	1.3	4.0	1.9	6.4	3.8	1.9	1.3
9	1.2	1.1	1.0	e1.0	1.0	1.3	4.0	1.9	6.0	3.6	1.7	1.3
10	1.2	1.1	1.1	e1.0	1.0	1.3	3.9	1.8	6.3	3.4	1.6	1.2
11	1.2	1.1	1.0	e1.0	1.0	1.2	3.7	1.8	12	3.8	1.6	1.2
12	1.2	1.1	1.1	e1.0	1.0	1.2	3.4	1.8	31	3.4	1.6	1.3
13	1.2	1.0	1.1	e1.0	1.0	1.3	3.4	1.8	26	3.2	1.5	1.4
14	1.1	1.1	1.1	e1.0	1.0	1.2	3.2	1.7	21	3.0	1.5	1.3
15	1.1	1.0	1.1	e1.0	1.0	1.3	3.2	1.7	21	2.9	1.5	1.3
16	1.1	1.0	1.1	e1.0	1.0	1.3	3.2	1.7	18	2.8	1.5	1.2
17	1.1	1.0	1.1	e1.0	1.1	1.4	3.0	1.7	16	2.7	1.5	1.2
18	1.1	1.1	1.1	e1.0	1.1	1.5	2.7	1.8	14	2.6	1.5	1.3
19	1.1	1.1	1.1	e1.0	1.1	1.4	2.4	1.8	12	2.7	1.4	1.4
20	1.1	1.1	1.1	e1.0	1.1	1.4	2.4	1.9	11	2.6	1.5	1.3
21	1.1	1.1	1.1	e1.0	e1.0	1.3	2.6	2.0	10	2.5	1.4	1.3
22	1.1	1.1	e1.0	e1.0	1.0	1.3	2.3	2.1	9.8	2.4	1.5	1.3
23	1.1	1.1	e1.0	e1.0	1.0	1.3	2.3	2.2	8.6	2.3	1.5	1.4
24	1.1	1.1	e1.0	e1.0	1.0	1.3	2.2	2.7	7.5	2.2	1.4	1.3
25	1.1	1.1	e1.0	e1.0	1.0	1.2	2.2	3.2	6.9	2.2	1.4	1.4
26	1.1	1.1	e1.0	e1.0	1.0	1.2	2.2	17	6.2	e2.1	1.5	1.4
27	1.0	1.1	e1.0	e1.0	1.1	1.3	2.1	22	5.6	2.1	1.4	1.4
28	1.0	1.1	e1.0	e1.0	1.1	1.3	2.1	18	5.0	2.0	1.4	1.5
29	1.1	1.1	e1.0	e1.0	1.1	1.3	2.2	16	4.7	2.0	1.4	1.5
30	1.1	1.1	e1.0	e1.0	---	1.4	2.2	14	4.4	2.0	1.3	1.5
31	1.1	---	e1.0	e1.0	---	1.5	---	13	---	1.9	1.3	---
TOTAL	35.2	32.3	32.8	31.0	29.70	39.2	82.5	149.8	330.4	94.6	48.8	39.9
MEAN	1.14	1.08	1.06	1.00	1.02	1.26	2.75	4.83	11.0	3.05	1.57	1.33
MAX	1.2	1.1	1.1	1.0	1.1	1.5	4.0	22	31	5.0	2.0	1.5
MIN	1.0	1.0	1.0	1.0	1.0	1.1	1.5	1.7	4.4	1.9	1.3	1.2
AC-FT	70	64	65	61	59	78	164	297	655	188	97	79

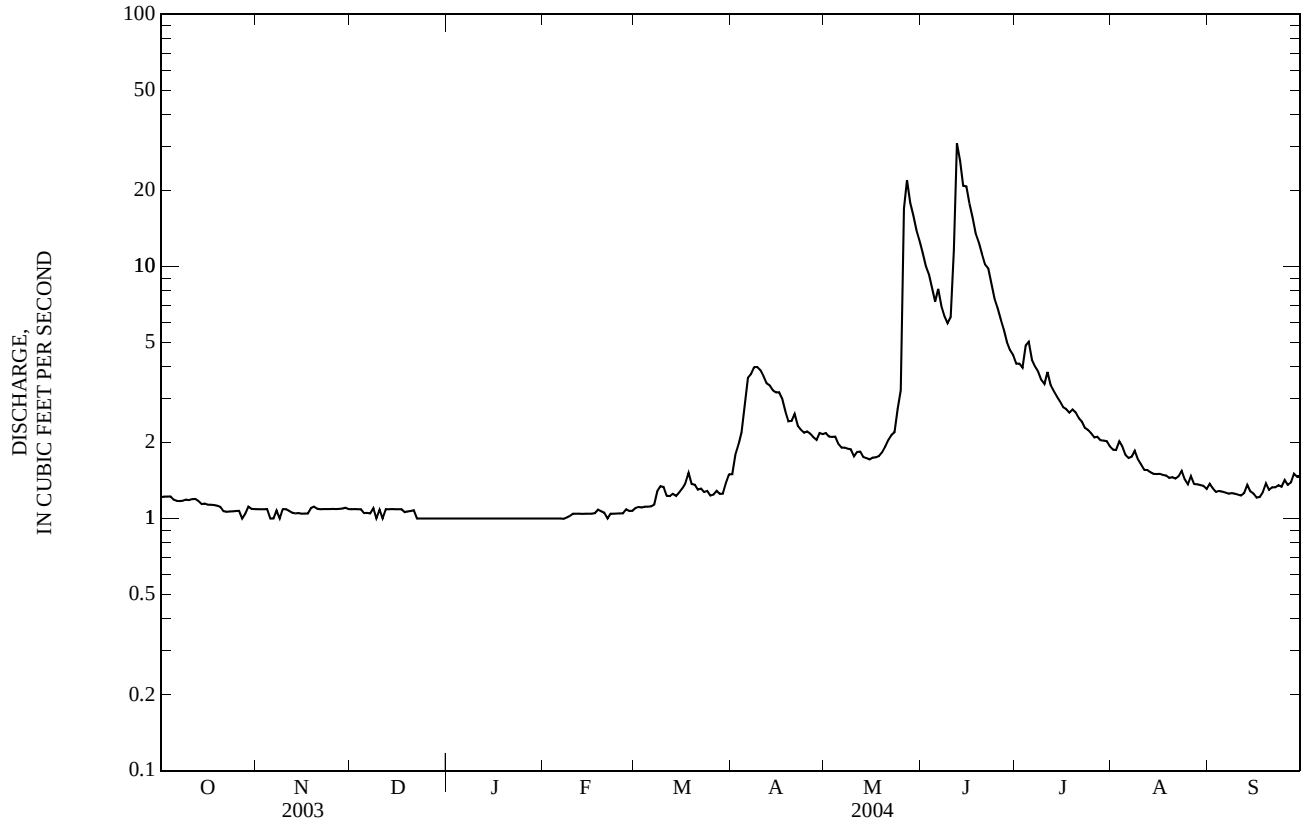
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2004, BY WATER YEAR (WY)

MEAN	2.31	2.12	1.97	1.86	1.76	2.26	4.42	11.7	8.26	5.23	2.86	2.51
MAX	6.92	4.60	3.75	3.84	3.51	5.52	21.5	75.6	26.6	32.9	8.11	8.42
(WY)	(1987)	(1987)	(1986)	(1976)	(1986)	(1996)	(1979)	(1974)	(1975)	(1993)	(1993)	(1978)
MIN	1.11	1.07	0.93	0.90	0.95	1.07	1.20	1.45	1.98	1.38	1.19	1.13
(WY)	(2002)	(2002)	(2002)	(2002)	(1997)	(2003)	(2002)	(2002)	(2000)	(2003)	(2003)	(2003)

06154410 LITTLE PEOPLES CREEK NEAR HAYS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1972 - 2004	
ANNUAL TOTAL	581.31		946.20			
ANNUAL MEAN	1.59		2.59		3.95*	
HIGHEST ANNUAL MEAN					11.6	1974
LOWEST ANNUAL MEAN					1.46	2001
HIGHEST DAILY MEAN	8.4	May 11	31	Jun 12	500	May 25, 1974
LOWEST DAILY MEAN	0.95	Mar 11	1.0	Oct 27	0.67	May 21, 1997
ANNUAL SEVEN-DAY MINIMUM	0.97	Mar 5	1.0	Dec 22	0.76	May 18, 1997
MAXIMUM PEAK FLOW			34	Jun 12	a576	May 25, 1974
MAXIMUM PEAK STAGE			1.17	Jun 12	b4.57	May 25, 1974
INSTANTANEOUS LOW FLOW					0.67	May 21, 1997
ANNUAL RUNOFF (AC-FT)	1,150		1,880		2,860	
10 PERCENT EXCEEDS	2.8		4.8		6.5	
50 PERCENT EXCEEDS	1.1		1.3		2.2	
90 PERCENT EXCEEDS	1.0		1.0		1.3	

*--Median of yearly mean discharge, 2.06 ft^3/s.
a--From rating curve extended above 44 ft^3/s, on basis of slope-area measurement of flow.
b--From floodmark, at site and datum then in use.
e--Estimated.



06154550 PEOPLES CREEK BELOW KUHR COULEE, NEAR DODSON, MT

LOCATION.--Lat 48°21'49", long 108°21'16" (NAD 27), in NW¼NW¼NE¼ sec.16, T.30 N., R.26 E., Phillips County, Hydrologic Unit 10050009, on right bank 10 ft downstream from bridge on county highway, 2.4 mi downstream from Kuhr Coulee, 5.5 mi southwest of Dodson, and at river mile 7.8.

DRAINAGE AREA.--675 mi^2.

PERIOD OF RECORD.--April 1918 to November 1921 (fragmentary), June 1951 to September 1973, October 1981 to September 1988 (published as "near Dodson"), October 1988 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 2,309.18 ft (NGVD 29) (levels by Bureau of Indian Affairs). Prior to June 1951, nonrecording gage at site 0.5 mi upstream at different elevation. June 1, 1951 to Sept. 30, 1988, water-stage recorder at sites 2.5 mi upstream at different elevation.

REMARKS.--Records fair. Diversions for irrigation of about 3,300 acres upstream from station. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	e0.00	e0.00	22	2.1	59	28	0.00	0.00
2	0.00	0.00	0.00	e0.00	e0.00	0.00	17	2.2	61	28	0.00	0.00
3	0.00	0.00	0.00	e0.00	e0.00	e0.00	13	2.4	56	26	0.00	0.00
4	0.00	0.00	0.00	e0.00	e0.00	0.00	15	2.4	46	55	0.00	0.00
5	0.00	0.00	0.00	e0.00	e0.00	e0.00	16	3.2	43	67	0.00	0.00
6	0.00	0.00	0.00	e0.00	e0.00	0.00	13	3.2	44	50	0.00	0.00
7	0.00	0.00	0.00	0.00	e0.00	e0.50	11	3.0	40	40	0.00	0.00
8	0.00	0.00	0.00	e0.00	0.00	e0.50	8.9	2.4	38	44	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	e100	7.7	2.1	39	44	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	e930	7.6	1.8	40	37	0.00	0.00
11	0.00	0.00	0.00	e0.00	0.00	e700	6.9	2.0	45	35	0.00	0.00
12	0.00	0.00	0.00	e0.00	0.00	e300	6.6	2.8	44	30	0.00	0.00
13	0.00	0.00	0.00	e0.00	0.00	e200	6.3	4.3	46	27	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	e150	5.2	5.4	53	20	0.00	0.00
15	0.00	0.00	0.00	e0.00	0.00	e140	4.6	6.2	53	8.3	0.00	0.00
16	0.00	0.00	0.00	e0.00	0.00	e130	4.5	5.9	49	6.6	0.00	0.00
17	0.00	0.00	0.00	e0.00	0.00	140	4.5	6.8	47	5.2	0.00	0.00
18	0.00	0.00	0.00	e0.00	0.00	124	4.3	6.0	43	3.5	0.00	0.00
19	0.00	0.00	0.00	e0.00	0.00	124	4.0	6.8	42	2.6	0.00	0.00
20	0.00	0.00	0.00	e0.00	0.00	112	3.5	5.8	40	2.3	0.00	0.00
21	0.00	0.00	0.00	e0.00	0.00	81	3.5	4.3	38	1.7	0.00	0.00
22	0.00	0.00	0.00	e0.00	0.00	62	3.3	7.8	36	1.1	0.00	0.00
23	0.00	0.00	0.00	e0.00	0.00	54	2.9	21	34	0.74	0.00	0.00
24	0.00	0.00	0.00	e0.00	0.00	54	2.6	179	32	0.59	0.00	0.00
25	0.00	0.00	0.00	e0.00	0.00	56	2.2	249	33	0.43	0.00	0.00
26	0.00	0.00	0.00	e0.00	0.00	50	2.0	162	33	0.23	0.00	0.00
27	0.00	0.00	0.00	e0.00	0.00	45	2.0	137	30	0.02	0.00	0.01
28	0.00	0.00	0.00	e0.00	0.00	43	1.8	109	29	0.00	0.00	0.03
29	0.00	0.00	0.00	e0.00	0.00	40	1.9	103	28	0.00	0.00	0.07
30	0.00	0.00	0.00	e0.00	---	37	2.2	80	28	0.00	0.00	0.12
31	0.00	---	0.00	e0.00	---	30	---	69	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	3,703.00	206.0	1,197.9	1,249	564.31	0.00	0.23
MEAN	0.00	0.00	0.00	0.00	0.00	119	6.87	38.6	41.6	18.2	0.00	0.01
MAX	0.00	0.00	0.00	0.00	0.00	930	22	249	61	67	0.00	0.12
MIN	0.00	0.00	0.00	0.00	0.00	0.00	1.8	1.8	28	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	7,340	409	2,380	2,480	1,120	0.00	0.5

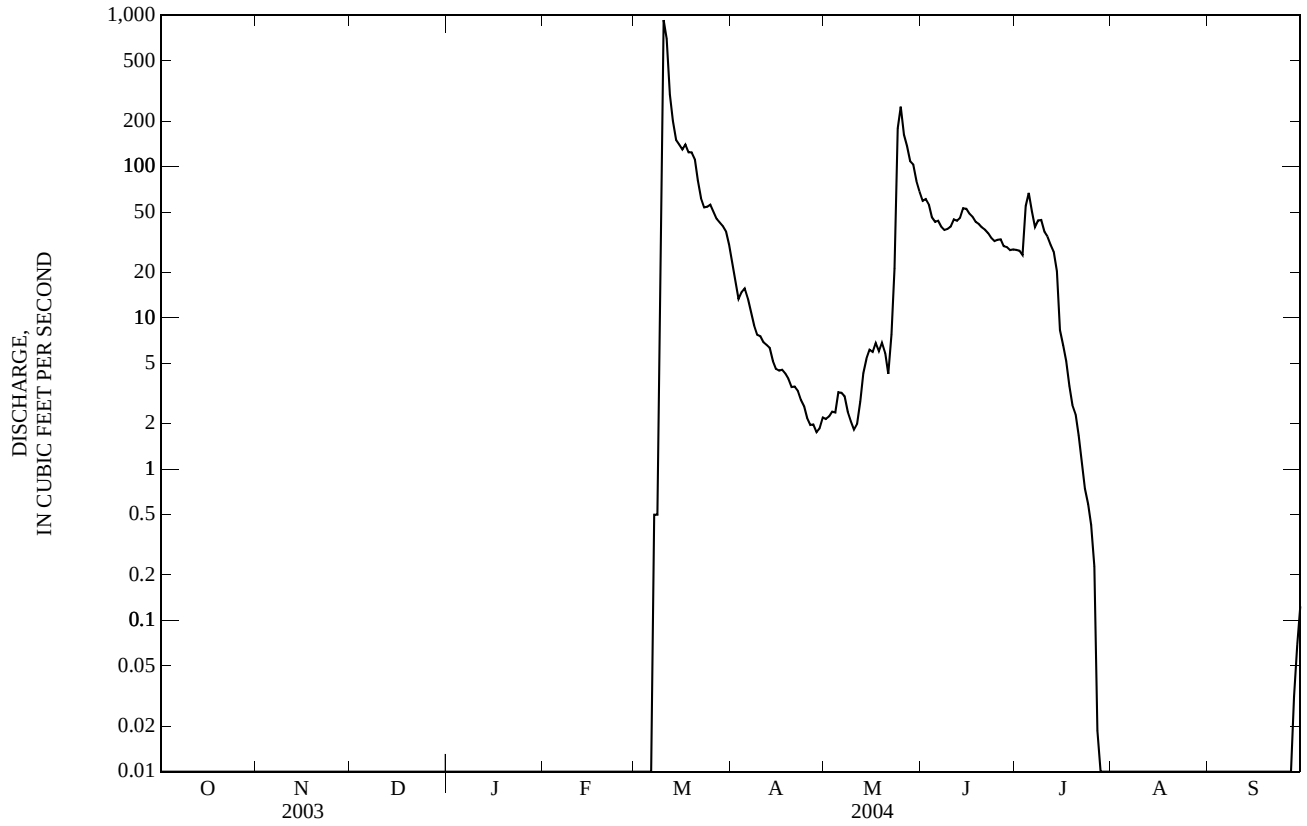
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918- 2004, BY WATER YEAR (WY)*

MEAN	8.18	5.55	4.37	5.07	29.3	79.3	52.9	53.1	41.2	22.0	3.26	12.5
MAX	195	63.6	61.5	64.1	369	385	520	575	332	128	31.2	480
(WY)	(1987)	(1987)	(1987)	(1971)	(1971)	(1996)	(1965)	(1986)	(1953)	(1983)	(1993)	(1986)
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.09	0.00	0.00	0.00	0.00
(WY)	(1959)	(1957)	(1953)	(1956)	(1956)	(2002)	(1962)	(1998)	(2001)	(1918)	(1919)	(1918)

06154550 PEOPLES CREEK BELOW KUHR COULEE, NEAR DODSON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1918 - 2004*	
ANNUAL TOTAL	2,237.83		6,920.44			
ANNUAL MEAN	6.13		18.9		26.7	
HIGHEST ANNUAL MEAN					131	1986
LOWEST ANNUAL MEAN					1.01	2001
HIGHEST DAILY MEAN	640	Mar 14	930	Mar 10	5,070	Sep 25, 1986
LOWEST DAILY MEAN	0.00	Jan 22	0.00	Oct 1	0.00	Jun 11, 1918
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 22	0.00	Oct 1	0.00	Jun 11, 1918
MAXIMUM PEAK FLOW			unknown		b7,590	Sep 25, 1986
MAXIMUM PEAK STAGE			a13.37	Mar 10	c17.05	Mar 29, 1952
INSTANTANEOUS LOW FLOW					0.00	many days
ANNUAL RUNOFF (AC-FT)	4,440		13,730		19,380	
10 PERCENT EXCEEDS	5.6		46		45	
50 PERCENT EXCEEDS	0.00		0.00		2.7	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

*--During period of operation [1918-21 (fragmentary), 1951-63, 1982 to current year.]
a--Backwater from ice.
b--Gage height, 15.91 ft, from floodmark, at different site and datum.
c--Backwater from ice, from floodmark in gage house, at different site and datum.
e--Estimated.



06155030 MILK RIVER NEAR DODSON, MT

LOCATION.--Lat 48°24'11", long 108°17'35" (NAD27), in NE¼SE¼NW¼ sec.36, T.31 N., R.26 E., Phillips County, Hydrologic Unit 10050004, on left bank 30 ft downstream from U.S. Highway 2 bridge, 0.95 mi downstream from Dodson Dam, 1.9 mi west of Dodson, and at river mile 273.2.

DRAINAGE AREA.--11,192 mi^2.

PERIOD OF RECORD.--October 1982 to current year (seasonal record beginning water year 1994).

GAGE.--Water-stage recorder. Elevation of gage is 2,250 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Numerous diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e90	7.0	0.00	2.2	0.08	1.0	0.09	1.5		
2			e90	6.7	0.18	0.10	0.09	1.4	0.35	2.0		
3			e80	6.2	0.49	0.01	0.31	0.99	0.54	1.9		
4			e80	5.8	0.50	0.00	0.16	1.8	0.47	1.7		
5			e80	6.1	0.84	0.02	0.03	2.0	0.49	1.6		
6			e90	5.9	0.61	0.11	121	0.78	0.74	1.5		
7			e90	5.5	1.1	0.00	259	1.1	0.89	1.6		
8			e100	5.4	0.77	0.00	159	0.68	0.90	1.7		
9			e100	5.6	0.48	0.13	94	0.44	0.59	2.0		
10			e250	5.2	0.26	0.62	42	0.44	0.00	2.3		
11			e2,200	5.6	45	1.5	11	0.24	0.00	116		
12			e3,000	6.4	143	0.93	2.1	0.22	0.02	76		
13			e2,800	5.4	132	0.88	0.47	0.73	0.18	13		
14			e2,400	5.7	79	0.35	0.14	0.47	0.49	0.03		
15			e2,400	5.4	8.5	0.28	0.62	1.2	0.30	0.00		
16			e2,200	5.6	0.51	0.54	1.1	0.17	0.22	0.00		
17			e2,000	5.9	0.00	0.40	0.70	0.21	0.27	0.00		
18			1,220	5.6	0.01	0.25	0.09	0.10	0.22	0.00		
19			819	5.8	0.41	0.01	0.28	0.27	0.54	0.00		
20			583	7.0	0.05	0.00	2.0	0.35	0.88	0.00		
21			509	1.2	0.00	0.00	2.5	0.24	0.52	0.00		
22			e717	0.40	0.05	0.21	3.9	0.48	0.50	0.00		
23			e700	0.42	0.67	0.65	2.4	0.95	0.51	0.00		
24			e500	0.23	0.46	0.51	2.4	0.61	0.55	0.00		
25			e400	0.03	375	0.01	1.3	0.48	0.54	0.00		
26			260	0.12	746	0.06	1.0	0.22	0.62	0.00		
27			305	0.20	754	0.24	0.33	0.33	1.0	0.00		
28			300	0.05	593	0.15	0.74	0.59	1.3	0.00		
29			153	0.16	353	1.1	1.1	0.48	1.3	0.00		
30			41	0.06	209	1.4	1.1	0.35	1.2	0.00		
31			12	---	51	---	0.41	0.08	---	0.00		
TOTAL			24,569	120.67	3,495.89	12.66	711.35	19.40	16.22	222.83		
MEAN			793	4.02	113	0.42	22.9	0.63	0.54	7.19		
MAX			3,000	7.0	754	2.2	259	2.0	1.3	116		
MIN			12	0.03	0.00	0.00	0.03	0.08	0.00	0.00		
AC-FT			48,730	239	6,930	25	1,410	38	32	442		

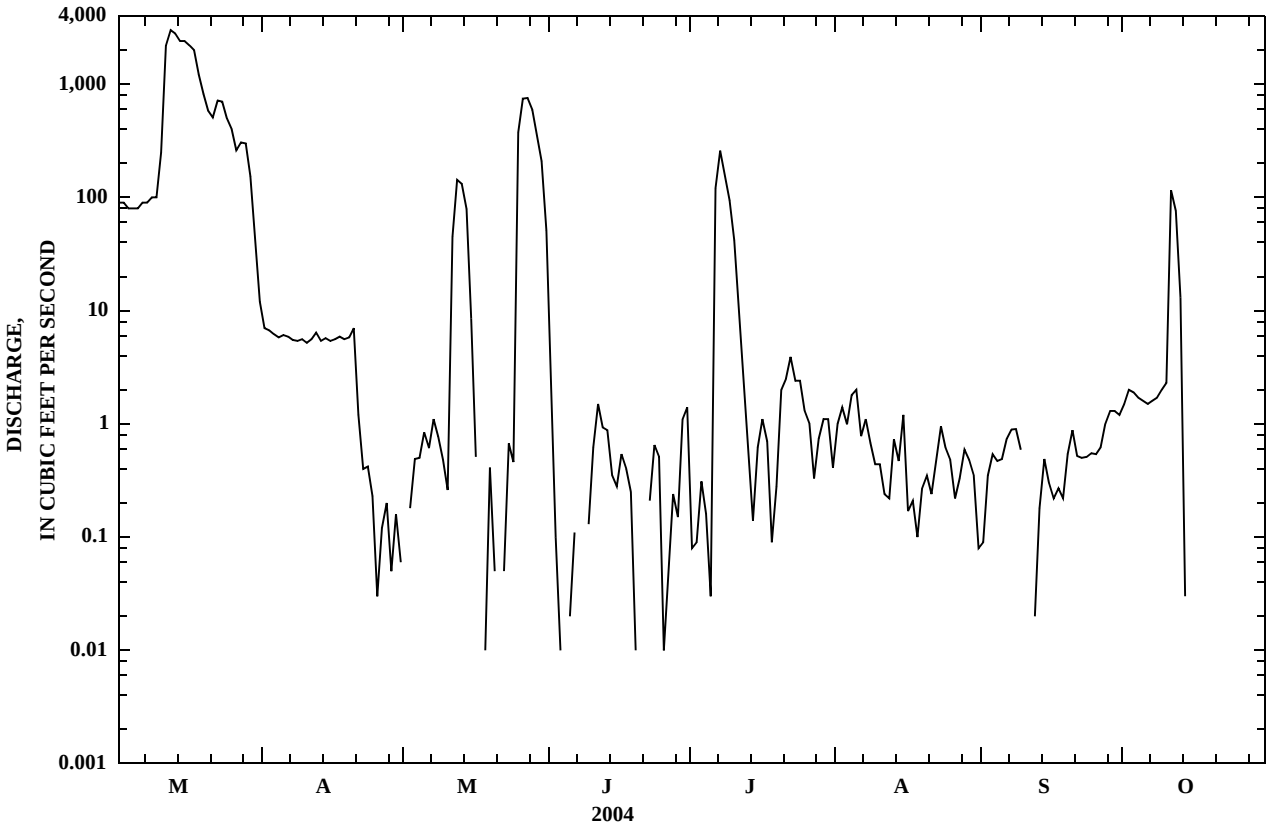
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1993 AND SEASONS 1994 - 2004*

MEAN	83.2	129	649	311	107	270	129	42.8	13.3	101	106	77.8
MAX	230	526	2,252	1,691	375	655	350	85.0	29.4	692	421	275
(WY)	(1990)	(1986)	(1996)	(1996)	(1994)	(1995)	(1998)	(2002)	(1999)	(1994)	(1987)	(1987)
MIN	18.2	20.3	19.2	2.35	3.41	0.42	8.72	0.63	0.06	5.39	25.3	17.3
(WY)	(1985)	(1985)	(2001)	(1999)	(2001)	(2004)	(2001)	(2004)	(2003)	(1998)	(1985)	(1985)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1994 - 2004*		WATER YEARS 1982 - 1993	
ANNUAL MEAN					181	
HIGHEST ANNUAL MEAN					590	1996
LOWEST ANNUAL MEAN					36.6	1985
HIGHEST DAILY MEAN	3,000	Mar 12	5,000	Mar 20 1996	11,500	Sep 26, 1986
LOWEST DAILY MEAN	0.0	May 1	0.0	Aug 15 2003	c0.0	Sep 16, 1983
ANNUAL SEVEN-DAY MINIMUM					0.0	Sep 16, 1983
MAXIMUM PEAK FLOW	a3,000	Mar 12	b5,200	Mar 17 1994	13,200	Sep 26, 1986
MAXIMUM PEAK STAGE	a21.95	Mar 11	a24.51	Mar 14 1996	29.79	Sep 26, 1990
INSTANTANEOUS LOW FLOW					0.0	Oct 6, 1990
ANNUAL RUNOFF (AC-FT)					131,300	
10 PERCENT EXCEEDS					386	
50 PERCENT EXCEEDS					47	
90 PERCENT EXCEEDS					5.2	

*--Seasonal record beginning water year 1994.
a--Backwater from ice.
b--Gage height, 22.71 ft.
c--No flow at times most years.
e--Estimated.

06155030 MILK RIVER NEAR DODSON, MT—Continued



06155900 MILK RIVER AT CREE CROSSING, NEAR SACO, MT

LOCATION.--Lat 48°32'25", long 107°31'10" (NAD 27), in NW¼SE¼SE¼ sec.11, T.32 N., R.32 E., Phillips County, Hydrologic Unit 10050004, on right bank 25 ft upstream from bridge on Phillips County road, 500 ft upstream from Nelson Canal, 9.9 mi northwest of Saco, and at river mile 176.4.

DRAINAGE AREA.--13,118 mi^2.

PERIOD OF RECORD.--May 2000 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 2,188 ft (NGVD 29).

REMARKS.--Seasonal records good except those for estimated daily discharges, which are poor. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e90	271	28	472	50	130	102	69		
2			e90	191	28	356	57	120	98	69		
3			e90	157	29	272	64	117	92	71		
4			e80	140	27	196	88	105	89	71		
5			e70	112	26	162	99	207	85	71		
6			e50	85	26	155	164	236	74	67		
7			e40	71	31	146	204	338	80	60		
8			e35	66	30	137	141	196	88	49		
9			e100	64	27	138	292	157	84	44		
10			e1,250	74	24	141	343	143	90	36		
11			e2,000	77	24	165	266	128	100	34		
12			e1,400	68	32	189	215	125	97	34		
13			e2,200	58	40	182	175	106	99	33		
14			e3,000	50	153	171	143	96	104	71		
15			e3,800	48	255	150	132	102	109	132		
16			e3,500	45	207	153	120	117	116	79		
17			e3,200	45	163	151	108	113	118	62		
18			e2,900	47	122	116	113	90	113	50		
19			e2,600	45	112	81	100	77	116	45		
20			e2,300	44	105	80	86	93	114	39		
21			1,880	42	140	91	89	102	89	37		
22			1,030	44	118	87	91	91	82	36		
23			769	40	102	70	85	84	87	36		
24			913	40	588	60	74	103	93	35		
25			866	38	1,110	51	77	120	91	34		
26			667	35	568	48	98	114	86	33		
27			506	33	601	44	113	119	82	33		
28			428	31	997	55	100	127	84	33		
29			427	27	1,020	51	105	130	82	33		
30			435	28	1,030	48	109	123	76	33		
31			367	---	651	---	128	107	---	33		
TOTAL			37,083	2,116	8,414	4,218	4,029	4,016	2,820	1,562		
MEAN			1,196	70.5	271	141	130	130	94.0	50.4		
MAX			3,800	271	1,110	472	343	338	118	132		
MIN			35	27	24	44	50	77	74	33		
AC-FT			73,550	4,200	16,690	8,370	7,990	7,970	5,590	3,100		

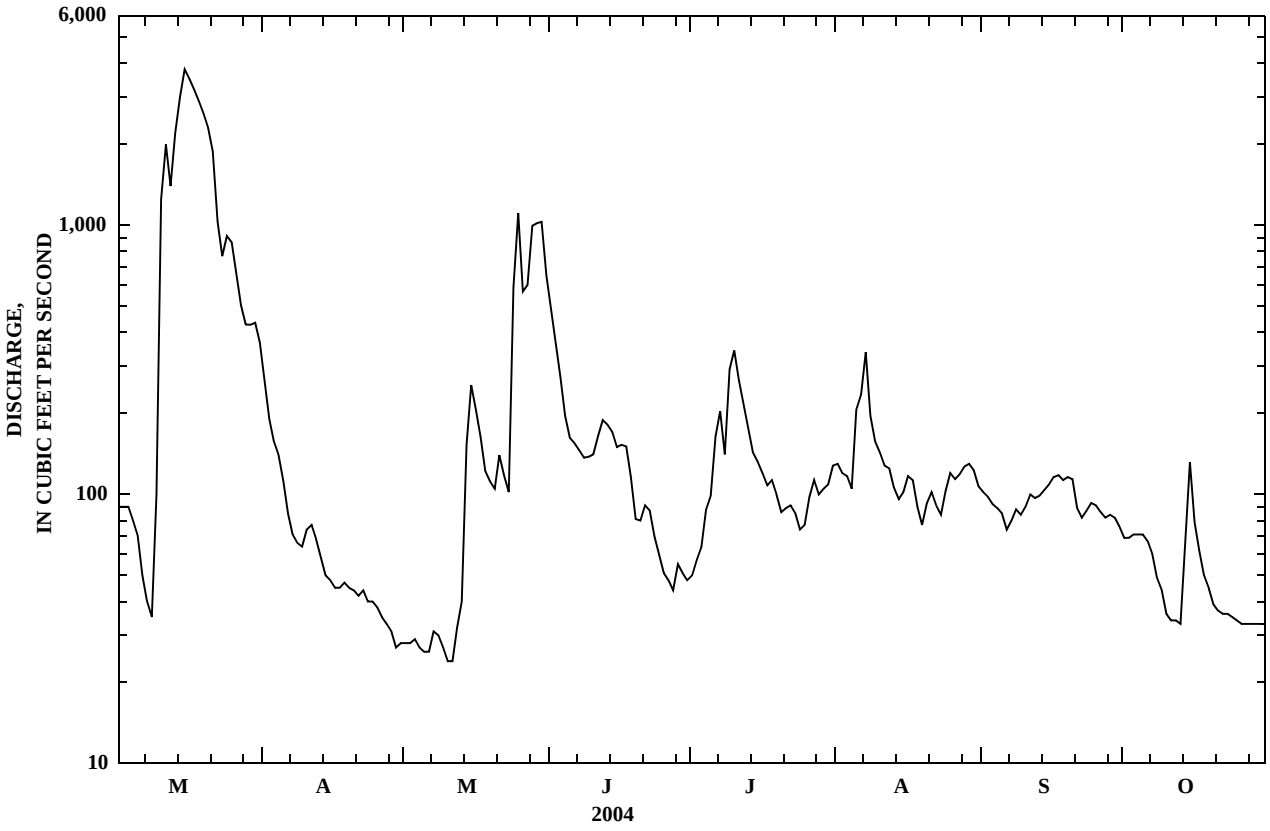
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 2000 - 2004

MEAN	488	60.9	114	202	138	113	57.3	32.1
MAX	1,196	125	271	517	244	225	108	50.1
(WY)	(2004)	(2003)	(2004)	(2002)	(2002)	(2002)	(2002)	(2005)
MIN	38.3	20.5	9.44	68.1	28.3	16.7	18.6	12.6
(WY)	(2002)	(2002)	(2001)	(2001)	(2001)	(2001)	(2000)	(2002)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 2000 - 2004	
HIGHEST DAILY MEAN	3,800	Mar 15	3,800	Mar 15 2004
LOWEST DAILY MEAN	24	May 10	2.6	May 28 2001
MAXIMUM PEAK FLOW	unknown		b2,600	Mar 21 2003
MAXIMUM PEAK STAGE	a15.19	Mar 14	a15.19	Mar 14 2004
INSTANTANEOUS LOW FLOW	21	May 10	2.6	May 28 2001

a--Backwater from ice.
b--Maximum peak discharge is known to be higher, occurred Mar. 15, 2004, but was affected by backwater from ice.

06155900 MILK RIVER AT CREE CROSSING, NEAR SACO, MT—Continued



06156500 BELANGER CREEK DIVERSION CANAL NEAR VIDORA, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°29'39", long 109°21'54" (NAD 27), in NW$^1/_4$ sec.19, T.6, R.25 W., third meridian, Hydrologic Unit 10050013, on left bank 0.3 mi downstream from diversion weir and 12 mi north of Vidora.

PERIOD OF RECORD.--March 1946 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 3,200 ft (NGVD 29), from Cypress Lake elevation.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Canal diverts water from right bank of Belanger Creek in SW$^1/_4$ sec.30, T.6, R.25 W., third meridian, for storage in Cypress Lake. Water Survey of Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

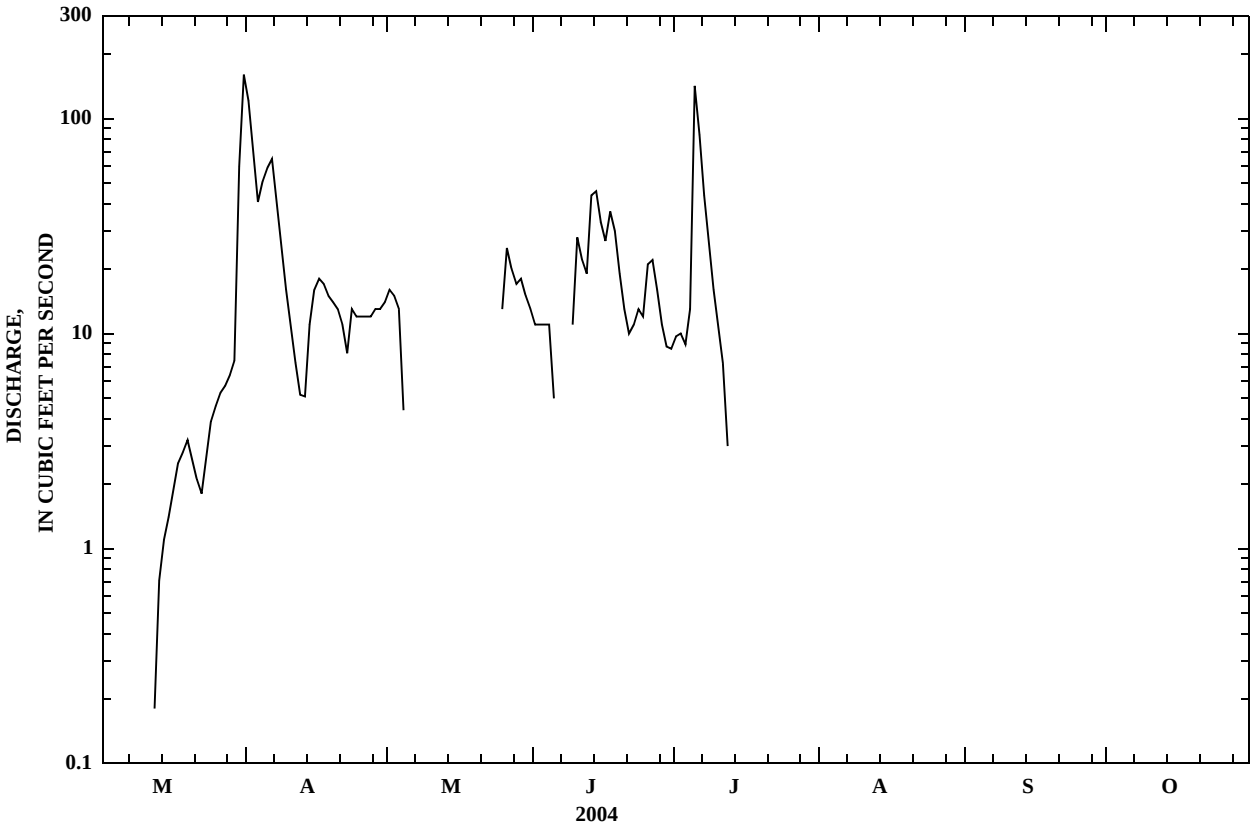
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 696 ft^3/s, June 28, 1998; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		e0.00	e0.00	e121	16	11	9.7	0.00	0.00	0.00		
2		e0.00	e0.00	67	15	11	10	0.00	0.00	0.00		
3		e0.00	e0.00	41	13	11	8.9	0.00	0.00	0.00		
4		e0.00	e0.00	51	4.4	11	13	0.00	0.00	0.00		
5		e0.00	e0.00	59	0.00	5.0	142	0.00	0.00	0.00		
6		e0.00	e0.00	65	0.00	0.00	84	0.00	0.00	0.00		
7		e0.00	e0.00	41	0.00	0.00	44	0.00	0.00	0.00		
8		e0.00	e0.00	25	0.00	0.00	27	0.00	0.00	0.00		
9		e0.00	e0.00	16	0.00	11	16	0.00	0.00	0.00		
10		e0.00	e0.00	11	0.00	28	11	0.00	0.00	0.00		
11		e0.00	e0.00	7.3	0.00	22	7.3	0.00	0.00	0.00		
12		e0.00	e0.18	5.2	0.00	19	3.0	0.00	0.00	0.00		
13		e0.00	e0.71	5.1	0.00	44	0.00	0.00	0.00	0.00		
14		e0.00	e1.1	11	0.00	46	0.00	0.00	0.00	0.00		
15		e0.00	e1.4	16	0.00	33	0.00	0.00	0.00	0.00		
16		e0.00	e1.9	18	0.00	27	0.00	0.00	0.00	0.00		
17		e0.00	e2.5	17	0.00	37	0.00	0.00	0.00	0.00		
18		e0.00	e2.8	15	0.00	30	0.00	0.00	0.00	0.00		
19		e0.00	e3.2	14	0.00	19	0.00	0.00	0.00	0.00		
20		e0.00	e2.6	13	0.00	13	0.00	0.00	0.00	0.00		
21		e0.00	e2.1	11	0.00	10	0.00	0.00	0.00	0.00		
22		e0.00	e1.8	8.1	0.00	11	0.00	0.00	0.00	0.00		
23		e0.00	e2.6	13	0.00	13	0.00	0.00	0.00	0.00		
24		e0.00	e3.9	12	0.00	12	0.00	0.00	0.00	0.00		
25		e0.00	e4.6	12	13	21	0.00	0.00	0.00	0.00		
26		e0.00	e5.3	12	25	22	0.00	0.00	0.00	0.00		
27		e0.00	e5.7	12	20	16	0.00	0.00	0.00	0.00		
28		e0.00	e6.4	13	17	11	0.00	0.00	0.00	0.00		
29		e0.00	e7.5	13	18	8.7	0.00	0.00	0.00	0.00		
30		---	e60	14	15	8.5	0.00	0.00	0.00	0.00		
31		---	e160	---	13	---	0.00	0.00	---	0.00		
TOTAL		0.00	276.29	738.7	169.40	511.20	375.90	0.00	0.00	0.00		
MEAN		0.00	8.91	24.6	5.46	17.0	12.1	0.00	0.00	0.00		
MAX		0.00	160	121	25	46	142	0.00	0.00	0.00		
MIN		0.00	0.00	5.1	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT		0.00	548	1,470	336	1,010	746	0.00	0.00	0.00		

e--Estimated.

06156500 BELANGER CREEK DIVERSION CANAL NEAR VIDORA, SASKATCHEWAN—Continued



06157500 CYPRESS LAKE EAST OUTFLOW CANAL NEAR VIDORA, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°29'12", long 109°21'08" (NAD 27), in SE$^1/_4$ sec.19, T.6, R.25 W., third meridian, Hydrologic Unit 10050013, on right bank 500 ft upstream from Belanger Creek, and 12.3 mi north of Vidora.

PERIOD OF RECORD.--April to October 1940, April 1943 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 3,180 ft (NGVD 29). Prior to Sept. 26, 1946, at elevation 2.24 ft higher and Sept. 26, 1946, to May 18, 1950, at elevation 1.54 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Canal diverts water from Cypress Lake for irrigation in Frenchman River basin in Saskatchewan. Water Survey of Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

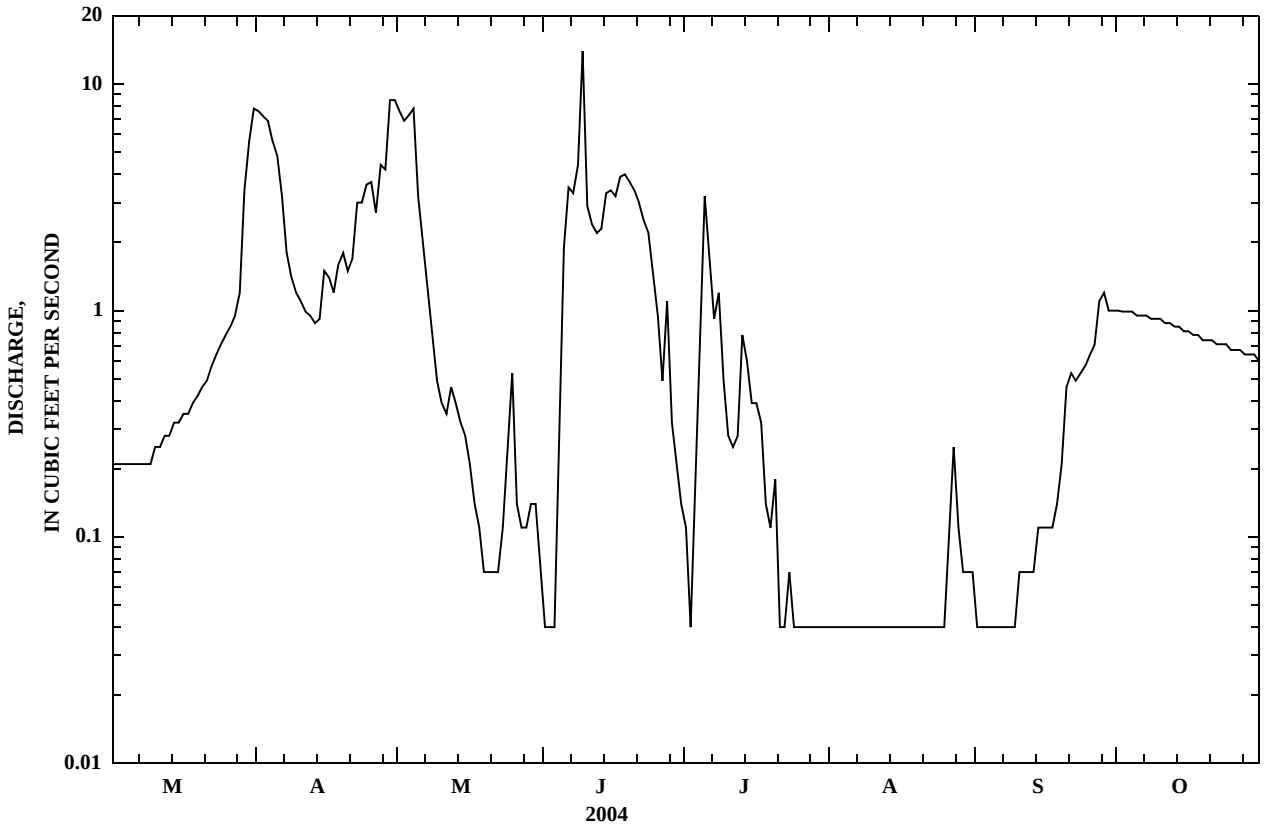
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 202 ft^3/s, Apr. 19, 1952; no flow at times most seasons.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.21	e7.6	7.6	0.04	0.11	0.04	0.04	e1.0		
2			e0.21	e7.2	6.9	0.04	0.04	0.04	0.04	e0.99		
3			e0.21	e6.9	7.3	0.04	0.18	0.04	0.04	e0.99		
4			e0.21	e5.6	7.8	0.35	0.64	0.04	0.04	e0.99		
5			e0.21	e4.8	3.2	1.9	3.2	0.04	0.04	e0.95		
6			e0.21	e3.2	1.9	3.5	1.8	0.04	0.04	e0.95		
7			e0.21	e1.8	1.2	3.3	0.92	0.04	0.04	e0.95		
8			e0.21	e1.4	0.78	4.4	1.2	0.04	0.04	e0.92		
9			e0.21	e1.2	0.49	14	0.49	0.04	0.04	e0.92		
10			e0.25	e1.1	0.39	2.9	0.28	0.04	0.07	e0.92		
11			e0.25	e0.99	0.35	2.4	0.25	0.04	0.07	e0.88		
12			e0.28	e0.95	0.46	2.2	0.28	0.04	0.07	e0.88		
13			e0.28	e0.88	0.39	2.3	0.78	0.04	0.07	e0.85		
14			e0.32	e0.92	0.32	3.3	0.60	0.04	0.11	e0.85		
15			e0.32	e1.5	0.28	3.4	0.39	0.04	0.11	e0.81		
16			e0.35	1.4	0.21	3.2	0.39	0.04	0.11	e0.81		
17			e0.35	1.2	0.14	3.9	0.32	0.04	0.11	e0.78		
18			e0.39	1.6	0.11	4.0	0.14	0.04	0.14	e0.78		
19			e0.42	1.8	0.07	3.7	0.11	0.04	0.21	e0.74		
20			e0.46	1.5	0.07	3.4	0.18	0.04	0.46	e0.74		
21			e0.49	1.7	0.07	3.0	0.04	0.04	0.53	e0.74		
22			e0.57	3.0	0.07	2.5	0.04	0.04	0.49	e0.71		
23			e0.64	3.0	0.11	2.2	0.07	0.04	0.53	e0.71		
24			e0.71	3.6	0.25	1.5	0.04	0.04	0.57	e0.71		
25			e0.78	3.7	0.53	0.95	0.04	0.04	0.64	e0.67		
26			e0.85	2.7	0.14	0.49	0.04	0.11	0.71	e0.67		
27			e0.95	4.4	0.11	1.1	0.04	0.25	1.1	e0.67		
28			e1.2	4.2	0.11	0.32	0.04	0.11	1.2	e0.64		
29			e3.4	8.5	0.14	0.21	0.04	0.07	1.0	e0.64		
30			e5.6	8.5	0.14	0.14	0.04	0.07	e1.0	e0.64		
31			e7.8	---	0.07	---	0.04	0.07	---	e0.60		
TOTAL			28.55	96.84	41.70	74.68	12.77	1.68	9.66	25.10		
MEAN			0.92	3.23	1.35	2.49	0.41	0.05	0.32	0.81		
MAX			7.8	8.5	7.8	14	3.2	0.25	1.2	1.0		
MIN			0.21	0.88	0.07	0.04	0.04	0.04	0.04	0.60		
AC-FT			57	192	83	148	25	3.3	19	50		

e--Estimated.

06157500 CYPRESS LAKE EAST OUTFLOW CANAL NEAR VIDORA, SASKATCHEWAN—Continued



06158500 EASTEND CANAL AT EASTEND, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°30'21", long 108°50'54" (NAD 27), in NW¼ sec.25, T.6, R.22 W., third meridian, Hydrologic Unit 10050013, on left bank 600 ft downstream from Eastend Reservoir headgate, 1.5 mi west of Eastend.

PERIOD OF RECORD.--March 1937 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 2,998.58 ft (Canadian Geodetic Vertical Datum 1928). Prior to June 1973, at sites within 1 mi, at different elevations.

REMARKS.--Records good. Canal diverts water from Eastend Reservoir in NW¼ sec.25, T.6, R.22 W., third meridian, on right bank for irrigation of about 3,100 acres in the Frenchman River basin in Saskatchewan. Water Survey of Canada satellite telemeter at station.

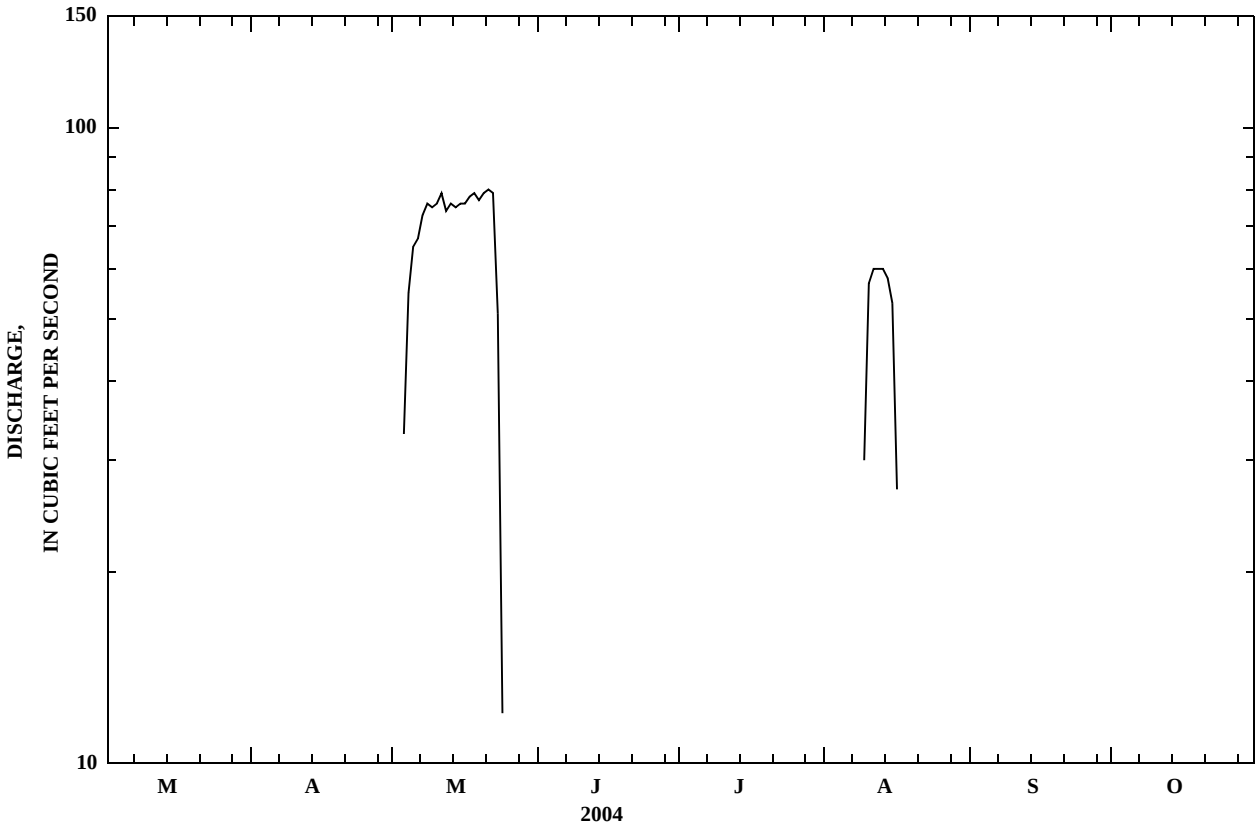
COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 91 ft³/s, May 18, 1993; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
3		0.00	0.00	0.00	33	0.00	0.00	0.00	0.00	0.00		
4		0.00	0.00	0.00	55	0.00	0.00	0.00	0.00	0.00		
5		0.00	0.00	0.00	65	0.00	0.00	0.00	0.00	0.00		
6		0.00	0.00	0.00	67	0.00	0.00	0.00	0.00	0.00		
7		0.00	0.00	0.00	73	0.00	0.00	0.00	0.00	0.00		
8		0.00	0.00	0.00	76	0.00	0.00	0.00	0.00	0.00		
9		0.00	0.00	0.00	75	0.00	0.00	30	0.00	0.00		
10		0.00	0.00	0.00	76	0.00	0.00	57	0.00	0.00		
11		0.00	0.00	0.00	79	0.00	0.00	60	0.00	0.00		
12		0.00	0.00	0.00	74	0.00	0.00	60	0.00	0.00		
13		0.00	0.00	0.00	76	0.00	0.00	60	0.00	0.00		
14		0.00	0.00	0.00	75	0.00	0.00	58	0.00	0.00		
15		0.00	0.00	0.00	76	0.00	0.00	53	0.00	0.00		
16		0.00	0.00	0.00	76	0.00	0.00	27	0.00	0.00		
17		0.00	0.00	0.00	78	0.00	0.00	0.00	0.00	0.00		
18		0.00	0.00	0.00	79	0.00	0.00	0.00	0.00	0.00		
19		0.00	0.00	0.00	77	0.00	0.00	0.00	0.00	0.00		
20		0.00	0.00	0.00	79	0.00	0.00	0.00	0.00	0.00		
21		0.00	0.00	0.00	80	0.00	0.00	0.00	0.00	0.00		
22		0.00	0.00	0.00	79	0.00	0.00	0.00	0.00	0.00		
23		0.00	0.00	0.00	51	0.00	0.00	0.00	0.00	0.00		
24		0.00	0.00	0.00	12	0.00	0.00	0.00	0.00	0.00		
25		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
27		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
29		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
30		---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31		---	0.00	---	0.00	---	0.00	0.00	---	0.00		
TOTAL		0.00	0.00	0.00	1,511.00	0.00	0.00	405.00	0.00	0.00		
MEAN		0.00	0.00	0.00	48.7	0.00	0.00	13.1	0.00	0.00		
MAX		0.00	0.00	0.00	80	0.00	0.00	60	0.00	0.00		
MIN		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT		0.00	0.00	0.00	3,000	0.00	0.00	803	0.00	0.00		

06158500 EASTEND CANAL AT EASTEND, SASKATCHEWAN—Continued



06161300 HUFF LAKE PUMPING CANAL NEAR VAL MARIE, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°22'20", long 107°53'05" (NAD 27), in NW$^1/_4$ sec.7, T.5, R.14 W., third meridian, Hydrologic Unit 10050013, on right bank 50 ft downstream from pump discharge outlet, and 11 mi northwest of Val Marie.

PERIOD OF RECORD.--March 1963 to current season (seasonal records only). Published as Val Marie West Pumping Canal near Val Marie, Saskatchewan, March 1963 to October 1980. July 1950 to current season in reports of Department of the Environment, Canada.

GAGE.--Water-stage recorder. Prior to 1956 and subsequent to 1960, records obtained from occasional discharge measurements and records of pump operation.

REMARKS.--Records fair. Canal diverts water from Huff Lake in NW$^1/_4$ sec.7, T.5, R.14 W., third meridian, on left bank for irrigation of about 2,100 acres in the Frenchman River basin in Saskatchewan.

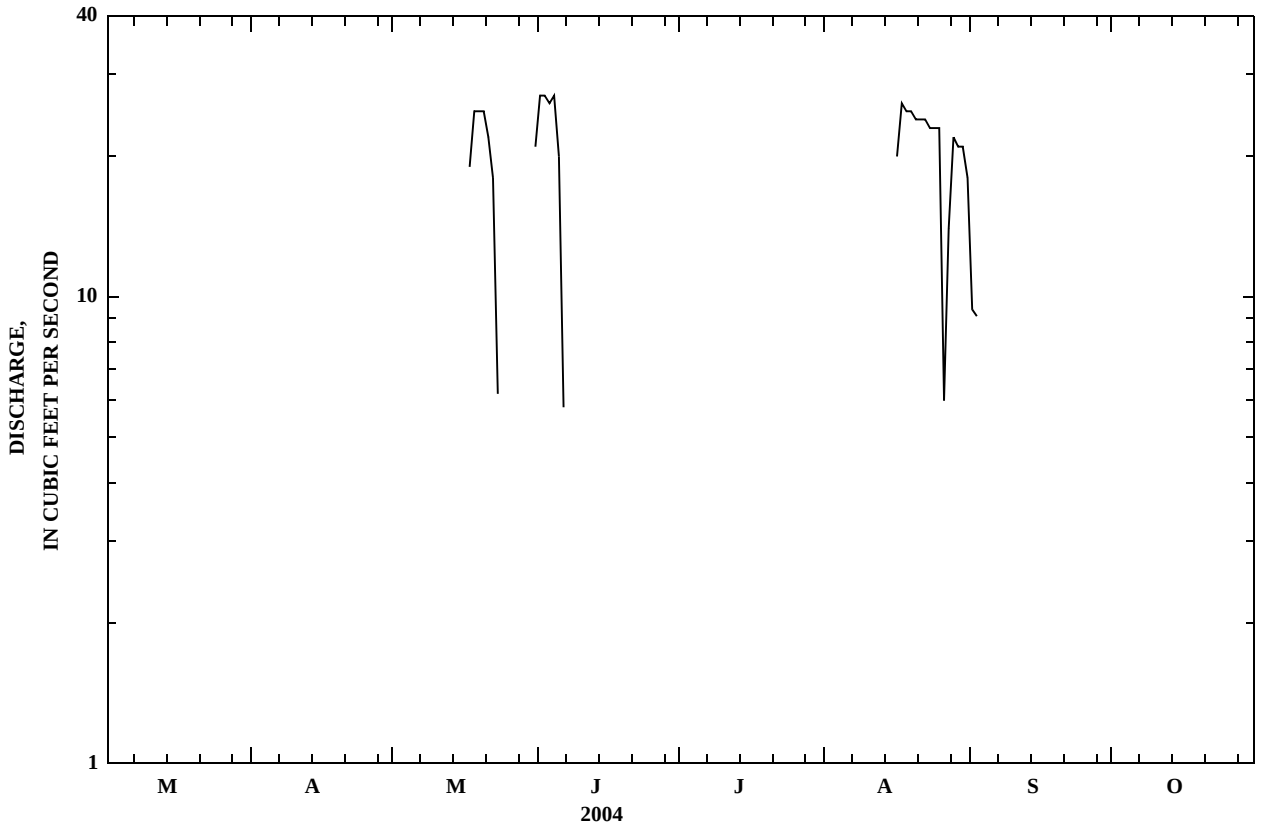
COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 31 ft^3/s, May 30 to June 2, 7-10, 1975, May 5, 6, 7, 9, 1977; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		0.00	0.00	0.00	0.00	27	0.00	0.00	9.4	0.00		
2		0.00	0.00	0.00	0.00	27	0.00	0.00	9.1	0.00		
3		0.00	0.00	0.00	0.00	26	0.00	0.00	0.00	0.00		
4		0.00	0.00	0.00	0.00	27	0.00	0.00	0.00	0.00		
5		0.00	0.00	0.00	0.00	20	0.00	0.00	0.00	0.00		
6		0.00	0.00	0.00	0.00	5.8	0.00	0.00	0.00	0.00		
7		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
9		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
11		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
12		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
14		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
16		0.00	0.00	0.00	0.00	0.00	0.00	20	0.00	0.00		
17		0.00	0.00	0.00	19	0.00	0.00	26	0.00	0.00		
18		0.00	0.00	0.00	25	0.00	0.00	25	0.00	0.00		
19		0.00	0.00	0.00	25	0.00	0.00	25	0.00	0.00		
20		0.00	0.00	0.00	25	0.00	0.00	24	0.00	0.00		
21		0.00	0.00	0.00	22	0.00	0.00	24	0.00	0.00		
22		0.00	0.00	0.00	18	0.00	0.00	24	0.00	0.00		
23		0.00	0.00	0.00	6.2	0.00	0.00	23	0.00	0.00		
24		0.00	0.00	0.00	0.00	0.00	0.00	23	0.00	0.00		
25		0.00	0.00	0.00	0.00	0.00	0.00	23	0.00	0.00		
26		0.00	0.00	0.00	0.00	0.00	0.00	6.0	0.00	0.00		
27		0.00	0.00	0.00	0.00	0.00	0.00	14	0.00	0.00		
28		0.00	0.00	0.00	0.00	0.00	0.00	22	0.00	0.00		
29		0.00	0.00	0.00	0.00	0.00	0.00	21	0.00	0.00		
30		---	0.00	0.00	0.00	0.00	0.00	21	0.00	0.00		
31		---	0.00	---	21	---	0.00	18	---	0.00		
TOTAL		0.00	0.00	0.00	161.20	132.80	0.00	339.00	18.50	0.00		
MEAN		0.00	0.00	0.00	5.20	4.43	0.00	10.9	0.62	0.00		
MAX		0.00	0.00	0.00	25	27	0.00	26	9.4	0.00		
MIN		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT		0.00	0.00	0.00	320	263	0.00	672	37	0.00		

06161300 HUFF LAKE PUMPING CANAL NEAR VAL MARIE, SASKATCHEWAN—Continued



06161500 HUFF LAKE GRAVITY CANAL NEAR VAL MARIE, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°22'10", long 107°53'06" (NAD 27), in SW$^1/_4$, sec. 7, T. 5, R.14 W., third meridian, Hydrologic Unit 10050013, on right bank 100 ft downstream from Huff Lake headgate and 11 mi northwest of Val Marie.

PERIOD OF RECORD.--March 1946 to current season (seasonal records only). Published as Val MarieWest Gravity Canal near Val Marie, Saskatchewan, March 1946 to October 1980. Monthly figures only prior to March 1947, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 2,662.88 ft (Canadian Geodetic Vertical Datum 1928). Prior to Sept. 27, 1949, at site 0.5 mi downstream at different datum.

REMARKS.--Records fair. Canal diverts water from Huff Lake in SW$^1/_4$, sec. 7, T. 5, R.14 W., third meridian, on left bank for irrigation of about1,900 acres in the Frenchman River basin in Saskatchewan. Since 1962, records have been based on gate openings in Huff Lake Dam.

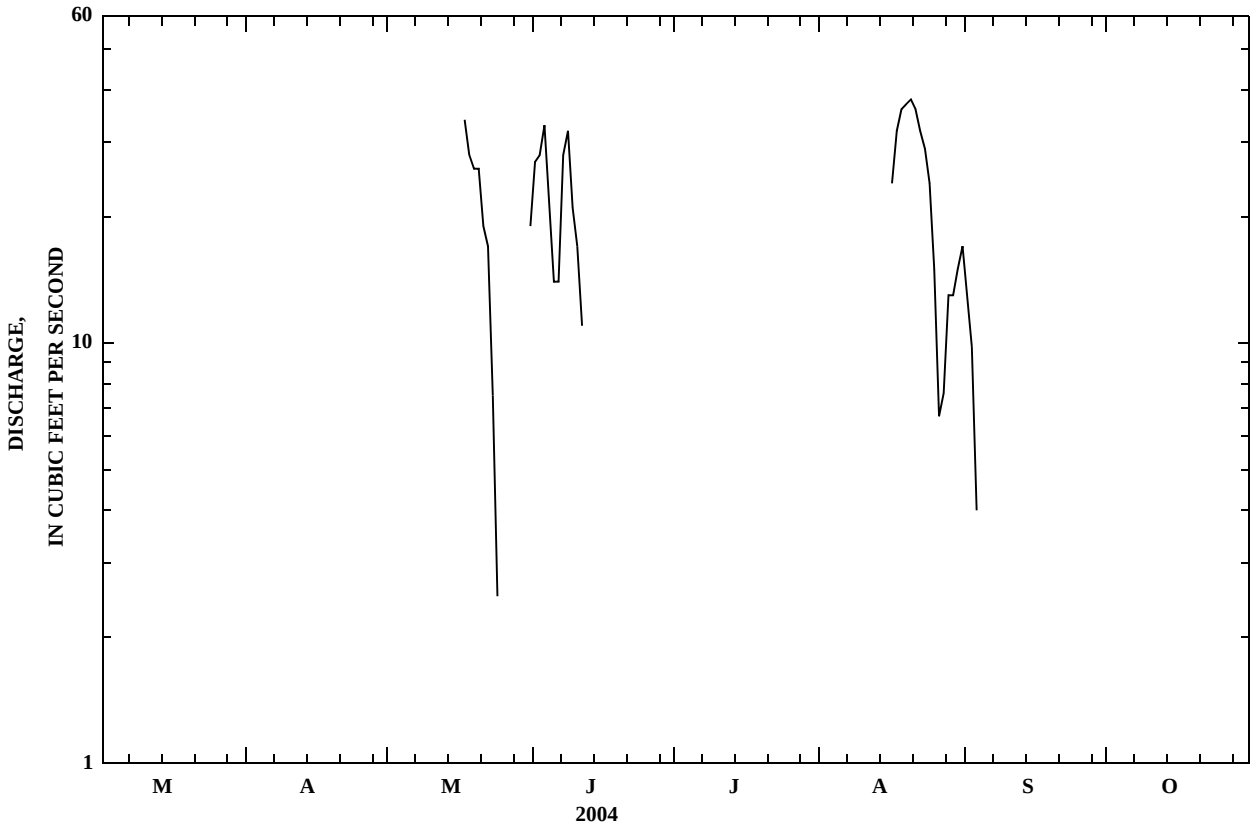
COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 68 ft^3/s, July 24, 1996; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		0.00	0.00	0.00	0.00	27	0.00	0.00	13	0.00		
2		0.00	0.00	0.00	0.00	28	0.00	0.00	9.8	0.00		
3		0.00	0.00	0.00	0.00	33	0.00	0.00	4.0	0.00		
4		0.00	0.00	0.00	0.00	23	0.00	0.00	0.00	0.00		
5		0.00	0.00	0.00	0.00	14	0.00	0.00	0.00	0.00		
6		0.00	0.00	0.00	0.00	14	0.00	0.00	0.00	0.00		
7		0.00	0.00	0.00	0.00	28	0.00	0.00	0.00	0.00		
8		0.00	0.00	0.00	0.00	32	0.00	0.00	0.00	0.00		
9		0.00	0.00	0.00	0.00	21	0.00	0.00	0.00	0.00		
10		0.00	0.00	0.00	0.00	17	0.00	0.00	0.00	0.00		
11		0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00		
12		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
14		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
16		0.00	0.00	0.00	0.00	0.00	0.00	24	0.00	0.00		
17		0.00	0.00	0.00	34	0.00	0.00	32	0.00	0.00		
18		0.00	0.00	0.00	28	0.00	0.00	36	0.00	0.00		
19		0.00	0.00	0.00	26	0.00	0.00	37	0.00	0.00		
20		0.00	0.00	0.00	26	0.00	0.00	38	0.00	0.00		
21		0.00	0.00	0.00	19	0.00	0.00	36	0.00	0.00		
22		0.00	0.00	0.00	17	0.00	0.00	32	0.00	0.00		
23		0.00	0.00	0.00	7.5	0.00	0.00	29	0.00	0.00		
24		0.00	0.00	0.00	2.5	0.00	0.00	24	0.00	0.00		
25		0.00	0.00	0.00	0.00	0.00	0.00	15	0.00	0.00		
26		0.00	0.00	0.00	0.00	0.00	0.00	6.7	0.00	0.00		
27		0.00	0.00	0.00	0.00	0.00	0.00	7.6	0.00	0.00		
28		0.00	0.00	0.00	0.00	0.00	0.00	13	0.00	0.00		
29		0.00	0.00	0.00	0.00	0.00	0.00	13	0.00	0.00		
30		---	0.00	0.00	0.00	0.00	0.00	15	0.00	0.00		
31		---	0.00	---	19	---	0.00	17	---	0.00		
TOTAL		0.00	0.00	0.00	179.00	248.00	0.00	375.30	26.80	0.00		
MEAN		0.00	0.00	0.00	5.77	8.27	0.00	12.1	0.89	0.00		
MAX		0.00	0.00	0.00	34	33	0.00	38	13	0.00		
MIN		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT		0.00	0.00	0.00	355	492	0.00	744	53	0.00		

06161500 HUFF LAKE GRAVITY CANAL NEAR VAL MARIE, SASKATCHEWAN—Continued



06162500 NEWTON LAKE MAIN CANAL NEAR VAL MARIE, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°18'18", long 107°48'05" (NAD 27), in NE$^1/_4$ sec.15, T.4, R.14 W., third meridian, Hydrologic Unit 10050013, on right bank about 500 ft downstream from Newton Lake headgate, and 5.4 mi northwest of Val Marie.

PERIOD OF RECORD.--April 1937 to current season (seasonal records only). Published as Val Marie Main Canal near Val Marie, Saskatchewan, March 1962 to October 1980. Prior to April 1947 monthly discharge only, published in WSP 1309. Prior to March 1962, published as Val Marie Canal near Val Marie.

GAGE.--Water-stage recorder. Elevation of gage is 2,622.03 ft (Canadian Geodetic Vertical Datum 1928). Prior to May 21, 1963, at several sites within 2 mi of present site at different elevations.

REMARKS.--Records good. Canal diverts water from Newton Lake in SE$^1/_4$ sec.22, T.4, R.14 W., third meridian, on left bank for irrigation of about 4,700 acres in the Frenchman River basin in Saskatchewan.

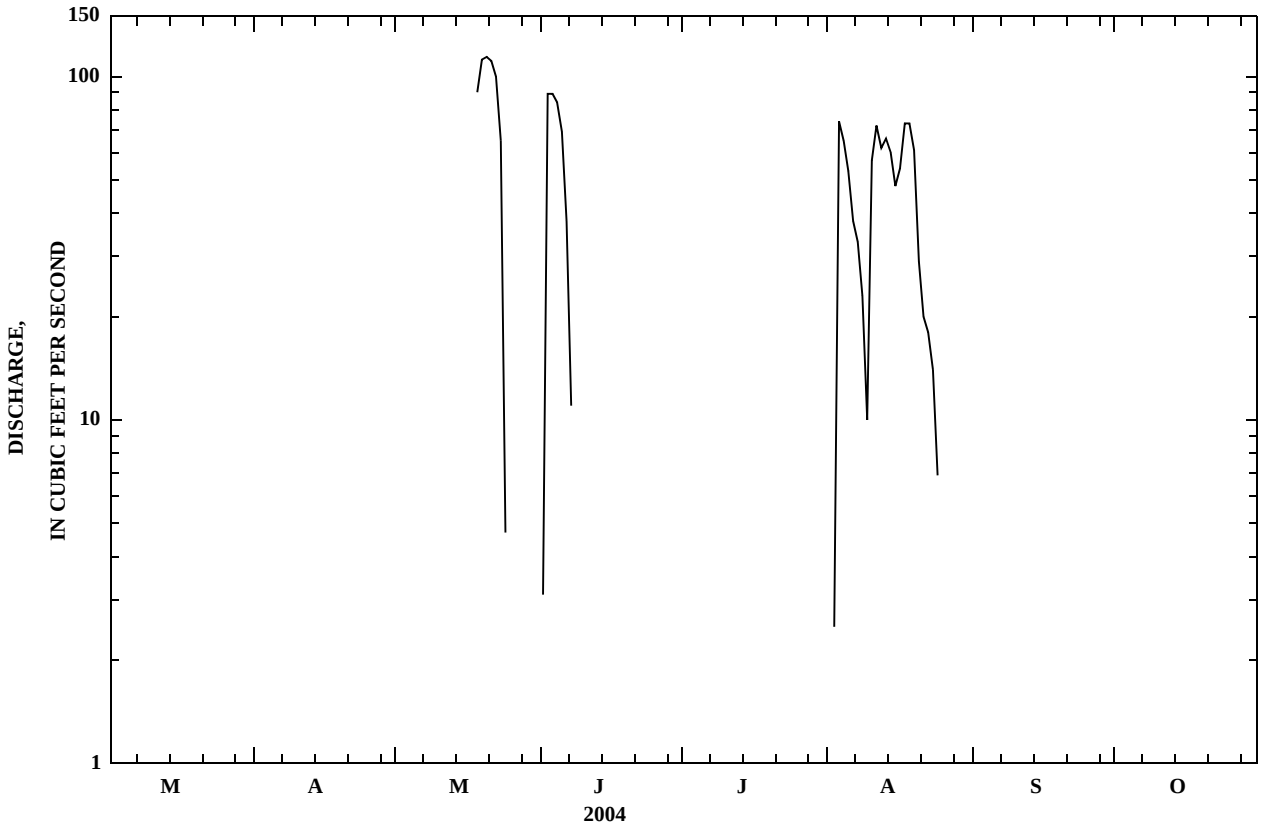
COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 131 ft^3/s, May 23, 1997; no flow at times each season.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		0.00	0.00	0.00	0.00	3.1	0.00	0.00	0.00	0.00		
2		0.00	0.00	0.00	0.00	89	0.00	2.5	0.00	0.00		
3		0.00	0.00	0.00	0.00	89	0.00	74	0.00	0.00		
4		0.00	0.00	0.00	0.00	84	0.00	65	0.00	0.00		
5		0.00	0.00	0.00	0.00	69	0.00	53	0.00	0.00		
6		0.00	0.00	0.00	0.00	38	0.00	38	0.00	0.00		
7		0.00	0.00	0.00	0.00	11	0.00	33	0.00	0.00		
8		0.00	0.00	0.00	0.00	0.00	0.00	23	0.00	0.00		
9		0.00	0.00	0.00	0.00	0.00	0.00	10	0.00	0.00		
10		0.00	0.00	0.00	0.00	0.00	0.00	57	0.00	0.00		
11		0.00	0.00	0.00	0.00	0.00	0.00	72	0.00	0.00		
12		0.00	0.00	0.00	0.00	0.00	0.00	62	0.00	0.00		
13		0.00	0.00	0.00	0.00	0.00	0.00	66	0.00	0.00		
14		0.00	0.00	0.00	0.00	0.00	0.00	60	0.00	0.00		
15		0.00	0.00	0.00	0.00	0.00	0.00	48	0.00	0.00		
16		0.00	0.00	0.00	0.00	0.00	0.00	54	0.00	0.00		
17		0.00	0.00	0.00	0.00	0.00	0.00	73	0.00	0.00		
18		0.00	0.00	0.00	90	0.00	0.00	73	0.00	0.00		
19		0.00	0.00	0.00	112	0.00	0.00	61	0.00	0.00		
20		0.00	0.00	0.00	114	0.00	0.00	29	0.00	0.00		
21		0.00	0.00	0.00	111	0.00	0.00	20	0.00	0.00		
22		0.00	0.00	0.00	100	0.00	0.00	18	0.00	0.00		
23		0.00	0.00	0.00	65	0.00	0.00	14	0.00	0.00		
24		0.00	0.00	0.00	4.7	0.00	0.00	6.9	0.00	0.00		
25		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
27		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
29		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
30		---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31		---	0.00	---	0.00	---	0.00	0.00	---	0.00		
TOTAL		0.00	0.00	0.00	596.70	383.10	0.00	1,012.40	0.00	0.00		
MEAN		0.00	0.00	0.00	19.2	12.8	0.00	32.7	0.00	0.00		
MAX		0.00	0.00	0.00	114	89	0.00	74	0.00	0.00		
MIN		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT		0.00	0.00	0.00	1,180	760	0.00	2,010	0.00	0.00		

06162500 NEWTON LAKE MAIN CANAL NEAR VAL MARIE, SASKATCHEWAN—Continued



06164000 FRENCHMAN RIVER AT INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 49°00'00", long 107°18'06" (NAD 27), in SE¼ sec.5, T.1, R.10 W., third meridian, in Saskatchewan, Hydrologic Unit 10050013, on left bank 50 ft north of international boundary, 22 mi northeast of Whitewater, MT, and at river mile 76.4.

DRAINAGE AREA.--2,120 mi^2, of which 343 mi^2 probably is noncontributing.

PERIOD OF RECORD.--April 1917 to current season (seasonal records only for most years).

REVISED RECORDS.--WSP 1389: 1938(M), 1939-41, 1942(M), 1943, 1950(M). W 1983: Drainage area.

GAGE.--Water-stage recorder and concrete control since August 1949. Elevation of gage is 2,420 ft (NGVD 29). Prior to June 23, 1937, water-stage recorder at site 0.5 mi upstream at different elevation. June 23, 1937, to October 1952, water-stage recorder at site 100 ft downstream at present elevation.

REMARKS.--Seasonal records fair. Natural flow of stream affected by several storage reservoirs, diversions for irrigation of about 14,500 acres, and return flow from irrigated areas. Water may be diverted into or from Battle Creek basin through Cypress Lake. Water Survey of Canada satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			2.9	562	23	180	11	1.0	3.1	0.11		
2			3.0	600	22	116	11	1.2	1.9	0.07		
3			2.9	551	22	60	11	1.1	1.3	0.07		
4			3.2	403	21	47	14	1.1	1.1	0.07		
5			3.0	558	17	53	14	1.1	0.95	0.07		
6			3.2	858	11	48	18	1.1	0.81	0.07		
7			3.2	537	7.6	46	27	1.1	0.67	0.07		
8			3.8	254	6.0	53	60	1.6	0.57	0.07		
9			4.8	182	3.9	46	133	8.2	0.49	0.07		
10			5.3	130	2.7	31	126	7.8	0.42	0.07		
11			7.7	151	7.5	54	113	7.4	0.35	0.07		
12			12	192	9.1	227	105	7.1	0.28	0.07		
13			12	175	29	158	96	6.8	0.25	0.07		
14			11	169	63	104	91	6.4	0.21	0.07		
15			10	162	57	52	88	8.9	0.18	0.07		
16			13	124	65	36	85	8.9	0.14	0.07		
17			17	99	54	26	84	8.6	0.14	0.07		
18			42	93	39	97	82	8.3	0.14	12		
19			82	103	308	105	64	7.8	0.14	75		
20			75	91	216	103	28	7.4	0.14	60		
21			37	75	96	101	14	7.0	0.11	65		
22			48	65	188	101	8.5	6.7	0.11	65		
23			42	60	295	80	5.4	8.2	0.11	58		
24			62	65	883	69	3.3	7.7	0.11	38		
25			91	58	1,170	54	2.0	7.2	0.11	24		
26			133	48	809	31	1.2	7.9	0.11	14		
27			193	46	692	27	0.85	8.4	0.11	9.5		
28			188	43	586	22	0.60	7.9	0.11	9.0		
29			184	40	646	15	0.57	7.3	0.11	9.0		
30			157	28	593	12	0.57	6.7	0.11	8.9		
31			396	---	279	---	0.57	5.4	---	8.8		
TOTAL			1,848.0	6,522	7,220.8	2,154	1,298.56	183.3	14.38	457.43		
MEAN			59.6	217	233	71.8	41.9	5.91	0.48	14.8		
MAX			396	858	1,170	227	133	8.9	3.1	75		
MIN			2.9	28	2.7	12	0.57	1.0	0.11	0.07		
AC-FT			3,670	12,940	14,320	4,270	2,580	364	29	907		

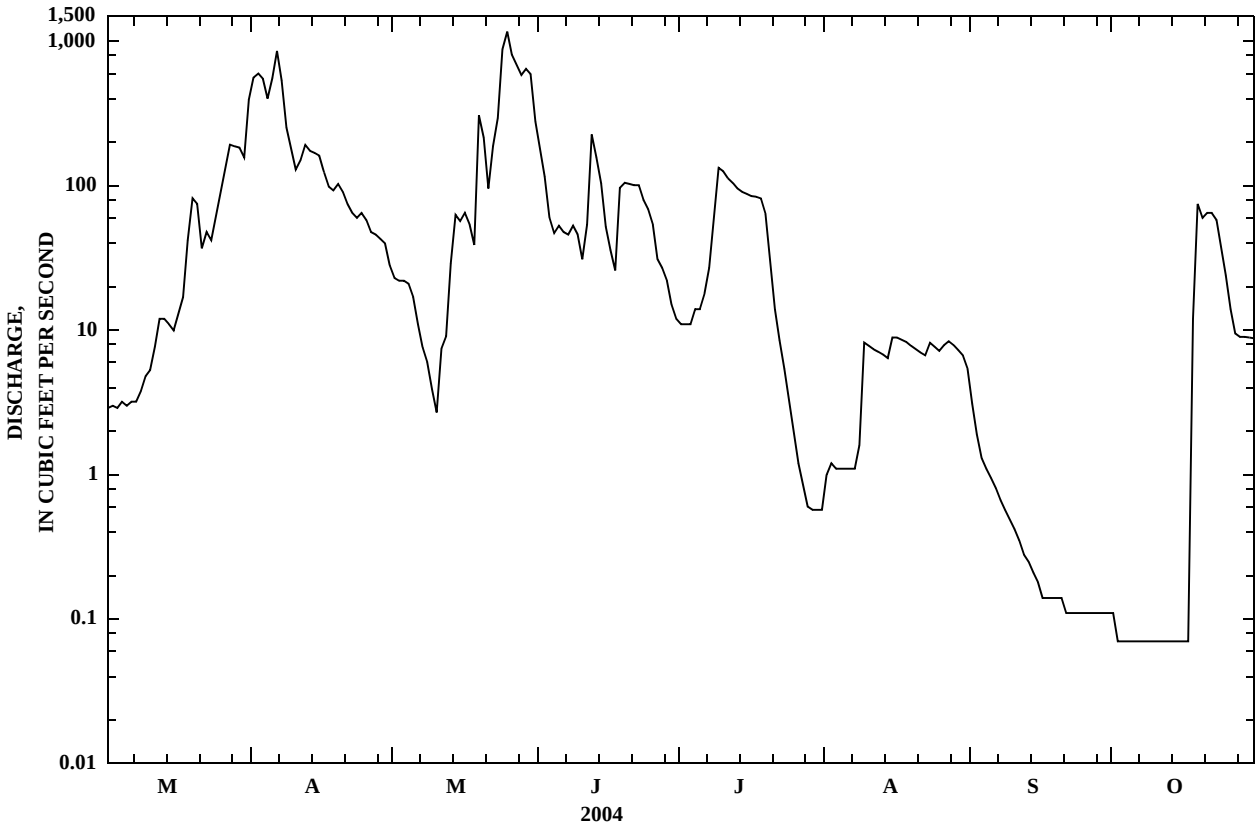
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1917 - 2004

MEAN	180	399	139	84.6	52.9	17.0	7.13	10.5
MAX	1,490	5,313	1,051	886	602	199	65.9	77.7
(WY)	(1997)	(1952)	(1927)	(1923)	(1955)	(2002)	(1951)	(1966)
MIN	0.00	0.35	2.54	0.39	0.02	0.00	0.00	0.00
(WY)	(2002)	(2000)	(1937)	(1937)	(1984)	(1934)	(1919)	(1932)

SUMMARY STATISTICS	FOR 2004 SEASON		FOR SEASONS 1917 - 2004*	
HIGHEST DAILY MEAN	1,170	May 25	19,200	Apr 15, 1952
LOWEST DAILY MEAN	0.00	Oct 1	0.00	Jul 28, 1919
MAXIMUM PEAK FLOW	1,200	May 25	a22,700	Apr 15, 1952
MAXIMUM PEAK STAGE	8.81	May 25	b19.90	Apr 15, 1952

*--Seasonal record most years.
a--From rating curve extended above 2,300 ft^3/s on basis of slope-area measurement of peak flow.
b--From floodmark.

06164000 FRENCHMAN RIVER AT INTERNATIONAL BOUNDARY—Continued



RESERVOIRS IN FRENCHMAN RIVER BASIN IN SASKATCHEWAN
(International gaging stations)

All elevations listed for the following reservoirs are referenced to the National Geodetic Vertical Datum of 1929.

06157000 CYPRESS LAKE

LOCATION.--Lat 49°27'30", long 109°30'25" (NAD 27), in SE$^1/_4$ sec.12, T.6, R.27 W., third meridian, Hydrologic Unit 10050013, on south shore, and 12 mi north of Consul.

DRAINAGE AREA.--107 mi^2.

PERIOD OF RECORD, February 1939 to current season (seasonal records only). Records prior to October 1946, published only in WSP 1309. March to May 1952 daily elevations and contents, published in WSP 1260-B. Water-stage recorder. Elevation of gage is at mean sea level (Geodetic Survey of Canada datum; subtract 33.67 ft to obtain Reclamation Service datum). Prior to 1969 season, at Reclamation Service datum. Prior to 1940, nonrecording gage on natural lake at "South" station. February 1940 to Apr. 28, 1955, elevation obtained from average of nonrecording gage readings at west and east dams. Apr. 29, 1955, to Aug. 21, 1984, gage located at east dam.

REMARKS.--This is an offstream reservoir formed by two earthfill dams on a natural lake of the same name which is the head of the Frenchman River. There are concrete control works at both dams. The following capacity figures are from capacity table effective January 1971; see previous reports for superseded figures. Usable capacity, 79,500 acre-ft between elevation 3,187.0 ft, bottom of west outlet works, and 3,201.9 ft, maximum design level. Dead storage, 24,300 acre-ft. Water is diverted from Battle Creek on west, 12 mi northwest of Consul, and from Belanger Creek, in the Frenchman River basin, on the east, 12 mi north of Vidora. Water is released to the same streams for irrigation. Figures given herein represent total contents. Water Survey of Canada satellite telemeter at station. This is one of a number of stations which are maintained jointly by Canada and the United States.

REVISED RECORDS.--W 1983: Drainage area.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 117,300 acre-ft, Apr. 21, 1955, elevation, 3,203.36 ft; minimum observed since first filling, 8,190 acre-ft, Nov. 17, 1992, elevation, 3,183.17 ft.

EXTREMES FOR CURRENT SEASON.--Maximum contents, 21,720 acre-ft, Apr. 18, elevation, 3,186.42 ft; minimum, 13,190 acre-ft, Oct. 31, elevation, 3,184.44 ft.

06159000 EASTEND RESERVOIR

LOCATION.--Lat 49°30'26", long 108°51'08" (NAD 27), in NW$^1/_4$ sec.25, T.6, R.22 W., third meridian Hydrologic Unit 10050013, at dam on Frenchman River, 1.6 mi west of Eastend, and at mile 300.5.

DRAINAGE AREA.--619 mi^2.

PERIOD OF RECORD.--February 1937 to current season (seasonal records only). Prior to 1958, published as East End Reservoir at East End. Nonrecording gages read about once a day during irrigation season and twice a day during high stages February 1937 to July 1979. Water-stage recorder. Elevation of gage is at mean sea level (Geodetic Survey of Canada datum).

REMARKS.--Reservoir is formed by earthfill dam completed in 1939, breached during flood in 1952 and rebuilt the same year with a concrete spillway and control works. The following capacity figures are from capacity table effective September 1982. Usable capacity, 1,690 acre-ft between elevation 2,993.5 ft, bottom of outlet works, and 3,012.0 ft, maximum design level. No dead storage. Water is used for irrigation. Water Survey of Canada satellite telemeter at station. This is one of a number of stations which are maintained jointly by Canada and the United States.

REVISED RECORDS (SEASONS).--WSP 1309: 1948(M). WSP 1729: Drainage area. WSP 2116: 1937-65. W 1983: Drainage area.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, about 3,700 acre-ft, Apr. 15, 1952, elevation, about 3,015 ft, dam overtopped; no contents at times.

EXTREMES FOR CURRENT SEASON.--Maximum contents, 2,330 acre-ft, Aug. 7, elevation, 3,013.57 ft; minimum, 476 acre-ft, Mar. 6, elevation, 3,007.57 ft.

06162000 HUFF LAKE

LOCATION.--Lat 49°22'16", long 107°53'07" (NAD 27), in SW$^1/_4$ sec.7, T.5, R.14 W., third meridian, Hydrologic Unit 10050013, near dam on Frenchman River, 11 mi northwest of Val Marie, and at mile 169.7.

DRAINAGE AREA.--1,274 mi^2.

PERIOD OF RECORD, February 1940 to current season (seasonal records only). February 1940 to October 1979, published as Val Marie West Reservoir. Records prior to October 1946, published only in WSP 1309. April to May 1952 daily elevations and contents, published in WSP 1260-B. Water-stage recorder. Elevation of gage is at mean sea level (Geodetic Survey of Canada datum). May 1952 to May 1954, reference point on control structure. May 1954 to May 10, 1966, nonrecording gages. May 11, 1966, to Oct. 31, 1979, recording gage on riparian gatewell.

REMARKS (REVISED).--Reservoir is formed by earthfill dam with concrete control works completed in 1939. The following capacity figures are from capacity table effective Jan. 1, 2004. Usable capacity, 3,000 acre-ft between elevation 2,663.2 ft, bottom of outlet works, and 2,676.5 ft, maximum design level. Dead storage, 25 acre-ft. Water is used for irrigation. Figures given herein represent total contents. Water Survey of Canada satellite telemeter at station. This is one of a number of stations which are maintained jointly by Canada and the United States.

REVISED RECORDS (SEASONS).--WSP 1309: 1947-50.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,160 acre-ft, Mar. 26, 1997, elevation, 2,678.91 ft; no contents Feb. 28, Mar. 31, 1950, Oct. 22-31, 1984, Mar. 1-7, Aug. 6 to Sept. 14, 1985 and Feb. 28 to Apr. 11, 2002.

EXTREMES FOR CURRENT SEASON.--Maximum contents, 3,690 acre-ft, May 24, elevation, 2,677.69 ft; minimum, 576 acre-ft, Mar. 9, elevation, 2.669.48 ft.

RESERVOIRS IN FRENCHMAN RIVER BASIN IN SASKATCHEWAN—Continued

06163000 NEWTON LAKE

LOCATION.--Lat 49°18'12", long 107°48'20" (NAD 27), in NE$^1/_4$ sec.15, T.4, R.14 W., third meridian, Hydrologic Unit 10050013, at dam on Frenchman River, 5.4 mi northwest of Val Marie, and at mile 156.2.

DRAINAGE AREA.--1,349 mi^2.

PERIOD OF RECORD.--February 1937 to current season (seasonal records only). February 1937 to October 1979, published as Val Marie Reservoir. Water-stage recorder. Elevation of gage is at mean sea level (Geodetic Survey of Canada datum). Prior to May 11, 1966, nonrecording gages.

REMARKS.--Reservoir is formed by earthfill dam with concrete control works; construction began in 1936; storage began in 1937; construction completed in 1938. The following capacity figures are from capacity table effective February 1983. Usable capacity, 9,950 acre-ft between elevation 2,616.1 ft, bottom of outlet works, and 2,635.4 ft maximum design level. No dead storage. Water is used for irrigation. Water Survey of Canada satellite telemeter at station. This is one of a number of stations which are maintained jointly by Canada and the United States.

REVISED RECORDS (SEASONS).--WSP 2116: 1937-65. WSP 1729: 1949.

EXTREMES FOR PERIOD OF RECORD,--Maximum contents observed, 18,920 acre-ft, Apr. 19, 1952, elevation, 2,638.80 ft; no contents at times.

EXTREMES FOR CURRENT SEASON.--Maximum contents, 13,460 acre-ft, May 26, elevation, 2,637.60 ft; minimum, 3,470 acre-ft, Mar. 1, elevation, 2,629.50 ft.

SEASONAL MONTHEND CONTENTS, IN ACRE-FEET, FEBRUARY 2004 TO OCTOBER 2004

Date	Cypress Lake	Eastend Reservoir	Huff Lake	Newton Lake
Feb. 29	17,420	477	587	3,470
Mar. 31	19,500	614	2,490	9,730
Apr. 30	21,110	2,280	2,870	10,940
May 31	16,620	1,820	2,970	11,080
June 30	16,710	1,970	3,110	10,650
July 31	15,770	2,140	3,130	10,280
Aug. 31	14,850	1,560	2,080	8,830
Sept. 30	13,850	1,590	1,080	10,270
Oct. 31	13,190	1,170	1,420	9,530

06164510 MILK RIVER AT JUNEBERG BRIDGE, NEAR SACO, MT

LOCATION.--Lat 48°30'32", long 107°13'02" (NAD 27), in NE¼NE¼ sec.30, T.32 N., R.35 E., Phillips County, Hydrologic Unit 10050014, on left bank 25 ft upstream from Juneberg bridge on Phillips County road, 1.5 mi downstream from Frenchman River, 6.9 mi northeast of Saco, and at river mile 152.3.

DRAINAGE AREA. --17,670 mi^2.

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,130 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow increased during irrigation season by water from St. Mary Canal which diverts from the St. Mary River near Babb (station number 05017500). Flow regulated by Fresno Reservoir (station number 06136500), two reservoirs in Lodge Creek basin in Saskatchewan (station numbers 06144260 and 06144360 and four reservoirs in Frenchman River basin in Saskatchewan. There are many small dams for the diversion of irrigation canals upstream. U. S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	131	100	e90	e90	e90	706	74	1,290	244	368	119
2	50	134	104	e90	e90	e90	703	70	916	228	347	116
3	48	127	109	e90	e90	e80	690	56	611	269	289	111
4	48	101	109	e90	90	e80	685	49	431	322	269	110
5	47	e100	99	e90	e90	e80	663	50	300	341	263	108
6	48	e100	108	e90	e90	e80	511	46	250	334	306	96
7	48	e100	88	e90	e90	e70	555	46	252	264	506	84
8	48	e90	69	e90	e100	e60	763	81	295	249	341	99
9	47	e100	55	e90	e100	e80	559	94	277	235	272	101
10	211	96	49	e90	e100	e500	288	88	229	423	194	96
11	204	99	44	e100	e100	e900	205	93	252	432	157	95
12	164	105	44	e100	e90	e1,200	147	101	279	392	133	100
13	159	104	43	e100	e90	e1,500	150	72	349	352	131	96
14	158	101	47	e100	e90	e1,500	169	75	431	316	108	104
15	151	101	63	e100	e90	e1,500	165	209	405	327	109	108
16	144	100	84	e100	e90	e3,200	146	215	339	319	125	109
17	136	101	96	e90	e90	e3,000	148	210	291	245	226	115
18	128	101	97	e90	e100	e2,700	145	175	239	248	216	114
19	128	105	102	e90	e100	e2,400	145	187	151	232	197	120
20	128	111	111	e90	e90	e2,100	121	502	128	188	198	137
21	129	112	113	e90	e90	e1,800	124	699	190	e219	213	118
22	116	107	110	e100	e90	1,540	121	486	214	e250	208	104
23	116	101	111	e100	e90	1,020	111	320	217	e300	198	100
24	123	112	111	e100	e90	984	98	656	213	e299	200	107
25	117	116	111	e90	e100	1,020	91	2,060	192	e289	212	108
26	119	117	112	e90	e100	880	72	1,920	168	e294	190	108
27	119	119	e100	e90	e90	662	66	1,790	155	e350	179	101
28	116	116	e100	e90	e90	583	63	1,880	134	e365	150	102
29	136	107	e100	e90	e90	767	80	1,860	260	380	140	102
30	146	97	e100	e90	---	855	63	1,740	267	383	139	99
31	139	---	e100	e90	---	779	---	1,600	---	361	132	---
TOTAL	3,521	3,211	2,789	2,880	2,690	32,100	8,553	17,504	9,725	9,450	6,716	3,187
MEAN	114	107	90.0	92.9	92.8	1,035	285	565	324	305	217	106
MAX	211	134	113	100	100	3,200	763	2,060	1,290	432	506	137
MIN	47	90	43	90	90	60	63	46	128	188	108	84
AC-FT	6,980	6,370	5,530	5,710	5,340	63,670	16,960	34,720	19,290	18,740	13,320	6,320

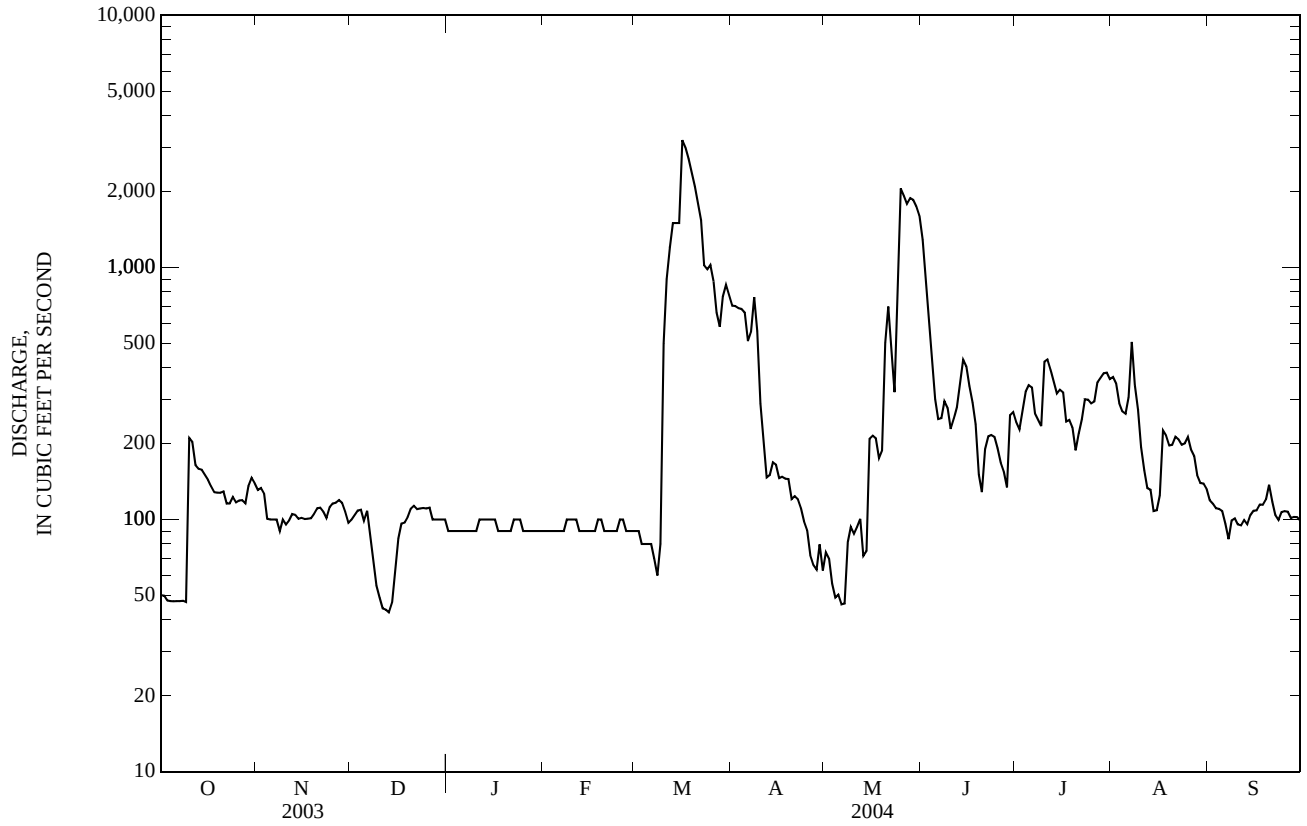
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2004, BY WATER YEAR (WY)

MEAN	282	151	119	117	214	1,011	743	466	467	413	238	231
MAX	4,043	597	406	271	1,758	4,075	6,221	2,545	2,258	1,844	693	1,517
(WY)	(1987)	(1987)	(1987)	(1987)	(1996)	(1979)	(1978)	(1986)	(1982)	(1991)	(1993)	(1986)
MIN	24.9	60.1	44.8	33.1	49.1	47.4	38.4	56.4	103	29.6	9.35	22.7
(WY)	(2002)	(1978)	(1986)	(1985)	(2002)	(2002)	(2002)	(1989)	(2001)	(1984)	(1984)	(1984)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1978 - 2004	
ANNUAL TOTAL	85,935		102,326			
ANNUAL MEAN	235		280		372*	
HIGHEST ANNUAL MEAN					1,042	1978
LOWEST ANNUAL MEAN					70.1	2001
HIGHEST DAILY MEAN	3,000	Mar 21	3,200	Mar 16	12,300	Apr 3, 1978
LOWEST DAILY MEAN	43	Sep 14	43	Dec 13	2.1	Aug 20, 1984
ANNUAL SEVEN-DAY MINIMUM	48	Oct 3	48	Oct 3	4.0	Jul 27, 1984
MAXIMUM PEAK FLOW			a3,200	Mar 16	c12,400	Apr 3, 1978
MAXIMUM PEAK STAGE			b14.30	Mar 16	b26.70	Mar 4, 1986
ANNUAL RUNOFF (AC-FT)	170,500		203,000		269,400	
10 PERCENT EXCEEDS	345		658		689	
50 PERCENT EXCEEDS	129		116		149	
90 PERCENT EXCEEDS	61		80		50	

*--Median of yearly mean discharge 233 ft^3/s.
a--About.
b--Backwater from ice.
c--Gage height, 24.20 ft.
e--Estimated.

06164510 MILK RIVER AT JUNEBERG BRIDGE, NEAR SACO, MT—Continued



06166000 BEAVER CREEK BELOW GUSTON COULEE, NEAR SACO, MT

LOCATION.--Lat 48°21'25", long 107°34'48" (NAD 27), in SE¼SW¼NW¼ sec. 16, T.30 N., R.32 E., Phillips County, Hydrologic Unit 10050014, on right bank, 25 ft upstream from bridge on county road, 13 mi southwest of Saco, 22.5 river miles downstream from Guston Coulee, and at mile 61.1.

DRAINAGE AREA.--1,208 mi^2.

PERIOD OF RECORD.--April 1920 to September 1921, April 1981 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 2,215 ft (NGVD 29).

REMARKS.--Seasonal records fair. Some regulation by numerous small reservoirs on tributary streams. Diversions for irrigation upstream from gage. U.S. Geological Survey satellite telemetry at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	97	0.00	221	0.55	0.00	1.00	6.6		
2			e0.00	85	e0.00	159	0.38	0.00	0.67	4.9		
3			e0.00	63	e0.00	97	0.22	0.00	0.48	5.9		
4			e0.00	45	e0.00	79	0.19	0.00	0.39	4.5		
5			e0.00	29	0.00	75	0.32	0.00	0.31	2.6		
6			e0.00	19	0.00	44	1.4	0.00	0.23	1.4		
7			e0.00	16	0.00	26	7.6	0.00	0.19	0.97		
8			e0.00	12	0.00	31	9.1	0.02	0.14	0.76		
9			e0.00	8.9	0.00	26	5.9	0.18	0.11	0.64		
10			e0.00	7.0	0.00	27	6.2	0.38	0.15	0.50		
11			e0.00	5.4	0.00	31	39	0.61	0.22	0.39		
12			e0.00	3.5	0.00	28	45	0.89	0.22	0.28		
13			e0.00	3.1	0.00	23	48	0.87	0.22	0.15		
14			e2.0	2.6	0.00	12	44	0.74	3.3	0.06		
15			e100	1.8	0.00	25	34	0.72	9.7	0.00		
16			e1,000	1.7	0.00	48	25	1.0	7.9	0.00		
17			e1,100	1.4	0.00	39	12	1.6	7.1	0.00		
18			e1,100	1.2	0.00	20	4.8	1.9	3.8	0.00		
19			e1,000	0.85	0.00	8.7	4.5	1.5	2.8	0.00		
20			e900	0.68	0.00	5.5	6.7	1.7	3.3	0.00		
21			e900	0.48	0.00	3.4	3.5	2.3	2.7	0.00		
22			e900	0.32	0.03	2.5	1.4	2.8	2.7	0.00		
23			655	0.14	0.77	3.2	0.85	2.7	2.9	0.00		
24			426	0.04	16	4.6	0.60	2.4	3.3	0.00		
25			312	0.00	42	4.3	0.04	2.3	7.7	0.00		
26			257	0.00	53	3.5	0.00	2.4	12	0.00		
27			232	0.00	112	2.8	0.00	2.8	9.0	0.00		
28			201	0.00	216	1.9	0.00	3.1	11	0.00		
29			147	0.00	231	1.3	0.00	3.1	11	0.00		
30			109	e0.00	265	0.85	0.00	2.3	8.1	0.00		
31			90	---	281	---	0.00	1.5	---	0.00		
TOTAL			9,431.00	405.11	1,216.80	1,053.55	301.25	39.81	112.63	29.65		
MEAN			304	13.5	39.3	35.1	9.72	1.28	3.75	0.96		
MAX			1,100	97	281	221	48	3.1	12	6.6		
MIN			0.00	0.00	0.00	0.85	0.00	0.00	0.11	0.00		
AC-FT			18,710	804	2,410	2,090	598	79	223	59		

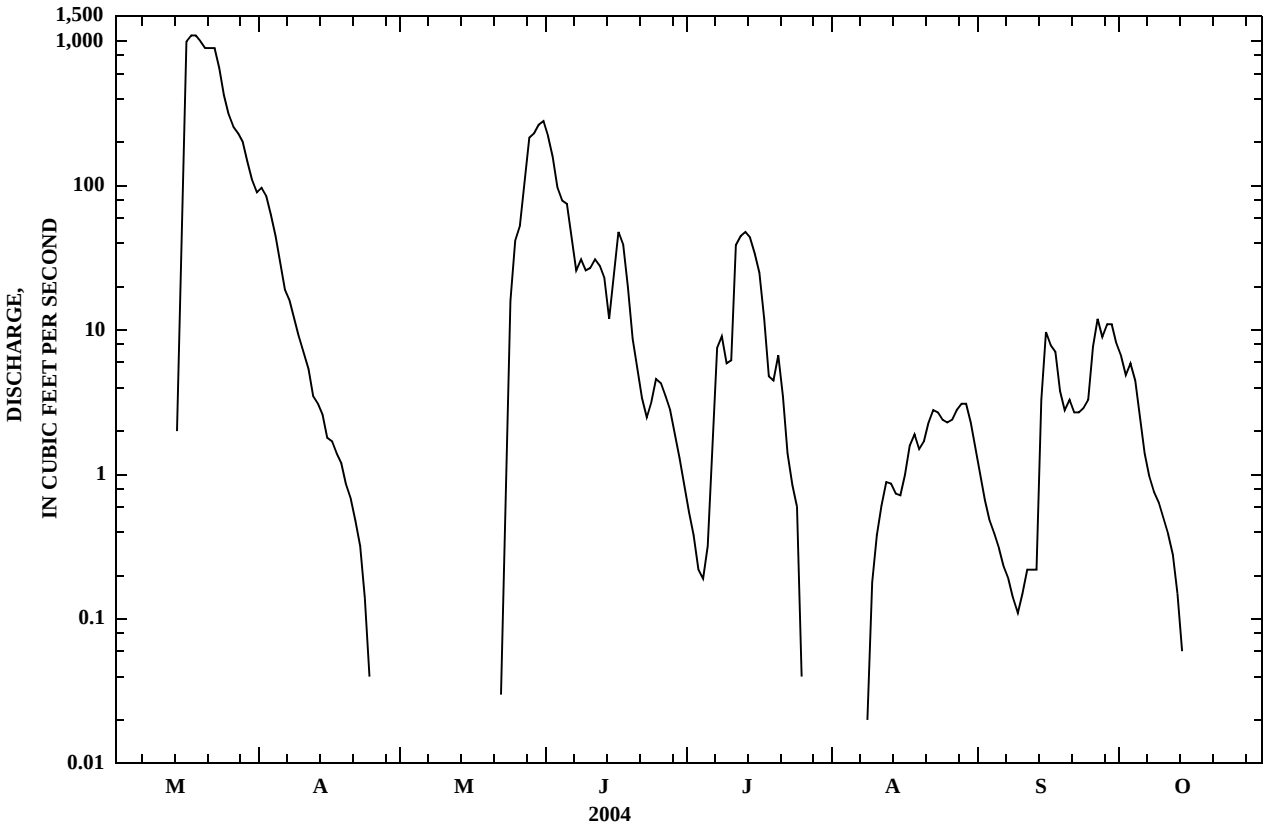
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1981 - 2004*

MEAN	68.2	19.4	58.6	34.7	42.8	6.94	56.1	21.7
MAX	304	140	718	315	223	40.7	1,187	342
(WY)	(2004)	(1987)	(1986)	(1982)	(1998)	(1993)	(1986)	(1987)
MIN	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
(WY)	(1995)	(1995)	(1984)	(2001)	(1985)	(2001)	(1984)	(1985)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1981 - 2004*	
HIGHEST DAILY MEAN	1,100	Mar 17	11,900	Sep 27, 1986
LOWEST DAILY MEAN	a0.00	Mar 1	c0.00	Apr 5, 1981
MAXIMUM PEAK FLOW	unknown		d23,500	Sep 26, 1986
MAXIMUM PEAK STAGE	b10.94	Mar 18	14.68	Sep 26, 1986

*--During period of operation (1981 to current year).
a--Many days.
b--Backwater from ice.
c--No flow at times each year.
d--From slope-area measurement of peak flow.
e--Estimated.

06166000 BEAVER CREEK BELOW GUSTON COULEE, NEAR SACO, MT—Continued



06169500 ROCK CREEK BELOW HORSE CREEK, NEAR INTERNATIONAL BOUNDARY

LOCATION.--Lat 48°58'10", long 106°50'20" (NAD 27), in NE¼NW¼ sec.15, T.37 N., R.37 E., Valley County, Hydrologic Unit 10050015, on right bank 2 mi south of international boundary, 3 mi downstream from Horse Creek, 21 mi northwest of Opheim, MT, and at river mile 82.0.

DRAINAGE AREA.--328 mi^2.

PERIOD OF RECORD.--March 1916 to October 1926, September 1956 to current year (seasonal records only prior to October 1978). Monthly discharge only for some periods, published in WSP 1309. Published as Rock Creek near Barnard, Mt. 1916-17. Prior to September 1956, records were collected at both Horse Creek (1914-56) and Rock Creek above Horse Creek (1914-56). Summations are equivalent to records at this site.

REVISED RECORDS.--WSP 1509: 1925(M), WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,530 ft (NGVD 29). March 1916 to October 1926, nonrecording gages at several sites within 500 ft upstream at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Several small diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 15, 1952, reached a stage of 12.6 ft, from floodmarks, discharge, 5,110 ft^3/s, by slope-area measurement of peak flow.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.02	e0.80	e0.50	e0.25	e0.00	e0.00	e100	4.5	21	4.2	1.9	1.7
2	0.02	e0.75	e0.50	e0.25	e0.00	e0.00	290	4.4	17	4.0	2.0	1.6
3	0.02	e0.70	e0.50	e0.25	e0.00	e0.00	200	4.2	14	3.7	1.9	1.6
4	0.08	e0.65	e0.50	e0.25	e0.00	e0.00	160	4.0	11	4.4	2.7	1.4
5	0.42	e0.60	e0.50	e0.25	e0.00	e0.00	180	3.9	9.8	4.7	2.2	1.2
6	0.53	e0.55	e0.50	e0.25	e0.00	e0.00	137	3.7	8.5	5.0	1.8	1.0
7	0.60	e0.55	e0.45	e0.25	e0.00	e0.00	95	3.7	7.4	8.8	1.6	0.97
8	0.64	e0.50	e0.45	e0.20	e0.00	e0.00	73	3.5	6.7	7.7	1.6	0.97
9	0.64	e0.55	e0.45	e0.20	e0.00	e0.00	55	3.5	6.1	8.3	1.5	0.98
10	0.64	e0.55	e0.45	e0.20	e0.00	e0.00	39	3.3	6.2	9.9	1.4	0.91
11	0.64	e0.60	e0.45	e0.15	e0.00	e0.00	29	4.7	12	8.9	1.3	0.80
12	0.63	e0.60	e0.45	e0.15	e0.00	e0.00	22	5.7	329	7.7	1.2	0.82
13	0.63	e0.60	e0.45	e0.10	e0.00	e0.00	18	7.3	236	6.6	1.2	0.83
14	0.69	e0.65	e0.45	e0.05	e0.00	e0.00	16	11	86	5.4	1.1	0.82
15	0.81	e0.65	e0.45	e0.05	e0.00	e0.00	19	39	49	4.1	1.1	0.84
16	0.83	e0.60	e0.45	e0.00	e0.00	e0.00	19	36	32	3.4	1.1	0.80
17	0.89	e0.65	e0.45	e0.00	e0.00	e0.00	16	27	23	e3.0	1.0	0.76
18	0.89	e0.65	e0.45	e0.00	e0.00	e0.00	15	22	19	e2.5	0.95	0.77
19	0.84	e0.65	e0.45	e0.00	e0.00	e0.00	13	77	15	e2.5	0.87	0.82
20	0.82	e0.60	e0.45	e0.00	e0.00	e0.00	12	164	13	e2.0	0.79	1.0
21	0.82	e0.55	e0.40	e0.00	e0.00	e0.00	11	66	11	e1.8	0.77	0.97
22	0.81	e0.55	e0.40	e0.00	e0.00	e0.00	10	37	9.4	1.7	0.69	0.95
23	0.75	e0.55	e0.40	e0.00	e0.00	e0.10	9.7	92	8.4	1.6	0.83	1.0
24	0.73	e0.55	e0.40	e0.00	e0.00	e0.50	8.3	903	7.4	1.5	1.1	1.1
25	0.71	e0.55	e0.40	e0.00	e0.00	e1.0	7.2	387	6.5	1.3	1.2	1.1
26	0.76	e0.55	e0.40	e0.00	e0.00	e1.5	6.5	125	5.8	1.2	1.3	1.1
27	0.77	e0.55	e0.35	e0.00	e0.00	e25	6.0	68	5.3	1.1	1.5	1.1
28	0.79	e0.55	e0.30	e0.00	e0.00	e55	5.3	47	4.8	1.0	1.7	1.1
29	e0.70	e0.55	e0.30	e0.00	e0.00	e85	5.1	42	4.5	1.0	2.3	1.1
30	e0.75	e0.50	e0.25	e0.00	---	e120	4.7	32	4.1	1.0	1.8	1.1
31	e0.80	---	e0.25	e0.00	---	e150	---	28	---	1.2	1.7	---
TOTAL	19.67	17.90	13.15	2.85	0.00	438.10	1,581.8	2,259.4	988.9	121.2	44.10	31.21
MEAN	0.63	0.60	0.42	0.09	0.00	14.1	52.7	72.9	33.0	3.91	1.42	1.04
MAX	0.89	0.80	0.50	0.25	0.00	150	290	903	329	9.9	2.7	1.7
MIN	0.02	0.50	0.25	0.00	0.00	0.00	4.7	3.3	4.1	1.0	0.69	0.76
AC-FT	39	36	26	5.7	0.00	869	3,140	4,480	1,960	240	87	62

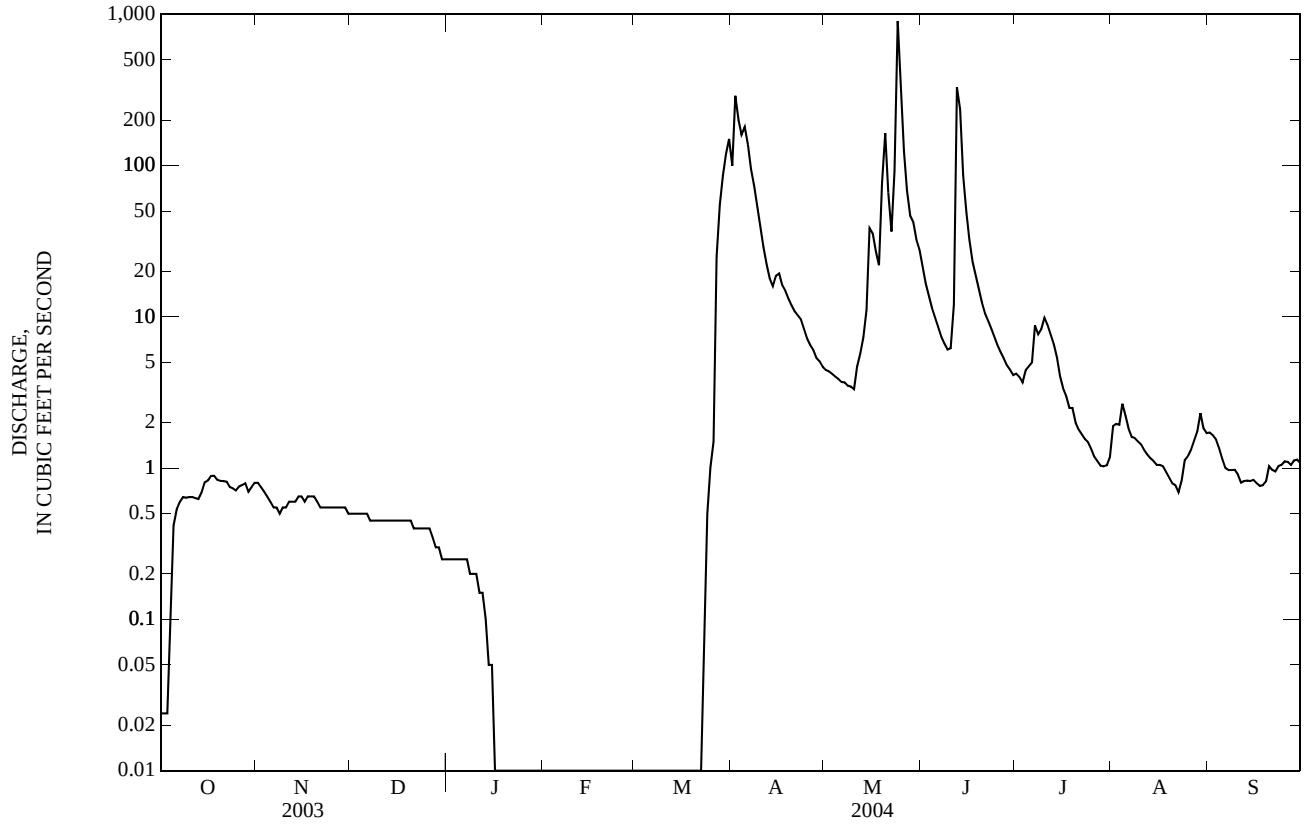
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2004, BY WATER YEAR (WY)*

MEAN	1.83	1.47	0.73	0.28	5.70	79.3	82.3	16.4	13.3	9.47	1.25	1.08
MAX	9.33	2.79	2.19	1.78	96.1	369	437	89.0	102	63.6	13.4	12.5
(WY)	(1987)	(1981)	(1980)	(1981)	(1981)	(1976)	(1969)	(1982)	(1991)	(1969)	(1975)	(1986)
MIN	0.00	0.10	0.03	0.00	0.00	0.00	3.97	1.46	0.17	0.00	0.00	0.00
(WY)	(1989)	(1989)	(1996)	(1984)	(1980)	(1965)	(1992)	(1992)	(1988)	(1988)	(1959)	(1958)

06169500 ROCK CREEK BELOW HORSE CREEK, NEAR INTERNATIONAL BOUNDARY—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1956 - 2004**	
ANNUAL TOTAL	3,451.13		5,518.28			
ANNUAL MEAN	9.46		15.1		14.2***	
HIGHEST ANNUAL MEAN					37.4	1999
LOWEST ANNUAL MEAN					1.88	1998
HIGHEST DAILY MEAN	668	Mar 19	903	May 24	3,460	Apr 7, 1969
LOWEST DAILY MEAN	0.00	Aug 2	0.00	Jan 16	0.00	Mar 1, 1957
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 11	0.00	Jan 16	0.00	Mar 1, 1957
MAXIMUM PEAK FLOW			1,120	May 24	a4,420	Apr 7, 1969
MAXIMUM PEAK STAGE			7.22	May 24	b13.40	Mar 29, 1978
INSTANTANEOUS LOW FLOW					c0.00	Mar 1, 1957
ANNUAL RUNOFF (AC-FT)	6,850		10,950		10,270	
10 PERCENT EXCEEDS	12		26		14	
50 PERCENT EXCEEDS	0.45		0.83		1.0	
90 PERCENT EXCEEDS	0.01		0.00		0.00	

*--During period of operation (September 1956 to current year).
**--Seasonal records only prior to October 1978.
***--Median of yearly discharge, 10.1 ft^3/s, 7,320 acre-ft/yr (October 1978 to current year).
a--Gage height, 12.03 ft.
b--Backwater from ice.
c--At times most years.
e--Estimated.



06172310 MILK RIVER AT TAMPICO, MT

LOCATION.--Lat 48°18'29", long 106°49'19" (NAD 27), in SW¼SW¼SW¼ sec.32, T.30 N., R.38 E., Valley County, Hydrologic Unit 10050012, on right bank, at county bridge 0.8 miles downstream from Buggy Creek and 0.3 miles northeast of Tampico, and at river mile 98.7.

DRAINAGE AREA.--21,078 mi^2.

PERIOD OF RECORD.--October 1973 to September 1977, May 1987 to current year (seasonal record beginning 1995 water year).

GAGE.--Water-stage recorder. Elevation of gage is 2,110 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow increased during irrigation season by water from St. Mary Canal which diverts from the St. Mary River near Babb. Flow regulated by Fresno and Nelson Reservoirs, five reservoirs in Lodge Creek basin in Saskatchewan, and four reservoirs in Frenchman River basin in Saskatchewan. Many small dams for the diversion of irrigation canals upstream, the closest being Vandalia Dam 19 mi upstream. Diversions upstream from station for irrigation of about 126,000 acres of which about 17,000 acres lies downstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 17, 1952 reached an observed stage of 38.67 ft at gage 200 ft downstream from Vandalia Dam, furnished by the U.S. Army Corps of Engineers; discharge about 45,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e40	2,020	74	1,820	161	139	76	686		
2			e40	1,930	70	1,520	136	146	72	458		
3			e35	1,770	69	1,130	117	149	64	323		
4			e40	1,580	65	797	110	136	68	215		
5			e45	1,350	58	518	109	125	78	176		
6			e45	1,240	52	347	126	128	87	257		
7			e40	1,110	50	264	156	164	89	236		
8			e35	1,010	50	225	157	290	81	144		
9			e25	1,000	47	243	135	262	76	108		
10			e30	786	42	279	107	208	73	99		
11			e30	521	47	1,160	275	147	70	91		
12			e40	377	48	1,070	340	99	69	86		
13			e100	278	48	1,570	251	78	67	81		
14			e100	232	49	1,780	199	69	65	76		
15			e200	240	49	1,470	149	62	66	75		
16			e1,000	235	61	955	126	52	69	78		
17			e3,000	200	165	658	117	48	68	131		
18			e3,500	207	249	471	92	50	68	125		
19			e4,000	194	278	345	104	59	70	109		
20			e3,500	185	1,080	238	118	62	70	94		
21			e4,000	161	1,830	185	55	61	77	86		
22			e4,500	149	1,440	226	47	61	82	83		
23			e4,000	145	974	287	42	66	72	79		
24			3,080	142	1,460	336	41	72	70	77		
25			2,740	129	4,390	346	42	78	69	75		
26			3,030	113	5,910	294	46	87	72	81		
27			2,990	101	3,650	237	54	103	71	83		
28			2,640	90	2,580	198	64	113	68	81		
29			2,470	82	2,260	166	79	101	66	80		
30			2,010	78	2,140	170	88	89	200	75		
31			1,440	---	2,030	---	110	83	---	74		
TOTAL			48,745	17,655	31,315	19,305	3,753	3,387	2,293	4,522		
MEAN			1,572	588	1,010	644	121	109	76.4	146		
MAX			4,500	2,020	5,910	1,820	340	290	200	686		
MIN			25	78	42	166	41	48	64	74		
AC-FT			96,690	35,020	62,110	38,290	7,440	6,720	4,550	8,970		

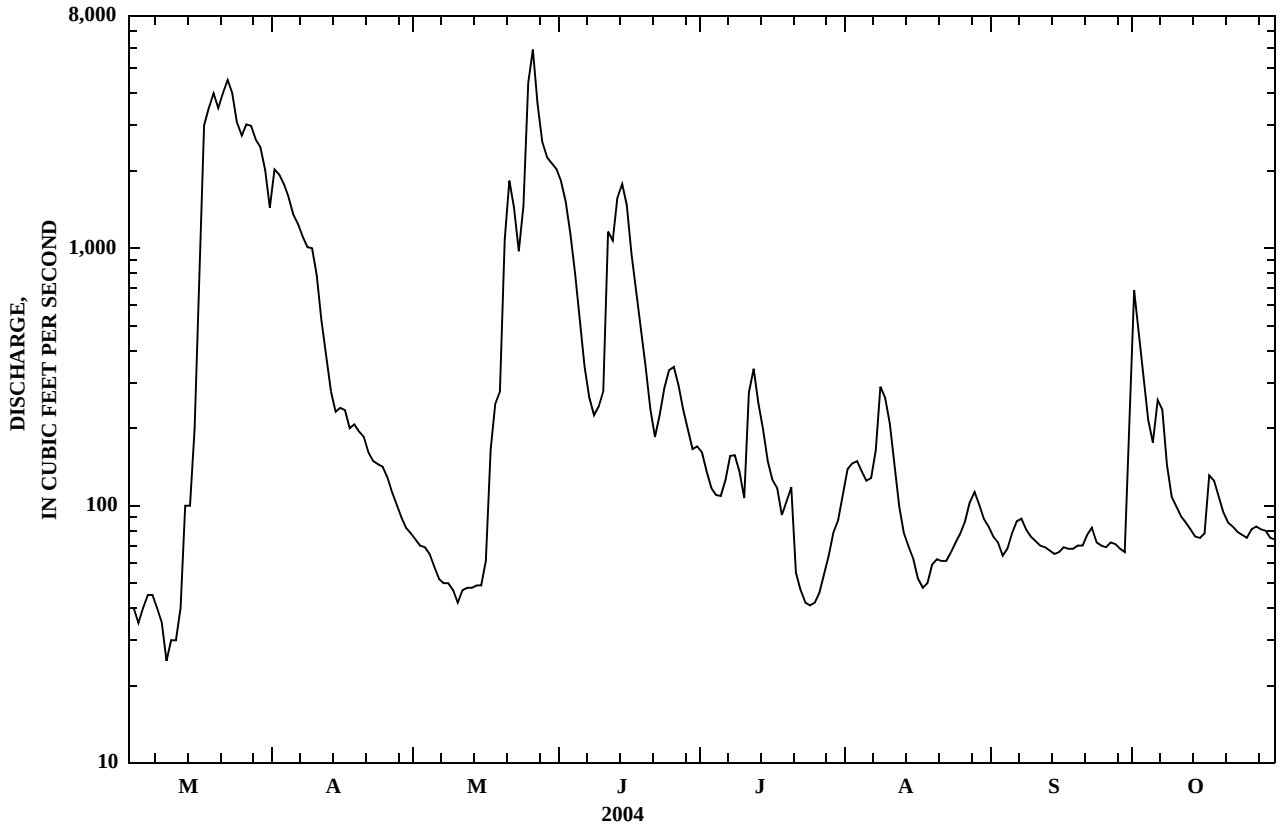
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1994, AND SEASONS 1995 - 2004*

MEAN	211	178	1,024	789	556	589	529	212	171	188	217	152
MAX	791	433	3,809	3,911	4,555	1,852	2,515	769	903	906	710	363
(WY)	(1974)	(1974)	(1994)	(1996)	(1975)	(1974)	(1991)	(1993)	(1993)	(1994)	(1976)	(1976)
MIN	55.2	49.3	46.6	3.35	6.59	11.7	8.35	4.63	6.52	29.1	90.0	66.9
(WY)	(1989)	(1989)	(2002)	(1992)	(2001)	(1977)	(1977)	(1988)	(1988)	(2002)	(1989)	(1989)

06172310 MILK RIVER AT TAMPICO, MT—Continued

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1995 - 2004*		WATER YEARS 1974 - 1994*	
ANNUAL MEAN					400	
HIGHEST ANNUAL MEAN					998	1975
LOWEST ANNUAL MEAN					84.6	1988
HIGHEST DAILY MEAN	5,910	May 26	a11,000	Mar 27, 1997	8,180	May 26, 1974
LOWEST DAILY MEAN	25	Mar 9	1.8	Jun 7, 2002	0.00	Aug 28, 1988
ANNUAL SEVEN-DAY MINIMUM					0.00	Sep 7, 1988
MAXIMUM PEAK FLOW	6,240	May 26	a11,000	May 27, 1997	c8,210	May 26, 1974
MAXIMUM PEAK STAGE	20.34	May 26	b27.64	Mar 27, 1997	25.40	Jul 4, 1991
INSTANTANEOUS LOW FLOW					0.00	Aug 28, 1988
ANNUAL RUNOFF (AC-FT)					308,500	
10 PERCENT EXCEEDS					920	
50 PERCENT EXCEEDS					128	
90 PERCENT EXCEEDS					13	

*--During period of operation (1974-77, 1987 to current year. Seasonal records beginning with 1995 water year).
a--Estimated daily discharge, ungaged bypass flow.
c--Backwater from ice.
c--Gage height, 23.65 ft.
e--Estimated.



06174500 MILK RIVER AT NASHUA, MT

LOCATION.--Lat 48°07'47", long 106°21'50" (NAD 27), in NE¼NE¼ sec.1, T.27 N., R.41 E., Valley County, Hydrologic Unit 10050012, on right bank at downstream side of former highway bridge site, 0.6 mi southwest of Nashua, 2.0 mi upstream from Porcupine Creek, and at river mile 22.7.
DRAINAGE AREA.--22,332 mi^2.
PERIOD OF RECORD.--October 1939 to current year.
REVISED RECORDS.--WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 2,027.75 ft (NGVD 29).
REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow increased during irrigation season by water from St. Mary Canal which diverts from the St. Mary River near Babb. Flow regulated by Fresno Reservoir (station number 06136500), two reservoirs in Lodge Creek basin in Saskatchewan, and four reservoirs in Frenchman River basin in Saskatchewan. Diversions for irrigation of about 140,000 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	e210	e130	e50	e80	e110	2,670	97	2,820	219	165	159
2	57	e190	e120	e50	e70	e100	2,490	91	2,600	206	185	160
3	57	e160	e120	e50	e70	e100	2,520	91	2,300	204	233	159
4	59	e150	e120	e50	e70	e110	2,420	86	1,890	193	275	155
5	63	e140	e120	e40	e80	e130	2,240	85	1,400	209	263	149
6	65	e130	e120	e40	e80	e150	2,020	84	881	264	237	135
7	71	e130	e110	e50	e80	e170	1,750	113	577	311	218	126
8	68	e130	e120	e50	e90	e200	1,530	110	448	284	219	122
9	68	e140	e100	e50	e90	e230	1,240	103	387	279	237	118
10	72	e150	e90	e60	e90	e260	1,070	113	367	280	319	114
11	76	e160	e80	e60	e90	e300	944	170	416	248	320	101
12	82	e160	e70	e70	e90	e350	651	212	1,260	213	274	105
13	87	e160	e70	e70	e100	e400	421	258	2,500	300	223	106
14	156	e160	e60	e70	e100	e500	310	323	2,460	345	165	103
15	206	e160	e60	e80	e100	e800	245	252	2,410	304	125	97
16	201	e150	e60	e90	e90	e1,400	216	158	2,360	252	100	91
17	194	e160	e60	e90	e90	e2,000	215	141	1,920	223	88	85
18	195	e160	e60	e90	e100	e3,300	211	134	1,280	204	76	83
19	195	e160	e60	e90	e110	e4,400	192	236	783	177	75	92
20	196	e160	e70	e90	e110	e5,600	186	284	534	151	75	107
21	196	e160	e70	e100	e110	e8,000	181	440	424	146	73	116
22	195	e150	e70	e100	e110	e7,600	172	1,350	361	154	88	118
23	194	e140	e70	e110	e100	e7,000	162	1,880	288	97	94	132
24	194	e130	e80	e90	e110	e6,400	146	1,840	276	72	95	151
25	191	e130	e80	e90	e110	6,140	143	2,450	316	81	122	144
26	195	e130	e80	e80	e110	5,670	138	3,960	352	78	140	123
27	200	e130	e70	e80	e110	5,310	134	5,560	355	74	143	115
28	204	e130	e70	e70	e110	4,950	122	5,760	325	79	148	109
29	214	e140	e70	e70	e110	4,370	114	4,870	284	74	144	104
30	221	e150	e60	e80	---	3,730	106	3,890	256	81	184	98
31	222	---	e60	e80	---	3,190	---	3,200	---	115	178	---
TOTAL	4,451	4,510	2,580	2,240	2,760	82,970	24,959	38,341	32,830	5,917	5,281	3,577
MEAN	144	150	83.2	72.3	95.2	2,676	832	1,237	1,094	191	170	119
MAX	222	210	130	110	110	8,000	2,670	5,760	2,820	345	320	160
MIN	57	130	60	40	70	100	106	84	256	72	73	83
AC-FT	8,830	8,950	5,120	4,440	5,470	164,600	49,510	76,050	65,120	11,740	10,470	7,090

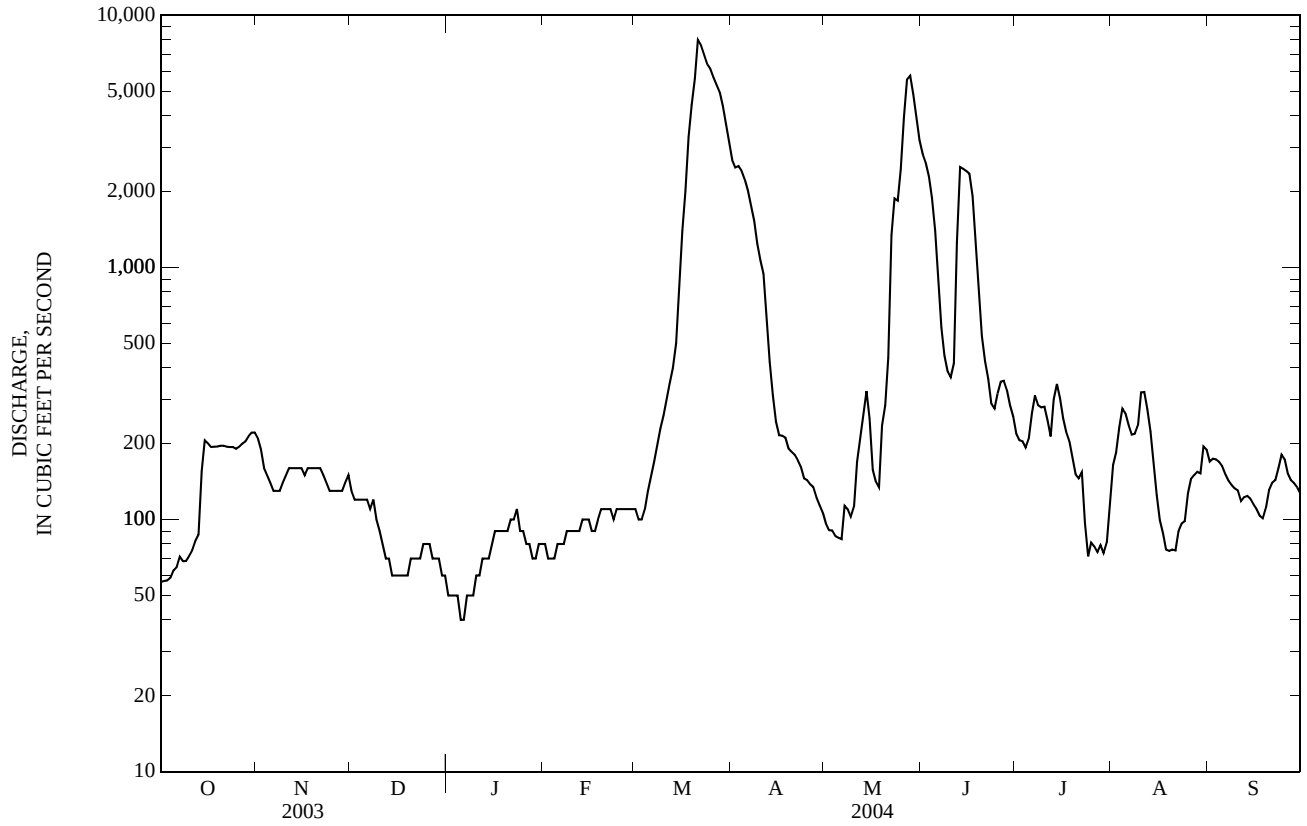
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)

MEAN	303	211	156	145	237	1,297	2,168	995	948	655	305	271
MAX	6,837	768	487	843	2,337	6,678	20,930	5,207	6,611	3,578	1,754	2,138
(WY)	(1987)	(1987)	(1987)	(1974)	(1996)	(1986)	(1952)	(1975)	(1953)	(1962)	(1993)	(1978)
MIN	34.4	61.2	39.7	36.0	38.9	56.5	15.1	10.5	28.0	3.56	3.42	12.6
(WY)	(2002)	(2002)	(1984)	(1950)	(1949)	(2002)	(1981)	(1992)	(1984)	(1984)	(1984)	(1988)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004	
ANNUAL TOTAL	111,095		210,4169			
ANNUAL MEAN	304		575		641*	
HIGHEST ANNUAL MEAN					2,359	1952
LOWEST ANNUAL MEAN					57.7	1984
HIGHEST DAILY MEAN	4,690	Mar 25	8,000	Mar 21	44,200	Apr 18, 1952
LOWEST DAILY MEAN	44	Jul 5	40	Jan 5	0.00	Jul 14, 1984
ANNUAL SEVEN-DAY MINIMUM	57	Jul 2	47	Jan 1	0.00	Jul 17, 1984
MAXIMUM PEAK FLOW			unknown		45,300	Apr 18, 1952
MAXIMUM PEAK STAGE			a21.49	Mar 21	31.38	Apr 18, 1952
INSTANTANEOUS LOW FLOW					0.00	Jul 14, 1984
ANNUAL RUNOFF (AC-FT)	220,400		418,700		464,300	
10 PERCENT EXCEEDS	506		1,900		1,270	
50 PERCENT EXCEEDS	116		143		176	
90 PERCENT EXCEEDS	68		70		58	

*--Median of yearly discharge, 547 ft^3/s.
a--Backwater from ice.
e--Estimated.

06174500 MILK RIVER AT NASHUA, MT—Continued



06177000 MISSOURI RIVER NEAR WOLF POINT, MT

LOCATION.--Lat 48°04'00", long 105°31'55" (NAD 27), in SW¼NW¼ sec.28, T.27 N., R.48 E., McCone County, Hydrologic Unit 10060001, on right bank 500 ft downstream from bridge on State Highway 13, 5 mi southeast of Wolf Point, 7.8 mi downstream from Wolf Creek, and at river mile 1,701.4.

DRAINAGE AREA.--82,290 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1928 to current year.

REVISED RECORDS.--WSP 1146: 1931. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,958.57 ft (NGVD 29). Prior to Apr. 13, 1930, nonrecording gages at Wolf Point ferry landing 5.5 mi upstream at different elevation.

REMARKS.-- Water-discharge records good except those for estimated daily discharges, which are fair. Flow partly regulated by Fort Peck Lake and many other reservoirs upstream from station. Diversion for irrigation of about 1,010,400 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 14, 1908, reached a stage of about 20 ft, (site and elevation then in use).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,540	4,650	8,590	e9,000	e8,900	e7,800	9,130	11,200	10,400	6,290	7,950	7,250
2	4,530	4,700	8,590	e9,100	e9,100	e7,300	8,550	11,100	9,860	6,530	8,110	7,200
3	4,520	4,710	8,290	e9,100	e9,100	e6,700	8,230	11,200	9,410	7,450	8,260	7,140
4	4,520	4,770	8,420	e8,900	e9,000	e6,500	7,860	11,300	9,610	7,650	8,430	7,480
5	4,460	4,760	8,620	e8,900	e9,200	e6,400	7,590	11,200	9,160	7,740	6,980	7,710
6	4,440	4,960	8,730	e8,800	e9,100	e6,600	7,210	11,000	8,760	7,590	7,380	7,590
7	4,430	4,680	8,610	e8,600	e9,400	e6,300	6,920	11,300	8,200	7,830	7,390	7,380
8	4,440	4,670	8,590	e8,700	e9,500	e6,600	6,500	10,900	8,290	7,940	7,320	7,310
9	4,470	4,720	8,540	e8,900	e9,400	e6,600	6,330	11,400	7,750	7,600	7,190	7,350
10	4,460	4,740	8,540	e9,000	e9,200	e6,400	6,110	11,300	7,690	7,690	7,160	7,390
11	4,380	4,760	8,740	e8,900	e9,000	e6,400	6,010	11,500	8,020	7,510	6,970	6,900
12	4,380	4,710	9,260	e8,900	e8,800	e6,300	6,200	11,500	7,710	7,720	7,060	6,860
13	4,390	4,690	8,640	e9,100	e9,000	e6,000	6,050	11,700	8,500	7,500	7,360	7,050
14	4,390	4,700	8,540	e9,100	e9,000	e5,900	6,260	11,700	9,530	7,400	7,150	7,190
15	4,420	4,720	8,530	e8,700	e8,800	e5,800	7,050	11,500	9,700	7,670	7,060	7,150
16	4,610	4,720	8,480	e8,900	e8,800	7,080	6,450	11,500	8,830	7,640	7,020	7,070
17	4,680	4,710	8,510	e9,100	e8,900	7,830	6,310	11,400	8,220	7,620	6,920	7,070
18	4,550	4,710	8,470	e9,300	e8,800	8,440	6,320	11,300	7,690	7,370	6,870	6,950
19	4,500	4,700	8,480	e9,500	e8,500	9,760	6,260	11,700	7,620	7,290	6,960	6,410
20	4,500	4,710	8,540	e9,200	e8,400	10,500	6,220	11,500	7,280	7,630	6,800	5,930
21	4,480	4,700	8,540	e9,200	e8,600	10,800	6,630	11,400	7,070	7,120	7,040	5,560
22	4,520	e4,500	8,510	e9,200	e9,000	11,800	6,990	11,700	6,830	6,990	6,950	5,390
23	4,490	e4,900	8,610	e9,000	e9,700	12,800	7,020	12,100	6,720	7,070	6,740	5,010
24	4,500	e6,600	8,340	e9,200	e9,400	13,900	6,790	13,000	6,400	7,150	6,890	4,670
25	4,440	e7,100	8,120	e8,900	e9,200	13,300	7,650	13,300	6,320	7,190	6,860	4,620
26	4,470	e8,000	7,950	e9,100	e9,300	11,800	8,530	13,800	6,150	6,970	7,020	4,890
27	4,490	e8,800	8,280	e9,200	e9,300	11,400	9,900	14,800	6,170	7,070	7,110	4,820
28	4,460	e9,100	8,620	e9,000	e9,100	11,000	11,200	15,300	6,290	7,170	7,070	4,660
29	4,630	e8,600	e8,200	e9,000	e7,800	10,400	11,200	14,400	6,230	7,390	7,130	4,640
30	4,690	8,350	e8,500	e9,000	---	10,100	10,700	12,000	6,230	7,700	7,110	4,590
31	4,600	---	e8,800	e8,900	---	9,480	---	11,500	---	7,820	7,210	---
TOTAL	139,380	165,140	264,180	279,400	261,300	267,990	224,170	370,500	236,640	229,300	223,470	191,230
MEAN	4,496	5,505	8,522	9,013	9,010	8,645	7,472	11,950	7,888	7,397	7,209	6,374
MAX	4,690	9,100	9,260	9,500	9,700	13,900	11,200	15,300	10,400	7,940	8,430	7,710
MIN	4,380	4,500	7,950	8,600	7,800	5,800	6,010	10,900	6,150	6,290	6,740	4,590
AC-FT	276,500	327,600	524,000	554,200	518,300	531,600	444,600	734,900	469,400	454,800	443,300	379,300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2004, BY WATER YEAR (WY)*

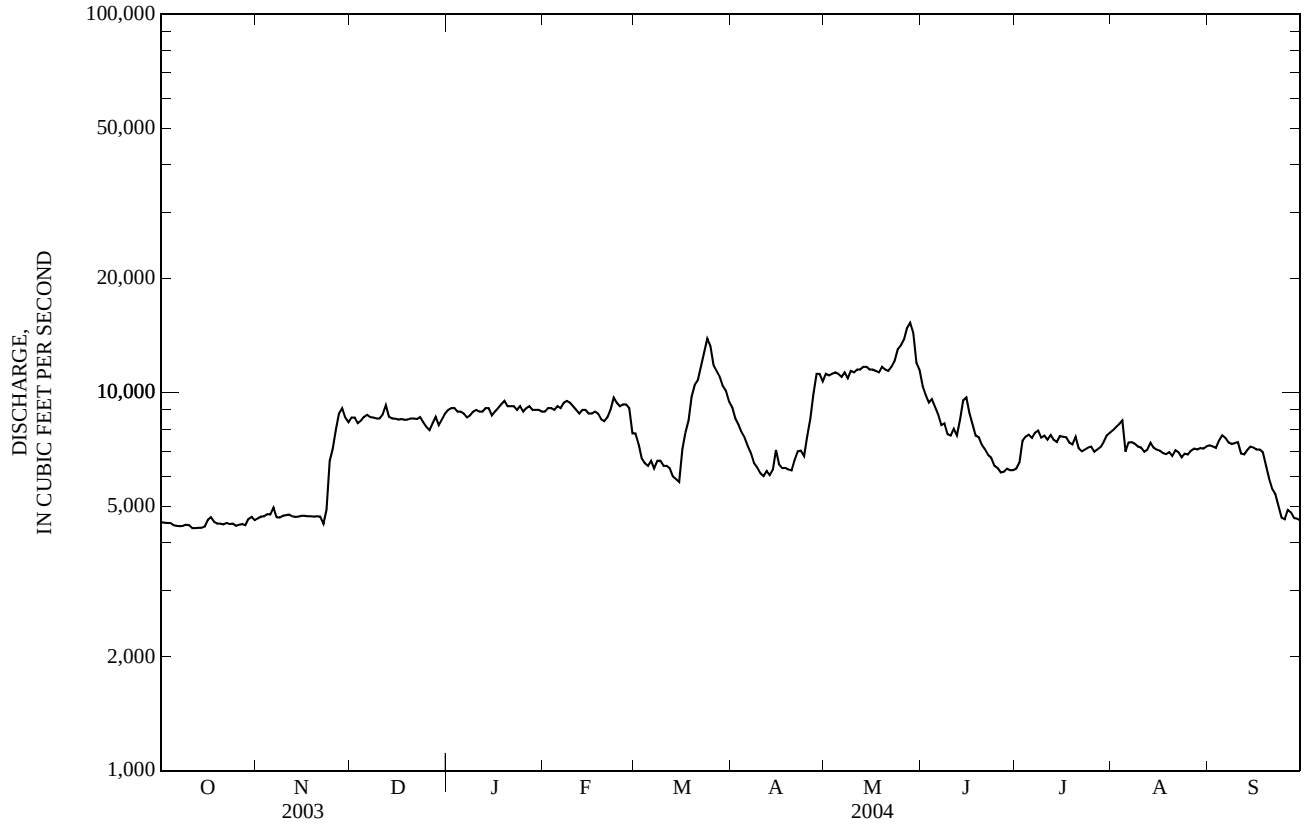
MEAN	11,310	9,093	9,021	9,702	9,908	8,898	9,504	9,297	9,393	10,230	11,930	11,660
MAX	29,130	22,210	13,420	14,270	15,820	16,750	27,180	21,800	26,040	36,270	27,110	27,150
(WY)	(1956)	(1998)	(1944)	(1971)	(1976)	(1976)	(1952)	(1979)	(1975)	(1975)	(1955)	(1955)
MIN	3,151	2,328	1,338	995	1,195	2,301	1,470	1,182	1,268	1,171	3,515	3,274
(WY)	(1993)	(1947)	(1943)	(1943)	(1943)	(1945)	(1945)	(1945)	(1945)	(1945)	(1963)	(1992)

06177000 MISSOURI RIVER NEAR WOLF POINT, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1943 - 2004*	
ANNUAL TOTAL	2,834,510		2,852,700			
ANNUAL MEAN	7,766		7,794		9,998	
HIGHEST ANNUAL MEAN					15,850	1955
LOWEST ANNUAL MEAN					5,607	1963
HIGHEST DAILY MEAN	11,400	May 18	15,300	May 28	45,100	Apr 19, 1952
LOWEST DAILY MEAN	3,900	Mar 15	4,380	Oct 11, 12	680	Dec 5, 1942
ANNUAL SEVEN-DAY MINIMUM	4,410	Oct 9	4,410	Oct 9	906	Jan 12, 1943
MAXIMUM PEAK FLOW			a15,600	May 27	c46,800	Apr 19, 1952
MAXIMUM PEAK STAGE			b8.31	Jan 10	15.64	Mar 27, 1960
INSTANTANEOUS LOW FLOW					d320	Dec 10, 1941
ANNUAL RUNOFF (AC-FT)	5,622,000		5,658,000		7,243,000	
10 PERCENT EXCEEDS	10,200		11,100		15,600	
50 PERCENT EXCEEDS	7,980		7,660		9,000	
90 PERCENT EXCEEDS	4,660		4,670		4,580	

SUMMARY STATISTICS	WATER YEARS 1929 - 1939**	
ANNUAL TOTAL		
ANNUAL MEAN	7,183	
HIGHEST ANNUAL MEAN	10,300	1939
LOWEST ANNUAL MEAN	4,891	1937
HIGHEST DAILY MEAN	56,700	Mar 25 1939
LOWEST DAILY MEAN	840	Nov 29 1937
ANNUAL SEVEN-DAY MINIMUM	910	Feb 10 1938
INSTANTANEOUS PEAK FLOW	f66,800	Mar 25 1939
INSTANTANEOUS PEAK STAGE	b14.40	Mar 25 1939
ANNUAL RUNOFF (AC-FT)	520,400	
10 PERCENT EXCEEDS	14,800	
50 PERCENT EXCEEDS	5,060	
90 PERCENT EXCEEDS	2,600	

*--After Fort Peck Lake reached operational level (1943 to current water year).
**--Prior to Fort Peck Lake reaching operational level (1929-1939).
a--Gage height, 5.77 ft.
b--Backwater from ice.
c--Gage height, 9.98 ft.
d--Occurred outside of period of record, during filling of Fort Peck Lake.
e--Estimated.
f--From rating curve extended above 39,000 ft^3/s.



06177000 MISSOURI RIVER NEAR WOLF POINT, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-51, 1961-62, 1965-68, 1970-73, May 2002 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 1979 to September 1985, seasonal records May 2002 to current year.
INSTRUMENTATION.--Temperature recorder installed May 16, 2002.
REMARKS.--Seasonal daily water temperature record rated excellent.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 22.0°C, July 17-19, 2004; minimum, 0.0°C, many days during winter periods.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: During period of seasonal operation, maximum, 22.0°C, July 17-19; minimum, 5.0°C, May 12.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
MAR													
23...	1100	12,800	712	11.6	90	8.0	463	6.0	2.0	140	32.9	13.0	4.16
MAY													
19...	1100	11,500	712	9.0	91	8.4	558	12.0	12.5	220	53.0	20.5	3.99
JUL													
07...	1015	7,330	713	12.2	133	8.3	568	24.0	16.5	210	52.4	20.0	4.00
AUG													
31...	1015	7,090	723	8.9	99	8.5	573	22.0	18.0	200	49.5	19.6	3.75

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MAR													
23...	2	46.5	42	100	5.85	.5	5.0	115	284	.39	9,800	.057	.231
MAY													
19...	1	41.3	29	157	9.55	.9	5.8	117	346	.47	10,700	<.010	<.016
JUL													
07...	1	41.6	29	158	9.48	.9	6.4	118	347	.47	6,870	E.005	.023
AUG													
31...	1	38.7	29	161	9.36	.9	6.6	121	346	.47	6,620	<.010	<.016

Date	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, fltrd, ug/L (01030)	Chromium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)
MAR													
23...	.003	1.61	.008	1.25	1.1	13	24	270	<.04	.33	<.8	18.4	1.6
MAY													
19...	E.001	.20	E.004	.048	3.0	4	34	52	<.04	.04	<.8	1.0	1.7
JUL													
07...	<.002	.31	E.005	.117	2.8	4	34	66	<.04	.10	<.8	6.1	2.1
AUG													
31...	E.001	.17	E.005	.040	3.2	4	37	49	<.04	E.03	<.8	.9	1.8

E--Estimated.

06177000 MISSOURI RIVER NEAR WOLF POINT, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recover-able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)
MAR											
23...	37.5	7	29,000	<.08	24.9	1.6	628	<.02	.07	2.32	38.5
MAY											
19...	3.6	<6	1,240	<.08	.92	.9	33	<.02	<.02	2.09	3.87
JUL											
07...	11.7	<6	5,560	<.08	4.18	.9	85	<.02	E.02	1.61	13.5
AUG											
31...	3.2	E4	900	<.08	.57	1.2	23	<.02	<.02	2.06	3.76

Date	Selenium, water, fltrd, ug/L (01145)	Selenium, water, unfltrd ug/L (01147)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR							
23...	.7	1.3	E.5	124	89	1,770	61,000
MAY							
19...	.7	.7	E.5	5	58	76	2,360
JUL							
07...	.9	.8	.6	22	82	277	5,480
AUG							
31...	.7	.8	<.6	3	34	77	1,470

E--Estimated.

06177000 MISSOURI RIVER NEAR WOLF POINT, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		APRIL			MAY			JUNE			JULY	
1	7.5	6.5	7.0	9.0	7.0	8.0	14.5	12.5	13.5	19.5	17.5	18.5
2	7.0	6.0	6.5	9.5	7.5	8.5	16.0	13.5	14.5	19.5	17.0	18.5
3	7.0	6.0	6.5	11.0	9.0	10.0	17.0	15.0	16.0	20.0	18.0	19.0
4	8.5	6.5	7.5	11.5	9.5	10.5	18.0	16.0	17.0	19.5	17.0	18.0
5	9.5	8.0	8.5	12.0	10.5	11.0	18.0	16.5	17.5	17.0	15.0	16.0
6	9.0	8.0	8.5	11.0	10.0	10.5	18.5	17.0	18.0	16.5	14.0	15.5
7	9.0	7.5	8.0	11.5	9.5	10.5	18.0	16.0	17.0	18.0	16.0	17.0
8	9.0	7.5	8.0	12.5	11.0	11.5	16.0	13.5	14.5	18.5	17.0	18.0
9	8.0	7.0	7.5	12.0	11.0	11.5	14.5	12.5	13.5	19.5	17.0	18.5
10	7.5	6.5	7.0	11.5	10.0	10.5	14.0	13.0	13.5	19.0	17.5	18.5
11	7.5	5.5	6.5	10.0	6.0	7.5	13.5	13.5	13.5	20.0	18.0	19.0
12	8.0	5.5	7.0	6.0	5.0	5.5	14.5	12.5	13.5	20.0	18.5	19.5
13	9.5	7.0	8.0	8.5	6.0	7.0	15.5	13.5	14.5	20.5	18.5	19.5
14	8.5	7.5	8.0	10.5	8.0	9.0	16.5	14.5	15.5	21.5	19.5	20.5
15	8.5	7.0	8.0	11.5	10.0	10.5	16.5	15.5	16.0	21.5	20.0	21.0
16	8.5	7.5	8.0	11.0	10.0	10.5	16.5	14.5	15.5	21.0	19.5	20.5
17	8.0	6.0	7.0	11.5	9.5	10.5	16.5	15.5	16.0	22.0	19.5	21.0
18	6.5	5.5	6.0	12.5	10.5	11.5	16.5	14.5	15.5	22.0	20.5	21.5
19	8.5	6.0	7.0	12.5	11.5	12.0	17.5	15.0	16.0	22.0	20.5	21.0
20	9.5	7.5	8.5	12.5	11.0	12.0	17.5	16.0	17.0	21.0	19.5	20.5
21	10.0	8.5	9.5	13.0	12.0	12.5	17.5	16.0	17.0	20.5	19.0	19.5
22	10.0	8.5	9.0	12.5	10.5	11.5	17.5	16.5	17.0	19.0	18.5	19.0
23	10.0	8.0	9.0	10.5	9.5	10.0	17.0	16.0	16.5	19.0	17.5	18.0
24	10.5	9.0	9.5	9.5	9.0	9.5	17.0	15.0	16.0	19.5	17.0	18.0
25	10.0	9.0	9.5	10.5	8.5	9.5	17.5	15.0	16.5	20.0	18.0	19.0
26	10.0	8.5	9.0	11.5	10.5	11.0	17.5	15.5	16.5	20.5	19.0	20.0
27	11.0	9.0	10.0	13.0	11.0	12.0	18.0	15.0	16.5	19.5	18.5	19.0
28	10.5	8.0	9.5	14.0	12.5	13.0	19.5	16.5	18.0	18.5	17.0	17.5
29	8.0	7.0	7.5	14.5	13.0	13.5	20.5	18.0	19.5	17.0	15.5	16.0
30	9.0	7.5	8.0	14.0	13.5	13.5	20.5	19.5	20.0	17.5	15.5	16.5
31	---	---	---	13.5	12.0	12.5	---	---	---	20.0	17.5	19.0
MONTH	11.0	5.5	8.0	14.5	5.0	10.5	20.5	12.5	16.0	22.0	14.0	19.0

		AUGUST			SEPTEMBER	
1	20.5	19.0	20.0	20.5	18.5	19.5
2	20.0	18.5	19.5	20.5	18.0	19.0
3	19.5	17.5	18.5	18.0	16.0	17.0
4	17.5	16.0	17.0	16.5	15.0	15.5
5	19.0	16.5	17.5	17.0	15.5	16.5
6	20.5	18.5	19.5	17.0	16.0	17.0
7	20.5	19.5	20.0	16.5	15.5	16.0
8	20.0	17.0	18.5	16.5	14.5	15.5
9	17.0	16.5	16.5	18.0	16.0	17.0
10	17.5	16.0	16.5	18.5	17.5	18.0
11	18.0	16.5	17.0	18.0	16.0	17.0
12	19.0	17.0	18.0	17.0	16.0	16.5
13	19.0	17.0	18.0	16.0	15.5	15.5
14	19.0	17.5	18.5	16.0	14.5	15.5
15	19.5	18.0	18.5	16.5	15.0	15.5
16	19.0	17.5	18.0	17.0	15.5	16.0
17	19.0	17.0	18.0	18.0	16.0	17.0
18	18.5	17.0	17.5	18.5	16.5	17.5
19	17.5	15.5	16.5	18.0	17.0	17.5
20	17.5	16.0	16.5	17.0	14.0	15.5
21	18.5	17.0	17.5	14.5	13.0	13.5
22	18.0	16.5	17.0	14.5	12.5	13.5
23	17.0	16.0	16.5	15.0	13.5	14.5
24	17.0	15.5	16.0	16.0	13.5	15.0
25	17.5	16.0	17.0	17.5	15.0	16.5
26	17.5	16.0	17.0	17.5	16.0	17.0
27	17.5	15.0	16.0	17.0	15.5	16.5
28	18.0	16.0	17.0	17.0	15.0	16.0
29	18.0	16.5	17.5	16.5	15.0	16.0
30	19.5	17.5	18.5	16.0	13.5	15.0
31	20.0	18.5	19.5	---	---	---
MONTH	20.5	15.0	17.5	20.5	12.5	16.5

06177500 REDWATER RIVER AT CIRCLE, MT

LOCATION.--Lat 47°24'51", long 105°34'30" (NAD 27), in SW¼SW¼ sec.11, T.19 N., R.48 E., McCone County, Hydrologic Unit 10060002, on left bank at Circle, 1 mi upstream from Horse Creek, and at river mile 110.2.

DRAINAGE AREA.--547 mi^2.

PERIOD OF RECORD.--April to November 1929, March to November 1930, July 1931 to December 1932, March to June 1933, February to November 1934, April 1935 to December 1936, April 1937 to June 1972, October 1974 to September 2004, (discontinued). Monthly discharge only for some periods, published in WSP 1309. Prior to October 1967, published as Redwater Creek at Circle.

REVISED RECORDS.--WSP 1006: 1929-30, 1932-33, 1935-39. WSP 1509: 1929, 1934. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Sharp-crested weir since Sept. 24, 1938. Elevation of gage is 2,394.32 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to June 1, 1941, and Mar. 23, 1943, to Feb. 16, 1948, nonrecording gage at site 0.3 mi upstream at same elevation. June 1, 1941, to Mar. 22, 1943, nonrecording gage at site 200 ft upstream at elevation 2.8 ft lower. Feb. 26, 1948, to May 7, 1950, nonrecording gage at site 200 ft upstream at present elevation.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 1,200 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.05	0.05	0.09	0.12	e0.00	e0.00	5.0	0.91	0.16	0.16	0.00	0.00
2	0.06	0.05	0.09	0.12	e0.00	e0.00	4.2	0.88	0.34	0.15	0.00	0.00
3	0.10	0.05	0.09	0.12	e0.00	e0.00	4.0	0.81	0.21	0.15	0.00	0.00
4	0.11	0.05	0.11	0.12	e0.00	e0.00	3.7	0.74	0.19	0.18	0.00	0.00
5	0.10	0.05	0.08	0.12	e0.00	e0.00	3.5	0.73	0.20	0.20	0.00	0.00
6	0.10	0.05	0.09	0.12	e0.00	e0.00	3.2	0.72	0.14	0.18	0.00	0.00
7	0.10	0.05	0.11	0.13	e0.00	e0.00	2.8	0.64	0.25	0.17	0.00	0.00
8	0.07	0.06	0.11	0.13	e0.00	e0.10	3.1	0.60	0.20	0.17	0.00	0.00
9	0.06	0.05	0.11	0.13	e0.00	e0.50	2.5	0.54	0.19	0.16	0.00	0.00
10	0.10	0.06	0.11	0.14	e0.00	26	2.3	0.51	0.21	0.15	0.00	0.00
11	0.13	0.06	0.07	0.12	e0.00	164	2.0	0.50	0.25	0.15	0.00	0.00
12	0.11	0.06	0.10	0.12	e0.00	138	1.8	0.52	0.25	0.13	0.00	0.00
13	0.10	0.06	0.10	0.12	e0.00	115	1.7	0.57	0.24	0.12	0.00	0.00
14	0.08	0.06	0.10	0.12	e0.00	63	1.7	0.61	0.18	0.09	0.00	0.00
15	0.09	0.06	0.12	0.12	e0.00	45	1.7	0.58	0.16	0.08	0.00	0.00
16	0.10	0.06	0.10	0.12	e0.00	35	1.7	0.48	0.17	0.11	0.00	0.00
17	0.10	0.06	0.10	0.12	e0.00	33	1.7	0.45	0.17	0.12	0.00	0.00
18	0.11	0.06	0.11	0.12	e0.00	29	1.7	0.47	0.17	0.10	0.00	0.00
19	0.12	0.06	0.10	e0.10	e0.00	37	1.6	0.52	0.17	0.10	0.00	0.00
20	0.12	0.06	0.10	e0.05	e0.00	31	1.5	0.57	0.17	0.08	0.00	0.00
21	0.10	0.06	0.11	e0.00	e0.00	24	1.4	0.49	0.17	0.06	0.00	0.00
22	0.05	0.06	0.13	e0.00	e0.00	20	1.4	0.54	0.16	0.00	0.00	0.00
23	0.04	0.06	0.12	e0.00	e0.00	17	1.3	0.59	0.16	0.00	0.00	0.00
24	0.04	0.06	0.12	e0.00	e0.00	17	1.2	0.80	0.17	0.00	0.00	0.00
25	0.04	0.07	0.12	e0.00	e0.00	17	1.1	0.89	0.15	0.00	0.00	0.00
26	0.04	0.06	0.12	e0.00	e0.00	15	1.0	0.78	0.14	0.00	0.00	0.00
27	0.05	0.06	0.15	e0.00	e0.00	16	1.3	0.73	0.15	0.00	0.00	0.00
28	0.05	0.07	0.17	e0.00	e0.00	15	1.0	0.68	0.13	0.00	0.00	0.00
29	0.11	0.10	0.13	e0.00	e0.00	11	0.99	0.53	0.12	0.00	0.00	0.00
30	0.06	0.10	0.13	e0.00	---	8.3	0.91	0.49	0.15	0.00	0.00	0.00
31	0.05	---	0.12	e0.00	---	6.3	---	0.38	---	0.00	0.00	---
TOTAL	2.54	1.82	3.41	2.36	0.00	883.20	63.00	19.25	5.52	2.81	0.00	0.00
MEAN	0.08	0.06	0.11	0.08	0.00	28.5	2.10	0.62	0.18	0.09	0.00	0.00
MAX	0.13	0.10	0.17	0.14	0.00	164	5.0	0.91	0.34	0.20	0.00	0.00
MIN	0.04	0.05	0.07	0.00	0.00	0.00	0.91	0.38	0.12	0.00	0.00	0.00
AC-FT	5.0	3.6	6.8	4.7	0.00	1,750	125	38	11	5.6	0.00	0.00

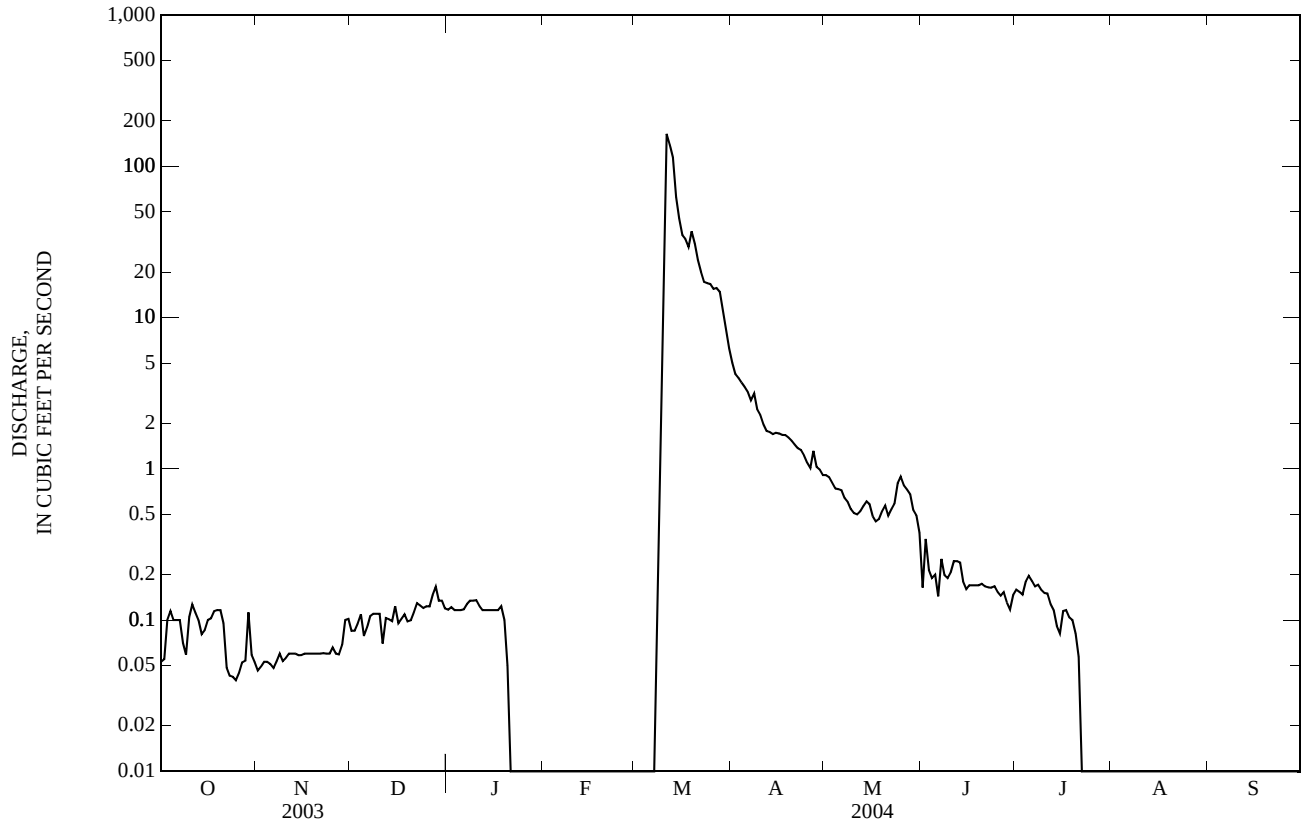
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2004, BY WATER YEAR (WY)*

MEAN	0.51	0.36	0.43	0.35	14.7	71.5	16.8	3.61	14.3	11.0	1.95	2.34
MAX	19.2	7.11	8.58	6.13	141	476	418	32.1	167	116	37.4	139
(WY)	(1987)	(1987)	(1952)	(1976)	(1943)	(1994)	(1952)	(1979)	(1944)	(1957)	(1932)	(1986)
MIN	0.00	0.00	0.00	0.00	0.00	0.05	0.07	0.02	0.00	0.00	0.00	0.00
(WY)	(1941)	(1931)	(1936)	(1936)	(1939)	(1941)	(1961)	(1961)	(1961)	(1939)	(1939)	(1940)

06177500 REDWATER RIVER AT CIRCLE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1929 - 2004*	
ANNUAL TOTAL	568.93		983.91			
ANNUAL MEAN	1.56		2.69		11.3**	
HIGHEST ANNUAL MEAN					61.6	1952
LOWEST ANNUAL MEAN					0.04	1941
HIGHEST DAILY MEAN	200	Mar 15	164	Mar 11	4,510	Mar 31, 1952
LOWEST DAILY MEAN	0.00	Aug 27	0.00	Jan 21	a0.00	Oct 8, 1929
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 24	0.00	Jan 21	0.00	Nov 20, 1929
MAXIMUM PEAK FLOW			192	Mar 11	b6,960	Jun 29, 1986
MAXIMUM PEAK STAGE			7.33	Mar 11	12.93	Mar 4, 1994
ANNUAL RUNOFF (AC-FT)	1,130		1,950		8,210	
10 PERCENT EXCEEDS	1.1		1.7		7.0	
50 PERCENT EXCEEDS	0.12		0.10		0.20	
90 PERCENT EXCEEDS	0.03		0.00		0.00	

*--During period of operation (1932, 1936, 1938-71, 1975 to September 2004).
**--Median of yearly discharges, 5.71 ft^3/s.
a--No flow at times most years.
b--From rating curve extended above 3,500 ft^3/s, gage height, 12.85 ft, from floodmark.
e--Estimated.



06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 48°59'25", long 105°41'46" (NAD 27), in NE¼NE¼SE¼ sec.6, T.37 N., R.46 E., Daniels County, Hydrologic Unit 10060003, on left bank 0.7 mi south of international boundary, 1.5 mi upstream from Coal Creek, 18.5 mi northwest of Scobey, MT, and at river mile 135.7.

DRAINAGE AREA.--358 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1931 to current season (seasonal records only for most years). Published as Middle Fork Poplar River at international boundary, March 1931 to November 1975.

REVISED RECORDS.--WSP 1389: 1931, 1935-37(M), 1939-40, 1942(M), 1943, 1948(M), 1950(M). WSP 1729: Drainage area. W 1984: Drainage area.

GAGE.--Water-stage recorder and concrete control since September 1977. Elevation of gage is 2,460 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. U.S. Geological Survey satellite telemeter at station. A few small diversions for irrigation upstream from station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft^3/s, Apr. 6, 1954, gage height, 10.25 ft, from floodmark, from rating curve extended above 2,500 ft^3/s, on basis of slope-area measurement of peak flow; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	e110	6.6	64	12	3.4	2.1	2.9		
2			e0.00	84	6.6	48	11	3.6	2.2	2.9		
3			e0.00	55	6.3	40	10	3.7	2.1	3.1		
4			e0.00	43	5.8	33	9.4	3.8	2.1	3.3		
5			e0.00	39	5.6	29	9.5	4.0	1.8	3.3		
6			e0.00	35	5.6	28	10	3.9	1.6	3.7		
7			e0.00	30	7.2	25	11	3.6	1.5	3.8		
8			e0.00	27	6.8	22	11	3.1	1.6	3.8		
9			e0.00	24	6.6	19	10	3.1	1.6	3.8		
10			e0.00	20	6.4	24	9.2	3.2	1.6	3.8		
11			e0.00	18	9.6	93	8.5	3.3	1.6	4.0		
12			e0.00	17	7.4	203	9.3	3.1	1.9	4.0		
13			e0.00	16	19	197	13	2.8	2.0	4.1		
14			e0.00	16	26	112	16	2.5	2.0	4.4		
15			e0.00	15	47	92	15	2.3	2.1	4.4		
16			e0.00	14	57	88	13	2.2	2.1	4.4		
17			e0.00	14	54	71	13	2.1	2.1	4.6		
18			e0.00	14	43	54	11	1.9	2.1	5.0		
19			e0.00	14	39	45	9.2	1.7	2.2	5.4		
20			e0.00	13	52	37	7.6	1.4	2.4	5.4		
21			e0.00	12	55	30	6.5	1.4	2.5	5.4		
22			e0.00	12	43	27	5.2	1.3	2.5	5.8		
23			e0.10	11	39	25	4.6	1.6	2.5	5.6		
24			e2.5	10	209	22	4.3	2.0	2.6	5.4		
25			e10	9.3	335	20	3.9	2.4	2.6	5.3		
26			e15	8.5	163	18	3.6	3.1	2.6	5.0		
27			e200	8.2	120	17	3.6	3.0	2.5	5.0		
28			e170	7.9	94	16	3.2	3.0	2.5	5.1		
29			e160	7.9	200	14	3.1	2.9	2.7	5.2		
30			e150	7.2	112	13	3.4	2.6	2.8	5.0		
31			e140	---	89	---	3.2	2.3	---	5.0		
TOTAL			847.60	712.0	1,876.5	1,526	263.3	84.3	64.5	137.9		
MEAN			27.3	23.7	60.5	50.9	8.49	2.72	2.15	4.45		
MAX			200	110	335	203	16	4.0	2.8	5.8		
MIN			0.00	7.2	5.6	13	3.1	1.3	1.5	2.9		
MED			0.00	14	39	30	9.3	2.9	2.1	4.4		
AC-FT			1,680	1,410	3,720	3,030	522	167	128	274		

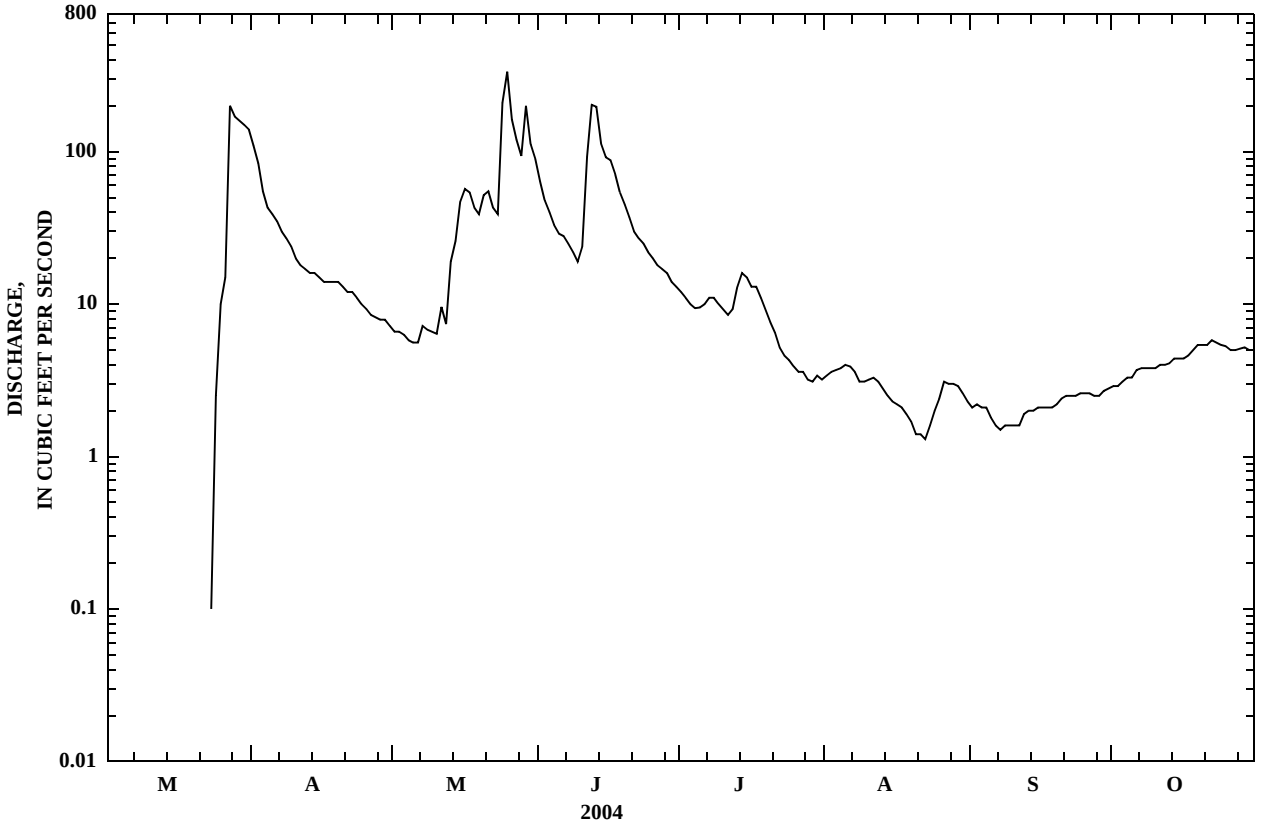
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1931 - 2004*

MEAN	0.00	20.2	68.8	80.8	17.8	14.9	8.62	1.55	1.46	2.72	4.90	0.00
MAX	0.00	61.3	418	699	86.2	191	120	19.4	15.3	11.8	9.35	0.00
(WY)	(1936)	(1981)	(1999)	(1952)	(1982)	(1963)	(1993)	(1940)	(1954)	(1955)	(1955)	(1936)
MIN	0.00	0.00	0.00	5.52	3.05	0.16	0.04	0.00	0.01	0.04	0.12	0.00
(WY)	(1936)	(1936)	(1950)	(1950)	(1988)	(1992)	(1988)	(1967)	(1988)	(1989)	(1937)	(1936)

06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 SEASON		SEASONS 1931 - 2004*	
HIGHEST DAILY MEAN	600	Mar 17	335	May 25	5,000	Apr 6, 1954
LOWEST DAILY MEAN	0.0	Mar 4	0.0	Mar 1	0.00	Jun 30, 1932
MAXIMUM PEAK FLOW			a413	May 25	c127,000	Apr 6, 1954
MAXIMUM PEAK STAGE			b5.32	Mar 26	10.25	Apr 6, 1954

*--Seasonal records most years.
a--Gage height, 4.82 ft.
b--Backwater from ice.
c--From rating curve extended above 2,500 ft3/s on basis of slope-area measurement of peak flow.
e--Estimated.



06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-65, 1976 to current year.

REMARKS.--Missing sediment data for May 25 due to access and equipment problems.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
APR													
05...	1020	40	704	9.0	81	8.0	977	12.0	7.0	300	44.8	45.9	8.56
MAY													
25...	1150	341	703	10.3	95	8.4	926	15.0	8.0	220	27.6	37.1	10.8
JUN													
17...	1015	74	714	8.1	85	8.4	1,190	12.0	14.5	420	54.2	69.7	11.9
SEP													
01...	1300	2.0	704	10.4	122	8.7	1,270	27.0	19.0	310	33.3	56.0	8.41

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, flrdt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
APR													
05...	3	124	46	327	5.31	.3	15.2	206	648	.88	70.0	.016	.041
MAY													
25...	4	133	55	321	4.49	.2	17.2	178	602	.82	554	E.008	<.016
JUN													
17...	3	130	39	403	6.38	.3	14.7	260	791	1.08	158	<.010	<.016
SEP													
01...	4	176	54	414	7.45	.4	3.8	275	810	1.10	4.37	E.005	<.016

Date	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recoverable, ug/L (01007)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
APR											
05...	.003	1.03	.031	.083	2.5	3	53	55	675	<.04	E.02
MAY											
25...	.002	1.51	.049	.137	3.4	4	41	47	873	E.03	E.04
JUN											
17...	<.002	1.25	.015	.054	4.5	4	77	74	1,020	E.02	E.02
SEP											
01...	E.001	.65	<.006	.024	2.9	3	40	36	1,380	<.04	<.04

E--Estimated.

06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Chrom-ium, water, fltrd, ug/L (01030)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recover-able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)
APR											
05...	<.8	<.8	2.2	3.1	70	350	<.08	.21	17.6	23	<.02
MAY											
25...	<.8	1.3	2.7	4.0	106	520	E.07	.38	6.5	20	<.02
JUN											
17...	<.8	<.8	2.8	3.2	82	160	<.08	.08	7.3	12	<.02
SEP											
01...	<.8	<.8	1.5	3.6	20	150	<.08	.10	5.9	8	<.02

Date	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)	Selen-ium, water, fltrd, ug/L (01145)	Selen-ium, water, unfltrd ug/L (01147)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
APR										
05...	<.02	2.66	2.29	.8	.9	.9	E2	81	12	1.3
MAY										
25...	<.02	1.89	2.42	.6	.7	1.9	3	--	--	--
JUN										
17...	<.02	1.92	2.91	.7	.5	1.5	E1	88	5	1.0
SEP										
01...	<.02	1.45	2.82	E.4	.6	.7	E2	64	30	.16

E--Estimated.

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 49°00'00", long 105°24'32" (NAD 27), in SW¼SW¼ sec.3, T.1 N., R.26 W., second meridian, in Saskatchewan, Hydrologic Unit 10060003, on left bank 10 ft north of international boundary, 400 ft southwest of Canadian East Poplar Port of Entry, 14 mi north of Scobey, MT, and at river mile 21.9.

DRAINAGE AREA.--541 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1931 to current year (seasonal records only in most seasons prior to October 1974). Prior to March 1962, published as East Fork Poplar River at international boundary.

REVISED RECORDS.--WSP 1389: 1932, 1939, 1942-43, 1947. W 1983: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,410.92 ft (International Boundary Commission Survey Datum). Prior to Oct. 5, 1953, water-stage recorder at site 80 ft upstream at same elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. U.S. Geological Survey satellite telemeter at station. Since September 1975 flow regulated by Morrison Dam at Cookson Reservoir 3.1 mi upstream.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	2.4	2.2	2.3	1.5	e0.00	6.7	2.6	3.8	2.6	2.5	3.1
2	2.0	2.3	2.2	2.4	1.2	e0.00	4.3	14	3.6	2.7	2.4	2.9
3	2.0	2.3	2.2	2.3	e1.0	e0.00	3.6	14	3.3	2.7	2.4	e2.5
4	2.1	2.3	2.2	2.1	e0.50	e0.00	3.6	13	3.1	2.6	e2.0	2.7
5	2.0	2.3	2.2	2.1	e0.00	e0.00	3.5	12	2.8	2.7	e2.5	e2.5
6	2.0	2.3	2.2	2.1	e0.00	e0.00	3.2	11	2.8	2.7	e2.5	e3.0
7	2.0	2.3	2.2	2.1	e0.00	e0.00	3.1	11	2.9	2.8	e2.5	2.9
8	2.0	2.3	2.2	2.3	e0.00	e0.00	2.9	9.6	2.7	3.0	e2.0	e2.5
9	2.0	2.3	2.2	e2.3	e0.00	e0.00	2.8	10	2.6	2.8	e2.5	e2.5
10	2.0	2.3	2.2	2.3	e0.00	e0.00	2.7	8.8	9.5	2.7	e2.5	e3.0
11	2.1	2.3	2.2	2.3	e0.00	e0.00	2.6	13	21	2.7	e2.5	3.0
12	2.1	2.3	2.2	2.2	e0.00	e0.00	2.6	11	14	2.7	e2.5	e2.0
13	2.2	2.3	2.2	2.2	e0.00	e0.00	2.6	11	7.5	2.5	e4.0	e2.5
14	2.2	2.3	2.2	2.3	e0.00	e0.00	2.4	11	5.3	2.4	3.7	e2.5
15	2.2	2.3	2.2	2.3	e0.00	e0.00	2.5	11	4.7	2.5	3.4	e2.5
16	2.2	2.3	2.2	2.3	e0.00	e0.00	2.5	9.9	4.1	2.5	e3.5	e2.5
17	2.2	2.3	2.2	2.2	e0.00	e0.00	2.4	9.8	5.1	2.5	3.1	e4.5
18	2.1	2.3	2.2	2.2	e0.00	e0.00	2.6	9.5	4.1	2.5	2.9	3.9
19	2.1	2.3	2.2	2.2	e0.00	e0.00	2.5	12	3.4	2.5	e2.5	3.0
20	2.1	2.3	2.2	2.2	e0.00	e0.00	2.4	9.8	3.4	2.6	e3.0	2.6
21	2.1	2.2	2.2	2.2	e0.00	e0.00	2.4	9.5	4.1	2.6	e3.5	2.6
22	2.0	2.2	2.2	2.2	e0.00	e0.00	2.4	9.0	3.7	2.6	2.7	2.8
23	2.0	2.2	2.2	2.2	e0.00	e0.00	2.2	11	3.5	2.6	2.6	e2.0
24	e2.3	2.2	2.1	2.0	e0.00	e0.00	2.4	18	3.3	2.6	e2.5	e3.0
25	e2.0	2.2	2.1	1.8	e0.00	e0.00	2.4	10	3.1	2.5	e2.5	2.8
26	e2.1	2.3	2.1	1.8	e0.00	e5.0	2.1	9.3	2.9	2.5	e3.0	2.5
27	e2.4	2.3	2.2	1.6	e0.00	e25	2.2	8.7	2.9	2.6	3.2	2.0
28	e2.0	2.2	e1.6	1.7	e0.00	e50	2.3	7.3	2.5	2.6	2.7	2.8
29	e2.2	2.2	e1.5	1.6	e0.00	e15	2.1	47	2.5	2.5	2.7	2.7
30	2.4	2.3	e1.9	1.4	---	11	2.1	10	2.5	2.4	e2.5	2.7
31	2.4	---	e2.2	1.6	---	8.9	---	6.3	---	2.4	2.9	---
TOTAL	65.4	68.4	66.3	64.8	4.20	114.90	84.1	360.1	140.7	80.6	85.7	82.5
MEAN	2.11	2.28	2.14	2.09	0.14	3.71	2.80	11.6	4.69	2.60	2.76	2.75
MAX	2.4	2.4	2.2	2.4	1.5	50	6.7	47	21	3.0	4.0	4.5
MIN	1.9	2.2	1.5	1.4	0.00	0.00	2.1	2.6	2.5	2.4	2.0	2.0
AC-FT	130	136	132	129	8.3	228	167	714	279	160	170	164

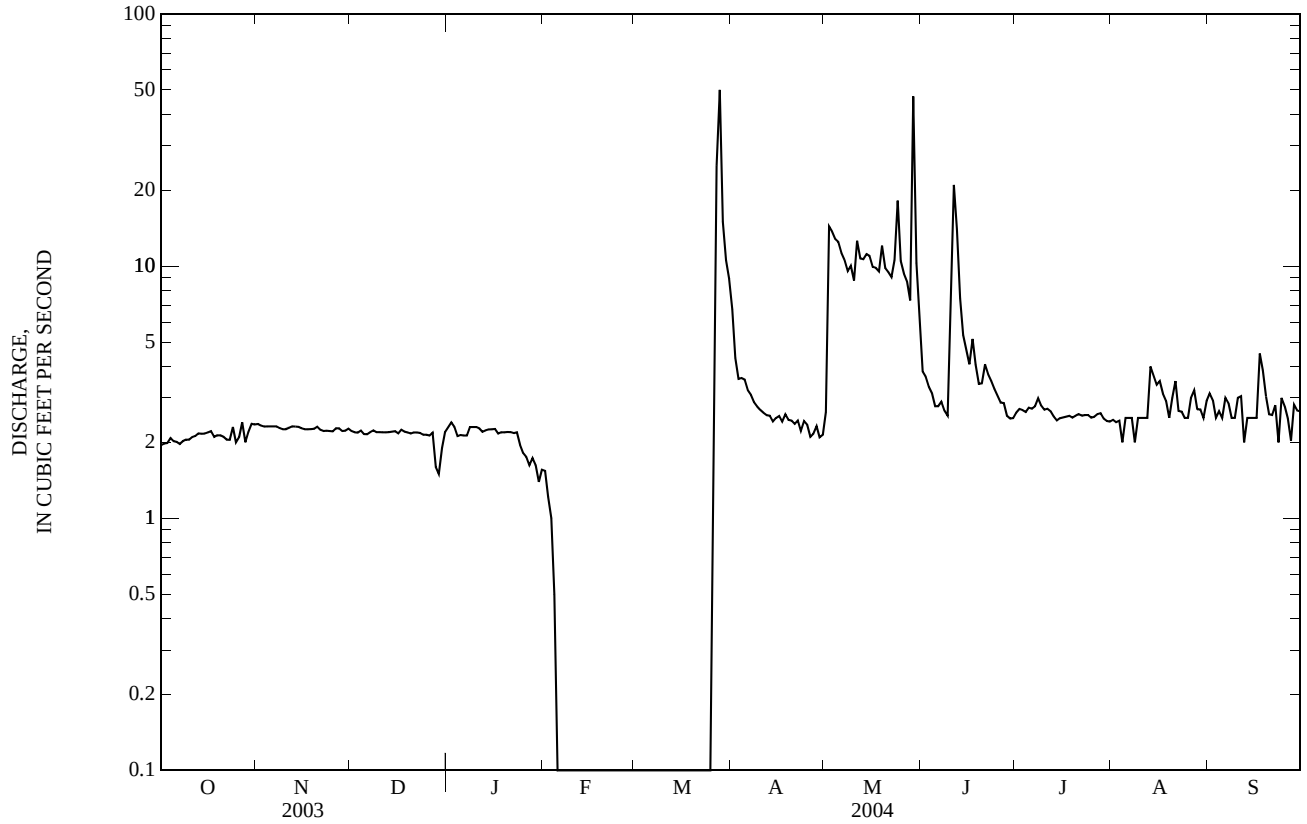
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2004, BY WATER YEAR (WY)*

MEAN	2.59	2.45	2.26	2.19	2.56	20.9	22.1	11.3	5.26	2.82	2.39	2.51
MAX	4.65	4.42	4.37	4.40	7.95	280	306	40.7	23.2	6.84	3.31	4.10
(WY)	(1980)	(1980)	(1980)	(1980)	(1997)	(1999)	(1982)	(1979)	(1979)	(1999)	(1997)	(1979)
MIN	1.59	1.64	1.27	1.26	0.14	1.91	1.80	2.98	1.72	1.79	1.58	1.53
(WY)	(1993)	(1993)	(1993)	(1982)	(2004)	(1992)	(1992)	(1978)	(1992)	(1977)	(1992)	(1992)

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1977 - 2004*	
ANNUAL TOTAL	940.5		1,217.70			
ANNUAL MEAN	2.58		3.33		6.63	
HIGHEST ANNUAL MEAN					32.3	1982
LOWEST ANNUAL MEAN					2.13	1992
HIGHEST DAILY MEAN	8.5	Mar 17	50	Mar 28	2,930	Apr 15, 1982
LOWEST DAILY MEAN	1.4	Mar 4	0.00	Feb 5	0.00	Feb 5, 2004
ANNUAL SEVEN-DAY MINIMUM	1.6	Mar 4	0.00	Feb 5	0.00	Feb 5, 2004
MAXIMUM PEAK FLOW			a120	May 29	c4,020	Apr 23, 1975
MAXIMUM PEAK STAGE			b7.14	Mar 26	12.80	Mar 25, 1943
INSTANTANEOUS LOW FLOW					d0.70	Feb 28, 1998
ANNUAL RUNOFF (AC-FT)	1,870		2,420		4,800	
10 PERCENT EXCEEDS	3.6		7.9		6.7	
50 PERCENT EXCEEDS	2.2		2.3		2.5	
90 PERCENT EXCEEDS	1.9		0.00		1.7	

*--Since initial filling of Cookson Reservoir.
a--Gage height, 6.81 ft.
b--Backwater from ice.
c--Gage height, 12.01 ft.
d--Backwater from beavers.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-65, 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1982 to current year.
WATER TEMPERATURE: June 1975 to September 1983.

INSTRUMENTATION.--Specific conductance monitor installed April 1995.

REMARKS.--Daily specific conductance records rated poor. Specific conductance data not available Feb. 5 through Mar. 25 due to no flow and Jan. 9 and May 24 through June 2 due to equipment problems.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 2,040 microsiemens per centimeter (μS/cm) at 25.0°C, Feb. 10-12, 1997; minimum daily mean, 363 μS/cm at 25.0°C, July 2, 1991.
WATER TEMPERATURE: Maximum, 29.5°C, July 6, 1975, July 25, 26, 1978; minimum, 0.0°C on many days during winters most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 1,850 microsiemens per centimeter (μS/cm) at 25.0°C, Dec. 27; minimum daily mean, 989 μS/cm at 25.0°C, Mar. 27.

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
MAY													
25...	1345	10	703	10.0	99	8.1	1,570	18.0	11.0	390	45.0	67.2	15.9
JUN													
17...	1330	5.9	714	9.4	98	8.6	1,520	12.5	14.0	410	69.1	58.4	10.6
JUL													
08...	0915	3.1	703	6.4	74	8.4	1,570	15.0	18.0	420	74.8	55.8	8.66
SEP													
01...	0945	3.9	704	9.9	113	8.3	1,510	20.0	17.5	360	58.2	52.2	8.74

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MAY													
25...	5	235	56	481	7.56	.3	8.9	388	1,060	1.44	28.6	.124	.091
JUN													
17...	5	223	53	479	7.11	.3	10.4	353	1,020	1.39	16.3	<.010	.067
JUL													
08...	5	228	54	470	7.61	.4	14.3	314	987	1.34	8.26	.262	.072
SEP													
01...	5	211	55	487	6.82	.4	11.0	302	945	1.28	9.95	<.010	<.016

Date	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recoverable, ug/L (01007)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, fltrd, ug/L (01030)	Chromium, water, unfltrd recoverable, ug/L (01034)
MAY													
25...	.007	1.24	E.004	.076	4.8	6	52	60	1,910	<.04	.04	.9	E.6
JUN													
17...	.005	.99	<.006	.055	4.2	5	67	69	1,700	<.04	<.04	<.8	<.8
JUL													
08...	.011	1.43	<.006	.089	5.7	7	75	85	1,920	<.04	E.02	<.8	.8
SEP													
01...	E.001	.57	<.006	.040	3.8	5	46	47	1,980	<.04	<.04	<.8	<.8

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recoverable, ug/L (01067)
MAY												
25...	2.7	4.9	59	940	<.08	.41	31.5	58	<.02	<.02	2.61	4.04
JUN												
17...	2.4	3.7	26	820	<.08	.39	21.0	92	<.02	<.02	2.15	3.96
JUL												
08...	2.0	3.5	10	1,020	<.08	.64	25.1	139	<.02	<.02	1.93	3.82
SEP												
01...	1.3	3.8	17	410	.13	.23	5.0	53	<.02	<.02	1.97	4.17

E--Estimated.

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Selenium, water, fltrd, ug/L (01145)	Selenium, water, unfltrd ug/L (01147)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAY							
25...	.8	.9	1.4	3	90	40	1.1
JUN							
17...	.7	.5	1.4	2	86	74	1.2
JUL							
08...	.6	.5	1.0	3	77	160	1.3
SEP							
01...	.4	.6	2.0	3	82	105	1.1

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,490	1,380	1,470	1,490	1,480	---	1,190	1,550	---	1,430	1,660	1,520
2	1,490	1,540	1,450	1,490	1,470	---	1,180	1,560	---	1,520	1,660	1,520
3	1,520	1,620	1,470	1,490	1,480	---	1,160	1,610	1,637	1,530	1,630	1,490
4	1,530	1,620	1,480	1,480	1,475	---	1,180	1,640	1,650	1,460	1,580	1,470
5	1,520	1,530	1,510	1,520	---	---	1,120	1,620	1,650	1,490	1,540	1,480
6	1,550	1,370	1,470	1,530	---	---	1,210	1,570	1,690	1,420	1,620	1,430
7	1,550	1,360	1,490	1,520	---	---	1,230	1,600	1,680	1,490	1,640	1,410
8	1,570	1,360	1,500	1,516	---	---	1,200	1,640	1,600	1,600	1,580	1,420
9	1,560	1,370	1,480	---	---	---	1,220	1,620	1,590	1,570	1,530	1,460
10	1,530	1,370	1,460	1,479	---	---	1,280	1,550	1,540	1,560	1,520	1,480
11	1,500	1,360	1,480	1,480	---	---	1,350	1,350	1,400	1,580	1,530	1,470
12	1,480	1,360	1,500	1,470	---	---	1,400	1,260	1,300	1,640	1,540	1,490
13	1,460	1,350	1,510	1,460	---	---	1,370	1,350	1,290	1,590	1,590	1,490
14	1,460	1,350	1,520	1,470	---	---	1,280	1,480	1,310	1,600	1,620	1,460
15	1,470	1,350	1,520	1,460	---	---	1,340	1,540	1,320	1,650	1,590	1,480
16	1,500	1,360	1,510	1,460	---	---	1,410	1,580	1,290	1,660	1,550	1,480
17	1,430	1,370	1,510	1,460	---	---	1,450	1,640	1,450	1,650	1,560	1,480
18	1,470	1,390	1,520	1,460	---	---	1,450	1,670	1,340	1,680	1,540	1,510
19	1,520	1,380	1,510	1,460	---	---	1,490	1,650	1,300	1,680	1,530	1,520
20	1,470	1,440	1,510	1,480	---	---	1,520	1,660	1,400	1,710	1,510	1,460
21	1,510	1,410	1,520	1,480	---	---	1,540	1,680	1,580	1,720	1,540	1,420
22	1,510	1,410	1,520	1,480	---	---	1,550	1,610	1,530	1,740	1,490	1,430
23	1,460	1,440	1,500	1,480	---	---	1,550	1,540	1,420	1,710	1,440	1,390
24	1,370	1,490	1,500	1,490	---	---	1,560	1,521	1,310	1,690	1,450	1,410
25	1,330	1,490	1,707	1,490	---	1,135	1,550	---	1,280	1,650	1,470	1,430
26	1,350	1,480	1,820	1,490	---	1,080	1,570	---	1,310	1,650	1,460	1,460
27	1,360	1,450	1,850	1,490	---	989	1,600	---	1,330	1,710	1,470	1,440
28	1,320	1,450	1,820	1,490	---	995	1,550	---	1,310	1,660	1,480	1,480
29	1,220	1,460	1,840	1,480	---	1,130	1,530	---	1,330	1,580	1,470	1,490
30	1,220	1,460	1,800	1,490	---	1,230	1,530	---	1,360	1,650	1,490	1,480
31	1,269	---	1,520	1,480	---	1,230	---	---	---	1,660	1,510	---
MEAN	1,450	1,430	1,560	---	---	---	1,390	---	---	1,610	1,540	1,460
MAX	1,570	1,620	1,850	--	--	--	1,600	--	--	1,740	1,660	1,520
MIN	1,220	1,350	1,450	--	--	--	1,120	--	--	1,420	1,440	1,390

06181000 POPLAR RIVER NEAR POPLAR, MT

LOCATION.--Lat 48°10'15", long 105°10'42" (NAD 27), in NE¼NE¼ sec.19, T.28 N., R.51 E., Roosevelt County, Hydrologic Unit 10060003, on right bank 4 mi north of Poplar, and at river mile 11.

DRAINAGE AREA.---3,174 mi^2.

PERIOD OF RECORD.--August 1908 to October 1924, August 1947 to September 1969, June 1975 to September 1979, October 1981 to current year. Monthly discharge only for some periods, published in WSP 1309.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 1176. 1948. WSP 1389: 1911. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,953.16 ft (NGVD 29). Prior to May 1, 1911, nonrecording gage at site 4.2 mi upstream at different elevation. May 1, 1911, to Oct. 4, 1913, nonrecording gage at site 14 mi upstream at different elevation. Oct. 5, 1913, to Oct. 31, 1924, nonrecording gage at site 2.2 mi upstream at different elevation. Aug. 10, 1947, to Sept. 30, 1969, water-stage recorder at present site and elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 5,500 acres upstream from station. Flow partially regulated by Coronach Dam, on the East Fork Poplar River, 2 mi north of international boundary. U. S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 10, 1946, reached a stage of 18.1 ft, from floodmark, discharge, 40,000 ft^3/s, from slope-area measurement of peak flow made at site 20 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	22	e15	e10	e6.0	e8.0	794	82	767	106	41	22
2	6.6	23	e15	e10	e5.0	e8.0	892	78	502	103	40	22
3	6.8	24	e15	e7.0	e5.0	e8.0	804	76	403	97	42	23
4	7.2	e15	e15	e5.0	e5.0	e9.0	668	74	327	96	47	23
5	7.2	e15	e15	e5.0	e6.0	e9.0	536	72	271	102	43	22
6	7.1	e15	e15	e5.0	e6.0	e9.0	467	69	231	101	40	21
7	7.1	e10	e15	e7.0	e6.0	e9.0	401	67	203	102	38	21
8	7.3	e10	e15	e7.0	e7.0	e9.0	335	67	185	126	35	21
9	7.0	e10	e15	e9.0	e7.0	e9.0	285	67	169	103	35	21
10	7.2	e15	e10	e9.0	e7.0	e8.0	251	68	175	91	34	21
11	7.1	e15	e10	e9.0	e7.0	e8.0	221	74	218	85	33	21
12	7.4	e15	e10	e9.0	e7.0	e8.0	201	85	292	78	33	21
13	7.6	e10	e15	e9.0	e7.0	e9.0	186	94	461	74	30	21
14	8.4	e10	e15	e9.0	e7.0	e9.0	169	96	577	71	29	21
15	9.0	e10	e15	e9.0	e8.0	e10	158	96	705	70	28	21
16	9.7	e10	e15	e9.0	e8.0	e10	154	109	592	69	27	21
17	10	e15	e15	e9.0	e9.0	e10	154	137	466	68	26	21
18	10	e20	e15	e7.0	e9.0	e10	159	154	371	65	24	21
19	10	e20	e15	e7.0	e9.0	e10	158	175	310	62	23	21
20	10	e15	e15	e8.0	e9.0	e9.0	154	175	270	59	22	20
21	10	e15	e15	e8.0	e9.0	e9.0	145	167	234	56	22	21
22	10	e10	e15	e8.0	e8.0	e9.0	137	159	209	56	22	21
23	9.7	e10	e15	e8.0	e8.0	e10	129	159	188	55	21	21
24	9.1	e10	e15	e7.0	e8.0	e15	120	174	170	53	21	21
25	11	e15	e15	e6.0	e8.0	e25	111	200	155	50	24	21
26	12	e15	e15	e5.0	e8.0	e40	104	395	143	46	24	21
27	12	e15	e15	e5.0	e9.0	e80	99	625	135	43	25	20
28	14	e15	e15	e4.0	e9.0	e100	95	644	125	40	25	20
29	23	e15	e10	e4.0	e9.0	e200	89	504	117	39	25	21
30	17	e15	e10	e5.0	---	e300	85	483	109	38	24	21
31	16	---	e10	e6.0	---	e500	---	1,250	---	38	23	---
TOTAL	303.0	434	435	225.0	216.0	1,467.0	8,261	6,675	9,080	2,242	926	634
MEAN	9.77	14.5	14.0	7.26	7.45	47.3	275	215	303	72.3	29.9	21.1
MAX	23	24	15	10	9.0	500	892	1,250	767	126	47	23
MIN	6.5	10	10	4.0	5.0	8.0	85	67	109	38	21	20
AC-FT	601	861	863	446	428	2,910	16,390	13,240	18,010	4,450	1,840	1,260

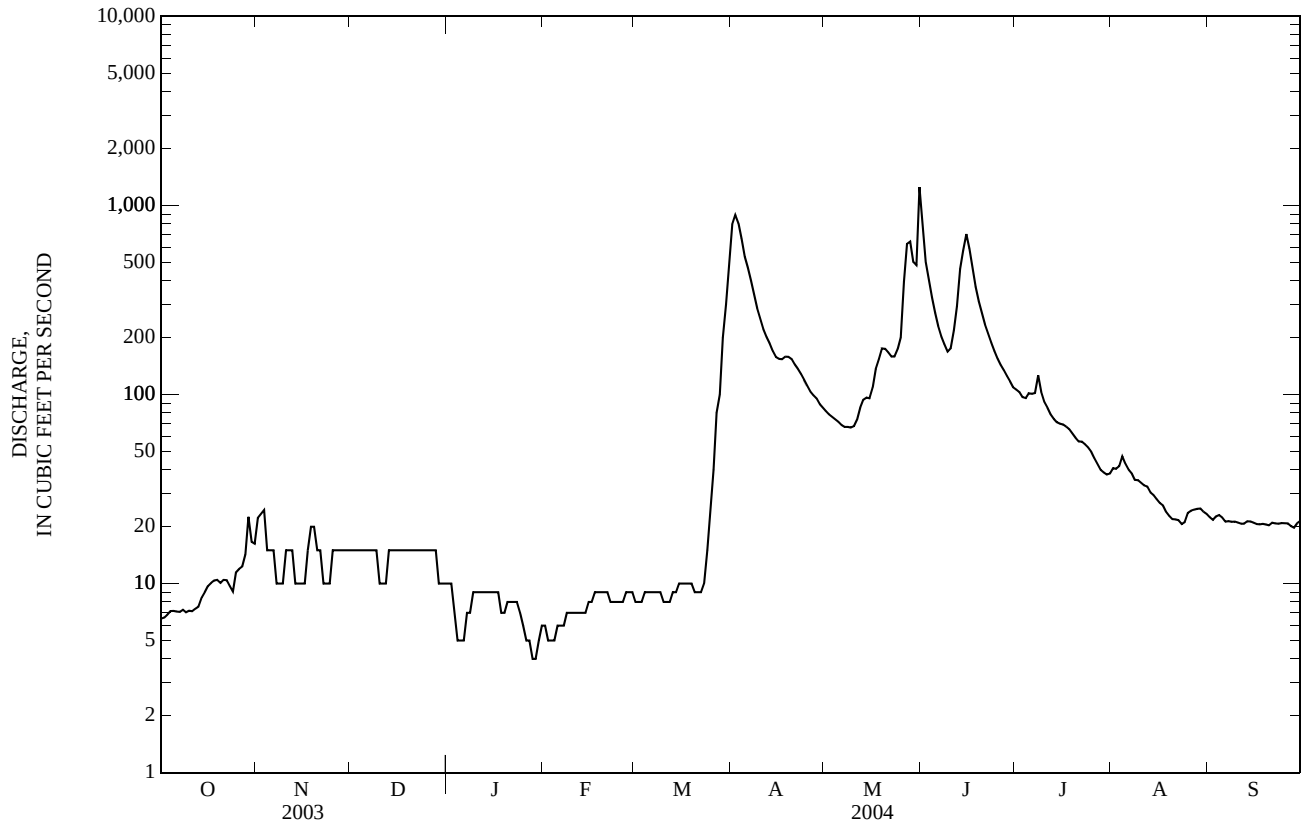
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 2004, BY WATER YEAR (WY)*

MEAN	27.8	26.5	16.6	8.48	26.7	330	658	124	89.0	76.9	27.2	23.8
MAX	81.5	93.5	50.0	30.0	743	2,445	4,918	421	336	800	220	206
(WY)	(1925)	(1919)	(1915)	(1915)	(1996)	(1960)	(1952)	(1955)	(1953)	(1993)	(1993)	(1911)
MIN	2.19	4.25	1.28	0.01	0.10	0.18	37.3	17.4	2.77	0.68	0.04	0.15
(WY)	(1959)	(1959)	(1986)	(1950)	(1959)	(1965)	(1992)	(1992)	(1988)	(1984)	(1988)	(1988)

06181000 POPLAR RIVER NEAR POPLAR, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1908 - 2004*	
ANNUAL TOTAL	26,543.1		30,898.0			
ANNUAL MEAN	72.7		84.4		119**	
HIGHEST ANNUAL MEAN					435	1952
LOWEST ANNUAL MEAN					13.7	1988
HIGHEST DAILY MEAN	4,000	Mar 18	1,250	May 31	34,200	Apr 7, 1954
LOWEST DAILY MEAN	2.8	Aug 28	4.0	Jan 28, 29	a0.00	Dec 16, 1917
ANNUAL SEVEN-DAY MINIMUM	3.0	Aug 24	5.0	Jan 25	0.00	Jan 4, 1950
MAXIMUM PEAK FLOW			1,380	May 31	37,400	Apr 6, 1954
MAXIMUM PEAK STAGE			6.85	May 31	b17.86	Apr 6, 1954
ANNUAL RUNOFF (AC-FT)	52,650		61,290		86,290	
10 PERCENT EXCEEDS	122		212		176	
50 PERCENT EXCEEDS	14		21		23	
90 PERCENT EXCEEDS	5.0		7.1		3.0	

*--During period of operation (1908-24, 1947-69, 1975-79, 1982 to current year).
**--Median of yearly mean discharge, 83.0 ft^3/s.
a--No flow at times.
b--From floodmark, from slope-area measurement of peak flow.
e--Estimated.



06181000 POPLAR RIVER NEAR POPLAR, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975-81, 1987-94, May 1999 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Seasonal records from April 2000 to September 2003.

REMARKS.--No dissolved oxygen data for June 16 due to equipment problems.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: During period of seasonal operation, maximum 33.0°C, Aug. 12, 18, 19, 2003; minimum 0.0°C on many days during winter periods.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
APR													
21...	0950	144	717	10.4	100	8.0	1,250	20.0	10.5	230	36.5	34.4	5.61
JUN													
03...	1045	407	720	8.4	94	8.5	908	16.0	18.0	210	34.0	30.6	8.46
16...	1115	594	724	--	--	8.3	954	18.5	16.5	210	34.1	29.9	7.42
AUG													
24...	0930	20	714	9.8	105	8.9	1,760	14.5	15.0	250	27.6	43.6	7.74

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
APR													
21...	6	205	65	413	20.9	.4	7.0	241	799	1.09	311	E.005	<.016
JUN													
03...	4	136	57	307	7.15	.3	13.9	167	583	.79	640	E.005	E.009
16...	5	156	61	332	6.56	.3	12.7	172	618	.84	992	E.005	<.016
AUG													
24...	9	319	73	499	95.7	.5	4.3	297	1,100	1.49	59.2	E.005	<.016

Date	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recoverable, ug/L (01007)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, fltrd, ug/L (01030)	Chromium, water, unfltrd recoverable, ug/L (01034)
APR													
21...	<.002	.66	<.006	.048	1.8	2	51	61	--	<.04	<.04	<.8	<.8
JUN													
03...	E.001	1.32	.011	.155	2.9	4	64	100	590	<.04	.08	<.8	3.6
16...	.003	1.62	.014	.200	3.3	4	66	101	668	<.04	.09	<.8	<.8
AUG													
24...	<.002	.60	<.006	.037	3.3	3	49	56	1,240	<.04	E.02	<.8	E.6

E--Estimated.

06181000 POPLAR RIVER NEAR POPLAR, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover -able, ug/L (71900)
APR										
21...	2.2	3.3	11	730	<.08	.55	2.9	60	<.02	<.02
JUN										
03...	3.3	6.7	38	3,430	<.08	2.76	1.8	122	<.02	E.01
16...	2.9	8.3	53	3,710	E.04	2.92	3.1	146	<.02	E.01
AUG										
24...	3.2	4.8	<6	670	<.08	.55	3.7	46	<.02	<.02

Date	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, fltrd, ug/L (01145)	Selenium, water, unfltrd ug/L (01147)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
APR									
21...	2.21	3.60	.5	.5	.7	2	94	44	17
JUN									
03...	3.44	7.46	.5	.5	1.4	13	96	165	181
16...	2.44	8.39	.6	.5	.9	15	90	128	205
AUG									
24...	2.28	4.49	.5	.7	1.1	4	99	74	4.0

E--Estimated.

06183450 BIG MUDDY CREEK NEAR ANTELOPE, MT

LOCATION.--Lat 48°40'22", long 104°30'42" (NAD 27), in SW¼SW¼NW¼ sec. 27, T.34 N., R.55 E., Sheridan County, Hydrologic Unit 10060006, on right bank, 3 mi southwest of Antelope, and 7 mi south of Plentywood, MT.

DRAINAGE AREA.--967 mi^2. Prior to 1981, drainage area published as 1,171 mi^2.

PERIOD OF RECORD.--October 1978 to current year.

REVISED RECORDS.--WDR MT-81-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,000 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Several known diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of instantaneous water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	e4.5	e3.5	e2.5	e1.5	e1.5	e160	12	246	9.1	3.6	3.6
2	3.6	e4.5	e3.5	e2.5	e1.5	e1.5	e140	9.9	274	8.7	3.5	3.3
3	3.5	e4.0	e3.5	e2.0	e1.5	e1.5	e160	9.6	146	8.2	4.0	3.3
4	2.9	e4.0	e3.0	e2.0	e1.5	e2.0	174	8.9	85	7.9	4.0	3.4
5	2.0	e4.0	e3.0	e2.0	e1.5	e1.5	140	8.2	61	7.9	4.4	3.4
6	2.0	e4.0	e4.0	e2.0	e1.5	e1.5	120	7.8	48	7.7	5.1	3.4
7	2.0	e4.0	e4.0	e2.5	e2.0	e2.0	111	7.1	37	7.7	6.1	5.2
8	1.9	e4.0	e3.5	e2.5	e2.0	e2.0	98	6.9	29	8.2	11	6.1
9	2.0	e4.5	e3.5	e2.5	e2.0	e2.0	81	6.8	24	7.9	10	5.1
10	2.4	e4.5	e3.0	e3.0	e2.0	e1.5	69	6.4	25	7.8	7.8	4.3
11	2.5	e4.5	e3.0	e3.0	e1.5	e1.5	59	7.7	34	8.2	6.7	3.9
12	2.4	e4.0	e3.0	e2.5	e1.5	e1.5	49	9.5	45	8.1	5.9	3.5
13	2.2	e4.0	e3.0	e2.5	e2.0	e1.5	50	14	62	8.1	5.5	3.2
14	2.3	e4.0	e3.0	e3.0	e2.0	e1.5	89	19	155	7.5	5.2	2.6
15	2.7	e4.0	e3.0	e3.0	e2.5	e1.5	55	29	243	7.1	5.3	2.1
16	3.6	e4.5	e3.0	e3.0	e2.5	e1.5	37	40	204	7.0	5.2	2.1
17	3.6	e4.5	e3.0	e2.5	e2.0	e1.5	35	45	125	6.7	4.7	3.2
18	3.7	e4.5	e3.0	e2.5	e2.0	e1.5	36	48	85	6.5	4.6	3.5
19	3.6	e4.5	e3.5	e3.0	e2.0	e1.5	35	54	66	6.3	4.5	3.4
20	3.8	e4.5	e3.5	e3.0	e2.5	e1.5	36	59	55	6.2	4.3	3.4
21	4.0	e3.5	e3.5	e2.5	e2.5	e1.5	36	54	44	5.7	4.5	3.5
22	4.2	e3.5	e3.5	e3.0	e2.5	e1.5	36	57	37	5.4	4.6	3.3
23	4.3	e3.5	e3.0	e2.5	e2.5	e2.0	29	61	31	4.9	4.7	3.5
24	4.2	e3.5	e3.0	e2.0	e2.5	e2.0	25	60	27	4.6	4.5	3.5
25	4.4	e3.5	e3.5	e2.0	e2.5	e10	21	61	23	4.3	4.8	3.3
26	4.4	e3.5	e3.5	e1.5	e2.5	e30	15	58	19	4.1	5.0	3.5
27	4.4	e4.0	e3.0	e1.5	e2.0	e100	13	88	17	4.0	4.3	3.3
28	4.4	e4.0	e3.0	e1.5	e2.0	e120	18	137	15	3.8	4.1	4.0
29	5.0	e3.5	e2.5	e1.5	e2.0	e140	15	144	13	3.6	4.2	4.0
30	5.1	e3.5	e2.5	e1.5	---	e180	14	131	10	3.3	4.1	4.0
31	e4.0	---	e2.5	e1.5	---	e210	---	125	---	3.3	3.9	---
TOTAL	102.9	121.0	99.0	72.5	58.5	829.0	1,956	1,384.8	2,285	199.8	160.1	107.9
MEAN	3.32	4.03	3.19	2.34	2.02	26.7	65.2	44.7	76.2	6.45	5.16	3.60
MAX	5.1	4.5	4.0	3.0	2.5	210	174	144	274	9.1	11	6.1
MIN	1.8	3.5	2.5	1.5	1.5	1.5	13	6.4	10	3.3	3.5	2.1
AC-FT	204	240	196	144	116	1,640	3,880	2,750	4,530	396	318	214

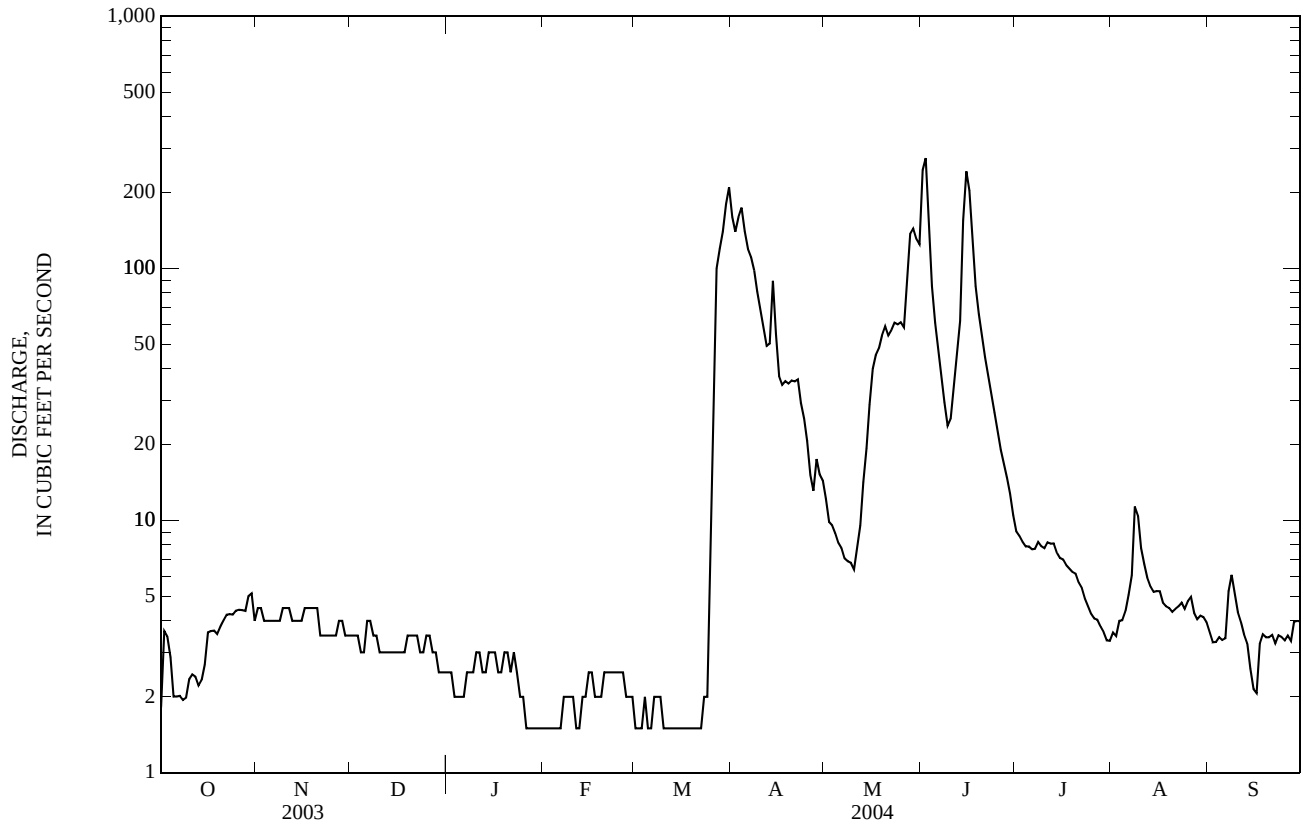
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 2004, BY WATER YEAR (WY)

MEAN	5.25	5.81	3.55	1.88	23.2	136	111	26.7	18.1	24.5	8.63	4.29
MAX	25.0	11.8	6.86	6.38	290	851	826	120	76.2	226	92.5	35.7
(WY)	(1987)	(1999)	(1982)	(1983)	(1996)	(1999)	(1982)	(1979)	(2004)	(1993)	(1987)	(1997)
MIN	0.14	0.88	0.45	0.00	0.00	2.65	5.04	5.29	0.23	0.03	0.00	0.00
(WY)	(1989)	(1989)	(1986)	(1989)	(1989)	(2002)	(1988)	(1992)	(1988)	(1985)	(1984)	(1984)

06183450 BIG MUDDY CREEK NEAR ANTELOPE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1979 - 2004	
ANNUAL TOTAL	13,762.47		7,376.5			
ANNUAL MEAN	37.7		20.2		30.8*	
HIGHEST ANNUAL MEAN					93.2	1979
LOWEST ANNUAL MEAN					4.73	1992
HIGHEST DAILY MEAN	2,300	Mar 18	274	Jun 2	3,160	Mar 23, 1999
LOWEST DAILY MEAN	0.26	Sep 18	1.5	Jan 26	c0.00	Aug 2, 1981
ANNUAL SEVEN-DAY MINIMUM	0.32	Sep 3	1.5	Jan 26	0.00	Jul 23, 1984
MAXIMUM PEAK FLOW			a322	Jun 1	3,190	Mar 22, 1999
MAXIMUM PEAK STAGE			b7.05	Mar 27	17.37	Apr 14, 1982
ANNUAL RUNOFF (AC-FT)	27,300		14,630		22,320	
10 PERCENT EXCEEDS	49		59		39	
50 PERCENT EXCEEDS	3.5		4.0		4.5	
90 PERCENT EXCEEDS	0.75		2.0		0.23	

*--Median of yearly mean discharge, 22.6 ft^3/s.
a--Gage height, 6.03 ft.
b--Backwater from ice.
c--No flow many days most years.
e--Estimated.



06183700 BIG MUDDY CREEK DIVERSION CANAL NEAR MEDICINE LAKE, MT

LOCATION.--Lat 48°30'34", long 104°32'55" (NAD 27), in SE¼NW¼SE¼ sec. 22, T.32 N., R.55 E., Sheridan County, Hydrologic Unit 10060006, on right bank, on dike road about 2 ft upstream from canal headgate and 2.2 miles northwest of Medicine Lake.

PERIOD OF RECORD.--August 1985 to September 1991, October 1991 to current year (seasonal records).

GAGE.--Water-stage recorder. Elevation of gage is 1,940 ft (NGVD 29).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Canal diverts water into Medicine Lake at the Medicine Lake National Wildlife Refuge. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	e170	e9.0	123	6.5	2.4	2.6	3.3		
2			e0.00	e190	e8.0	223	5.5	2.4	2.4	3.6		
3			e0.00	e170	e7.0	247	5.0	2.4	2.5	3.5		
4			e0.00	e140	e6.0	143	5.2	2.4	2.5	3.5		
5			e0.00	e120	e5.0	95	5.3	2.4	2.4	3.5		
6			e0.00	e130	e4.0	76	4.6	2.4	2.3	3.5		
7			e0.00	e120	3.6	59	4.5	2.4	2.5	3.5		
8			e0.00	108	3.5	44	5.4	2.5	2.5	3.6		
9			e0.00	95	3.3	29	5.0	2.5	2.4	3.7		
10			e0.00	81	3.5	25	5.0	2.7	2.6	3.8		
11			e0.00	71	4.3	36	4.9	3.2	3.0	3.9		
12			e0.00	62	4.8	61	4.5	3.1	3.0	3.9		
13			e0.00	56	4.9	70	4.5	3.0	3.0	3.9		
14			e0.00	56	5.9	78	4.5	2.9	3.0	4.0		
15			e0.00	91	7.9	144	4.5	2.8	2.9	4.1		
16			e0.00	e60	13	182	4.3	2.8	2.9	4.1		
17			e0.00	e35	22	158	4.1	2.8	2.8	4.1		
18			e0.00	e35	34	115	3.8	2.6	2.8	4.3		
19			e0.00	e35	44	92	3.8	2.6	2.8	4.4		
20			e0.00	e35	48	75	3.9	2.5	2.8	4.6		
21			e2.0	e35	57	62	3.8	2.5	3.0	4.7		
22			e10	e35	53	46	4.0	2.4	3.0	4.8		
23			e50	e35	52	36	4.0	2.4	3.0	4.8		
24			e130	e30	71	28	4.0	2.4	3.1	4.8		
25			e120	e25	71	22	3.9	2.4	3.2	4.9		
26			e100	e20	70	18	3.8	2.5	3.2	4.9		
27			e120	e15	69	14	3.8	2.6	3.2	5.1		
28			e110	e15	87	11	3.5	2.6	3.3	5.2		
29			e190	e15	123	8.7	3.2	2.6	3.3	5.3		
30			e230	e10	135	7.4	2.5	2.6	3.3	5.3		
31			e200	---	126	---	2.4	2.6	---	5.2		
TOTAL			1,262.00	2,095	1,155.7	2,328.1	133.7	80.4	85.3	131.8		
MEAN			40.7	69.8	37.3	77.6	4.31	2.59	2.84	4.25		
MAX			230	190	135	247	6.5	3.2	3.3	5.3		
MIN			0.00	10	3.3	7.4	2.4	2.4	2.3	3.3		
AC-FT			2,500	4,160	2,290	4,620	265	159	169	261		

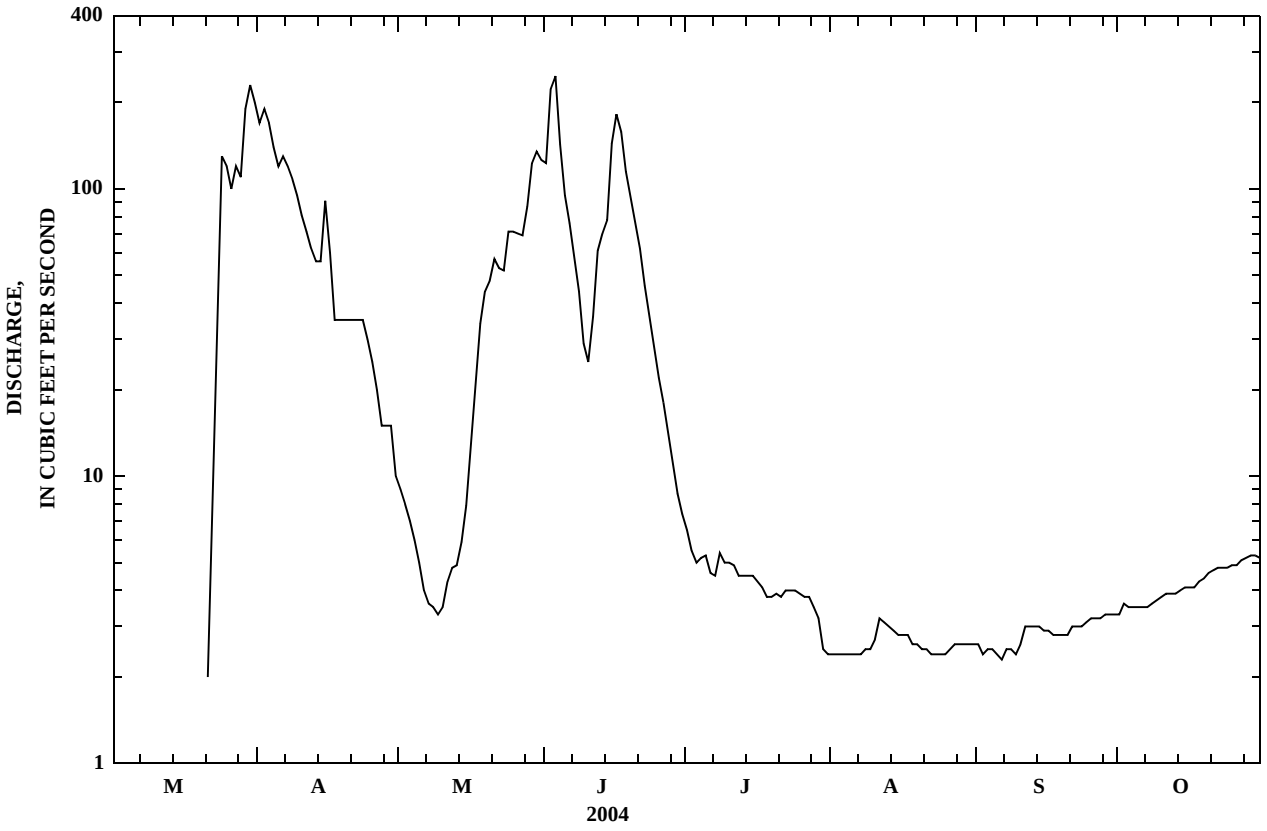
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1991 AND SEASONS 1992 - 2004*

MEAN	0.28	5.11	97.3	51.7	16.2	12.6	22.8	5.88	3.68	3.34	1.66	0.580
MAX	1.10	23.4	434	260	46.5	77.6	144	31.3	37.3	10.5	4.97	2.80
(WY)	(1990)	(1986)	(1999)	(1997)	(1999)	(2004)	(1993)	(1987)	(1997)	(2004)	(1990)	(1990)
MIN	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000
(WY)	(1988)	(1988)	(2002)	(1988)	(1987)	(1987)	(1987)	(1988)	(1987)	(1988)	(1988)	(1988)

SUMMARY STATISTICS	FOR 2004 SEASON		WATER YEARS 1985 - 1991*		WATER YEARS 1992 - 2004*	
ANNUAL MEAN			14.5			
HIGHEST ANNUAL MEAN			31.6	1989		
LOWEST ANNUAL MEAN			0.17	1988		
HIGHEST DAILY MEAN	247	Jun 3	1,300	Mar 2, 1986	1,340	Mar 23, 1999
LOWEST DAILY MEAN	0.00	Mar 1	c0.00	Feb 11, 1986	0.00	Sep 22, 1992
ANNUAL SEVEN-DAY MINIMUM			0.00	Feb 11, 1986		
MAXIMUM PEAK FLOW	a300	Jun 3	1,300	Mar 2, 1986	d1,360	Mar 23, 1999
MAXIMUM PEAK STAGE	b8.23	Mar 29			f12.18	Jul 24, 1993
ANNUAL RUNOFF (AC-FT)			10,540			
10 PERCENT EXCEEDS			29			
50 PERCENT EXCEEDS			2.6			
90 PERCENT EXCEEDS			0.00			

*--During periods of operation 1985-91, 1992 to October 2004. Seasonal records beginning water year 1992.
a--Gage height, 7.19 ft.
b--Backwater from ice.
c--No flow at times most years.
d--Gage height, 10.99 ft.
f--Site and datum then in use.
e--Estimated.

06183700 BIG MUDDY CREEK DIVERSION CANAL NEAR MEDICINE LAKE, MT—Continued



06183750 LAKE CREEK NEAR DAGMAR, MT

LOCATION.--Lat 48°33'51", long 104°10'38" (NAD 27), in SE¼SE¼SW¼ sec. 31, T.33 N., R.58 E., Sheridan County, Hydrologic Unit 10060006, on left bank, at downstream end of dike, just north of Medicine Lake National Wildlife Refuge and 1.7 mi southeast of Dagmar.

DRAINAGE AREA.--101 mi^2.

PERIOD OF RECORD.--September 1985 to October 1989, March 1995 to current year (seasonal records only since 1986).

GAGE.--Water-stage recorder. Elevation of gage is 1,979 ft (NGVD 29).

REMARKS.--Records fair. Numerous diversions upstream for irrigation. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	2.3	0.10	2.4	0.00	0.00	0.00	0.00		
2			e0.00	2.9	0.03	2.1	0.00	0.00	0.00	0.00		
3			e0.00	2.6	0.03	2.4	0.00	0.00	0.00	0.00		
4			e0.00	2.4	0.00	2.4	0.00	0.00	0.00	0.00		
5			e0.00	2.4	0.00	1.7	0.11	0.00	0.00	e0.00		
6			e0.00	1.3	0.00	1.2	0.20	0.00	0.00	e0.00		
7			e0.00	0.23	0.00	1.1	0.34	0.00	0.00	e0.00		
8			e0.00	0.40	0.00	1.1	0.68	0.00	0.00	e0.00		
9			e0.00	0.49	0.00	0.91	2.2	0.00	0.00	e0.00		
10			e0.00	0.58	0.00	1.7	2.5	0.00	0.00	e0.00		
11			e0.00	1.1	0.22	3.5	2.5	0.00	0.00	e0.00		
12			e0.00	1.1	0.36	4.1	2.5	0.00	0.00	e0.00		
13			e0.00	1.4	0.41	3.9	2.5	0.00	0.00	e0.00		
14			e0.00	1.3	0.56	3.7	2.0	0.00	0.00	e0.00		
15			e0.00	1.2	0.71	3.0	1.2	0.00	0.00	e0.00		
16			e0.00	1.2	0.63	2.5	0.92	0.00	0.00	e0.00		
17			e0.00	1.3	0.61	2.4	0.67	0.00	0.00	e0.00		
18			e0.00	1.5	0.46	1.9	0.52	0.00	0.00	e0.00		
19			e0.00	1.2	0.82	1.5	0.50	0.00	0.00	e0.00		
20			e0.00	1.1	1.1	1.2	0.49	0.00	0.00	e0.00		
21			e0.00	0.97	1.4	0.93	0.47	0.00	0.00	e0.00		
22			e0.00	0.61	1.4	0.72	0.45	0.00	0.00	e0.00		
23			2.6	0.50	1.2	0.69	0.39	0.00	0.00	e0.00		
24			3.9	0.44	2.1	0.51	0.29	0.00	0.00	e0.00		
25			12	0.40	2.3	0.50	0.15	0.00	0.00	e0.00		
26			14	0.30	1.7	0.29	0.04	0.00	0.00	e0.00		
27			13	0.25	2.4	0.03	0.01	0.00	0.00	e0.00		
28			12	0.27	2.5	0.00	0.00	0.00	0.00	e0.00		
29			9.5	0.16	2.5	0.01	0.01	0.00	0.00	e0.00		
30			6.9	0.16	2.8	0.02	0.00	0.00	0.00	e0.00		
31			2.7	---	2.8	---	0.00	0.00	---	e0.00		
TOTAL			76.60	32.06	29.14	48.41	21.64	0.00	0.00	0.00		
MEAN			2.47	1.07	0.94	1.61	0.70	0.00	0.00	0.00		
MAX			14	2.9	2.8	4.1	2.5	0.00	0.00	0.00		
MIN			0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT			152	64	58	96	43	0.00	0.00	0.00		

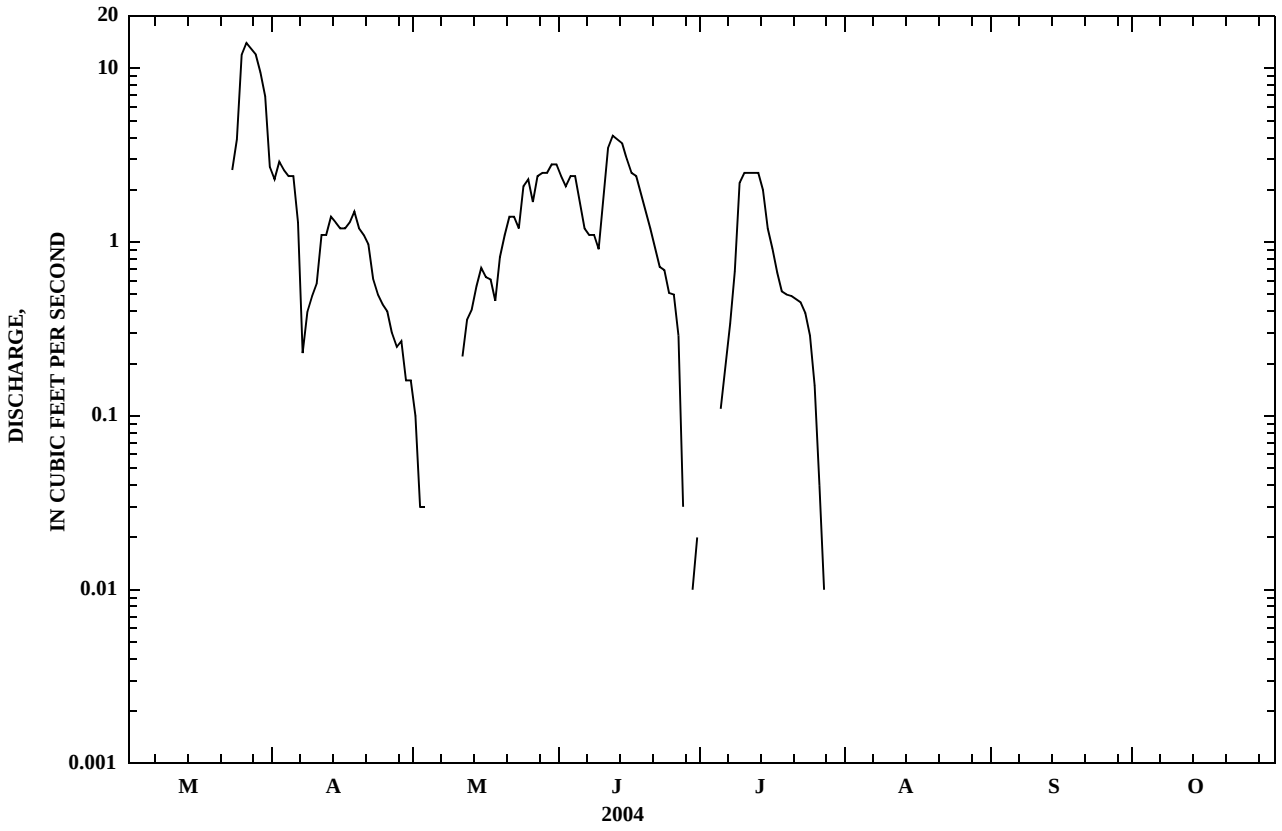
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1986 - 2004*

MEAN	11.6	10.0	0.93	0.42	0.37	0.04	0.00	0.00
MAX	83.4	45.1	3.35	2.81	1.40	0.26	0.00	0.00
(WY)	(2003)	(1997)	(1986)	(2000)	(1999)	(1999)	(1986)	(1986)
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1988)	(1988)	(1998)	(1997)	(1986)	(1986)	(1986)	(1986)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1986 - 2004*	
HIGHEST DAILY MEAN	14	Mar 26	950	Mar 20, 2003
LOWEST DAILY MEAN	a0.00	Oct 1	a0.00	Oct 1, 1985
MAXIMUM PEAK FLOW	15	Mar 25	950	Mar 20, 2003
MAXIMUM PEAK STAGE	6.16	Mar 25	10.05	Mar 20, 2003

*--During periods of operation (September 1985 to October 1989, March 1995 to current year).
a--No flow many days most years.
e--Estimated.

06183750 LAKE CREEK NEAR DAGMAR, MT—Continued



06183800 COTTONWOOD CREEK NEAR DAGMAR, MT

LOCATION.--Lat 48°30'35", long 104°10'23" (NAD 27), in SE¼NE¼SE¼ sec. 21, T.32 N., R.58 E., Sheridan County, Hydrologic Unit 10060006, on right bank, at bridge on county road 1.2 mi southeast of Medicine Lake National Wildlife Refuge, and 5.3 mi south of Dagmar.

DRAINAGE AREA.--126 mi^2.

PERIOD OF RECORD.--August 1985 to September 1989, March 1995 to current year, seasonal records only.

GAGE.--Water-stage recorder. Elevation of gage is 1,975 ft (NGVD 29).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	13	0.26	2.7	0.12	0.32	0.04	0.03		
2			e0.00	11	0.24	2.5	0.14	0.28	0.03	0.05		
3			e0.00	12	0.24	2.6	0.14	0.31	0.06	0.07		
4			e0.00	10	0.23	2.1	0.17	0.31	0.08	0.05		
5			e0.00	8.0	0.20	1.8	0.16	0.35	0.08	0.05		
6			e0.00	6.4	0.16	1.5	0.14	0.24	0.08	0.03		
7			e0.00	5.2	0.18	0.92	0.17	0.19	0.10	0.01		
8			e0.00	4.5	0.20	0.53	1.2	0.16	0.09	0.03		
9			e0.00	3.8	0.19	0.40	5.1	0.15	0.09	0.01		
10			e0.00	3.2	0.16	0.81	2.3	0.19	0.10	0.02		
11			e0.00	2.7	0.77	1.6	1.5	0.17	0.12	0.05		
12			e0.00	2.4	1.7	2.1	5.7	0.19	0.14	0.05		
13			e0.00	2.2	3.0	1.9	17	0.25	0.14	0.06		
14			e0.00	2.1	4.5	1.4	13	0.22	0.16	0.05		
15			e0.00	1.9	3.2	0.83	8.1	0.22	0.16	0.09		
16			e0.00	1.9	2.3	0.71	4.2	0.24	0.16	0.10		
17			e0.00	1.7	1.9	0.48	2.8	0.23	0.16	0.09		
18			e0.00	1.9	1.3	0.45	1.9	0.20	0.16	0.09		
19			e0.00	2.0	1.8	0.39	1.2	0.20	0.17	0.09		
20			e0.00	1.9	3.0	0.36	1.1	0.19	0.19	0.10		
21			e0.00	1.6	2.3	0.34	1.2	0.20	0.20	0.09		
22			e0.00	1.6	1.9	0.29	1.0	0.20	0.22	0.09		
23			e0.00	1.7	1.8	0.26	0.57	0.20	0.21	0.07		
24			e1.0	1.0	2.4	0.23	0.34	0.19	0.21	0.09		
25			e10	0.63	3.6	0.20	0.31	0.21	0.20	0.08		
26			e50	0.44	2.8	0.18	0.30	0.21	0.17	0.09		
27			e40	0.39	2.3	0.20	0.29	0.20	0.16	0.06		
28			e30	0.35	2.4	0.21	0.29	0.19	0.13	0.05		
29			e20	0.30	2.6	0.20	0.26	0.14	0.11	0.07		
30			e18	0.30	3.2	0.17	0.25	0.09	0.06	0.07		
31			16	---	3.1	---	0.28	0.06	---	0.08		
TOTAL			185.00	106.11	53.93	28.36	71.23	6.50	3.98	1.96		
MEAN			5.97	3.54	1.74	0.95	2.30	0.21	0.13	0.06		
MAX			50	13	4.5	2.7	17	0.35	0.22	0.10		
MIN			0.00	0.30	0.16	0.17	0.12	0.06	0.03	0.01		
AC-FT			367	210	107	56	141	13	7.9	3.9		

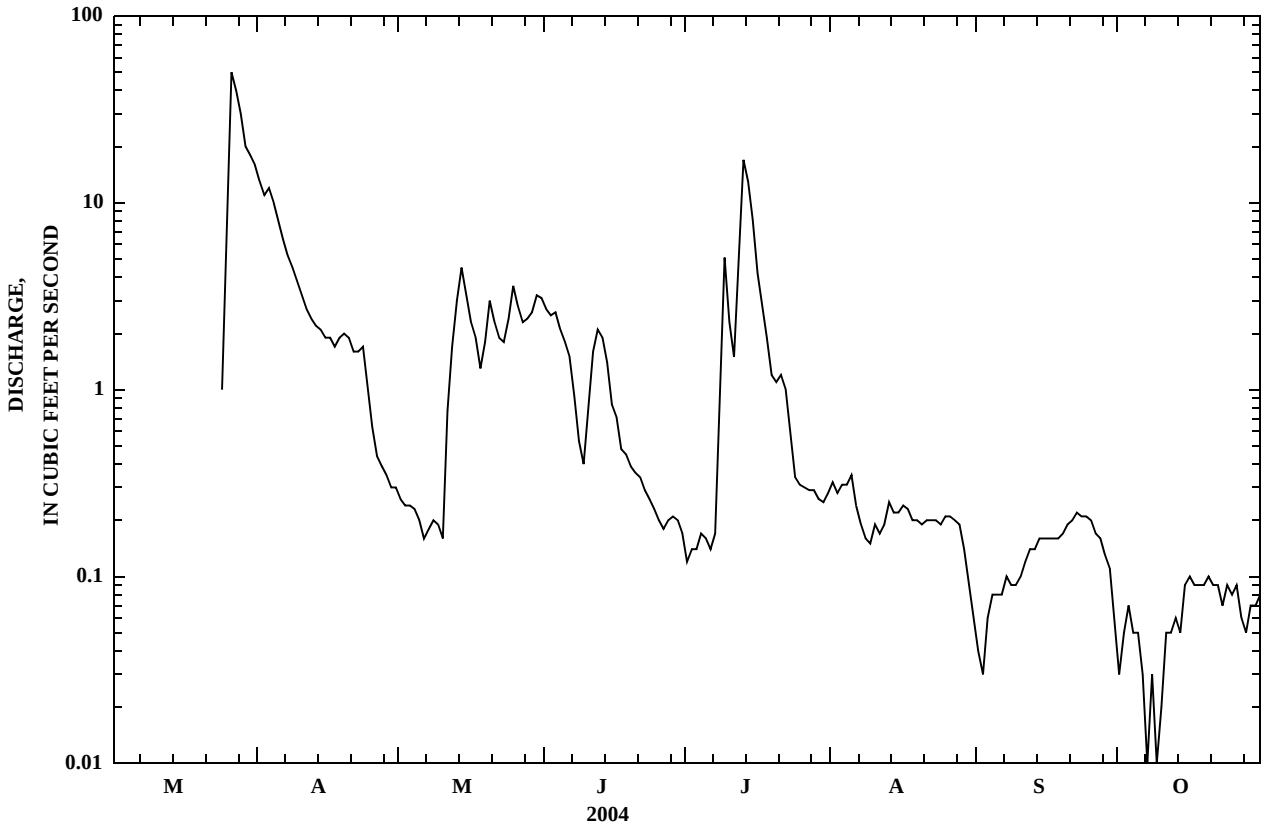
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1986 - 2004*

MEAN	33.3	8.63	1.54	1.59	5.40	0.14	0.04	0.01
MAX	140	32.6	6.95	13.7	27.4	0.71	0.33	0.10
(WY)	(2003)	(1987)	(1999)	(2000)	(1997)	(1999)	(1997)	(2001)
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1988)	(1988)	(1988)	(1987)	(1986)	(1986)	(1986)	(1986)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1986 - 2004*	
HIGHEST DAILY MEAN	50	Mar 26	1,810	Mar 18, 2003
LOWEST DAILY MEAN	0.00	Oct 1	b0.00	Oct 1, 1985
MAXIMUM PEAK FLOW	unknown		c3,380	Mar 18, 2003
MAXIMUM PEAK STAGE	a4.59	Mar 25	8.76	Mar 22, 1997

*--During periods of operation (1985-89, 1995 to current year; seasonal records only).
a--Backwater from ice.
b--No flow most years.
c--Gage height, 8.43 ft, from floodmark.
e--Estimated.

06183800 COTTONWOOD CREEK NEAR DAGMAR, MT—Continued



06183850 SAND CREEK NEAR DAGMAR, MT

LOCATION.--Lat 48°29'38", long 104°16'23" (NAD 27), in SE¼NW¼NW¼ sec. 26, T.32 N., R.57 E., Sheridan County, Hydrologic Unit 10060006, at Medicine Lake National Wildlife Refuge boundary, on right bank at downstream end of culvert on county road, 1.0 mi upstream from mouth, and 7 mi southwest of Dagmar.

DRAINAGE AREA.--122 mi^2.

PERIOD OF RECORD.--August 1985 to September 1989, March 1995 to current year (seasonal records).

GAGE.--Water-stage recorder. Elevation of gage is 1,945 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known diversions for irrigation upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e0.00	16	0.00	e3.0	e0.15	0.44	0.00	0.00		
2			e0.00	14	0.00	e2.5	e0.15	0.38	0.00	0.00		
3			e0.00	11	0.00	e2.5	e0.15	0.66	0.00	0.00		
4			e0.00	11	0.00	e2.0	e0.20	0.99	0.00	0.00		
5			e0.00	8.6	0.00	e2.0	e0.15	1.3	0.00	0.00		
6			e0.00	5.8	0.00	e1.5	e0.15	1.5	0.00	0.00		
7			e0.00	4.6	0.00	e1.0	e0.20	1.3	0.00	0.00		
8			e0.00	4.0	0.00	e0.55	e1.5	0.90	0.00	0.00		
9			e0.00	3.2	0.00	e0.40	e5.0	0.78	0.00	0.00		
10			e0.00	2.4	0.00	e0.80	e2.5	0.64	0.00	0.00		
11			e0.00	2.1	0.45	e1.5	e1.5	0.66	0.00	0.00		
12			e0.00	1.9	1.3	e2.0	e6.0	0.69	0.00	0.00		
13			e0.00	1.7	5.1	e2.0	e15	0.63	0.00	0.00		
14			e0.00	1.3	6.3	e1.5	e15	0.45	0.00	0.00		
15			e0.00	1.2	4.9	e0.85	e8.0	0.31	0.00	0.00		
16			e0.00	1.3	2.8	e0.70	e4.0	0.17	0.00	0.00		
17			e0.00	2.0	1.6	e0.50	e3.0	0.08	0.00	0.00		
18			e0.00	2.0	0.94	e0.45	e2.0	0.06	0.00	0.00		
19			e0.00	1.7	1.6	e0.40	e1.5	0.03	0.00	0.00		
20			e0.00	1.9	3.8	e0.35	e1.0	0.00	0.00	0.00		
21			e0.00	1.6	4.7	e0.35	e1.0	0.00	0.00	0.00		
22			e0.00	1.1	3.7	e0.30	e1.0	0.00	0.00	0.29		
23			e0.00	0.85	3.1	e0.25	e0.60	0.00	0.00	0.31		
24			e1.0	0.72	4.0	e0.25	e0.35	0.00	0.00	0.42		
25			e6.0	0.70	5.0	e0.20	e0.30	0.00	0.00	0.26		
26			e40	0.40	6.6	e0.20	0.87	0.00	0.00	0.23		
27			e35	0.28	e3.0	e0.20	0.71	0.00	0.00	0.25		
28			e30	0.19	e2.5	e0.20	0.55	0.00	0.00	0.56		
29			e25	0.13	e2.5	e0.20	0.47	0.00	0.00	0.67		
30			e20	0.09	e3.0	e0.15	0.37	0.00	0.00	0.65		
31			18	---	e3.0	---	0.32	0.00	---	0.67		
TOTAL			175.00	103.76	69.89	28.80	73.69	11.97	0.00	4.31		
MEAN			5.65	3.46	2.25	0.96	2.38	0.39	0.00	0.14		
MAX			40	16	6.6	3.0	15	1.5	0.00	0.67		
MIN			0.00	0.09	0.00	0.15	0.15	0.00	0.00	0.00		
AC-FT			347	206	139	57	146	24	0.00	8.5		

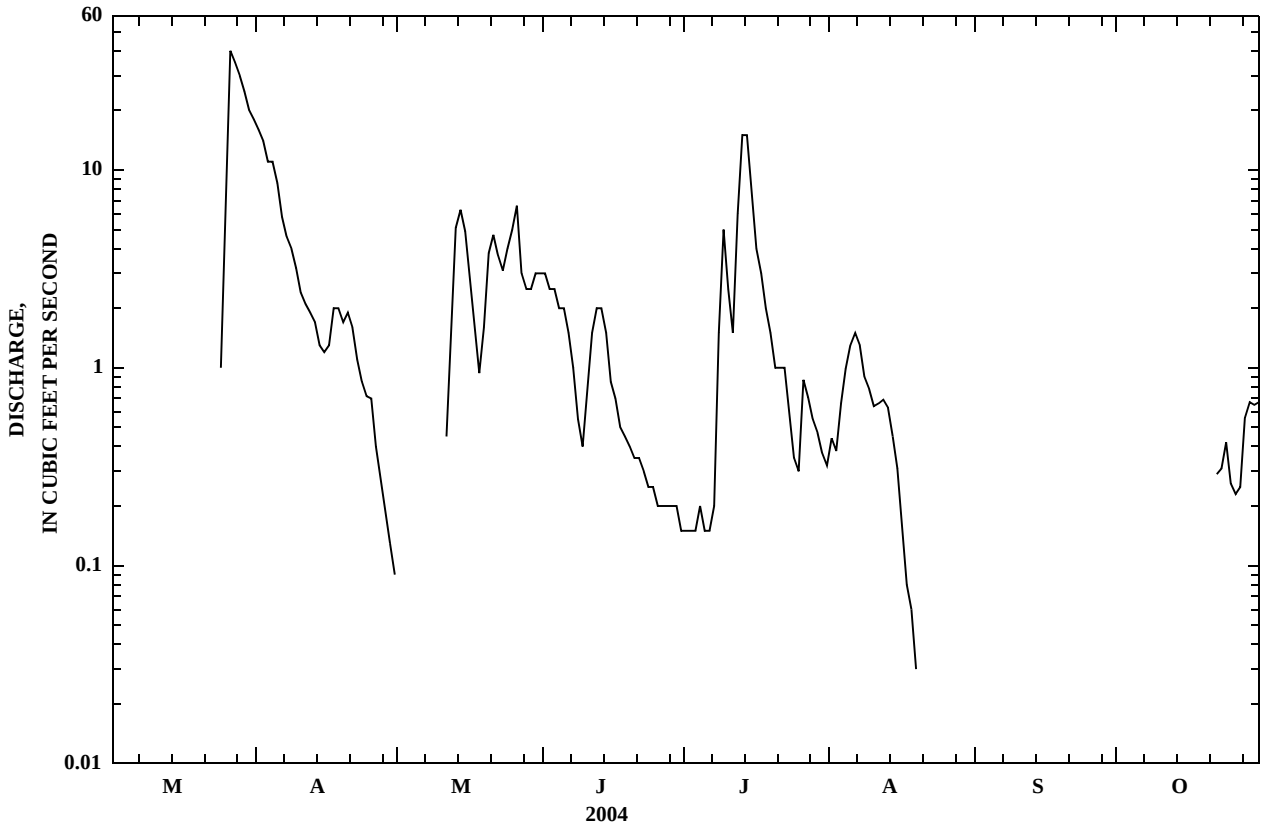
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1986 - 2004*

MEAN	10.4	6.29	1.87	2.11	3.49	0.34	0.06	0.01
MAX	33.1	16.7	6.80	9.06	21.6	3.34	0.80	0.14
(WY)	(1999)	(1987)	(1999)	(2000)	(1997)	(1997)	(1997)	(2005)
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1988)	(1988)	(1988)	(1988)	(1986)	(1986)	(1986)	(1986)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1986 - 2004*	
HIGHEST DAILY MEAN	40	Mar 26	200	Mar 18, 2003
LOWEST DAILY MEAN	0.00	Mar 1	b0.00	Oct 1, 1985
MAXIMUM PEAK FLOW	Unknown		c284	Mar 18, 2003
MAXIMUM PEAK STAGE	a3.40	Mar 26	d5.80	Mar 26, 1997

*--During periods of operation (1985-89, 1995 to current year; seasonal records only).
a--Backwater from ice.
b--No flow most years.
c--Result of culvert computation of peak flow.
d--From floodmark, probable date, backwater from ice.
e--Estimated.

06183850 SAND CREEK NEAR DAGMAR, MT—Continued



06185500 MISSOURI RIVER NEAR CULBERTSON, MT
(National Stream Quality Accounting Network Station)

LOCATION.--Lat 48°07'30", long 104°28'20" (NAD 27), in SE¼NW¼ sec.3, T.27 N., R.56 E., Richland County, Hydrologic Unit 10060005, on right bank at upstream side of bridge on State Highway 16, 2.5 mi southeast of Culbertson, 10 mi downstream from Big Muddy Creek, and at river mile 1,620.76.

DRAINAGE AREA.--91,557 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1941 to December 1951, April 1958 to current year.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,883.4 ft (NGVD 29) (U.S. Army Corps of Engineers bench mark). July 1 to Nov. 6, 1941, water-stage recorder at site 400 ft upstream at elevation 0.11 ft higher. Nov. 7, 1941, to Aug. 17, 1950, water-stage recorder at site 580 ft downstream at present elevation. Aug. 18, 1950, to Dec. 31, 1951, nonrecording gage on bridge at present elevation. Apr. 1, 1958, to Nov. 1, 1967, water-stage recorder at site 580 ft downstream at present elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow partly regulated by Fort Peck Lake (station number 06131500) and many other reservoirs upstream from station. Diversions for irrigation of about 1,030,400 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,720	4,910	e8,700	e8,600	e9,000	e9,200	11,200	11,200	12,700	6,110	7,680	6,860
2	4,630	4,830	e8,400	e8,900	e9,000	e8,000	10,500	11,100	11,400	6,220	7,770	6,980
3	4,600	4,840	e8,600	e9,100	e9,000	e7,900	10,200	11,200	10,300	6,220	8,010	7,000
4	4,600	4,830	e8,600	e9,200	e9,100	e7,400	9,590	11,100	9,450	6,890	8,210	7,000
5	4,580	e4,200	e8,300	e9,200	e9,100	e6,800	9,120	11,000	9,590	7,570	8,570	7,110
6	4,540	e3,500	e8,500	e8,900	e9,000	e6,600	8,570	11,100	9,280	7,780	7,730	7,340
7	4,500	e3,700	e8,700	e8,900	e9,300	e6,500	8,120	10,900	8,700	7,890	7,240	7,520
8	4,490	e4,300	e8,800	e8,800	e9,200	e6,700	7,690	11,000	8,210	8,070	7,350	7,320
9	4,460	e4,900	e8,700	e8,700	e9,500	e6,400	7,210	10,900	8,080	8,210	7,310	7,170
10	4,510	e4,900	e8,600	e8,800	e9,600	e6,700	6,860	10,800	7,940	7,980	7,220	7,150
11	4,550	e4,800	e8,600	e9,000	e9,500	e6,700	6,650	11,300	8,000	7,790	7,130	7,140
12	4,500	e4,900	e8,600	e9,100	e9,300	e6,500	6,390	11,400	7,950	7,830	7,010	7,120
13	4,470	e4,900	e8,800	e9,000	e9,100	e6,500	6,450	11,600	8,000	7,710	6,850	6,740
14	4,500	e4,900	e9,300	e9,000	e8,900	e6,400	6,430	11,700	8,200	7,720	7,050	6,890
15	4,520	e4,800	e8,700	e9,200	e9,100	e6,000	6,270	11,600	9,300	7,500	7,160	7,000
16	4,520	e4,800	e8,600	e9,200	e9,100	e6,000	7,020	11,400	10,200	7,530	6,950	7,120
17	4,610	e4,800	e8,600	e8,800	e8,900	e5,900	7,190	11,400	9,970	7,660	6,960	7,010
18	4,820	e4,800	e8,500	e9,000	e8,900	e7,100	6,790	11,300	8,820	7,540	6,870	6,980
19	4,760	e4,800	e8,600	e9,200	e9,000	e7,900	6,680	11,500	8,160	7,430	6,740	6,900
20	4,620	e4,800	e8,500	e9,400	e8,900	e8,500	6,600	11,700	7,800	7,290	6,840	e6,800
21	4,590	e5,000	e8,500	e9,600	e8,600	e9,800	6,460	11,800	7,570	7,380	e7,000	e6,500
22	4,580	e4,800	e8,600	e9,300	e8,500	e11,000	6,560	11,400	7,190	7,290	e6,900	e6,100
23	4,600	e4,800	e8,600	e9,300	e8,700	e11,000	7,020	11,700	7,010	6,930	e7,000	e5,600
24	4,580	e4,600	e8,600	e9,300	e9,100	e12,000	7,250	12,100	6,800	6,870	6,690	5,390
25	4,610	e5,000	e8,700	e9,100	e9,800	e13,000	7,220	12,900	6,520	7,020	6,620	5,010
26	4,610	e6,700	e8,400	e9,300	e9,500	e14,000	7,110	13,500	6,380	7,070	6,650	4,800
27	4,630	e7,200	e8,200	e9,000	e9,300	e14,000	8,230	14,000	6,230	6,930	6,680	4,950
28	4,660	e8,100	e8,000	e9,100	e9,400	e13,000	9,120	14,700	6,170	6,850	6,850	5,070
29	4,760	e8,900	e8,300	e9,200	e9,400	12,200	10,800	15,700	6,200	6,930	6,860	4,970
30	4,850	e9,200	e8,700	e9,000	---	12,100	11,600	15,500	6,170	7,180	6,890	4,880
31	4,960	---	e8,300	e9,000	---	11,700	---	13,100	---	7,450	6,870	---
TOTAL	142,930	157,510	265,600	281,200	264,800	273,500	236,900	371,600	248,290	226,840	221,660	194,420
MEAN	4,611	5,250	8,568	9,071	9,131	8,823	7,897	11,990	8,276	7,317	7,150	6,481
MAX	4,960	9,200	9,300	9,600	9,800	14,000	11,600	15,700	12,700	8,210	8,570	7,520
MIN	4,460	3,500	8,000	8,600	8,500	5,900	6,270	10,800	6,170	6,110	6,620	4,800
AC-FT	283,500	312,400	526,800	557,800	525,200	542,500	469,900	737,100	492,500	449,900	439,700	385,600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941- 2004, BY WATER YEAR (WY)*

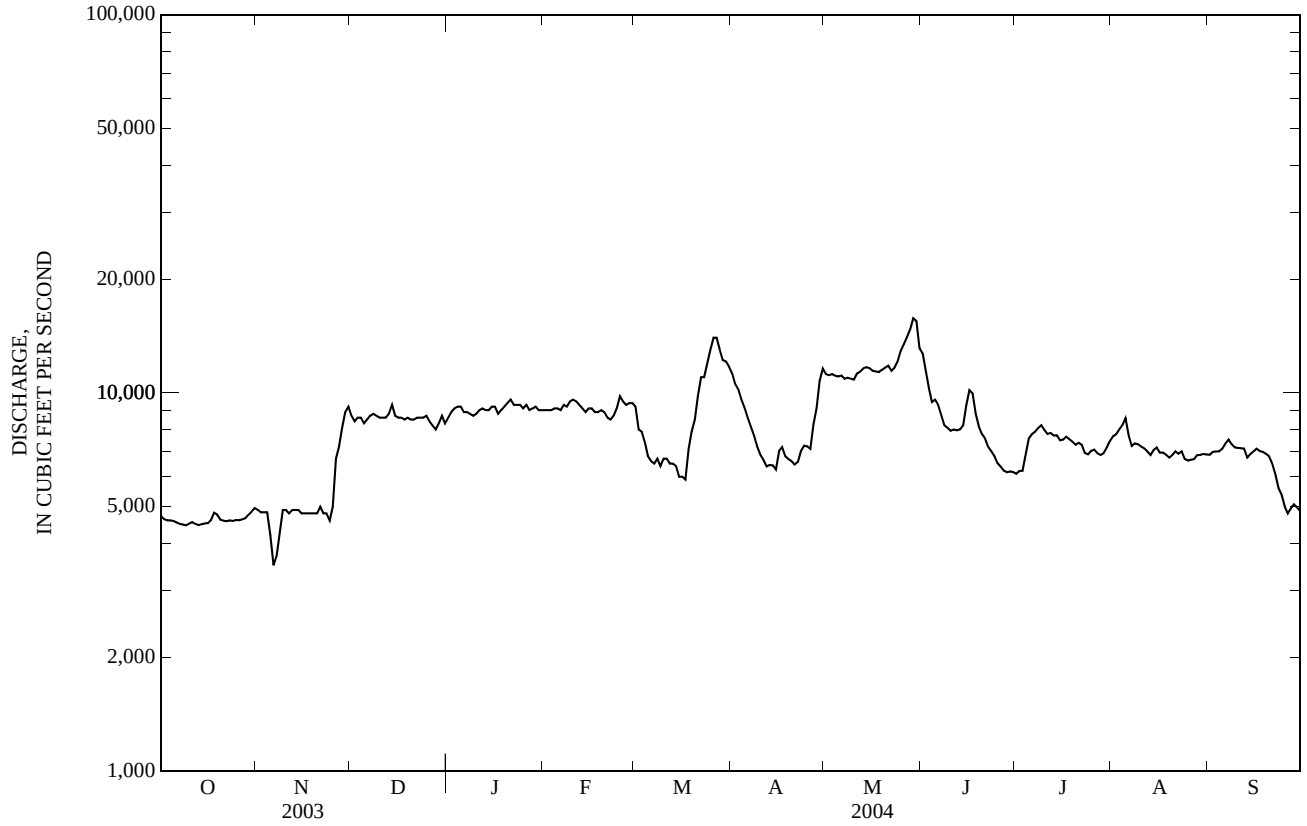
MEAN	10,490	9,127	9,149	9,902	10,490	10,290	10,450	9,599	9,698	10,150	11,220	10,950
MAX	28,570	22,440	13,280	14,400	17,450	20,690	32,840	26,650	26,650	37,050	25,300	20,590
(WY)	(1949)	(1952)	(1944)	(1986)	(1976)	(1976)	(1979)	(1975)	(1975)	(1975)	(1948)	(1948)
MIN	1,237	1,126	1,061	1,010	1,167	2,674	1,965	1,366	1,366	1,273	3,823	3,771
(WY)	(1942)	(1942)	(1942)	(1943)	(1942)	(1950)	(1945)	(1945)	(1945)	(1945	(1963)	(1992)

06185500 MISSOURI RIVER NEAR CULBERTSON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1941 - 2004*	
ANNUAL TOTAL	2,896,580		2,885,250			
ANNUAL MEAN	7,936		7,883		10,130	
HIGHEST ANNUAL MEAN					19,910	1952
LOWEST ANNUAL MEAN					4,083	1942
HIGHEST DAILY MEAN	12,000	May 15	15,700	May 29	69,200	Mar 27, 1943
LOWEST DAILY MEAN	3,500	Nov 6	3,500	Nov 6	575	Nov 22, 1941
ANNUAL SEVEN-DAY MINIMUM	4,310	Nov 2	4,310	Nov 2	709	Nov 19, 1941
MAXIMUM PEAK FLOW			16,000	May 29	a78,200	Mar 26, 1943
MAXIMUM PEAK STAGE			7.65	May 29	b19.66	Apr 14, 1979
INSTANTANEOUS LOW FLOW			3,500	Nov 6	575	Nov 22, 1941
ANNUAL RUNOFF (AC-FT)	5,745,000		5,723,000		7,337,000	
10 PERCENT EXCEEDS	10,300		11,100		15,800	
50 PERCENT EXCEEDS	8,200		7,750		9,330	
90 PERCENT EXCEEDS	4,740		4,800		4,500	

SUMMARY STATISTICS	WATER YEARS 1941 - 1951**		WATER YEARS 1958 - 2004***	
ANNUAL MEAN	9,245		10,280	
HIGHEST ANNUAL MEAN	14,520	1948	16,580	1975
LOWEST ANNUAL MEAN	4,083	1942	6,121	1963
HIGHEST DAILY MEAN	69,200	Mar 27, 1943	52,000	Apr 18, 1979
LOWEST DAILY MEAN	575	Nov 22, 1941	2,000	Nov 20, 1964
ANNUAL SEVEN-DAY MINIMUM	709	Nov 19, 1941	2,130	Nov 19, 1964
MAXIMUM PEAK FLOW	a78,200	Mar 26, 1943	c55,000	Mar 23, 1960
MAXIMUM PEAK STAGE	b15.12	Mar 26, 1943	b19.66	Apr 14, 1979
ANNUAL RUNOFF (AC-FT)	6,698,000		7,444,000	
10 PERCENT EXCEEDS	21,000		15,000	
50 PERCENT EXCEEDS	6,190		9,510	
90 PERCENT EXCEEDS	1,400		5,700	

*--During period of operation (1941-52, 1958 to current year).
**--Before operational level at Fort Peck Lake was reached.
***--After operational level at Fort Peck Lake was reached.
a--Gage height, 14.80 ft, from rating curve extended above 30,000 ft^3/s.
b--Backwater from ice.
c--Gage height, 19.14 ft.
e--Estimated.



06185500 MISSOURI RIVER NEAR CULBERTSON, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946, 1965 to 1986, 1991 to 1994, October 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1965 to September 1981.
WATER TEMPERATURE: July 1965 to September 1979, seasonal records starting July 18, 2002 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to September 1976.

INSTRUMENTATION.--Temperature probe installed July 17, 2002.

REMARKS.--Daily water temperature records are rated excellent.

EXTREMES FOR PERIOD OF DAILY RECORD:
SPECIFIC CONDUCTANCE: Maximum daily, 941 microsiemens per centimeter (μS/cm) at 25°C, Jan. 19, 1980; minimum daily, 338 μS/cm at 25°C, Mar. 30, 1967.
WATER TEMPERATURE: Maximum 26.0°C, Aug. 14, 2003; minimum, 0.0°C, on many days during winter period.
SEDIMENT CONCENTRATION: Maximum daily mean, 2,940 mg/L, Aug. 15, 1974; minimum daily mean, 30 mg/L, Jan. 13, 1975.
SEDIMENT LOAD: Maximum daily, 147,000 tons, June 5, 1975; minimum daily, 421 tons, Jan. 13, 1975.

EXTREMES FOR CURRENT YEAR:
WATER TEMPERATURE: During period of seasonal operation, maximum 25.5°C, July 18; minimum, 5.5°C, Apr. 19 and May 13, 14.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
OCT													
20...	1200	4,630	19	.048	.032	722	12.4	124	8.6	609	24.0	13.0	220
MAR													
29...	1345	12,200	E880	.103	.077	728	12.8	102	8.3	516	12.0	4.0	150
APR													
12...	1100	6,410	150	.093	.067	720	11.0	96	8.5	608	10.0	7.0	200
MAY													
17...	1130	11,400	46	.048	.032	720	10.0	101	8.4	591	22.0	13.0	210
JUN													
08...	1145	8,230	81	.090	.064	725	10.0	109	8.1	645	20.0	17.0	210
22...	1115	7,290	96	.097	.071	719	7.4	84	8.5	637	20.5	18.5	210
JUL													
26...	1115	7,080	34	.051	.035	716	8.9	109	8.5	594	38.0	22.0	220
AUG													
23...	1200	7,040	29	.046	.032	709	6.2	69	8.5	569	20.0	17.0	210

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alkalinity, wate,r fltrd inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wate,r fltrd incrm. titr., field, mg/L (00453)	Carbonate, water, fltrd incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)
OCT													
20...	54.2	21.2	4.33	1	49.1	166	154	179	4	10.6	.9	7.20	132
MAR													
29...	35.2	14.8	4.54	2	53.5	114	113	137	.0	6.72	.5	5.47	136
APR													
12...	45.2	20.1	4.41	2	58.2	153	150	183	.0	8.69	.7	6.67	144
MAY													
17...	51.9	19.3	3.84	1	38.2	163	175	213	.0	10.0	.9	6.16	125
JUN													
08...	48.7	20.7	4.64	2	58.2	167	168	204	.0	10.2	.8	6.39	148
22...	48.4	20.4	4.59	2	57.0	164	157	191	.0	9.29	.8	7.32	146
JUL													
26...	53.1	20.2	4.01	1	39.0	165	163	199	.0	9.93	.9	6.93	124
AUG													
23...	49.7	19.6	3.59	1	37.8	162	162	185	6	9.44	.9	6.60	121

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)
OCT													
20...	373	.53	4,840	387	.14	.30	<.010	<.016	<.002	E.005	.010	.140	1.2
MAR													
29...	325	.45	10,900	330	.32	1.9	.051	.213	.006	.006	.025	1.01	10.8
APR													
12...	378	.54	6,840	395	.23	.58	<.010	.034	E.001	.006	.015	.28	3.6
MAY													
17...	361	.50	11,400	371	.17	.31	<.010	<.016	<.002	.006	.008	.185	.6
JUN													
08...	398	.57	9,280	418	.20	.54	<.010	E.009	<.002	.007	.013	.30	5.2
22...	389	.56	8,080	410	.20	.48	<.010	E.012	<.002	.009	.015	.200	3.2
JUL													
26...	357	.50	7,060	369	.17	.25	<.010	<.016	<.002	.008	.014	.122	3.2
AUG													
23...	346	.49	6,830	359	.14	.35	<.010	E.009	<.002	.006	.013	.142	2.2

Date	Inor-ganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, fltrd, ug/L (01030)
OCT													
20...	.2	1.0	2.4	.8	3.1	2.5	--	--	--	111	--	--	--
MAR													
29...	.2	10.5	4.6	5.5	3.4	1.4	--	--	--	98	--	--	--
APR													
12...	<.1	3.6	3.8	1.6	4.4	2.1	--	--	--	120	--	--	--
MAY													
17...	<.1	1.3	2.4	.6	2.1	2.3	5	35	91	101	<.04	.07	<.8
JUN													
08...	.2	5.0	5.4	1.8	8.1	2.5	--	--	--	121	--	--	--
22...	.4	2.9	4.1	2.1	9.4	2.5	6	41	90	126	<.04	.07	<.8
JUL													
26...	.2	3.0	2.2	.7	1.4	2.6	6	38	75	114	<.04	.05	<.8
AUG													
23...	<.1	2.1	2.2	1.2	2.9	2.3	5	36	80	113	<.04	.06	<.8

Date	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)
OCT													
20...	--	--	--	E4	--	--	--	68.5	--	--	--	--	--
MAR													
29...	--	--	--	E5	--	--	--	43.0	--	--	--	--	--
APR													
12...	--	--	--	<6	--	--	--	61.3	--	--	--	--	--
MAY													
17...	2.6	1.9	6.1	<6	4,280	<.08	2.99	54.9	.7	90	<.02	<.02	2.17
JUN													
08...	--	--	--	<6	--	--	--	63.8	--	--	--	--	--
22...	3.3	2.7	7.9	6	4,460	<.08	3.38	58.3	.6	97	<.02	E.01	2.43
JUL													
26...	2.3	2.3	6.2	<6	2,850	<.08	2.18	60.0	.6	62	<.02	<.02	2.01
AUG													
23...	2.5	1.7	5.5	<6	3,380	<.08	2.36	63.4	.6	66	<.02	<.02	2.63

E--Estimated.

06185500 MISSOURI RIVER NEAR CULBERTSON, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Nickel, water, unfltrd recover-able, ug/L (01067)	Selen-ium, water, fltrd, ug/L (01145)	Selen-ium, water, unfltrd ug/L (01147)	Stront-ium, water, fltrd, ug/L (01080)	Vanad-ium, water, fltrd, ug/L (01085)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)
OCT													
20...	--	.8	--	530	1.0	--	--	<.006	<.006	<.006	<.004	<.005	83.9
MAR													
29...	--	.8	--	329	1.4	--	--	<.006	<.006	<.006	<.005	<.005	90.0
APR													
12...	--	.7	--	416	1.4	--	--	<.006	<.006	<.006	<.005	<.005	92.0
MAY													
17...	7.23	.5	.5	490	1.2	E.6	15	<.006	<.006	<.006	<.005	<.005	98.7
JUN													
08...	--	.7	--	448	2.4	--	--	<.006	<.006	<.006	<.005	<.005	97.7
22...	7.82	.6	.8	435	1.5	1.0	19	<.006	<.006	<.006	<.005	<.005	99.5
JUL													
26...	5.92	.7	.7	461	1.2	E.5	12	<.006	<.006	<.006	<.005	<.005	101
AUG													
23...	7.70	.7	1.2	468	1.1	.6	14	<.006	<.006	<.006	<.005	<.005	98.2

Date	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diazi-non-d10 surrog. wat flt 0.7u GF percent recovry (91063)
OCT													
20...	<.007	<.050	<.010	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.004	<.005	104
MAR													
29...	<.007	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	116
APR													
12...	<.007	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	113
MAY													
17...	<.007	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	116
JUN													
08...	<.007	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	115
22...	E.003	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	109
JUL													
26...	<.010	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	111
AUG													
23...	<.007	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	118

Date	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)
OCT													
20...	<.005	<.02	<.002	<.009	<.005	<.009	<.005	<.005	<.007	<.003	<.004	<.035	<.027
MAR													
29...	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027
APR													
12...	<.009	<.02	<.007	<.009	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027
MAY													
17...	<.009	<.02	<.007	<.009	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027
JUN													
08...	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027
22...	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027
JUL													
26...	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027
AUG													
23...	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027

E--Estimated.

06185500 MISSOURI RIVER NEAR CULBERTSON, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)
OCT													
20...	<.006	<.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.010
MAR													
29...	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025
APR													
12...	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025
MAY													
17...	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025
JUN													
08...	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025
22...	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	.01	<.007	<.025
JUL													
26...	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025
AUG													
23...	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025

Date	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
OCT												
20...	<.011	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	33	129	1,610
MAR												
29...	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009	80	1,540	50,700
APR												
12...	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009	76	1,150	19,900
MAY												
17...	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009	40	283	8,710
JUN												
08...	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009	52	408	9,070
22...	<.011	<.02	<.005	<.02	E.037	<.02	<.010	<.002	<.009	48	374	7,360
JUL												
26...	<.011	<.20	<.005	<.02	<.034	<.02	<.010	<.002	<.009	35	230	4,400
AUG												
23...	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009	39	223	4,240

E--Estimated.

06185500 MISSOURI RIVER NEAR CULBERTSON, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		APRIL			MAY			JUNE			JULY	
1	8.0	6.5	7.0	10.0	8.5	9.0	13.5	13.0	13.5	21.0	20.0	20.5
2	7.0	6.0	6.5	10.5	8.5	9.5	15.5	13.0	14.0	23.0	19.5	21.0
3	7.5	6.0	6.5	12.0	10.0	11.0	17.5	15.0	16.0	23.5	21.0	22.0
4	8.5	6.5	7.5	13.0	10.5	12.0	19.5	17.0	18.0	21.5	18.5	20.0
5	9.5	8.0	8.5	14.0	12.5	13.0	20.5	18.5	19.5	18.5	17.5	18.0
6	9.5	9.0	9.0	13.5	12.0	12.5	21.0	19.0	20.0	19.0	16.5	18.0
7	10.5	8.5	9.5	14.0	11.5	12.5	19.5	18.0	19.0	19.0	17.5	18.0
8	10.0	8.5	9.0	14.0	12.5	13.5	18.0	16.0	17.0	19.0	18.0	18.5
9	9.0	7.5	8.5	13.5	13.0	13.5	16.5	15.0	15.5	21.0	18.0	19.5
10	8.0	6.5	7.5	13.0	11.5	12.5	15.0	14.0	14.5	21.5	19.5	20.5
11	8.5	6.5	7.0	11.5	7.5	9.0	14.5	14.0	14.0	21.5	20.0	20.5
12	8.0	6.0	7.0	7.5	6.0	6.5	15.0	13.5	14.0	22.0	20.5	21.0
13	10.0	7.0	8.0	6.0	5.5	5.5	15.5	14.0	14.5	23.0	20.5	21.5
14	8.5	7.5	8.0	8.0	5.5	6.5	17.5	14.5	16.0	24.0	21.5	22.5
15	9.5	7.5	8.5	11.0	8.0	9.5	16.5	16.0	16.5	24.5	22.5	23.5
16	9.0	8.0	8.5	12.0	10.0	11.0	17.5	15.5	16.5	24.5	23.0	23.5
17	8.0	7.0	7.5	13.0	10.5	11.5	17.0	15.5	16.0	25.0	22.5	24.0
18	7.5	6.5	7.0	13.5	11.5	12.5	17.0	14.5	15.5	25.5	23.5	24.5
19	8.5	5.5	7.0	14.0	13.0	13.5	18.0	15.5	16.5	24.5	23.5	24.0
20	9.5	7.0	8.0	14.5	13.0	13.5	18.0	17.0	17.5	25.0	23.0	24.0
21	11.0	8.5	9.5	14.5	13.0	14.0	18.0	16.5	17.5	24.0	22.5	23.5
22	11.5	9.0	10.0	13.5	11.5	12.5	18.5	17.0	17.5	22.5	21.0	22.0
23	12.0	9.5	10.5	11.5	10.5	11.0	18.5	17.0	17.5	22.0	20.0	21.0
24	11.5	9.5	10.5	11.0	10.0	10.5	18.5	16.0	17.0	22.0	19.5	20.5
25	11.5	9.5	10.5	11.0	9.5	10.5	19.5	16.5	18.0	22.0	19.5	20.5
26	12.0	9.5	11.0	11.0	10.0	10.5	18.0	16.0	17.0	22.5	20.0	21.0
27	13.0	11.0	12.0	13.0	10.5	11.5	18.5	15.5	17.0	22.0	20.0	21.0
28	12.5	10.0	11.0	14.5	12.5	13.5	20.5	16.5	18.5	20.5	19.0	20.0
29	10.5	9.5	10.0	15.0	14.0	14.5	22.0	18.0	20.0	20.0	18.0	19.0
30	10.0	9.0	9.5	15.0	14.0	14.5	22.5	20.0	21.0	20.0	17.5	18.5
31	---	---	---	14.0	13.0	13.0	---	---	---	21.0	18.5	19.5
MONTH	13.0	5.5	8.5	15.0	5.5	11.5	22.5	13.0	17.0	25.5	16.5	21.0

		AUGUST			SEPTEMBER	
1	21.5	19.0	20.0	21.5	18.0	19.5
2	22.5	20.0	21.0	20.5	19.5	20.0
3	21.0	19.5	20.5	19.5	17.5	18.5
4	19.5	18.0	19.0	18.5	16.5	17.5
5	19.5	17.5	18.5	18.0	16.0	16.5
6	21.5	18.5	20.0	16.0	15.0	15.5
7	22.5	20.5	21.5	16.0	14.5	15.0
8	21.5	19.0	20.5	17.0	14.5	16.0
9	19.5	18.0	19.0	18.0	15.5	16.5
10	18.0	16.5	17.5	18.0	16.5	17.0
11	17.5	16.0	17.0	17.5	16.0	16.5
12	18.5	16.0	17.0	17.5	17.0	17.0
13	20.0	17.0	18.5	17.0	15.5	16.0
14	21.0	18.0	19.0	16.5	15.0	15.5
15	21.5	18.5	20.0	16.0	14.5	15.5
16	21.0	19.0	19.5	17.0	15.0	16.0
17	21.0	18.5	20.0	17.5	15.0	16.0
18	20.0	17.5	19.0	18.5	16.0	17.0
19	19.5	16.5	18.0	18.5	17.0	17.5
20	19.0	16.5	17.5	17.5	15.0	16.5
21	19.5	17.0	18.0	16.0	13.5	14.5
22	18.5	16.5	17.5	15.5	13.0	14.0
23	17.5	16.0	16.5	15.5	13.0	14.0
24	17.5	15.5	16.5	16.0	12.5	14.0
25	18.0	16.0	16.5	16.5	13.0	14.5
26	18.0	16.5	17.0	17.0	13.5	15.0
27	19.0	16.0	17.5	17.0	14.0	15.0
28	18.5	16.5	17.5	16.5	13.5	15.0
29	18.5	16.5	17.5	16.0	14.0	14.5
30	19.5	17.0	18.0	15.5	12.5	14.0
31	20.0	18.0	19.0	---	---	---
MONTH	22.5	15.5	18.5	21.5	12.5	16.0

SMALLER RESERVOIRS IN MISSOURI RIVER BASIN IN MONTANA

All elevations listed for the following reservoirs are referenced to the National Geodetic Vertical Datum of 1929.

06012000 LIMA RESERVOIR

LOCATION--Lat 44°39'16", long 112°21'54" (NAD 27), in $SW^1/_4$ sec.32, T.13 S., R.6 W., Beaverhead County, Hydrologic Unit 10020001, at Lima Dam on Red Rock River, 7 mi northwest of Monida, and at river mile 2,542.2.

DRAINAGE AREA--570 mi^2.

PERIOD OF RECORD.--April 1940 to current year. Records prior to October 1950, published only in WSP 1309, and those for April 1955, published only in WSP 1729. Records of daily elevations available in files of Helena district office.

REMARKS.--Elevation of gage is at sea level (levels by Montana Department of Natural Resources and Conservation)Reservoir is formed by earthfill dam with concrete spillway completed in 1902. Usable capacity, 84,050 acre-ft between elevation 6,537.30 ft, bottom of tunnel, and 6,582.7 ft, spillway crest. No dead storage. Figures given herein represent usable contents. Water is used for irrigation, flood control, and recreation. Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 85,870 acre-ft, May 27, 28, June 14, 15, 1984, elevation, 6,582.98 ft; no usable storage Sept. 20-26, 1979, Sept. 13-30, 1987, Oct. 1987, July 18 to Sept. 30, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 29,010 acre-ft, June 20, elevation 6,569.67 ft; minimum contents, 4,300 acre-ft, Oct. 1 to Nov. 11, elevation, 6,553.00 ft.

06038000 HEBGEN LAKE

LOCATION.--Lat 44°51'51", long 111°20'09" (NAD 27), in $SW^1/_4NW^1/_4$ sec.23, T.11 S., R.3 E., Gallatin County, Hydrologic Unit 10020007, at Hebgen Dam on Madison River, 18 mi northwest of West Yellowstone, and at river mile 103.

DRAINAGE AREA.--904 mi^2.

PERIOD OF RECORD.--January 1936 to current year. Records prior to October 1939, published only in WSP 1309. Figures of contents published in WSP 1629, 1709, and 1729 have been found to be in error and should not be used. Prior to Oct. 1, 1949, published as Hebgen Reservoir near West Yellowstone. Records of daily elevations since October 1955 on file in Helena district office.

REMARKS.--Elevation of gage is at sea level (levels by The Montana Power Co.). Prior to earthquake of Aug. 17, 1959, elevation of gage was 9.74 ft higher, also at sea level. Reservoir is formed by earthfill dam with concrete core and spillway completed in 1915, repaired in 1960 following severe earthquake of Aug. 17, 1959, which lowered dam 9.74 ft and deformed reservoir area. Subsequent usable capacity, 378,800 acre-ft, between elevation 6,473.00 ft, bottom of outlet tower, and 6,534.87 ft, spillway crest. Dead storage, 7,340 acre-ft below elevation 6,473.00 ft. Prior to Aug. 17, 1959, usable capacity, 344,700 acre-ft between 6,483.11 ft, bottom of outlet tower, and 6,544.61 ft, spillway crest. Observations of reservoir level prior and subsequent to earthquake indicate smaller increases in capacity than indicated by new capacity table. Figures given herein represent usable contents. Water is used for power and recreation. Records furnished by The Montana Power Co. REVISED RECORDS, WSP 1916: 1959-60.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 380,500 acre-ft, July 21, 1987, elevation, 6,535.0 ft; minimum monthend, 670 acre-ft, Dec. 31, 1936, by capacity table used prior to August 1959.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 378,100 acre-ft, July 6, elevation, 6,534.81 ft; minimum observed, 258,400 acre-ft, Mar. 24, 25, elevation, 6,524.53 ft.

06040500 ENNIS LAKE

LOCATION.--Lat 45°28'12", long 111°38'15" (NAD 27), in $NW^1/_4SW^1/_4$ sec.20, T.4 S., R.1 E., Madison County, Hydrologic Unit 10020007, at Madison Dam on Madison River, 5 mi northeast of McAllister, and at river mile 40.3.

DRAINAGE AREA.--2,181 mi^2.

PERIOD OF RECORD.--January 1936 to September 1975 (total contents), October 1975 to current year (usable contents). Records prior to October l939, published only in WSP 1309. Prior to 1949, published as Madison Reservoir near McAllister. Records of daily elevations since October 1955 on file in Helena district office.

REMARKS.--Elevation of gage is at sea level (levels by The Montana Power Co.). Reservoir is formed by timber crib dam completed in 1900. Usable capacity, 41,020 acre-ft between elevation 4,826.5 ft, bottom of penstock, and 4,841.5 ft, top of flashboard. Dead storage, 1,040 acre-ft below elevation 4,826.5 ft. Not normally drawn below 4,831.0 ft, 6,810 acre-ft. Figures given herein represent usable contents. Water is used for power and recreation. Records furnished by PPL EnergyPlus, LLC.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 40,830 acre-ft, June 20, 1968, elevation, 4,841.45 ft; minimum observed, 2,600 acre-ft, Mar. 31, 1937, elevation, 4,828.8 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 38,080 acre-ft, Oct. 22, elevation, 4,841.00 ft; minimum observed, 26,400 acre-ft, Jan. 8, 9, elevation, 4,837.80 ft.

06064500 LAKE HELENA

LOCATION.--Lat 46°45'58", long 111°53'10" (NAD 27), in $SE^1/_4SW^1/_4$ sec. 29, T.12 N., R.2 W., Lewis and Clark County, Hydrologic Unit 10030101, at Hauser Dam on Missouri River, 13 mi northeast of Helena, and at river mile 2,239.1.

DRAINAGE AREA.--610 mi^2 above dam and control works on Prickly Pear Creek. PERIOD OF RECORD, May 1945 to current year. April to July 1953 scattered daily elevation and contents, published in WSP 1320-B. May to June 1964 daily elevations and contents, published in WSP 1840-B. Records of daily elevations since October 1955 on file in Helena district office. Nonrecording gage at Hauser Dam read hourly.

REMARKS.--Elevation of gage is at sea level (levels by The Montana Power Co.). Gage heights collected at Hauser Dam are effective on Lake Helena at control dam. Prior to April 1945, contents of Lake Helena included with records of Hauser Lake. Since that date, a dam and control works has separated the two lakes to allow independent regulation of Lake Helena, if needed. Usable capacity, 12,710 acre-ft, between elevation 3,624.00 ft, bottom of control works, and 3,635.00 ft, top of flashboards. No dead storage. Figures given herein represent usable contents. Water is used for recreation, wildlife, and power production through Hauser Dam. Records furnished by PPL EnergyPlus, LLC.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 12,040 acre-ft, Mar. 14, 2003, elevation, 3,635.70 ft; no storage Mar. 29 to Apr. 7, 1958, Feb. 12, 20, 1962, May 4-10, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 11,360 acre-ft, many days throughout year, elevation, 3,635.40 ft; minimum observed, 9,050 acre-ft, Sept. 18, 27, elevation, 3,634.30 ft.

SMALLER RESERVOIRS IN MISSOURI RIVER BASIN IN MONTANA—Continued

06065000 HAUSER LAKE

LOCATION.--Lat 46°45'58", long 111°53'10" (NAD 27), in $SE^1/_4SW^1/_4$ sec.29, T.12 N., R.2 W., Lewis and Clark County, Hydrologic Unit 10030101, at Hauser Dam on Missouri River, 1.6 mi downstream from Prickly Pear Creek, 13 mi northeast of Helena, and at river mile 2,226.4.

DRAINAGE AREA.--16,876 mi^2.

PERIOD OF RECORD.--January 1936 to current year. Records prior to October 1939, published only in WSP 1309. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. May to June 1964 daily elevations and contents, published in WSP 1840-B. Monthend contents prior to May 1945 include contents of Lake Helena, excluded thereafter. Records of daily elevations since October 1955 on file in Helena district office. Nonrecording gage read hourly.

REMARKS.--Elevation of gage is at sea level (levels by The Montana Power Co.). Reservoir is formed by concrete dam completed in 1907; separated from Lake Helena in April 1945. Usable contents, 61,870 acre-ft, between elevation 3,617.00 ft, bottom of tunnel, and 3,635.00 ft top of flashboards. Dead storage, 46,810 acre-ft below elevation 3,617.00 ft. Prior to Nov. 28, 1949, usable capacity, 52,090 acre-ft at elevation 3,635.00 ft, decrease caused by construction of Canyon Ferry Dam in backwater of Hauser Dam. Not normally drawn below 3,621.00 ft, 8,870 acre-ft. Capacity above elevation 3625.0 updated in 1990. Figures given herein represent usable contents. Water is used for power and recreation. Records furnished by PPL EnergyPlus, LLC. REVISED RECORDS, WSP 1729: 1949-57.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 66,040 acre-ft, Mar. 14, 2003, elevation, 3,635.70 ft; no storage Jan. 31, Feb. 29, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 64,250 acre-ft, several days throughout year, elevation, 3,635.40 ft; minimum observed, 57,910 acre-ft, Sept. 18, 27, elevation, 3,634.30 ft.

06066000 HOLTER LAKE

LOCATION.--Lat 46°59'28", long 112°00'17" (NAD 27), on line between $SE^1/_4$ sec.5 and $NE^1/_4$ sec.8, T.14 N., R.3 W., Lewis and Clark County, Hydrologic Unit 10030101, at Holter Dam on Missouri River, 3.3 mi east of Wolf Creek, and at river mile 2,211.1.

DRAINAGE AREA.--17,149 mi^2.

PERIOD OF RECORD, January 1936 to current year. Records prior to October 1939, published only in WSP 1309. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. May to June 1964 daily elevations and contents, published in WSP 1840-B. Records of daily elevations since October 1955 on file in Helena district office. Prior to 1950, published as Holter Reservoir near Wolf Creek. Nonrecording gage read three times daily.

REMARKS.--Elevation of gage is at sea level (levels by The Montana Power Co.). Reservoir is formed by concrete dam completed in 1918. Usable capacity, 81,920 acre-ft between elevation 3,543.00 ft, bottom of tunnel, and 3,564.00 ft, top of flashboards. Dead storage, 158,500 acre-ft below elevation 3,543.00 ft. Not normally drawn below 3,548.00 ft, 16,660 acre-ft. Figures given herein represent usable contents. Water is used for power and recreation. Records furnished by PPL EnergyPlus, LLC.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 85,250 acre-ft, June 19, 1970, elevation, 3,564.70 ft; no storage Feb. 29, Dec. 31, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 82,160 acre-ft, Dec. 11, elevation, 3,564.05 ft; minimum observed, 77,400 acre-ft, July 13, elevation, 3,563.04 ft.

06079500 GIBSON RESERVOIR

LOCATION.--Lat 47°36'09", long 112°45'39" (NAD 27), in $NE^1/_4NW^1/_4$ $SE^1/_4$ sec.4, T.21 N., R.9 W., Teton County, Hydrologic Unit 10030104, at Gibson Dam on Sun River, 19 mi northwest of Augusta, and at river mile 100.8.

DRAINAGE AREA.--575 mi^2.

PERIOD OF RECORD.--January 1930 to current year. Records prior to October 1940, published only in WSP 1309. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. May to June 1964 daily elevations and contents, published in WSP 1840-B. Nonrecording gage read daily. Records of daily elevations on file in Helena district office.

REMARKS.--Elevation of gage is at sea level (levels by Bureau of Reclamation). Reservoir is formed by concrete dam with glory-hole spillway completed in 1929. usable capacity, 96,480 acre-ft, between elevation 4,557.5 ft, bottom of outlet, and 4,724.0 ft, top of glory-hole, by capacity table effective Oct. 1, 1997; see previous reports for superseded figures. Water is used for irrigation and recreation. Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 116,300 acre-ft, June 8, 1964, elevation 4,732.23 ft, from floodmark, of which 11,600 acre-ft was uncontrolled storage, by capacity table used Oct. 1, 1965 to July 30, 1975; minimum observed, 11 acre-ft, Oct. 13, 1936, elevation, 4,560.9 ft by capacity table used prior to 1939.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 96,390 acre-ft, June 6, elevation, 4,723.93 ft; minimum, 5,600 acre-ft, Oct. 21, elevation, 4,610.89 ft.

06136500 FRESNO RESERVOIR

LOCATION.--Lat 48°36'304", long 109°56'45" (NAD 27), in $SE^1/_4$ sec, 19, T. 33 N., R.14E, Hill County, Hydrologic Unit 10050002, at dam on Milk River, 13. mi west of Havre and at river mile 437.3.

DRAINAGE AREA.--3,766 mi^2 of which 670 mi^2 is probably noncontributing.

PERIOD OF RECORD.--January 1, 1940 to current year. Records prior to September 1940, published only in WSP 1309. March to May 1952 daily elevations and contents published in WSP 1260-B. April to July 1953 scattered daily elevations and contents published in WSP 1320-B. Records of daily contents in files of Helena district office. Nonrecording gage read daily.

REMARKS.--Elevation of gage is at sea level (levels by Bureau of Reclamation). Reservoir is formed by earthfill dam with concrete spillway completed in 1939. Usable capacity, 103,000 acre-ft, between elevation 2,530.00 ft, invert of tunnel inlet, and 2,575.00 ft, spillway crest, from capacity table effective Feb. 1, 1983. Elevation of maximum water surface is 2,592.93 ft, 224,700 acre-ft. Crest of dam is 2,596.10 ft. There are no gates in the spillway. Dead storage, 448 acre-ft, below elevation 2,530.00 ft. Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Bureau of Reclamation. REVISED RECORDS, WSP 1729: Drainage area.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 154,000 acre-ft, Apr. 3, 1952, elevation, 2,579.3 ft, of which 26,800 acre-ft was uncontrolled storage, capacity table then in use; no storage Feb. 18 to Mar. 6, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 68,520 acre-ft, July 14, elevation, 2,569.46 ft; minimum observed, 14,830 acre-ft, Feb. 29, elevation, 2,546.31 ft.

SMALLER RESERVOIRS IN MISSOURI RIVER BASIN IN MONTANA—Continued

06204000 MYSTIC LAKE

LOCATION.--Lat 45°13'30", long 109°45'36" (NAD 27), in sec.9, T.7 S., R.16 E., (unsurveyed), Stillwater County, Hydrologic Unit 10070005, at dam on West Rosebud Creek, 15 mi southwest of Roscoe, 25 mi southwest of Absarokee and at river mile 28.8.

DRAINAGE AREA.--46.9 mi^2.

PERIOD OF RECORD.--January 1936 to current year. Records prior to September 1939, published only in WSP 1309. Record of daily elevations since October 1965 available in files of Helena district office. Water-stage recorder. Prior to October 1965, only monthend figures furnished.

REMARKS.--Elevation of gage is at sea level (levels by The Montana Power Co.). Reservoir is formed by thin-section reinforced concrete arch dam completed in 1925. Usable capacity, 21,000 acre-ft between elevation 7,612.00 ft, minimum operating level, and 7,673.50 ft, top of 3.5 ft stop logs. No dead storage. Figures given herein represent usable contents. Water is used for power development and recreation. Records furnished by PPL EnergyPlus, LLC. REVISED RECORDS, WSP 1916: Drainage area.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 21,130 acre-ft, July 10, 1983, elevation, 7,673.8 ft; no storage most days Mar. 23 to May 5, 1981, Apr. 10 to May 19, 1982, May 4,5, 1983, May 14, 1984, Mar. 23,26,27, 1986, Apr. 8-11, 1988, Apr. 18-20, 1999, Apr. 12 to May 1, 2000, and several days in April 2003.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 21,010 acre-ft, Aug. 16, elevation, 7,673.53 ft; minimum observed, 169 ac-ft, May 3, elevation 7,612.60.

MONTHEND CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Lima Reservoir	Hebgen Lake	Ennis Lake	Lake Helena	Hauser Lake
Oct. 31	4,300	293,700	34,690	10,680	62,460
Nov. 30	4,680	287,200	30,660	10,680	62,460
Dec. 30	5,820	283,800	29,230	10,680	62,460
Jan. 31	7,040	273,700	29,590	11,130	63,660
Feb. 29	8,150	264,600	29,940	10,900	63,060
Mar. 31	10,760	259,000	28,160	10,900	63,060
Apr 30	24,750	266,600	31,750	10,680	62,460
May 31	28,260	327,100	34,690	11,130	63,660
June 30	28,190	372,900	37,320	11,130	63,660
July 31	26,660	371,600	36,950	11,130	63,660
Aug. 31	26,070	355,900	36,950	11,130	63,660
Sept. 30	27,370	343,400	36,570	9,250	58,480

Date	Holter Lake	Gibson Reservoir	Fresno Reservoir	Mystic Lake
Oct. 31	79,690	7,910	25,420	14,070
Nov. 30	80,400	13,430	22,770	11,800
Dec. 30	81,100	17,300	20,660	8,870
Jan. 31	81,060	20,840	17,500	6,030
Feb. 28	81,290	23,760	14,830	3,570
Mar. 31	80,960	34,640	28,960	1,320
Apr 30	81,200	68,610	45,570	209
May 31	81,010	94,770	45,700	3,030
June 30	80,870	91,880	65,580	16,850
July 31	81,250	48,780	53,650	20,640
Aug. 31	80,780	19,400	38,050	19,340
Sept. 30	80,260	22,500	41,920	18,140

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